



Montana Department of
ENVIRONMENTAL QUALITY

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April 5, 2013

Patrick B. Kimmet
Refinery Manager
CHS Inc.
P.O. Box 909
Laurel, MT 59044

Dear Mr. Kimmet:

Montana Air Quality Permit #1821-29 is deemed final as of April 5, 2013, by the Department of Environmental Quality (Department). This permit is for CHS, Inc – Laurel Refinery. All conditions of the Department's Decision remain the same. Enclosed is a copy of your permit with the final date indicated.

For the Department,

Julie Merkel
Air Permitting Supervisor
Air Resources Management Bureau
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JM:SH
Enclosures

DEPARTMENT OF ENVIRONMENTAL QUALITY
Permitting and Compliance Division
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FINAL ENVIRONMENTAL ASSESSMENT (EA)

Issued For: CHS Inc.
Laurel Refinery
P.O. Box 909
Laurel, MT 59044-0909

Montana Air Quality Permit (MAQP) Number: 1821-29

Preliminary Determination on Permit Issued: 03/01/2013

Department Decision Issued: 03/20/2013

Permit Final: 04/05/2013

1. *Legal Description of Site:* South ½, Section 16, Township 2 South, Range 24 East in Yellowstone County.
2. *Description of Project:*

On January 22, 2013, CHS Inc. submitted an application for a modification to MAQP #1821-28. As a result of the Mild Hydrocracker (MHC) Project, the quantity of gasoil converted to diesel will generally increase and the quantity converted to gasoline will generally decrease. This will result in a lower rate of gasoline production at the Fluid Catalytic Cracking Unit (FCCU) and the downstream Alkylation Unit. According to CHS, these refinery gasoline component streams have relatively high octane ratings and are typically blended with gasoline component streams that have lower octane ratings to meet product octane specifications. CHS has determined that there may be times following the Mild Hydrocracker Project's startup that the refinery will not be able to produce enough of the higher octane gasoline components necessary to meet the minimum octane product specifications. As a result, CHS proposed to complete the Gasoline Component Unloading Project as included within the January 22, 2013 application. CHS also indicated that the impact from the MHC Project is not the only justification for completing the Gasoline Component Unloading Project. CHS anticipates that there may be other market-driven factors that will require CHS to increase or decrease the octane rating of its gasoline product in the future.

The January 22, 2013 application contained information necessary to incorporate permit changes associated with CHS's proposal to install the facilities necessary to unload various gasoline components from railcars to existing storage tanks such that these components can be blended into refinery products. The Gasoline Component Unloading project is considered an aggregate part of the previously approved Mild Hydrocracker Project and therefore, was evaluated as such for purposes of determining its regulatory applicability with respect to PSD applicability.

In addition to the proposed Gasoline Component Unloading project, CHS also requested the following changes to BACT permit conditions and monitoring requirements associated with the H-1001 Reformer Heater, FCC Charge Heater, and Gasoline and Distillate Truck Loading Rack VCU.

- For H-1001 and the FCC Charge Heater, CHS requested that permit conditions expressed in terms of MMBtu be removed from the permit and that permit limits in terms of mass (i.e. lb/hr and tons per rolling 12-calendar month total) be maintained.

CHS offered the following explanation for removal of these permit conditions:

The H-1001 Reformer Heater utilizes two fuel sources. The PSA tailgas fuel stream is generated within the 1000 Unit Hydrogen Plant and supplies the majority of the fuel required by the heater during normal operation. The supplemental fuel source is either refinery fuel gas (RFG) or natural gas. The RFG has a relatively consistent BTU content and is monitored through existing systems including an online process GC (i.e. not a CEM) and lab analysis of grab samples such that the composition and subsequently the BTU content of the RFG is characterized on a regular basis. In contrast, the PSA tailgas fuel stream has a BTU content that can vary significantly over the course of a day or week. Additionally, it does not have an online GC or a reliable grab sampling system such that its BTU content can be characterized in a frequent or accurate enough manner to be useful in assuring compliance with limits based on short term measurements of the fuel BTU content. CHS estimates that due to the sampling issues only 20% of the samples collected of the 1000 Unit PSA tailgas are valid samples. In consideration of this issue, CHS proposed in the comments to the Preliminary Determination for MAQP #1821-27 that a stack flue gas flow rate monitor be installed for use along with the existing NOx and CO CEM to demonstrate compliance with mass emission limits in place of the proposed limits expressed in terms of MMBtu. CHS believes this approach is appropriate for the following reasons:

