

**BEFORE THE ILLINOIS POLLUTION CONTROL BOARD
OF THE STATE OF ILLINOIS**

WRB REFINING, LP)	
Sulfur Recovery from Fuel Gas Project)	
)	PCB 16-
)	(Tax Certification - Air)
PROPERTY IDENTIFICATION NUMBER)	
19-1-08-35-00-000-001 or portion thereof)	

APPEARANCE

I hereby file my Appearance in this proceeding on behalf of the Illinois Environmental Protection Agency.

Respectfully submitted by,

1st Robb H. Layman

Robb H. Layman
Assistant Counsel

Date: November 25, 2015

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
1021 North Grand Avenue East
P.O. Box 19276
Springfield, Illinois 62794-9276
Telephone: (217) 524-9137

**BEFORE THE ILLINOIS POLLUTION CONTROL BOARD
OF THE STATE OF ILLINOIS**

WRB REFINING, LP)	
Sulfur Recovery from Fuel Gas Project)	
)	PCB 16-
)	(Tax Certification - Air)
PROPERTY IDENTIFICATION NUMBER)	
19-1-08-35-00-000-001 or portion thereof)	

RECOMMENDATION

NOW COMES the ILLINOIS ENVIRONMENTAL PROTECTION AGENCY ("Illinois EPA"), through its attorneys, and pursuant to 35 Ill. Adm. Code 125.204 of the ILLINOIS POLLUTION CONTROL BOARD'S ("Board") procedural regulations, files the Illinois EPA's Recommendation in the above-referenced request for tax certification of pollution control facilities. The Illinois EPA recommends a **grant** of issuance of a tax certification covering the subject matter of the request. In support thereof, the Illinois EPA states as follows:

I. The Illinois EPA previously received an application and supplemental information from WRB REFINING, LP, ("WRB") concerning the proposed tax certification of certain air emission sources and/or equipment located at its Wood River petroleum refinery in Madison County, Illinois.¹ The later supplements presented information meant to address or clarify questions raised by the Illinois EPA during its deliberations and preliminary review of the application. After the Illinois EPA subsequently updated its tax certification application forms earlier this year, WRB, through its attorneys, resubmitted its application materials to the Illinois EPA using the updated form, together with attachments containing information from the initial

¹ An initial application was received by the Illinois EPA in October 2010 and later supplements were submitted in February 2013 and May 2014.

application and later supplements. A copy of the updated application is attached hereto as

Exhibit A.

2. The applicant's principal business address is as follows:

WRB Refining LP
404 Phillips Building
Bartlesville, Oklahoma 74004

3. The facility address is as follows:

WRB Refining LP
900 South Central Avenue
P.O. Box 76
Roxana, Illinois 62084

4. The subject matter of this request consists of the installation of a Fuel Gas Treater (East Absorber) and separate components of two new Sulfur Recovery Units (SRU Trains E and F). Based on information in the application and later supplements, the Sulfur Recovery from Fuel Gas Project ("project") was designed to reduce the sulfur content of the added volume of refinery fuel gas produced by the new refinery units (e.g., Ultra Low Sulfur Diesel Hydrotreaters, the Delayed Coker Naphtha Hydrotreater and the Delayed Coker). Refinery fuel gas is comprised of light hydrocarbon streams produced in WRB's refining of crude oil, containing sulfur compounds predominantly comprised of hydrogen sulfides, and is utilized as a fuel for refinery operations. Fuel gas is not a refinery product *per se*; the fuel gas is combusted in the refinery's heaters and boilers to aid in other refining processes and is not sold or distributed as a fuel or fuel derivative.²

5. As described by WRB in the application, the Sulfur Recovery from Fuel Gas project involved two principal parts. *See*, Attachment 1 to Exhibit A, page 2. This recommendation evaluates each part separately.

² *See*, Attachment 1 to Exhibit A, page 4. This fact tends to distinguish the subject project from past requests by WRB Refining and others for tax certification of equipment whose environmental benefits are largely derived from a lower-emitting or lesser-polluting product subsequently used or consumed by end-consumers, such as low-sulfur gasoline or diesel fuel.

Fuel Gas Treater (East Absorber)

6. The Fuel Gas Treater receives sour fuel gas streams, collected and pressurized from the new unit production processes, for the purpose of separating out the hydrogen sulfides contained within the processed fuel gas. This process occurs in the amine contractor, which is a “vertical vessel similar to a fractionation column.” *See*, Attachment 1 to Exhibit A, page 2. The sour gas streams collected from the new units production processes are placed into contact with a diethanolamine solution (DEA), causing a chemical process to occur in the amine contractor. This reaction binds the sulfur (i.e., hydrogen sulfides) in the fuel gas stream, allowing the cleaner fuel gas to be sent directly into the distribution system and used as fuel in the refinery’s numerous heaters and boilers.

7. The application and attachment states that the installation and operation of the Fuel Gas Treater acts to ensure that the refinery’s fuel gas combustion devices comply with federal New Source Performance Standards (“NSPS”) emissions standards found at the following: 40 CFR Part 60, Subpart Ja (Standards of Performance for Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After May 14, 2007); 40 CFR Part 63, Subpart UUU (Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units and Sulfur Recovery Units); and Illinois’ SO₂ emissions standards for Petroleum and Petrochemical Processes found at 35 Ill. Adm. Code Part 214. *See*, Exhibit A and Attachment 1, page 7. More fundamentally, the application contends that the refinery process undertaken by the Fuel Gas Treater effectively prevents SO₂ emissions that would otherwise be emitted at higher concentrations in the exhausts of the refinery’s various heaters and boilers.

