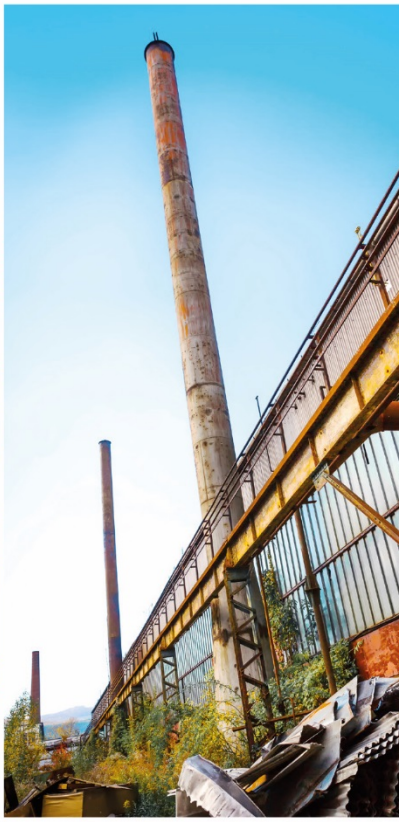
Annual Operation, Maintenance, and Monitoring Report January 2020 through December 2020

Former Holtz Krause Landfill
Wausau, Wisconsin

City of Wausau



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1. Introduction

GHD Services, Inc. (GHD) has prepared this Operation, Maintenance, and Monitoring (OM&M) Report (Report) for the former Holtz Krause Landfill (Site) in Wausau, Wisconsin, on behalf of the City of Wausau. This Report presents the results of OM&M activities at the Site from January 2020 through December 2020 as required by the Operation and Maintenance (O&M) Plan.

Since 1995, the City of Wausau has operated the landfill gas system, maintained the cap, measured settlement, and monitored groundwater at and near the landfill. Under the September 25, 2012 Purchase Agreement, Marathon County purchased the landfill property and the Holtz Krause Steering Committee developed the landfill into a soccer complex. Figure 1.1 shows the landfill, soccer complex, and gas extraction system components.

The September 25, 2012 Purchase Agreement states that the City of Wausau will continue to operate and maintain the landfill gas collection system and landfill cap outside the soccer field area. The Parks department, serving the County and City, is responsible for operation and maintenance of the soccer complex, which includes the irrigation system, under-drains, field turf, concession building, maintenance building, parking lots, and championship field lights. As part of the 2012 Agreement, the Holtz Krause Steering Committee is to provide $54,000 in funds to the County for the purpose of funding the future replacement of the flare which would likely occur after the flare is 15 to 20 years old (i.e. 2028 to 2033).

This report provides the results of the OM&M performed that is the responsibility of the City of Wausau (landfill gas collection system OM&M, site inspections, and landfill cover areas outside of the soccer complex).

1.1 Site Description

The Holtz Krause Landfill and vicinity is a 64 acre site that operated between 1957 and 1980. The Site is located at the end of East Kent Street, east of Grand Avenue. This landfill received approximately 2.0 million cubic yards (CY) of waste including municipal solid waste, non-combustible waste, demolition material, and wood waste.

The landfill is surrounded by a wetland (south), single residence, Curling Club (west), cemetery (northwest), cell tower (north), and railroad operations (north and east).

In 2013, construction of the soccer complex and modifications and repairs of the gas extraction system were completed. The landfill gas collection system now consists of the following:

- 32 landfill gas extraction wells housed in flush-mounted vaults
- Header pipe, control valves, and condensate drainage system
- Landfill gas flare consisting of blower skid, flare, controls, and other associated equipment
- 13 landfill gas monitoring probes

The landfill cover system consists of the following (from ground surface)

- A vegetative layer consisting of 6 to 8 inches of topsoil and 3 feet of rooting zone soil
- Primary barrier layer consisting of a 40-mil very low density polyethylene (VLDPE) geomembrane liner
- Secondary barrier layer consisting of 2 feet of compacted clay
- The 1982 soil cover (0 to 2 feet thick)

The soccer field utilities are installed entirely above the liner within the rooting zone. These include the irrigation system, under drains, storm drains, water, sanitary and electrical. The landfill gas header piping is installed below the liner.

1.2 Objectives and Requirements

As required in the O&M Plan for the Site, and as modified by prior approval of the Wisconsin Department of Natural Resources (WDNR), the City is responsible for the following OM&M items:

- Weekly inspections of the flare station from April through September
- Every other week inspections of the flare station from October through March
- Twice monthly monitoring of landfill gas composition at the flare station from November through February
- Monthly monitoring of landfill gas composition at the flare station from March through October
- Semi-annual preventative maintenance of the flare station
- Monitoring and inspection of landfill gas extraction wells (gas composition, flow rate, header vacuum, and well condition) by the WDNR-approved revised monitoring schedule provided in Table 1.1, and as follows:
  - Annual monitoring for extraction wells that are always off (wells EW-1, EW-2, EW-8, EW-9, EW-11, EW-13, EW-14, EW-15, EW-22, EW-23, EW-24, EW-35, and EW-38), with the monitoring round split between the months of June and July.
  - Quarterly monitoring (February/March, May, August, and October/November) for extraction wells that are always on (wells EW-3, EW-7, EW-10, EW-18, EW-21, and EW-31).
  - Monthly monitoring (April through September) and quarterly monitoring (October through March) for wells that are not consistently on or off (wells EW-4, EW-5, EW-6, EW-19, EW-21, EW-30, EW-32, EW-33, EW-34, EW-36, and EW-37).
- Quarterly gas probe monitoring
- Monthly general Site inspections

Results of the OM&M items noted above are presented in the following sections.

2. Gas Extraction System and Flare Station

2.1 Overview and System Components

The landfill gas extraction system consists of the following components:

- 32 gas extraction wells housed in flush-mounted vaults
- Header pipe, control valves, and condensate drainage system
- Landfill gas flare consisting of blower skid, flare, controls, and other associated equipment
- 13 gas monitoring probes

Through the use of a blower at the flare station, vacuum is applied to the landfill gas extraction wells, via the header pipe network, to extract landfill gas from the landfill and transfer it to the flare station. At the flare station, extracted landfill gas is supplied to a candlestick flare for combustion and destruction. Landfill gas condensate that accumulates in the header piping or at the flare station drains to the City of Wausau sanitary sewer via a condensate sump and drip leg.

Gas monitoring probes are installed around the perimeter of the landfill to allow monitoring of any landfill gas migration beyond the landfill limits.

The components of the gas extraction system are shown on Figure 1.1.

2.2 Flare Station OM&M

The required flare station OM&M consists of the following:

- Weekly inspection of the flare station operation from April through September
- Every other week inspections of the flare station operation from October through March
- Twice weekly remote flare station monitoring
- Twice monthly monitoring of flare station landfill gas composition from November through February
- Monthly monitoring of flare station landfill gas composition from March through October
- Semi-annual preventative maintenance of flare station

Weekly and every other week flare station inspections consist of recording all current operating conditions (flow rate, oxygen content, gas/flare temperatures, gas pressures, header vacuum, system hours, etc.) listed on the “Weekly Flare Station Inspection Form” (included in the O&M Plan). A summary of inspection results are presented in Table 2.1. Weekly and every other week flare inspection forms from the reporting period are included in Appendix A.

In addition to on-Site inspections, the flare station was monitored at least twice per week via the remote (internet) connection to verify operation. Any issues or shutdowns discovered during remote monitoring were logged, and are detailed in Section 2.2.1.

Monitoring of landfill gas composition (percent each: methane, carbon dioxide, and oxygen) was completed a minimum of one time per month from April to September, and a minimum of two times

per month from October to March. The results of landfill gas monitoring at the flare station are presented in Tables 2.1 and 2.2.

Semi-annual flare station maintenance consists of performing all flare manufacturer specified inspections and preventative maintenance. The semi-annual inspection and maintenance events were performed by GHD on behalf of the City of Wausau in May 2020 and October 2020. The April inspection and maintenance event was deferred to May 2020 due to COVID travel restrictions/considerations. The semi-annual maintenance reports are included in Appendix B.

2.2.1 Unscheduled Flare Station Shutdowns

During the reporting period (January 2020 through December 2020), the flare station experienced 9 unscheduled shutdowns. Details of the shutdowns are as follows:

- January 10, 2020: The flare station shut down due to a low flow rate shutdown. The flare was restarted on January 13, 2020.
- June 10, 2020: The flare station shut down due to a utility outage caused by a thunderstorm. The flare station was restarted on June 10, 2020 once power was restored.
- June 29, 2020: The flare station shut down due to a utility outage caused by a thunderstorm. The flare station was restarted on June 30, 2020 once power was restored.
- July 18, 2020: The flare station shut down due to utility outage caused by a thunderstorm. The flare station was restarted on July 18, 2020 once power was restored.
- August 3, 2020: The flare station shut down due to a low flow rate shutdown. The flare station was restarted on August 3, 2020.
- August 23, 2020: The flare station shut down due to a low flow rate shutdown. The flare station was restarted on August 23, 2020.
- October 21, 2020: The flare station shut down due to utility outage caused by a thunderstorm. The flare station was restarted on October 23, 2020 once power was restored.
- November 10, 2020: The flare station shut down due to utility outage caused by a thunderstorm. The flare station was restarted on November 11, 2020 once power was restored.

The flare station operated for 8,566 of the 8,784 available hours (98-percent) during the reporting period.

2.3 Gas Extraction Well Monitoring

The gas extraction well monitoring schedule was modified in 2018 according to the WDNR-approved revised monitoring schedule provided in Table 1.1. Wells which are always off are monitored annually in June and July. Wells which are always on are monitored quarterly. Wells which operate intermittently are monitored on a monthly basis April through September, and on a quarterly basis October through March. Gas extraction well measurements consist of monitoring the landfill gas concentration, flow rate, and vacuum at each gas extraction well. Additionally, at the time of monitoring, the condition of each well is inspected and evaluated. Any maintenance needs found are then completed, as necessary.

During gas well monitoring, extraction well flow rates were adjusted based upon the composition of landfill gas within the individual wells. Wells were adjusted to supply landfill gas to the flare station with a nominal methane concentration of 30-percent. Landfill gas was extracted from the wellfield at approximately 70 cubic feet per minute (cfm) during the reporting period.

Results of the gas extraction well monitoring are presented in Table 2.2.

2.4 Gas Probe Monitoring

Landfill gas probe monitoring is conducted on a quarterly basis at the thirteen gas probes installed around the perimeter of the Site. Locations of the gas probes are presented on Figure 1.1. Monitoring at each probe consisted of the gas composition (methane, carbon dioxide, oxygen, and balance) and static pressure. Probes were purged for a minimum of 210 seconds before a final measurement was recorded.

Gas probe monitoring results are presented in Table 2.3. Methane was non-detect at all probes during the reporting period monitoring events, indicating that the gas extraction system has been effective at controlling landfill gas migration from the Site.

2.5 Landfill Gas Condensate

Landfill gas condensate, collected in the landfill gas header and at the flare station, gravity drains to a drip leg near the flare station before draining to the City of Wausau sanitary sewer. Landfill gas condensate is sampled at the direction/discretion of the City of Wausau Wastewater Treatment Facility.

3. Landfill Cover

In accordance with the O&M Plan, the City was responsible for completing general Site inspections on a monthly basis. Any issues identified in monthly inspections were then reported to the responsible party (i.e. county for soccer complex/field issues, city for landfill areas outside of the soccer complex, etc.).

The Site inspections focused on the following main components:

- Landfill cover area
- Landfill gas extraction wells
- Landfill gas monitoring probes
- Flare station area
- Access roads/paths associated with the Site

Inspections are completed on the “Landfill Site Inspection” form previously provided in the Site O&M Plan. Copies of the monthly inspection forms are provide in Appendix C.

General maintenance items completed during the reporting period included:

- Site mowing as necessary

- Replacement of the wellhead for gas well GW-32

4. Conclusions

Based upon the OM&M activities performed in the reporting period, the following conclusions are made:

- The flare station provided consistent, reliable operation throughout the reporting period with 98-percent up-time from January 1, 2020 through December 31, 2020.
- The flare station controls allowed extraction amounts to closely match landfill production (approximately 70 cfm at 30 to 37-percent methane). Additionally, this resulted in minimal amounts of oxygen within the landfill waste, ensuring the landfill remains in anaerobic gas production and limits the potential for subsurface fires.
- Landfill gas monitoring probes were all non-detect for methane during the reporting period, indicating that landfill gas extraction rates are sufficient to prevent off-Site gas migration.
- The general Site was noted to be in good condition throughout the reporting period, with no significant concerns.
- Gas composition at gas extraction wells was noted to be very consistent throughout the reporting period. This consistency supports continuation of the revised gas monitoring frequency detailed in Table 1.1.

5. Recommendations

Based upon the consistent performance of the gas extraction and flare system, it is recommended that gas extraction well monitoring in 2021 continues under the revised monitoring schedule, provided in Table 1.1.

Figures

Paper Size ANSI A

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Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983 HARN
Grid: NAD 1983 HARN WISCRS Marathon County Feet

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GHD

CITY OF WAUSAU
FORMER HOLTZ KRAUSE LANDFILL
WAUSAU, WISCONSIN

SITE PLAN

Project No. **11209649**
Revision No. **-**
Date **01/26/2021**

FIGURE 1.1

Data source: . Created by: jhedblom

Tables

Table 1.1

Revised Gas Extraction Well Monitoring Schedule
Holtz Krause Closed Landfill - Wausau, Wisconsin

Well Condition	Total Number of Wells	1st Quarter (Feb/Mar)	April	May	June	July	August	September	4th Quarter (Oct/Nov)
Wells Always Off (Annual Monitoring) (June: EW-1, 2, 8, 9, 22, 23, and 24) (July: EW-11, 13, 14, 15, 35, and 38)	13				Half Round (June wells)	Half Round (July wells)			
Wells Always On (Quarterly Monitoring) (EW-3, 7, 10, 18, 20, and 31)	6	X		X			X		X
Wells with Intermittent Operation (Monthly/Quarterly monitoring) (EW-4, 5, 6, 12, 17, 19, 21, 30, 32, 33, 34, 36, and 37)	13	X	X	X	X	X	X	X	X

Table 2.1

Flare Station Operational Data
January 2020 through December 2020
Holtz Krause Closed Landfill - Wausau, Wisconsin

Date	Header Pressure (in H_2O)	Methane (%)	Carbon Dioxide (%)	Oxygen (%)	Flow Rate (scfm)	Inlet Gas Temp (^oF)	Flare Temp (^oF)	Status (on/off)	System Hours (hours)
1/3/2020	-1.8	NR	NR	NR	73	48	1,395	on	53,478
1/7/2020	-2.9	34.8	31.0	0.4	66	47	1,238	on	53,671
1/14/2020	-2.3	NR	NR	NR	74	46	1,330	on	53,779
1/21/2020	-2.7	34.7	30.7	0.4	73	44	1,342	on	53,947
1/28/2020	-3.5	NR	NR	NR	67	46	1,323	on	54,115
2/4/2020	-4.5	31.3	29.5	0.4	67	45	1,244	on	54,283
2/11/2020	-3.0	NR	NR	NR	69	45	1,347	on	54,451
2/18/2020	-4.4	32.0	29.7	0.4	66	44	1,276	on	54,619
2/25/2020	-3.9	NR	NR	NR	66	44	1,216	on	54,786
3/3/2020	-2.2	35.6	31.1	0.3	73	45	1,242	on	54,955
3/10/2020	-4.5	30.7	28.9	0.4	66	44	1,189	on	55,122
3/17/2020	-3.7	NR	NR	NR	66	45	1,298	on	55,290
3/24/2020	-2.9	33.4	30.4	0.2	69	46	1,367	on	55,457
3/31/2020	-3.6	NR	NR	NR	73	46	1,304	on	55,625
4/7/2020	-2.3	34.4	30.7	0.3	71	48	1,315	on	55,793
4/14/2020	-4.2	NR	NR	NR	74	46	1,280	on	55,963
4/21/2020	-5.0	NR	NR	NR	66	46	1,234	on	56,130
4/28/2020	-2.7	NR	NR	NR	67	48	1,243	on	56,274
5/5/2020	-2.9	31.5	30.0	0.4	67	48	1,325	on	56,467
5/12/2020	-3.9	NR	NR	NR	68	48	1,274	on	56,634
5/19/2020	-3.5	NR	NR	NR	69	48	1,397	on	56,701
5/26/2020	-3.4	NR	NR	NR	71	52	1,194	on	56,964
6/2/2020	-2.5	NR	NR	NR	66	52	1,203	on	57,133
6/9/2020	-2.5	31.3	29.1	0.3	68	54	1,209	on	57,299
6/16/2020	-3.1	NR	NR	NR	68	54	1,147	on	57,461
6/23/2020	-2.9	NR	NR	NR	70	56	1,312	on	57,629
6/30/2020	-2.7	NR	NR	NR	72	62	1,394	on	57,774
7/7/2020	-3.2	NR	NR	NR	68	59	1,270	on	57,941
7/14/2020	-3.2	31.5	29.6	0.4	70	59	1,185	on	58,109
7/21/2020	-3.6	NR	NR	NR	70	60	1,252	on	58,274
7/28/2020	-3.4	NR	NR	NR	68	61	1,238	on	58,441
8/4/2020	-3.4	32.5	30.7	0.3	66	60	1,331	on	58,596
8/11/2020	-4.0	NR	NR	NR	68	61	1,242	on	58,762
8/18/2020	-3.8	NR	NR	NR	68	61	1,319	on	58,924
8/25/2020	-3.8	NR	NR	NR	67	62	1,200	on	59,087
9/1/2020	-4.1	NR	NR	NR	72	61	1,179	on	59,255
9/8/2020	-4.6	33.9	32.3	0.4	71	60	1,353	on	59,422

Table 2.1

Flare Station Operational Data
January 2020 through December 2020
Holtz Krause Closed Landfill - Wausau, Wisconsin

