September 21, 2016

The regular meeting of the Wheatfield Planning Board was called to order at the Wheatfield Town Hall at 7:00 p.m. by Chairman Walt Garrow. Present: Richard Muscatello, Melissa Germann, Michael Polek and Walt Garrow. Absent: Don Proefrock. Also Present: Town Engineer Wendel, Members of the public.

Summary of Agenda

Moved by R. Muscatello, Seconded by M. Germann to approve the minutes of September 7, 2016. Voting Results: Yeas: Muscatello, Germann, Garrow, Polek. Nays: none. Motion carried.

Site Plat Review for Empire Pipeline – Wheatfield Dehydration Facility, 2251 Liberty Drive, Wheatfield, NY 14120. All previous outstanding conditions have been completed by the applicant. The applicant has agreed to the conditions discussed with the planning board on August 29th, 2016. A list of those conditions is an attachment to the review results for this meeting. Supplemental information was provided on the thermal oxidizer to address outstanding Planning Board issues, and that document is also an attachment to the review results. The Planning Board still had questions about the stack testing and emergency contact information. National Fuel agreed to provide an informational P.O.C. specifically for the Niagara Wheatfield dehydration station, to the Town, and the Town can appoint anyone they wish to request information. Additionally, National fuel stated that they will provide the test results from the stack testing to be conducted upon system start-up.

There was extensive discussion between members of the public and the applicant. Topics discussed were the thermal oxidizer, natural gas from fracking operations, and the percent moisture allowed in our gas vs. Canada and whether this gas was going to be going to Canada.

Board Actions

Motion made by M. Germann and Seconded by R. Muscatello for the planning board to declare the project pre-empted from SEQRA because the project is regulated under FERC which pre-empts it from SEQRA and other state environmental review regulations, and considering that FERC is completing an extensive environmental review process under NEPA, the project will not have an adverse environmental impact or impact the public health and safety of its residents.

Voting Results: Yeas: Muscatello, Germann, Garrow, Polek. Nays: none. Absent: Proefrock. Motion carried.

Motion made by R. Muscatello and Seconded by M. Germann to approve the Site Plan contingent upon engineering review and noted conditions.

Voting Results: Yeas: Muscatello, Germann, Garrow, Polek. Nays: none. Absent: Proefrock. Motion carried.

Next meeting: October 5th, 2016
Motion made by R. Muscatello, Seconded by M. Germann to adjourn the meeting at 7:35 p.m. Motion unanimously carried.

Respectfully Submitted,
Michael Polek, Secretary

TOWN OF WHEATFIELD PLANNING & ZONING BOARD

Site Review Process Results

1. Type of Review ("X" one):

	Sketch Plat Review		Public Informational Meeting
XX	Site Plat Review		Final Subdivision Plat
	Preliminary Subdivision Plat-Major		Rezoning Request
	Special Use Permit		Commercial Vehicle Parking Permit

Site Plat Date – July 14, 2016 Review Date: September 21, 2016

2. Development Specifics: Empire Pipeline – Wheatfield Dehydration Facility

a. Property Identification & Location – 2251 Liberty Drive, Wheatfield, NY 14120.
b. Owner(s) Name(s), Address & Phone No. – James and Patricia Page, 800 Thornwood Drive, Lewiston, NY 14092. Phone: 716-284-9498.
c. Developer (when different) Name, Address & Phone No. – Empire Pipeline, Inc., 6363 Main Street, Williamsville, NY, 14221. Phone: 716-857-7032 .
d. Architect/Engineer/Licensed Land Surveyor Name, Address & Phone No. – Phillips Lytle LLP.
e. Development Details (Explain) – Construct facility to remove water vapor from natural gas stream.