8. Pollution control facilities are entitled to preferential tax treatment, as provided by 35 ILCS 200/11-5 (2010).

9. Section 11-10 of the Property Tax Code, 35 ILCS 200/11-10 (2010), defines

“pollution control facilities” as:

“any system, method, construction, device or appliance appurtenant thereto, or any portion of any building or equipment, that is designed, constructed, installed or operated for the primary purpose of: (a) eliminating, preventing, or reducing air or water pollution... or (b) treating, pretreating, modifying or disposing of any potential solid, liquid, gaseous pollutant which if released without treatment, pretreatment, modification or disposal might be harmful, detrimental or offensive to human, plant or animal life, or to property.”

This definition is exceptionally broad in terms of its potential scope, as it can apply to “any system,” “any method,” “any device,” etc., that has its primary purpose focused on combatting or abating pollution. This is consistent with legislative intent to promote a wide array of environmental improvements and to reduce the financial expenditures by those who are making the improvements.³ Here, the subject equipment is a type of process control or design rather than a traditional end-of-the-pipe control or treatment system.⁴ However, the breadth of the definition does not preclude such non-traditional equipment from qualifying as a pollution control facility, a proposition which is supported in case law.⁵

10. The foremost limiting factor in the definition is the primary purpose test. Some recent tax certification requests involving air pollution control facilities have highlighted the importance of this test. As a rule, courts have held that the test “seeks to determine the function

³ See, *Beelman Truck Company v. Cosentino*, 624 N.E.2d 454, 456 (5th Dist. App. Ct. 1993)(legislature’s intent when adopting pollution control facility definition in Use Tax Act was “intended to encourage diverse means for reducing pollution”), citing, *Columbia Quarry Co. v. Department of Revenue*, 506 N.E.2d 795 (1987); see also, *Illinois Cereal Mills, Inc., v. Department of Revenue*, 346 N.E.2d 69, 71 (4th Dist. App. Ct. 1976).

⁴ From a definitional standpoint, this type of project seems to fall within the area of pollution prevention. While a process control or design does not actually eliminate or reduce pollution at its point of contact, as distinct from end-of-pipe controls, it does act to prevent pollution from occurring at a subsequent stage of use.

⁵ See, *Beelman Truck Company v. Cosentino*, 624 N.E.2d at 456 (“Because the language of section 2a is broad... courts have interpreted it broadly”).

and ultimate objective” of the subject equipment.⁶ However, the task of applying this test is not always straight forward, particularly where non-traditional equipment is the subject of a request and such equipment assumes a role in both manufacturing and pollution abatement.

11. Source reduction and pollution prevention efforts have been at the forefront of technological and regulatory initiatives in the environmental field for at least the last two decades. Such developments have spurred air and water pollution requirements that, rather than reflect command and control, allow sources to choose among various compliance avenues, including manufacturing or process-related changes, to achieve greater reductions in pollutants. As a consequence, the lines between traditional pollution control devices and manufacturing processes have blurred, with some equipment or devices once used exclusively for manufacturing purposes now arguably serving as a separate and equally important means for pollution abatement or prevention. The Property Tax Code is silent in terms of evaluating a pollution control facility possessing such dual purposes.⁷

12. For its part, the Illinois EPA has traditionally recommended tax certification under the Property Tax Code for pollution prevention and/or process-related projects where they are shown to prevent or reduce air pollution that would otherwise be emitted to the environment. Examples range from in-process modifications designed to reduce or prevent contaminants occurring at a later manufacturing stage⁸ to in-process changes in ductwork or waste-streams that

⁶ See, *Beelman Truck Company v. Cosentino*, 624 N.E.2d at 457, citing, *Shred Pax Corp. v. Department of Revenue*, 559 N.E.2d 492, 494 (Ill. App. Ct. 1st Dist.) and *Illinois Cereal Mills, Inc., v. Department of Revenue* at 71.

⁷ The Board has observed that the Property Tax Code does not “concern itself with whether pollution control is the ‘sole purpose’ of a particular piece of equipment or facility.” See, *WRB Refining v. Illinois EPA*, PCB No. 12-76 (February 2, 2012).

⁸ See, *In the matter of Dynegy Midwest Generation, Inc., v. Illinois EPA*, PCB No. 14-49 (December 19, 2013)(installation of agglomerator systems upstream of electrostatic precipitators alter the size of dust particles to improve the latter’s power and efficiency); *In the matter of Marathon Ashland Petroleum v. Illinois EPA*, PCB No. 06-99 (January 5, 2006)(Mosc system designed to reduce hazardous air pollutants and sludge during a coking cycle of refinery operations); *In the matter of Equistar Chemicals, LP, v. Illinois EPA*, PCB No. 14-97 (January 23, 2014)(replacement of seal components to compressors).

allow capture and subsequent reduction or prevention of contaminants.⁹ In these types of cases, while the process equipment undoubtedly served a role or function in the manufacturing process, its' predominant feature was that of the abatement or prevention of air contaminants.¹⁰

13. In this instance, WRB's Fuel Gas Treater is designed to refine existing fuel gas in a way that results in a cleaner-burning fuel for use in the refinery's operations, thus reducing air pollution generated during combustion of the fuel gas. In this regard, the equipment does actually remove or reduce the sulfur content of the fuel gas to prevent the emissions of hydrogen sulfides following combustion in the heaters and boilers.¹¹ Similar reasoning supported the Illinois EPA's prior supporting recommendation, and the Board's subsequent certification approval, in at least one analogous proceeding.¹²

14. The application and accompanying attachment also support a finding that, in the absence of the Fuel Gas Treater, the fuel gases from the traditional refinery processes that were previously combusted in the refinery's heaters and boilers required the introduction of some type

⁹ See, *In the matter of Marathon Petroleum Company, LLC, v. Illinois EPA*, PCB No. 12-06 (July 21, 2011)(modifications to vent or process gas streams, including new vent collection header and compression systems, to reduce hydrogen sulfur emissions from flaring); *In the matter of Marathon Petroleum Company, LLC, v. Illinois EPA*, PCB No 09-58 (February 19, 2009)(new process line directing sulfur dioxide off-gases from a flare system to the catalytic cracking unit); *In the matter of WRB Refining, LLC, v. Illinois EPA*, PCB No. 12-76 (February 2, 2012)(installation of compressors and other process equipment to capture off-gases otherwise flared to the environment, routing them instead to a delayed coker gas recovery facility).