Date	Header Pressure (in H_2O)	Methane (%)	Carbon Dioxide (%)	Oxygen (%)	Flow Rate (scfm)	Inlet Gas Temp (^oF)	Flare Temp (^oF)	Status (on/off)	System Hours (hours)
9/15/2020	-2.9	NR	NR	NR	73	60	1,391	on	59,591
9/22/2020	-3.1	NR	NR	NR	67	60	1,268	on	59,759
9/29/2020	-3.7	NR	NR	NR	72	59	1,342	on	59,927
10/7/2020	-4.4	34.9	32.7	0.4	64	58	1,315	on	60,119
10/14/2020	-2.9	NR	NR	NR	75	56	1,282	on	60,287
10/20/2020	-4.1	NR	NR	NR	69	55	1,329	on	60,428
10/27/2020	-3.8	36.4	32.7	0.4	72	54	1,424	on	60,545
11/3/2020	-3.6	36.0	32.3	0.3	68	54	1,356	on	60,703
11/10/2020	-3.7	NR	NR	NR	70	54	1,342	on	60,872
11/17/2020	-5.8	35.1	32.5	0.4	70	52	1,358	on	61,015
11/24/2020	-3.6	NR	NR	NR	74	52	1,359	on	61,182
12/1/2020	-4.3	37.1	32.9	0.5	69	50	1,325	on	61,350
12/11/2020	-3.8	NR	NR	NR	73	50	1,353	on	61,518
12/21/2020	-4.9	35.9	32.2	0.4	73	48	1,303	on	61,687
12/30/2020	-5.7	NR	NR	NR	75	50	1,321	on	61,855

Table 2.2

Landfill Gas Data
January 2020 through December 2020
Holtz Krause Closed Landfill - Wausau, Wisconsin

ID	Date	Methane (%)	Carbon Dioxide (%)	Oxygen (%)	Temp (^{o}F)	Flow Rate (scfm)	Header Pressure (in. H_2O)	Status (on/off)
Flare	1/7/2020	34.8	31	0.4	47	66	-2.9	On
Flare	1/21/2020	34.7	30.7	0.4	44	73	-2.7	On
Flare	2/4/2020	31.3	29.5	0.4	45	67	-4.5	On
Flare	2/18/2020	32	29.7	0.4	44	66	-4.4	On
Flare	3/3/2020	35.6	31.1	0.3	45	73	-2.2	On
Flare	3/10/2020	30.7	28.9	0.4	44	66	-4.5	On
Flare	3/24/2020	33.4	30.4	0.2	46	69	-2.9	On
Flare	4/7/2020	34.4	30.7	0.3	48	71	-2.3	On
Flare	5/5/2020	31.5	30	0.4	48	67	-2.9	On
Flare	6/9/2020	31.3	29.1	0.3	54	68	-2.5	On
Flare	7/14/2020	31.5	29.6	0.4	59	70	-3.2	On
Flare	8/4/2020	32.5	30.7	0.3	60	66	-3.4	On
Flare	9/8/2020	33.9	32.3	0.4	60	71	-4.6	On
Flare	10/7/2020	34.9	32.7	0.4	58	64	-4.4	On
Flare	10/27/2020	36.4	32.7	0.4	54	72	-3.8	On
Flare	11/3/2020	36	32.3	0.3	54	68	-3.6	On
Flare	11/17/2020	35.1	32.5	0.4	52	70	-5.8	On
Flare	12/1/2020	37.1	32.9	0.5	50	69	-4.3	On
Flare	12/22/2020	35.9	32.2	0.4	48	73	-4.9	On
EW-01	6/9/2020	3.0	15.6	4.2	65	0	-2.0	Off
EW-01	7/14/2020	0.0	0.0	20.3	70	0	-2.6	Off
EW-02	6/9/2020	26.0	27.5	0.3	58	0	-1.9	Off
EW-02	7/14/2020	16.9	20.3	4.5	65	0	-2.5	Off
EW-03	3/24/2020	49.2	29.8	0.3	36	0	-1.7	On
EW-03	5/5/2020	27.4	17.3	9.1	48	0	-2.3	Off
EW-03	7/14/2020	38.7	25.6	3.6	65	1	-2.5	On
EW-03	8/4/2020	34.9	24.6	4.7	61	3	-2.7	On
EW-03	10/7/2020	44.5	31.8	0.5	54	5	-3.7	On
EW-04	3/24/2020	26.6	22.8	4.2	42	0	-2.2	Off
EW-04	4/7/2020	28.8	26.8	0.3	44	0	-1.6	On
EW-04	5/5/2020	29.9	27.0	0.3	47	5	-2.3	On
EW-04	6/9/2020	28.9	25.7	1.2	56	6	-2.0	On
EW-04	7/14/2020	24.4	22.4	4.3	60	4	-2.5	On
EW-04	8/4/2020	30.6	27.9	0.6	60	6	-2.4	On
EW-04	9/8/2020	31.0	29.2	0.5	58	4	-3.9	On
EW-04	10/7/2020	32.2	30.0	0.4	57	13	-3.8	On
EW-05	3/24/2020	25.9	24.5	0.3	44	2	-2.2	On
EW-05	4/7/2020	26.2	24.4	0.3	47	22	-1.6	On
EW-05	5/5/2020	20.2	23.3	0.4	48	4	-2.4	On
EW-05	6/9/2020	23.6	22.5	0.8	56	6	-1.9	On
EW-05	7/14/2020	21.4	20.8	2.5	57	5	-2.4	On
EW-05	8/4/2020	23.2	23.6	0.4	60	5	-2.6	On
EW-05	9/8/2020	19.5	20.3	4.5	58	0	-4.0	Off
EW-05	10/7/2020	25.7	25.7	0.5	57	5	-3.7	On

Table 2.2

Landfill Gas Data
January 2020 through December 2020
Holtz Krause Closed Landfill - Wausau, Wisconsin

ID	Date	Methane (%)	Carbon Dioxide (%)	Oxygen (%)	Temp (^{o}F)	Flow Rate (scfm)	Header Pressure (in. H_2O)	Status (on/off)
EW-06	3/24/2020	24.5	26.0	1.2	46	24	-2.0	On
EW-06	4/7/2020	27.4	26.9	0.3	48	0	-1.3	On
EW-06	5/5/2020	21.8	26.0	0.3	49	4	-2.4	On
EW-06	6/9/2020	22.9	25.3	0.3	59	7	-1.9	On
EW-06	7/14/2020	22.7	25.6	0.4	58	5	-2.2	On
EW-06	8/4/2020	22.7	25.8	0.3	60	4	-2.6	On
EW-06	9/8/2020	24.4	27.2	0.4	57	3	-4.0	On
EW-06	10/7/2020	26.0	26.7	1.4	56	5	-3.8	On
EW-07	3/24/2020	31.4	27.3	1.4	43	2.5	-2.2	On
EW-07	5/5/2020	35.2	28.5	0.3	47	5	-2.3	On
EW-07	7/14/2020	31.6	27.2	1.2	60	6	-2.3	On
EW-07	8/4/2020	33.7	28.7	0.3	59	4	-2.6	On
EW-07	10/7/2020	34.7	30.6	0.3	56	5	-3.7	On
EW-08	6/9/2020	11.9	22.1	0.3	63	5	-1.8	On
EW-08	7/14/2020	12.3	21.7	0.8	66	0	-2.3	Off
EW-09	6/9/2020	20.6	23.6	1.2	58	0	-1.9	Off
EW-09	7/14/2020	17.9	23.3	1.3	61	0	-2.4	Off
EW-10	3/24/2020	31.6	28.7	0.3	44	13	-2.2	On
EW-10	5/5/2020	29.7	27.4	0.5	47	4	-2.4	On
EW-10	7/14/2020	26.4	24.5	2.3	57	5	-2.4	On
EW-10	8/4/2020	28.9	27.5	0.3	57	11	-2.6	On
EW-10	10/7/2020	28.6	26.6	2.5	54	0	-3.8	On
EW-11	7/14/2020	0.6	17.9	0.6	69	0	-2.5	Off
EW-12	3/24/2020	16.9	26.0	0.3	43	0	-2.4	Off
EW-12	4/7/2020	19.5	25.8	0.3	44	0	-1.7	Off
EW-12	5/5/2020	19.0	25.2	0.8	45	0	-2.4	Off
EW-12	6/9/2020	22.4	25.5	0.4	61	6	-1.6	On
EW-12	7/14/2020	17.7	23.6	2.1	62	3	-2.5	On
EW-12	8/4/2020	19.9	26.3	0.3	60	0	-2.6	Off
EW-12	9/8/2020	24.3	28.2	0.3	60	0	-3.9	On
EW-12	10/7/2020	25.8	29.0	0.4	57	2	-3.7	On
EW-13	7/14/2020	1.3	12.5	7.3	66	0	-2.5	Off
EW-14	7/14/2020	7.6	12.5	8.5	70	0	-2.3	Off
EW-15	7/14/2020	2.1	17.6	0.9	64.3	0	-2.4	Off
EW-17	3/24/2020	35	27.4	1.3	42.4	16	-2.3	On
EW-17	4/7/2020	37.0	28.3	0.3	45	16	-1.6	On
EW-17	5/5/2020	36.0	27.3	0.4	46	3	-2.3	On
EW-17	6/9/2020	36.2	27.0	0.3	70	8	-1.7	On
EW-17	7/14/2020	32.4	25.3	2.1	56	5	-2.3	On
EW-17	8/4/2020	34.8	27.7	0.6	56	6	-2.5	On
EW-17	9/8/2020	36.2	29.4	0.4	55	1	-3.8	On
EW-17	10/7/2020	37.5	30.4	0.4	54	5	-3.8	On

Table 2.2

Landfill Gas Data
January 2020 through December 2020
Holtz Krause Closed Landfill - Wausau, Wisconsin

ID	Date	Methane (%)	Carbon Dioxide (%)	Oxygen (%)	Temp (^{o}F)	Flow Rate (scfm)	Header Pressure (in. H_2O)	Status (on/off)
EW-18	3/24/2020	25.9	18.1	11.6	41	0	-2.5	On
EW-18	5/5/2020	54.7	34.8	0.5	45	0	-2.2	On
EW-18	7/14/2020	49.4	33.9	1.4	62	5*	-2.1	On
EW-18	8/4/2020	51.6	35.6	0.5	59	6	-2.5	On
EW-18	10/7/2020	43.7	31.8	3.9	55	0	-3.8	On
EW-19	3/24/2020	27.0	21.9	10.9	35	0	-0.7	Off
EW-19	4/7/2020	46.8	34.8	0.7	44	0	0.1	On
EW-19	5/5/2020	0.1	0.3	21.9	48	0	-0.8	Off
EW-19	6/9/2020	0.2	0.4	19.9	69	0	-0.3	Off
EW-19	7/14/2020	0.0	0.1	20.7	69	0	-0.5	Off
EW-19	8/4/2020	0.1	0.5	20.9	62	0	-1.0	Off
EW-19	9/8/2020	0.2	0.1	21.3	56	0	-2.0	Off
EW-19	10/7/2020	0.6	0.4	21.0	53	0	-2.2	Off
EW-20	3/24/2020	40.0	32.2	3.5	46	0	-2.1	On
EW-20	5/5/2020	46.8	36.2	0.3	49	13	-1.9	On
EW-20	7/14/2020	42.8	35.8	0.4	56	16*	-2.3	On
EW-20	8/4/2020	41.1	35.8	0.3	57	17	-2.4	On
EW-20	10/7/2020	40.8	36.9	1.0	54	16	-3.9	On
EW-21	3/24/2020	30.5	28.7	0.4	43	10	-1.7	On
EW-21	4/7/2020	30.2	28.5	0.3	46	15	-1.2	On
EW-21	5/5/2020	19.5	20.4	5.5	48	5	-2.5	On
EW-21	6/9/2020	24.5	26.6	0.3	61	8	-1.8	On
EW-21	7/14/2020	23.2	25.8	1.4	57	5	-2.8	On
EW-21	8/4/2020	24.3	27.7	0.3	60	6	-2.6	On
EW-21	9/8/2020	25.9	29.1	0.5	57	13	-3.9	On
EW-21	10/7/2020	29.5	30.8	0.4	56	5	-4.1	On
EW-22	6/9/2020	6.3	19.8	0.3	65	0	-1.9	Off
EW-22	7/14/2020	8.9	21.4	0.5	65	0	-2.6	Off
EW-23	6/9/2020	2.3	11.1	6.6	64	0	-1.9	Off
EW-23	7/14/2020	0.2	4.9	14.6	66	0	-2.5	Off
EW-24	6/9/2020	3.7	15.3	4.9	60	0	-1.9	Off
EW-24	7/14/2020	6.9	21.4	0.4	64	0	-2.5	Off
EW-30	3/24/2020	28.6	32.7	0.7	43	17	-2.2	On
EW-30	4/7/2020	28.9	33.5	0.3	45	0	-1.7	On
EW-30	5/5/2020	27.3	32.4	0.4	46	4	-2.2	On
EW-30	6/9/2020	23.7	30.6	0.6	56	7	-1.7	On
EW-30	7/14/2020	20.1	29.8	1.2	58	5	-2.1	On
EW-30	8/4/2020	21.2	30.7	0.5	58	5	-2.5	On
EW-30	9/8/2020	26.2	31.3	0.7	57	0	-3.8	On
EW-30	10/7/2020	30.4	34.0	0.4	55	16	-3.8	On
EW-31	3/24/2020	36.9	34.9	0.2	41	10	-1.0	On
EW-31	5/5/2020	34.2	34.0	0.4	46	2	-2.2	On
EW-31	7/14/2020	28.0	30.9	1.3	59	5	-2.2	On
EW-31	8/4/2020	29.4	32.6	0.5	59	6	-2.4	On
EW-31	10/7/2020	34.2	35.9	0.5	53	5	-3.8	On

Table 2.2

Landfill Gas Data
January 2020 through December 2020
Holtz Krause Closed Landfill - Wausau, Wisconsin

ID	Date	Methane (%)	Carbon Dioxide (%)	Oxygen (%)	Temp (^oF)	Flow Rate (scfm)	Header Pressure (in. H_2O)	Status (on/off)
EW-32	3/24/2020	16.0	27.4	0.6	40	0	-1.2	Off
EW-32	4/7/2020	18.0	27.9	0.3	44	0	-1.7	Off
EW-32	5/5/2020	12.5	26.3	0.4	47	0	-2.0	Off
EW-32	6/9/2020	12.2	25.2	0.4	65	0	-1.5	Off
EW-32	8/4/2020	0.5	0.8	20.6	74	0	0.0	Off
EW-32	9/8/2020	0.3	0.3	21.1	55	0	0.0	Off
EW-32	10/7/2020	0.3	0.2	20.5	56	0	-3.8	Off
EW-32	10/27/2020	27.0	33.9	0.3	39	0	-2.7	On
EW-33	3/24/2020	28.5	32.5	0.2	41	28	-2.2	On
EW-33	4/7/2020	27.2	32.4	0.3	43	0	-1.7	On
EW-33	5/5/2020	25.8	32.0	0.3	47	0	-2.3	On
EW-33	6/9/2020	23.2	30.8	0.4	60	7	-1.6	On
EW-33	7/14/2020	27.6	32.9	0.5	58	3	-3.2	On
EW-33	8/4/2020	28.9	33.8	0.3	59	4	-2.5	On
EW-33	9/8/2020	35.1	36.6	0.5	58	3	-3.7	On
EW-33	10/7/2020	38.0	37.8	0.4	56	1	-3.9	On
EW-34	3/24/2020	27.6	32.2	0.3	37	0	-0.2	On
EW-34	4/7/2020	19.1	27.5	0.3	45	0	0.0	Off
EW-34	5/5/2020	13.3	17.1	10.5	47	0	-0.2	Off
EW-34	6/9/2020	19.9	27.0	2.2	72	0	0.0	Off
EW-34	7/14/2020	9.4	11.3	10.2	66	0	-1.0	Off
EW-34	8/4/2020	1.0	2.7	18.7	64	0	-0.2	Off
EW-34	9/8/2020	1.0	2.4	19.2	57	0	-0.6	Off
EW-34	10/7/2020	0.5	0.7	20.8	53	0	-0.2	Off
EW-35	7/14/2020	20.3	28.0	1.4	65	0	0.0	On
EW-36	3/24/2020	32.8	31.1	1.6	37	0	-1.0	On
EW-36	4/7/2020	33.3	32.5	0.2	43	0	-0.6	On
EW-36	5/5/2020	28.9	30.6	0.3	47	2	-1.5	On
EW-36	6/9/2020	25.8	29.2	0.3	63	7	-1.0	On
EW-36	7/14/2020	25.4	29.3	0.3	62	4	-1.1	On
EW-36	8/4/2020	25.9	30.3	0.3	59	6	-1.3	On
EW-36	9/8/2020	29.4	32.3	0.7	58	2	-1.7	On
EW-36	10/7/2020	30.9	33.0	1.1	57	N/A	-1.8	On
EW-37	3/24/2020	41.1	36.8	0.3	39	20	-1.2	On
EW-37	4/7/2020	38.8	35.7	0.3	44	0	-0.6	On
EW-37	5/5/2020	33.4	34.7	0.3	47	3	-1.5	On
EW-37	6/9/2020	29.4	33.5	0.4	62	9	-1.2	On
EW-37	7/14/2020	29.7	34.5	0.4	58	2	-1.4	On
EW-37	8/4/2020	30.7	35.2	0.3	60	6	-1.4	On
EW-37	9/8/2020	37.5	38.4	0.4	58	3	-1.5	On
EW-37	10/7/2020	32.2	34.2	0.4	55	0	-1.8	On
EW-38	7/14/2020	0.0	10.1	7.9	65	0	-2.3	Off

Notes:

* - Well is fully open

Table 2.3

Landfill Gas Probe Data
January 2020 through December 2020
Holtz Krause Closed Landfill - Wausau, Wisconsin

