



State of Utah

GARY R. HERBERT
Governor

GREG BELL
Lieutenant Governor

Department of
Environmental Quality

Amanda Smith
Executive Director

DIVISION OF AIR QUALITY
Cheryl Heying
Director

DAQE-AN0101240022-09

November 3, 2009

Krege B. Christensen
Silver Eagle Refining - Woods Cross Inc.
2355 S 1100 W
PO Box 870298
Woods Cross, UT 84087-0298

Dear Mr. Christensen:

Re: Approval Order: Reconstruction of Cooling Tower #1, Replacement of HTR-50401, Change in Service for FUR-100001, Davis County; CDS A; MACT (Part 63), NSPS (Part 60), Nonattainment or Maintenance Area, Title V (Part 70)
Project Number: N010124-0022

The attached document is the Approval Order for the above-referenced project. Future correspondence on this Approval Order should include the engineer's name as well as the DAQE number as shown on the upper right-hand corner of this letter. The project engineer for this action is John Jenks, who may be reached at (801) 536-4459.

Sincerely,

M. Cheryl Heying, Executive Secretary
Utah Air Quality Board

MCH:JJ:kw

cc: Davis County Health Department

STATE OF UTAH

Department of Environmental Quality

Division of Air Quality

**APPROVAL ORDER: Reconstruction of Cooling Tower #1,
Replacement of HTR-50401, Change in Service for FUR-100001**

**Prepared By: John Jenks, Engineer
Phone: (801) 536-4459
Email: jjenks@utah.gov**

APPROVAL ORDER NUMBER

DAQE-AN0101240022-09

Date: November 3, 2009

**Silver Eagle Refining - Woods Cross Inc.
Petroleum Products Refining**

**Source Contact:
Mr. Blaine Zwahlen, Engineer
Phone: (801) 298-3211**

**M. Cheryl Heying
Executive Secretary
Utah Air Quality Board**

Abstract

On March 31, 2009 Silver Eagle Refining – Woods Cross Inc. (Silver Eagle) submitted a NOI to replace the structure and packing material of the north cooling tower (Cooling Tower #1). No emissions increases are anticipated as a result of this change, and the total replacement cost is less than 50% of the cost of a new cooling tower. In addition, the NOI also requested a replacement for heater HTR-50401. The currently permitted heater is a small 1.5 MMBTU/hr hot-oil heater, but has been found to be inadequate for this task. A larger 4.23 MMBTU/hr heater will be installed, with an expected increase in potential emissions of less than 1 ton/yr for all criteria pollutants and a commensurate increase in individual HAPs.

On April 17, 2009, under separate cover, Silver Eagle submitted a NOI requesting a change in service for a previously permitted heater. The heater was originally approved on March 29, 2005 in an AO covering the construction of a hydrotreater unit. On September 26, 2006 Silver Eagle informed UDAQ that the hydrotreater had not yet undergone construction. As of the date of this latest request, the hydrotreater has not been installed. Silver Eagle would like to use the heater, currently designated as FUR-100001, as an isomerization stabilizer heater (new designation HTR-50402) in the existing isomerization unit. This proposed change in service will not increase the potential emissions from the Silver Eagle Refinery which are as follows:

19.0 tons per year of PM₁₀
125.1 tons per year of NO_x
68.1 tons per year of SO₂
50.3 tons per year of CO
175.0 tons per year of VOC

Additional information relating to both of these requests was submitted on April 1, 2009 and on July 14, 2009.

This air quality AO authorizes the project with the following conditions and failure to comply with any of the conditions may constitute a violation of this order. This AO is issued to, and applies to the following:

Name of Permittee:

Silver Eagle Refining - Woods Cross Inc.
2355 S 1100 W
PO Box 870298
Woods Cross, UT 84087-0298

Permitted Location:

Petroleum Products Refining
2355 So. 1100 West
Woods Cross, UT 84087

UTM coordinates: 423,200 m Easting, 4,524,300 m Northing
SIC code: 2911 (Petroleum Refining)

Section I: GENERAL PROVISIONS

- I.1 The limits set forth in this AO shall not be exceeded without prior approval. [R307-401]
- I.2 Modifications to the equipment or processes approved by this AO that could affect the emissions covered by this AO must be reviewed and approved. [R307-401-1]

