

**ALLEGHENY COUNTY HEALTH DEPARTMENT  
AIR QUALITY PROGRAM**

January 19, 2010

**SUBJECT:**     TRANSFLO Terminal Services - Pittsburgh Terminal  
                  Corner of Courtland & Blair Street  
                  Pittsburgh, PA, 15207  
                  Allegheny County

                  Operating Permit: No. 0430

**TO:**            Sandra L. Etzel  
                  Chief Engineer

**FROM:**        Ron Huffman  
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**FACILITY DESCRIPTION:**

The TRANSFLO Terminal Services - Pittsburgh Terminal transfers various types of solid and liquid products between railcar and truck. The product is brought in by either railcar or truck and then transferred directly into a truck, or alternately brought in by truck and transferred directly to railcar. The source owns four (4) different train track loading areas. These track areas either utilize two (2) specially designed solid loading conveyors that are each equipped with a baghouse, liquid pumps to transfer liquids, or an electric air compressor to pressurize railcars in order to evacuate liquid out of the railcar and into a truck. The facility also operates a mobile blowing/pneumatic conveyance system for transferring material such as lime. The facility operates one (1) No.2 fuel oil fired 1.4 MMBtu/hr boiler in order to transload certain liquids during winter months. This source has no existing air permits.

TRANSFLO Terminal Services - Pittsburgh Terminal is a minor source for particulate matter (PM), particulate matter of 10 microns or less in diameter (PM<sub>10</sub>), sulfur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), and carbon monoxide (CO) and as defined in section 2101.20 of Article XXI. TRANSFLO Terminal Services - Pittsburgh Terminal is a synthetic minor source for volatile organic compounds (VOCs) and Hazardous Air Pollutants (HAPs), as defined in Article XXI, section 2101.20.

**EMISSION SOURCES:**

ID	SOURCE DESCRIPTION	CONTROL DEVICE(S)	MAXIMUM CAPACITY	FUEL/RAW MATERIAL	STACK ID
P-001	Solid Transfer Operations	Baghouse	609,400 tons/yr	Solids Transferred	S-001
P-002	Liquid Transfer Operations	Vapor balance <sup>1</sup>	80,000 kgal/yr	Liquids Transferred	S-002
B-001	Boiler	Uncontrolled	1.4 MMBtu/hr	No. 2 Fuel Oil	S-003

<sup>1</sup> Vapor balance only applies to all HAP containing liquids and VOC containing liquids with a vapor pressure of at least 0.9 psia. Vapor balancing is not required; however, for the transfer of diesel fuel or liquids that contain ethylene glycol or Bis(2-ethylhexyl)phthalate as the only HAP.

**Miscellaneous Emission Sources:**

TRANSFLO Terminal Services - Pittsburgh Terminal operates a specially designed vehicle called a “Master Vac” for loading plastics. The emission factor for plastic materials is from AP-42, Section 6.6.1 and is the basis for considering the transfer of plastics as insignificant. The transfer of 30,000 tons per year equates to particulate emissions of 0.01 tons per year (i.e., 22.5 pounds per year).

The facility has a paved parking lot with vehicle traffic.

The facility has two (2) small (< 500 gallon each) aboveground diesel tanks.

**Emission Controls:**

The particulate emissions from the solids transfer operations (P-001) are controlled with baghouses.

Vapor balance will be used on liquid transfer operations (P-002). Vapor balance only applies to all HAP containing liquids and VOC containing liquids with a vapor pressure of at least 0.9 psia. Vapor balancing is not required; however, for the transfer of diesel fuel or liquids that contain ethylene glycol or Bis(2-ethylhexyl)phthalate as the only HAP.