ID	Date	Methane (%)	Carbon Dioxide (%)	Oxygen (%)	Static Pressure (in. H_2O)
GP-1S	3/10/2020	0.0	0.8	19.5	-0.1
GP-1S	5/19/2020	0.0	0.1	20.9	-0.2
GP-1S	8/18/2020	0.0	0.1	20.5	-0.1
GP-1S	10/9/2020	0.0	8.3	10.4	0.2
GP-1D	3/10/2020	0.0	0.6	19.8	-0.1
GP-1D	5/19/2020	0.0	0.1	20.9	-0.2
GP-1D	8/18/2020	0.0	0.1	20.5	-0.1
GP-1D	10/9/2020	0.0	8.2	9.6	0.2
GP-2	3/10/2020	0.0	0.6	20.3	-0.1
GP-2	5/19/2020	0.0	0.9	20.8	-0.1
GP-2	8/18/2020	0.0	1.5	19.7	0.0
GP-2	10/9/2020	0.0	0.8	20.5	0.0
GP-3S	3/10/2020	0.0	0.1	20.6	-0.1
GP-3S	5/19/2020	0.0	0.1	21.1	-0.1
GP-3S	8/18/2020	0.0	0.1	20.5	0.0
GP-3S	10/9/2020	0.0	1.5	19.3	0.1
GP-3D	3/10/2020	0.0	0.0	20.6	-0.1
GP-3D	5/19/2020	0.0	0.1	21.2	-0.1
GP-3D	8/18/2020	0.0	0.1	20.6	0.0
GP-3D	10/9/2020	0.0	0.7	20.2	0.1
GP-5	3/10/2020	0.0	1.5	19.6	-0.1
GP-5	5/19/2020	0.0	0.1	21.3	-0.1
GP-5	8/18/2020	0.0	0.6	20.0	0.0
GP-5	10/9/2020	0.0	5.1	16.5	0.1
GP-6	3/10/2020	0.0	0.1	21.0	-0.1
GP-6	5/19/2020	0.0	0.2	21.5	-0.1
GP-6	8/18/2020	0.0	0.4	20.3	0.0
GP-6	10/9/2020	0.0	0.5	20.6	0.1
GP-7R	3/10/2020	0.0	0.5	20.2	-0.1
GP-7R	5/19/2020	0.0	0.1	21.4	-0.1
GP-7R	8/18/2020	0.0	0.1	20.5	0.0
GP-7R	10/9/2020	0.0	0.8	20.4	0.0
GP-10	3/10/2020	0.0	0.5	20.9	-0.1
GP-10	5/19/2020	0.0	0.1	21.6	-0.1
GP-10	8/18/2020	0.0	0.5	20.2	0.0
GP-10	10/9/2020	0.0	0.7	20.5	0.0
GP-11	3/10/2020	0.0	1.3	20.0	-0.1
GP-11	5/19/2020	0.0	0.5	21.2	-0.1
GP-11	8/18/2020	0.0	2.9	17.9	0.0
GP-11	10/9/2020	0.0	4.3	17.0	0.1

Table 2.3

Landfill Gas Probe Data
January 2020 through December 2020
Holtz Krause Closed Landfill - Wausau, Wisconsin

ID	Date	Methane (%)	Carbon Dioxide (%)	Oxygen (%)	Static Pressure (in. H_2O)
GP-12	3/10/2020	0.0	0.2	20.9	-0.1
GP-12	5/19/2020	0.0	2.6	19.7	-0.1
GP-12	8/18/2020	0.0	4.3	17.5	0.0
GP-12	10/9/2020	0.0	2.5	18.9	0.02
GP-13	3/10/2020	0	0.1	20.8	-0.09
GP-13	5/19/2020	0.0	0.8	20.9	-0.1
GP-13	8/18/2020	0.0	1.3	19.3	0.0
GP-13	10/9/2020	0.0	1.2	20.0	0.0
GP-14	3/10/2020	0.0	0.2	20.7	-0.1
GP-14	5/19/2020	0.0	2.4	19.0	-0.1
GP-14	8/18/2020	0.0	2.6	18.1	0.0
GP-14	10/9/2020	0.0	3.2	17.6	0.0

Appendices

Appendix A
Weekly Flare Station Inspection Forms

WEEKLY FLARE STATION INSPECTION FORM

Project # 1728 Project Name: Holtz Krause (Min 30 SCFM, Max 200 SCFM)

Tester (Initials)	KSF	KSF	KSF	KSF
Date	1/3/2020	1/7/2020	1/14/2020	1/21/2020
Time	10:00 AM	10:00 AM	10:00 AM	10:00 AM
Sky Conditions	Cloudy	Clear	Cloudy	Clear
Ambient Temperature, deg F	32	25	30	15
Inlet Temperature, deg F (GHS-TI-301)	48	47	46	44
Demister Inlet Valve Position, % Open (GHS-HV-301)	100	100	100	100
LFG Vacuum, In WC (GHS-PI-301)	2	3	3	3
Demister Filter Delta P (GHS-PDI-301)	0.3	0.2	0.3	0.2
Blower 301 Inlet Valve Position, % Open (GHS-FCV-301)	100	100	100	100
Discharge Pressure, In WC (GHS-PI-302)	0.5	0.5	2	1
Discharge Temperature, deg F (GHS-TI-302)	55	54	54	48
Propane Pilot Supply Pressure, In WC (GHS-PI-101)	9	9	9	11
Flame Arrester Inlet Pressure, In WC (FLR-PI-301)	1.0	1.0	2.0	1.5
Flame Arrester Outlet Pressure, In WC (FLR-PI-301)	0.8	0.7	1.5	1.0
Flame Arrester Delta P, In WC (FLR-PI-301)	0.2	0.3	0.5	0.5
Blower 301 Frequency, Hz (CP-YIC-2)	13.8	14.7	16.6	14.9
Blower 301 Current, Amps (CP-YIC-2)	3.7	3.7	3.9	3.8
YIC-1 From Main Menu Screen				
ANALOG DATA MENU				
* **PROCESS OVERVIEW**				
Inlet Vacuum, In WC	1.8	2.9	2.3	2.7
Inlet Temp, DegF	51	50	50	49
Oxygen, %	0.4	0.2	0	0
Blower Speed, %	13	15	16	15
Blower Vibration, In/Sec	0	0	0	0
CP Temp, DegF	75	73	72	64
FLR Flame Temp, DegF	1395	1238	1330	1342
FLR Flow Press, In WC	0.5	0.1	1.9	0.4
FLR Flow Temp, DegF	60	59	56	53
Flow Rate, SCFM	73	66	74	73
* **BACK**				
* **BLOWER DATA**				
Status, Run/Stop	Run	Run	Run	Run
Run Time, Hr	53478	53671	53779	53947
Speed, %	13	15	16	15
Vibration, In/Sec	0.0	0.0	0.0	0.0
Outlet Temp, DegF	60	59	56	53
* **BACK**				
* **FLARE DATA**				
Flow Rate, SCFM	66	66	66	73
Flame Temp, DegF	1371	1242	1343	1340
BLR Speed, %	13	15	16	15
Flow Pressure, In WC	0.5	0.1	1.9	0.5
Hour Meter	53472	53665	53772	53941

* ***PUSH BUTTON***

WEEKLY FLARE STATION INSPECTION FORM

Project # 1728 Project Name: Holtz Krause (Min 30 SCFM, Max 200 SCFM)

Run Clock	On	On	On	On
Pilot	Off	Off	Off	Off
SD Valve	Open	Open	Open	Open
Flame	On	On	On	On
Relight	Off	Off	Off	Off
Pilot	Ready	Ready	Ready	Ready
Vac Ramp	Off	Off	Off	Off
Forced Flow	Off	Off	Off	Off
* **BACK**				
* **FLOW DATA**				
Flow Rate, SCFM	73	72	73	72
Today's Total, MMSCF	0.03	0.03	0.03	0.04
This Month's Total, MMSCF	2.86	0.61	1.07	1.79
Total Flow, MMSCF	270.57	271.33	271.79	272.52
Flow Press, In WC	0.4	0.1	1.9	0.5
Flow Temp, DegF	60	59	56	53
Flow Delta P, In WC	0.46	0.38	0.45	0.46
* **7 DAY FLOW HISTORY**				
Yesterday's Flow, MMSCF	0.03	0.03	0.03	0.04
2 Day's Ago Flow, MMSCF	0.11	0.10	0.00	0.10
3 Day's Ago Flow, MMSCF	0.10	0.10	0.00	0.10
4 Day's Ago Flow, MMSCF	0.10	0.10	0.09	0.11
5 Day's Ago Flow, MMSCF	0.10	0.10	0.10	0.10
6 Day's Ago Flow, MMSCF	0.10	0.10	0.10	0.10
7 Day's Ago Flow, MMSCF	0.10	0.10	0.10	0.10
* **BACK**				
* **RESETTABLE FLOW**				
Resettable Total Flow, MMSCF	270.51	271.33	271.79	272.52
Reset Time	0	0	0	0
Reset Date	0	0	0	0
* **BACK & * BACK**				

	Adequate	Needs Work
Check Propane and Nitrogen Cylinders and change/fill if necessary	X	
Inspect Blower, Flare and Demister Structures for Loose Bolts/Cracks	X	
Drain Demister (if necessary)	X	
Clean Demister Filter Material (if dP indicates it is necessary)	X	
Lubricate Grease Fittings (as necessary)	X	
Test Alarm Lights on Panel by pushing "RUN" and "Alarm/Shutdown" Lamps	X	
Check if any shutdowns/alarms need re-setting (note which ones in comments section)	X	
Drain Flare Stack Condensate (if necessary)		X

Comments: Drained Condensate

Signature: Kevin S. Fabel

* ***PUSH BUTTON***

WEEKLY FLARE STATION INSPECTION FORM

Project # 1728 Project Name: Holtz Krause (Min 30 SCFM, Max 200 SCFM)

Tester (Initials)	KSF	KSF	KSF	KSF
Date	1/28/2020	2/4/2020	2/11/2020	2/18/2020
Time	10:00 AM	10:00 AM	10:00 AM	10:00 AM
Sky Conditions	Clear	Clear	Cloudy	Clear
Ambient Temperature, deg F	30	20	25	25
Inlet Temperature, deg F (GHS-TI-301)	46	45	45	44
Demister Inlet Valve Position, % Open (GHS-HV-301)	100	100	100	100
LFG Vacuum, In WC (GHS-PI-301)	3	4	3	400
Demister Filter Delta P (GHS-PDI-301)	0.2	0.2	0.2	0.2
Blower 301 Inlet Valve Position, % Open (GHS-FCV-301)	100	100	100	100
Discharge Pressure, In WC (GHS-PI-302)	0.5	0.5	0.5	0.5
Discharge Temperature, deg F (GHS-TI-302)	52	50	52	50
Propane Pilot Supply Pressure, In WC (GHS-PI-101)	8	10	9	9
Flame Arrester Inlet Pressure, In WC (FLR-PI-301)	1.0	1.0	1.0	1.0
Flame Arrester Outlet Pressure, In WC (FLR-PI-301)	0.8	0.8	0.8	0.8
Flame Arrester Delta P, In WC (FLR-PI-301)	0.2	0.2	0.2	0.2
Blower 301 Frequency, Hz (CP-YIC-2)	15.8	17.1	15.1	17.1
Blower 301 Current, Amps (CP-YIC-2)	3.8	3.8	3.7	3.8
YIC-1 From Main Menu Screen				
ANALOG DATA MENU				
* **PROCESS OVERVIEW**				
Inlet Vacuum, In WC	3.5	4.5	3.0	4.4
Inlet Temp, DegF	49	49	48	48
Oxygen, %	0	0	0	0
Blower Speed, %	17	19	16	19
Blower Vibration, In/Sec	0	0	0	0
CP Temp, DegF	67	62	70	67
FLR Flame Temp, DegF	1323	1244	1347	1276
FLR Flow Press, In WC	0.3	0.1	0.1	0.1
FLR Flow Temp, DegF	58	56	56	56
Flow Rate, SCFM	67	67	69	66
* **BACK**				
* **BLOWER DATA**				
Status, Run/Stop	Run	Run	Run	Run
Run Time, Hr	54115	54283	54451	54619
Speed, %	17	19	16	19
Vibration, In/Sec	0.0	0.0	0.0	0.0
Outlet Temp, DegF	58	56	56	56
* **BACK**				
* **FLARE DATA**				
Flow Rate, SCFM	67	67	70	66
Flame Temp, DegF	1361	1250	1305	1246
BLR Speed, %	17	19	16	19
Flow Pressure, In WC	0.3	0.1	0.1	0.1
Hour Meter	54108	54277	54444	54612

* ***PUSH BUTTON***

WEEKLY FLARE STATION INSPECTION FORM

Project # 1728 Project Name: Holtz Krause (Min 30 SCFM, Max 200 SCFM)

Run Clock	On	On	On	On
Pilot	Off	Off	Off	Off
SD Valve	Open	Open	Open	Open
Flame	On	On	On	On
Relight	Off	Off	Off	Off
Pilot	Ready	Ready	Ready	Ready
Vac Ramp	Off	Off	Off	Off
Forced Flow	Off	Off	Off	Off
* **BACK**				
* **FLOW DATA**				
Flow Rate, SCFM	68	67	69	65
Today's Total, MMSCF	0.03	0.03	0.03	0.03
This Month's Total, MMSCF	2.49	0.30	1.01	1.72
Total Flow, MMSCF	273.22	273.94	274.65	275.36
Flow Press, In WC	0.2	0.1	0.1	0.1
Flow Temp, DegF	58	56	56	56
Flow Delta P, In WC	0.40	0.38	0.42	0.38
* **7 DAY FLOW HISTORY**				
Yesterday's Flow, MMSCF	0.03	0.03	0.03	0.03
2 Day's Ago Flow, MMSCF	0.10	0.10	0.10	0.10
3 Day's Ago Flow, MMSCF	0.10	0.10	0.10	0.10
4 Day's Ago Flow, MMSCF	0.10	0.11	0.10	0.10
5 Day's Ago Flow, MMSCF	0.10	0.11	0.10	0.10
6 Day's Ago Flow, MMSCF	0.10	0.10	0.10	0.10
7 Day's Ago Flow, MMSCF	0.11	0.10	0.10	0.10
* **BACK**				
* **RESETTABLE FLOW**				
Resettable Total Flow, MMSCF	273.22	273.94	234.65	275.36
Reset Time	-	-	-	-
Reset Date	-	-	-	-
* **BACK & * BACK**				

	Adequate	Needs Work
Check Propane and Nitrogen Cylinders and change/fill if necessary	X	
Inspect Blower, Flare and Demister Structures for Loose Bolts/Cracks	X	
Drain Demister (if necessary)	X	
Clean Demister Filter Material (if dP indicates it is necessary)	X	
Lubricate Grease Fittings (as necessary)	X	
Test Alarm Lights on Panel by pushing "RUN" and "Alarm/Shutdown" Lamps	X	
Check if any shutdowns/alarms need re-setting (note which ones in comments section)	X	
Drain Flare Stack Condensate (if necessary)		X

Comments: Drained Condensate

Signature: Kevin S. Fabel

* ***PUSH BUTTON***

WEEKLY FLARE STATION INSPECTION FORM

Project # 1728 Project Name: Holtz Krause (Min 30 SCFM, Max 200 SCFM)

Tester (Initials)	KSF	KSF	KSF	KSF
Date	2/25/2020	3/3/2020	3/10/2020	3/17/2020
Time	10:00 AM	9:30 AM	10:00 AM	8:00 AM
Sky Conditions	Clear	Cloudy	Clear	Clear
Ambient Temperature, deg F	25	30	30	35
Inlet Temperature, deg F (GHS-TI-301)	44	45	44	45
Demister Inlet Valve Position, % Open (GHS-HV-301)	100	100	100	100
LFG Vacuum, In WC (GHS-PI-301)	3	3	4	3
Demister Filter Delta P (GHS-PDI-301)	0.2	0.2	0.2	0.2
Blower 301 Inlet Valve Position, % Open (GHS-FCV-301)	100	100	100	100
Discharge Pressure, In WC (GHS-PI-302)	0.5	0.5	0.5	0.5
Discharge Temperature, deg F (GHS-TI-302)	52	53	52	50
Propane Pilot Supply Pressure, In WC (GHS-PI-101)	8	8	10	10
Flame Arrester Inlet Pressure, In WC (FLR-PI-301)	1.0	1.2	1.0	1.0
Flame Arrester Outlet Pressure, In WC (FLR-PI-301)	0.8	1.0	0.7	0.8
Flame Arrester Delta P, In WC (FLR-PI-301)	0.2	0.2	0.3	0.2
Blower 301 Frequency, Hz (CP-YIC-2)	16.3	14.2	17	15.8
Blower 301 Current, Amps (CP-YIC-2)	3.7	3.7	3.7	3.7
YIC-1 From Main Menu Screen				
ANALOG DATA MENU				
* **PROCESS OVERVIEW**				
Inlet Vacuum, In WC	3.9	2.2	4.5	3.7
Inlet Temp, DegF	48	48	48	48
Oxygen, %	0	0.2	0	0
Blower Speed, %	18	14	19	17
Blower Vibration, In/Sec	0	0	0	0
CP Temp, DegF	68	73	67	68
FLR Flame Temp, DegF	1216	1242	1189	1298
FLR Flow Press, In WC	0.1	0.1	0.3	0.1
FLR Flow Temp, DegF	57	56	57	56
Flow Rate, SCFM	66	73	66	66
* **BACK**				
* **BLOWER DATA**				
Status, Run/Stop	Run	Run	Run	Run
Run Time, Hr	54786	54955	55122	55290
Speed, %	18	14	19	17
Vibration, In/Sec	0.0	0.0	0.0	0.0
Outlet Temp, DegF	57	56	57	56
* **BACK**				
* **FLARE DATA**				
Flow Rate, SCFM	65	66	67	67
Flame Temp, DegF	1210	1257	1183	1343
BLR Speed, %	18	14	19	17
Flow Pressure, In WC	0.1	0.1	0.2	0.1
Hour Meter	54780	54948	55112	55284

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WEEKLY FLARE STATION INSPECTION FORM

Project # 1728 Project Name: Holtz Krause (Min 30 SCFM, Max 200 SCFM)