- I.3 All records referenced in this AO or in other applicable rules, which are required to be kept by the owner/operator, shall be made available to the Executive Secretary or Executive Secretary's representative upon request, and the records shall include the two-year period prior to the date of the request. Unless otherwise specified in this AO or in other applicable state and federal rules, records shall be kept for a minimum of two (2) years. [R307-401]
- I.4 At all times, including periods of startup, shutdown, and malfunction, owners and operators shall, to the extent practicable, maintain and operate any equipment approved under this AO, including associated air pollution control equipment, in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Executive Secretary which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source. All maintenance performed on equipment authorized by this AO shall be recorded. [R307-401-4]
- I.5 The owner/operator shall comply with R307-150 Series. Inventories, Testing and Monitoring. [R307-150]
- I.6 The owner/operator shall comply with UAC R307-107. General Requirements: Unavoidable Breakdowns. [R307-107]
- I.7 All definitions, terms, abbreviations, and references used in this AO conform to those used in the UAC R307 and 40 CFR. Unless noted otherwise, references cited in these AO conditions refer to those rules. [R307-101]
- I.8 The owner/operator shall notify the Executive Secretary in writing when the installation of the equipment has been completed and the equipment is operational, as an initial compliance inspection is required. To insure proper credit when notifying the Executive Secretary, send your correspondence to the Executive Secretary, attn: Compliance Section.

If construction and/or installation have not been completed within eighteen months from the date of this AO, the Executive Secretary shall be notified in writing on the status of the construction and/or installation. At that time the Executive Secretary shall require documentation of the continuous construction and/or installation of the operation and may revoke the AO in accordance with R307-401-18. [R307-401]

Section II: SPECIAL PROVISIONS

- II.A The approved installations shall consist of the following equipment:**
- II.A.1 **Permitted Source**
- II.A.2 **H-101: Reformer furnace**
25 MMBtu/hr furnace, fired on plant gas and/or natural gas
- II.A.3 **H-102: HDS furnace**
11 MMBtu/hr furnace, fired on plant gas

- II.A.4 **H-104: MDDW Heater**
27 MMBtu/hr furnace with low-NO_x burners, fired on natural gas only
- II.A.5 **H-103: MDDW reboiler heater**
10 MMBtu/hr heater, fired on natural gas only
- II.A.6 **F-201: #1 Crude furnace**
21 MMBtu/hr furnace, fired on plant gas and/or natural gas
- II.A.7 **F-221: Naptha stabilizer furnace**
4.5 MMBtu/hr furnace, fired on plant gas
- II.A.8 **F-231: Preflash furnace**
14 MMBtu/hr furnace, fired on plant gas and/or natural gas
- II.A.9 **F-251: #2 Crude furnace**
5 MMBtu/hr furnace, fired on plant gas and/or natural gas
- II.A.10 **F-501: Vacuum furnace**
11 MMBtu/hr furnace, fired on plant gas and/or natural gas
- II.A.11 **F-601: Asphalt furnace**
2 MMBtu/hr furnace, fired on plant gas
- II.A.12 **F-701: AB furnace**
2 MMBtu/hr furnace, fired on natural gas only
- II.A.13 **AB Still**
Asphalt blowing still
- II.A.14 **B-1: Boiler #1**
23,000 lbs/hr steam furnace, fired on plant gas and/or natural gas
- II.A.15 **B-2: Boiler #2**
23,000 lbs/hr steam furnace, fired on plant gas and/or natural gas
- II.A.16 **K-1: Reformer compressor driver**
150 hp internal combustion engine, fired on natural gas
- II.A.17 **K-2: Reformer compressor driver**
150 hp internal combustion engine, fired on natural gas
- II.A.18 **K-3: Reformer compressor driver**
330 hp internal combustion engine, fired on natural gas
- II.A.19 **MDDW**
Distillate Dewaxing Unit

