

Chiquita Canyon Landfill Semi-Annual New Source Performance Standards (NSPS) and Startup, Shutdown, and Malfunction (SSM) Plan Report

Prepared for:

Chiquita Canyon Landfill
29201 Henry Mayo Drive
Castaic, CA 91384

For Submittal to:

South Coast Air Quality Management District
21865 East Copley Drive
Diamond Bar, CA 91765-4182

SCS ENGINEERS

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Table of Contents

Section	Page
1.0 Site Background Information.....	1
2.0 Monitoring and Records Required under NSPS.....	2
40 CFR 60.755(5).....	5
40 CFR 60.757(f)(1).....	5
40 CFR 60.756(c).....	5
40 CFR 60.756(d).....	5
40 CFR 60.757(f)(2).....	5
40 CFR 60.757(f)(3).....	5
40 CFR 60.757(f)(4).....	5
40CFR 60.758(c)(1)(i).....	6
40 CFR 60.757(f)(5).....	6
40 CFR 60.757(f)(6).....	8
40 CFR 60.758.....	9
3.0 Startup, Shutdown, and Malfunction (SSM) Plan Reporting.....	10

Tables

1	Summary of Wells Under Positive Pressure
2	Summary of Wells Above 5% Oxygen
3	Summary of Wells Above 131 Degrees Fahrenheit
4	Instantaneous Surface Emissions Monitoring Summary
5	Summary of Flare Station Periods of Downtime Exceeding 1 Hour
6	Summary of Flare Station Startup, Shutdown Events
7	Summary of Flare Station Malfunction Events
8	Summary of GCCS SSM Events

Appendices

Appendix A	GCCS Site Map
Appendix B	Startup, Shutdown and Malfunction Forms

1.0 SITE BACKGROUND INFORMATION

Chiquita Canyon Landfill (CCL) is located at 29201 Henry Mayo Drive, Castaic, California, in northern Los Angeles County. The region receives an average annual rainfall of about 16 inches. It is a Class III non-hazardous municipal solid waste (MSW) landfill.

The site began operating in 1972. The permitted landfill disposal footprint totals 257 acres and is comprised of 3 separate areas designated as “Primary” Canyon, “Canyon B”, and the Main Canyon (including Canyons A, C, D and subsequent fill modules). Currently, 231 acres of the footprint have been used for disposal. All areas except the Primary Canyon have landfill liners and leachate collection systems. Leachate is collected and trucked off site; condensate is injected into the flare.

The landfill gas (LFG) collection and control system (GCCS) was originally installed in Primary Canyon and Canyon B in 1989 and subsequently upgraded over the years. Horizontal collectors and vertical wells were later installed in the Main Canyon as the landfill grew.

A John Zink flare (No. 1/FL-150) with a rated capacity of 4,000 standard cubic feet per minute (scfm) was installed in 1993. A second John Zink flare (No. 2/FL-100) with a rated capacity of 4,000 scfm was installed in 2009. The existing collection system appears to provide comprehensive physical coverage in Primary Canyon and in Canyon B. The network of horizontal collectors and vertical wells in the Main Canyon is extensive and appears to provide comprehensive physical coverage in all areas except those that have recently received waste.

The GCCS is permitted and operated by CCL under the facility identification number of 119219. The LFG collection system operates under South Coast Air Quality Management District (SCAQMD) Permit No. G29331. The LFG flares operate under SCAQMD Permit No. G23473. The LFG condensate collection and storage system operates under SCAQMD Permit No. F64185. The LFG to Energy Facility (LFGTE) accepts LFG but is owned and operated by Ameresco Chiquita Canyon Energy LLC (Ameresco), which is not under common control with the CCL. The Ameresco facility operates under its own Title V permit. The landfill site is permitted under its Title V permit (Facility ID No. 119219).

A diagram of the GCCS showing system component positioning is shown in the site plan provided in Appendix A, and consists of the following:

- A system of vertical wells.
- An extensive network of horizontal collectors.
- A system of lateral piping which connects the vertical wells and horizontal collectors to a main header system.
- A main collection header which transports LFG to the blower/flare station.
- A blower flare station (BFS).
- A condensate collection system.

The purpose of the GCCS is to minimize potential environmental impacts associated with LFG, including the following:

- LFG emissions at the landfill surface.
- LFG migration at the property boundary.
- LFG emissions out of the flare stack.
- LFG migration through the vadose zone.

The GCCS removes LFG under a vacuum from the landfill mass. The system collects and controls migrating surface and subsurface gases from the disposal area.

A drawing of the existing GCCS is presented in Appendix A.

2.0 MONITORING AND RECORDS REQUIRED UNDER NSPS

This New Source Performance Standards (NSPS) Semi-Annual Report for CCL is being submitted to the SCAQMD and U.S. Environmental Protection Agency (EPA) in compliance with 40 Code of Federal Regulations (CFR) Subpart WWW (“NSPS”), including 40 CFR 60.757(f), which describe the items to be submitted in an annual report for landfills seeking to comply with NSPS using an active collection system. In compliance with 40 CFR 63, Subpart AAAA (National Emissions Standards for Hazardous Air Pollutants [NESHAP] for MSW Landfills), this report is submitted semi-annually.

In addition, this report includes the semi-annual Startup, Shutdown, and Malfunction (SSM) Plan Report, per 40 CFR Part 63 Subparts A and AAAA, NESHAP for MSW Landfills.

40 CFR 60.753(b)

Operate the collection system with negative pressure at each wellhead except for (1) a fire or increased well temperature, (2) use of a geomembrane or synthetic cover, and (3) a decommissioned well.

During the reporting period, SCS Engineers’ (SCS) technicians re-monitored and when necessary, utilized corrective action to ensure that the collection system was operated with negative pressure at all wellheads. Individual wells were sometimes shutdown and/or decommissioned when construction or filling activities altered the landfill area by making it a dangerous or inaccessible area. These events were reported as SSM events under CCL’s SSM Plan. Events of wells with positive pressure from the current reporting period are summarized in **Table 1**.

40 CFR 60.753(c)

Operate each interior wellhead in the collection system with a temperature less than 55 degrees Celsius (131 degrees Fahrenheit) and with either a nitrogen level less than 20 percent or an oxygen level less than 5 percent.

During the reporting period, interior wellheads that were not operated with LFG temperatures less than 55 degrees Celsius (°C) or 131 degrees Fahrenheit (°F) or did not have oxygen concentrations at or above 5 percent were corrected and re-monitored within the timeframe allowed, or the well was shutdown and/or decommissioned and reported as an SSM event under CCL’s SSM Plan. Per NSPS, if correction of an exceedance cannot be achieved within 15 calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial

exceedance. Events of wells with high oxygen are summarized in **Table 2**. Events of wells with high temperature are summarized in **Table 3**.

Higher operating value (HOV) requests were submitted to the SCAQMD. The approved wells are summarized below.

HOV Wells	Approval Date	HOV
CV-90	January 9, 2014	145 °F
H-39	January 9, 2014	145 °F
CV-57D	January 9, 2014	145 °F
CV-84D	January 9, 2014	145 °F
CV-84S	January 9, 2014	145 °F
CV-85D	January 9, 2014	145 °F
B-7	January 9, 2014	10% O ₂
B-8	January 9, 2014	15% O ₂
B-9	January 9, 2014	10% O ₂
B-10	January 9, 2014	10% O ₂
B-11	January 9, 2014	10% O ₂
B-13	January 9, 2014	10% O ₂
CV-22	January 9, 2014	15% O ₂
D-6	January 9, 2014	10% O ₂
D-7	January 9, 2014	10% O ₂
D-8	January 9, 2014	10% O ₂
D-9	January 9, 2014	10% O ₂
D-10	January 9, 2014	10% O ₂
D-11	January 9, 2014	10% O ₂
P-1	January 9, 2014	10% O ₂
P-2	January 9, 2014	10% O ₂
P-3	January 9, 2014	10% O ₂
P-4	January 9, 2014	10% O ₂
P-5	January 9, 2014	10% O ₂
P-12	January 9, 2014	10% O ₂
P-13	January 9, 2014	10% O ₂
P-14	January 9, 2014	10% O ₂
P-22	January 9, 2014	10% O ₂
P-23	January 9, 2014	10% O ₂
P-24	January 9, 2014	10% O ₂
P-56	January 9, 2014	10% O ₂
P-78	January 9, 2014	15% O ₂
P-79	January 9, 2014	10% O ₂
CV-76	December 6, 2016	145 °F
H-52A	December 6, 2016	145 °F
CV-100	December 6, 2016	145 °F
CV-103	December 6, 2016	145 °F
CV-104	December 6, 2016	145 °F
CV-105	December 6, 2016	145 °F
CV-50D	December 6, 2016	145 °F
CV-50S	December 6, 2016	145 °F
CV-51D	December 6, 2016	145 °F

HOV Wells	Approval Date	HOV
CV-51S	December 6, 2016	145 °F
CV-52D	December 6, 2016	145 °F
CV-52S	December 6, 2016	145 °F
CV-53D	December 6, 2016	145 °F
CV-53S	December 6, 2016	145 °F
CV-54D	December 6, 2016	145 °F
CV-54S	December 6, 2016	145 °F
CV-55R	December 6, 2016	145 °F
CV-56D	December 6, 2016	145 °F
CV-57R	December 6, 2016	145 °F
CV-74R	December 6, 2016	145 °F
CV-79R	December 6, 2016	145 °F
CV-107-56	December 6, 2016	145 °F
CV-109-55	December 6, 2016	145 °F
CV-1418	December 6, 2016	145 °F
CV-1419	December 6, 2016	145 °F
CV-1424	December 6, 2016	145 °F
CV-1425	December 6, 2016	145 °F
CV-1426	December 6, 2016	145 °F
CV-1532	December 6, 2016	145 °F
CV-1533	December 6, 2016	145 °F
CV-108-52	December 6, 2016	145 °F

40 CFR 60.753(d)

Operate the collection system so that the methane concentration is less than 500 parts per million (ppm) above background at the surface of the landfill.

Landfill surface emissions monitoring (SEM) (“instantaneous surface sweeps”) was performed monthly during the reporting period to measure concentrations of total organic carbon (TOC) as methane. The monthly monitoring is performed in accordance with CCL’s SCAQMD Rule 1150.1 Compliance Plan. This monitoring exceeds the NSPS requirement for quarterly SEM. The monthly testing was performed by RES Environmental, Inc. (RES) under contract to CCL using a portable toxic vapor analyzer (TVA), which meets or exceeds all guideline specifications. The TVA was calibrated on the same date as the testing. Calibration records are available upon request. Reports summarizing the monitoring dates, survey pathways, and results are kept on file at the landfill. The records are available upon request. The results of the monitoring events are summarized in **Table 4**. Each exceedance has been subjected to corrective action and re-monitoring in accordance with the Rule 1150.1 and the NSPS.

40 CFR 60.753(e)

Operate the system such that all collected gases are vented to a control system designed and operated in compliance with 40 CFR 60.752(b)(2)(ii).

All collected gases were conveyed to the control system. The flare station is equipped with an automatic shutdown and alarm system that powers down the specific blower whenever a flare shuts down to ensure that no collected LFG is vented to the atmosphere untreated.

40 CFR 60.755(5)

The owner or operator shall implement a program to monitor for cover integrity and implement cover repairs as necessary on a monthly basis.

The site operations personnel monitor and report any areas of concern as part of their daily inspection and as part of the monthly surface emissions monitoring. These inspections included at least monthly cover integrity checks on all areas of the landfill. The site operations personnel then make any necessary repairs. The monthly cover integrity checks were performed on January 30, February 26, March 28, April 30, May 31, and June 28, 2019.

40 CFR 60.757(f)(1)

Value and length of time for exceedance of applicable parameters monitored under 40 CFR 60.756(a), (b), (c), and (d).

40 CFR 60.756(a) and (b): The flare station has installed and calibrated according to manufacturer's specifications, maintain a temperature monitoring device with a continuous recorder and a LFG flow rate monitoring device which records flows at least every 15 minutes.

40 CFR 60.756(c)

The facility does not have an open flare.

40 CFR 60.756(d)

The facility does not use a device other than an open flare or an enclosed combustor.

40 CFR 60.757(f)(2)

Description and duration of all periods when the gas stream is diverted from the control device.

At no time during the reporting period was the gas stream diverted from the control devices.

40 CFR 60.757(f)(3)

Description and duration of all periods when the control device was not operating for more than 1 hour.

Individual control device shutdowns exceeding 1 hour in duration can be found in **Table 5**. In no instance did free venting of LFG ever occur.

40 CFR 60.757(f)(4)

All periods when the collection system was not operating in excess of 5 days.

At no time during the reporting period was the collection system not operating in excess of 5 days.

40 CFR 60.758(c)(1)(i)

For enclosed combustors except for boilers and process heaters with design heat input capacity of 44 megawatts (150 million British thermal units per hour) or greater, all 3-hour periods of operation during which the average combustion temperature was more than 28°C below the average combustion temperature during the most recent performance test at which compliance with 40 CFR 60.753(b)(2)(iii) was determined.

The most recent source test for Flare No. 1/FL-150 was conducted on July 12, 2018, and reported on August 13, 2018. The minimum temperature Flare No. 1/FL-150 should have operated from January 1, 2019 – June 30, 2019 was 1,571 °F (1,621 °F minus 50 °F).

The source test for Flare No. 2/FL-100 was conducted on December 20, 2017, and reported on January 24, 2018. The minimum temperature Flare No. 2/FL-100 should have operated from January 1 – January 29, 2019 was 1,498 °F (1,548 °F minus 50 °F). The most recent source test for Flare No. 2/FL-100 was conducted on December 18, 2018, and reported on January 30, 2019. The minimum temperature Flare No. 2/FL-100 should have operated from January 30 – June 30, 2019 was 1,483 °F (1,533 °F minus 50 °F).

During the reporting period, the temperature of the flares did not drop below the established minimum NSPS temperatures for 3-hour periods, excluding periods of SSM, which are exempt per NSPS criteria.

Missing or invalid data can potentially be a deviation for the temperature monitoring requirement for the flares if one or more hours of data in a 3-hour block is missing or invalid as defined by having more than 15 minutes of invalid or missing data in an hour. There were zero (0) missing temperature data events for FL-100 and FL-150 during the reporting period.

40 CFR 60.757(f)(5)

The location of each observed methane surface emission in exceedance of 500 ppm, and the follow-up remonitoring concentration were recorded for each location for which an exceedance was recorded during a monthly monitoring event.

Landfill SEM (“instantaneous surface sweeps”) were performed on a monthly basis during the reporting period to measure concentrations of TOC as methane. The monitoring dates, survey pathways, and results are documented in the landfill’s quarterly reports prepared by RES. The quarterly reports are kept on site for the landfill’s records.