3. Planning & Zoning Board Mandated Conditions/Recommendations:

A. All planned and unplanned activity taking place on this property must be consistent with existing health, safety and environmental ordinances and be compliant with government noise and traffic laws, in addition to other applicable governance's, thus preserving the culture and tranquility of the neighborhood.
B Property is zoned M-1 Light Industrial. Parcel will be owned by National Fuel. Currently have letter of authorization.
C Applicant provided an Emergency Response/Action Plan information and reviewed it at this meeting taking questions. The Emergency Response information was sent to the Fire Advisory Board (FAB).
D Applicant provided background noise levels and a Noise Study according to FERC requirements which take measurements at the nearest receptor. Town code requires fence line measurements. The applicant states that they will be well within the town code fence line limits and have provided documentation regarding that. The Planning Board interprets the noise impact as non-impacting.
E Applicant states that they are under FERC Regulations, federal pre-emption. Provided application to the Town Planning Board for input, while changes can be more easily made.
F Applicant states that no wetlands will be disturbed. A SWIPP was provided. Applicant provided wetlands delineation to the USACE.
G Applicant provided landscaping plan incorporating Planning Board input. Over 200 trees will be planted.
H Applicant provided written responses to public comments and Town provided questions.
I Applicant stated that radon is not an issue with this gas source and have provided documentation regarding that.
J Applicant states that the highest structure on-site is the oxidizer tower at 31'. They provided documentation.
K The applicant made the fire hydrants more easily identify-able on the Site plans.
L The applicant provided a copy of all plans to the FAB through the Town's clerk.
M FAB requirements included providing a copy of plans, showing hydrant locations, showing gate locations, road construction capacity, and road widths.
N The applicant provided a copy of plans to the local fire departments.
O The applicant states that they will obtain Niagara County Planning Board Approval.
P The Planning Board had previously asked a list of questions regarding emergency procedures, emergency response experience and security. The applicant verbally addressed the questions and provided written responses.

Q Any further plan developments or alterations require Planning Board Review.
R. Attached document: Supplemental Information –Response to Request for More Detail on Thermal Oxidizer. September 16, 2016. PhillipsLytle LLP.
S Letter attached: Dehydration Station, ~~Draft~~ Conditions discussed with Town Planning Board, August 29, 2016, Phillips Lytle LLP. In regards to this letter, National Fuel will provide an informational P.O.C. specifically for the Niagara Wheatfield dehydration station, to the Town. And regarding this the Town can appoint anyone they wish to request the stated information.

4. Planning & Zoning Board Action:

Motion made by M. Germann and Seconded by R. Muscatello: Whereas, the Dehydration Facility proposed by Empire Pipeline, Inc. is part of an overall project that is regulated under FERC, and Whereas, FERC regulated pipelines and associated facilities are pre-empted by the National Gas Act (NGA) from SEQRA and other State environmental review regulations, and Whereas, FERC is completing an extensive environmental review process under NEPA, Now therefore let it be resolved that the Town of Wheatfield acknowledges that the project is not subject to SEQRA and that the NEPA review and decision by FERC will ensure that the project will not have an adverse environmental impact or impact the public health and safety of its residents.

Voting Results: Yeas: Muscatello, Germann, Garrow, Polek. Nays: none. Abstentions: Proefrock. Motion carried.

Motion made by R. Muscatello and Seconded by M. Germann to approve the Site Plan contingent upon engineering review and noted conditions.

Voting Results: Yeas: Muscatello, Germann, Garrow, Polek. Nays: none. Abstentions: Proefrock. Motion carried.

Authentication:

	Sep. 21, 2016	
Planning & Zoning Board Representative	Date	Owner/Representative Signature

Distribution: Town Clerk, Building Department, Town Board Members, Town Assessor, Town Attorney, File Folder, Enforcement Office, Applicant

Dehydration Station
Draft Conditions discussed with Town Planning Board
August 29, 2016

- Empire will place a deed restriction, which limits future development rights on approximately fifteen (15) acres on the north end of its parcel consistent with the draft restrictive covenant dated 6/20/26 and included as Exhibit C to Empire's 6/28/16 submittal to the Planning Board.

- Empire will provide records of thermal oxidizer exhaust temperature monitoring to the Town upon request.

- Empire will provide the Town with an annual report documenting how often the Dehy Facility actually operated during the previous calendar year upon request by the Town.