- II.A.20 **Air Blown Asphalt Plant**
Air Blown Asphalt Plant
- II.A.21 **VDU**
Vacuum Distillation Unit
- II.A.22 **Cooling towers: Cooling towers**
Two cooling towers
- II.A.23 **SRU**
Sulfur Recovery Unit (NASH Unit)
- II.A.24 **Two Railcar Loading Terminals**
North and South Loading Terminals
- II.A.25 **Gasoline Ethanol Loading Rack**
Submerged Loading Normal Service
- II.A.26 **VRU**
Vapor Recovery Unit on Gasoline Loading Rack
- II.A.27 **HDS Flare**
HDS Emergency Relief Flare
- II.A.28 **Refinery Flare**
Flare for combusting gases from process relief valves and excess plant gas
- II.A.29 **Merox Unit**
Merox Unit
- II.A.30 **Isomerization Furnaces**
Isomerization Unit Process Furnaces (2)
- II.A.31 **HTR-50401**
Isomerization Unit Hot Oil Heater
- II.A.32 **HTR-50402**
Isomerization Unit Stabilizer Heater
- II.A.33 **Naphtha Railcar Loading System**
Naphtha Railcar Loading System
- II.A.34 **Tank Farms Process Drains**
Tank Farms Process Drains
- II.A.35 **Tank 1: Storage vessel - petroleum liquids**
64,419 barrel storage vessel with floating roof

- II.A.36 **Tank 2: Storage vessel - petroleum liquids**
34,584 barrel storage vessel with floating roof
- II.A.37 **Tank 3: Storage vessel - petroleum liquids**
10,295 barrel storage vessel with fixed roof
- II.A.38 **Tank 4: Storage vessel - petroleum liquids**
460 barrel storage vessel with fixed roof
- II.A.39 **Tank 5: Storage vessel - petroleum liquids**
493 barrel storage vessel with fixed roof
- II.A.40 **Tank 8: Storage vessel - petroleum liquids**
Out of Service
- II.A.41 **Tank 9: Storage vessel - petroleum liquids**
5,222 barrel storage vessel with fixed roof
- II.A.42 **Tank 10: Storage vessel - petroleum liquids**
5,083 barrel storage vessel with fixed roof
- II.A.43 **Tank 11: Storage vessel - petroleum liquids**
5,114 barrel storage vessel with fixed roof
- II.A.44 **Tank 12: Storage vessel - petroleum liquids**
5,230 barrel storage vessel with fixed roof
- II.A.45 **Tank 13: Storage vessel - petroleum liquids**
Out of Service
- II.A.46 **Tank 14: Storage vessel - petroleum liquids**
811 barrel storage vessel with fixed roof
- II.A.47 **Tank 15: Storage vessel - petroleum liquids**
31,585 barrel storage vessel with fixed roof
- II.A.48 **Tank 16: Storage vessel - petroleum liquids**
10,298 barrel storage vessel with fixed roof
- II.A.49 **Tank 17: Storage vessel - petroleum liquids**
10,329 barrel storage vessel with fixed roof
- II.A.50 **Tank 18: Storage vessel - petroleum liquids**
34, 819 barrel storage vessel with floating roof
- II.A.51 **Tank 19: Storage vessel - petroleum liquids**
11,681 barrel storage vessel with floating roof

- II.A.52 **Tank 20: Storage vessel - petroleum liquids**
11,681 barrel storage vessel with floating roof

- II.A.53 **Tank 23: Storage vessel - petroleum liquids**
34,802 barrel storage vessel with floating roof

- II.A.54 **Tank 24: Storage vessel - petroleum liquids**
34,802 barrel storage vessel with floating/fixed roof

- II.A.55 **Tank 25: Storage vessel - petroleum liquids**
6,985 barrel storage vessel with fixed roof

- II.A.56 **Tank 26: Storage vessel - petroleum liquids**
6,790 barrel storage vessel with floating roof

- II.A.57 **Tank 27: Storage vessel - petroleum liquids**
11,502 barrel storage vessel with floating roof

- II.A.58 **Tank 28: Storage vessel - petroleum liquids**
11,514 barrel storage vessel with floating roof

- II.A.59 **Tank 29: Storage vessel - petroleum liquids**
10,276 barrel storage vessel with cone roof

- II.A.60 **Tank 31: Storage vessel - petroleum liquids**
225 barrel storage vessel with fixed roof

- II.A.61 **Tank 41: Storage vessel - petroleum liquids**
4,351 barrel storage vessel with floating roof

- II.A.62 **Tank 42: Storage vessel - petroleum liquids**
5,499 barrel storage vessel with floating roof

