

**DEPARTMENT OF ENVIRONMENTAL QUALITY  
AIR QUALITY DIVISION  
ACTIVITY REPORT: Scheduled Inspection**

P074345184

<b>FACILITY:</b> Savoy Energy LP- Moore 1-14 CPF		<b>SRN / ID:</b> P0743
<b>LOCATION:</b> P.O. Box 1560, BROOKLYN		<b>DISTRICT:</b> Jackson
<b>CITY:</b> BROOKLYN		<b>COUNTY:</b> JACKSON
<b>CONTACT:</b> Dylan Foglesong , Production Engineer		<b>ACTIVITY DATE:</b> 07/12/2018
<b>STAFF:</b> Mike Kovalchick	<b>COMPLIANCE STATUS:</b> Compliance	<b>SOURCE CLASS:</b> MINOR
<b>SUBJECT:</b> Inspection of an oil/gas processing facility that is fed with 6 oil/gas wells.		
<b>RESOLVED COMPLAINTS:</b>		

**Minor Source-****Facility Contact**

Jack Rokes-Operations Manager

Dylan Foglesong-Production Engineer

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**Purpose**

On July 12, 2018, I conducted an unannounced compliance inspection of Savoy Energy LP-Moore 1-14 CPF (Company) on Peterson Road near Brooklyn, Michigan. The purpose of the inspection was to determine the facility's compliance status with the applicable federal and state air pollution regulations, particularly Michigan Act 451, Part 55, Air Pollution Control Act and administrative rules.

**Facility Location**

The facility is located in near the town of Brooklyn in a rural area. See attached aerial photo. It is accessed via a long-unmarked gravel road at 9703 Peterson Road.

**Facility Background**

The facility has not been previously formally inspected. It is a central processing facility for six oil/gas wells known as the Moore 1-14(located on site), Kimball 2-14, Bauer 1-13, Colbrook 5-24, Boyce 4-24 and the Boyce 2-24. 2 of the wells are located near the facility and another 3 near the town of Brooklyn. A PTI application was submitted on September 9, 2016 for this facility. However, the application was voided on December 2, 2016 as it was determined that all the equipment at the existing facility was considered exempt.

From the PTI application: "Produced oil, gas, and water enter the Moore CPF from the Black River formation via multiple nearby wellheads and are sent through six (6) line hears (500, Btu/hr each) followed by six (6) heater treaters (1,000,000 Btu/hr each) that break out the oil, gas, and water into separate streams. The oil and water are sent to six (6) fixed roof tanks, four (4) of which store oil and two (2) of which store water. (Tanks are less than 75 cubic meters/19,813 gallons each) Emissions from these tanks are controlled by a VRU. The crude oil is loaded into tanker trucks from a truck loading operation. The gas stream is then treated to remove moisture in the triethylene glycol dehydration unit, which has a natural gas-fired reboiler. The natural gas stream from the dehydrator is then sent through a single standalone JT skid which cools the stream to drop out propanes, butanes, and other heavier hydrocarbons. These liquids are sent to a the pressurized NGL tank. Liquids from the NGL tank are removed from the site via tanker truck. The natural gas from the standalone JT skid is introduced into the pipeline to be transported along the distribution system. In case the gas is unable to be transferred to the sales lines, a flare located at the facility is utilized intermittently to burn production gas. This flare also acts as backup control for the fixed roof tanks in the unlikely event of a VRU malfunction or breakdown. A small natural gas-fired generator engine rated at 125 HP provides power to the site." Note: Since the time of the application the 225 horsepower compressor was replaced with a CAT 398 natural gas fired engine rated at 600 HP that was manufactured in the 1990's.

Aerial photos show nothing was built yet on October 3, 2011. By April 3, 2013, 2 heater treaters were present, 4

crude oil tanks and 2 brim tanks and a flare. By July 14, 2015, 5 heater treaters were present and a compressor. By October 13, 2016, an additional heat treater was added along with the VRU unit.

### Regulatory Applicability

40 CFR Part 63 Subpart HH-Oil and Natural Gas Production Facility. Because the actual annual average flowrate of natural gas will be less than 85 thousand standard cubic meters per day, the requirements of NESAHF Subpart HH will not apply to the Moore CPF, pursuant to 40 CFR 63.764(e)(1)(I), other than the requirement to keep records of the actual average natural gas flow from the dehydrator, per 40 CFR 63.774 (d) (1).