- *The proposed mass emission limits were derived by simply multiplying the MMBtu-based limits together;*
- *The mass limits better accomplish the goal of restricting the short and long term emissions from the H-1001 Reformer Heater through the use of continuous concentration and flow monitors rather than determining an average of a number of grab samples; and*
- *The mass limits are expressed in terms the CHS Operations staff has the ability to monitor in order to ensure continuous and ongoing compliance.*

As included within the application for MAQP #1821-27, CHS proposed to install a new gasoline and distillate truck loading facility, which included an associated Vapor Combustion Unit (VCU) as the control device for vapors displaced from the truck during the loading process. CHS identified BACT for the loading rack as a VCU that controls volatile organic compound (VOC) emissions to a maximum of 10 mg/l of gasoline product loaded. The new loading rack is subject to 40 CFR 63 Subpart CC (NESHAP for Petroleum Refineries) requirements, which requires the loading rack to meet the requirements of 40 CFR 63 Subpart R. CHS requested that the BACT permit monitoring requirement be updated to more closely reflect the Subpart R requirement.

3. *Objectives of Project:* The primary objectives of this permitting action would be: 1) to install the equipment necessary to unload railcars of various gasoline components for use in blending with gasoline components produced at the CHS refinery to ensure that octane rating requirements for the CHS product gasoline can be met during all refinery operating modes. 2) to remove Best Available Control Technology (BACT) limitations in terms of MMBtu specifically for the H-1001 Reformer Heater and the FCC Charge Heater 3) to update the BACT monitoring requirement for the new VCU permitted as a part of MAQP #1821-27.

4. *Alternatives Considered:* In addition to the proposed action, the Department also considered the “no-action” alternative. The “no-action” alternative would deny issuance of the MAQP to the proposed facility. However, the Department does not consider the “no-action” alternative to be appropriate because CHS demonstrated compliance with all applicable rules and regulations as required for permit issuance. Therefore, the “no-action” alternative was eliminated from further consideration.
5. *A listing of mitigation, stipulations and other controls:* A list of enforceable permit conditions and a complete permit analysis, including BACT determinations, would be contained in MAQP #1821-29.
6. *Regulatory effects on private property:* The Department considered alternatives to the conditions imposed in this permit as part of the permit development. The Department determined that the permit conditions are reasonably necessary to ensure compliance with applicable requirements and to demonstrate compliance with those requirements and do not unduly restrict private property rights.
7. The following table summarizes the potential physical and biological effects of the proposed project on the human environment. The "no action alternative" was discussed previously.

		Major	Moderate	Minor	None	Unknown	Comments
A	Terrestrial and Aquatic Life and Habitats			X			Yes
B	Water Quality, Quantity and Distribution			X			Yes
C	Geology and Soil Quality, Stability and Moisture			X			Yes
D	Vegetation Cover, Quantity and Quality			X			Yes
E	Aesthetics				X		Yes
F	Air Quality			X			Yes
G	Unique Endangered, Fragile or Limited Environmental Resource			X			Yes
H	Demands on Environmental Resource of Water, Air and Energy			X			Yes
I	Historical and Archaeological Sites			X			Yes
J	Cumulative and Secondary Impacts			X			Yes

SUMMARY OF COMMENTS ON POTENTIAL PHYSICAL AND BIOLOGICAL EFFECTS:

The following comments have been prepared by the Department.

A. Terrestrial and Aquatic Life and Habitats:

This permitting action could have a minor effect on terrestrial and aquatic life and habitats, as the proposed projects would include the addition of a new emission unit. Impacts to terrestrial and aquatic life and habitats may occur as a result of these increased emissions. However, the emissions increases for the proposed project would fall below significance levels identified within the rules associated with Prevention of Significant Deterioration (PSD). Additionally, the permitting action would result in the incorporation of the most current facility and emissions information available. The overall emissions would remain within the facility-wide emissions caps established in MAQP #1821-05 in 2000 and updated in 2004 as part of MAQP #1821-11. Further, the

project would ultimately take place on industrial property that has already been disturbed. Therefore, only minor impacts to terrestrial and aquatic life and habitats would be anticipated.