¹⁰ In other examples, the Illinois EPA has recommended tax certification under the Property Tax Code for process-related changes that act to reduce contaminants in feedstocks destined for use by the public or other consumers. These types of projects have arisen in refinery operations and commonly involve in-process changes or equipment that, once constructed and operated, retain a traditional manufacturing (i.e., refining) function. Again, however, a prominent feature of the projects has been an emphasis on reducing the sulfur content of feedstocks (i.e., gasoline, diesel, liquid propane gas) that are destined for consumer use. The Illinois EPA has noted that the driving force behind these projects has been the fuel content restrictions adopted by the United States Environmental Protection Agency under Title II of the Clean Air Act, which are aimed at reducing mobile source emissions.

¹¹ Compare, *Central Illinois Light Co. v. Department of Revenue*, 784 N.E.2d 442, 446-447 (3rd Dist. App. Ct. 2003)(explaining that the primary purpose of the trucks involved in the *Beelman* decision "was to reduce, control and prevent pollution by *actually removing pollution*"(emphasis added)).

¹² See, *In the matter of Marathon Ashland Petroleum, LLC, v. Illinois EPA*, PCB No. 06-107 (January 5, 2006)(certifying an amine/sour gas unit, including feed drum, absorbers, flash drum and steam re-boiler, that was used to remove acid gases so that remaining gas stream could be used in the refinery's fuel gas system).

of process modification or controls by WRB in order to comply with federal and state environmental regulations. In other words, *but for* the need to meet a regulatory requirement, the installation and use of the Fuel Gas Treater would not have been necessary.¹³ Moreover, had WRB elected to install individual, end-of-pipe controls on each of the refinery's heaters and boilers, rather than employ a more efficient, process-related approach for preventing the combustion of higher sulfur containing fuel gas, the former approach would almost certainly have been eligible for tax certification. *See*, Attachment I to Exhibit A, page 1. As suggested by WRB in its updated application, a different result for the latter approach seems incongruous.¹⁴

15. Based on information in the application, it is the Illinois EPA's engineering judgment that the Fuel Gas Treater is a device whose primary purpose is the prevention of air pollution and therefore may be considered as "pollution control facilities" in accordance with the statutory definition and consistent with the Board's regulations at 35 Ill. Adm. Code 125.200.

[Exhibit B].

16. Because the information in the application demonstrates that the Fuel Gas Treater satisfies the statutory and regulatory criteria, the Illinois EPA recommends the Board **grant** tax certification of the same.

Two Sulfur Recovery Units (SRU Trains E and F)

¹³ *See, Central Illinois Light Company v. Department of Revenue*, 453 N.E.2d 1167, 1170 (3rd Dist. App. Ct. 1983)(finding that were it not for pollution control regulations, there would have been no need for a cooling pond and electronic truck scale). The Board has observed that "whether it is necessary to meet USEPA or state requirements" is not a matter of concern of the Property Tax Code. *See, WRB Refining v. Illinois EPA*, PCB No. 12-76 (February 2, 2012). While the Illinois EPA acknowledges that the statute's chief criteria relates to the "primary purpose" of the subject equipment or facility, the fact that environmental compliance is driven by statutory or regulatory requirements can be informative in evaluating primary purpose, as the cited appellate court case illustrates.

¹⁴ *Compare, Shell Oil Company v. Department of Revenue*, 453 N.E.2d 125, 128 (4th Dist. App. Ct. 1983), where the appellate court acknowledged, in reversing Department of Revenue's denial of certification under the Use Tax Act for two new smokestacks, taxpayer could have constructed a more expensive duct-work system that would have qualified for certification as an appurtenant appliance. In this instance, end-of-pipe controls at individual process heaters or boilers would almost certainly have been certified as pollution control facilities had WRB chose to install them. The Illinois EPA does not believe that a different outcome should ensue from the installation and use of a more efficient, larger-scale system of process units, as reflected by the Fuel Gas Treater.

17. The second part of the project involves the two Sulfur Recovery Units, consisting of three separate components. The first component for each of the units is the Amine Regeneration Unit ("ARU"), comprising a fractionation column, a steam reboiler, pumps, coolers and heat exchangers. The ARU receives the rich DEA from the Fuel Gas Treater and, using traditional refining principles, separates out the hydrogen sulfides. *See infra*, paragraph 6; *see also*, Attachment 1 to Exhibit A, page 3. The lower concentrated stream is returned to the Fuel Gas Treater, while the higher concentrated stream of acid gas is routed to the Claus Train.

18. The Claus Train comprises the second component of the Sulfur Recovery Units, where a thermal reactor initially converts part of the acid gases from the ARUs back to sulfur dioxides. *Id.* The mixture of sulfur dioxide and hydrogen sulfide gases is then routed through a train of heaters, reactors and condensers that effectively convert them into a molten form of elemental sulfur. *Id.* Although WRB recuperates some of its costs by selling the sulfur as a "low value product," WRB contends that its costs to operate the pollution control facility "far exceed" revenues generated from the sale of the byproduct. *See*, Attachment 1 to Exhibit A, page 3.