40 CFR Part 60 Subpart KKK-NSPS for Equipment Leaks of VOC from Onshore Natural Gas Processing Plants. Pursuant to 40 CFR 60.630, NSPS Subpart KKK applies to onshore natural gas processing plants that commenced construction, reconstruction, or modification after January 20, 1984 and before August 23, 2011. The term "natural gas processing plant" is defined in 40 CFR 60.631 as "any processing site engaged in the extraction of natural gas liquids from field gas, fractionation of mixed natural gas liquids to natural gas products, or both". The Moore CPF was constructed after August 23, 2011, and does not meet the definition of a natural gas processing plant; therefore, Subpart KKK does not apply. (Note: The standalone JT skid extracts natural gas liquids from the field gas, but the definition of natural gas processing excludes standalone JT skids from being considered natural gas processing.)

40 CFR Part 60, Subpart OOOO - Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution for which Construction, Modification or Reconstruction Commenced...August 23, 2011, and on or before September 18, 2015. Reciprocating compressors are considered an affected facility. However, the current compressor was manufactured prior to the applicability date and is therefore not subject. Storage vessels with VOC emissions equal or greater than 6 tpy must reduce VOC emissions by 95% or greater. Uncontrolled storage vessel emissions at the site are less than 6 tpy of VOC per tank and are therefore not subject to these provisions. Note: The storage vessel emissions are routed to a VRU, but the VRU is not subject to any provisions under OOOO since the uncontrolled emissions without the VRU would not be greater than 6 tpy. Per 60.5365(f), the group of all equipment, except compressors, within a process unit at a natural gas processing plant must comply with the requirements of NSPS, Subpart VVa, except as provided in Part 60.5401. This facility is not a natural gas processing plant as defined and therefore is not subject.

40 CFR Part 60, Subpart OOOOa - Standards of Performance for Crude Oil and Natural Gas Facilities for which Construction, Modification or Reconstruction Commenced After September 18, 2015. This subpart applies to hydraulically fractured wells, centrifugal compressors, reciprocating compressors, pneumatic controllers and pumps, natural gas processing plants, storage vessels, equipment leaks, and natural gas sweetening units that commence construction, modification, or reconstruction after September 18, 2015. All equipment at the facility commenced construction prior to this applicability date. However, a recently drilled well was fed to the facility and triggered the definition of modification in regards to applicability for equipment leaks at well sites. Moore CPF is considered a "well site" as opposed to a "compressor station" since there is a collocated wellhead at the facility. Therefore, the facility is now subject to the equipment leak monitoring requirements of this rule and an initial leak survey was completed by June 3, 2017.

PTI Permit exemption Rule 282 (2) (b) (1) Fuel-burning equipment which is used for oil and gas production or processing-Sweet natural gas, synthetic natural gas, liquefied petroleum gas, or a combination thereof and the equipment has a rated heat input capacity of not more than 50,000,000 Btu per hour. (Applies to heat treaters, line heaters, dehydrator reboiler.)

PTI Permit exemption Rule 284 (2) (e) Storage of sweet crude or sweet condensate in a vessel that has a capacity of less than 40,000 gallons if vapor recovery or its equivalent is used to prevent the emission of vapors to the atmosphere. (Applies to crude oil/brim tanks.)

PTI Permit exemption Rule 284 (2) (j) Pressure storage if boiling point less than freezing. (Applies to NGL tank.)

PTI Permit exemption Rule 285 (2) (g) Internal combustion engines that have less than 10,000,000 Btu/hour maximum heat input. (Applies to 600 H.P. 4.41 MM Btu/hour natural gas fired compressor.)

PTI Permit exemption Rule 288 (2) (b)(I) for glycol dehydrators located at an oil well site that are controlled by a condenser etc. (Applies to onsite glycol dehydrator.)

PTI Permit exemption Rule 288 (c) applies to sweet gas flares. (Applies to onsite flare.)

40 CFR Part 63, Subpart ZZZZ - National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines. This applies to both the compressor engine and generator engine.