**EMISSION CALCULATIONS:**

**Solid Transfer Operations (P-001):**

The permittee transfers various types of solids between rail and truck using two (2) conveyor type systems. Each conveyor system consists of four potential particulate emission points: baghouse exhaust emissions, drop point from railcar to conveyor, drop point from conveyor to covered truck, and drop point from conveyor return to collection bin. Note: the particulate emissions from the drop point from railcar to conveyor, and conveyor to covered truck are controlled with baghouses. This facility uses two different model baghouses (Donaldson UMA-150 and Donaldson UMA-100). The UMA -150 is a larger model (greater air-flow) and it has been conservatively assumed that the UMA-150 is used to control emissions from the transfer of all solid products at this facility. The control efficiency of the drop point from railcar to

conveyor is estimated to be 90% based on an air velocity measurement provided by the source. The control efficiency of the drop point from conveyor to covered truck is also estimated to be 90% (conservative estimate) since a foam seal is used at the transfer point. A 0% control efficiency of the drop point from conveyor return to collection bin is used as no controls are currently used.

The facility provided uncontrolled and limited/controlled PM/PM<sub>10</sub> emission factors after taking into consideration all transfer points; these emission factors incorporate the methods of AP-42 Chapter 13.2.4 - Aggregate Handling and Storage Piles. The permittee is limited to 609,400 tons solid transfer per year and 50 tons solid transfer per conveyor per hour. Appendix A includes detailed emission calculations for the solids transfer operations. The following table shows the maximum potential emissions from solids transfer operations.

**Maximum Potential Emissions for all Solids Transfer Operations (P-001)**

<b>POLLUTANT</b>	<b>HOURLY EMISSION LIMIT (lbs/hr)</b>	<b>ANNUAL EMISSION LIMIT (tons/year)<sup>1</sup></b>
PM	2.74	12.0
PM <sub>10</sub>	1.42	6.22

<sup>1</sup> A year is defined as any consecutive 12-month period.

**Liquid Transfer Operations (P-002):**

The permittee transfers various types of liquids between rail and truck using primarily a submerged loading process (ethylene glycol uses a splash loading process). Electric air compressors are used to pressurize railcars in order to evacuate liquid out of the railcar and into a truck. Vapor balance is used on all liquid transfers of HAP containing liquids except for the transfer of diesel fuel or liquids that contain ethylene glycol or Bis(2-ethylhexyl)phthalate as the only HAP. Vapor balance is also used on all liquid transfers of VOC containing liquids with a vapor pressure of at least 0.9 psia. Based on AP-42 Chapter 5.2.2.1.1, a collection efficiency of 98.7% is assumed for loading liquid to trucks passing the NSPS-level annual test (3 inches pressure change). Potential VOC/HAP emissions from these operations were calculated according to AP-42 Chapter 5.2 - Transportation and Marketing of Petroleum Liquids. Worse case VOC and HAP emissions were evaluated based on worse case liquid transferred. In order to calculate a VOC potential to emit, Pentane was used as a representative worse case material with a vapor pressure of greater than 0.9 psia and Bis(2-ethylhexyl)phthalate was used as a representative worse case material with a vapor pressure of less than 0.9 psia. The permittee is limited to 20,000 kgal per year for VOC containing liquids with a vapor pressure of less than 0.9 psia. The permittee is also limited to 60,000 kgal per twelve consecutive month period of liquid transloaded for VOC containing liquids with a vapor pressure of 0.9 psia or greater, and for all HAP containing liquids (the transloading of diesel fuel or liquids that contain ethylene glycol or Bis(2-ethylhexyl)phthalate as the only HAP is not limited and are not counted in the determination of throughput of these transloaded liquids). In addition, materials that do not contain any VOC or HAP are not included in the total annual 20 and 60 million gallon per year throughput limits. The facility is required to notify the Department in writing at least seven (7) days prior to processing a liquid material not currently processed. The facility is required to keep daily records of all liquids it transfers (no matter the vapor pressure). Appendix A includes detailed emission calculations for the liquids transfer operations. The following table shows the maximum potential emissions from liquids transfer operations.

**Maximum Limited Potential Emissions for all Liquids Transfer Operations (P-002)**

<b>POLLUTANT</b>	<b>HOURLY EMISSION LIMIT (lbs/hr)</b>	<b>ANNUAL EMISSION LIMIT (tons/year)<sup>1</sup></b>
VOC	5.81	7.51
HAP	1.91	1.91

<sup>1</sup> A year is defined as any consecutive 12-month period.