19. The third component of the Sulfur Recovery Units is the Tail Gas Treatment Unit ("TGTU"), which addresses the tail gas vapors produced by each of the Claus Trains. The TGTU employs a catalytic reactor to convert some of the sulfur compounds in the tail gas stream to hydrogen sulfides, and later employs an amine contactor to separate more hydrogen sulfides out of other parts of the stream. The higher concentrated stream of gas is sent to the Claus Trains for conversion to elemental sulfur. The rest of the steam is the exhaust gas that is routed to a thermal oxidizer, equipped with continuous emissions monitor and burner system, which acts to ensure that emissions to the atmosphere from the Claus recovery plant do not exceed the 250 parts per million SO₂ emissions standard under the NSPS at 40 CFR Part 60, Subpart Ja (Standards of Performance for Petroleum Refineries for which Construction, Reconstruction, or

Modification Commenced After May 14, 2007), and the NESHAP at 40 CFR Part 63, Subpart UUU (Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units). Refinery emissions must also comply with Illinois' emission limit of 1,000 parts per million requirement, as demonstrated on a three-hour block average basis, under 35 Ill. Adm. Code 214.382(b). *See*, Attachment 1 to Exhibit A, page 3 and 7.

20. Based on information in the application and attachment, it is the Illinois EPA's engineering judgment that all three components of the second part of the Sulfur Recovery from Fuel Gas Project can be said to represent equipment whose primary purpose is the prevention of air pollution and therefore may be considered as "pollution control facilities." *See*, Exhibit B. The ARUs and their associated appurtenances work in concert with the Fuel Gas Treater, acting to separate out the hydrogen sulfides from the acid gas streams. The TGTU and its associated appurtenances separate out hydrogen sulfides from the tail of the Claus Trains and control emissions through a thermal oxidizer system. In this regard, the equipment is designed to refine existing fuel gas in a way that results in a cleaner-burning fuel for use in the refinery's operations and serves to directly prevent emissions of sulfur compounds to the environment. To the extent that the project ensures that certain federal and state requirements are being met, it can be noted that neither of the process-related units would have been required for refinery operations *but for* the need to comply with those regulations governing SO₂ emissions.

21. Similarly, the Illinois EPA recommends a grant of tax certification for the two Claus Trains. A Claus Train is a conventional refinery process that converts the high content H₂S from the acid gases of the ARUs to elemental sulfur and acts in concert with the ARUs to separate out hydrogen sulfides from the fuel gas. While a Claus Train creates a discrete product that can be sold for profit, the record of this proceeding (which includes both the updated application cited herein and the underlying materials submitted by WRB in prior applications),

indicates that revenues do not generate a net income sufficient to cover the annual operating costs of the Sulfur Recovery Unit. *See*, Attachment 1 to Exhibit A, page 3. Moreover, recognition of the each new Claus Train as a pollution control facility under the Property Tax Code is consistent with the past treatment of three existing Claus Trains associated with a separate Sulfur Recovery Unit still operating at the refinery. The Illinois EPA issued a certificate for tax certification of pollution control facilities for the earlier Claus Trains in December 1992 under a predecessor state revenue statute. *See*, Attachment 2 to Exhibit A.

22. Because the information in the application demonstrates that the two Amine Regeneration Units, the two Claus Trains and the two Tail Gas Treatment Units satisfy the statutory and regulatory criteria, the Illinois EPA recommends the Board **grant** tax certification of the same.

Respectfully submitted by,

1st Robb H. Layman

Robb H. Layman
Assistant Counsel

Date: November 25, 2015.

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
1021 North Grand Avenue East
P.O. Box 19276
Springfield, Illinois 62794-9276
Telephone: (217) 524-9137

CERTIFICATE OF SERVICE

I hereby certify that on the 25th day of November, 2015, I electronically filed the following instruments entitled **NOTICE, APPEARANCE** and **RECOMMENDATION** with:

John Therriault, Clerk
Illinois Pollution Control Board
100 West Randolph Street
Suite 11-500
Chicago, Illinois 60601

and, further, that I did send a true and correct paper copy of the same foregoing instruments, by First Class Mail with postage thereon fully paid and deposited into the possession of the United States Postal Service, to:

Steve Santarelli
Illinois Department of Revenue
101 West Jefferson
P.O. Box 19033
Springfield, Illinois 62794

Michael Kemp
WRB Refining, LP
1384-06 Phillips Building
420 S. Keeler Avenue
Bartlesville, Oklahoma 74003-6670

1st Robb H. Layman
Robb H. Layman
Assistant Counsel



HODGE DWYER & DRIVER

ATTORNEYS AT LAW

KATHERINE D. HODGE
E mail: khodge@hddattorneys.com

September 9, 2015

SEP 09 2015

VIA HAND DELIVERY

Mr. Ray Pilapil
Illinois Environmental Protection Agency
Bureau of Air – Permits Section
1021 North Grand Avenue, East
P.O. Box 19276
Springfield, Illinois 62794-9276

RE: Update to Pending Application for
Certification of Sulfur Recovery from Fuel Gas Project
Our File No. – WRBR:272.001

Dear Mr. Pilapil:

WRB Refining LP (“WRB”)¹ previously submitted an application and supplemental information to the Illinois Environmental Protection Agency (“Illinois EPA”) for certification of WRB’s Sulfur Recovery from Fuel Gas Project (“Project”) as a pollution control facility (“PCF”). However, Illinois EPA has updated its PCF application forms since WRB’s previous submittal. Thus, WRB is hereby submitting the attached updated PCF application forms, as well as the attached comprehensive supplement that combines the application and supplemental information previously submitted to Illinois EPA for this Project.

¹ Formerly WRB Refining LLC.

(00124251 1)

Exhibit A

Mr. Ray Pilapil
September 9, 2015
Page 2

Based upon the attached information, WRB respectfully requests that Illinois EPA recommend **issuance** to the Illinois Pollution Control Board of a tax certification covering the Project. Please let us know if you have any questions or need additional information.

Sincerely,


Katherine D. Hodge

KDH:JJH:mky
attachments

pc: Robb H. Layman, Esq. (via electronic mail; w/attachments)
Mr. Brian Wulf (via electronic mail; w/attachments)
Ms. Dana French (via electronic mail; w/attachments)

1021 North Grand Avenue East • P.O. Box 19276 • Springfield • Illinois • 62794-9276

**Application for Certification (Property Tax Treatment)
 Pollution Control Facility**

FOR AGENCY USE ONLY

File Number: _____	Date Rec'd: _____
Certification Number: _____	Date: _____

Facility Type (check one): Air Water

This form is to be used for any application for certification of property tax treatment for a pollution control facility for air or water from the Illinois EPA. Separate applications must be completed for each control facility claimed. Do not mix types (air and water). Where both air and water operations are related, file two applications.