Run Clock	On	On	On	On
Pilot	Off	Off	Off	Off
SD Valve	Open	Open	Open	Open
Flame	On	On	On	On
Relight	Off	Off	Off	Off
Pilot	Ready	Ready	Ready	Ready
Vac Ramp	Off	Off	Off	Off
Forced Flow	Off	Off	Off	Off
* **BACK**				
* **FLOW DATA**				
Flow Rate, SCFM	66	73	66	67
Today's Total, MMSCF	0.03	0.03	0.03	0.03
This Month's Total, MMSCF	2.42	0.20	0.91	1.63
Total Flow, MMSCF	276.06	276.78	277.48	278.21
Flow Press, In WC	0.1	0.1	0.4	0.1
Flow Temp, DegF	57	56	57	56
Flow Delta P, In WC	0.38	0.46	0.39	0.39
* **7 DAY FLOW HISTORY**				
Yesterday's Flow, MMSCF	0.03	0.03	0.03	0.03
2 Day's Ago Flow, MMSCF	0.10	0.10	0.10	0.11
3 Day's Ago Flow, MMSCF	0.10	0.10	0.10	0.11
4 Day's Ago Flow, MMSCF	0.10	0.10	0.10	0.10
5 Day's Ago Flow, MMSCF	0.10	0.10	0.10	0.10
6 Day's Ago Flow, MMSCF	0.10	0.10	0.10	0.10
7 Day's Ago Flow, MMSCF	0.10	0.10	0.10	0.10
* **BACK**				
* **RESETTABLE FLOW**				
Resettable Total Flow, MMSCF	276.06	276.78	277.48	278.21
Reset Time	-	-	-	-
Reset Date	-	-	-	-
* **BACK & * BACK**				

	Adequate	Needs Work
Check Propane and Nitrogen Cylinders and change/fill if necessary	X	
Inspect Blower, Flare and Demister Structures for Loose Bolts/Cracks	X	
Drain Demister (if necessary)	X	
Clean Demister Filter Material (if dP indicates it is necessary)	X	
Lubricate Grease Fittings (as necessary)	X	
Test Alarm Lights on Panel by pushing "RUN" and "Alarm/Shutdown" Lamps	X	
Check if any shutdowns/alarms need re-setting (note which ones in comments section)	X	
Drain Flare Stack Condensate (if necessary)		X

Comments: Drained Condensate

Signature: Kevin S. Fabel

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WEEKLY FLARE STATION INSPECTION FORM

Project # 1728 Project Name: Holtz Krause (Min 30 SCFM, Max 200 SCFM)

Tester (Initials)	KSF	KSF	KSF	KSF
Date	3/24/2020	3/31/2020	4/7/2020	4/14/2020
Time	10:00 AM	10:00 AM	10:00 AM	10:00 AM
Sky Conditions	Clear	Clear	Cloudy	Clear
Ambient Temperature, deg F	40	35	50	30
Inlet Temperature, deg F (GHS-TI-301)	46	46	48	46
Demister Inlet Valve Position, % Open (GHS-HV-301)	100	100	100	100
LFG Vacuum, In WC (GHS-PI-301)	3	4	3	4
Demister Filter Delta P (GHS-PDI-301)	0.2	0.3	0.2	0.2
Blower 301 Inlet Valve Position, % Open (GHS-FCV-301)	100	100	100	100
Discharge Pressure, In WC (GHS-PI-302)	0.5	0.5	0.5	1.2
Discharge Temperature, deg F (GHS-TI-302)	54	54	58	52
Propane Pilot Supply Pressure, In WC (GHS-PI-101)	8	8	8	11
Flame Arrester Inlet Pressure, In WC (FLR-PI-301)	1.0	1.2	1.3	1.2
Flame Arrester Outlet Pressure, In WC (FLR-PI-301)	0.8	1.0	1.0	0.9
Flame Arrester Delta P, In WC (FLR-PI-301)	0.2	0.2	0.3	0.3
Blower 301 Frequency, Hz (CP-YIC-2)	14.7	16.2	14.2	16.9
Blower 301 Current, Amps (CP-YIC-2)	3.7	3.7	3.7	3.6
YIC-1 From Main Menu Screen				
ANALOG DATA MENU				
* **PROCESS OVERVIEW**				
Inlet Vacuum, In WC	2.9	3.6	2.3	4.2
Inlet Temp, DegF	48	48	49	49
Oxygen, %	0.4	0.2	0.5	0.4
Blower Speed, %	15	18	14	19
Blower Vibration, In/Sec	0	0	0	0
CP Temp, DegF	75	73	78	71
FLR Flame Temp, DegF	1367	1304	1315	1280
FLR Flow Press, In WC	0.1	0.4	0.6	0.4
FLR Flow Temp, DegF	59	58	62	56
Flow Rate, SCFM	69	73	71	74
* **BACK**				
* **BLOWER DATA**				
Status, Run/Stop	Run	Run	Run	Run
Run Time, Hr	55457	55625	55793	55963
Speed, %	15	18	14	19
Vibration, In/Sec	0.0	0.0	0.0	0.0
Outlet Temp, DegF	59	58	62	56
* **BACK**				
* **FLARE DATA**				
Flow Rate, SCFM	68	73	72	45
Flame Temp, DegF	1385	1278	1273	1261
BLR Speed, %	15	18	14	19
Flow Pressure, In WC	0.2	0.4	0.5	0.4
Hour Meter	55451	55619	55787	55956

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WEEKLY FLARE STATION INSPECTION FORM

Project # 1728 Project Name: Holtz Krause (Min 30 SCFM, Max 200 SCFM)

Run Clock	On	On	On	On
Pilot	Off	Off	Off	Off
SD Valve	Open	Open	Open	Open
Flame	On	On	On	On
Relight	Off	Off	Off	Off
Pilot	Ready	Ready	Ready	Ready
Vac Ramp	Off	Off	Off	Off
Forced Flow	Off	Off	Off	Off
* **BACK**				
* **FLOW DATA**				
Flow Rate, SCFM	68	73	72	74
Today's Total, MMSCF	0.03	0.04	0.04	0.04
This Month's Total, MMSCF	2.34	3.05	0.61	1.31
Total Flow, MMSCF	278.92	279.63	280.34	281.05
Flow Press, In WC	0.1	0.4	0.6	0.4
Flow Temp, DegF	59	58	62	56
Flow Delta P, In WC	0.41	0.47	0.46	0.49
* **7 DAY FLOW HISTORY**				
Yesterday's Flow, MMSCF	0.03	0.03	0.03	0.04
2 Day's Ago Flow, MMSCF	0.10	0.10	0.10	0.10
3 Day's Ago Flow, MMSCF	0.11	0.10	0.10	0.10
4 Day's Ago Flow, MMSCF	0.10	0.10	0.10	0.10
5 Day's Ago Flow, MMSCF	0.10	0.10	0.10	0.10
6 Day's Ago Flow, MMSCF	0.10	0.10	0.10	0.10
7 Day's Ago Flow, MMSCF	0.10	0.10	0.11	0.10
* **BACK**				
* **RESETTABLE FLOW**				
Resettable Total Flow, MMSCF	278.92	279.63	280.34	281.05
Reset Time	-	-	-	-
Reset Date	-	-	-	-
* **BACK & * BACK**				

	Adequate	Needs Work
Check Propane and Nitrogen Cylinders and change/fill if necessary	X	
Inspect Blower, Flare and Demister Structures for Loose Bolts/Cracks	X	
Drain Demister (if necessary)	X	
Clean Demister Filter Material (if dP indicates it is necessary)	X	
Lubricate Grease Fittings (as necessary)	X	
Test Alarm Lights on Panel by pushing "RUN" and "Alarm/Shutdown" Lamps	X	
Check if any shutdowns/alarms need re-setting (note which ones in comments section)	X	
Drain Flare Stack Condensate (if necessary)	X	

Comments:

Signature: Kevin S. Fabel

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WEEKLY FLARE STATION INSPECTION FORM

Project # 1728 Project Name: Holtz Krause (Min 30 SCFM, Max 200 SCFM)

Tester (Initials)	KSF	KSF	KSF	KSF
Date	4/21/2020	4/28/2020	5/5/2020	5/12/2020
Time	10:00 AM	10:00 AM	10:00 AM	10:00 AM
Sky Conditions	Clear	Foggy	Cloudy	Clear
Ambient Temperature, deg F	30	50	45	40
Inlet Temperature, deg F (GHS-TI-301)	46	48	48	48
Demister Inlet Valve Position, % Open (GHS-HV-301)	100	100	100	100
LFG Vacuum, In WC (GHS-PI-301)	4	3	3	3
Demister Filter Delta P (GHS-PDI-301)	0.2	0.3	0.2	0.2
Blower 301 Inlet Valve Position, % Open (GHS-FCV-301)	100	100	100	100
Discharge Pressure, In WC (GHS-PI-302)	0.5	0.5	0.5	1
Discharge Temperature, deg F (GHS-TI-302)	54	59	58	57
Propane Pilot Supply Pressure, In WC (GHS-PI-101)	9	9	10	15
Flame Arrester Inlet Pressure, In WC (FLR-PI-301)	1.1	1.0	1.1	1.0
Flame Arrester Outlet Pressure, In WC (FLR-PI-301)	0.8	0.8	0.8	0.8
Flame Arrester Delta P, In WC (FLR-PI-301)	0.3	0.2	0.3	0.2
Blower 301 Frequency, Hz (CP-YIC-2)	17.5	14.3	14.6	15.9
Blower 301 Current, Amps (CP-YIC-2)	3.7	3.6	3.6	3.6
YIC-1 From Main Menu Screen				
ANALOG DATA MENU				
* **PROCESS OVERVIEW**				
Inlet Vacuum, In WC	5.0	2.7	2.9	3.9
Inlet Temp, DegF	49	50	51	51
Oxygen, %	0.5	0.7	0.6	0.5
Blower Speed, %	20	14	15	17
Blower Vibration, In/Sec	0	0	0	0
CP Temp, DegF	68	78	76	75
FLR Flame Temp, DegF	1234	1243	1325	1274
FLR Flow Press, In WC	0.1	0.2	1.4	1
FLR Flow Temp, DegF	58	62	61	61
Flow Rate, SCFM	66	67	67	68
* **BACK**				
* **BLOWER DATA**				
Status, Run/Stop	Run	Run	Run	Run
Run Time, Hr	56130	56274	54467	56634
Speed, %	20	14	15	17
Vibration, In/Sec	0.0	0.0	0.0	0.0
Outlet Temp, DegF	58	62	61	61
* **BACK**				
* **FLARE DATA**				
Flow Rate, SCFM	66	66	68	68
Flame Temp, DegF	1258	1251	1347	1249
BLR Speed, %	20	14	15	17
Flow Pressure, In WC	0.1	0.4	1.4	1
Hour Meter	56123	56291	56461	56628

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WEEKLY FLARE STATION INSPECTION FORM

Project # 1728 Project Name: Holtz Krause (Min 30 SCFM, Max 200 SCFM)

Run Clock	On	On	On	On
Pilot	Off	Off	Off	Off
SD Valve	Open	Open	Open	Open
Flame	On	On	On	On
Relight	Off	Off	Off	Off
Pilot	Ready	Ready	Ready	Ready
Vac Ramp	Off	Off	Off	Off
Forced Flow	Off	Off	Off	Off
* **BACK**				
* **FLOW DATA**				
Flow Rate, SCFM	65	67	68	69
Today's Total, MMSCF	0.03	0.03	0.04	0.03
This Month's Total, MMSCF	2.03	2.73	0.4	1.11
Total Flow, MMSCF	281.76	282.47	283.18	283.88
Flow Press, In WC	0.1	0.4	1.4	1
Flow Temp, DegF	58	62	60	61
Flow Delta P, In WC	0.38	0.39	0.41	0.41
* **7 DAY FLOW HISTORY**				
Yesterday's Flow, MMSCF	0.03	0.03	0.04	0.04
2 Day's Ago Flow, MMSCF	0.10	0.10	0.10	0.10
3 Day's Ago Flow, MMSCF	0.10	0.10	0.10	0.11
4 Day's Ago Flow, MMSCF	0.10	0.10	0.10	0.10
5 Day's Ago Flow, MMSCF	0.10	0.10	0.10	0.10
6 Day's Ago Flow, MMSCF	0.10	0.10	0.10	0.10
7 Day's Ago Flow, MMSCF	0.10	0.10	0.10	0.10
* **BACK**				
* **RESETTABLE FLOW**				
Resettable Total Flow, MMSCF	281.76	282.47	283.18	283.88
Reset Time	-	-	-	-
Reset Date	-	-	-	-
* **BACK & * BACK**				

	Adequate	Needs Work
Check Propane and Nitrogen Cylinders and change/fill if necessary	X	
Inspect Blower, Flare and Demister Structures for Loose Bolts/Cracks	X	
Drain Demister (if necessary)	X	
Clean Demister Filter Material (if dP indicates it is necessary)	X	
Lubricate Grease Fittings (as necessary)	X	
Test Alarm Lights on Panel by pushing "RUN" and "Alarm/Shutdown" Lamps	X	
Check if any shutdowns/alarms need re-setting (note which ones in comments section)	X	
Drain Flare Stack Condensate (if necessary)	X	

Comments: Turned off heat trace for year…Turned on A/C.

Signature: Kevin S. Fabel

* ***PUSH BUTTON***

WEEKLY FLARE STATION INSPECTION FORM

Project # 1728 Project Name: Holtz Krause (Min 30 SCFM, Max 200 SCFM)

Tester (Initials)	KSF	KSF	KSF	KSF
Date	5/19/2020	5/26/2020	6/2/2020	6/9/2020
Time	10:00 AM	10:00 AM	10:00 AM	10:00 AM
Sky Conditions	Cloudy	Clear	Clear	Clear
Ambient Temperature, deg F	50	75	85	75
Inlet Temperature, deg F (GHS-TI-301)	48	52	52	54
Demister Inlet Valve Position, % Open (GHS-HV-301)	100	100	100	100
LFG Vacuum, In WC (GHS-PI-301)	3	3	3	3
Demister Filter Delta P (GHS-PDI-301)	0.3	0.3	0.3	0.3
Blower 301 Inlet Valve Position, % Open (GHS-FCV-301)	100	100	100	100
Discharge Pressure, In WC (GHS-PI-302)	1.5	1.5	1.5	1.5
Discharge Temperature, deg F (GHS-TI-302)	54	63	62	64
Propane Pilot Supply Pressure, In WC (GHS-PI-101)	9	12	15	14
Flame Arrester Inlet Pressure, In WC (FLR-PI-301)	1.0	1.3	1.0	1.2
Flame Arrester Outlet Pressure, In WC (FLR-PI-301)	0.8	1.0	0.8	0.9
Flame Arrester Delta P, In WC (FLR-PI-301)	0.2	0.3	0.2	0.3
Blower 301 Frequency, Hz (CP-YIC-2)	15.6	15.7	13.8	14
Blower 301 Current, Amps (CP-YIC-2)	3.8	3.7	3.7	3.8
YIC-1 From Main Menu Screen				
ANALOG DATA MENU				
* **PROCESS OVERVIEW**				
Inlet Vacuum, In WC	3.5	3.4	2.5	2.5
Inlet Temp, DegF	51	53	54	55
Oxygen, %	0	0	0.1	0
Blower Speed, %	17	17	13	14
Blower Vibration, In/Sec	0	0	0	0
CP Temp, DegF	74	85	87	83
FLR Flame Temp, DegF	1397	1194	1203	1209
FLR Flow Press, In WC	1.4	1.5	1.3	1.4
FLR Flow Temp, DegF	58	64	63	63
Flow Rate, SCFM	69	71	66	68
* **BACK**				
* **BLOWER DATA**				
Status, Run/Stop	Run	Run	Run	Run
Run Time, Hr	56701	56964	57133	57299
Speed, %	17	17	13	14
Vibration, In/Sec	0.0	0.0	0.0	0.0
Outlet Temp, DegF	58	64	63	63
* **BACK**				
* **FLARE DATA**				
Flow Rate, SCFM	69	71	65	68
Flame Temp, DegF	1412	1186	1209	1218
BLR Speed, %	17	17	13	14
Flow Pressure, In WC	1.4	1.5	1.3	1.4
Hour Meter	56789	56958	57126	57293

* ***PUSH BUTTON***

WEEKLY FLARE STATION INSPECTION FORM

Project # 1728 Project Name: Holtz Krause (Min 30 SCFM, Max 200 SCFM)

Run Clock	On	On	On	On
Pilot	Off	Off	Off	Off
SD Valve	Open	Open	Open	Open
Flame	On	On	On	On
Relight	Off	Off	Off	Off
Pilot	Ready	Ready	Ready	Ready
Vac Ramp	Off	Off	Off	Off
Forced Flow	Off	Off	Off	Off
* **BACK**				
* **FLOW DATA**				
Flow Rate, SCFM	69	71	65	68
Today's Total, MMSCF	0.03	0.03	0.03	0.03
This Month's Total, MMSCF	1.79	2.50	0.1	0.81
Total Flow, MMSCF	284.57	285.28	285.99	286.69
Flow Press, In WC	1.4	1.5	1.3	1.4
Flow Temp, DegF	58	64	63	63
Flow Delta P, In WC	0.42	0.43	0.38	0.41
* **7 DAY FLOW HISTORY**				
Yesterday's Flow, MMSCF	0.03	0.03	0.03	0.03
2 Day's Ago Flow, MMSCF	0.11	0.10	0.10	0.10
3 Day's Ago Flow, MMSCF	0.10	0.10	0.10	0.10
4 Day's Ago Flow, MMSCF	0.10	0.10	0.10	0.10
5 Day's Ago Flow, MMSCF	0.10	0.10	0.10	0.10
6 Day's Ago Flow, MMSCF	0.10	0.10	0.10	0.10
7 Day's Ago Flow, MMSCF	0.08	0.10	0.10	0.10
* **BACK**				
* **RESETTABLE FLOW**				
Resettable Total Flow, MMSCF	284.57	285.28	285.99	286.69
Reset Time	-	-	-	-
Reset Date	-	-	-	-
* **BACK & * BACK**				

	Adequate	Needs Work
Check Propane and Nitrogen Cylinders and change/fill if necessary	X	
Inspect Blower, Flare and Demister Structures for Loose Bolts/Cracks	X	
Drain Demister (if necessary)	X	
Clean Demister Filter Material (if dP indicates it is necessary)	X	
Lubricate Grease Fittings (as necessary)	X	
Test Alarm Lights on Panel by pushing "RUN" and "Alarm/Shutdown" Lamps	X	
Check if any shutdowns/alarms need re-setting (note which ones in comments section)	X	
Drain Flare Stack Condensate (if necessary)	X	

Comments:

Signature: Kevin S. Fabel

* ***PUSH BUTTON***

WEEKLY FLARE STATION INSPECTION FORM

Project # 1728 Project Name: Holtz Krause (Min 30 SCFM, Max 200 SCFM)