- II.A.63 **Tank 43: Storage vessel - pet. liquids (ethanol)**
1,644 barrel storage vessel with floating roof

- II.A.64 **Tank 47: Storage vessel - petroleum liquids**
654 barrel storage vessel with fixed roof

- II.A.65 **Tank 48: Storage vessel - petroleum liquids**
655 barrel storage vessel with fixed roof

- II.A.66 **Tank 53: Storage vessel - petroleum liquids**
285 barrel storage vessel with fixed roof

- II.A.67 **Tank 54: Storage vessel - petroleum liquids**
288 barrel storage vessel with fixed roof

- II.A.68 **Tank 61: Storage vessel - petroleum liquids**
10,284 barrel storage vessel with fixed roof
- II.A.69 **Tank 62: Storage vessel - petroleum liquids**
269 barrel storage vessel with fixed roof
- II.A.70 **Tank 80: Storage vessel - NASH**
343 barrel storage vessel with fixed roof
- II.A.71 **Tank 81: Storage vessel - NASH**
2,604 barrel storage vessel with fixed roof
- II.A.72 **Tank 82: Storage vessel - NASH**
2,604 barrel storage vessel with fixed roof
- II.A.73 **Tank 83: Storage vessel - caustic**
1,211 barrel storage vessel with fixed roof
- II.A.74 **Tank 84: Storage vessel - caustic**
120 barrel storage vessel with fixed roof
- II.A.75 **Tank 85: Storage vessel - caustic**
271 barrel storage vessel with fixed roof
- II.A.76 **Tank 86: Storage vessel - caustic**
977 barrel storage vessel with fixed roof
- II.A.77 **Tank 87: Storage vessel - NASH**
496 barrel storage vessel with fixed roof
- II.A.78 **Tank 101: Storage vessel - petroleum liquids**
35,140 barrel storage vessel with floating roof
- II.A.79 **Tank 102: Storage vessel - petroleum liquids**
23,149 barrel storage vessel with floating roof
- II.A.80 **Tank 103: Storage vessel - petroleum liquids**
34,868 barrel storage vessel with floating roof
- II.A.81 **Tank 104: Storage vessel - petroleum liquids**
34,868 barrel storage vessel with floating roof
- II.A.82 **Tank 105: Storage vessel - petroleum liquids**
16,592 barrel storage vessel with floating roof
- II.A.83 **Tank 106: Storage vessel - petroleum liquids**
16,533 barrel storage vessel with floating roof

II.A.84 **Tank 107: Storage vessel - petroleum liquids**
30,099 barrel storage vessel with floating roof

II.A.85 **Tank OO: Storage vessel - wastewater**
9,038 barrel storage vessel with fixed roof

II.B Requirements and Limitations

II.B.1 **Conditions on Permitted Source**

II.B.1.a Total emissions to the atmosphere from all regulated emission points and all regulated fugitive emissions shall not exceed the following rates:

Pollutant/Period	Emission Limit	Units
PM ₁₀		
Annual	19.0	tons/yr
24-hour period	0.06	tons/day
SO ₂		
Annual	68.1	tons/yr
24-hour period	0.54	tons/day
NO _x		
Annual	125.1	tons/yr
24-hour period	0.58	tons/day

Emissions of VOC from the Asphalt Blowing Furnace (F-701) shall not exceed:

Pollutant	Emission Limit	Units
VOC	6.6	lbs/hr

[R307-401]

II.B.1.b The following emission factors shall be used to calculate daily and annual emissions:

Pollutant/Source	Emission Factors	Units	Reference
SO ₂			
Natural Gas Combustion	0.60	lbs/MMscf	AO limit
Plant Fuel Gas Combustion (Note 3)	(Note 1)	lbs/MMscf	Calculated
Fuel Oil Combustion (No. 6 or lighter)	(Note 2)	lbs/k gal	Calculated
Asphalt Blowing Furnace (Note 4)	1.5	lbs/hr	AO limit