Table 4 provides the results of any locations where observed methane surface emissions in exceedance of 500 parts per million by volume (ppmv) were found. Instantaneous surface monitoring is performed every month at CCL. SEM was performed in general accordance with NSPS using procedures under Rule 1150.1.

Each of the locations where surface emissions exceeded 500 ppmv as methane were remediated by applying additional soil cover, compacting the soil, moisture conditioning the soil, adjusting nearby LFG extraction wells, and/or adding additional extraction points. Following the remediation activities, locations were subsequently re-monitored and all locations were corrected within the first 10-day period. In addition to the 10-day monitoring event, re-monitoring was also performed within 1-month of the initial exceedance or an additional 10-day re-monitoring if the first 10-day resulted in continued emission exceedances.

From the previous reporting period, during the monthly SEM event on September 27, 2018, there was twenty-four (24) areas that had an instantaneous reading above 500 ppmv as methane. Remediation activities were performed, including adjusting local wells as well as adding soil and compacting, and the 10-day re-monitoring event on October 5, 2018, resulted in twenty-one (21) locations with surface emissions below 500 ppmv. The 1-month re-monitoring event on October 25, 2018 resulted in the twenty-one (21) areas with surface emissions below 500 ppmv, and in compliance per NSPS. Note, Grids 82/Y31, 83/Y32, and 83/Y33 were in active, dangerous areas; therefore, not accessible for immediate re-monitoring. The 10-day re-monitoring for 82/Y31 was performed on April 30, 2019 when the area was accessible, resulting in surface emissions above 500 ppmv. The second 10-day re-monitoring was performed on May 9, 2019, resulting in surface emissions below 500 ppmv. The 1-month re-monitoring event was performed on May 23, 2019, resulting in surface emissions below 500 ppmv, and in compliance per NSPS. The 10-day re-monitoring for 83/Y32 and 83/Y33 was performed on January 30, 2019 when the areas were accessible, resulting in surface emissions below 500 ppmv. Grids 83/Y32 and 83/Y33 were in active areas again. The 1-month re-monitoring event for 83/Y32 and 83/Y33 was performed on April 30, 2019 when the areas were accessible, resulting in surface emissions below 500 ppmv, and in compliance per NSPS.

During the monthly SEM event on October 30, 2018, there were fifteen (15) areas that had instantaneous readings above 500 ppmv as methane. Remediation activities were performed, including adjusting local wells as well as adding soil and compacting, and the 10-day re-monitoring event on November 8, 2018, resulted in twelve (12) locations with surface emissions below 500 ppmv. The 1-month re-monitoring event on November 19, 2018 resulted in the twelve (12) areas with surface emissions below 500 ppmv, and in compliance per NSPS. Note, Grids 33/Y41, 32/Y42, and 37/Y18 were in active areas, dangerous areas; therefore, not accessible for immediate re-monitoring. The 1-month re-monitoring event was performed on February 26, 2019 for all areas when the areas were accessible, resulting in surface emissions below 500 ppmv, and in compliance per NSPS.

During the monthly SEM event on December 27, 2018, there were six (6) areas that had instantaneous readings above 500 ppmv as methane. Remediation activities were performed, including adjusting local wells as well as adding soil and compacting, and the 10-day re-monitoring event on January 4, 2019, resulted in all locations with surface emissions below 500 ppmv. The 1-month re-monitoring event was performed on January 25, 2019, resulting in surface emissions below 500 ppmv, and in compliance per NSPS.

During the monthly SEM event on January 30, 2019, there were eight (8) areas that had instantaneous readings above 500 ppmv as methane. Remediation activities were performed, including adjusting local wells as well as adding soil and compacting, and the 10-day re-monitoring event on February 8, 2019, resulted in all locations with surface emissions below 500 ppmv. The 1-month re-monitoring event was performed on February 23, 2019, resulting in surface emissions below 500 ppmv, and in compliance per NSPS.

During the monthly SEM event on February 26, 2019, there were eight (8) areas that had instantaneous readings above 500 ppmv as methane. Remediation activities were performed, including adjusting local wells as well as adding soil and compacting, and the 10-day re-monitoring event on March 8, 2019, resulted in all locations with surface emissions below 500 ppmv. The 1-month re-monitoring event was performed on March 22, 2019, resulting in surface emissions below 500 ppmv, and in compliance per NSPS.

During the monthly SEM event on March 28, 2019, there were six (6) areas that had instantaneous readings above 500 ppmv as methane. Remediation activities were performed, including adjusting local wells as well as adding soil and compacting, and the 10-day re-monitoring event on April 3, 2019, resulted in all locations with surface emissions below 500 ppmv. The 1-month re-monitoring event was performed on April 22, 2019, resulting in surface emissions below 500 ppmv, and in compliance per NSPS.

During the monthly SEM event on April 30, 2019, there were fourteen (14) areas that had instantaneous readings above 500 ppmv as methane. Remediation activities were performed, including adjusting local wells as well as adding soil and compacting, and the 10-day re-monitoring event on May 9, 2019, resulted in all locations with surface emissions below 500 ppmv. The 1-month re-monitoring event was performed on May 23, 2019, resulting in surface emissions below 500 ppmv, and in compliance per NSPS.

During the monthly SEM event on May 31, 2019, there were nine (9) areas that had instantaneous readings above 500 ppmv as methane. Remediation activities were performed, including adjusting local wells as well as adding soil and compacting, and the 10-day re-monitoring event on June 7, 2019, resulted in all locations with surface emissions below 500 ppmv. The 1-month re-monitoring event was performed on June 20, 2019, resulting in surface emissions below 500 ppmv, and in compliance per NSPS.

During the monthly SEM event on June 28, 2019, there were twenty (20) areas that had instantaneous readings above 500 ppmv as methane. Remediation activities were performed, including adjusting local wells as well as adding soil and compacting, and the 10-day re-monitoring event on July 8, 2019, resulted in all locations with surface emissions below 500 ppmv. The 1-month re-monitoring event will be performed in July 2019, and reported in the next reporting period.

40 CFR 60.757(f)(6)

The date of installation and the location of each well or collection system expansion added pursuant to 40 CFR 60.752 paragraphs (a)(3), (b), and (c)(4).

The following installations occurred during the reporting period:

Date	Well Installation Activity
January 2, 2019	Installed horizontal collector H-1806B and its associated piping, operational.
February 20, 2019	Installed horizontal collector H-1807S and its associated piping, operational.
February 26, 2019	Installed horizontal collector H-1771A and H-1804N and its associated piping, operational.
May 9, 2019	Installed horizontal collector H-1807A and its associated piping, operational.
March 26, 2019	Installed horizontal collector H-1951E and H-1951W and its associated piping, operational.
June 7, 2019	Installed horizontal collector H-1960 and its associated piping, operational.

40 CFR 60.758

The most recent source test for Flare No. 1/FL-150 was performed on July 12, 2018, and reported an average process temperature of 1,621 °F on August 13, 2018.

The most recent source test for Flare No. 2/FL-100 was performed on December 18, 2018, and reported an average process temperature of 1,533 °F on January 30, 2019.

Performance test summary information on the Non Methane Organic Compounds (NMOC), Nitrogen Oxides (NOx), Sulfur Oxides (SOx), and Carbon Monoxide (CO) emissions for Flare No. 1/FL-150 and No. 2/FL-100 is provided below.

Test Date	Parameter	Flare	Emission Limit
Flare No. 1 (FL-150) 7/12/18, Reported 8/13/18	NOx Emission Rate (lb/MMBtu)	0.0446	0.06 lb/MMBtu
	CO Emission Rate (lb/MMBtu)	<10	2,000 ppmv
	NMOC Emission Rate (ppmv, as hexane @ 3% O ₂)	2.57	20 ppmv
	NMOC Destruction Efficiency (%)	98.8%	98%
Flare No. 2 (FL-100) 12/18/18, Reported 1/30/19	NOx Emission Rate (lb/MMBtu)	0.0236	0.025 lb/MMBtu
	CO Emission Rate (lb/MMBtu)	<0.0195	0.06 lb/MMBtu
	NMOC Emission Rate (ppmv, as hexane @ 3% O ₂)	0.811	20 ppmv
	NMOC Destruction Efficiency (%)	99.2%	98%

3.0 STARTUP, SHUTDOWN, AND MALFUNCTION (SSM) PLAN REPORTING

This semi-annual SSM Plan Report was prepared in order to comply with the requirements set forth in Chiquita Canyon Landfill's SSM plan and in accordance with 40 CFR 63.6(d)(5)(i) requirements. Unless otherwise noted in this report, all actions taken during the reporting period were consistent with Chiquita Canyon Landfill's SSM Plan. This report contains information regarding the number, duration, and description of each SSM event. A copy of the SSM Plan and all revisions/addenda are kept on file at the facility for at least five (5) years and are available to appropriate regulatory agency personnel for inspection.

Report Preparer:

Name & Title: James Kim, Project Professional, SCS ENGINEERS

Signature:  Date: 6/27/19

I CERTIFY THAT, TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE INFORMATION PROVIDED IN THIS REPORT IS COMPLETE AND ACCURATE.

Landfill Responsible Official:

Name & Title: Steve Cassulo, District Manager, Chiquita Canyon Landfill

Signature:  Date: 7.25.19

The NESHAP requires a facility to prepare and implement an SSM plan. The SSM plan includes the procedures for operating and maintaining affected gas collection and control equipment as well as continuous control device monitoring equipment during start-up, shutdown, and malfunction events. CCL is an existing affected source per 40 CFR §63.1945(b), therefore the deadline to implement the SSM Plan was January 16, 2004.

40 CFR §63.10(5)(i) requires the operator submit semi-annually a report identifying where SSM events were not consistent with the SSM Plan, and identify in detail all instances. The actions taken at CCL for all start-up, shutdown, and malfunction events during the reporting period, January 1 through June 30, 2019, were consistent with the procedures listed in CCL's SSM Plan. In each case, the SSM Plan was successfully implemented. **Tables 6 through 8** contain the date, duration, and description of each startup/shutdown event and malfunction. Please note that the majority of flare malfunctions due to stack temperature and gas flow were a result of Ameresco power plant operation, which is not in common control with CCL.

There were no events, which occurred during the reporting period that were not adequately addressed by the SSM Plan and in each case the SSM Plan was successfully implemented. The SSM Plan was not revised or required to be revised during the reporting period, so no information associated with SSM Plan revision is attached.

Table 1. Summary of Wells Under Positive Pressure

Name	Date	Static Pressure (In. H ₂ O)	5-Day Corrective Action Date	Corrective Action	15-Day Follow-Up Static Pressure (In. H ₂ O)	Follow-Up Date	Comments
H-17 (EXP-17)	3/7/19	7.55	3/7/19	Valve adjustment	-18.9	3/8/19*	--

Notes:

- (1) Wells taken offline under SSM event as allowed under the NSPS were not considered part of the system during the monitoring event.
- (2) Exceedances marked with an asterisk (*) were remediated within 5-day period and corrected and re-monitored within the 15-day period prescribed by the NSPS.

Table 2. Summary of Wells Above 5% Oxygen

Name	Date	Oxygen (% by Vol)	5-Day Corrective Action Date	Corrective Action	15-Day Follow-Up Oxygen (% by Vol)	Follow-Up Date	Comments
H-17 (EXP-17)	12/29/18	6.6	12/29/18	Temporarily decommissioned on 12/29/18	--	--	Online and compliant (0.0%) on 1/2/19 within 120-day timeframe
H-1773B	10/31/18	11.4	10/31/18	Valve adjustment	8.7	11/5/18	Compliant (1.2%) on 1/28/19 within 120-day timeframe
H-1801S	8/27/18	15.7	8/27/18	Temporarily decommissioned on 8/27/18	--	--	From previous reporting period, online and compliant (4.9%) on 9/19/18 within 120-day timeframe
H-42	12/29/18	20.7	12/29/18	Temporarily decommissioned on 12/29/18	20.7	12/29/18	Online and compliant (3.4%) on 2/15/19 within 120-day timeframe
H-45	12/29/18	12.8	12/29/18	Temporarily decommissioned on 12/29/18	0.1	1/9/19*	--
H-48	7/24/18	14.0	7/24/18	Temporarily decommissioned on 8/14/18	NA	NA	Offline as of end of reporting period
H-60	11/30/18	18.1	11/30/18	Valve adjustment	18.3	11/30/18	Compliant (3.9%) on 1/9/19 within 120-day timeframe
C-14	6/4/19	11.3	6/4/19	Valve adjustment	6.4	6/17/19	Temporarily decommissioned 6/18/19, offline as of end of reporting period
C-24	5/13/19	11.8	5/13/19	Temporarily decommissioned on 5/28/19	10.7	5/28/19	Online and compliant (0.1%) on 6/13/19 within 120-day timeframe
C-27	6/4/19	9.3	6/4/19	Valve adjustment	0	6/17/19*	--
CHH140 8C	5/29/19	9.8	5/29/19	Valve adjustment	2.6	6/13/19*	--
CV-105	4/10/19	6.3	4/10/19	Valve adjustment	4.0	4/10/19*	--
CV-1609D	5/9/19	5.9	5/9/19	Valve adjustment	2.7	5/24/19*	--

Name	Date	Oxygen (% by Vol)	5-Day Corrective Action Date	Corrective Action	15-Day Follow-Up Oxygen (% by Vol)	Follow-Up Date	Comments
CV31D	4/11/19	6.9	4/11/19	Valve adjustment	0.1	4/16/19*	--
CV33D	4/12/19	15.0	4/12/19	Valve adjustment	4.8	4/16/19*	--
CV-56D	4/25/19	12.0	4/25/19	Valve adjustment	7.3	4/25/19	Temporarily decommissioned 5/9/19, offline as of end of reporting period
CV-78	2/18/19	21.5	2/18/19	Valve adjustment	21.6	2/18/119	Temporarily decommissioned 2/20/19, offline as of end of reporting period
CV-90	1/30/19	14.4	1/30/19	Valve adjustment	18.9	1/31/19	Temporarily decommissioned 2/20/19. Online and compliant (0.0%) on 4/24/19 within 120-day timeframe
H-05 (EXP-05)	5/14/19	16.0	5/14/19	Valve adjustment	4.9	5/29/19*	--
H-06 (EXP-06)	5/14/19	6.4	5/14/19	Valve adjustment	4.8	5/28/19*	--
H-06 (EXP-06)	6/6/19	6.7	6/6/19	Valve adjustment	2.2	6/21/19*	--
H-08 (EXP-08)	5/14/19	5.5	5/14/19	Valve adjustment	3.5	5/28/19*	--
H-102A	3/21/19	19.7	3/21/19	Valve adjustment	2.9	4/2/19*	--
H-14 (EXP-14)	5/14/19	8.3	5/14/19	Valve adjustment	17.9	5/28/19	Temporarily decommissioned 5/29/19, offline as of end of reporting period
H-1402E	5/29/19	12.1	5/29/19	Valve adjustment	0.0	6/11/19*	--
H-1403E	3/15/19	14.8	3/15/19	Valve adjustment	4.8	3/21/19*	--
H-1406E	3/25/19	18.9	3/25/19	Valve adjustment	3.6	3/25/19*	--
H-1407E	3/25/19	6.5	3/25/19	Valve adjustment	3.4	3/26/19*	--