B. Water Quality, Quantity, and Distribution:

While deposition of pollutants would occur, the Department determined that any impacts from deposition of pollutants would be minor. Furthermore, this action would not result in a change in the quality or quantity of ground water. There also would not be any changes in drainage patterns or new discharges associated with these projects. Therefore, minor impacts to water quality, quantity, and/or distribution would be anticipated.

C. Geology and Soil Quality, Stability, and Moisture:

The proposed project would include installation of an emission source on the same existing industrial site. Therefore, no additional disturbance would be created as a result of the proposed project. While deposition of pollutants may occur, the Department determined that any impacts from deposition of pollutants would be minor. Additionally, no unique geologic or physical features would be disturbed. Overall, the Department believes that any impact to the geology and soil quality, stability, and moisture would be minor.

D. Vegetation Cover, Quantity, and Quality:

The proposed project would affect an existing, industrial property that has already been disturbed. No additional vegetation on the site would be disturbed for the project. However, possible increases in actual emissions of VOCs from historical emission levels may result in minor impacts to the diversity, productivity, or abundance of plant species in the surrounding areas. Overall, any impacts to vegetation cover, quantity, and quality would be minor.

E. Aesthetics:

The proposed emission source would be constructed in areas that have previously been disturbed and would not result in any additional disturbance. Therefore, no impacts to aesthetics are anticipated.

F. Air Quality:

The proposed project would include an increase of VOC emissions. However, the project emissions would not exceed “significance” threshold levels as outlined in the rules associated with PSD. CHS would be required to maintain compliance with the Billings/Laurel SO₂ State Implementation Plan (SIP), current permit conditions, and state and federal ambient air quality standards. While deposition of pollutants would be anticipated, the Department has determined that any air quality impacts as a result of the deposition would be minor.

G. Unique Endangered, Fragile, or Limited Environmental Resources:

The Department, in an effort to assess any potential impacts to any unique endangered, fragile, or limited environmental resources in the initial proposed area of operation (South ½, Section 16, Township 2 South, Range 24 East in Yellowstone County), previously contacted the Natural Resource Information System – Montana Natural Heritage Program. Search results concluded there are seven species of concern within the

area. The search area, in this case, is defined by the section, township, and range of the proposed site, with an additional 1-mile buffer. The known specie of concern includes the Yellowstone Cutthroat Trout (Sensitive).

This permitting action could result in minor impacts to unique endangered, fragile, or limited environmental resources. However, as described in Section 7.F. of this EA, pollutant emissions generated from the facility would have minimal impacts on air quality in the immediate and surrounding area because of the relatively small amount of pollution emitted. There would not be any additional impact to these resources because the project would occur at an already disturbed site.

H. Demands on Environmental Resource of Water, Air, and Energy:

As described in Section 7.B of this EA, this permitting action would have little or no effect on the environmental resource of water as there would be no additional discharges to groundwater or surface water associated with this permitting action.

As described in Section 7.F of this EA, the impact on the air resource in the area of the facility would be minor because the facility would be required to maintain compliance with other limitations affecting the overall emissions from the facility.

A minor impact to the energy resource would be expected during the construction process involved with the proposed projects; however, this impact would be temporary. Additional energy consumption as a result of new equipment installation would be expected to be minimal by scale. Overall, the impact to the energy resource would be minor.

I. Historical and Archaeological Sites:

In an effort to identify any historical and archaeological sites near the proposed project area for previous projects, the Department contacted the Montana Historical Society, State Historic Preservation Office (SHPO). According to SHPO records, there have been a few previously recorded sites within the designated search locales. In addition to the sites there have been a few previously conducted cultural resource inventories done in the areas. The projects would occur within the boundaries of a previously disturbed industrial site. There is a low likelihood cultural properties would be impacted; therefore, any impacts to historical and archeological would be considered minor.

J. Cumulative and Secondary Impacts:

The proposed project would include increases of VOC emissions; however, cumulative and secondary impacts from this action would be anticipated to be minor as the emissions would not exceed “significance” threshold levels as outlined in the rules associated with PSD. Additionally, as described in Section 7.F of this EA, the impact on the air resource in the area of the facility would be minor because the facility would be required to maintain compliance with other limitations affecting the overall emissions from the facility. Any cumulative or secondary impacts as a result of this project would be considered to be minor and overall emissions would remain within the facility-wide emissions caps.

8. The following table summarizes the potential economic and social effects of the proposed project on the human environment. The "no action alternative" was discussed previously.