If attachments are needed, record them consecutively on an index sheet.

You may complete this form online, save a copy locally, print, sign and submit it to

Illinois EPA
 Attention: Ray E. Pilapil, Permit Section
 Division of Air Pollution Control
 1021 North Grand Avenue East, P.O. Box 19276
 Springfield, IL 62794-9276

I. Applicant Information:

Company Name: <u>WRB Refining LP</u>	
Person Authorized to Receive Certification: <u>Michael Kemp</u>	Person to Contact for Additional Details: <u>Dana French</u>
Street Address: <u>1384-06 Phillips Building/420 S. Keeler Ave</u>	Street Address: <u>900 S. Central Ave</u>
City: <u>Bartlesville</u> State: <u>OK</u>	City: <u>Roxana</u> State: <u>IL</u>
Zip: <u>74003-6670</u> Phone: <u>918-977-6834</u>	Zip: <u>62084</u> Phone: <u>618-255-2418</u>
Email Address: <u>michael.d.kemp@p66.com</u>	Email Address: <u>dana.french@p66.com</u>

II. Facility Information:

Facility Location: Quarter Section: _____ Township: _____ Range: _____
 Municipality: _____ Township: _____

Note: A plat map location is requested for facilities located outside of municipal boundaries.

Address: 900 S Central Ave City: Roxana
 State: IL Zip Code: 62084 County: Madison Book Number: _____

Property Index Number: 191083400000006

Note: The Property Index Number is the numerical reference used to identify a parcel of real property for assessment and taxation purposes.

Manufacturing Operations Information:

Nature of Operations Conducted at the Above Location

Petroleum Refining

Permit Information:

WPC Construction Permit Number: _____	Date Issued: _____
NPDES Permit Number: <u>IL0000205</u>	Date Issued: <u>Dec 22, 2011</u> Exp Date: <u>Dec 31, 2016</u>
APC Construction Permit Number: <u>06050052/Revised Jan 23, 2015</u>	Date Issued: <u>Aug 5, 2008</u>
APC Operating Permit Number: <u>95120306</u>	Date Issued: <u>Nov 7, 2003</u> Exp Date: _____

Note: Submit copies of all relevant permits issued by local pollution control agencies (e.g. MSD Construction Permit)

This Agency is authorized to request this information under 415 ILCS 5/4(b)(2012). Disclosure of this information is voluntary and no penalties will result from the failure to provide the information. However, the absence of the information could prevent your application from being processed or could result in denial of your application.

Manufacturing Process Information:

Please provide information on the manufacturing process and materials on which pollution control facility is used, including each major piece of equipment associated with the pollution control facility (or low sulfur dioxide emission coal fueled device).

Description of the Process:

See Sulfur Recovery from Fuel Gas Project Attachment

Materials Used in the Process:

See Sulfur Recovery from Fuel Gas Project Attachment

Pollution Control Facility Information:

Please provide a narrative description of the pollution control facility (or low sulfur dioxide emission coal fueled device), and an explanation of why its primary purpose is to eliminate, prevent or reduce pollution. State the type of control facility, as well as a narrative description and a process flow diagram describing the pollution control facility. Include an average analysis of the influent and effluent of the control facility stating the collection efficiency, if applicable.

Describe the Pollution Control Facility (or Low Sulfur Dioxide Emission Coal Fueled Device).

See Sulfur Recovery from Fuel Gas Project Attachment

Describe the Primary Purpose of the Pollution Control Facility (or Low Sulfur Dioxide Emission Coal Fueled Device):

See Sulfur Recovery from Fuel Gas Project Attachment

Identify the statute or regulation (federal or state), or local ordinance, if any, requiring the installation of the subject pollution control facility (or low sulfur dioxide emission coal fueled device).

See Sulfur Recovery from Fuel Gas Project Attachment

Nature of Contaminants or Pollutants:

List air contaminants or water pollution substances released as effluents to the manufacturing processes. Also list the final disposal of any contaminants removed from the manufacturing processes.

Contaminant or Pollutant	Material Retained, Captured or Recovered	
	Description	Disposal or Use
Sulfur oxides (SOx)	Hydrogen sulfide	H2S is converted to elemental sulfur and sold as
Hydrogen sulfide (H2S)	Sulfur	a low value product (operating cost exceeds value)

Note: Contaminant or pollutant means that which is removed from the process by the pollution control facility.

Point(s) of Waste Water Discharge:

Identify the location of the discharge to the receiving stream. This will typically refer to a source of water pollution but can include water-carried wastes from air pollution control facilities.

Plans and Specifications Attached Yes No

Submit Drawings, which clearly show:

- (a) Point(s) of discharge to receiving stream; and
- (b) Sewers and process piping to and from the control facility.

Are contaminants (or residues) collected by the control facility? Yes No

Note: If the collected contaminants are disposed of other than as wastes, state the disposition of the materials, and the value dollars reclaimed by the sale or reuse of the collected substances. State the cost of reclamation and related expense

Project Status:

Date Installation Completed: Mar 31, 2011

Provide the date the pollution control facility was first placed into service and operated. If not, explain.

Status of installation on date of application:

Complete

III. Verification and Signature:

The following information is submitted in accordance with the Illinois Property Tax Code, as amended, and to the best of my knowledge is true and correct.

Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44(h))

Michael D. Kemp
Printed Name:

Principal Advisor
Title:

For incorporated entities, signature should be from an authorized corporate representative.