- Emergency contact information for the Dehy Facility will be provided to any internal and external agency and other individuals as requested by the Town including the Town's Disaster Management personnel. Emergency contact information will also be posted on the entrance gate to the Dehy Facility.

- Prior to the Dehy Facility being placed into active service, Empire will conduct emergency response training for local fire departments, Niagara County Emergency Management Agency, Town Disaster Management personnel, Town municipal officials, and any other emergency agencies and/or individuals designated by the Town to familiarize personnel with Dehy Facility function, configuration and operation. Empire will provide refresher training annually to all of the agencies and personnel discussed above, as well as on an as-requested basis.

- Empire will make the Site specific Emergency Response Plan for the Dehy Facility available to all Emergency Management Agencies and personnel during its annual emergency response training for the Dehy Facility. The Emergency Response Plan will also be reviewed with agency personnel during the Dehy Facility emergency response orientation training which will be conducted prior to the Dehy Facility being placed into active service.

- All planned and unplanned activity taking place on this property must be consistent with existing applicable health, safety and environmental ordinances and be compliant with applicable noise and traffic laws, in addition to other applicable governance's, thus preserving the culture and tranquility of the neighborhood.

- National Fuel will apply for Planning Board review with respect to any further planned significant aboveground developments or alterations at the Dehy Facility site.

Phillips Lytle LLP

VIA EMAIL AND HAND DELIVERY September 16, 2016

Town of Wheatfield Planning Board
c/o Walter Garrow
Planning Board Chairman
Town of Wheatfield Town Hall
2800 Church Road
Wheatfield, NY 14120

Re: **Supplemental Information - Response to Request for More Detail on Thermal Oxidizer -** Final Site Plan Review Application by Empire Pipeline, Inc., Regarding a Proposed Dehydration Facility Located at 2251 Liberty Drive in a Light Industrial District in the Town of Wheatfield

Dear Mr. Garrow and Members of the Town of Wheatfield Planning Board:

As you know, we represent Empire Pipeline, Inc. ("**Empire**") with respect to the above-referenced application associated with the proposed construction and operation of a natural gas dehydration facility ("**Dehy Facility**") on a portion of a parcel of land located at 2251 Liberty Drive, further identified as SBL 161.00-1-39 ("**Site**") in the Town of Wheatfield, New York ("**Town**"). The Dehy Facility is an auxiliary facility that is part of Empire's and National Fuel Gas Supply Corporation's (together, "**National Fuel**") Northern Access 2016 Project ("**Project**"), which involves improvements to existing interstate pipeline systems in Northern Pennsylvania and Western New York.[1]

On March 2, 2016, a sketch plan conference concerning the Dehy Facility was held with the Town of Wheatfield Planning Board ("**Planning Board**") at its regular meeting. At that meeting, the Planning Board questioned whether the manufacturer's guaranteed

[1] As discussed on numerous occasions with the Planning Board, the Federal Energy Regulatory Commission ("**FERC**") has exclusive jurisdiction over the siting, construction and/or operation of facilities associated with interstate natural pipelines including the Dehy Facility. In submitting this response, Empire in no way concedes any authority over the siting of the Dehy Facility to the Town, and this submission is made without any admission of fact or concession of law on Empire's part, and with full reservation of all of Empire's rights.

ATTORNEYS AT LAW

ADAM S. WALTERS, PARTNER DIRECT 716 847 7023 AWALTERS@PHILLIPSLYTLE.COM

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destruction efficiency of 99.0% for the thermal oxidizer to be installed as part of the Dehy Facility could be increased. Based on the Planning Board's inquiry, Empire engaged in discussions with the manufacturer, Frederick Logan Company, Inc . ("**FLOCO**"), the result of which was a re-design of the thermal oxidizer that allowed FLOCO to provide a revised guaranteed destruction efficiency of 99.9%.[2] This re-design further brings down the Potential to Emit (PTE) emissions for the Dehy Facility.