Name	Date	Oxygen (% by Vol)	5-Day Corrective Action Date	Corrective Action	15-Day Follow-Up Oxygen (% by Vol)	Follow-Up Date	Comments
H-1407E	5/22/19	9.8	5/22/19	Valve adjustment	6.6	6/6/19	In 120-day timeframe for corrective action, or 9/19/19
H-15 (EXP-15)	2/27/19	10.9	2/27/19	Valve adjustment	16.8	3/1/19	Temporarily decommissioned 4/10/19, online and compliant (1.4%) on 6/19/19 within 120-day timeframe
H-1551A	2/27/19	16.5	2/27/19	Valve adjustment	0.5	3/1/19*	--
H-1551A	4/25/19	14.5	4/25/19	Valve adjustment	15.2	5/9/19	Temporarily decommissioned 5/10/19, online and compliant (0.0%) on 5/30/19 within 120-day timeframe
H-1572N	2/18/19	21.1	2/18/19	Valve adjustment	22.1	2/18/19	Temporarily decommissioned 2/26/19, online and compliant (0.2%) on 5/9/19 within 120-day timeframe
H-1573S	4/17/19	14.3	4/17/19	Valve adjustment	4.1	4/17/19*	--
H-17 (EXP-17)	12/29/18	6.6	12/29/18	Valve adjustment	0.0	1/2/19*	--
H-17 (EXP-17)	2/27/19	12.5	2/27/19	Valve adjustment	0.7	3/1/19*	--
H-17 (EXP-17)	3/22/19	8.6	3/22/19	Valve adjustment	14.7	3/25/19	Temporarily decommissioned 3/25/19, online and compliant (0.4%) on 5/29/19 within 120-day timeframe
H-17 (EXP-17)	6/11/19	5.9	6/11/19	Valve adjustment	4.3	6/19/19*	--
H-1753N	4/1/19	13.2	4/1/19	Valve adjustment	0.0	4/1/19*	--
H-1756S	1/31/19	18.0	1/31/19	Valve adjustment	19.6	1/31/19	Compliant (4.9%) on 3/25/19 within 120-day timeframe
H-1757N	6/3/19	7.5	6/3/19	Valve adjustment	7.1	6/3/19	In 120-day timeframe for corrective action, prior to 10/1/19

Name	Date	Oxygen (% by Vol)	5-Day Corrective Action Date	Corrective Action	15-Day Follow-Up Oxygen (% by Vol)	Follow-Up Date	Comments
H-1765S	2/27/19	19.9	2/27/19	Valve adjustment	20.6	2/27/19	Temporarily decommissioned 4/25/19, offline as of end of reporting period
H-1769B	3/22/19	12.3	3/22/19	Valve adjustment	0.0	4/1/19*	--
H-1769B	6/3/19	13.9	6/3/19	Valve adjustment	14.1	6/3/19	In 120-day timeframe for corrective action, prior to 10/1/19
H-1770B	1/2/19	11.3	1/2/19	Valve adjustment	11.7	1/2/19	Temporarily decommissioned 1/11/19, online and compliant (4.8%) on 4/1/19 within 120-day timeframe
H-1770B	5/9/19	9.4	5/9/19	Valve adjustment	4.8	5/24/19*	--
H-1770B	6/3/19	13.7	6/3/19	Valve adjustment	15.2	6/3/19	In 120-day timeframe for corrective action, prior to 10/1/19
H-18 (EXP-18)	2/27/19	11.1	2/27/19	Valve adjustment	8.9	3/1/19	Temporarily decommissioned on 4/10/19, offline as of end of reporting period
H-1804N	12/31/18	6.6	12/31/18	Valve adjustment	6.8	1/2/19	Temporarily decommissioned 1/7/19, online and compliant (0.4%) on 4/1/19 within 120-day timeframe
H-1806B	12/31/18	16.6	12/31/18	Valve adjustment	1.8	1/2/19*	--
H-1951W	5/29/19	5.9	5/29/19	Valve adjustment	0.9	6/12/19*	--
H-32	3/21/19	11.0	3/21/19	Valve adjustment	2.8	4/3/19*	--
H-40	6/11/19	6.1	6/11/19	Valve adjustment	9.5	6/25/19	Temporarily decommissioned 6/26/19, offline as of end of reporting period
H-41A	3/19/19	8.1	3/19/19	Valve adjustment	4.9	4/2/19*	--

Name	Date	Oxygen (% by Vol)	5-Day Corrective Action Date	Corrective Action	15-Day Follow-Up Oxygen (% by Vol)	Follow-Up Date	Comments
H-42	5/14/19	20.1	5/14/19	Valve adjustment	20.9	5/23/19	Temporarily decommissioned 5/29/19, offline as of end of reporting period
H-47	5/14/19	6.2	5/14/19	Valve adjustment	4.8	5/28/19*	--
H-47	6/11/19	15.6	6/11/19	Valve adjustment	18.0	6/25/19	Temporarily decommissioned 6/26/19, offline as of end of reporting period
H-48	2/27/19	20.7	2/27/19	Valve adjustment	20.2	3/1/19	Temporarily decommissioned 4/25/19, offline as of end of reporting period
H-51A	2/27/19	20.5	2/27/19	Valve adjustment	20.9	3/1/19	Compliant (2.4%) on 4/8/19 within 120-day timeframe
H-51A	5/29/19	20.3	5/29/19	Valve adjustment	0.5	6/11/19*	--
H-51A	6/12/19	20.0	6/12/19	Valve adjustment	20.0	6/12/19	Temporarily decommissioned 6/12/19, offline as of end of reporting period
H-55	5/14/19	12.0	5/14/19	Valve adjustment	4.2	5/28/19*	--
H-55	6/11/19	18.7	6/11/19	Valve adjustment	3.4	6/11/19*	--
H-65	6/3/19	20.3	6/3/19	Valve adjustment	20.4	6/3/19	In 120-day timeframe for corrective action, prior to 10/1/19
H-69	4/11/19	20.2	4/11/19	Valve adjustment	19.6	4/19/19	Temporarily decommissioned 4/25/19, offline as of end of reporting period
H-70	1/30/19	12.9	1/30/19	Valve adjustment	19.3	1/31/19	Temporarily decommissioned 4/25/19, offline as of end of reporting period

Name	Date	Oxygen (% by Vol)	5-Day Corrective Action Date	Corrective Action	15-Day Follow-Up Oxygen (% by Vol)	Follow-Up Date	Comments
H-83	4/24/19	13.2	4/24/19	Valve adjustment	12.4	4/24/19	Temporarily decommissioned 5/9/19, offline as of end of reporting period
P-02	3/19/19	6.2	3/19/19	Valve adjustment	4.5	3/19/19*	--
P-37	3/19/19	20.5	3/19/19	Valve adjustment	0.7	3/26/19*	--
P-38A	3/20/19	16.2	3/20/19	Valve adjustment	0.0	3/26/19*	--
P-38A	4/8/19	14.3	4/8/19	Valve adjustment	0.0	4/18/19*	--
P-39	4/4/19	5.9	4/4/19	Valve adjustment	4.4	4/18/19*	--
P-57	4/3/19	6.4	4/3/19	Valve adjustment	2.9	4/17/19*	--
P-66	6/26/19	12.0	6/26/19	Valve adjustment	4.0	6/26/19*	--
P-67R	6/26/19	17.9	6/26/19	Valve adjustment	12.3	6/26/19	In 120-day timeframe for corrective action, prior to 10/24/19
P-79	4/3/19	11.4	4/3/19	Valve adjustment	4.8	4/17/19*	--

Notes:

- (1) Wells taken offline under SSM event as allowed under the NSPS were not considered part of the system during the monitoring event.
(2) Exceedances marked with an asterisk (*) were remediated within 5-day period and corrected and re-monitored within the 15-day period prescribed by the NSPS.

Table 3. Summary of Wells Above 131 Degrees Fahrenheit

Name	Date	Temp (°F)	5-Day Corrective Action Date	Corrective Action	15-Day Follow-Up Temp (°F)	Follow-Up Date	Comments
C-27	6/4/19	131.5	6/4/19	Valve adjustment	129.1	6/4/19*	--
CV-1701D	4/25/19	132.3	4/25/19	Valve adjustment	129.4	4/25/19*	--
CV-1701S	4/25/19	138.7	4/25/19	Valve adjustment	127.3	4/25/19*	--
CV-55R	4/25/19	154.1	4/25/19	Valve adjustment	126.5	4/25/19*	--
H-04 (EXP-04)	5/14/19	139.3	5/14/19	Valve adjustment	128.7	5/28/19*	--
H-1404C	5/22/19	138	5/22/19	Valve adjustment	80	6/6/19*	--
H-1405W	5/23/19	137.3	5/23/19	Valve adjustment	129.8	6/6/19*	--
H-1551A	4/25/19	136.8	4/25/19	Valve adjustment	128.7	4/25/19*	--
H-1761N	4/1/19	134.1	4/1/19	Valve adjustment	128.4	4/1/19*	--
H-27	6/3/19	133.9	6/3/19	Valve adjustment	118.7	6/17/19*	--
H-79	4/25/19	133.2	4/25/19	Valve adjustment	129.1	4/25/19*	--

Notes:

- (1) Wells taken offline under SSM event as allowed under the NSPS were not considered part of the system during the monitoring event.
 (2) Exceedances marked with an asterisk (*) were remediated within 5-day period and corrected and re-monitored within the 15-day period prescribed by the NSPS.

Table 4. Instantaneous Surface Emissions Monitoring Summary

Monitoring Date	Location of Exceedance	Initial Reading (ppmv)	10-Day Re-Check Date	Re-Check Reading (ppmv)	10-Day Re-Check Date	Re-Check Reading (ppmv)	1-Month Re-Check Date	Re-Check Reading (ppmv)
9/27/18	82/Y31	650	ACTIVE	ACTIVE	5/9/19	14.14	5/23/19	243
			4/30/19	1,000				
9/27/18	83/Y32	1,900	ACTIVE	ACTIVE	N/A	N/A	ACTIVE	ACTIVE
			1/30/19	4	N/A	N/A	4/30/19	16
9/27/18	83/Y33	1,025	ACTIVE	ACTIVE	N/A	N/A	ACTIVE	ACTIVE
			1/30/19	4	N/A	N/A	4/30/19	16
10/30/18	33/Y41	4,116	ACTIVE	ACTIVE	N/A	N/A	ACTIVE	ACTIVE
			12/27/18	22			2/26/19	9
10/30/18	32/Y42	800	11/8/18	493	N/A	N/A	ACTIVE	ACTIVE
							2/26/19	3
10/30/18	37/Y18	9,000	ACTIVE	ACTIVE	N/A	N/A	ACTIVE	ACTIVE
			12/27/18	18			2/26/19	12
12/27/18	34/Y21	600	1/4/19	34.26	N/A	N/A	1/25/19	80
12/27/18	34/Y22	700	1/4/19	19.41	N/A	N/A	1/25/19	40
12/27/18	162/Y23	1,300	1/4/19	38.48	N/A	N/A	1/25/19	206
12/27/18	162/Y24	3,000	1/4/19	113	N/A	N/A	1/25/19	290
12/27/18	162/Y25	1,300	1/4/19	72.91	N/A	N/A	1/25/19	161
12/27/18	162/Y26	700	1/4/19	59.32	N/A	N/A	1/25/19	28
1/30/19	88/Y61	500	2/8/19	100	N/A	N/A	2/23/19	112
1/30/19	89/Y62	500	2/8/19	120	N/A	N/A	2/23/19	119
1/30/19	39/Y1	620	2/8/19	360	N/A	N/A	2/23/19	277
1/30/19	38/Y2	7,400	2/8/19	295	N/A	N/A	2/23/19	281
1/30/19	38/Y3	1,700	2/8/19	302	N/A	N/A	2/23/19	300
1/30/19	38/Y4	9,500	2/8/19	79	N/A	N/A	2/23/19	101
1/30/19	162/Y41	1,082	2/8/19	142	N/A	N/A	2/23/19	132
1/30/19	196/Y42	2,032	2/8/19	111	N/A	N/A	2/23/19	110
2/26/19	163/Y1	1,945	3/8/19	292	N/A	N/A	3/22/19	70
2/26/19	163/Y2	2,110	3/8/19	340	N/A	N/A	3/22/19	63
2/26/19	164/Y3	1,497	3/8/19	216	N/A	N/A	3/22/19	55
2/26/19	164/Y4	885	3/8/19	354	N/A	N/A	3/22/19	141
2/26/19	86/Y21	900	3/8/19	68	N/A	N/A	3/22/19	42
2/26/19	41/Y41	5,944	3/8/19	446	N/A	N/A	3/22/19	38
2/26/19	84/Y61	500	3/8/19	212	N/A	N/A	3/22/19	66
2/26/19	161/Y62	680	3/8/19	280	N/A	N/A	3/22/19	167
3/28/19	164/Y20	734	4/3/19	32	N/A	N/A	4/22/19	331
3/28/19	164/Y21	1,189	4/3/19	189	N/A	N/A	4/22/19	58
3/28/19	198/Y22	830	4/3/19	29	N/A	N/A	4/22/19	106