NSPS Cat 2 Fee source/MAERS reporting facility.

Rule 629 does not apply as Jackson county is not one of the counties requiring a leak detection program.

Rule 702 applies. The compressor meets BACT per use of 3-way catalyst designed to remove NO<sub>x</sub>, Co and VOC. Glycol dehydrator is equipped with a condenser designed to meet 99.7% VOC control efficiency. Additionally, the tanks are equipped with a vapor recovery device achieving 95% control efficiency, the truck loading operation is equipped with a submerged fill pipe per the requirements of Rule 706(5).

Rule 706 applies. The crude oil loaded out at the Moore CPF has a vapor pressure greater than 1.5 psia and facility can potentially handle more than 5,000,000 gallons in a year, so the requirements of this rule potentially apply to the truck loading operation. This regulation requires such delivery vessels to be equipped with a vapor recovery system. However, the truck loading operation at the Moore CPF loads crude oil into delivery vessels at a production facility and uses a submerged fill pipe; therefore, pursuant to Rule 706(5), the provisions of this rule do not apply.

### **Arrival & Facility Contact**

Visible emissions or odor were not observed upon my approach to the Company's facility at 8:00 am. An oil rig maintenance crew was onsite servicing the Moore 1-14 oil/gas well. They suggested that I speak with a field technician that was the lease company operator for the facility. I then meet with Larry Bissett (LB). I informed LB of my intent to conduct a facility inspection and to review the various records as necessary. At this point, he contacted Jack Rokes-Operations Manager for the Company and stated that he would be joining us later. LB indicated that there generally personnel available onsite on a daily basis except at night time.

### **Pre-Inspection Meeting**

#### **Onsite Inspection**

I observed the flare. It is enclosed in a metal sheath like vessel but can be viewed through a hole in the metal siding. The flare was lit and appeared to be simply acting as a pilot light with no emissions/smoke observed. See attached photos.

Six heater-treater units were observed. They were all operating with no smoke observed being exhausted. See attached photos.

I observed a 600 HP natural gas fired compressor engine. It was not generating any opacity and appeared to be well maintained. It has a catalytic converter on it. See attached photos.

I observed a glycol dehydrator equipped with a condenser. See attached photo.

I observed a VRU unit. It pulls vapors off the crude oil/brine tanks and sends them to the compressor engine. In the event the compressor is down, the vapors are sent to the flare. See attached photo.

I observed 4 crude oil tanks, 2 brim tanks and one large propane tank that holds the higher molecular weight petroleum fractions. No odors or emissions were note except from the southern most brim tank. Closer inspection showed that a pressure relief hatch on the roof tank appeared to be leaking a small amount VOC's that had a sulfurous smell. LB indicated that it the seal to the pressure relief hatch needed to be replaced. He says the constant removal of the oil/brim using trucks causing wear on the seal due to pressure fluctuations from draw caused by emptying the tanks.

Shortly thereafter, the operations manager arrived. He indicated that he would have the seal replaced/fixd that afternoon. (Note. This was confirmed later per Company representative Dylan Foglesong.)

### **Recordkeeping Review**

Attachment (1) is the MAERS report for 2018. Total emissions reported were 3 tons of CO, 2 tons of NO<sub>x</sub> and less than 1 ton of VOC's. The Company used a tank model to estimate emissions from the storage tanks.

Attachment (2) is the facility diagram.

Attachment (3) is spec sheet for the newer 600 hp compressor engine showing PTE calculations.

Attachment (4) is summary of PTE emissions for the entire facility when equipped with the smaller engine. Changing out the new engine for the old engine still shows PTE emissions(uncontrolled) to be less than Major source thresholds. The closest would be for VOC's at 85 tons.

I send an email note to Company representative Dylan Foglesong regarding required records related to NSPS OOOOa. This was his reply: " The addition of the Colbrook 5-24 HD1 production stream to the Moore 14 facility in June 2016 brought the facility under OOOOa applicability for fugitive emissions. The LDAR requirements under OOOOa went into effect on 6/3/2017, the initial annual report for this is due 9/1/2018. I requested that he send me a copy of this Annual report when available.

