



Montana Department of  
**ENVIRONMENTAL QUALITY**

Brian Schweitzer, Governor

P. O. Box 200901

Helena, MT 59620-0901

(406) 444-2544

Website: [www.deq.mt.gov](http://www.deq.mt.gov)

March 22, 2011

Thomas McIntyre  
Renewable Energy Corporation – Advanced Silicon Materials, LLC  
119140 Rick Jones Way  
Silver Bow, MT 59750

Dear Mr. McIntyre:

The Department of Environmental Quality (Department) has made its decision on the Montana Air Quality Permit application for a polycrystalline silicon manufacturing plant. The application was given permit number 2940-07. The Department's decision may be appealed to the Board of Environmental Review (Board). A request for hearing must be filed by April 6, 2011. This permit shall become final on April 7, 2011, unless the Board orders a stay on the permit.

Procedures for Appeal: Any person jointly or severally adversely affected by the final action may request a hearing before the Board. Any appeal must be filed before the final date stated above. The request for a hearing shall contain an affidavit setting forth the grounds for the request. Any hearing will be held under the provisions of the Montana Administrative Procedures Act. Submit requests for a hearing in triplicate to: Chairman, Board of Environmental Review, P.O. Box 200901, Helena, Montana 59620.

Conditions: See attached.

For the Department,

Vickie Walsh  
Air Permitting Program Supervisor  
Air Resources Management Bureau  
(406) 444-9741

Julie A. Merkel  
Air Quality Specialist  
Air Resources Management Bureau  
(406) 444-3626

VW: JM  
Enclosure

**DEPARTMENT OF ENVIRONMENTAL QUALITY**  
**Permitting and Compliance Division**  
**Air Resources Management Bureau**  
**P.O. Box 200901, Helena, Montana 59620**  
**(406) 444-3490**

**FINAL ENVIRONMENTAL ASSESSMENT (EA)**

*Issued To:* Renewable Energy Corporation-Advanced Silicon Materials LLC  
Butte Operations  
119140 Rick Jones Way  
P.O. Box 3466  
Butte, MT 59702

*Permit Number:* **2940-07**

*Preliminary Determination Issued:* **March 4, 2011**

*Department Decision Issued:* **March 22, 2011**

*Permit Final:*

1. *Legal Description of Site:* Section 35, Township 3 North, Range 9 West, Silver Bow County, Montana.
2. *Description of Project:* On January 25, 2011, the Department received an application for a permit modification from Bison Engineering, on behalf of REC. The project would be the replacement of the existing natural gas-fired low NO<sub>x</sub> burners and flue gas recirculation system with ultra low NO<sub>x</sub> burners for the two 40 MMBtu/hr hot oil heaters (H-1701 and H-2701).
3. *Objectives of Project:* The objective of this project would be to allow for more efficient operation of the two 40-MMBtu/hr hot oil heaters on a consistent basis.
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 air quality preconstruction permit to the proposed facility. However, the Department does not consider the “no-action” alternative to be appropriate because REC 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 conditions, including a BACT analysis, would be included in Permit #2940-07.
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 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 Included
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 Resources			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

Slight decreases in PM<sub>10</sub>, NO<sub>x</sub>, CO, and VOC emissions may be expected as a result of this project, resulting in minor, if any, impacts on existing terrestrial and aquatic life and habitats of the area because the proposed project would occur on industrial property that has already been disturbed. Where the facility would emit air pollutants and corresponding deposition of pollutants would occur, the Department determined that any impacts from deposition would be minor due to dispersion characteristics of pollutants and the atmosphere and conditions that would be placed in Permit #2940-07.

B. Water Quality, Quantity and Distribution

This permitting action would have little or no effect on the water quality, water quantity, and distribution, as there would be no discharges to groundwater or surface water associated with this project, the proposed project would not require any additional water usage by the facility, and because the proposed project would occur on industrial property that has already been disturbed. Where the facility would emit air pollutants and corresponding deposition of pollutants would occur, the Department determined that any impacts from deposition would be minor due to dispersion characteristics of pollutants and the atmosphere and conditions that would be placed in Permit #2940-07.

C. Geology and Soil Quality, Stability and Moisture

This permitting action would have a minor effect on geology and soil quality, stability, and moisture, as the proposed project would affect an existing industrial property that has already been disturbed. No additional land would be disturbed for the project. The decrease in PM<sub>10</sub>, NO<sub>x</sub>, CO, and VOC emissions for this project may have a little or no effect on the soil stability and moisture; however, the air quality permit associated with this project would contain

limitations to minimize the effect of the emissions on the surrounding environment. Where the facility would emit air pollutants and corresponding deposition of pollutants would occur, the Department determined that any impacts from deposition would be minor due to dispersion characteristics of pollutants and the atmosphere and conditions that would be placed in Permit #2940-07.

D. Vegetation Cover, Quantity, and Quality

This permitting action would have a minor effect on 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. The decrease in PM<sub>10</sub>, NO<sub>x</sub>, CO, and VOC emissions for this project would have little or no effect on the surrounding vegetation; however, the air quality permit associated with this project would contain limitations to minimize the effect of the emissions on the surrounding environment. Where the facility would emit air pollutants and corresponding deposition of pollutants would occur, the Department determined that any impacts from deposition would be minor due to dispersion characteristics of pollutants and the atmosphere and conditions that would be placed in Permit #2940-07.