NO _x			
Natural Gas or Plant Fuel Gas Combustion	140	lbs/MMscf	AP-42
Natural Gas or Plant Fuel Gas with Low NO _x burners	81	lbs/MMscf	AP-42
Compressors	3,400	lbs/MMscf	AO limit
Fuel Oil Combustion (No. 6 or lighter)	120	lbs/k gal	AP-42
Asphalt Blowing Furnace (Note 4)	1.0	lbs/hr	AO limit
PM ₁₀			
Natural Gas or Plant Fuel Gas Combustion	5	lbs/MMscf	AO limit
Fuel Oil Combustion (No. 6 or lighter)	7.0	lbs/k gal	AP-42
Asphalt Blowing Furnace (Note 4)	6.6	lbs/10 ⁶ cu. ft.	Stack Test

Note 1: Emission factor shall be calculated from the H₂S content of the plant fuel gas as shown in Condition II.B.1.c.

Note 2: Emission factor shall be calculated from the weight percent sulfur content of the fuel oil as shown in Condition II.B.1.c.

Note 3: The term plant fuel gas as used in this permit means either refinery generated fuel gas or a mixture of refinery generated plant fuel gas and natural gas.

Note 4: All emissions for the Asphalt Blowing Plant Furnace F701 for which the emission factor is stated in lbs/hr shall be calculated only for actual hours that the blowing still is operating.

When stack testing is conducted, the emission factors shall be updated to correspond with the results of the latest stack test. When the stack test report is approved by the Executive Secretary, the new emission factors shall be used to calculate emissions from that date forward. Stack tests exceeding the approved emission factors shall not be considered a violation of this AO. [R307-401]

II.B.1.c The SO₂ emission factors for plant fuel gas and fuel oil shall be determined as follows:

The H₂S content of the plant fuel gas shall be measured, in parts per million by volume (ppmv), by a continuous emissions monitor located downstream of the refinery fuel gas drum. Daily plant fuel gas emission factors shall be calculated as follows using average hourly H₂S content data from the CEM:

$$(\text{lb SO}_2 / 10^6 \text{ scf gas}) = (24 \text{ hr avg. ppmv H}_2\text{S}) / 10^6 * (64 \text{ lb SO}_2 / \text{lb mole}) / (385.65 \text{ scf} / \text{lb mole measured at 68 deg. F})$$

The fuel oil SO₂ emissions factor shall be calculated on the basis of the sulfur content of the fuel oil (in weight percent) as follows:

$$(\text{lb SO}_2 / \text{k gal}) = (\text{density lb/gal}) * (1000 \text{ gal/k gal}) * (\text{wt.\% S})/100 * (64 \text{ lbs SO}_2 / 32 \text{ lb S})$$

[R307-401]

- II.B.1.d Compliance with the SO₂, NO_x and PM₁₀ daily emissions limitations in Condition II.B.1.a shall be determined by applying the appropriate emissions factors from Conditions II.B.1.b and II.B.1.c to the relevant quantities of fuel combusted in all furnaces, heaters, boilers and compressors as follows:

For plant fuel gas the following equation shall be used:

$$\text{Emission Factor (lbs/MMscf)} * \text{Gas Consumption (MMscf/24 hrs)} / (2,000 \text{ lb/ton})$$

For fuel oil the following equation shall be used:

$$\text{Emission Factor (lbs/k gal)} * \text{Fuel Oil Consumption (k gal/24 hrs)} / (2,000 \text{ lb/ton})$$

For the Asphalt Blowing Furnace [F-701] the following equation shall be used to calculate PM₁₀ emissions:

$$\text{PM}_{10} \text{ Emission Factor (lbs/10}^6 \text{ cu.ft.)} * \text{Gas Consumption (cu.ft./24 hrs)} / (2,000 \text{ lbs/ton})$$

For the Asphalt Blowing Furnace [F-701] the following equation shall be used to calculate SO₂ & NO_x emissions:

$$\text{SO}_2 \text{ \& NO}_x \text{ Emission Factor (lbs/hr)} * \text{Production (operating hrs/24 hrs)} / (2,000 \text{ lbs/ton})$$

All emissions for the Asphalt Blowing Plant Furnace F701 for which the emission factor is stated in lbs/hr shall be calculated only for actual hours that the blowing still is operating. The gas stream, providing natural gas/plant fuel gas to all furnaces, heaters, boilers and compressors, shall be measured by meters monitoring the flow to each combustion device. Total annual emissions shall be calculated using the sum of all the individual meters.