### **Post-Inspection Meeting**

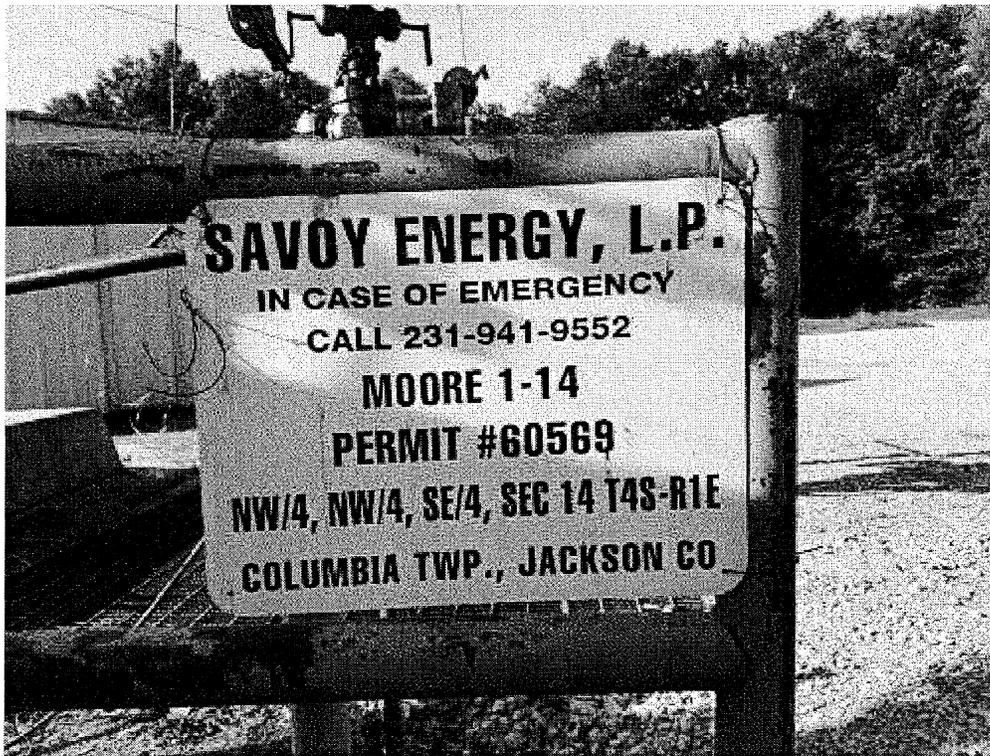
NA.

### **Compliance Summary**

The facility appears to be in compliance with all applicable requirements.



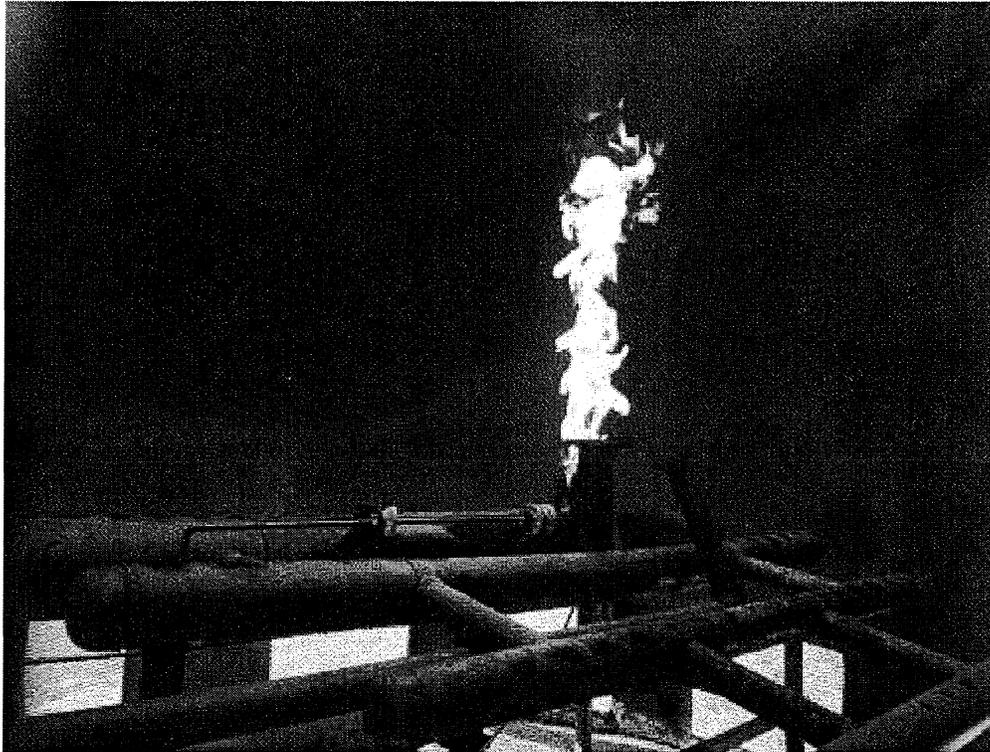
**Image 1(Aerial Photo)** : Aerial photo of the facility.