On September 2, 2016, we submitted additional information about the thermal oxidizer for the Facility and its automatic shutdown functions based on questions raised by the Planning Board following its August 3, 2016 informational meeting concerning the Facility. Via email communications with the Planning Board Chairman following the submittal of this additional information, we were informed that the additional information was not detailed enough. We were also informed that the Planning Board is requesting that the thermal oxidizer efficiency be verified by a third party professional via analytical testing.

In response, we have discussed both of these issues extensively with the manufacturer of the thermal oxidizer, FLOCO, and requested that FLOCO provide us with a more detailed explanation of the thermal oxidizer's automatic shutdown process and further information concerning its destruction efficiency. Accordingly, attached as ***Exhibit A*** hereto, please find a detailed letter from FLOCO, which explains how the thermal oxidizer works in relation to the operation of the Dehy Facility, the design and destruction efficiency of the thermal oxidizer, and system monitoring and automatic shutdown procedures that ensure that the thermal oxidizer is working properly whenever the Dehy Facility is in operation.

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[2] Empire notes that in addition to obtaining an increased guaranteed destruction efficiency for the thermal oxidizer, Empire, at the request of the Planning Board and community stakeholders, has also committed to a deed restriction, which limits future developments rights on a portion of the Site. Furthermore, following consultation with representatives of the Niagara Falls Air Base and the Town of Wheatfield, New York, Empire also agreed to move the Dehy Facility from its originally proposed site, east of the Niagara Falls Air Base, to an alternative industrially zoned location – the current Liberty Drive Site.

We have also discussed with FLOCO the Town's request that the oxidizer efficiency be verified via third party professional analytical testing. As noted in the conclusion of FLOCO's letter, based on their decades of experience designing and manufacturing thermal oxidizers, the well-established reliability of this technology and the components of the waste stream that will run through the thermal oxidizer, such testing is simply not warranted. In our discussions with FLOCO on this topic, their engineers, in particular, noted that the "waste stream" from the Dehy Facility is comprised of constituents of pipeline quality natural gas (which has already been processed upstream of the Facility and prior to entering the interstate pipeline system), and thus only contains trace levels of any volatile organic compounds in the first instance. Furthermore, FLOCO noted that the highest-auto ignition temperature of any of the constituents in the waste stream for the Facility (i.e. the temperature at which such constituents will be destructed, or oxidized) is 1128° F, well below the chamber operating set point of 1450°F, which will be continuously monitored. As such, the thermal oxidizer will readily destruct these waste steam constituents. That is why, from FLOCO's perspective, the actual destruction efficiency of the thermal oxidizer should be even greater than its guaranteed destruction efficiency of 99.9%.

In light of the above, Empire does not believe that it would be appropriate for the Planning Board to require that the oxidizer efficiency be verified by third party professional analytical testing. In addition, we would respectfully point out that such a requirement would intrude upon the jurisdiction of the FERC relative to the Dehy Facility. As explained in detail in our initial sketch plan submitted to the Planning Board dated February 24, 2016, it is well-established that Congress intended to fully occupy the field of regulation for interstate pipeline facilities such as the Dehy Facility and that local zoning laws, building or other codes and any licensing or certification requirements are pre-empted insofar as they purport to apply to FERC regulated modifications of interstate pipeline facilities. Congress has exercised its Constitutional authority by enacting the Natural Gas Act ("**NGA**") which, with the regulations promulgated pursuant to the NGA, establish a comprehensive scheme of federal regulation that confers exclusive jurisdiction over the transportation of natural gas in interstate commerce. *Algonquin LNG v. Loqa*, 79 F. Supp. 2d. 49, 51 (D. RI, 2000). The NGA has long been recognized as a "comprehensive scheme of federal regulation of all wholesales of natural gas in interstate commerce and confers upon FERC exclusive

jurisdiction over facilities related to the transportation of natural gas in interstate commerce. *Schneidewind v. ANR Pipeline Co.*, 485 U.S. 293, 301-02 (1988).[3]

In addition to intruding upon FERC jurisdiction, we would also note that air emissions are not within the scope of site plan review per the Town Code, which limits the Planning Board to a specific set of criteria to consider during the site plan review process. See, §200-81 of the Code titled "Review Standards". As documented in our letter of intent dated June 28, 2016, Empire has demonstrated compliance with each and every applicable criteria.