Monitoring Date	Location of Exceedance	Initial Reading (ppmv)	10-Day Re-Check Date	Re-Check Reading (ppmv)	10-Day Re-Check Date	Re-Check Reading (ppmv)	1-Month Re-Check Date	Re-Check Reading (ppmv)
3/28/19	196/Y1	567	4/3/19	47	N/A	N/A	4/22/19	93
3/28/19	163/Y2	705	4/3/19	36	N/A	N/A	4/22/19	44
3/28/19	163/Y3	682	4/3/19	52	N/A	N/A	4/22/19	21
4/30/19	162/Y11	525	5/9/19	14	N/A	N/A	5/23/19	207
4/30/19	30/Y21	2,000	5/9/19	22	N/A	N/A	5/23/19	491
4/30/19	30/Y22	4,000	5/9/19	38	N/A	N/A	5/23/19	370
4/30/19	30/Y23	3,000	5/9/19	79	N/A	N/A	5/23/19	288
4/30/19	82/Y24	1,000	5/9/19	14	N/A	N/A	5/23/19	117
4/30/19	82/Y25	800	5/9/19	19	N/A	N/A	5/23/19	243
4/30/19	34/Y26	9,000	5/9/19	112	N/A	N/A	5/23/19	449
4/30/19	34/Y27	8,000	5/9/19	50	N/A	N/A	5/23/19	377
4/30/19	34/Y28	1,800	5/9/19	52	N/A	N/A	5/23/19	294
4/30/19	89/Y29	3,000	5/9/19	1,119	N/A	N/A	5/23/19	342
4/30/19	89/Y30	800	5/9/19	12	N/A	N/A	5/23/19	109
4/30/19	89/Y41	9,000	5/9/19	100	N/A	N/A	5/23/19	168
4/30/19	89/Y42	9,000	5/9/19	212	N/A	N/A	5/23/19	166
4/30/19	54/Y31	4,000	5/9/19	114	N/A	N/A	5/23/19	439
5/31/19	84/Y1	3,000	6/7/19	218	N/A	N/A	6/20/19	141
5/31/19	90/Y2	4,000	6/7/19	107	N/A	N/A	6/20/19	221
5/31/19	155/Y3	6,000	6/7/19	54	N/A	N/A	6/20/19	206
5/31/19	84/Y4	9,000	6/7/19	169	N/A	N/A	6/20/19	308
5/31/19	83/Y5	700	6/7/19	114	N/A	N/A	6/20/19	44
5/31/19	155/Y6	500	6/7/19	8	N/A	N/A	6/20/19	29
5/31/19	149/Y7	9,000	6/7/19	113	N/A	N/A	6/20/19	289
5/31/19	88/Y8	1,500	6/7/19	21	N/A	N/A	6/20/19	39
5/31/19	161/Y9	9,000	6/7/19	256	N/A	N/A	6/20/19	291
6/28/19	89/Y41	2,000	7/8/19	198	N/A	N/A	Pending	Pending
6/28/19	89/Y42	3,000	7/8/19	54	N/A	N/A	Pending	Pending
6/28/19	89/Y43	1,500	7/8/19	72	N/A	N/A	Pending	Pending
6/28/19	148/Y12	2,300	7/8/19	13	N/A	N/A	Pending	Pending
6/28/19	148/Y13	1,300	7/8/19	10	N/A	N/A	Pending	Pending
6/28/19	153/Y14	5,000	7/8/19	55	N/A	N/A	Pending	Pending
6/28/19	151/Y1	1,500	7/8/19	31	N/A	N/A	Pending	Pending
6/28/19	151/Y2	5,000	7/8/19	66	N/A	N/A	Pending	Pending
6/28/19	204/Y51	1,700	7/8/19	12	N/A	N/A	Pending	Pending
6/28/19	167/Y21	1,789	7/8/19	114	N/A	N/A	Pending	Pending
6/28/19	53/Y71	3,000	7/8/19	63	N/A	N/A	Pending	Pending
6/28/19	81/Y72	3,000	7/8/19	84	N/A	N/A	Pending	Pending

Monitoring Date	Location of Exceedance	Initial Reading (ppmv)	10-Day Re-Check Date	Re-Check Reading (ppmv)	10-Day Re-Check Date	Re-Check Reading (ppmv)	1-Month Re-Check Date	Re-Check Reading (ppmv)
6/28/19	81/Y73	1,500	7/8/19	128	N/A	N/A	Pending	Pending
6/28/19	203/Y91	3,100	7/8/19	12	N/A	N/A	Pending	Pending
6/28/19	32/Y81	737	7/8/19	165	N/A	N/A	Pending	Pending
6/28/19	36/Y82	583	7/8/19	169	N/A	N/A	Pending	Pending
6/28/19	33/Y83	3,146	7/8/19	145	N/A	N/A	Pending	Pending
6/28/19	38/Y84	1,044	7/8/19	152	N/A	N/A	Pending	Pending
6/28/19	67/Y01	3,000	7/8/19	9	N/A	N/A	Pending	Pending
6/28/19	53/Y32	960	7/8/19	6	N/A	N/A	Pending	Pending

N/A means not applicable

Pending means the reading will be performed and reported in the next reporting period. Active means it is currently in an active area and readings will be conducted as soon as it is accessible.

Table 5. Flare Station Periods Offline for More Than One Hour

Date of Shutdown Event	Date of Startup Event	Duration of Event (Hours)	Cause for Startup/Shutdown or Malfunction
1/1/19 7:40	1/1/19 9:38	1.97	FL-100 flame failure
1/1/19 7:55	1/1/19 9:53	1.97	FL-150 low stack temperature
1/1/19 23:56	1/2/19 1:40	1.73	FL-100 flame failure
1/2/19 0:29	1/2/19 2:04	1.58	FL-150 low stack temperature
1/2/19 6:37	1/2/19 9:14	2.62	FL-100 low stack temperature
1/4/19 0:00	1/4/19 5:31	5.52	FL-100 flame failure
1/10/19 10:12	1/10/19 16:46	6.57	FL-150 V4 carbon media change out; treatment maintenance
1/12/19 10:04	1/12/19 13:31	3.45	FL-150 high gas flow
1/12/19 10:34	1/12/19 13:44	3.17	FL-100 flame failure
1/15/19 3:52	1/15/19 5:45	1.88	FL-100 power outage
1/15/19 3:52	1/15/19 5:56	2.07	FL-150 power outage
1/15/19 16:18	1/15/19 20:23	4.08	FL-100 flame failure
1/15/19 16:22	1/16/19 12:56	20.57	FL-150 low stack temperature, dirty flame arrestor
1/16/19 10:27	1/16/19 14:01	3.57	FL-100 monthly alarm testing, flame arrestor inspection
1/18/19 11:51	1/19/19 11:12	23:35	FL-100 high stack temperature, high temperature thermocouple
1/18/19 13:56	1/18/19 15:02	1.10	FL-150 flare component on standby
1/19/19 22:01	1/19/19 23:24	1.38	FL-100, LFGTE interruption
1/19/19 22:01	1/19/19 23:27	1.43	FL-150, LFGTE interruption
1/21/19 19:23	1/21/19 20:52	1.48	FL-150 high gas flow
1/23/19 13:03	1/23/19 14:15	1.20	FL-150, LFGTE interruption
1/25/19 11:44	1/25/19 14:47	3.05	FL-100 high stack temperature, middle thermocouple
1/29/19 3:35	1/29/19 5:20	1.75	FL-150 low stack temperature, dirty flame arrestor
1/29/19 3:37	1/29/19 5:20	1.73	FL-100 low air combustion alarm
1/29/19 5:20	1/29/19 11:26	6.10	FL-100 all gas burners and flame arrestor maintenance
1/29/19 11:56	1/29/19 13:59	2.05	FL-150 monthly alarm testing, flame arrestor maintenance
2/1/19 7:11	2/1/19 11:45	4.57	FL-150 condensate injection system maintenance
2/9/19 19:28	2/9/19 21:14	1.77	FL-100 high liquids
2/9/19 19:28	2/9/19 21:39	2.18	FL-150 high liquid level
2/22/19 3:08	2/22/19 7:19	4.18	FL-150 low stack temperature
2/24/19 3:54	2/24/19 4:58	1.07	FL-150, LFGTE interruption
2/24/19 20:11	2/24/19 21:41	1.50	FL-150 low stack temperature
2/27/19 12:14	2/27/19 14:19	2.08	FL-150 low stack temperature

Date of Shutdown Event	Date of Startup Event	Duration of Event (Hours)	Cause for Startup/Shutdown or Malfunction
2/27/19 13:32	2/27/19 15:09	1.62	FL-100 combustion air flow low
2/28/19 7:18	2/28/19 10:28	3.17	FL-150 flame arrestor cleaning
3/2/19 12:03	3/2/19 13:26	1.38	FL-150 flame failure, low air pressure
3/2/19 21:28	3/2/19 23:03	1.58	FL-150 flame failure, low air pressure
3/2/19 21:29	3/2/19 22:50	1.35	FL-100 flame failure, low air combustion flow
3/4/19 6:42	3/5/19 15:09	32.45	FL-100 maintenance, bottom and top gas burners
3/5/19 20:47	3/5/19 22:39	1.87	FL-150, LFGTE interruption
3/5/19 20:53	3/5/19 22:01	1.13	FL-100, LFGTE interruption
3/7/19 10:22	3/7/19 12:37	2.25	FL-100 high gas burner temperature
3/8/19 9:30	3/11/19 14:04	76.57	FL-100 maintenance insulate all gas burners, high gas burner temperature
3/8/19 9:39	3/8/19 10:40	1.02	FL-150 high gas flow
3/8/19 11:41	3/8/19 13:32	1.85	FL-150 high stack temperature
3/12/19 7:14	3/12/19 11:04	3.83	FL-150 flame failure, low air pressure
3/12/19 7:19	3/12/19 8:52	1.55	FL-100 flame failure, low air pressure
3/14/19 4:50	3/14/19 8:03	3.22	FL-150 low stack temperature
3/14/19 4:50	3/14/19 7:43	2.88	FL-100 high gas flow, condensate knock-out problems
3/14/19 10:20	3/14/19 11:42	1.37	FL-100 high gas flow, condensate knock-out problems
3/14/19 10:20	3/14/19 12:03	1.72	FL-150 maintenance, flame arrestor
3/14/19 19:29	3/14/19 20:42	1.22	FL-100 maintenance, condensate drainage system
3/14/19 19:30	3/15/19 10:09	14.65	FL-150 maintenance, flame arrestor
3/15/19 4:07	3/15/19 9:13	5.10	FL-100, LFGTE interruption
3/15/19 19:45	3/15/19 21:02	1.28	FL-150 low stack temperature, condensate knock-out problems
3/15/19 23:25	3/16/19 12:39	13.23	FL-150 low stack temperature, flame arrestor restriction
3/15/19 23:27	3/16/19 1:05	1.63	FL-100, LFGTE interruption
3/17/19 2:03	3/17/19 4:46	2.72	FL-100 combustion air flow inspection and condensate knock-out problems
3/17/19 13:46	3/17/19 16:25	2.65	FL-100 combustion air flow inspection and condensate knock-out problems
3/17/19 1:51	3/17/19 5:03	3.20	FL-150 low stack temperature, condensate knock-out problems
3/17/19 13:27	3/17/19 16:46	3.32	FL-150 low stack temperature, condensate knock-out problems
3/18/19 1:00	3/18/19 2:58	1.97	FL-150 low stack temperature
3/18/19 1:07	3/18/19 2:43	1.60	FL-100 low combustion air flow
3/18/19 6:37	3/18/19 12:02	5.42	FL-100 maintenance all gas burners
3/20/19 7:56	3/20/19 9:11	1.25	FL-150 maintenance flame arrestor

Date of Shutdown Event	Date of Startup Event	Duration of Event (Hours)	Cause for Startup/Shutdown or Malfunction
3/20/19 11:21	3/20/19 12:47	1.43	FL-150, LFGTE interruption
3/20/19 11:21	3/20/19 12:34	1.22	FL-100, LFGTE interruption
3/21/19 6:51	3/21/19 8:05	1.23	FL-100 maintenance, flame arrestor
4/4/19 10:10	4/4/19 11:28	1.30	FL-150 maintenance, serviced gas blower BL107
4/4/19 10:10	4/4/19 15:09	4.98	FL-100 maintenance, cleaned all gas burners, serviced gas blower BL107
4/6/19 9:15	4/6/19 14:13	4.97	FL-100 maintenance, bearing replacement to gas blower BL107
4/6/19 9:15	4/6/19 14:51	5.60	FL-150 maintenance, replaced bearings to gas blower BL107
4/7/19 14:18	4/7/19 15:51	1.55	FL-100, LFGTE interruption
4/7/19 14:18	4/7/19 16:07	1.82	FL-150, LFGTE interruption
4/8/19 6:29	4/8/19 8:10	1.68	FL-100, LFGTE interruption
4/8/19 6:29	4/8/19 7:50	1.35	FL-150, LFGTE interruption
4/8/19 8:27	4/8/19 8:31	0.07	FL-150, LFGTE interruption
4/12/19 17:22	4/12/19 19:11	1.82	FL-100 maintenance, cleaned all gas burners
4/14/19 18:11	4/14/19 20:46	2.58	FL-100 flame failure, high liquids
4/14/19 20:55	4/14/19 22:23	1.47	FL-100 flame failure
4/14/19 22:27	4/15/19 10:53	12.43	FL-100 flame failure, high pressure in air mix chamber
4/15/19 10:56	4/15/19 12:25	1.48	FL-150 maintenance, flame arrestor
4/15/19 13:27	4/15/19 15:19	2.37	FL-150 maintenance, gas flow meter, rotate gas blowers
4/15/19 17:02	4/15/19 18:20	1.30	FL-100, LFGTE interruption
4/19/19 8:56	4/19/19 10:46	1.83	FL-150 maintenance, flame arrestor
4/19/19 15:09	4/19/19 17:40	2.52	FL-150 low stack temperature, high liquid levels
4/19/19 18:37	4/19/19 23:07	4.50	FL-150 low stack temperature, high liquid levels
4/19/19 18:40	4/19/19 22:15	3.58	FL-100 flame failure, high liquid levels
4/20/19 8:01	4/20/19 9:54	1.88	FL-100 maintenance, 14 inch knockout cleanout
4/20/19 8:01	4/20/19 10:13	2.20	FL-150 maintenance, 14 inch knockout cleanout
4/20/19 16:31	4/20/19 17:45	1.23	FL-100 flame failure, high liquid levels
4/20/19 18:21	4/20/19 21:02	2.68	FL-150 low stack temperatures, high liquid levels
4/20/19 22:21	4/20/19 23:36	1.25	FL-100 flame failure, high liquid levels
4/20/19 22:22	4/21/19 0:17	1.92	FL-150 low stack temperatures, high liquid levels
4/21/19 4:04	4/21/19 6:33	2.48	FL-150 low stack temperature, high liquid levels