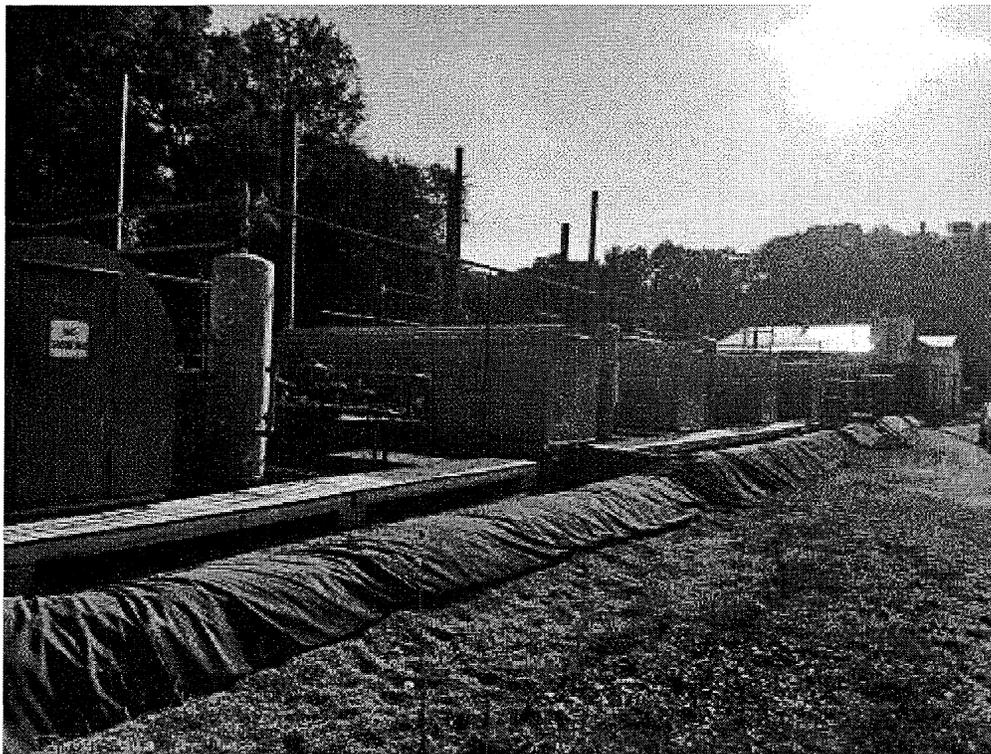
**Image 2(Well head)** : Moore 1-14 oil/gas well located at the central processing center.