		Major	Moderate	Minor	None	Unknown	Comments
A	Social Structures and Mores				X		Yes
B	Cultural Uniqueness and Diversity				X		Yes
C	Local and State Tax Base and Tax Revenue				X		Yes
D	Agricultural or Industrial Production				X		Yes
E	Human Health			X			Yes
F	Access to and Quality of Recreational and Wilderness Activities				X		Yes
G	Quantity and Distribution of Employment				X		Yes
H	Distribution of Population				X		Yes
I	Demands for Government Services			X			Yes
J	Industrial and Commercial Activity				X		Yes
K	Locally Adopted Environmental Plans and Goals				X		Yes
L	Cumulative and Secondary Impacts			X			Yes

SUMMARY OF COMMENTS ON POTENTIAL ECONOMIC AND SOCIAL EFFECTS: The following comments have been prepared by the Department:

A. Social Structures and Mores:

The proposed project would not cause a disruption to any native or traditional lifestyles or communities (social structures or mores) in the area because the project would be constructed at a previously disturbed industrial site. The proposed project would not change the nature of the site.

B. Cultural Uniqueness and Diversity:

The proposed project would not cause a change in the cultural uniqueness and diversity of the area because the land is currently used as a petroleum refinery; therefore, the land use would not be changing. The use of the surrounding area would not change as a result of the proposed project.

C. Local and State Tax Base and Tax Revenue:

The refinery's overall capacity would not change as a result of the permitting action. In addition, no new employees would be needed for this project. Therefore, no impacts to the local and state tax base and tax revenue are anticipated from this project.

D. Agricultural or Industrial Production:

The proposed project would not result in a reduction of available acreage or productivity of any agricultural land; therefore, agricultural production would not be affected. The refinery's overall capacity would not change as a result of the proposed project. Therefore, industrial production would not be affected.

E. Human Health:

As described in Section 7.F of this EA, the impacts from this facility on human health would be minor because the emissions from the facility would increase, but not significantly from prior levels. The air quality permit for this facility would incorporate conditions to ensure that the facility would be operated in compliance with all applicable rules and standards. These rules and standards are designed to be protective of human health.

F. Access to and Quality of Recreational and Wilderness Activities:

The proposed project would not have an impact on recreational or wilderness activities because the site is far removed from recreational and wilderness areas or access routes. The action would not result in any changes in access to and quality of recreational and wilderness activities.

G. Quantity and Distribution of Employment:

No change in the number of employees currently onsite would be anticipated as a result of the proposed project. Therefore, the action would not have any impacts to the quantity and distribution of employment at the facility.

H. Distribution of Population:

This proposed project would not involve any significant physical or operational change that would affect the location, distribution, density, or growth rate of the human population. The distribution of population would not change as a result of the project.

I. Demands of Government Services:

The demands on government services would experience a minor impact. The primary demand on government services would be the acquisition of the appropriate permits by the facility and compliance verification with those permits.

J. Industrial and Commercial Activity:

The refinery's overall capacity would not change as a result of the proposed project. Therefore, no impacts on industrial activity at CHS would be expected. Industrial and commercial activity in the neighboring area would not be anticipated to be affected by issuing MAQP #1821-29.

K. Locally Adopted Environmental Plans and Goals:

The proposed project would not affect any locally adopted environmental plans or goals. CHS must continue to comply with the SIP and FIP and associated stipulations for the Billings/Laurel area. The Department is not aware of any locally adopted environmental plans and goals that would be impacted by this project.

L. Cumulative and Secondary Impacts:

Overall, any cumulative and secondary impacts from this project on the social and economic aspects of the human environment would be minor. The project would be associated with an existing facility and would not change the culture or character of the area. Additionally, overall emissions will remain within the facility-wide emissions caps.

Recommendation: An Environmental Impact Statement (EIS) is not required.

If an EIS is not required, explain why the EA is an appropriate level of analysis: All potential effects resulting from this permitting action would be minor; therefore, an EIS is not required. In addition, the source would be applying BACT and the analysis indicates compliance with all applicable air quality rules and regulations.

Other groups or agencies contacted or which may have overlapping jurisdiction: None.

Individuals or groups contributing to this EA: Department of Environmental Quality, Permitting and Compliance Division - Air Resources Management Bureau.

EA Prepared By: Skye Hatten

Date: February 21, 2013