As the Planning Board is undoubtedly aware, Planning Boards are authorized to consider the arrangements, layout and design of the site plan, including: "parking, means of access, screening, signs, landscaping, architectural features, location and dimension of buildings, adjacent land use and physical features meant to protect adjacent land uses as well as any additional elements specified by the town board in such zoning ordinance or local law." N.Y. Town Law § 274-a(2)(a). The Planning Board has no authority to consider other issues. *See Moriarty v. Planning Bd. of Sloatsburg*, 119

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[3] *See also, Dominion Transmission*, 982 F. Supp. 2d at 577 (citing *Dominion Transmission v. Summers*, 723 F.3d 238. 243 (D.C.Cir 2013)). State and local laws that conflict with federal law are "without effect." *Washington Gas Light Company v. Prince George's County Council*, 711 F.3d 412, 419 (4th Cir. 2013); *Dominion Transmission, Inc. v. Town of Myersville Town Council*, 982 F. Supp. 2d 570, 576 (D. Md. 2013). See also, *Nat'l Fuel Gas Supply Corp. v. Public Service Com'n of State of N.Y*, 894 F.2d 571, 576 (2d Cir. 1990) (Congress intended to vest exclusive jurisdiction to regulate pipelines in FERC) (*quoting Schneidewind v. ANR Pipeline Co.*, 485 U.S. 293, 301 (1988)). FERC's exclusive authority over interstate gas pipeline facilities extends to the siting of such facilities. *Id.; see also Dominion Transmission, Inc. v. Town of Myersville Town Council*, 982 F. Supp. 2d 570, 579 (D. Md. 2013) (issuing declaratory judgment that portions of town code directly affecting the siting, construction, or operation of natural gas compressor were "null and void."); *Nat'l Fuel Gas Supply Corp. v. Town of Wales*, No. 12-CV-034S, 2013 WL 5739033, at *4 (W.D.N.Y. Oct. 22, 2013) (holding town's regulation of noise produced by a FERC-regulated compressor station was preempted); *Skyview Acres Co-op., Inc. v. Pub. Serv. Comm'n of State*, 163 A.D.2d 600, 603 (2d Dep't 1990) (holding town zoning code prohibiting FERC-approved location of gas pipeline facility while allowing for alternative locations was "unreasonably restrictive" and that location was solely within the jurisdiction of FERC); *Weaver's Cove Energy, LLC v. Rhode Island Coastal Resources Management Council*, 583 F. Supp. 2d 259, 283-84 (State approval process for dredging activities associated with construction of FERC regulated facility is preempted because Congress clearly intended the NGA to occupy the entire field of regulation).

A.D.2d 188, 198 (2d Dep't 1986) ("In sum, construction of the health, safety and general welfare provision in the instant enabling legislation is limited by its relation to the specific factors a Planning Board may consider with respect to site plan review . . . [The enabling statute] confers on the Planning Board no authority to regulate matters beyond the obvious purpose of the legislation."). *See also, Hudson Canyon Constr., Inc. v. Town of Cortlandt*, 262 A.D.2d 484 (2d Dep't 1999); *Hill v. Planning Board of the Town Amherst*, 140 A.D.2d 967 (4th Dep't 1988); *Apache Assoc. v. Planning Bd. Of Nyack*, 131 A.D.2d 666 (2d Dep't 1987).

We look forward to discussing these issues in more detail at the Planning Board's next meeting on September 21, 2016 and are hopeful that we can work with the Planning Board to resolve any open issues relative to final site plan approval at that meeting. As the Planning Board is aware, per NYS Town Law §274-a(8) and §200-82 of the Town of Wheatfield Code, the Planning Board has 62 days from the close of the public hearing to render a decision on Empire's site plan application. As the public hearing was held on August 3, 2016, the Planning Board must render a final decision on or before its meeting on October 5, 2016.