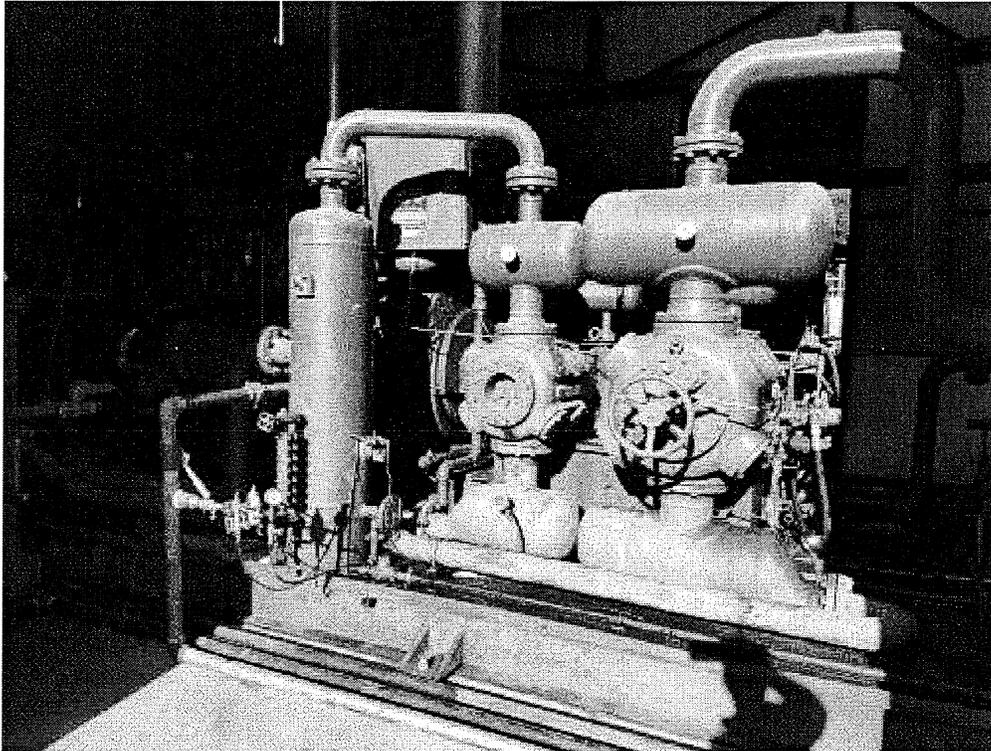
**Image 3(Enclosed flare)** : Enclosed flare.