**Boiler (B-001):**

The one (1) boiler operated at this facility is No.2 fuel oil-fired. The No. 2 fuel oil shall not exceed 0.5% sulfur content. Emission calculations were based on U.S. EPA AP-42 Chapter 1.3, Tables 1.3-1, 1.3-2, 1.3-3, 1.3-9, 1.3-10, and 1.3-11, published September 1998. A 15% adjustment factor was added to all emissions calculated using AP-42 factors to account for operational variability of equipment. Note: PM and PM<sub>10</sub> emission factors are based on §2104.02.a.1. Appendix A includes detailed emission calculations for the boilers. The following tables show the maximum potential emissions from the boilers.

**Maximum Potential Emissions for Boiler B-001**

<b>POLLUTANT</b>	<b>HOURLY EMISSION LIMIT (lbs/hr)<sup>1</sup></b>	<b>ANNUAL EMISSION LIMIT (tons/year)<sup>2</sup></b>
PM	0.02	0.09
PM <sub>10</sub>	0.02	0.09
SO <sub>2</sub>	0.82	3.58
NO <sub>x</sub>	0.23	1.01
VOC	3.91E-03	0.02
CO	0.06	0.25

<sup>1</sup> PM and PM<sub>10</sub> emissions based on §2104.02.a.1 limits.

<sup>2</sup> A year is defined as any consecutive 12-month period.

**EMISSIONS SUMMARY (entire facility):**

**Maximum Potential Emissions for Entire Facility**

<b>POLLUTANT</b>	<b>ANNUAL EMISSION LIMIT (tons/year)<sup>1</sup></b>
PM	12.1
PM <sub>10</sub>	6.22
SO <sub>2</sub>	3.58
NO <sub>x</sub>	1.01
VOC	7.52
CO	0.25
HAPs	1.94

<sup>1</sup> A year is defined as any consecutive 12-month period.

**OPERATING PERMIT APPLICATION COMPONENTS:**

1. Permit Application No. 0430, dated May 6, 2008.
2. Supplemental information collected during a site visit August 5, 2008.
3. Updated Permit Application No. 0430, dated August 27, 2008.
4. Correspondence with the source in October 2009.

**REGULATORY APPLICABILITY:**

1. **Article XXI Requirements for Issuance:**

The following Article XXI requirements apply to this facility:

§2103.12.a.2.B (Standards for Issuance): Existing sources, where no limits have been established under Article XXI, are subject to Reasonably Available Control Technology (RACT) requirements.

- (a) Particulate limitations for the solid transfer operations (P-001) have been established by §2104.02.b.
- (b) The Department has determined that RACT for the liquid transfer operations (P-002) is the potential to emit as shown in Appendix A, page 3. The permittee is limited to 20,000 kgal per year of liquid transloaded for all VOC containing liquids with a vapor pressure less than 0.9 psia. The permittee is also required to use vapor balance, and is limited to 60,000 kgal per year of liquid transloaded for all HAP containing liquids or VOC containing liquids with a vapor pressure greater than or equal to 0.9 psia. The transloading of diesel fuel or liquids that contain ethylene glycol or Bis(2-ethylhexyl)phthalate as the only HAP is not limited and are not counted in the determination of throughput of these transloaded liquids.
- (c) The Department has determined that RACT for the existing boiler (B-001) is the potential to emit as shown in Appendix A, page 4.

§2103.20.b.4 (Synthetic Minors): This rule applies because in order to stay below the major source thresholds for PM<sub>10</sub>, VOC, and HAP, the following limits are required. The permittee is required to

use a baghouse during solid transfer operations and is limited to 609,400 tons solid transfer per year and 50 tons solid transfer per conveyor per hour. The permittee is limited to 20,000 kgal per year of liquid transloaded for all HAP containing liquids or VOC containing liquids with a vapor pressure less than 0.9 psia. The permittee is also required to use vapor balance, and is limited to 60,000 kgal per year of liquid transloaded for all HAP containing liquids or VOC containing liquids with a vapor pressure greater than or equal to 0.9 psia. The 60,000 kgal per year throughput limit and vapor balance requirement excludes the transfer of diesel fuel or liquids that contain ethylene glycol or Bis(2-ethylhexyl)phthalate as the only HAP.