Date of Shutdown Event	Date of Startup Event	Duration of Event (Hours)	Cause for Startup/Shutdown or Malfunction
4/21/19 12:09	4/22/19 19:44	31.58	FL-150 low stack temperature, dirty flame arrestor, high liquid levels
4/21/19 13:19	4/21/19 14:25	1.10	FL-100 maintenance, 2 inch condensate drainage system
4/22/19 7:18	4/22/19 18:58	11.67	FL-100 maintenance, clean all gas burners and flame arrestor
4/25/19 20:08	4/25/19 21:08	1.0	FL-100 flame failure
5/1/19 6:13	5/3/19 18:09	59.93	FL-100 shutdown to start FL-100
5/1/19 8:25	5/1/19 13:49	5.40	FL-150 maintenance, cleaning, replacement of gas burners
5/3/19 16:41	5/3/19 18:24	1.72	FL-150 maintenance, flame arrestor
5/3/19 20:41	5/4/19 8:30	11.82	FL-100 flame failure
5/3/19 21:00	5/3/19 22:22	1.37	FL-150 maintenance, flame arrestor
5/13/19 11:49	5/13/19 15:02	3.22	FL-150, LFGTE interruption
5/17/19 8:44	5/17/19 10:04	1.33	FL-150 maintenance, clean condensate injection guns
5/17/19 9:41	5/17/19 11:04	1.38	FL-100 maintenance, annual flowmeter calibration
5/20/19 8:51	5/20/19 11:49	2.97	FL-100 maintenance, install level sensors in inlet knockout
5/20/19 8:52	5/20/19 14:14	5.37	FL-150 maintenance, program level sensors in knockout, replace condensate level sensors
5/21/19 6:56	5/21/19 8:17	1.35	FL-100 flame failure, variable frequency drive (VFD) alarm fault
5/21/19 6:57	5/21/19 11:50	4.88	FL-150 flame failure
5/21/19 11:48	5/21/19 13:47	1.98	FL-100 maintenance, flame arrestor
5/24/19 1:39	5/24/19 4:22	2.72	FL-100 flame failure
5/24/19 1:39	5/24/19 4:32	2.88	FL-150 flame failure
6/3/19 20:51	6/4/19 0:19	3.47	FL-150 low stack temperature
6/4/19 21:19	6/5/19 7:20	10.02	FL-100 blower overload condition
6/4/19 21:20	6/5/19 9:35	12.25	FL-150 blower overload condition
6/5/19 13:43	6/5/19 15:06	1.38	FL-150 cleaned flow meter and flame arrestor
6/8/19 11:51	6/8/19 12:59	1.13	FL-100 low stack temperature
6/14/19 9:44	6/14/19 11:07	1.38	FL-150 cleaned condensate injection tips
6/20/19 7:34	6/20/19 14:34	7.00	FL-150 cleaned flow meter, burner table, and flame arrestor
6/20/19 17:12	6/21/19 8:25	15.22	FL-150 low stack temperature
6/21/19 13:02	6/21/19 15:53	2.85	FL-150 low stack temperature
6/21/19 16:49	6/21/19 19:49	3.00	FL-100 low stack temperature
6/21/19 16:50	6/21/19 20:25	3.58	FL-150 low stack temperature
6/21/19 20:41	6/21/19 21:50	1.15	FL-100 condensate knock-out problems
6/21/19 20:42	6/21/19 22:46	2.07	FL-150 low stack temperature

Date of Shutdown Event	Date of Startup Event	Duration of Event (Hours)	Cause for Startup/Shutdown or Malfunction
6/22/19 0:03	6/22/19 3:50	3.78	FL-150 low stack temperature
6/22/19 4:07	6/22/19 15:21	11.23	FL-100 condensate knock-out problems
6/22/19 4:08	6/22/19 15:41	11.55	FL-150 low stack temperature
6/22/19 16:23	6/22/19 20:15	3.87	FL-150 low stack temperature
6/22/19 23:09	6/24/19 7:18	32.15	FL-100 component repair
6/24/19 7:13	6/24/19 14:16	7.05	FL-150 cleaning
6/24/19 11:38	6/24/19 16:00	4.37	FL-100 cleaned flame arrestor
6/24/19 15:59	6/25/19 12:27	20.47	FL-150 maintenance
6/26/19 7:55	6/26/19 11:01	3.10	FL-100 condensate sump maintenance
6/26/19 20:43	6/27/19 7:50	11.12	FL-150 low stack temperature
6/27/19 14:48	6/28/19 9:34	18.77	FL-150 low stack temperature

* Please note, majority of flare malfunctions due to stack temperature and gas flow were a result of Ameresco power plant operation, which is not in common control with CCL.

Table 6. Summary of Flare Station Startup/Shutdown Events

Date of Shutdown Event	Date of Startup Event	Duration of Event (Hours)	Cause for Startup/Shutdown
1/10/19 10:12	1/10/19 16:46	6.57	FL-150 V4 carbon media change out treatment maintenance
1/16/19 10:27	1/16/19 14:01	3.57	FL-100 monthly alarm testing, flame arrestor inspection
1/18/19 13:56	1/18/19 15:02	1.10	FL-150 flare component on standby
1/29/19 5:20	1/29/19 11:26	6.10	FL-100 all gas burners and flame arrestor maintenance
1/29/19 11:56	1/29/19 13:59	2.05	FL-150 monthly alarm testing, flame arrestor maintenance
1/31/19 6:53	1/31/19 7:13	0.33	FL-100 air filter replacement
2/1/19 7:11	2/1/19 11:45	4.57	FL-150 condensate injection system maintenance
2/28/19 7:18	2/28/19 10:28	3.17	FL-150 flame arrestor cleaning
3/4/19 6:42	3/5/19 15:09	32.45	FL-100 maintenance, bottom and top gas burners
3/8/19 9:30	3/11/19 14:04	76.57	FL-100 maintenance insulate all gas burners, high gas burner temperature
3/14/19 10:20	3/14/19 12:03	1.72	FL-150 maintenance, flame arrestor
3/14/19 19:29	3/14/19 20:42	1.22	FL-100 maintenance, condensate drainage system
3/14/19 19:30	3/15/19 10:09	14.65	FL-150 maintenance, flame arrestor
3/15/19 10:05	3/15/19 10:41	0.60	FL-100 shutdown to restart FL-150
3/15/19 12:55	3/15/19 13:52	0.95	FL-150 maintenance condensate drainage system
3/15/19 12:55	3/15/19 13:42	0.78	FL-100 maintenance, condensate drainage system
3/16/19 10:22	3/16/19 11:07	0.75	FL-100 shutdown to replace flow meter to FL-150
3/18/19 6:37	3/18/19 12:02	5.42	FL-100 maintenance all gas burners
3/20/19 7:56	3/20/19 9:11	1.25	FL-150 maintenance flame arrestor
3/21/19 6:51	3/21/19 8:05	1.23	FL-100 maintenance, flame arrestor
4/4/19 10:10	4/4/19 11:28	1.30	FL-150 maintenance, serviced gas blower BL107
4/4/19 10:10	4/4/19 15:09	4.98	FL-100 maintenance, cleaned all gas burners, serviced gas blower BL107
4/6/19 9:15	4/6/19 14:13	4.97	FL-100 maintenance, bearing replacement to gas blower BL107
4/6/19 9:15	4/6/19 14:51	5.60	FL-150 maintenance, replaced bearings to gas blower BL107
4/12/19 17:22	4/12/19 19:11	1.82	FL-100 maintenance, cleaned all gas burners
4/15/19 10:56	4/15/19 12:25	1.48	FL-150 maintenance, flame arrestor
4/15/19 13:27	4/15/19 13:40	0.22	FL-100 maintenance, rotate gas blowers

Date of Shutdown Event	Date of Startup Event	Duration of Event (Hours)	Cause for Startup/Shutdown
4/15/19 13:27	4/15/19 15:19	2.37	FL-150 maintenance, gas flow meter, rotate gas blowers
4/19/19 8:56	4/19/19 10:46	1.83	FL-150 maintenance, flame arrestor
4/20/19 8:01	4/20/19 9:54	1.88	FL-100 maintenance, 14 inch knockout cleanout
4/20/19 8:01	4/20/19 10:13	2.20	FL-150 maintenance, 14 inch knockout cleanout
4/21/19 13:19	4/21/19 14:25	1.10	FL-100 maintenance, 2 inch condensate drainage system
4/22/19 7:18	4/22/19 18:58	11.67	FL-100 maintenance, clean all gas burners and flame arrestor
5/1/19 6:13	5/3/19 18:09	59.93	FL-100 shutdown to start FL-100
5/1/19 8:25	5/1/19 13:49	5.40	FL-150 maintenance, cleaning, replacement of gas burners
5/3/19 16:41	5/3/19 18:24	1.72	FL-150 maintenance, flame arrestor
5/3/19 21:00	5/3/19 22:22	1.37	FL-150 maintenance, flame arrestor
5/4/19 7:51	5/4/19 8:50	0.98	FL-150 shutdown to startup FL-100
5/17/19 8:44	5/17/19 10:04	1.33	FL-150 maintenance, clean condensate injection guns
5/17/19 9:41	5/17/19 11:04	1.38	FL-100 maintenance, annual flowmeter calibration
5/20/19 8:51	5/20/19 11:49	2.97	FL-100 maintenance, install level sensors in inlet knockout
5/20/19 8:52	5/20/19 14:14	5.37	FL-150 maintenance, program level sensors in knockout, replace condensate level sensors
5/20/19 11:58	5/20/19 12:20	0.37	FL-100 maintenance, install level sensors in inlet knockout
5/21/19 11:48	5/21/19 13:47	1.98	FL-100 maintenance, flame arrestor
6/5/19 9:39	6/5/19 9:55	0.27	FL-150 cleaned flow meter and flame arrestor
6/5/19 13:43	6/5/19 15:06	1.38	FL-150 cleaned flow meter and flame arrestor
6/14/19 9:44	6/14/19 11:07	1.38	FL-150 cleaned condensate injection tips
6/20/19 7:34	6/20/19 14:34	7.00	FL-150 cleaned flow meter, burner table, and flame arrestor
6/22/19 23:09	6/24/19 7:18	32.15	FL-100 component repair
6/24/19 7:13	6/24/19 14:16	7.05	FL-150 cleaning
6/24/19 8:47	6/24/19 9:42	0.92	FL-100 cleaned flame arrestor
6/24/19 11:38	6/24/19 16:00	4.37	FL-100 cleaned flame arrestor
6/24/19 15:59	6/25/19 12:27	20.47	FL-150 maintenance
6/26/19 7:55	6/26/19 8:11	0.27	FL-150 replaced mid thermocouple and condensate maintenance
6/26/19 19:03	6/26/19 19:50	0.78	FL-150 replaced mid thermocouple and condensate maintenance

Date of Shutdown Event	Date of Startup Event	Duration of Event (Hours)	Cause for Startup/Shutdown
6/26/19 7:55	6/26/19 11:01	3.10	FL-100 condensate sump maintenance

Table 7. Summary of Flare Station Malfunction Events

Date of Shutdown Event	Date of Startup Event	Duration of Event (Hours)	Cause for Malfunction
1/1/19 7:40	1/1/19 9:38	1.97	FL-100 flame failure
1/1/19 7:55	1/1/19 9:53	1.97	FL-150 low stack temperature
1/1/19 9:57	1/1/19 10:04	0.12	FL-150 low stack temperature
1/1/19 20:04	1/1/19 20:55	0.85	FL-150 LFGTE interruption
1/1/19 23:56	1/2/19 1:40	1.73	FL-100 flame failure
1/2/19 0:29	1/2/19 2:04	1.58	FL-150 low stack temperature
1/2/19 6:37	1/2/19 9:14	2.62	FL-100 low stack temperature
1/4/19 0:00	1/4/19 5:31	5.52	FL-100 flame failure
1/5/19 0:04	1/5/19 1:02	0.97	FL-150 low stack temperature
1/12/19 10:04	1/12/19 13:31	3.45	FL-150 high gas flow
1/12/19 10:34	1/12/19 13:44	3.17	FL-100 flame failure
1/14/19 7:37	1/14/19 7:54	0.28	FL-150 high gas flow
1/15/19 3:52	1/15/19 5:45	1.88	FL-100 power outage
1/15/19 3:52	1/15/19 5:56	2.07	FL-150 power outage
1/15/19 16:18	1/15/19 20:23	4.08	FL-100 flame failure
1/15/19 16:22	1/16/19 12:56	20.57	FL-150 low stack temperature, dirty flame arrestor
1/15/19 23:00	1/15/19 23:09	0.15	FL-100 flame failure
1/16/19 1:00	1/16/19 1:09	0.15	FL-100 flame failure
1/16/19 2:32	1/16/19 2:41	0.15	FL-100 flame failure
1/16/19 3:50	1/16/19 3:59	0.15	FL-100 flame failure
1/16/19 5:05	1/16/19 5:14	0.15	FL-100 flame failure
1/16/19 6:21	1/16/19 6:30	0.15	FL-100 flame failure
1/16/19 7:28	1/16/19 7:37	0.15	FL-100 flame failure
1/18/19 11:51	1/19/19 11:12	23:35	FL-100 high stack temperature, high temperature thermocouple
1/19/19 16:20	1/19/19 17:02	0.70	FL-100, LFGTE interruption
1/19/19 22:01	1/19/19 23:24	1.38	FL-100, LFGTE interruption
1/19/19 22:01	1/19/19 23:27	1.43	FL-150, LFGTE interruption
1/21/19 19:23	1/21/19 20:52	1.48	FL-150 high gas flow
1/21/19 20:05	1/21/19 20:39	0.57	FL-100 high burner temperature
1/23/19 13:01	1/23/19 13:55	0.90	FL-100, LFGTE interruption
1/23/19 13:03	1/23/19 14:15	1.20	FL-150, LFGTE interruption
1/25/19 11:44	1/25/19 14:47	3.05	FL-100 high stack temperature, middle thermocouple
1/29/19 3:35	1/29/19 5:20	1.75	FL-150 low stack temperature, dirty flame arrestor
1/29/19 3:37	1/29/19 5:20	1.73	FL-100 low air combustion alarm
1/31/19 9:08	1/31/19 9:18	0.17	FL-150 low stack temperature

Date of Shutdown Event	Date of Startup Event	Duration of Event (Hours)	Cause for Malfunction
2/2/19 15:41	2/2/19 16:07	0.43	FL-100 BL107 over amp
2/2/19 15:41	2/2/19 16:28	0.78	FL-150 BL107 over amp
2/9/19 19:28	2/9/19 21:14	1.77	FL-100 high liquids
2/9/19 19:28	2/9/19 21:39	2.18	FL-150 high liquid level
2/11/19 10:35	2/11/19 11:09	0.57	FL-100 power failure
2/11/19 10:35	2/11/19 11:32	0.95	FL-150 power failure
2/22/19 3:08	2/22/19 7:19	4.18	FL-150 low stack temperature
2/24/19 3:53	2/24/19 4:52	0.98	FL-100, LFGTE interruption
2/24/19 3:54	2/24/19 4:58	1.07	FL-150, LFGTE interruption
2/24/19 20:12	2/24/19 20:50	0.63	FL-100 combustion air flow low
2/24/19 20:11	2/24/19 21:41	1.50	FL-150 low stack temperature
2/27/19 12:14	2/27/19 14:19	2.08	FL-150 low stack temperature
2/27/19 12:24	2/27/19 12:54	0.50	FL-100 combustion air flow low
2/27/19 12:58	2/27/19 13:18	0.33	FL-100 combustion air flow low
2/27/19 13:32	2/27/19 15:09	1.62	FL-100 combustion air flow low
3/2/19 12:03	3/2/19 13:26	1.38	FL-150 flame failure, low air pressure
3/2/19 14:11	4/2/19 14:32	0.35	FL-150, LFGTE interruption
3/2/19 14:39	3/2/19 14:43	0.07	FL-150, LFGTE interruption
3/2/19 21:28	3/2/19 23:03	1.58	FL-150 flame failure, low air pressure
3/2/19 21:29	3/2/19 22:50	1.35	FL-100 flame failure, low air combustion flow
3/3/19 18:01	3/3/19 18:06	0.08	FL-150, LFGTE interruption
3/3/19 18:02	3/3/19 18:27	0.42	FL-100, LFGTE interruption
3/3/19 18:09	3/3/19 18:14	0.08	FL-150, LFGTE interruption
3/3/19 18:19	3/3/19 18:41	0.37	FL-150, LFGTE interruption
3/5/19 20:47	3/5/19 22:39	1.87	FL-150, LFGTE interruption
3/5/19 20:53	3/5/19 22:01	1.13	FL-100, LFGTE interruption
3/7/19 10:22	3/7/19 12:37	2.25	FL-100 high gas burner temperature
3/8/19 9:39	3/8/19 10:40	1.02	FL-150 high gas flow
3/8/19 11:41	3/8/19 13:32	1.85	FL-150 high stack temperature
3/11/19 14:10	3/11/19 14:54	0.73	FL-100 flame failure
3/11/19 15:10	3/11/19 15:31	0.35	FL-100 flame failure
3/12/19 7:14	3/12/19 11:04	3.83	FL-150 flame failure, low air pressure
3/12/19 7:19	3/12/19 8:52	1.55	FL-100 flame failure, low air pressure
3/14/19 4:50	3/14/19 8:03	3.22	FL-150 low stack temperature
3/14/19 4:50	3/14/19 7:43	2.88	FL-100 high gas flow, condensate knock-out problems
3/14/19 10:20	3/14/19 11:42	1.37	FL-100 high gas flow, condensate knock-out problems
3/15/19 4:07	3/15/19 9:13	5.10	FL-100, LFGTE interruption