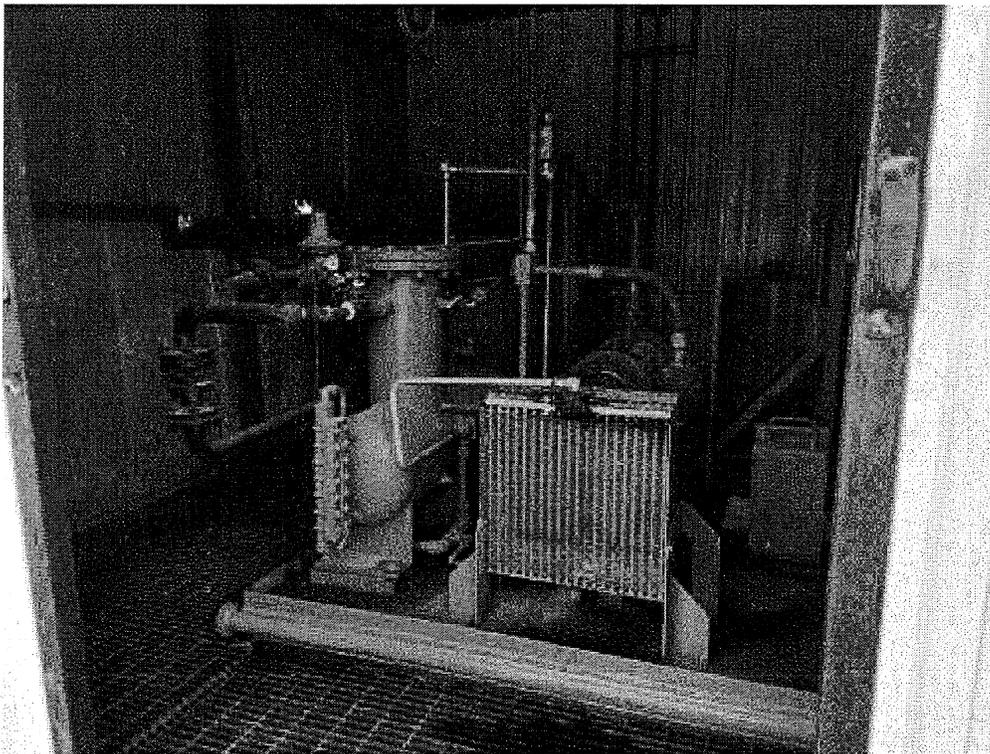
**Image 4(Flare)** : Flare



**Image 5(Heater Treaters)** : Heater Treaters



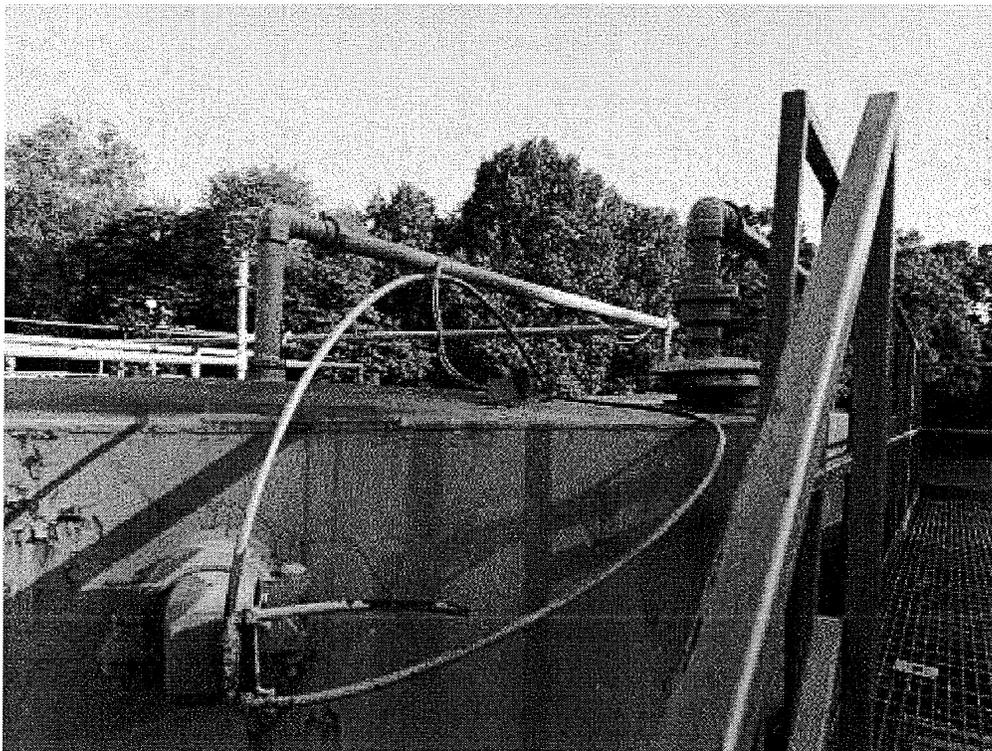
**Image 6(Compressor engine) :** Compressor engine