Tester (Initials)	KSF	KSF	KSF	KSF
Date	6/16/2020	6/23/2020	6/30/2020	7/7/2020
Time	10:00 AM	10:00 AM	10:00 AM	10:00 AM
Sky Conditions	Clear	Clear	Clear	Clear
Ambient Temperature, deg F	70	70	75	85
Inlet Temperature, deg F (GHS-TI-301)	54	56	62	59
Demister Inlet Valve Position, % Open (GHS-HV-301)	100	100	100	100
LFG Vacuum, In WC (GHS-PI-301)	4	3	3	3
Demister Filter Delta P (GHS-PDI-301)	0.3	0.3	0.3	0.3
Blower 301 Inlet Valve Position, % Open (GHS-FCV-301)	100	100	100	100
Discharge Pressure, In WC (GHS-PI-302)	1.5	1.5	1.5	1.8
Discharge Temperature, deg F (GHS-TI-302)	60	60	72	67
Propane Pilot Supply Pressure, In WC (GHS-PI-101)	12	10	9	12
Flame Arrester Inlet Pressure, In WC (FLR-PI-301)	1.0	1.1	1.3	1.2
Flame Arrester Outlet Pressure, In WC (FLR-PI-301)	0.8	0.8	1.0	0.9
Flame Arrester Delta P, In WC (FLR-PI-301)	0.2	0.3	0.3	0.3
Blower 301 Frequency, Hz (CP-YIC-2)	14.8	14.9	14.7	15.2
Blower 301 Current, Amps (CP-YIC-2)	3.7	3.7	3.8	3.7
YIC-1 From Main Menu Screen				
ANALOG DATA MENU				
* **PROCESS OVERVIEW**				
Inlet Vacuum, In WC	3.1	2.9	2.7	3.2
Inlet Temp, DegF	56	57	64	59
Oxygen, %	0	0	0.3	0.1
Blower Speed, %	15	15	15	16
Blower Vibration, In/Sec	0	0	0	0
CP Temp, DegF	79	79	89	86
FLR Flame Temp, DegF	1147	1312	1394	1270
FLR Flow Press, In WC	1.4	1.5	1.5	1.4
FLR Flow Temp, DegF	62	63	75	68
Flow Rate, SCFM	68	70	72	68
* **BACK**				
* **BLOWER DATA**				
Status, Run/Stop	Run	Run	Run	Run
Run Time, Hr	57461	57629	57774	57941
Speed, %	15	15	15	16
Vibration, In/Sec	0.00	0.00	0.00	0.00
Outlet Temp, DegF	62	63	75	68
* **BACK**				
* **FLARE DATA**				
Flow Rate, SCFM	68	71	71	69
Flame Temp, DegF	1158	1322	1411	1249
BLR Speed, %	15	15	15	16
Flow Pressure, In WC	1.4	1.5	1.5	1.4
Hour Meter	57454	57622	57768	57935

* ***PUSH BUTTON***

WEEKLY FLARE STATION INSPECTION FORM

Project # 1728 Project Name: Holtz Krause (Min 30 SCFM, Max 200 SCFM)

Run Clock	On	On	On	On
Pilot	Off	Off	Off	Off
SD Valve	Open	Open	Open	Open
Flame	On	On	On	On
Relight	Off	Off	Off	Off
Pilot	Ready	Ready	Ready	Ready
Vac Ramp	Off	Off	Off	Off
Forced Flow	Off	Off	Off	Off
* **BACK**				
* **FLOW DATA**				
Flow Rate, SCFM	68	65	71	69
Today's Total, MMSCF	0.03	0.03	0	0.03
This Month's Total, MMSCF	1.49	2.2	2.84	0.6
Total Flow, MMSCF	287.37	288.08	288.369	289.4
Flow Press, In WC	1.4	1.5	1.5	1.4
Flow Temp, DegF	62	63	75	68
Flow Delta P, In WC	0.40	0.43	0.46	0.42
* **7 DAY FLOW HISTORY**				
Yesterday's Flow, MMSCF	0.03	0.10	0.00	0.03
2 Day's Ago Flow, MMSCF	0.10	0.11	0.10	0.10
3 Day's Ago Flow, MMSCF	0.10	0.10	0.10	0.10
4 Day's Ago Flow, MMSCF	0.10	0.10	0.10	0.10
5 Day's Ago Flow, MMSCF	0.10	0.10	0.10	0.10
6 Day's Ago Flow, MMSCF	0.07	0.10	0.10	0.10
7 Day's Ago Flow, MMSCF	0.10	0.10	0.10	0.07
* **BACK**				
* **RESETTABLE FLOW**				
Resettable Total Flow, MMSCF	287.37	288.08	288.69	289.4
Reset Time	-	-	-	-
Reset Date	-	-	-	-
* **BACK & * BACK**				

	Adequate	Needs Work
Check Propane and Nitrogen Cylinders and change/fill if necessary	X	
Inspect Blower, Flare and Demister Structures for Loose Bolts/Cracks	X	
Drain Demister (if necessary)	X	
Clean Demister Filter Material (if dP indicates it is necessary)	X	
Lubricate Grease Fittings (as necessary)	X	
Test Alarm Lights on Panel by pushing "RUN" and "Alarm/Shutdown" Lamps	X	
Check if any shutdowns/alarms need re-setting (note which ones in comments section)	X	
Drain Flare Stack Condensate (if necessary)	X	

Comments:

Signature: Kevin S. Fabel

* ***PUSH BUTTON***

WEEKLY FLARE STATION INSPECTION FORM

Project # 1728 Project Name: Holtz Krause (Min 30 SCFM, Max 200 SCFM)

Tester (Initials)	KSF	KSF	KSF	KSF
Date	7/14/2020	7/21/2020	7/28/20	8/4/2020
Time	10:00 AM	10:00 AM	10:00 AM	10:00 AM
Sky Conditions	Cloudy	Cloudy	Clear	Clear
Ambient Temperature, deg F	70	60	65	60
Inlet Temperature, deg F (GHS-TI-301)	59	60	61	60
Demister Inlet Valve Position, % Open (GHS-HV-301)	100	100	100	100
LFG Vacuum, In WC (GHS-PI-301)	3	3	3	4
Demister Filter Delta P (GHS-PDI-301)	0.3	0.3	0.3	0.2
Blower 301 Inlet Valve Position, % Open (GHS-FCV-301)	100.0	100	100	100
Discharge Pressure, In WC (GHS-PI-302)	1	1.2	1.4	1.5
Discharge Temperature, deg F (GHS-TI-302)	64	64	66	62
Propane Pilot Supply Pressure, In WC (GHS-PI-101)	8	8	12	12
Flame Arrester Inlet Pressure, In WC (FLR-PI-301)	1	1.2	1.0	1.0
Flame Arrester Outlet Pressure, In WC (FLR-PI-301)	0.7	0.9	0.8	0.7
Flame Arrester Delta P, In WC (FLR-PI-301)	0.3	0.3	0.2	0.3
Blower 301 Frequency, Hz (CP-YIC-2)	15.3	16	15.5	15.3
Blower 301 Current, Amps (CP-YIC-2)	3.7	3.7	3.8	3.7
YIC-1 From Main Menu Screen				
ANALOG DATA MENU				
* **PROCESS OVERVIEW**				
Inlet Vacuum, In WC	3.2	3.6	3.4	3.4
Inlet Temp, DegF	60	62	62	62
Oxygen, %	0	0	0	0
Blower Speed, %	16	17	16	16
Blower Vibration, In/Sec	0	0	0	0
CP Temp, DegF	80	75	83	75
FLR Flame Temp, DegF	1185	1252	1238	1331
FLR Flow Press, In WC	1.5	1.5	1.4	1.3
FLR Flow Temp, DegF	68	68	69	64
Flow Rate, SCFM	70	70	68	66
* **BACK**				
* **BLOWER DATA**				
Status, Run/Stop	Run	Run	Run	Run
Run Time, Hr	58109	58274	58441	58596
Speed, %	16	17	16	16
Vibration, In/Sec	0.0	0.0	0.0	0.0
Outlet Temp, DegF	68	68	69	64
* **BACK**				
* **FLARE DATA**				
Flow Rate, SCFM	70	71	67	67
Flame Temp, DegF	1191	1287	1279	1336
BLR Speed, %	16	17	16	16
Flow Pressure, In WC	1.5	1.5	1.4	1.3
Hour Meter	58103	58267	58435	58589

* ***PUSH BUTTON***

WEEKLY FLARE STATION INSPECTION FORM

Project # 1728 Project Name: Holtz Krause (Min 30 SCFM, Max 200 SCFM)

Run Clock	On	On	On	On
Pilot	Off	Off	Off	Off
SD Valve	Open	Open	Open	Open
Flame	On	On	On	On
Relight	Off	Off	Off	Off
Pilot	Ready	Ready	Ready	Ready
Vac Ramp	Off	Off	Off	Off
Forced Flow	Off	Off	Off	Off
* **BACK**				
* **FLOW DATA**				
Flow Rate, SCFM	70	71	68	67
Today's Total, MMSCF	0.03	0.04	0.03	0.03
This Month's Total, MMSCF	1.31	1.99	2.7	0.26
Total Flow, MMSCF	290.11	290.79	291.5	292.15
Flow Press, In WC	1.5	1.5	1.4	1.3
Flow Temp, DegF	68	68	69	64
Flow Delta P, In WC	0.43	0.44	0.41	0.39
* **7 DAY FLOW HISTORY**				
Yesterday's Flow, MMSCF	0.03	0.04	0.03	0.03
2 Day's Ago Flow, MMSCF	0.10	0.10	0.10	0.10
3 Day's Ago Flow, MMSCF	0.10	0.08	0.10	0.10
4 Day's Ago Flow, MMSCF	0.10	0.10	0.10	0.10
5 Day's Ago Flow, MMSCF	0.10	0.10	0.10	0.10
6 Day's Ago Flow, MMSCF	0.10	0.10	0.10	0.09
7 Day's Ago Flow, MMSCF	0.10	0.10	0.10	0.10
* **BACK**				
* **RESETTABLE FLOW**				
Resettable Total Flow, MMSCF	290.11	290.79	291.5	292.15
Reset Time	-	-	-	-
Reset Date	-	-	-	-
* **BACK & * BACK**				

	Adequate	Needs Work
Check Propane and Nitrogen Cylinders and change/fill if necessary	X	
Inspect Blower, Flare and Demister Structures for Loose Bolts/Cracks	X	
Drain Demister (if necessary)	X	
Clean Demister Filter Material (if dP indicates it is necessary)	X	
Lubricate Grease Fittings (as necessary)	X	
Test Alarm Lights on Panel by pushing "RUN" and "Alarm/Shutdown" Lamps	X	
Check if any shutdowns/alarms need re-setting (note which ones in comments section)	X	
Drain Flare Stack Condensate (if necessary)	X	

Comments: Drained Condensate

Signature: Kevin S. Fabel

* ***PUSH BUTTON***

WEEKLY FLARE STATION INSPECTION FORM

Project # 1728 Project Name: Holtz Krause (Min 30 SCFM, Max 200 SCFM)

Tester (Initials)	KSF	KSF	KSF	KSF
Date	8/11/2020	8/18/2020	8/25/2020	9/1/2020
Time	10:00 AM	10:00 AM	10:00 AM	10:00 AM
Sky Conditions	Clear	Clear	Clear	Clear
Ambient Temperature, deg F	70	55	70	60
Inlet Temperature, deg F (GHS-TI-301)	61	61	62	61
Demister Inlet Valve Position, % Open (GHS-HV-301)	100	100	100	100
LFG Vacuum, In WC (GHS-PI-301)	4	3	4	3.5
Demister Filter Delta P (GHS-PDI-301)	0.3	0.3	0.3	0.3
Blower 301 Inlet Valve Position, % Open (GHS-FCV-301)	100	100	100	100
Discharge Pressure, In WC (GHS-PI-302)	1	2	1.2	1.3
Discharge Temperature, deg F (GHS-TI-302)	66	64	68	62
Propane Pilot Supply Pressure, In WC (GHS-PI-101)	15	12	10	12
Flame Arrester Inlet Pressure, In WC (FLR-PI-301)	1.0	1.0	1.0	1.2
Flame Arrester Outlet Pressure, In WC (FLR-PI-301)	0.7	0.8	0.7	0.9
Flame Arrester Delta P, In WC (FLR-PI-301)	0.3	0.2	0.3	0.3
Blower 301 Frequency, Hz (CP-YIC-2)	16.1	16	16	16.8
Blower 301 Current, Amps (CP-YIC-2)	3.7	3.8	3.7	3.7
YIC-1 From Main Menu Screen				
ANALOG DATA MENU				
* **PROCESS OVERVIEW**				
Inlet Vacuum, In WC	4.0	3.8	3.8	4.1
Inlet Temp, DegF	63	62	63	62
Oxygen, %	0	0	0	0
Blower Speed, %	18	17	17	19
Blower Vibration, In/Sec	0	0	0	0
CP Temp, DegF	82	77	83	78
FLR Flame Temp, DegF	1242	1319	1200	1179
FLR Flow Press, In WC	1.3	1.4	1.4	1.5
FLR Flow Temp, DegF	69	66	71	66
Flow Rate, SCFM	68	68	67	72
* **BACK**				
* **BLOWER DATA**				
Status, Run/Stop	Run	Run	Run	Run
Run Time, Hr	58762	58924	59087	59255
Speed, %	18	17	17	19
Vibration, In/Sec	0.0	0.0	0.0	0.0
Outlet Temp, DegF	69	66	71	67
* **BACK**				
* **FLARE DATA**				
Flow Rate, SCFM	68	67	66	67
Flame Temp, DegF	1203	1335	1200	1183
BLR Speed, %	18	17	17	19
Flow Pressure, In WC	1.3	1.4	1.3	1.5
Hour Meter	58757	58917	59081	59249

* ***PUSH BUTTON***

WEEKLY FLARE STATION INSPECTION FORM

Project # 1728 Project Name: Holtz Krause (Min 30 SCFM, Max 200 SCFM)

Run Clock	On	On	On	On
Pilot	Off	Off	Off	Off
SD Valve	Open	Open	Open	Open
Flame	On	On	On	On
Relight	Off	Off	Off	Off
Pilot	Ready	Ready	Ready	Ready
Vac Ramp	Off	Off	Off	Off
Forced Flow	Off	Off	Off	Off
* **BACK**				
* **FLOW DATA**				
Flow Rate, SCFM	67	67	66	73
Today's Total, MMSCF	0.03	0.03	0.03	0.03
This Month's Total, MMSCF	0.95	1.63	2.3	0
Total Flow, MMSCF	292.85	293.52	294.2	294.95
Flow Press, In WC	1.3	1.4	1.3	1.5
Flow Temp, DegF	69	66	71	67
Flow Delta P, In WC	0.40	0.40	0.39	0.47
* **7 DAY FLOW HISTORY**				
Yesterday's Flow, MMSCF	0.03	0.03	0.03	0.03
2 Day's Ago Flow, MMSCF	0.10	0.08	0.08	0.10
3 Day's Ago Flow, MMSCF	0.10	0.10	0.10	0.10
4 Day's Ago Flow, MMSCF	0.10	0.10	0.10	0.10
5 Day's Ago Flow, MMSCF	0.10	0.10	0.10	0.10
6 Day's Ago Flow, MMSCF	0.10	0.10	0.10	0.10
7 Day's Ago Flow, MMSCF	0.10	0.09	0.10	0.10
* **BACK**				
* **RESETTABLE FLOW**				
Resettable Total Flow, MMSCF	292.85	293.52	294.2	294.95
Reset Time	-	-	-	-
Reset Date	-	-	-	-
* **BACK & * BACK**				

	Adequate	Needs Work
Check Propane and Nitrogen Cylinders and change/fill if necessary	X	
Inspect Blower, Flare and Demister Structures for Loose Bolts/Cracks	X	
Drain Demister (if necessary)	X	
Clean Demister Filter Material (if dP indicates it is necessary)	X	
Lubricate Grease Fittings (as necessary)	X	
Test Alarm Lights on Panel by pushing "RUN" and "Alarm/Shutdown" Lamps	X	
Check if any shutdowns/alarms need re-setting (note which ones in comments section)	X	
Drain Flare Stack Condensate (if necessary)	X	

Comments:

Signature: Kevin S. Fabel

* ***PUSH BUTTON***

WEEKLY FLARE STATION INSPECTION FORM

Project # 1728 Project Name: Holtz Krause (Min 30 SCFM, Max 200 SCFM)

Tester (Initials)	KSF	KSF	KSF	KSF
Date	9/8/2020	9/15/2020	9/22/2020	9/29/2020
Time	10:00 AM	10:00 AM	10:00 AM	10:00 AM
Sky Conditions	Cloudy	Clear	Clear	Cloudy
Ambient Temperature, deg F	50	65	65	50
Inlet Temperature, deg F (GHS-TI-301)	60	60	60	59
Demister Inlet Valve Position, % Open (GHS-HV-301)	100	100	100	100
LFG Vacuum, In WC (GHS-PI-301)	4	3	3	4
Demister Filter Delta P (GHS-PDI-301)	0.3	0.3	0.3	0.3
Blower 301 Inlet Valve Position, % Open (GHS-FCV-301)	100	100	100	100
Discharge Pressure, In WC (GHS-PI-302)	1.2	1.2	1.2	1.2
Discharge Temperature, deg F (GHS-TI-302)	60	63	61	58
Propane Pilot Supply Pressure, In WC (GHS-PI-101)	8	8	10	8
Flame Arrester Inlet Pressure, In WC (FLR-PI-301)	1.0	1.3	1.0	1.2
Flame Arrester Outlet Pressure, In WC (FLR-PI-301)	0.8	1.0	0.8	0.9
Flame Arrester Delta P, In WC (FLR-PI-301)	0.2	0.3	0.2	0.3
Blower 301 Frequency, Hz (CP-YIC-2)	17.5	15.2	15	16.3
Blower 301 Current, Amps (CP-YIC-2)	3.8	3.7	3.8	3.7
YIC-1 From Main Menu Screen				
ANALOG DATA MENU				
* **PROCESS OVERVIEW**				
Inlet Vacuum, In WC	4.6	2.9	3.1	3.7
Inlet Temp, DegF	62	62	61	61
Oxygen, %	0	0	0	0
Blower Speed, %	20	16	15	18
Blower Vibration, In/Sec	0	0	0	0
CP Temp, DegF	74	78	78	75
FLR Flame Temp, DegF	1353	1391	1268	1342
FLR Flow Press, In WC	1.5	1.6	1.3	1.5
FLR Flow Temp, DegF	66	67	65	64
Flow Rate, SCFM	71	73	67	72
* **BACK**				
* **BLOWER DATA**				
Status, Run/Stop	Run	Run	Run	Run
Run Time, Hr	59422	59591	59759	59927
Speed, %	20	16	15	18
Vibration, In/Sec	0.0	0.0	0.0	0.0
Outlet Temp, DegF	66	67	65	64
* **BACK**				
* **FLARE DATA**				
Flow Rate, SCFM	71	73	67	71
Flame Temp, DegF	1351	1434	1241	1358
BLR Speed, %	20	16	15	18
Flow Pressure, In WC	1.5	1.6	1.3	1.5
Hour Meter	59416	59584	59753	59920