If you have questions, please do not hesitate to contact me.

Respectfully submitted,

Phillips Lytle LLP

By 

Adam S. Walters
Enclosure
cc: Michael Klock, Building Inspector
Matthew E. Brooks, Esq., Town Attorney
Doc #01-2980702.2

EXHIBIT A

FREDERICK LOGAN COMPANY
(INCORPORATED)

OFFICE: 140 COMMONWEALTH DRIVE, THORN HILL INDUSTRIAL PARK
WARRENDALE, PA., 15086 PH: 724-776-9300 FX: 724-776-0355

PLANT: 420 RIVERPORT DRIVE
LEETSDALE, PA., 15056

Since 1967

Michael Kasprzak
Assistant Vice President
National Fuel Gas Supply Corporation
1100 State Street
Erie, Pennsylvania 16501

September 9, 2016

Re: Wheatfield Dehydration Facility - Thermal Oxidizer Control Explanation

Dear Mr. Kasprzak:

We understand that the Town of Wheatfield, New York, has requested additional information regarding the thermal oxidizer that Frederick Logan Company, Inc. has designed and will manufacture for Empire Pipeline Inc. ("Empire") for installation and operation at a proposed dehydration facility to be located at 2251 Liberty Drive, Wheatfield, New York. We are pleased to provide you with this additional information.

Overview of the Process

A Glycol Dehydration unit is designed to remove water vapor or humidity from natural gas. This minimizes operational issues encountered from the presence of water vapor and free water in transmission pipeline systems. A glycol dehydration plant uses a liquid absorbent (Triethylene Glycol) in a closed loop system to absorb the water from the natural gas flowing through a contactor tower. The glycol is circulated from the contactor tower to a re-boiler (regenerator) where the water is "boiled off" from the glycol. Glycol that contains water that has been absorbed into it is known as a "Rich Glycol Stream". Once the water has been boiled off, it is known as a "Lean Glycol Stream" and is ready to be circulated back into the contactor tower. It is this circulation of glycol through the contactor tower and re-boiler that removes water (and some other gas components) from the natural gas stream. The rate at which pure, water-free glycol is circulated to the contactor tower is critical for operation of the Dehydration Facility and for achieving gas water content per pipeline specifications.

The steam and other trace components, which are boiled off from the reboiler (waste gas), are often times vented directly to the atmosphere. The Wheatfield installation, however, will route the waste stream to a thermal oxidizer to be destroyed.

The thermal oxidizer unit is currently the best technology available for this process. Below are the design and operation details of the Wheatfield thermal oxidizer Unit.

Thermal Oxidizer

All hydrocarbons have an inherent physical property at which the hydrocarbon will "combust" or burn. This property is referred to as the auto-ignition temperature.

There are three main considerations when designing a thermal oxidizer. These are commonly referred to as the three "T"s.

Time, Temperature and Turbulence:

Time – The thermal oxidizer combustion chamber is designed to ensure that the waste gas stream is exposed to an elevated temperature for more than 0.5 seconds (here close to 1.7 seconds to ensure a 99.9% destruction efficiency). We use mass flow calculation (combustion air mass + Fuel Gas + Waste Gas stream) and the size of the oxidizer to determine the stream velocity through the combustion chamber, ultimately establishing the residence time.

Temperature – The combustion chamber temperature is measured at the end of the combustion chamber, one pipe diameter from the stack exit. The location for measuring the temperature of a thermal oxidizer has been determined by the EPA. The thermal oxidizer combustion chamber operating temperature is 1450°F. This is 50°F above EPA's established minimum operating temperature of 1400°F, which is set well above the auto-ignition temperature of all VOC's in the waste stream. (Please see table 1 below for a listing of the common components in the natural gas stream for an interstate pipeline and their individual auto-ignition temperatures. Please note that the highest auto-ignition temperature for any of the constituents in the natural gas stream is 1128°F, well below the chamber operating set point of 1450°F, as well as the minimum operating temperature of 1400°F.)