Date of Shutdown Event	Date of Startup Event	Duration of Event (Hours)	Cause for Malfunction
3/15/19 19:45	3/15/19 21:02	1.28	FL-150 low stack temperature, condensate knock-out problems
3/15/19 19:52	3/15/19 20:45	0.88	FL-100 low stack temperature, condensate knock-out problems
3/15/19 23:25	3/16/19 12:39	13.23	FL-150 low stack temperature, flame arrestor restriction
3/15/19 23:27	3/16/19 1:05	1.63	FL-100, LFGTE interruption
3/16/19 1:14	3/16/19 1:39	0.42	FL-100 low stack temperature
3/17/19 1:35	3/17/19 1:55	0.33	FL-100 combustion air flow inspection and condensate knock-out problems
3/17/19 2:03	3/17/19 4:46	2.72	FL-100 combustion air flow inspection and condensate knock-out problems
3/17/19 13:46	3/17/19 16:25	2.65	FL-100 combustion air flow inspection and condensate knock-out problems
3/17/19 1:51	3/17/19 5:03	3.20	FL-150 low stack temperature, condensate knock-out problems
3/17/19 13:27	3/17/19 16:46	3.32	FL-150 low stack temperature, condensate knock-out problems
3/18/19 1:00	3/18/19 2:58	1.97	FL-150 low stack temperature
3/18/19 1:07	3/18/19 2:43	1.60	FL-100 low combustion air flow
3/20/19 11:21	3/20/19 12:47	1.43	FL-150, LFGTE interruption
3/20/19 11:21	3/20/19 12:34	1.22	FL-100, LFGTE interruption
4/7/19 14:18	4/7/19 15:51	1.55	FL-100, LFGTE interruption
4/7/19 14:18	4/7/19 16:07	1.82	FL-150, LFGTE interruption
4/8/19 6:29	4/8/19 8:10	1.68	FL-100, LFGTE interruption
4/8/19 6:29	4/8/19 7:50	1.35	FL-150, LFGTE interruption
4/8/19 8:27	4/8/19 8:31	0.07	FL-150, LFGTE interruption
4/14/19 18:11	4/14/19 20:46	2.58	FL-100 flame failure, high liquids
4/14/19 20:55	4/14/19 22:23	1.47	FL-100 flame failure
4/14/19 22:27	4/15/19 10:53	12.43	FL-100 flame failure, high pressure in air mix chamber
4/15/19 13:46	4/15/19 13:59	0.22	FL-100 high gas flow
4/15/19 17:02	4/15/19 18:20	1.30	FL-100, LFGTE interruption
4/17/19 14:35	4/17/19 15:14	0.65	FL-100, LFGTE interruption
4/17/19 14:36	4/17/19 14:57	0.35	FL-150, LFGTE interruption
4/19/19 15:09	4/19/19 17:40	2.52	FL-150 low stack temperature, high liquid levels
4/19/19 18:37	4/19/19 23:07	4.50	FL-150 low stack temperature, high liquid levels
4/19/19 15:15	4/19/19 16:05	0.85	FL-100 flame failure, high liquid levels
4/19/19 18:40	4/19/19 22:15	3.58	FL-100 flame failure, high liquid levels
4/19/19 22:22	4/19/19 22:50	0.47	FL-100 flame failure, high liquid levels
4/20/19 16:31	4/20/19 17:45	1.23	FL-100 flame failure, high liquid levels

Date of Shutdown Event	Date of Startup Event	Duration of Event (Hours)	Cause for Malfunction
4/20/19 18:21	4/20/19 21:02	2.68	FL-150 low stack temperatures, high liquid levels
4/20/19 22:22	4/21/19 0:17	1.92	FL-150 low stack temperatures, high liquid levels
4/20/19 18:25	4/20/19 18:32	0.12	FL-100 flame failure
4/20/19 18:58	4/20/19 19:23	0.42	FL-100 flame failure
4/20/19 19:34	4/20/19 19:58	0.40	FL-100 flame failure
4/20/19 22:21	4/20/19 23:36	1.25	FL-100 flame failure, high liquid levels
4/21/19 4:04	4/21/19 6:33	2.48	FL-150 low stack temperature, high liquid levels
4/21/19 12:09	4/22/19 19:44	31.58	FL-150 low stack temperature, dirty flame arrestor, high liquid levels
4/24/19 10:57	4/24/19 11:49	0.87	FL-100 gas blower BL106 over amp
4/24/19 10:58	4/24/19 11:11	0.22	FL-150 over amp to blower BL106, LFGTE interruption
4/25/19 20:08	4/25/19 21:08	1.0	FL-100 flame failure
4/25/19 23:15	4/26/19 0:09	0.9	FL-100 flame failure
5/3/19 20:41	5/4/19 8:30	11.82	FL-100 flame failure
5/13/19 11:48	5/13/19 12:32	0.73	FL-100, LFGTE interruption
5/13/19 11:49	5/13/19 15:02	3.22	FL-150, LFGTE interruption
5/13/19 13:06	5/13/19 13:19	0.22	FL-100, LFGTE interruption
5/13/19 18:41	5/13/19 19:32	0.85	FL-100, LFGTE interruption
5/13/19 18:41	5/13/19 19:34	0.88	FL-150, LFGTE interruption
5/13/19 20:04	5/13/19 20:34	0.55	FL-100, LFGTE interruption
5/13/19 20:04	5/13/19 20:38	0.57	FL-150, LFGTE interruption
5/18/19 9:07	5/18/19 9:59	0.87	FL-100 high gas flow
5/21/19 6:56	5/21/19 8:17	1.35	FL-100 flame failure, variable frequency drive (VFD) alarm fault
5/21/19 6:57	5/21/19 11:50	4.88	FL-150 flame failure
5/24/19 1:39	5/24/19 4:22	2.72	FL-100 flame failure
5/24/19 1:39	5/24/19 4:32	2.88	FL-150 flame failure
5/27/19 1:41	5/27/19 2:25	0.73	FL-100 low stack temperature
6/3/19 22:13	6/3/19 22:39	0.43	FL-100 high condensate liquid levels
6/3/19 20:51	6/4/19 0:19	3.47	FL-150 low stack temperature
6/4/19 21:19	6/5/19 7:20	10.02	FL-100 blower overload condition
6/4/19 0:23	6/4/19 0:57	0.57	FL-150 blower overload condition
6/4/19 21:20	6/5/19 9:35	12.25	FL-150 blower overload condition
6/8/19 11:51	6/8/19 12:59	1.13	FL-100 low stack temperature
6/10/19 0:57	6/10/19 1:30	0.55	FL-100 blower overload condition
6/20/19 17:12	6/21/19 8:25	15.22	FL-150 low stack temperature
6/21/19 13:02	6/21/19 15:53	2.85	FL-150 low stack temperature
6/21/19 16:49	6/21/19 19:49	3.00	FL-100 low stack temperature

Date of Shutdown Event	Date of Startup Event	Duration of Event (Hours)	Cause for Malfunction
6/21/19 16:50	6/21/19 20:25	3.58	FL-150 low stack temperature
6/21/19 20:41	6/21/19 21:50	1.15	FL-100 condensate knock-out problems
6/21/19 20:42	6/21/19 22:46	2.07	FL-150 low stack temperature
6/22/19 0:03	6/22/19 3:50	3.78	FL-150 low stack temperature
6/22/19 2:37	6/22/19 3:26	0.82	FL-100 condensate knock-out problems
6/22/19 4:07	6/22/19 15:21	11.23	FL-100 condensate knock-out problems
6/22/19 4:08	6/22/19 15:41	11.55	FL-150 low stack temperature
6/22/19 16:23	6/22/19 20:15	3.87	FL-150 low stack temperature
6/22/19 22:30	6/22/19 23:16	0.77	FL-150 low stack temperature
6/26/19 20:43	6/27/19 7:50	11.12	FL-150 low stack temperature
6/27/19 14:48	6/28/19 9:34	18.77	FL-150 low stack temperature

Note:

Please note that the majority of flare malfunctions due to stack temperature and gas flow were a result of Ameresco power plant operation, which is not in common control with CCL.

Unless otherwise noted, all malfunctions resulted in a shutdown and subsequent startup of the flare system. Pending means offline as of end of reporting period.

Table 8. Summary of GCCS Startup/Shutdown Events

Date of Shutdown Event	Date of Startup Event	Duration of Event (Hours)	Cause for Startup/Shutdown and Corrective Actions Taken
6/12/18	2/22/19	6,120.00	CV-1423 temporarily decommissioned due to filling operations
11/28/18	1/28/19	1,464.00	CV-1420 temporarily decommissioned due to filling operations
11/5/18	2/19/19	2,544.00	CV-1421 temporarily decommissioned due to filling operations
1/3/19	1/22/19	456.00	CV-1424 temporarily decommissioned due to filling operations
12/18/18	2/19/19	1,512.00	CV-1425 temporarily decommissioned due to filling operations
11/5/18	4/17/19	3,912.00	CV-1426 temporarily decommissioned due to filling operations
11/5/18	2/20/19	2,568.00	CV-1703 temporarily decommissioned due to filling operations
7/5/18	4/25/19	7,056.00	CV-55R temporarily decommissioned due to filling operations
11/12/18	Pending	Pending	CV-95 temporarily decommissioned due to filling operations
11/12/18	Pending	Pending	CV-57R temporarily decommissioned due to filling operations
12/29/18	1/2/19	96.00	H-17 (EXP-17) temporarily decommissioned due to watered in
10/8/18	12/27/18	1,920.00	H-1570N temporarily decommissioned due to filling operations
10/1/18	12/27/18	2,088.00	H-1572N temporarily decommissioned due to filling operations
10/8/18	12/27/18	1,920.00	H-1764N temporarily decommissioned due to filling operations
11/12/18	Pending	Pending	H-1770B temporarily decommissioned due to high oxygen
11/5/18	1/24/19	1,920.00	H-1771B temporarily decommissioned due to filling operations
11/5/18	4/5/19	3,624.00	H-1771N temporarily decommissioned due to filling operations
9/25/18	1/24/19	2,904.00	H-1772B temporarily decommissioned due to filling operations
12/21/18	4/2/19	2,448.00	H-1772C temporarily decommissioned due to filling operations
11/12/18	2/19/19	2,376.00	H-1772N temporarily decommissioned due to filling operations
10/31/18	1/24/19	2,040.00	H-1773B temporarily decommissioned due to filling operations
12/21/18	1/28/19	912.00	H-1773N temporarily decommissioned due to filling operations
11/5/18	12/27/18	1,248.00	H-1801S temporarily decommissioned due to filling operations

Date of Shutdown Event	Date of Startup Event	Duration of Event (Hours)	Cause for Startup/Shutdown and Corrective Actions Taken
10/1/18	12/27/18	2,088.00	H-1802S temporarily decommissioned due to filling operations
10/31/18	1/24/19	2,040.00	H-1804A temporarily decommissioned due to filling operations
11/5/18	4/30/19	4,224.00	H-1804B temporarily decommissioned due to filling operations
10/1/18	3/1/19	3,624.00	H-1805B temporarily decommissioned due to filling operations
10/8/18	12/27/18	1,920.00	H-34 temporarily decommissioned due to filling operations
10/22/18	12/29/18	1,632.00	H-41A temporarily decommissioned due to watering in
12/29/18	2/15/19	1,152.00	H-42 temporarily decommissioned due to high oxygen and watered in
12/29/18	2/27/19	1,440.00	H-45 temporarily decommissioned due to high oxygen and watered in
8/14/18	Pending	Pending	H-48 temporarily decommissioned due to high oxygen
11/30/18	5/23/19	4,176.00	H-60 temporarily decommissioned due to high oxygen, watered in
6/18/19	Pending	Pending	C-14 temporarily decommissioned due to high oxygen
5/28/19	Pending	Pending	C-24 temporarily decommissioned due to high oxygen
4/23/19	5/30/19	888.00	CV-100 temporarily decommissioned due to filling operations
4/23/19	5/10/19	408.00	CV-101 temporarily decommissioned due to filling operations
4/23/19	5/30/19	888.00	CV-103 temporarily decommissioned due to filling operations
1/24/19	3/22/19	1,368.00	CV111-65 temporarily decommissioned due to filling operations
4/1/19	4/16/19	360.00	CV-1421 temporarily decommissioned due to filling operations
12/31/18	1/22/19	528.00	CV-1422 temporarily decommissioned due to filling operations
1/30/19	4/30/19	2,160.00	CV-1422 temporarily decommissioned due to filling operations
4/2/19	4/10/19	192.00	CV-1424 temporarily decommissioned due to filling operations
4/23/19	5/30/19	888.00	CV-74R temporarily decommissioned due to filling operations
6/27/19	Pending	Pending	CV-1532 temporarily decommissioned due to filling operations
6/10/19	Pending	Pending	CV-1533 temporarily decommissioned due to filling operations
1/23/19	3/1/19	888.00	CV-56D temporarily decommissioned due to filling operations