Michael D. Kemp
Signature:

9/8/15
Date:

**Application for Certification (Property Tax Treatment)
Pollution Control Facility
WRB Refining LP – Wood River Refinery**

Project: Sulfur Recovery from Fuel Gas

II. Facility Information:

Manufacturing Process Information:

Description of the Process:

As is typical for an oil refinery, WRB Refining LP's ("WRB") Wood River Refinery ("Refinery") utilizes various processes that generate light hydrocarbon streams containing hydrogen, methane, ethane, ethylene, propane, and hydrogen sulfide ("H₂S"). The hydrotreaters, which produce Low Sulfur Gasoline and Ultra Low Sulfur Diesel, produce a significant amount of the H₂S present in these light hydrocarbon streams. WRB burns these light hydrocarbon streams as fuel gas in the Refinery's heaters and boilers as a means of providing heat for the various processes used to refine crude oil. In order to meet federal emission standards for emission units at the Refinery, WRB removes the H₂S from the fuel gas streams prior to combustion to prevent sulfur dioxide ("SO₂") emissions to the atmosphere. WRB must then recover the H₂S removed from the fuel gas and convert it to elemental sulfur to prevent emitting H₂S to the atmosphere.

Materials Used in the Process:

Materials used in its process include H₂S, SO₂, sulfur, diethanolamine ("DEA"), methyldiethanolamine ("MDEA"), catalyst, and hydrogen.

Pollution Control Facility Information:

Describe the Pollution Control Facility:

If the emission of SO₂ pollution was not a concern, WRB could and would blend together the Refinery's untreated fuel gas streams containing H₂S and route the streams directly to the Refinery's furnaces and boilers as fuel gas. However, SO₂ pollution is a significant concern, and environmental regulations impose stringent limitations upon sulfur emissions. Thus, in order to meet applicable emission standards, WRB installed pollution control equipment that removes H₂S from the Refinery's fuel gas streams prior to combustion and converts the H₂S to elemental sulfur. This pollution control equipment directly prevents more than 770 tons per day of SO₂ emissions to the atmosphere, significantly reducing SO₂ emissions that would otherwise be emitted from untreated fuel gas.

As shown in the attached Process Flow Diagram (see Attachment 1), the following pollution control equipment is included in this Application for pollution control facility ("PCF") certification:

- One Fuel Gas Treater (identified as the "East Absorber") (referred to in the attached Process Flow Diagram as the Amine Contactor);
- Two Sulfur Recovery Units (identified as "SRU Trains E and F") consisting of:
 - Two Amine Regeneration Units, each consisting of a fractionation column, steam reboilers, pumps, coolers, heat exchangers, and other associated equipment;
 - Two Claus Trains, each consisting of heaters, catalytic reactors, and condensers; and
 - Two Tail Gas Treatment Units, each consisting of a catalytic reactor, amine contactor, MDEA regeneration column, and thermal oxidizer; and
- Other ancillary components and appurtenances.

The aforementioned equipment is not process equipment. This equipment is not directly involved in the production of gasoline, diesel, or other petroleum products at the Refinery. Rather, the sole purpose of this equipment is the elimination, prevention, and reduction of air pollution. But for the reduction in air pollution emissions achieved from the operation of this equipment, the equipment is not functionally necessary to produce petroleum hydrocarbon products at the Refinery.

The Fuel Gas Treater and two Sulfur Recovery Units process the additional volume of sour fuel gas produced by other new units at the Refinery, including the Ultra Low Sulfur Diesel Hydrotreaters, the Delayed Coker Naphtha Hydrotreater, and the Delayed Coker. First, the sour fuel gas streams from these various Refinery processes are collected and pressured to the new Fuel Gas Treater. The sour gas enters the bottom of the Fuel Gas Treater, a vertical vessel similar to a fractionation column. A solution of DEA and water enters the top of the Fuel Gas Treater. The DEA solution that enters the Fuel Gas Treater is referred to as "Lean DEA" because it contains almost no H₂S. As the Lean DEA flows down the Fuel Gas Treater from one tray to the next, the Lean DEA contacts the sour gas which is rising up the column. The H₂S in the sour gas bonds to the DEA as the sour gas contacts the DEA. The resulting low H₂S fuel gas exits the top of the Fuel Gas Treater and mixes with fuel gas from two other existing fuel gas treaters (not included in this Application). The blended fuel gas is then analyzed by a certified and continuous H₂S analyzer to verify that the H₂S content is below the level required by the Refinery's operating permit. The low H₂S fuel gas is then distributed by a piping network to the Refinery's heaters and boilers. The H₂S-laden DEA, referred to as "Rich DEA," is withdrawn from the bottom of the Fuel Gas Treater and pumped to the Sulfur Recovery Units.

Once the Rich DEA is pumped from the Fuel Gas Treater to the Sulfur Recovery Units, a three-step process recovers the H₂S from the DEA and converts it to elemental sulfur. For the first step in the Sulfur Recovery Units process, the Rich DEA is routed to the two new Amine Regeneration Units ("ARUs"). Each ARU consists of a large fractionation column, a steam reboiler, pumps, coolers, heat exchangers, and other associated equipment. The ARUs use elevated temperature and fractionation principles to separate the H₂S from the DEA. Low H₂S content Lean DEA exits the bottom of the ARU columns, is cooled, and then pumped back to the Fuel Gas Treater to capture additional H₂S.

For the second step in the Sulfur Recovery Units process, high H₂S content "acid gas" exits the top of the ARU columns and is routed to the two new Claus Trains. The first step within each Claus Train is to convert a portion of the H₂S present in the acid gas from the ARUs to SO₂. This step is completed in a high temperature thermal reactor. Then, as the second step within each of the Claus Trains, the H₂S and SO₂ mixture from the thermal reactor is routed to a series of three heaters, catalytic reactors, and condensers, which convert the H₂S and SO₂ into molten elemental sulfur. Although WRB is able to recuperate some of its costs for operating the pollution control equipment included in this Application by selling the generated elemental sulfur as a low value product to industrial users such as chemical and fertilizer manufacturers, the costs to operate the pollution control equipment far exceed this revenue, resulting in a significant net economic loss for WRB. In addition to the molten elemental sulfur, each Claus Train produces a "Tail Gas" vapor stream containing nitrogen, water vapor, carbon dioxide, hydrogen, and a small amount of sulfur compounds, including SO₂, carbonyl sulfide ("COS"), and carbon bisulfide ("CS₂"). Environmental regulations do not allow this Tail Gas stream to be routed to the atmosphere due to its sulfur content.