E. Aesthetics

Replacing the burners with ultra low NO<sub>x</sub> burners on the two natural gas-fired hot oil heaters would have minor impacts on the surrounding property from both the visual perspective, as well as noise pollution. However, most of the disturbance will be temporary, and once construction is complete, the natural landscaping and aesthetic value of the property will be restored. The Department determined little or no changes in the aesthetic value of the site will be experienced.

F. Air Quality

The air quality of the area would realize little or no impacts from the proposed project because the facility would decrease PM<sub>10</sub>, NO<sub>x</sub>, CO, and VOC emissions by very small amounts. Air emissions from the facility would be minimized by conditions that would be placed in Permit #2940-07. Permit conditions would be placed in Permit #2940-07 to establish limits to minimize emissions.

The Department believes controlled emissions from the source would not cause or contribute to a violation of any ambient air quality standard. Although deposition of pollutants would occur as a result of the proposed project, the Department determined that the impacts from deposition of pollutants would be minor due to dispersion characteristics of pollutants (stack height, stack temperature, etc.) and atmospheric conditions (wind speed, wind direction, ambient temperature, etc.). Therefore, any impacts to air quality from the proposed facility would be minor.

G. Unique Endangered, Fragile, or Limited Environmental Resources

There would be a slight decrease in emissions in the area where the facility is located, which would result in little or no impacts to existing unique endangered, fragile, or limited environmental resources in the area. However, the proposed project will take place at an existing facility that is normally used for such activities. Therefore, the Department determined that any impacts to unique endangered, fragile, or limited environmental resources would be minor.

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

While air emissions from the facility may decrease due to the proposed project, and a corresponding decrease in deposition of pollutants may occur, the Department determined that any impacts from deposition would be minor due to dispersion characteristics of pollutants and the atmosphere and conditions that would be included in Permit #2940-07. Overall, the demands on the environmental resource of water, air, and energy would be minor.

#### I. Historical and Archaeological Sites

The proposed project may decrease emissions in the area where the facility operates, which would result in little or no impacts to existing historical and archaeological sites in the area. However, the facility is an existing facility and is located within an area that is normally used for such activities. Therefore, there would be a low likelihood of disturbance to any known archaeological or historical site given the previous industrial disturbance in the area of operation and the chance of impacting any historical and archaeological sites would be minor.

#### J. Cumulative and Secondary Impacts

The proposed project would cause little or no effects on the physical and biological aspects of the human environment because the project would decrease emissions of PM, PM<sub>10</sub>, CO, VOC and NO<sub>x</sub>. Conditions that would be placed in Permit #2940-07 would ensure that no air quality impacts, other than minor air quality impacts, would occur. Limitations would be established in Permit #2940-07 to minimize air pollution. Overall, any impacts to the physical and biological environment would be minor.

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 Included
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 ECENOMIC AND SOCIAL EFFECTS: The following comments have been prepared by the Department.

A. Social Structures and Mores

The proposed facility would not cause a disruption to any native or traditional lifestyles or communities (social structures or mores) in the area because the project would occur 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 this project.

C. Local and State Tax Base and Tax Revenue

This project would have no effect on the local and state tax base and tax revenue because the proposed project does not require any change in operation of the facility. No new employees would be added as a result of this project.

D. Agricultural or Industrial Production

The proposed project would take place at an existing facility located in a previously disturbed industrial area typically used for such operations. Therefore, the Department would not expect that the facility would affect or displace any agricultural land or industrial production.

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 action would not alter any existing access to or quality of any recreational or wilderness area activities. This 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. Furthermore, the facility is contained on private property and would continue to be contained within private property boundaries.

G. Quantity and Distribution of Employment

The proposed project would not result in any impacts to the quantity or distribution of employment at the facility or surrounding community. No employees would be hired at the facility as a result of the project.

H. Distribution of Population

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

I. Demands for 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 (including local building permits, as necessary, and a state air quality permit) and compliance verification with those permits.

J. Industrial and Commercial Activity

The proposed project would not affect local industrial and commercial activity because no additional construction would be required.

K. Locally Adopted Environmental Plans and Goals

There are no locally adopted environmental plans and goals that are expected to be affected by the proposed change to emission limitations.

L. Cumulative and Secondary Impacts

The existing facility and the proposed emission decreases would cause little or no impacts to both the physical environment and the human environment because the operational limitations and other conditions within Permit #2940-07 will ensure that ambient air quality standards are protected.

*Recommendation:* No Environmental Impact Statement (EIS) is required.

*If an EIS is not required, explain why the EA is an appropriate level of analysis:* The proposed project would result in a slight decrease in emissions of PM, PM<sub>10</sub>, CO, NO<sub>x</sub>, and VOC. Permit #2940-07 includes conditions and limitations to ensure the facility will operate in compliance with all applicable rules and regulations. In addition, there are no significant impacts associated with this proposal.

*Individuals or groups contributing to this EA:* Department of Environmental Quality – Air Resources Management Bureau

EA prepared by: Julie Merkel

Date: 02/22/11