Daily fuel oil consumption shall be monitored by means of leveling gages on all tanks that feed combustion sources. [R307-401]

- II.B.1.e Compliance with the daily emissions limitations of Condition II.B.1.a shall be determined by adding the daily results of the natural gas, plant fuel gas, and fuel oil combustion. Results shall be tabulated on a daily basis.

Compliance with annual limitations shall be determined on a rolling 12-month total. Based on the first day of each month, the previous month's daily (24-hour) emissions shall be summed for a monthly total. Annual emissions shall be the summation of the last 12 monthly totals. Results shall be tabulated monthly.

The flares shall not be regulated for SO₂, NO_x, and PM₁₀ emissions, nor shall they be included in the emissions limitations in Condition II.B.1.a. PM₁₀ emissions from the compressors, [K-1], [K-2], and [K-3], are not to be included in the emissions limitations of Condition II.B.1.a. SRU turnaround emissions are not to be included in the emissions limitations of Condition II.B.1.a. [R307-401]

II.B.1.f Stack testing of the asphalt blowing furnace shall be performed as specified below:

Emissions Point	Pollutant	Test Frequency
Asphalt Blowing Furnace	NO _x	*
Stack [F-701]	SO ₂	*
	VOC	*

* Testing shall be performed in accordance with R307-165. Emission Testing.

Notification

See Condition II.B.1.m

Sample Location

40 CFR 60, Appendix A, Method 1

Volumetric Flow Rate

40 CFR 60, Appendix A, Method 2

SO₂

40 CFR 60, Appendix A, Method 6, 6A, 6B or 6C

NO_x

40 CFR 60, Appendix A, Method 7, 7A, 7B, 7C, 7D or 7E

VOC

40 CFR 60, Appendix A, Method 25

Calculations

To determine mass emission rates (lbs/hr, etc.), the pollutant concentration as determined by the appropriate methods above shall be multiplied by the volumetric flow rate and any necessary conversion factors determined by the Executive Secretary to give the results in the specified units of the emission limitation.

Production Level During Testing

The production rate during all compliance testing shall be no less than 90% of the maximum production achieved in the previous three (3) years. [R307-150]

II.B.1.g Visible emissions from the following emission points shall not exceed the following values:

1. Point or fugitive emissions associated with the installation or control facilities for the Specialty Asphalt Facility and emissions from combustion sources shall not exceed 10% opacity.
2. Fugitive emissions shall not exceed 15% opacity, except fugitive dust.
3. Fugitive dust emissions shall not exceed 20% opacity.
4. Flares shall produce no visible emissions except for periods not to exceed five minutes during any two consecutive hours.

Opacity observations of emissions from stationary sources (other than the flares) shall be conducted according to 40 CFR 60, Appendix A, Method 9.

Visible fugitive dust emissions from haul-road traffic and mobile equipment in operational areas shall not exceed 20% opacity at any point. Visible emission determinations shall use procedures similar to Method 9. The normal requirement for observations to be made at 15-second intervals over a six-minute period, however, shall not apply. Visible emissions shall be measured at the densest point of the plume but at a point not less than 1/2 vehicle length behind the vehicle and not less than 1/2 the height of the vehicle.

Opacity observations of emissions from the flares shall be conducted according to 40 CFR 60, Appendix A, Method 22. [R307-401]

II.B.1.h The asphalt blowing furnace shall operate whenever asphalt is being blown through the asphalt blowing still. While blowing asphalt the Asphalt Blowing Furnace [F-701] chamber temperature shall not be less than 1,250°F or more than 2,000°F for more than five minutes in any 60-minute period. It shall be monitored with equipment located such that an inspector can at any time safely read the output. The readings shall be accurate to within plus or minus 15°F. The equipment shall be calibrated against a primary standard at least once every 90 days. The primary standard shall be established by the company and shall be submitted to the Executive Secretary for approval. The owner/operator shall maintain in airtight condition the air pathway from the blower through the scrubber to the entrance of the asphalt blowing furnace. [R307-401]