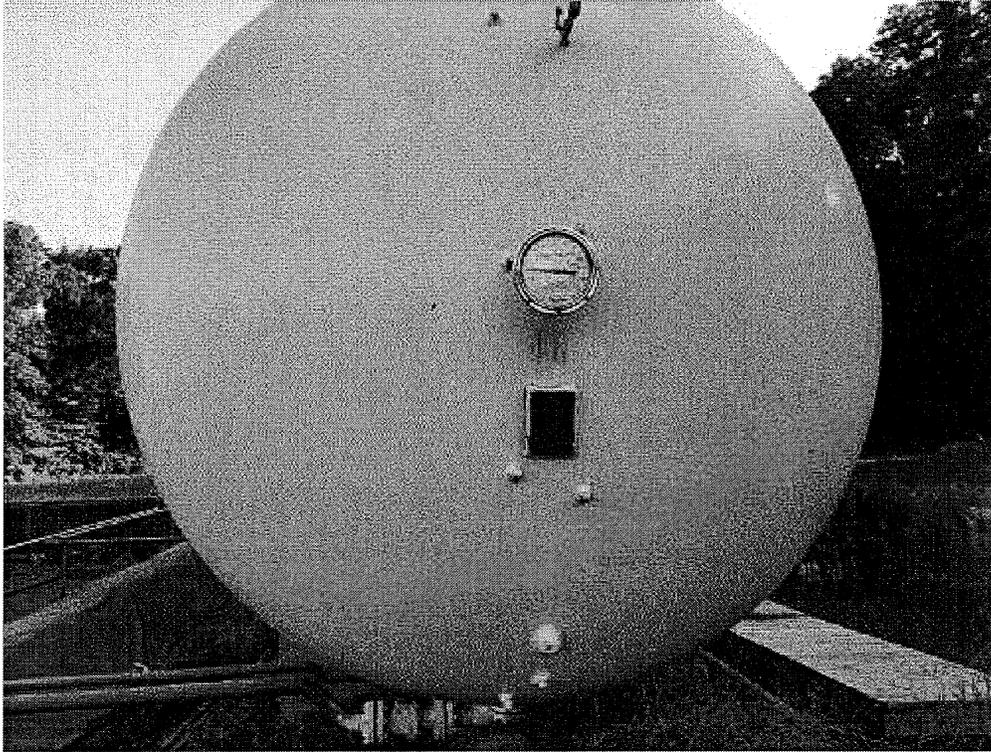
**Image 7(VRU) :** VRU unit



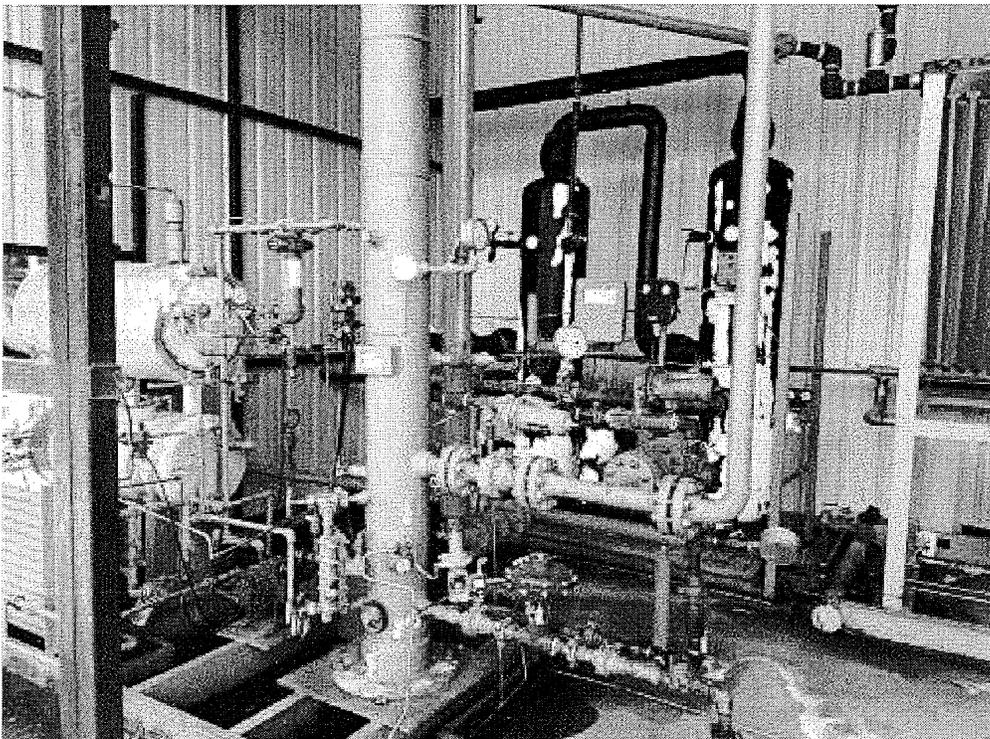
**Image 8(Crude Oil tanks)** : Crude oil tanks. The 2 tanks on the right side are brim tanks. The brim tank in front had a leaky pressure relief hatch.

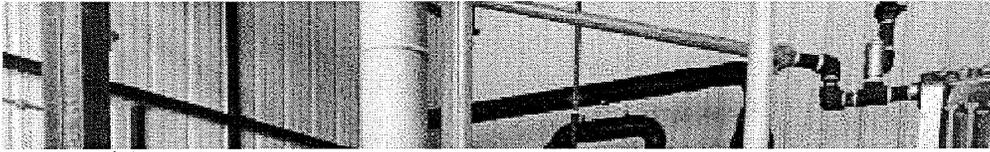


**Image 9(Pressure relief)** : Leaky pressure relief hatch visible on the top of the tank on the right side.



**Image 10(Propane tank)** : Large propane tank.





NAME M. Kovalchuk

DATE 7/17/2018

SUPERVISOR [Signature]