Date of Shutdown Event	Date of Startup Event	Duration of Event (Hours)	Cause for Startup/Shutdown and Corrective Actions Taken
5/9/19	Pending	Pending	CV-56D temporarily decommissioned due to high oxygen
1/23/19	3/1/19	888.00	CV-56S temporarily decommissioned due to filling operations
2/25/19	NA	NA	CV-78 abandoned due to poor gas quality
10/1/18	1/2/19	2,232.00	CV-79R temporarily decommissioned due to filling operations
3/1/19	4/10/19	960.00	CV-79R temporarily decommissioned due to filling operations
4/17/19	4/30/19	312.00	CV-80 temporarily decommissioned due to filling operations
1/30/19	3/26/19	1,320.00	CV-82 temporarily decommissioned due to filling operations
2/18/19	4/2/19	1,032.00	CV-84D temporarily decommissioned due to filling operations
2/18/19	4/2/19	1,032.00	CV-84S temporarily decommissioned due to filling operations
1/24/19	4/5/19	1,704.00	CV-85S temporarily decommissioned due to filling operations
2/12/19	4/2/19	1,176.00	CV-89 temporarily decommissioned due to filling operations
1/30/19	4/24/19	2,016.00	CV-90 temporarily decommissioned due to high oxygen and filling operations
12/31/18	5/3/19	2,952.00	CV-94 temporarily decommissioned due to filling operations
5/29/19	Pending	Pending	H-14 (EXP-14) temporarily decommissioned due to high oxygen
4/10/19	Pending	Pending	H-15 (EXP-15) temporarily decommissioned due to high oxygen
4/10/19	Pending	Pending	H-18 (EXP-18) temporarily decommissioned due to high oxygen
6/4/19	Pending	Pending	H-1405E temporarily decommissioned due to filling operations
5/3/19	5/10/19	168.00	H-1406E temporarily decommissioned due to filling operations
6/4/19	Pending	Pending	H-1406E temporarily decommissioned due to filling operations
2/19/19	3/26/19	840.00	H-1407E temporarily decommissioned due to filling operations
5/10/19	Pending	Pending	H-1551A temporarily decommissioned due to high oxygen
4/3/18	5/2/19	9,456.00	H-1551B abandoned
6/27/19	Pending	Pending	H-1551C temporarily decommissioned due to filling operations
4/1/19	4/10/19	216.00	H-1562N temporarily decommissioned due to filling operations

Date of Shutdown Event	Date of Startup Event	Duration of Event (Hours)	Cause for Startup/Shutdown and Corrective Actions Taken
6/27/19	Pending	Pending	H-1562N temporarily decommissioned due to filling operations
6/10/19	Pending	Pending	H-1563N temporarily decommissioned due to filling operations
6/4/19	Pending	Pending	H-1564N temporarily decommissioned due to filling operations
4/1/19	Pending	Pending	H-1565C temporarily decommissioned due to filling operations
2/19/19	3/26/19	840.00	H-1565E temporarily decommissioned due to filling operations
5/3/19	5/10/19	168.00	H-1566N temporarily decommissioned due to filling operations
6/4/19	Pending	Pending	H-1566N temporarily decommissioned due to filling operations
2/19/19	3/25/19	816.00	H-1567N temporarily decommissioned due to filling operations
1/24/19	Pending	Pending	H-1569N temporarily decommissioned due to filling operations
2/25/19	NA	NA	H-1569N abandoned
2/20/19	4/2/19	984.00	H-1570N temporarily decommissioned due to filling operations
12/27/18	3/1/19	1,536.00	H-1572N temporarily decommissioned due to filling operations, and high oxygen
3/11/19	5/9/19	1,416.00	H-1572N temporarily decommissioned due to filling operations, and high oxygen
6/10/19	Pending	Pending	H-1752S temporarily decommissioned due to filling operations
1/24/19	3/22/19	1,368.00	H-1753N temporarily decommissioned due to filling operations
6/12/19	Pending	Pending	H-1753N temporarily decommissioned due to filling operations
6/4/19	Pending	Pending	H-1753S temporarily decommissioned due to filling operations
4/1/19	Pending	Pending	H-1754N temporarily decommissioned due to filling operations
6/4/19	Pending	Pending	H-1754S temporarily decommissioned due to filling operations
6/27/19	Pending	Pending	H-1756N temporarily decommissioned due to filling operations
6/3/19	Pending	Pending	H-1757N temporarily decommissioned due to filling operations
6/4/19	Pending	Pending	H-1758N temporarily decommissioned due to filling operations
6/4/19	Pending	Pending	H-1759N temporarily decommissioned due to filling operations
4/1/19	4/5/19	96.00	H-1761S temporarily decommissioned due to filling operations

Date of Shutdown Event	Date of Startup Event	Duration of Event (Hours)	Cause for Startup/Shutdown and Corrective Actions Taken
1/24/19	4/5/19	1,704.00	H-1762N temporarily decommissioned due to filling operations
2/18/19	4/5/19	1,104.00	H-1763N temporarily decommissioned due to filling operations
3/1/19	4/5/19	840.00	H-1764N temporarily decommissioned due to filling operations
3/1/19	4/8/19	912.00	H-1765N temporarily decommissioned due to filling operations
5/29/19	6/18/19	480.00	H-1765N temporarily decommissioned due to filling operations
4/25/19	Pending	Pending	H-1765S temporarily decommissioned due to high oxygen
6/3/19	Pending	Pending	H-1769B temporarily decommissioned due to filling operations
5/28/19	Pending	Pending	H-1769S temporarily decommissioned due to filling operations
6/25/19	Pending	Pending	H-1770S temporarily decommissioned due to filling operations
NA	2/26/19	NA	H-1771A new well put in service
1/30/19	3/27/19	1,344.00	H-1771B temporarily decommissioned due to filling operations
4/2/19	4/16/19	336.00	H-1771B temporarily decommissioned due to filling operations
1/22/19	5/30/19	3,072.00	H-1771S temporarily decommissioned due to filling operations
4/1/19	4/10/19	216.00	H-1772N temporarily decommissioned due to filling operations
2/19/19	3/26/19	840.00	H-1772S temporarily decommissioned due to filling operations
4/23/19	5/30/19	888.00	H-1773C temporarily decommissioned due to filling operations
5/3/19	5/10/19	168.00	H-1773S temporarily decommissioned due to filling operations
6/4/19	Pending	Pending	H-1773S temporarily decommissioned due to filling operations
6/25/19	Pending	Pending	H-1774S temporarily decommissioned due to filling operations
3/5/19	4/25/19	1,224.00	H-1801N temporarily decommissioned due to filling operations
5/9/19	5/29/19	480.00	H-1801N temporarily decommissioned due to filling operations
3/1/19	4/8/19	912.00	H-1801S temporarily decommissioned due to filling operations
5/9/19	Pending	Pending	H-1801S temporarily decommissioned due to filling operations
1/3/19	1/30/19	648.00	H-1802N temporarily decommissioned due to filling operations

Date of Shutdown Event	Date of Startup Event	Duration of Event (Hours)	Cause for Startup/Shutdown and Corrective Actions Taken
4/2/19	4/10/19	192.00	H-1802N temporarily decommissioned due to filling operations
5/10/19	5/29/19	456.00	H-1802N temporarily decommissioned due to filling operations
3/1/19	4/10/19	960.00	H-1802S temporarily decommissioned due to filling operations
5/9/19	6/18/19	960.00	H-1802S temporarily decommissioned due to filling operations
1/28/19	2/18/19	504.00	H-1804A temporarily decommissioned due to filling operations
2/18/19	4/10/19	1,224.00	H-1804A temporarily decommissioned due to filling operations
NA	2/6/19	NA	H-1804N new well put in service
3/1/19	4/5/19	840.00	H-1804S temporarily decommissioned due to filling operations
12/27/18	1/22/19	624.00	H-1805A temporarily decommissioned due to filling operations
4/2/19	4/10/19	192.00	H-1805A temporarily decommissioned due to filling operations
3/11/19	4/30/19	1,200.00	H-1805B temporarily decommissioned due to filling operations
5/9/19	6/17/19	936.00	H-1805B temporarily decommissioned due to filling operations
12/31/18	1/22/19	528.00	H-1805N temporarily decommissioned due to filling operations
1/23/19	2/22/19	720.00	H-1805N temporarily decommissioned due to filling operations
NA	1/2/19	NA	H-1806B new well put in service
3/5/19	4/30/19	1,344.00	H-1806B temporarily decommissioned due to filling operations
5/9/19	6/18/19	960.00	H-1806B temporarily decommissioned due to filling operations
4/17/19	5/9/19	528.00	H-1806N temporarily decommissioned due to filling operations
NA	5/9/19	NA	H-1807A new well put in service
NA	2/20/19	NA	H-1807S new well put in service
NA	3/26/19	NA	H-1951E new well put in service
NA	3/26/19	NA	H-1951W new well put in service
NA	6/7/19	NA	H-1960 new well put in service
2/12/19	4/2/19	1,176.00	H-34 temporarily decommissioned due to filling operations
4/23/19	Pending	Pending	H-34A35A temporarily decommissioned due to watering in
4/23/19	NA	NA	H-34A35A abandoned
6/26/19	Pending	Pending	H-40 temporarily decommissioned due to high oxygen


Date of Shutdown Event	Date of Startup Event	Duration of Event (Hours)	Cause for Startup/Shutdown and Corrective Actions Taken
5/29/19	Pending	Pending	H-42 temporarily decommissioned due to high oxygen
6/26/19	Pending	Pending	H-47 temporarily decommissioned due to high oxygen
2/12/19	4/2/19	1,176.00	H-50 temporarily decommissioned due to filling operations
6/26/19	Pending	Pending	H-51A temporarily decommissioned due to high oxygen
6/3/19	Pending	Pending	H-65 temporarily decommissioned due to filling operations
5/2/19	5/10/19	192.00	H-67 temporarily decommissioned due to filling operations
4/25/19	Pending	Pending	H-69 temporarily decommissioned due to high oxygen
4/25/19	Pending	Pending	H-70 temporarily decommissioned due to high oxygen
1/30/19	3/26/19	1,320.00	H-72 temporarily decommissioned due to filling operations
1/23/19	4/5/19	1,728.00	H-83 temporarily decommissioned due to filling operations
5/9/19	Pending	Pending	H-83 temporarily decommissioned due to high oxygen
5/17/19	6/19/19	792.00	P-38A temporarily decommissioned due to filling operations
5/17/19	6/14/19	672.00	P-39A temporarily decommissioned due to filling operations
5/20/19	6/19/19	720.00	P-57 temporarily decommissioned due to filling operations
5/20/19	6/19/19	720.00	P-58R temporarily decommissioned due to filling operations
5/20/19	6/19/19	720.00	P-59 temporarily decommissioned due to filling operations
5/20/19	6/19/19	720.00	P-60R temporarily decommissioned due to filling operations
5/17/19	6/26/19	960.00	P-65 temporarily decommissioned due to filling operations
5/17/19	6/14/19	672.00	P-66 temporarily decommissioned due to filling operations
5/17/19	6/26/19	960.00	P-67R temporarily decommissioned due to filling operations
5/17/19	6/26/19	960.00	P-68 temporarily decommissioned due to filling operations
5/17/19	6/26/19	960.00	P-39A temporarily decommissioned due to filling operations
5/17/19	6/26/19	960.00	P-70 temporarily decommissioned due to filling operations
5/20/19	6/26/19	888.00	P-72 temporarily decommissioned due to filling operations

Date of Shutdown Event	Date of Startup Event	Duration of Event (Hours)	Cause for Startup/Shutdown and Corrective Actions Taken
5/20/19	6/26/19	888.00	P-74 temporarily decommissioned due to filling operations
5/20/19	6/26/19	888.00	P-75 temporarily decommissioned due to filling operations

*Pending indicates the wells have not started-up as of the end of reporting period. NA means Not Applicable.

There were no malfunctions of the GCCS during the reporting period. Each of the above well downtime events were planned.

Appendix A
GCCS Site Map



Appendix B
Startup, Shutdown and Malfunction Forms

EVENT CODES FOR STARTUP, SHUTDOWN AND MALFUNCTION EVENTS

For Startups and Shutdowns:

Startup: The setting in operation of an affected source or portion of an affected source for any purpose.

Shutdown: The cessation of operation of an affected source or portion of any source for any purpose.

Code Event


- 1 Maintenance
- 2 Suspected Collection System Malfunction
- 3 Suspected Control Device Malfunction
- 4 Suspected Continuous Monitoring System Malfunction
- 5 Training
- 6 Gas System Construction/Expansion
- 99 Other

Malfunction: Any sudden, infrequent and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. Failures that are caused in part by poor maintenance or careless operation are not malfunctions.


For Malfunctions:

- 10 Automatic shutdown of control device by designed protective systems
- 11 Autodialer callout
- 12 Shutdown alarm that result in the device not shutting down
- 13 Unalarmed shutdown
- 14 Control Device Smoking
- 15 Inspection identified malfunction
- 16 Loss of power – utility down
- 17 Loss of power – unknown
- 18 Damaged Well, Header, or Lateral Piping

- 19 Leaks at wellheads, valves, flanges, test ports, seals
- 20 Condensate Knock-out
- 21 Collection Piping Blockages
- 22 Problems due to Settlement
- 23 Loss of phase
- 24 Blower overload condition
- 25 Blower bearing failure
- 26 Broken belts (if belt-drive) or broken coupling (if direct-drive) in blower
- 27 Continuous Monitoring System Malfunction – Thermocouple
- 28 Continuous Monitoring System Malfunction – UV Scanner
- 29 Continuous Monitoring System Malfunction – Flow Monitor
- 30 Continuous Monitoring System Malfunction – Flow Recorder
- 31 Continuous Monitoring System Malfunction – Temperature Recorder
- 32 Act of God (i.e., lightening, wind, etc.)
- 99 Other