II.B.1.i Vapor Recovery Unit on Loading Rack: The loading device shall not leak and shall be designed and operated to allow no more than an average of 15cc drainage per disconnect for five consecutive disconnects. All loading and vapor lines shall be equipped with fittings which make a vapor tight connection and shall be closed prior to disconnection to prevent release of VOC. In no case shall vapor emissions to the atmosphere exceed 0.64 lb/1000 gallons gasoline/ethanol transferred. An approved inspection program shall be in place prior to the compliance test. Necessary repairs to lines, joints, etc., shall be completed as soon as

practicable as specified in R307-328. All transport vessels loading gasoline/gasohol shall be equipped with compatible bottom load connections and vapor recovery systems. [R307-401]

II.B.1.j All vacuum ejector exhaust from the vacuum distillation unit shall be incinerated in one of the process heaters. [R307-401]

II.B.1.k The SRU shall be at least 95% effective in removing sulfur from the streams fed into the unit. Shut down for routine maintenance (expected every two to five years for a period of approximately 15 days) for the SRU shall only be scheduled during the period from April through October. The projected periods/forecasts for the SRU (NASH) turnarounds shall be submitted to the Executive Secretary by the end of the first calendar quarter of each year planned and 30 days prior to the turnaround a notice shall be given to the Executive Secretary. Neither the emissions increase (above normal operations) experienced during the SRU routine turnarounds nor those from process flaring shall be included in the daily (24 HR) or annual compliance demonstrations. Copies of the SRU Operating Instruction/Standard shall be made available to the Executive Secretary upon request.

In the event the SRU efficiency drops and remains below 95%, the refinery shall isolate the problem within five days from discovery. A permanent repair or modification shall be accomplished within 15 days from the day of discovery. If the repair proves to be satisfactory, i.e., no repeat failure modes of the same type occur for at least 30 days, the efficiency drop shall not be considered a violation. A separate failure within the 30-day period shall constitute a new event.

SRU efficiency shall be estimated and reported to the Executive Secretary a minimum of once per year via the following method: Over a minimum of three and a maximum of seven operating days or other period of time as approved by the Executive Secretary, the total H₂S output from the SRU plant fuel gas (prior to mixing with natural gas) and the concentration of sulfur in the inlet and outlet streams from the low pressure NASH unit shall be measured. From these parameters the SRU efficiency shall be calculated. An alternate method may be used if approved by the Executive Secretary. [R307-401]

II.B.1.l The SRU throughput rate during SRU testing will be used to determine the maximum monthly operating rate of the unit. The SRU throughput rate during the test plus 10% becomes the monthly maximum allowable operating rate. Additional testing at higher throughput rates will be required to establish a higher monthly maximum allowable operating rate if the existing monthly maximum allowable throughput rate is to be exceeded. The maximum monthly SRU operating rate so determined shall in no way supersede the constraints established in the emissions limitations section of the AO. [R307-401]

II.B.1.m The refinery shall notify the Executive Secretary of test dates at least 30 days prior to a stack test or SRU compliance test. A pretest conference shall be held if directed by the Executive Secretary. The conference shall be held at least 30 days prior to the test and shall be attended by the owner/operator, the tester, and the Executive Secretary or representative.

The asphalt blowing furnace emission point shall be designed to conform to the requirements of 40 CFR 60, Appendix A, Method 1, and Occupational Safety and Health Administration (OSHA) or Mine Safety and Health Administration (MSHA) approvable access shall be provided to the test location. [R307-401]