* ***PUSH BUTTON***

WEEKLY FLARE STATION INSPECTION FORM

Project # 1728 Project Name: Holtz Krause (Min 30 SCFM, Max 200 SCFM)

Run Clock	On	On	On	On
Pilot	Off	Off	Off	Off
SD Valve	Open	Open	Open	Open
Flame	On	On	On	On
Relight	Off	Off	Off	Off
Pilot	Ready	Ready	Ready	Ready
Vac Ramp	Off	Off	Off	Off
Forced Flow	Off	Off	Off	Off
* **BACK**				
* **FLOW DATA**				
Flow Rate, SCFM	73	73	67	72
Today's Total, MMSCF	0.03	0.03	0.03	0.03
This Month's Total, MMSCF	0.71	1.43	2.14	2.85
Total Flow, MMSCF	295.62	296.35	297.06	297.76
Flow Press, In WC	1.5	1.6	1.3	1.5
Flow Temp, DegF	66	67	65	64
Flow Delta P, In WC	0.45	0.47	0.39	0.45
* **7 DAY FLOW HISTORY**				
Yesterday's Flow, MMSCF	0.03	0.04	0.03	0.03
2 Day's Ago Flow, MMSCF	0.10	0.10	0.10	0.10
3 Day's Ago Flow, MMSCF	0.11	0.10	0.10	0.10
4 Day's Ago Flow, MMSCF	0.10	0.10	0.10	0.10
5 Day's Ago Flow, MMSCF	0.10	0.10	0.10	0.10
6 Day's Ago Flow, MMSCF	0.10	0.10	0.10	0.10
7 Day's Ago Flow, MMSCF	0.10	0.10	0.10	0.10
* **BACK**				
* **RESETTABLE FLOW**				
Resettable Total Flow, MMSCF	295.62	296.35	297.06	297.76
Reset Time	-	-	-	-
Reset Date	-	-	-	-
* **BACK & * BACK**				

	Adequate	Needs Work
Check Propane and Nitrogen Cylinders and change/fill if necessary	X	
Inspect Blower, Flare and Demister Structures for Loose Bolts/Cracks	X	
Drain Demister (if necessary)	X	
Clean Demister Filter Material (if dP indicates it is necessary)	X	
Lubricate Grease Fittings (as necessary)	X	
Test Alarm Lights on Panel by pushing "RUN" and "Alarm/Shutdown" Lamps	X	
Check if any shutdowns/alarms need re-setting (note which ones in comments section)	X	
Drain Flare Stack Condensate (if necessary)	X	

Comments: Drained Condensate

Signature: Kevin S. Fabel

* ***PUSH BUTTON***

WEEKLY FLARE STATION INSPECTION FORM

Project # 1728 Project Name: Holtz Krause (Min 30 SCFM, Max 200 SCFM)

Tester (Initials)	KSF	KSF	KSF	KSF
Date	10/7/2020	10/14/2020	10/20/2020	10/27/2020
Time	10:00 AM	10:00 AM	10:00 AM	10:00 AM
Sky Conditions	Clear	Cloudy	Clear	Clear
Ambient Temperature, deg F	60	45	25	25
Inlet Temperature, deg F (GHS-TI-301)	58	56	55	54
Demister Inlet Valve Position, % Open (GHS-HV-301)	100	100	100	100
LFG Vacuum, In WC (GHS-PI-301)	4	3	3	3
Demister Filter Delta P (GHS-PDI-301)	0.3	0.3	0.2	0.3
Blower 301 Inlet Valve Position, % Open (GHS-FCV-301)	100.0	100	100	100
Discharge Pressure, In WC (GHS-PI-302)	0.7	0.8	0.7	0.7
Discharge Temperature, deg F (GHS-TI-302)	60	57	58	59
Propane Pilot Supply Pressure, In WC (GHS-PI-101)	10	8	9	10
Flame Arrester Inlet Pressure, In WC (FLR-PI-301)	1	1.3	1.0	1.0
Flame Arrester Outlet Pressure, In WC (FLR-PI-301)	0.7	1.0	0.7	0.7
Flame Arrester Delta P, In WC (FLR-PI-301)	0.3	0.3	0.3	0.3
Blower 301 Frequency, Hz (CP-YIC-2)	17.3	14.7	16.7	16.6
Blower 301 Current, Amps (CP-YIC-2)	3.7	3.7	3.7	3.9
YIC-1 From Main Menu Screen				
ANALOG DATA MENU				
* **PROCESS OVERVIEW**				
Inlet Vacuum, In WC	4.4	2.9	4.1	3.8
Inlet Temp, DegF	61	60	59	57
Oxygen, %	0	0	0.1	0
Blower Speed, %	19	16	19	18
Blower Vibration, In/Sec	0	0	0	0
CP Temp, DegF	76	72	75	74
FLR Flame Temp, DegF	1315	1282	1329	1424
FLR Flow Press, In WC	0.2	1.2	0.1	0.1
FLR Flow Temp, DegF	65	62	64	65
Flow Rate, SCFM	64	75	69	72
* **BACK**			.	
* **BLOWER DATA**				
Status, Run/Stop	Run	Run	Run	Run
Run Time, Hr	60119	60287	60428	60545
Speed, %	19	16	19	18
Vibration, In/Sec	0	0	0	0
Outlet Temp, DegF	65	62	64	65
* **BACK**				
* **FLARE DATA**				
Flow Rate, SCFM	65	75	69	72
Flame Temp, DegF	1319	1280	1310	1403
BLR Speed, %	19	16	19	18
Flow Pressure, In WC	0.2	1.1	0.5	0.1
Hour Meter	60112	60281	60422	60539

* ***PUSH BUTTON***

WEEKLY FLARE STATION INSPECTION FORM

Project # 1728 Project Name: Holtz Krause (Min 30 SCFM, Max 200 SCFM)

Run Clock	On	On	On	On
Pilot	Off	Off	Off	Off
SD Valve	Open	Open	Open	Open
Flame	On	On	On	On
Relight	Off	Off	Off	Off
Pilot	Ready	Ready	Ready	Ready
Vac Ramp	Off	Off	Off	Off
Forced Flow	Off	Off	Off	Off
* **BACK**				
* **FLOW DATA**				
Flow Rate, SCFM	65	65	69	72
Today's Total, MMSCF	0.03	0.03	0.03	0.03
This Month's Total, MMSCF	0.62	1.33	1.93	2.42
Total Flow, MMSCF	298.58	299.31	299.9	300.4
Flow Press, In WC	0.5	1	0.1	0.1
Flow Temp, DegF	65	62	64	65
Flow Delta P, In WC	0.38	0.49	0.42	0.47
* **7 DAY FLOW HISTORY**				
Yesterday's Flow, MMSCF	0.03	0.10	0.03	0.03
2 Day's Ago Flow, MMSCF	0.10	0.11	0.10	0.10
3 Day's Ago Flow, MMSCF	0.10	0.10	0.10	0.10
4 Day's Ago Flow, MMSCF	0.10	0.10	0.09	0.06
5 Day's Ago Flow, MMSCF	0.11	0.10	0.10	0.00
6 Day's Ago Flow, MMSCF	0.10	0.10	0.10	0.02
7 Day's Ago Flow, MMSCF	0.10	0.10	0.10	0.10
* **BACK**				
* **RESETTABLE FLOW**				
Resettable Total Flow, MMSCF	298.58	299.31	299.9	300.4
Reset Time	-	-	-	-
Reset Date	-	-	-	-
* **BACK & * BACK**				

	Adequate	Needs Work
Check Propane and Nitrogen Cylinders and change/fill if necessary	X	
Inspect Blower, Flare and Demister Structures for Loose Bolts/Cracks	X	
Drain Demister (if necessary)	X	
Clean Demister Filter Material (if dP indicates it is necessary)	X	
Lubricate Grease Fittings (as necessary)	X	
Test Alarm Lights on Panel by pushing "RUN" and "Alarm/Shutdown" Lamps	X	
Check if any shutdowns/alarms need re-setting (note which ones in comments section)	X	
Drain Flare Stack Condensate (if necessary)	X	

Comments: Drained Condensate

Signature: Kevin S. Fabel

* ***PUSH BUTTON***

WEEKLY FLARE STATION INSPECTION FORM

Project # 1728 Project Name: Holtz Krause (Min 30 SCFM, Max 200 SCFM)

Tester (Initials)	KSF	KSF	KSF	KSF
Date	11/3/2020	11/10/2020	11/17/2020	11/24/2020
Time	10:00 AM	10:00 AM	10:00 AM	10:00 AM
Sky Conditions	Clear	Cloudy	Clear	Cloudy
Ambient Temperature, deg F	40	40	20	30
Inlet Temperature, deg F (GHS-TI-301)	54	54	52	52
Demister Inlet Valve Position, % Open (GHS-HV-301)	100	100	100	100
LFG Vacuum, In WC (GHS-PI-301)	3	3	5	3
Demister Filter Delta P (GHS-PDI-301)	0.3	0.3	0.2	0.2
Blower 301 Inlet Valve Position, % Open (GHS-FCV-301)	100	100	100	100
Discharge Pressure, In WC (GHS-PI-302)	0.5	1	0.5	0.8
Discharge Temperature, deg F (GHS-TI-302)	62	61	58	58
Propane Pilot Supply Pressure, In WC (GHS-PI-101)	15	9	10	9
Flame Arrester Inlet Pressure, In WC (FLR-PI-301)	1.0	1.0	1.0	1.2
Flame Arrester Outlet Pressure, In WC (FLR-PI-301)	0.7	0.7	0.7	0.9
Flame Arrester Delta P, In WC (FLR-PI-301)	0.3	0.3	0.3	0.3
Blower 301 Frequency, Hz (CP-YIC-2)	16	16.4	19	16.4
Blower 301 Current, Amps (CP-YIC-2)	3.8	3.8	3.9	3.8
YIC-1 From Main Menu Screen				
ANALOG DATA MENU				
* **PROCESS OVERVIEW**				
Inlet Vacuum, In WC	3.6	3.7	5.8	3.6
Inlet Temp, DegF	57	57	56	55
Oxygen, %	0	0.2	0	0
Blower Speed, %	17	18	23	18
Blower Vibration, In/Sec	0	0	0	0
CP Temp, DegF	75	75	67	72
FLR Flame Temp, DegF	1356	1342	1358	1359
FLR Flow Press, In WC	0.1	1.4	0.1	0.8
FLR Flow Temp, DegF	66	67	64	64
Flow Rate, SCFM	68	70	70	74
* **BACK**				
* **BLOWER DATA**				
Status, Run/Stop	Run	Run	Run	Run
Run Time, Hr	60703	60872	61015	61182
Speed, %	17	18	23	18
Vibration, In/Sec	0	0	0	0
Outlet Temp, DegF	66	67	64	64
* **BACK**				
* **FLARE DATA**				
Flow Rate, SCFM	68	70	70	74
Flame Temp, DegF	1307	1349	1377	1351
BLR Speed, %	17	18	23	18
Flow Pressure, In WC	0.1	1.4	0.1	0.8
Hour Meter	60692	60865	61088	61176

* ***PUSH BUTTON***

WEEKLY FLARE STATION INSPECTION FORM

Project # 1728 Project Name: Holtz Krause (Min 30 SCFM, Max 200 SCFM)

Run Clock	On	On	On	On
Pilot	Off	Off	Off	Off
SD Valve	Open	Open	Open	Open
Flame	On	On	On	On
Relight	Off	Off	Off	Off
Pilot	Ready	Ready	Ready	Ready
Vac Ramp	Off	Off	Off	Off
Forced Flow	Off	Off	Off	Off
* **BACK**				
* **FLOW DATA**				
Flow Rate, SCFM	67	70	70	74
Today's Total, MMSCF	0.03	0.04	0.03	0.03
This Month's Total, MMSCF	0.20	0.90	1.51	2.23
Total Flow, MMSCF	301.06	301.77	302.77	303.1
Flow Press, In WC	0.1	1.4	0.1	0.7
Flow Temp, DegF	66	67	64	64
Flow Delta P, In WC	0.41	0.43	0.42	0.49
* **7 DAY FLOW HISTORY**				
Yesterday's Flow, MMSCF	0.03	0.04	0.03	0.03
2 Day's Ago Flow, MMSCF	0.10	0.10	0.10	0.10
3 Day's Ago Flow, MMSCF	0.10	0.10	0.11	0.11
4 Day's Ago Flow, MMSCF	0.10	0.10	0.10	0.10
5 Day's Ago Flow, MMSCF	0.06	0.10	0.10	0.10
6 Day's Ago Flow, MMSCF	0.09	0.10	0.03	0.11
7 Day's Ago Flow, MMSCF	0.10	0.10	0.06	0.10
* **BACK**				
* **RESETTABLE FLOW**				
Resettable Total Flow, MMSCF	301.06	301.77	302.77	303.1
Reset Time	-	-	-	-
Reset Date	-	-	-	-
* **BACK & * BACK**				

	Adequate	Needs Work
Check Propane and Nitrogen Cylinders and change/fill if necessary	X	
Inspect Blower, Flare and Demister Structures for Loose Bolts/Cracks	X	
Drain Demister (if necessary)	X	
Clean Demister Filter Material (if dP indicates it is necessary)	X	
Lubricate Grease Fittings (as necessary)	X	
Test Alarm Lights on Panel by pushing "RUN" and "Alarm/Shutdown" Lamps	X	
Check if any shutdowns/alarms need re-setting (note which ones in comments section)	X	
Drain Flare Stack Condensate (if necessary)	X	

Comments: Drained Condensate

Signature: Kevin S. Fabel

* ***PUSH BUTTON***

WEEKLY FLARE STATION INSPECTION FORM

Project # 1728 Project Name: Holtz Krause (Min 30 SCFM, Max 200 SCFM)

Tester (Initials)	KSF	KSF	KSF	KSF
Date	12/1/2020	12/11/2020	12/21/2020	12/30/2020
Time	10:00 AM	10:00 AM	10:00 AM	10:00 AM
Sky Conditions	Clear	Cloudy	Clear	Cloudy
Ambient Temperature, deg F	30	30	15	30
Inlet Temperature, deg F (GHS-TI-301)	50	50	48	50
Demister Inlet Valve Position, % Open (GHS-HV-301)	100	100	100	100
LFG Vacuum, In WC (GHS-PI-301)	3.5	3	4	5
Demister Filter Delta P (GHS-PDI-301)	0.2	0.3	0.3	0.3
Blower 301 Inlet Valve Position, % Open (GHS-FCV-301)	100	100	100	100
Discharge Pressure, In WC (GHS-PI-302)	0.5	0.7	0.4	0.5
Discharge Temperature, deg F (GHS-TI-302)	55	58	54	59
Propane Pilot Supply Pressure, In WC (GHS-PI-101)	10	8	8	8
Flame Arrester Inlet Pressure, In WC (FLR-PI-301)	1.0	1.2	1.0	1.2
Flame Arrester Outlet Pressure, In WC (FLR-PI-301)	0.7	0.9	0.7	0.9
Flame Arrester Delta P, In WC (FLR-PI-301)	0.3	0.3	0.3	0.3
Blower 301 Frequency, Hz (CP-YIC-2)	17.1	16.6	18.1	19.2
Blower 301 Current, Amps (CP-YIC-2)	3.9	3.9	3.9	3.9
YIC-1 From Main Menu Screen				
ANALOG DATA MENU				
* **PROCESS OVERVIEW**				
Inlet Vacuum, In WC	4.3	3.8	4.9	5.7
Inlet Temp, DegF	54	54	53	52
Oxygen, %	0	0	0	0.1
Blower Speed, %	19	18	21	23
Blower Vibration, In/Sec	0	0	0	0
CP Temp, DegF	68	76	64	76
FLR Flame Temp, DegF	1325	1353	1303	1321
FLR Flow Press, In WC	0.1	0.7	0.2	0.1
FLR Flow Temp, DegF	61	63	60	65
Flow Rate, SCFM	69	73	73	75
* **BACK**				
* **BLOWER DATA**				
Status, Run/Stop	Run	Run	Run	Run
Run Time, Hr	61350	61518	61687	61855
Speed, %	19	18	21	23
Vibration, In/Sec	0	0	0	0
Outlet Temp, DegF	61	63	60	65
* **BACK**				
* **FLARE DATA**				
Flow Rate, SCFM	75	73	73	74
Flame Temp, DegF	1331	1368	1331	1355
BLR Speed, %	19	18	21	23
Flow Pressure, In WC	0.1	0.7	0.2	0.3
Hour Meter	61344	61511	61680	61849

* ***PUSH BUTTON***

WEEKLY FLARE STATION INSPECTION FORM

Project # 1728 Project Name: Holtz Krause (Min 30 SCFM, Max 200 SCFM)