Flare/Monitoring Equipment
Startup/Shutdown Forms



Flare/Monitoring Equipment
Malfunction Forms

GCCS SSM Log

Chiquita Canyon Landfill Extraction Well Shutdown/Startup Log

WELL ID	SHUTDOWN DATE	REASON	STARTUP DATE	DURATION (DAYS)	DID STARTUP/SHUTDOWN VARY FROM PROCEDURE IN SSM PLAN (Y OR N)
C-14	6/18/2019	Temp decom due to high O2	Pending	N/A	N
C-24	5/28/2019	Temp decom due to high O2	Pending	N/A	N
CV-100	4/23/2019	Temp Offline due to filling operations	5/30/2019	37	N
CV-101	4/23/2019	Temp Offline due to filling operations	5/10/2019	17	N
CV-103	4/23/2019	Temp Offline due to filling operations	5/30/2019	37	N
CV111-65	1/24/2019	Temp Offline due to filling operations	3/22/2019	57	N
CV-1420	11/28/2018	Temp Offline due to filling operations	1/28/2019	61	N
CV-1421	11/5/2018	Temp Offline due to filling operations	2/19/2019	106	N
CV-1421	4/1/2019	Temp Offline due to filling operations	4/16/2019	15	N
CV-1422	12/31/2018	Temp Offline due to filling operations	1/22/2019	22	N
CV-1422	1/30/2019	Temp Offline due to filling operations	4/30/2019	90	N
CV-1423	6/12/2018	Temp Offline due to filling operations	2/22/2019	255	N
CV-1424	1/3/2019	Temp Offline due to filling operations	1/22/2019	19	N
CV-1424	4/2/2019	Temp Offline due to filling operations	4/10/2019	8	N
CV-1425	12/18/2018	Temp Offline due to filling operations	2/19/2019	63	N
CV-1426	11/5/2018	Temp Offline due to filling operations	4/17/2019	163	N
CV-74R	4/23/2019	Temp Offline due to filling operations	5/30/2019	37	N
CV-1532	6/27/2019	Temp decom due to filling operations	Pending	N/A	N
CV-1533	6/10/2019	Temp Offline due to filling operations	Pending	N/A	N
CV-1703	11/5/2018	Temp Offline due to filling operations	2/20/2019	107	N
CV-55R	7/5/2018	Temp Offline due to filling operations	4/25/2019	294	N
CV-56D	1/23/2019	Temp Offline due to filling operations	3/1/2019	37	N
CV-56D	5/9/2019	Temp decom due to high O2	Pending	N/A	N
CV-56S	1/23/2019	Temp Offline due to filling operations	3/1/2019	37	N
CV-57R	11/12/2018	Temp Offline due to filling operations	Pending	N/A	N
CV-78	2/25/2019	Abandoned due to poor gas quality	N/A	N/A	N
CV-79R	10/1/2018	Temp Offline due to filling operations	1/2/2019	93	N
CV-79R	3/1/2019	Temp Offline due to filling operations	4/10/2019	40	N
CV-80	4/17/2019	Temp Offline due to filling operations	4/30/2019	13	N
CV-82	1/30/2019	Temp Offline due to filling operations	3/26/2019	55	N
CV-84D	2/18/2019	Temp Offline due to filling operations	4/2/2019	43	N
CV-84S	2/18/2019	Temp Offline due to filling operations	4/2/2019	43	N
CV-85S	1/24/2019	Temp Offline due to filling operations	4/5/2019	71	N
CV-89	2/12/2019	Temp Offline due to filling operations	4/2/2019	49	N
CV-90	1/30/2019	Temp Offline due to high O2 and filling operations	4/24/2019	84	N
CV-94	12/31/2018	Temp Offline due to filling operations	5/3/2019	123	N
CV-95	11/12/2018	Temp Offline due to filling operations	Pending	N/A	N
H-14 (EXP-14)	5/29/2019	Temp decom due to high O2	Pending	N/A	N
H-15 (EXP-15)	4/10/2019	Temp decom due to high O2	Pending	N/A	N
H-17 (EXP-17)	12/29/2018	Temp Offline due to high O2 and watered in	1/2/2019	4	N
H-18 (EXP-18)	4/10/2019	Temp decom due to high O2	Pending	N/A	N
H-1405E	6/4/2019	Temp Offline due to filling operations	Pending	N/A	N
H-1406E	5/3/2019	Temp Offline due to filling operations	5/10/2019	7	N
H-1406E	6/4/2019	Temp Offline due to filling operations	Pending	N/A	N
H-1407E	2/19/2019	Temp Offline due to filling operations	3/26/2019	35	N
H-1551A	5/10/2019	Temp decom due to high O2	Pending	N/A	N
H-1551B	4/3/2018	Capped off/buried by operation abandoned, lost and found	5/2/2019	394	N
H-1551C	6/27/2019	Temp Offline due to filling operations	Pending	N/A	N
H-1562N	4/1/2019	Temp Offline due to filling operations	4/10/2019	9	N
H-1562N	6/27/2019	Temp Offline due to filling operations	Pending	N/A	N
H-1563N	6/10/2019	Temp Offline due to filling operations	Pending	N/A	N
H-1564N	6/4/2019	Temp Offline due to filling operations	Pending	N/A	N
H-1565C	4/1/2019	Temp Offline due to filling operations	Pending	N/A	N
H-1565E	2/19/2019	Temp Offline due to filling operations	3/26/2019	35	N
H-1566N	5/3/2019	Temp Offline due to filling operations	5/10/2019	7	N
H-1566N	6/4/2019	Temp Offline due to filling operations	Pending	N/A	N
H-1567N	2/19/2019	Temp Offline due to filling operations	3/25/2019	34	N
H-1569N	1/24/2019	Temp Offline due to filling operations	N/A	N/A	N
H-1569N	2/25/2019	Abandoned/buried by operation	N/A	N/A	N
H-1570N	10/8/2018	Temp Offline due to filling operations	12/27/2018	80	N
H-1570N	2/20/2019	Temp Offline due to filling operations	4/2/2019	41	N
H-1572N	10/1/2018	Temp Offline due to filling operations	12/27/2018	87	N
H-1572N	12/27/2018	Temp Offline due to filling operations. Temp decom due to high O2	3/1/2019	64	N
H-1572N	3/11/2019	Temp Offline due to filling operations, Temp decom due to high O2	5/9/2019	59	N
H-1752S	6/10/2019	Temp Offline due to filling operations	Pending	N/A	N
H-1753N	1/24/2019	Temp Offline due to filling operations	3/22/2019	57	N
H-1753N	6/12/2019	Temp Offline due to filling operations	Pending	N/A	N
H-1753S	6/4/2019	Temp Offline due to filling operations	Pending	N/A	N
H-1754N	4/1/2019	Temp Offline due to filling operations	Pending	N/A	N
H-1754S	6/4/2019	Temp Offline due to filling operations	Pending	N/A	N
H-1756N	6/27/2019	Temp Offline due to filling operations	Pending	N/A	N

Chiquita Canyon Landfill Extraction Well Shutdown/Startup Log

WELL ID	SHUTDOWN DATE	REASON	STARTUP DATE	DURATION (DAYS)	DID STARTUP/SHUTDOWN VARY FROM PROCEDURE IN SSM PLAN (Y OR N)
H-1757N	6/3/2019	Temp Offline due to filling operations	Pending	N/A	N
H-1758N	6/4/2019	Temp Offline due to filling operations	Pending	N/A	N
H-1759N	6/4/2019	Temp Offline due to filling operations	Pending	N/A	N
H-1761S	4/1/2019	Temp Offline due to filling operations	4/5/2019	4	N
H-1762N	1/24/2019	Temp Offline due to filling operations	4/5/2019	71	N
H-1763N	2/18/2019	Temp Offline due to filling operations	4/5/2019	46	N
H-1764N	10/8/2018	Temp Offline due to filling operations	12/27/2018	80	N
H-1764N	3/1/2019	Temp Offline due to filling operations	4/5/2019	35	N
H-1765N	3/1/2019	Temp Offline due to filling operations	4/8/2019	38	N
H-1765N	5/29/2019	Temp Offline due to filling operations	6/18/2019	20	N
H-1765S	4/25/2019	Temp decom due to high O2	Pending	N/A	N
H-1769B	6/3/2019	Temp Offline due to filling operations	Pending	N/A	N
H-1769S	5/28/2019	Temp Offline due to filling operations	Pending	N/A	N
H-1770B	11/12/2018	Temp decom due to high O2	Pending	N/A	N
H-1770S	6/25/2019	Temp Offline due to filling operations	Pending	N/A	N
H-1771A	N/A	New Well put in service	2/26/2019	N/A	N
H-1771B	11/5/2018	Temp Offline due to filling operations	1/24/2019	80	N
H-1771B	1/30/2019	Temp Offline due to filling operations	3/27/2019	56	N
H-1771B	4/2/2019	Temp Offline due to filling operations	4/16/2019	14	N
H-1771N	11/5/2018	Temp Offline due to filling operations	4/5/2019	151	N
H-1771S	1/22/2019	Temp Offline due to filling operations	5/30/2019	128	N
H-1772B	9/25/2018	Temp Offline due to filling operations	1/24/2019	121	N
H-1772C	12/21/2018	Temp Offline due to filling operations	4/2/2019	102	N
H-1772N	11/12/2018	Temp Offline due to filling operations	2/19/2019	99	N
H-1772N	4/1/2019	Temp Offline due to filling operations	4/10/2019	9	N
H-1772S	2/19/2019	Temp Offline due to filling operations	3/26/2019	35	N
H-1773B	10/31/2018	Temp Offline due to filling operations	1/24/2019	85	N
H-1773C	4/23/2019	Temp Offline due to filling operations	5/30/2019	37	N
H-1773N	12/21/2018	Temp Offline due to filling operations	1/28/2019	38	N
H-1773S	5/3/2019	Temp Offline due to filling operations	5/10/2019	7	N
H-1773S	6/4/2019	Temp Offline due to filling operations	Pending	N/A	N
H-1774S	6/25/2019	Temp Offline due to filling operations	Pending	N/A	N
H-1801N	3/5/2019	Temp Offline due to filling operations	4/25/2019	51	N
H-1801N	5/9/2019	Temp Offline due to filling operations	5/29/2019	20	N
H-1801S	11/5/2018	Temp Offline due to filling operations	12/27/2018	52	N
H-1801S	3/1/2019	Temp Offline due to filling operations	4/8/2019	38	N
H-1801S	5/9/2019	Temp Offline due to filling operations	Pending	N/A	N
H-1802N	1/3/2019	Temp Offline due to filling operations	1/30/2019	27	N
H-1802N	4/2/2019	Temp Offline due to filling operations	4/10/2019	8	N
H-1802N	5/10/2019	Temp Offline due to filling operations	5/29/2019	19	N
H-1802S	10/1/2018	Temp Offline due to filling operations	12/27/2018	87	N
H-1802S	3/1/2019	Temp Offline due to filling operations	4/10/2019	40	N
H-1802S	5/9/2019	Temp Offline due to filling operations	6/18/2019	40	N
H-1804A	10/31/2018	Temp Offline due to filling operations	1/24/2019	85	N
H-1804A	1/28/2019	Temp Offline due to filling operations	2/18/2019	21	N
H-1804A	2/18/2019	Temp Offline due to filling operations	4/10/2019	51	N
H-1804B	11/5/2018	Temp Offline due to filling operations	4/30/2019	176	N
H-1804N	N/A	New Well Put in service	2/26/2019	N/A	N
H-1804S	3/1/2019	Temp Offline due to filling operations	4/5/2019	35	N
H-1805A	12/27/2018	Temp Offline due to filling operations	1/22/2019	26	N
H-1805A	4/2/2019	Temp Offline due to filling operations	4/10/2019	8	N
H-1805B	10/1/2018	Temp Offline due to filling operations	3/1/2019	151	N
H-1805B	3/11/2019	Temp Offline due to filling operations	4/30/2019	50	N
H-1805B	5/9/2019	Temp Offline due to filling operations	6/17/2019	39	N
H-1805N	12/31/2018	Temp Offline due to filling operations	1/22/2019	22	N
H-1805N	1/23/2019	Temp Offline due to filling operations	2/22/2019	30	N
H-1806B	N/A	New Well Put in service	1/2/2019	N/A	N
H-1806B	3/5/2019	Temp Offline due to filling operations	4/30/2019	56	N
H-1806B	5/9/2019	Temp Offline due to filling operations	6/18/2019	40	N
H-1806N	4/17/2019	Temp Offline due to filling operations	5/9/2019	22	N
H-1807A	N/A	New Well Put in service	5/9/2019	N/A	N
H-1807S	N/A	New Well Put in service	2/20/2019	N/A	N
H-1951E	N/A	New Well Put in service	3/26/2019	N/A	N
H-1951W	N/A	New Well Put in service	3/26/2019	N/A	N
H-1960	N/A	New Well Put in service	6/7/2019	N/A	N
H-34	10/8/2018	Temp Offline due to filling operations	12/27/2018	80	N
H-34	2/12/2019	Temp Offline due to filling operations	4/2/2019	49	N
H-34A35A	4/23/2019	Temp Offline due to watered in	N/A	N/A	N
H-34A35A	4/23/2019	Abandoned/ capped due to watered in	N/A	N/A	N
H-40	6/26/2019	Temp Decom due to high O2	Pending	N/A	N
H-41A	10/22/2018	Temp Decom due to watering in	12/29/2018	68	N
H-42	12/29/2018	Temp Decom due to High O2 and watered in	2/15/2019	48	N

Chiquita Canyon Landfill Extraction Well Shutdown/Startup Log

WELL ID	SHUTDOWN DATE	REASON	STARTUP DATE	DURATION (DAYS)	DID STARTUP/SHUTDOWN VARY FROM PROCEDURE IN SSM PLAN (Y OR N)
H-42	5/29/2019	Temo decom due to high O2	Pending	N/A	N
H-45	12/29/2018	Temp Decom due to High O2 and watered in	2/27/2019	60	N
H-47	6/26/2019	Decom due to high O2	Pending	N/A	N
H-48	8/14/2018	Decom due to high O2, dead headed, no flow	Pending	N/A	N
H-50	2/12/2019	Temp Offiline due to filling operations	4/2/2019	49	N
H-51A	6/26/2019	Decom due to high O2	Pending	N/A	N
H-60	11/30/2018	Temp Decom due to High O2 and watered in, broken wellhead valve	5/23/2019	174	N
H-65	6/3/2019	Temp Offiline due to filling operations	Pending	N/A	N
H-67	5/2/2019	Temp Offiline due to filling operations	5/10/2019	8	N
H-69	4/25/2019	Temp Decom due to High O2	Pending	N/A	N
H-70	4/25/2019	Temp Decom due to High O2	Pending	N/A	N
H-72	1/30/2019	Temp Offiline due to filling operations	3/26/2019	55	N
H-83	1/23/2019	Temp Offiline due to filling operations	4/5/2019	72	N
H-83	5/9/2019	Temp decom due to high O2	Pending	N/A	N
P-38A	5/17/2019	Temp Offiline due to dirt filling operations	6/19/2019	33	N
P-39A	5/17/2019	Temp Offiline due to dirt filling operations	6/14/2019	28	N
P-57	5/20/2019	Temp Offiline due to dirt filling operations	6/19/2019	30	N
P-58R	5/20/2019	Temp Offiline due to dirt filling operations	6/19/2019	30	N
P-59	5/20/2019	Temp Offiline due to dirt filling operations	6/19/2019	30	N
P-60R	5/20/2019	Temp Offiline due to dirt filling operations	6/19/2019	30	N
P-65	5/17/2019	Temp Offiline due to dirt filling operations	6/26/2019	40	N
P-66	5/17/2019	Temp Offiline due to dirt filling operations	6/14/2019	28	N
P-67R	5/17/2019	Temp Offiline due to dirt filling operations	6/26/2019	40	N
P-68	5/17/2019	Temp Offiline due to dirt filling operations	6/26/2019	40	N
P-69	5/17/2019	Temp Offiline due to dirt filling operations	6/26/2019	40	N
P-70	5/17/2019	Temp Offiline due to dirt filling operations	6/26/2019	40	N
P-72	5/20/2019	Temp Offiline due to dirt filling operations	6/26/2019	37	N
P-74	5/20/2019	Temp Offiline due to dirt filling operations	6/26/2019	37	N
P-75	5/20/2019	Temp Offiline due to dirt filling operations	6/26/2019	37	N