§2104.02.a.1 (Particulate Mass Emissions): This rule applies to fuel burning or combustion equipment where the actual heat input to such equipment is greater than 0.50 MMBtu per hour. Pursuant to this rule, particulate emissions from the boiler (B-001) shall not exceed 0.015 lbs/MMBtu of actual heat input at any time while combusting fuel oil.

§2104.02.b (Particulate Mass Emissions): This rule applies to processes that have the potential to emit particulate matter that are not listed in Subsection c, d, e, f, g, or h and for which there is no standard established under Part E of Article XXI. Pursuant to this rule, particulate matter emissions from the solid transfer operations (P-001) shall not exceed seven (7) pounds in any 60 minute period or 100 pounds in any 24-hour period. As shown in Appendix A, page 2, use of the baghouses ensures compliance with this limit.

§2104.03 (Sulfur Oxide Emissions): This rule applies to fuel burning or combustion equipment. Pursuant to this rule, sulfur oxide emissions from the boiler (B-001) shall not exceed 1.0 pound per million BTU of actual heat input because this unit burns fuel oil and has an actual heat input capacity greater than 0.50 million BTUs per hour, but less than 50 million BTUs per hour.

§2105.12.a (Volatile Organic Compound Storage Tanks): The requirements of §2105.12.a for volatile organic compound storage tanks are not applicable to the fuel oil storage tanks (T-001 and T-002). The storage tanks are less than 2,000 gallons each and the fuel oil has a maximum vapor pressure of 0.008 psia which is less than the vapor pressure threshold defined in §2105.12.a.

2. **Testing Requirements:**

Testing is not required, but the Department reserves the right to require testing in the future to assure compliance with the terms and conditions of Operating Permit No. 0430.

3. **New Source Review (NSR) and Prevention of Significant Deterioration (PSD):**

NSR and PSD do not apply. The facility is a minor source for all criteria pollutants.

4. **New Source Performance Standards**

40 CFR 60, Subpart Dc for Small Industrial-Commercial-Institutional Steam Generating Units: This rule does not apply to the No.2 fuel oil boiler (B-001) because the maximum design heat input capacity is less than 10 MMBtu/hr.

40 CFR 60, Subpart Kb for Volatile Organic Liquid Storage Vessels: This rule does not apply to the existing storage tanks T-001 and T-002 because the capacity of each tank is less than 75 cubic meters

(19,813 gallons).

5. **National Emission Standards For Hazardous Air Pollutants**  
None of the National Emission Standards for Hazardous Air Pollutants apply to this source.
6. **Risk Management Plan; CAA Section 112(r):**  
The source is not required to have a risk management plan at this time because none of the regulated chemicals exceed the thresholds on the regulation.

**METHOD OF DEMONSTRATING COMPLIANCE:**

Compliance with the emission standards set in this permit will be demonstrated by:

- (a) weekly notation of the pressure drop across the baghouses controlling particulate emissions from the solid transfer operations;
- (b) daily records of all solids transloaded;
- (c) daily records of all VOC and HAP containing liquids transloaded (differentiating between VOC liquids with a vapor pressure greater than or equal to 0.9 psi and liquids having a vapor pressure less than 0.9 psi);
- (d) monthly records of each leak inspection;
- (e) recording boiler fuel consumption each month, maintaining fuel certifications from fuel suppliers, and providing written notice of fuel consumption and sulfur content to the Department semiannually; and
- (f) Notifying the Department in writing of any new liquid material to be processed, at least seven (7) days prior to commencing the change.

See Operating Permit No. 0430 for the specific conditions for determining compliance with the applicable requirements.

**RECOMMENDATION:**

All applicable Federal, State and County regulations have been addressed in the permit application. The operating permit application for TRANSFLO Terminal Services - Pittsburgh Terminal should be approved with the emission limitations and terms and conditions in Operating Permit No. 0430.