Run Clock	On	On	On	On
Pilot	Off	Off	Off	Off
SD Valve	Open	Open	Open	Open
Flame	On	On	On	On
Relight	Off	Off	Off	Off
Pilot	Ready	Ready	Ready	Ready
Vac Ramp	Off	Off	Off	Off
Forced Flow	Off	Off	Off	Off
* **BACK**				
* **FLOW DATA**				
Flow Rate, SCFM	69	73	73	74
Today's Total, MMSCF	0.03	0.03	0.03	0.04
This Month's Total, MMSCF	0.00	0.71	1.41	2.12
Total Flow, MMSCF	303.8	304.51	305.22	305.93
Flow Press, In WC	0.1	0.8	0.2	0.1
Flow Temp, DegF	61	63	60	65
Flow Delta P, In WC	0.42	0.47	0.48	0.49
* **7 DAY FLOW HISTORY**				
Yesterday's Flow, MMSCF	0.03	0.03	0.03	0.04
2 Day's Ago Flow, MMSCF	0.10	0.10	0.10	0.10
3 Day's Ago Flow, MMSCF	0.10	0.10	0.10	0.10
4 Day's Ago Flow, MMSCF	0.10	0.10	0.10	0.10
5 Day's Ago Flow, MMSCF	0.10	0.10	0.10	0.10
6 Day's Ago Flow, MMSCF	0.10	0.10	0.10	0.10
7 Day's Ago Flow, MMSCF	0.11	0.10	0.10	0.10
* **BACK**				
* **RESETTABLE FLOW**				
Resettable Total Flow, MMSCF	303.8	304.51	305.22	305.93
Reset Time	-	-	-	-
Reset Date	-	-	-	-
* **BACK & * BACK**				

	Adequate	Needs Work
Check Propane and Nitrogen Cylinders and change/fill if necessary	X	
Inspect Blower, Flare and Demister Structures for Loose Bolts/Cracks	X	
Drain Demister (if necessary)	X	
Clean Demister Filter Material (if dP indicates it is necessary)	X	
Lubricate Grease Fittings (as necessary)	X	
Test Alarm Lights on Panel by pushing "RUN" and "Alarm/Shutdown" Lamps	X	
Check if any shutdowns/alarms need re-setting (note which ones in comments section)	X	
Drain Flare Stack Condensate (if necessary)	X	

Comments: Drained Condensate

Signature: Kevin S. Fabel

* ***PUSH BUTTON***

Appendix B
Semi Annual Flare Station Maintenance Reports

SEMI-ANNUAL INSPECTION AND MAINTENANCE FORM
FORMER HOLTZ KRAUSE LANDFILL

Inspector: Tom Hobday

The following items will be performed semi-annually by City personnel or an outside vendor:

Item	*Date Performed*	*Comments*
BLOWER/FLARE SYSTEM		
- Check igniter gap (should be 0.1" - regap if necessary).	5/12/2020	Gap is correct
- Verify that the spark is at the tip of the igniter.	5/12/2020	Good spark/flame
- Inspect igniter wiring for heat damage, worn insulation and frayed wires.	5/12/2020	Wiring in good shape
- Test pilot switch to verify pilot lights and it doesn't blow out.	5/12/2020	Flame lights well
- Check thermocouple voltage to verity the temperature reading.	5/12/2020	0.2 mV @ 50 deg F - good 23.4 mV @ 1,100 deg F - good
- Test blower and safety shutoff operation. The blower contactor/blower start operation and safety shutoff valves shall be fully tested.	5/12/2020	Works
- Zero out all pressure, differential pressure, and vacuum gauges	5/12/2020	All zeroed
- Check all components on the "set point sheet" to verify they have not changed. Make adjustments, if necessary.	5/12/2020	All setpoints verified to be correct
- Verify flow transmitter calibration (via differential pressure).	5/12/2020	0.0" at 0 cfm, and 0.47" @ 73 cfm . Within specifications.
- Calibrate oxygen sensor.	5/12/2020	Calibrated zero and span. 10.2 mV at ambient - sensor ok.
- Remove demister sump clean-out cover and remove any accumulated debris	5/12/2020	Sump is dry, light yellow powder on demister element
- If pressure drop across the demister reaches two times (2X) the original value, remove demister element for inspection. (pressure wash element as necessary).	5/12/2020	Light yellow powder on element, otherwise clean
- Test demister condensate level switch (close level switch hand valve, and add water via tee to verify operation)	5/12/2020	Works
- Test the pilot fail shutdown (turn off propane supply)	5/12/2020	Works correctly
- Test the high outlet temperature shutdown while the flare is operating. (adjust PLC setpoint)	5/12/2020	Adjusted setpoint to test, works correctly

SEMI-ANNUAL INSPECTION AND MAINTENANCE FORM
FORMER HOLTZ KRAUSE LANDFILL

Inspector: Tom Hobday

The following items will be performed semi-annually by City personnel or an outside vendor:

Item	*Date Performed*	*Comments*
- Test the oxygen safety shutdown while the flare is operating. (open O2 lines to atm.)	5/12/2020	Opened valve to expose to atmosphere, shutdown works
- Test the low flow safety shutdown. (throttle blower inlet valve while in vacuum control)	5/12/2020	Blower to manual, throttled inlet valve, shutdown verified
- Test Blower Vibration alarm and shut down (adjust PLC setpoint)	5/12/2020	Lowered timer, induced vibration, works
- Test the inlet valve fail close shutdown while flare is operating. (closed nitrogen supply)	5/12/2020	Works
- Test the high inlet temperature failure (adjust PLC setpoint)	5/12/2020	Adjusted setpoint to test, works correctly
- Test the high vacuum shutdown (adjust PLC setpoint)	5/12/2020	Adjusted setpoint to test, works correctly
- Test the low temperature shutdown. (adjust PLC setpoint)	N/A	This is a non user-programmable set-point. Unable to get the flare to produce a low enough temp to test.
- Inspect transmitter housings and piping. Replace O-rings, if necessary.	5/12/2020	All in good shape.
- Inspect and clean the solenoid valve.	5/12/2020	In good shape
- Visually inspect for arcing contractor points. Check switches and contactors (annual).	5/12/2020	No issues
- Re-torque all electrical components. Double check at the thermocouple leads and the main power feed going to the blower (annual).	5/12/2020	All ok
- Check for loose bolts on structure and flanges. Tighten, as necessary.	5/12/2020	No loose bolts
- Remove, inspect, and clean if necessary air conditioner filter (semi-annually)	5/12/2020	Filter clean
- Remove and inspect flame arrestor element (annually - or based on diff. pressure).	5/12/2020	Element is clean and dry
- Grease blower bearings - remove old grease, re-pack bearing per manufacturer specifications	5/12/2020	Bearings in good shape, flushed with fresh grease and repacked. Old grease on outlet side slightly dirty

SEMI-ANNUAL INSPECTION AND MAINTENANCE FORM
FORMER HOLTZ KRAUSE LANDFILL

Inspector: Tom Hobday

The following items will be performed semi-annually by City personnel or an outside vendor:

Item	*Date Performed*	*Comments*
BLOWER/FLARE SYSTEM		
- Check igniter gap (should be 0.1" - regap if necessary).	10/16/2020	Gap is correct
- Verify that the spark is at the tip of the igniter.	10/15/2020	Verified
- Inspect igniter wiring for heat damage, worn insulation and frayed wires.	10/16/2020	Good shape
- Test pilot switch to verify pilot lights and it doesn't blow out.	10/15/2020	Pilot works well
- Check thermocouple voltage to verity the temperature reading.	10/16/2020	0.3 mV @ 47 deg F - good 28.1 mV @ 1,275 deg F - good
- Test blower and safety shutoff operation. The blower contactor/blower start operation and safety shutoff valves shall be fully tested.	10/15/2020	Turned VFD breaker off, works
- Zero out all pressure, differential pressure, and vacuum gauges	10/15/2020	All zeroed
- Check all components on the "set point sheet" to verify they have not changed. Make adjustments, if necessary.	10/15/2020	Setpoints verified
- Verify flow transmitter calibration (via differential pressure).	10/16/2020	0.0" at 0 cfm, and 0.47" @ 73 cfm . Within specifications.
- Calibrate oxygen sensor.	10/16/2020	Calibrated zero and span. 9.8 mV at ambient - sensor ok, spare in cabinet.
- Remove demister sump clean-out cover and remove any accumulated debris	10/16/2020	Sump is clean and dry
- If pressure drop across the demister reaches two times (2X) the original value, remove demister element for inspection. (pressure wash element as necessary).	10/16/2020	Element inspected and is clean and dry
- Test demister condensate level switch (close level switch hand valve, and add water via tee to verify operation)	10/16/2020	Filled with water, shutdown works
- Test the pilot fail shutdown (turn off propane supply)	10/15/2020	Works correctly
- Test the high outlet temperature shutdown while the flare is operating. (adjust PLC setpoint)	10/15/2020	Works correctly

SEMI-ANNUAL INSPECTION AND MAINTENANCE FORM
FORMER HOLTZ KRAUSE LANDFILL

Inspector: Tom Hobday

The following items will be performed semi-annually by City personnel or an outside vendor:

Item	*Date Performed*	*Comments*
- Test the oxygen safety shutdown while the flare is operating. (open O2 lines to atm.)	10/15/2020	Opened to atmosphere, works correctly
- Test the low flow safety shutdown. (throttle blower inlet valve while in vacuum control)	10/15/2020	Throttled inlet valve, works correctly
- Test Blower Vibration alarm and shut down (adjust PLC setpoint)	10/15/2020	Adjusted setpoint, induced vibration, works
- Test the inlet valve fail close shutdown while flare is operating. (closed nitrogen supply)	10/15/2020	Closed nitrogen, shutdown works
- Test the high inlet temperature failure (adjust PLC setpoint)	10/15/2020	Adjusted setpoint to test, works correctly
- Test the high vacuum shutdown (adjust PLC setpoint)	10/15/2020	Works correctly
- Test the low temperature shutdown. (adjust PLC setpoint)	N/A	This is a non user-programmable set-point. Unable to get the flare to produce a low enough temp to test.
- Inspect transmitter housings and piping. Replace O-rings, if necessary.	10/16/2020	All good, regreased o-rings
- Inspect and clean the solenoid valve.	10/16/2020	Working well
- Visually inspect for arcing contractor points. Check switches and contactors (annual).	-	-
- Re-torque all electrical components. Double check at the thermocouple leads and the main power feed going to the blower (annual).	10/16/2020	All connections checked/tightened
- Check for loose bolts on structure and flanges. Tighten, as necessary.	10/16/2020	No loose bolts
- Remove, inspect, and clean if necessary air conditioner filter (semi-annually)	10/16/2020	Filter is clean. Turned off AC for winter. Heat trace turned on
- Remove and inspect flame arrestor element (annually - or based on diff. pressure).	10/16/2020	Element is clean
- Grease blower bearings - remove old grease, re-pack bearing per manufacturer specifications	10/16/2020	Bearings in good shape, flushed with fresh grease and repacked.

DAILY FLARE STATION DATA LOG

Project # 1728 Project Name: Holtz Krause (Min 30 SCFM, Max 200 SCFM)

Tester	T. Holcday		T. Holcday	
Date	5/12/20		10/15/20	
Time	12:10		15:50	
Sky Conditions	clear		clear	
Ambient Temperature, deg F	50°F		45°F	
Inlet Temperature, deg F (GHS-TI-301)	52°F		56°F	
Demister Inlet Valve Position, % Open (GHS-HV-301)	100%		100%	
LFG Vacuum, In WC (GHS-PI-301)	3"		4"	
Demister Filter Delta P (GHS-PDI-301)	0.2"		0.3"	
Blower 301 Inlet Valve Position, % Open (GHS-FCV-301)	100%		100%	
Discharge Pressure, In WC (GHS-PI-302)	1"		0.5"	
Discharge Temperature, deg F (GHS-TI-302)	62°F		60°F	
Propane Pilot Supply Pressure, In WC (GHS-PI-101)	9"		9"	
Flame Arrester Inlet Pressure, In WC (FLR-PI-301)	1.2"		1.1"	
Flame Arrester Outlet Pressure, In WC (FLR-PI-301)	1.0"		0.9"	
Flame Arrester Delta P, In WC (FLR-PI-301)	0.2"		0.2"	
Blower 301 Frequency, Hz (CP-YIC-2)	15.3 Hz		18.1 Hz	
Blower 301 Current, Amps (CP-YIC-2)	3.7 A		3.7 A	

* ***PUSH BUTTON***

DAILY FLARE STATION DATA LOG

Project # 1728 Project Name: Holtz Krause (Min 30 SCFM, Max 200 SCFM)

YIC-1 From Main Menu Screen	5/12/20		10/15/20	
ANALOG DATA MENU				
* **PROCESS OVERVIEW**				
Inlet Vacuum, In WC	3.2"		5.2"	
Inlet Temp, DegF	55°F		60°F	
Oxygen, %	1.6%		0.0%	
Blower Speed, %	16%		21%	
Blower Vibration, In/Sec	0.00"/sec		0.00"/sec	
CP Temp, DegF	76°F		66°F	
FLR Flame Temp, DegF	1,120°F		1,303°F	
FLR Flow Press, In WC	1.5"		0.8"	
FLR Flow Temp, DegF	66°F		65°F	
Flow Rate, SCFM	71 cfm		71 cfm	
* **BACK**				
* **BLOWER DATA**				
Status, Run/Stop	Run		Run	
Run Time, Hr	56,636		60,319	
Speed, %	16%		21%	
Vibration, In/Sec	0.00"/sec		0.00"/sec	
Outlet Temp, DegF	66°F		65°F	
* **BACK**				
* **FLARE DATA**				
Flow Rate, SCFM	71 cfm		71 cfm	
Flame Temp, DegF	1,135°F		1,350°F	
BLR Speed, %	16%		21%	
Flow Pressure, In WC	1.5"		0.3"	
Hour Meter	56,629		60,313	
Run Clock	on		on	
Pilot	off		off	

* ***PUSH BUTTON***

DAILY FLARE STATION DATA LOG

Project # 1728 Project Name: Holtz Krause (Min 30 SCFM, Max 200 SCFM)

	5/12/20		10/15/20	
SD Valve	Open		Open	
Flame	on		on	
Relight	off		off	
Pilot	Ready		Ready	
Vac Ramp	off		off	
Forced Flow	off		off	
* **BACK**				
* **FLOW DATA**				
Flow Rate, SCFM	71 cfm		71 cfm	
Today's Total, MMSCF	0.0388101		0.0644743	
This Month's Total, MMSCF	1.110045		1.432413	
Total Flow, MMSCF	283.891		299.438	
Flow Press, In WC	1.5"		0.4"	
Flow Temp, DegF	66°F		65°F	
Flow Delta P, In WC	0.45"		0.45"	
* **7 DAY FLOW HISTORY**				
Yesterday's Flow, MMSCF	0.0388101		0.0644743	
2 Day's Ago Flow, MMSCF	0.0970867		0.1013539	
3 Day's Ago Flow, MMSCF	0.1053693		0.1002725	
4 Day's Ago Flow, MMSCF	0.1012762		0.1070924	
5 Day's Ago Flow, MMSCF	0.0995842		0.1007580	
6 Day's Ago Flow, MMSCF	0.1011416		0.1035278	
7 Day's Ago Flow, MMSCF	0.1006249		0.1041530	
* **BACK**				
* **RESETTABLE FLOW**				
Resettable Total Flow, MMSCF	2.83891e		2.99438e	
Reset Time	0:0:0		0:0:0	
Reset Date	0/00/00		0/00/00	
* **BACK**				

* ***PUSH BUTTON***

DAILY FLARE STATION DATA LOG

Project # 1728 Project Name: Holtz Krause (Min 30 SCFM, Max 200 SCFM)

* BACK				

* ***PUSH BUTTON***

FLARE SYSTEM SETPOINTS

All Setpoints depend on Biogas Pressure and Flow

Project # 1728 Project Name: Holtz Krause Initials: T. Holiday

Description	Setpoint	DATE	Setpoint	DATE
SETPOINT MENU				
* **VACUUM/FLOW**				
Vacuum/Flow	Flow	5/12/20	Flow	10/15/20
* **MANUAL/AUTO**				
Min % Speed	10 %	5/12/20	10 %	10/15/20
Auto/Manual	Auto	↓	Auto	↓
Manual % Speed	20%	↓	20%	↓
* **BACK**				
* **VACUUM CONTROL**				
* **SETPOINTS**				
Setpoint, In WC	6.0"	5/12/20	6.0"	10/15/20
Ramp Incriment, In WC	4.0"	↓	4.0"	↓
* **BACK**				
* **PID SPs**				
Gain	2.50	5/12/20	2.50	10/15/20
Sample Rate, Sec	0.50 sec	|	0.50 sec	|
Derative, Sec	0.01 sec	|	0.01 sec	|
Reset, Sec/Min	0.50 sec	|	0.50 sec	|
Deadband, In WC	0.5"	↓	0.5"	↓
* **BACK**				
* **BACK**				
* **FLOW CONTROL**				
* **SETPOINTS**				
Flow Control Setpoint, SCFM	70 cfm	5/12/20	70 cfm	10/15/20
* **BACK**				
* **PID SETPOINTS**				
Gain	0.80	5/12/20	0.80	10/15/20
Sample Rate, Sec	0.70 sec	|	0.70 sec	|
Derative, Sec	0.01 sec	|	0.01 sec	|
Reset, Sec/Min	1.10 sec	|	1.10 sec	|
Deadband, SCFM	5 cfm	↓	5 cfm	↓
* **BACK**				
* **BACK**				
* **BACK**				
* **FLARE MENU**				