Thus, for the third and final step in the Sulfur Recovery Units process, the Tail Gas stream is routed to the two new Tail Gas Treatment Units ("TGTUs"). The purpose of the TGTUs is to convert the sulfur compounds present in the Tail Gas stream to H₂S, separate this H₂S from the other components present in the Tail Gas, and route the H₂S back to the Claus Trains for conversion to elemental sulfur. In the TGTUs, the Tail Gas is heated, mixed with hydrogen, and routed to a catalytic reactor where the sulfur compounds are converted to H₂S. The TGTUs' reactor effluent is then cooled and routed to an MDEA contactor to separate the H₂S from the other components present in the Tail Gas. The H₂S-laden MDEA is pumped to an MDEA Regeneration column where elevated temperature and fractionation principles are used to separate the H₂S from the MDEA. The H₂S from the MDEA Regeneration column is routed back to the Claus Trains for conversion to elemental sulfur. The gas stream exiting the top of the TGTU MDEA contactor is called "TGTU exhaust gas," which contains traces of H₂S and other sulfur compounds (COS, CS₂, and SO₂). This TGTU exhaust gas stream is routed to a thermal oxidizer to ensure all remaining sulfur compounds are converted into SO₂ without exceeding the federal 250 ppm SO₂ emission limit specified by 40 C.F.R. 60 Subpart Ja, Section 60.102a(f)(1)(i), and 40 C.F.R. 63 Subpart UUU, Section 63.1568(a)(1)(i). The TGTU exhaust gas stream must also comply with Illinois' 1,000 ppm SO₂ emission limit, demonstrated on a

three-hour block average basis, as specified by 35 Ill. Admin. Code Section 214.382(b).¹ The oxidizer includes a continuous emissions monitoring system and is designed with a burner compliant with Best Available Control Technology limits for carbon monoxide, volatile organic material, and nitrogen oxides.

Overall, WRB constructed the new Fuel Gas Treater (East Absorber) and two new Sulfur Recovery Units (SRU Trains E and F) for the sole purpose of significantly reducing SO₂ pollution. This equipment is required for the Refinery to comply with environmental regulations limiting SO₂ and H₂S emissions.

Describe the Primary Purpose of the Pollution Control Facility:

Fuel gas is an important energy source. However, combustion of untreated fuel gas, i.e., fuel gas containing sulfur contaminants, releases SO₂ into the atmosphere. There are two different ways with which WRB can reduce SO₂ emissions resulting from fuel gas combustion in the Refinery's heaters and boilers in compliance with applicable environmental regulations. One way would be to install scrubbers on the Refinery's heaters and boilers, which would undoubtedly qualify for PCF certifications. However, installation of scrubbers at the Refinery is extremely uneconomical because WRB burns the fuel gas in many heaters and boilers located throughout the Refinery. The other way to reduce the release of SO₂ during fuel gas combustion at the Refinery is the method accomplished by the sulfur removal equipment included in this PCF Application, i.e., removing the sulfur from the fuel gas prior to combustion. Given that the purpose of this equipment is the same as scrubbers, i.e., preventing the release of SO₂ during fuel gas combustion, this equipment qualifies for PCF certification, just as scrubbers would clearly qualify for PCF certification.

In addition, after treatment for sulfur removal, the fuel gas is entirely consumed at the Refinery. WRB does not sell or export any of its fuel gas production – it is not a Refinery product. Even if WRB could and did sell the Refinery's fuel gas as a Refinery product rather than burning the cleaned fuel gas onsite, WRB would still need to acquire a gaseous energy source for the Refinery's heaters and boilers. The equipment covered by this Application reduces air pollution by removing sulfur before the fuel gas is combusted, as opposed to adding on control devices after combustion takes place. Removing sulfur from the fuel gas prior to combustion is just as environmentally beneficial and effective at reducing air pollution as it would be to remove the SO₂ after combustion using add-on control devices. Indeed, adding on individual control devices to approximately forty boilers and heaters at the Refinery that combust fuel gas would be an inefficient use of resources resulting in no additional environmental benefit.

There are a total of five Sulfur Recovery Units at the Refinery, two of which (SRU Trains E and F) are the newer Sulfur Recovery Units included in the present Application that were constructed in 2011 as part of WRB's CORE Project. In the early 1990s, Illinois EPA determined that the other Sulfur Recovery Units and the Scot Unit TGTU at the Refinery were

¹ These applicable NSPS Subpart Ja, NESHAP Subpart UUU, and Illinois state SO₂ emission limits are reflected in the Refinery's revised construction permit issued by Illinois EPA for the Refinery's CORE Project. See Revised Construction Permit No. 06050052, issued Jan. 23, 2015, at Conditions 4.8.3(b), (c), and (d).

PCFs (see Attachment 2). That equipment is identical in purpose to the equipment included in WRB's present Application, i.e., the elimination, prevention, and reduction of air pollution.