Turbulence – Good mixing is engineered into this design by using a forced draft combustion air blower. The blower forces air into the chamber and causes the waste gas to spin and mix with the combustion air. This design also requires the hot gases to turn 90 degrees upward, which also increases mixing and prevents channeling along the outer walls of the combustion chamber.

Table 1 - Auto Ignition Temperatures

Chemical	Auto-ignition Temperature (°F)
Benzene	1040
Butane	761
Carbon monoxide	1128
Cyclohexane	473
Ethane	959
Ethylene. ethene	914
Heptane	399
Hexane	433
Isobutane	864
Isobutene	869
Isopentane	788
Isohexane	507
Methane (Natural Gas)	1076
Neoheaxane	797
Neopentane	842
n-Butane	761
n-Heptane	419
n-Hexane	437
n-Octane	428
n-Pentane	500
n-Pentene	569
Propane	878
Propylene, propene	856
p-Xylene	986
Toluene	995
Toluene	986
Xylene	867

Initial Proposed Design (99% Destruction Efficiency) vs Revised Proposed Design (99.9% Destruction Efficiency)

As stated above, one of the main factors affecting the design is the residence time that the waste gas is exposed to the combustion chamber temperature. In this case, the operating temperature is 1450°F. In order to increase the guaranteed destruction efficiency of the thermal oxidizer, the combustion chamber diameter was increased to reduce the waste stream velocity and facilitate a greater residence time. This diameter change will increase waste gas residence time from approx. 0.75 seconds to 1.7 seconds, allowing the unit to achieve the higher destruction efficiency (99.9% vs. 99.0%).

Operation & Continuous Temperature Monitoring

The thermal oxidizer system is designed to ensure that the 99.9% destruction efficiency is maintained by continuously monitoring the combustion chamber temperature. A temperature probe is mounted at the top of the exhaust stack. This sends a constant real time signal back to the thermal oxidizer controller. The temperature is monitored locally at the thermal oxidizer unit, as well as at the main station controller.

If the temperature drops below the minimum operation temperature set point of 1400°F, the unit will automatically initiate a shutdown of both the thermal oxidizer and the regenerator. The specifics of this process are detailed below.

The unit maintains the combustion chamber set point of 1450°F automatically by using lead /lag control. If the temperature starts falling, fuel gas is introduced to maintain the set combustion chamber temperature. An air blower is also utilized to assist with combustion mixture and temperature control.

Shutdown Procedure

If the temperature in the combustion chamber falls below 1400°F, the shutdown of both the thermal oxidizer and the regenerator is automatic and does not require human intervention. If the shutdown signal comes from one of the thermal oxidizer alarms (including low combustion chamber temperature or any other detected malfunction), both the thermal oxidizer main burner and pilot close automatically using the actuated valves on the main fuel line and the pilot line. The overhead valve in the waste feed line to the thermal oxidizer from the reboiler is also automatically closed. A signal is also simultaneously sent to the reboiler control system for shutdown. The actuated valves in the main fuel line and pilot line are closed and a signal is sent to the electric motor control to shut down the electric motor driven glycol pump. Thus, in the event of a malfunction including the temperature in the combustion chamber falling below 1400°F, the entire system automatically shuts down.

Conclusion

The above information is intended to provide a detailed explanation of the thermal oxidizer control system for the Wheatfield Dehydration Facility. We understand that the Town of Wheatfield has requested a third-party stack test of the thermal oxidizer unit to ensure predicted destruction efficiency. Based on Frederick Logan Company's decades of experience designing and manufacturing thermal oxidizers, the well-established reliability of this technology, and the components of the waste stream at the Wheatfield Dehydration Facility, such testing is simply not warranted. Frederick Logan Company has guaranteed a minimum destruction efficiency of 99.9%.

Very truly yours,

Scott Hood, CPM
Sr. Process Designer
Frederick Logan Co., Inc.
140 Commonwealth Dr.
Warrendale, PA 15086-7505