FLARE SYSTEM SETPOINTS

All Setpoints depend on Biogas Pressure and Flow

Project # 1728 Project Name: Holtz Krause Initials: T. Hobday

* **START SPs**				
Pilot Enable, Secs	120 sec	5/12/20	120 sec	10/15/20
Pilot On Squence, Secs	10 sec	↓	10 sec	↓
Pilot Off Squence, Secs	3 sec	↓	3 sec	↓
Delay Blower Start, Secs	3 sec	↓	3 sec	↓
Delay Shutdown Valve Open, Secs	3 sec	↓	3sec	↓
* **BACK**				
* **PILOT**				
FLR Pilot Assumed on Above This Temp, DegF	250°F	5/12/20	250°F	10/15/20
* **BACK**				
* **FLR RUN CLOCK**				
Start Time of Day, Hr.Min	0.00	5/12/20	0.00	10/15/20
On Cycle Duration, Mins	1,440 min	↓	1,440mn	↓
Off Cycle Duration, Mins	1 min	↓	1 min	↓
Cycles per Day	1	↓	1	↓
* **BACK**				
* **BACK**				
* **FLOW CALC**				
CH4%	31.0%	5/12/20	31.0%	10/15/20
O2%	0.1%	↓	0.1%	↓
CO2%	32.5%	↓	32.5%	↓
Elevation, Ft	1,225 ft	↓	1,225 ft	↓
Manual Input	0.975	↓	0.975	↓
* **BACK**				
* **OXYGEN CALIBRATION**				
* **BACK**				
* **ALARMS & SHUTDOWNS**				
* **INLET MENU**				
* **HIGH VACUUM**				
Alarm SP, In WC	52.0"	5/12/20	52.0"	10/15/20
Alarm Delay, Sec	45 sec	↓	45 sec	↓
Shutdown SP, In WC	55.0"	↓	55.0"	↓
Shutdown Delay, Sec	45 sec	↓	45 sec	↓
* **BACK**				
* **INLET TEMPERATURE**				
Alarm SP, DegF	98°F	5/12/20	98°F	10/15/20

FLARE SYSTEM SETPOINTS

All Setpoints depend on Biogas Pressure and Flow

Project # 1728 Project Name: Holtz Krause Initials: T. Hobday

Alarm Delay, Sec	45 sec	5/12/20	45 sec	10/15/20
Shutdown SP, DegF	100°F	↓	100°F	↓
Shutdown Delay, Sec	45 sec	↓	45 sec	↓
* **BACK**				
* **BACK**				
* **FLT-301 COND LEVEL**				
Shutdown Delay, Sec	35 sec	5/12/20	35 sec	10/15/20
* **BACK**				
* **BLOWER MENU**				
* **VIBRATION**				
Alarm SP, In/S	0.18 "/sec	5/12/20	0.18 "/sec	10/15/20
Alarm Delay, Sec	45 sec	↓	45 sec	↓
Shutdown SP, In/S	0.20 "/sec	↓	0.20 "/sec	↓
Shutdown Delay, Sec	45 sec	↓	45 sec	↓
* **BACK**				
* **HIGH OUTLET GAS TEMP**				
Alarm SP, DegF	170°F	5/12/20	170°F	10/15/20
Alarm Delay, Sec	45 sec	↓	45 sec	↓
Shutdown SP, DegF	174°F	↓	174°F	↓
Shutdown Delay, Sec	45 sec	↓	45 sec	↓
* **BACK**				
* **BACK**				
* **FLARE MENU**				
* **HIGH FLAME TEMP**				
Alarm SP, DegF	N/A		N/A	
Alarm Delay, Sec	↘		↘	
Shutdown SP, DegF				
Shutdown Delay, Sec	↘		↘	
* **BACK**				
* **LOW FLAME TEMP**				
Alarm SP, DegF	150°F	5/12/20	150°F	10/15/20
Alarm Delay, Sec	45 sec	↓	45 sec	↓
Shutdown SP, DegF	200°F	↓	200°F	↓
Shutdown Delay, Sec	45 sec	↓	45 sec	↓
* **BACK**				
* **HIGH FLOW RATE**				

FLARE SYSTEM SETPOINTS

All Setpoints depend on Biogas Pressure and Flow

Project # 1728 Project Name: Holtz Krause Initials: T. Hobday

Alarm SP, SCFM	220 cfm	5/12/20	220 cfm	10/15/20
Alarm Delay, Sec	45 sec	↓	45 sec	↓
* **BACK**				
* **LOW FLOW RATE**				
Alarm SP, SCFM	35 cfm	5/12/20	35 cfm	10/15/20
Alarm Delay, Sec	35 sec	|	35 sec	|
Shutdown SP, SCFM	30 cfm	|	30 cfm	|
Shutdown Delay, Sec	35 sec	↓	35 sec	↓
* **BACK**				
* **FLARE RELIGHT**				
Relight Delay, Secs	600 sec	5/12/20	600 sec	10/15/20
Number of Relight Attempts	3	↓	3	↓
* **BACK**				
* **BACK**				
* **OXYGEN SENSOR**				
* **HIGH OXYGEN OE-301**				
Alarm SP, %	3.5%	5/12/20	3.5%	10/15/20
Alarm Delay, Sec	120 sec	|	120 sec	|
Shutdown SP, %	5.0%	|	5.0%	|
Shutdown Delay, Sec	120 sec	↓	120 sec	↓
* **BACK**				
* **BACK**				
* **UTILITY OUTAGE RESTART DELAY**				
System Restart Delay, Secs	60 sec	5/12/20	60 sec	10/15/20
* **BACK**				
* **PANEL TEMP**				
Low Temp Alarm SP, degF	35 °F	5/12/20	35 °F	10/15/20
Low Temp Alarm Delay, Sec	120 sec	|	120 sec	|
High Temp Alarm SP, degF	120° F	|	120° F	|
High Temp Alarm Delay, Sec	120 sec	↓	120 sec	↓
* **BACK**				
* **BACK**				
* **BACK**				

Appendix C
Monthly Site Inspection Forms

LANDFILL SITE INSPECTION
FORMER HOLTZ KRAUSE LANDFILL

Inspector: Kevin Fabel

Date: 1.14.20

Item	*Yes*	*No*	*Comments*
Cover intact and free of erosion?	(y)	n	
Vegetation cover intact?	(y)	n	
Is cover free of surface water ponding?	(y)	n	
Is cover free of exposed refuse?	(y)	n	
Is cover free of leachate seeps?	(y)	n	
Is cover free of animal burrows?	(y)	n	
Is cover free of noxious weeds?	(y)	n	
Is cover in need of mowing?	y	(n)	
Evidence of settlement of fill?	y	(n)	
Nuisance odors present?	y	(n)	
On-site access road drivable?	y	(n)*	
Fence around flare secured?	(y)	n	
Evidence of trespassers or encroachment?	y	(n)	
Illegal disposal/dumping present?	y	(n)	
Gas wells free of damage?	(y)	n	
Water mon wells secured/free of damage?	(y)	n	
Gas probes secured/free of damage?	(y)	n	
Flare station modem operational?	(y)	n	

Comments:

* ~ 14" of snow on site

LANDFILL SITE INSPECTION
FORMER HOLTZ KRAUSE LANDFILL

Inspector Kevin Faber

Date: 2·18·20

Item	*Yes*	*No*	*Comments*
Cover intact and free of erosion?	(y)	n	
Vegetation cover intact?	(y)	n	
Is cover free of surface water ponding?	(y)	n	
Is cover free of exposed refuse?	(y)	n	
Is cover free of leachate seeps?	(y)	n	
Is cover free of animal burrows?	(y)	n	
Is cover free of noxious weeds?	(y)	n	
Is cover in need of mowing?	y	(n)	
Evidence of settlement of fill?	y	(n)	
Nuisance odors present?	y	(n)	
On-site access road drivable?	y	(n)*	
Fence around flare secured?	(y)	n	
Evidence of trespassers or encroachment?	y	(n)	
Illegal disposal/dumping present?	y	(n)	
Gas wells free of damage?	(y)	n	
Water mon wells secured/free of damage?	(y)	n	
Gas probes secured/free of damage?	(y)	n	
Flare station modem operational?	(y)	n	

Comments:

Above Average Snow this Winter

Current Snow on Ground ~ 20"

LANDFILL SITE INSPECTION
FORMER HOLTZ KRAUSE LANDFILL

Inspector Kevin Faber

Date: 3/24/20

Item	*Yes*	*No*	*Comments*
Cover intact and free of erosion?	y	n	
Vegetation cover intact?	y	n	
Is cover free of surface water ponding?	y	n	
Is cover free of exposed refuse?	y	n	
Is cover free of leachate seeps?	y	n	
Is cover free of animal burrows?	y	n	
Is cover free of noxious weeds?	y	n	
Is cover in need of mowing?	y	n	
Evidence of settlement of fill?	y	n	
Nuisance odors present?	y	n	
On-site access road drivable?	y	n	
Fence around flare secured?	y	n	
Evidence of trespassers or encroachment?	y	n	
Illegal disposal/dumping present?	y	n	
Gas wells free of damage?	y	n	
Water mon wells secured/free of damage?	y	n	
Gas probes secured/free of damage?	y	n	
Flare station modem operational?	y	n	

Comments:

All Snow gone from fields

LANDFILL SITE INSPECTION
FORMER HOLTZ KRAUSE LANDFILL

Inspector Kevin Sager

Date: 4/7/20

Item	*Yes*	*No*	*Comments*
Cover intact and free of erosion?	(y)	n	
Vegetation cover intact?	(y)	n	
Is cover free of surface water ponding?	(y)	n	
Is cover free of exposed refuse?	(y)	n	
Is cover free of leachate seeps?	(y)	n	
Is cover free of animal burrows?	(y)	n	
Is cover free of noxious weeds?	(y)	n	
Is cover in need of mowing?	y	(n)	
Evidence of settlement of fill?	y	(n)	
Nuisance odors present?	y	(n)	
On-site access road drivable?	(y)	n	
Fence around flare secured?	(y)	n	
Evidence of trespassers or encroachment?	y	(n)	
Illegal disposal/dumping present?	y	(n)	
Gas wells free of damage?	(y)	n	
Water mon wells secured/free of damage?	(y)	n	
Gas probes secured/free of damage?	(y)	n	
Flare station modem operational?	(y)	n	

Comments:

LANDFILL SITE INSPECTION
FORMER HOLTZ KRAUSE LANDFILL

Inspector Kevin Faber

Date: 5/5/20

Item	*Yes*	*No*	*Comments*
Cover intact and free of erosion?	y	n	
Vegetation cover intact?	y	n	
Is cover free of surface water ponding?	y	n	
Is cover free of exposed refuse?	y	n	
Is cover free of leachate seeps?	y	n	
Is cover free of animal burrows?	y	n	
Is cover free of noxious weeds?	y	n	
Is cover in need of mowing?	y	n	
Evidence of settlement of fill?	y	n	
Nuisance odors present?	y	n	
On-site access road drivable?	y	n	
Fence around flare secured?	y	n	
Evidence of trespassers or encroachment?	y	n*	
Illegal disposal/dumping present?	y	n	
Gas wells free of damage?	y	n	
Water mon wells secured/free of damage?	y	n	
Gas probes secured/free of damage?	y	n	
Flare station modem operational?	y	n	

Comments:

Due to Covid-19 - no soccer allowed on fields

LANDFILL SITE INSPECTION
FORMER HOLTZ KRAUSE LANDFILL

Inspector Kevin Faber

Date: 6/9/20

Item	*Yes*	*No*	*Comments*
Cover intact and free of erosion?	(y)	n	
Vegetation cover intact?	(y)	n	
Is cover free of surface water ponding?	(y)	n	
Is cover free of exposed refuse?	(y)	n	
Is cover free of leachate seeps?	(y)	n	
Is cover free of animal burrows?	(y)	n	
Is cover free of noxious weeds?	(y)	n	
Is cover in need of mowing?	y	(n)*	
Evidence of settlement of fill?	y	(n)	
Nuisance odors present?	y	(n)	
On-site access road drivable?	(y)	n	
Fence around flare secured?	(y)	n	
Evidence of trespassers or encroachment?	y	(n)	
Illegal disposal/dumping present?	y	(n)	
Gas wells free of damage?	(y)	n	
Water mon wells secured/free of damage?	(y)	n	
Gas probes secured/free of damage?	(y)	n	
Flare station modem operational?	(y)	n	

Comments:

* Perimeter of Complex scheduled to be Mowed

LANDFILL SITE INSPECTION
FORMER HOLTZ KRAUSE LANDFILL

Inspector Kevin Faber

Date: 7/15/20

Item	*Yes*	*No*	*Comments*
Cover intact and free of erosion?	(y)	n	
Vegetation cover intact?	(y)	n	
Is cover free of surface water ponding?	(y)	n	
Is cover free of exposed refuse?	(y)	n	
Is cover free of leachate seeps?	(y)	n	
Is cover free of animal burrows?	(y)	n	
Is cover free of noxious weeds?	(y)	n	
Is cover in need of mowing?	y	(n)	
Evidence of settlement of fill?	y	(n)	
Nuisance odors present?	y	(n)	
On-site access road drivable?	(y)	n	
Fence around flare secured?	(y)	n	
Evidence of trespassers or encroachment?	y	(n)	
Illegal disposal/dumping present?	y	(n)	
Gas wells free of damage?	(y)*	n	
Water mon wells secured/free of damage?	(y)	n	
Gas probes secured/free of damage?	(y)	n	
Flare station modem operational?	(y)	n	

Comments:

* GHD on site to do Visual Check of all EW Wells. Repaired some Quick Connects. EW-32 - broken valve - will be repaired in October

LANDFILL SITE INSPECTION
FORMER HOLTZ KRAUSE LANDFILL

Inspector Kevin Fager

Date: 8/4/20

Item	*Yes*	*No*	*Comments*
Cover intact and free of erosion?	(y)	n	
Vegetation cover intact?	(y)	n	
Is cover free of surface water ponding?	(y)	n	
Is cover free of exposed refuse?	(y)	n	
Is cover free of leachate seeps?	(y)	n	
Is cover free of animal burrows?	(y)	n	
Is cover free of noxious weeds?	(y)	n	
Is cover in need of mowing?	y	(n)	
Evidence of settlement of fill?	y	(n)	
Nuisance odors present?	y	(n)	
On-site access road drivable?	(y)	n	
Fence around flare secured?	(y)	n	
Evidence of trespassers or encroachment?	y	(n)	
Illegal disposal/dumping present?	y	(n)	
Gas wells free of damage?	(y)	n	
Water mon wells secured/free of damage?	(y)	n	
Gas probes secured/free of damage?	(y)	n	
Flare station modem operational?	(y)	n	

Comments:

65 Geese on-site in morning.

LANDFILL SITE INSPECTION
FORMER HOLTZ KRAUSE LANDFILL

Inspector Kevin Faber

Date: 9/8/20

Item	*Yes*	*No*	*Comments*
Cover intact and free of erosion?	y	n	
Vegetation cover intact?	y	n	
Is cover free of surface water ponding?	y	n	
Is cover free of exposed refuse?	y	n	
Is cover free of leachate seeps?	y	n	
Is cover free of animal burrows?	y	n	
Is cover free of noxious weeds?	y	n	
Is cover in need of mowing?	y	n	
Evidence of settlement of fill?	y	n	
Nuisance odors present?	y	n	
On-site access road drivable?	y	n	
Fence around flare secured?	y	n	
Evidence of trespassers or encroachment?	y	n	
Illegal disposal/dumping present?	y	n	
Gas wells free of damage?	y	n	
Water mon wells secured/free of damage?	y	n	
Gas probes secured/free of damage?	y	n	
Flare station modem operational?	y	n	

Comments:

No Issues at Site

LANDFILL SITE INSPECTION
FORMER HOLTZ KRAUSE LANDFILL

Inspector Kevin Faber

Date: 10/7/20

Item	*Yes*	*No*	*Comments*
Cover intact and free of erosion?	(y)	n	
Vegetation cover intact?	(y)	n	
Is cover free of surface water ponding?	(y)	n	
Is cover free of exposed refuse?	(y)	n	
Is cover free of leachate seeps?	(y)	n	
Is cover free of animal burrows?	(y)	n	
Is cover free of noxious weeds?	(y)	n	
Is cover in need of mowing?	y	(n)	
Evidence of settlement of fill?	y	(n)	
Nuisance odors present?	y	(n)	
On-site access road drivable?	(y)	n	
Fence around flare secured?	(y)	n	
Evidence of trespassers or encroachment?	y	(n)	
Illegal disposal/dumping present?	y	(n)	
Gas wells free of damage?	(y)	n	
Water mon wells secured/free of damage?	(y)	n	
Gas probes secured/free of damage?	(y)	n	
Flare station modem operational?	(y)	n	

Comments:

GHD Semi Annual Service Visit Scheduled for 10/16

LANDFILL SITE INSPECTION
FORMER HOLTZ KRAUSE LANDFILL

Inspector Kevin Engel

Date: 11/3/20

Item	*Yes*	*No*	*Comments*
Cover intact and free of erosion?	(y)	n	
Vegetation cover intact?	(y)	n	
Is cover free of surface water ponding?	(y)	n	
Is cover free of exposed refuse?	(y)	n	
Is cover free of leachate seeps?	(y)	n	
Is cover free of animal burrows?	(y)	n	
Is cover free of noxious weeds?	(y)	n	
Is cover in need of mowing?	y	(n)	
Evidence of settlement of fill?	y	(n)	
Nuisance odors present?	y	(n)	
On-site access road drivable?	(y)	n	
Fence around flare secured?	(y)	n	
Evidence of trespassers or encroachment?	y	(n)	
Illegal disposal/dumping present?	y	(n)	
Gas wells free of damage?	(y)	n	
Water mon wells secured/free of damage?	(y)	n	
Gas probes secured/free of damage?	(y)	n	
Flare station modem operational?	(y)	n	

Comments:

Indian Summer 70° today

LANDFILL SITE INSPECTION
FORMER HOLTZ KRAUSE LANDFILL

Inspector Kevin Fraser

Date: 12/8/20

Item	*Yes*	*No*	*Comments*
Cover intact and free of erosion?	(y)	n	
Vegetation cover intact?	(y)	n	
Is cover free of surface water ponding?	(y)	n	
Is cover free of exposed refuse?	(y)	n	
Is cover free of leachate seeps?	(y)	n	
Is cover free of animal burrows?	(y)	n	
Is cover free of noxious weeds?	(y)	n	
Is cover in need of mowing?	y	(n)	
Evidence of settlement of fill?	y	(n)	
Nuisance odors present?	y	(n)	
On-site access road drivable?	(y)	n	
Fence around flare secured?	(y)	n	
Evidence of trespassers or encroachment?	y	(n)	
Illegal disposal/dumping present?	y	(n)	
Gas wells free of damage?	(y)	n	
Water mon wells secured/free of damage?	(y)	n	
Gas probes secured/free of damage?	(y)	n	
Flare station modem operational?	(y)	n	

Comments:

No Snow on Site

about GHD

GHD is one of the world's leading professional services companies operating in the global markets of water, energy and resources, environment, property and buildings, and transportation. We provide engineering, environmental, and construction services to private and public sector clients.

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