- II.B.1.n The owner/operator shall use natural gas, and/or plant fuel gas as a primary fuel in all plant fuel burning equipment. Fuel oil may be fired as a backup fuel only during periods of natural gas curtailment or to test oil-burning capability of units. Testing may be done one hour per month. [R307-401]
- II.B.1.o The owner/operator shall use only natural gas, and /or plant fuel gas that has an H₂S content no higher than 0.10 grain/dscf (based on a 3-hour rolling average) as a fuel for any fuel burning devices subject to 40 CFR 60 Subpart J. [R307-401]
- II.B.1.p The sulfur content of any fuel oil shall not exceed 0.5 percent by weight. Sulfur content shall be determined by ASTM Method D-4294-89, or approved equivalent. [R307-401]
- II.B.1.q The owner/operator shall install, calibrate, maintain, and operate a continuous monitoring system located downstream of the primary fuel mixing drum to determine compliance with the SO₂ emission limits and the H₂S limits of NSPS subpart J. The owner/operator shall record the output of the system, for measuring the H₂S concentration in the plant fuel gas. SO₂ emissions rates shall be calculated assuming 100% of the H₂S in the plant fuel gas is combusted forming SO₂ at a ratio of 34 lbs of H₂S equals 64 lbs of SO₂. The monitoring system shall comply with all applicable sections of R307-170 and 40 CFR 60, Appendix B, Specification 7 - H₂S. [R307-401]
- II.B.1.r The refinery generated plant fuel gas shall be continuously monitored with equipment that will determine the quantity of plant fuel gas consumed. The meters outputs shall be located such that an inspector/operator can safely read the output at any time. The reading shall be accurate to within plus or minus 2%. The meters shall be calibrated against a standard at least once every 90 days. The standard shall be established by the company and shall be submitted to the Executive Secretary for approval. [R307-401]
- II.B.1.s VOC products shall be stored only in tanks that have the appropriate emissions controls as specified by NSPS and/or R307-327. Silver Eagle shall maintain records to demonstrate the true vapor pressure of the products stored in each tank and the type of emission controls applied to each tank. [R307-401]

Section III: APPLICABLE FEDERAL REQUIREMENTS

In addition to the requirements of this AO, all applicable provisions of the following federal programs have been found to apply to this installation. This AO in no way releases the owner or operator from any liability for compliance with all other applicable federal, state, and local regulations including UAC R307.

NSPS (Part 60), UU: AsphaltProcessing/RoofingManufctr
 MACT (Part 63), BBBB: Gasoline Distribution Bulk
 NSPS (Part 60), GGG: VOC Equip Leaks Petro Refineries
 NSPS (Part 60), J: Petroleum Refineries
 NSPS (Part 60), Kb: VolatLiq/PetroStorageVessel 7/23/84
 NSPS (Part 60), Ka: PetrolStorageVessel 5/18/78~7/23/84
 NSPS (Part 60), A: General Provisions
 NSPS (Part 60), K: Petrol StorageVessel 6/11/73~5/19/78
 NSPS (Part 60), QQQ: VOC Emis Petro Ref Wastewtr Sys

PERMIT HISTORY

This AO is based on the following documents:

Is Derived From	Additional Information Received dated July 14, 2009
Supersedes	DAQE-AN0101240021-09 dated June 3, 2009
Is Derived From	Additional Information Received dated April 17, 2009
Is Derived From	Additional Information Received dated April 1, 2009
Is Derived From	Source Submitted NOI dated March 31, 2009
Supersedes	DAQE-AN0101240016-07 dated August 17, 2007

ACRONYMS

The following lists commonly used acronyms and their associated translations as they apply to this document:

40 CFR	Title 40 of the Code of Federal Regulations
AO	Approval Order
BACT	Best Available Control Technology
CAA	Clean Air Act
CAAA	Clean Air Act Amendments
CDS	Classification Data System (used by EPA to classify sources by size/type)
CEM	Continuous emissions monitor
CEMS	Continuous emissions monitoring system
CFR	Code of Federal Regulations
CO	Carbon monoxide
COM	Continuous opacity monitor
DAQ	Division of Air Quality (typically interchangeable with UDAQ)
DAQE	This is a document tracking code for internal UDAQ use
EPA	Environmental Protection Agency
HAP or HAPs	Hazardous air pollutant(s)
ITA	Intent to Approve
MACT	Maximum Achievable Control Technology
MMBTU	Million British Thermal Units
NAA	Nonattainment Area
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emission Standards for Hazardous Air Pollutants
NOI	Notice of Intent
NO _x	Oxides of nitrogen
NSPS	New Source Performance Standard
NSR	New Source Review
PM ₁₀	Particulate matter less than 10 microns in size
PM _{2.5}	Particulate matter less than 2.5 microns in size
PSD	Prevention of Significant Deterioration
R307	Rules Series 307
R307-401	Rules Series 307 - Section 401
SO ₂	Sulfur dioxide
Title IV	Title IV of the Clean Air Act
Title V	Title V of the Clean Air Act
UAC	Utah Administrative Code
UDAQ	Utah Division of Air Quality (typically interchangeable with DAQ)
VOC	Volatile organic compounds