More recently, consistent with Illinois EPA's recommendation for certification, the Illinois Pollution Control Board ("Board") has previously certified as PCFs equipment identical in purpose to the equipment included in WRB's present Application. In *Marathon Ashland Petroleum, LLC v. Illinois Environmental Protection Agency*, PCB No. 06-107 (Ill.Pol.Control.Bd. Jan. 5, 2006), Marathon Ashland Petroleum ("Marathon") applied for PCF tax certification of its Amine Unit number 2. Illinois EPA described Amine Unit number 2 as follows:

Anime [sic] Unit number 2, which consist of the installation of equipment to remove acid gases, primarily composed of hydrogen sulfide, carbon dioxide, sulfur dioxide, and ammonia gases, from gas streams received from other units at the refinery, and which allows the remaining gas streams to be used in the refinery's fuel gas system, resulting in the removal from the feed stream of contaminants that would otherwise be emitted.

Id. at 2. Illinois EPA recognized that the primary purpose of the actual Amine Unit number 2 was eliminating, preventing, or reducing air pollution. *Id.* Accordingly, Illinois EPA recommended that the Board certify Amine Unit number 2 as a PCF, and the Board subsequently agreed with the Illinois EPA's recommendation, certifying Amine Unit number 2 as a PCF. *Id.*

Similar to Marathon's Amine Unit number 2, WRB's pollution control equipment included in this Application, i.e., the Fuel Gas Treater (East Absorber) and two Sulfur Recovery Units (SRU Trains E and F), function solely to treat gas streams by removing sulfur prior to those gas streams being burned in the Refinery's heaters and boilers. As a result, the SO₂ emissions from treated fuel gas are significantly lower than the SO₂ emissions from untreated fuel gas. Thus, both Marathon's Amine Unit number 2 and WRB's equipment included in this Application have the primary purpose of eliminating, preventing, or reducing air pollution.

This primary purpose of the equipment included in this Application stands in stark contrast to equipment used for the primary purpose of producing power or steam. For example, in *Illinois Cereal Mills, Inc. v. Department of Revenue*, 37 Ill. App. 3d 379 (4th Dist. 1976), a company, under threat of enforcement action by Illinois EPA, replaced coal-fired boilers with natural gas-fired boilers that produced steam in a less polluting manner. The Illinois Department of Revenue ("DOR") denied tax-exempt status under the Illinois Use Tax Act ("UTA") for the boilers contending that the primary purpose of the boilers was to produce steam, even though the facility chose to install them because they produce steam in a less polluting manner than boilers fired by coal. The *Illinois Cereal* court agreed with the DOR, determining that the definition of PCF in the UTA refers "to equipment such as precipitators, filters, and smoke stacks which have no substantial function in the manufacturing or processing of a product other than to abate the pollution caused by the plant operation." *See Illinois Cereal*, at 381-82. The court held that the gas-fired boilers did not qualify for the tax exemption under UTA because the boilers' primary purpose was producing steam. *Id.*

In contrast to the gas-fired boilers at issue in *Illinois Cereal*, WRB's pollution control equipment included in the present Application does not produce steam. Rather, this equipment removes sulfur from fuel gas prior to combustion, thus eliminating, preventing, and reducing air pollution from the Refinery.

Indeed, WRB's equipment included in this Application is limited to only equipment that has the sole purpose of eliminating, preventing, or reducing air pollution. No equipment with the primary purpose of distributing fuel in the Refinery's fuel distribution system is included in this Application. The Fourth District Appellate Court of Illinois has noted the distinction between PCF equipment and refinery fuel distribution system equipment. In *Shell Oil Company v. Department of Revenue*, 117 Ill. App. 3d 1049, 1050 (4th Dist. 1983), the court considered whether certain equipment installed by Shell Oil Company ("Shell") at its Wood River refinery (the same refinery location that is the subject of WRB's present Application) qualified as PCFs. In addition to installing a precipitator, Shell made "changes in the storage and distribution system of a portion of the fuel used in the refinery operations. These changes . . . consisted of the construction of storage tanks and revisions in the way the refinery distributed the fuel." *Id.* at 1051. More specifically, Shell's changes in the fuel distribution system consisted of the following:

The first step involved changes in the refinery distribution process to allow low sulphur crude oil to be distilled at one time and high sulphur crude oil at another. The second part involved the construction of large storage tanks to segregate the low sulphur pitch from the high sulphur pitch, and the final phase involved changes in the refinery fuel distribution system. According to [Shell's] engineer, the latter phase enabled plaintiff to "get the right fuel to the right heaters in the right combination so we could burn the fuel [low sulphur pitch] and comply with the regulations."

Id. at 1052. The above description clearly describes changes to the way Shell distributed fuel within the refinery. Accordingly, the *Shell Oil* court held that the primary purpose of the aforementioned changes "was to enable [Shell] to produce asphalt from high sulphur pitch and burn the low sulphur pitch as fuel in the refinery." *Id.* at 1053.

The refinery changes to the fuel distribution system involved in *Shell Oil* are plainly distinguishable from the equipment included in WRB's present Application. Shell's changes to its fuel distribution system merely altered the way that Shell was able to route its fuel streams, a result from which included the ability to burn low sulfur pitch as fuel at the refinery. Despite the resulting ability to burn pitch at the refinery, the primary purpose of mere changes in the refinery's fuel distribution process was self-explanatory, i.e., to distribute fuel around the refinery. In contrast, the equipment included in WRB's present Application has nothing to do with fuel distribution. Rather, WRB's subject equipment functions solely to treat gas streams by removing sulfur prior to those gas streams being burned in the Refinery's heaters and boilers. As a result, the SO₂ emissions from treated fuel gas are significantly lower than the SO₂ emissions from otherwise untreated fuel gas. Therefore, the equipment in WRB's present Application are readily distinguishable from the changes involved in *Shell Oil*. Specifically, whereas the changes involved in *Shell Oil* were not PCFs, Illinois EPA should recommend to the Board that

the equipment included in WRB's present Application be certified as PCFs because the equipment's sole purpose is to eliminate, prevent, and reduce air pollution.

Statute or Regulation. If Any, Requiring Installation of the Pollution Control Facility:

The Refinery is subject to federal emission standards in the New Source Performance Standards ("NSPS") and the National Emission Standards for Hazardous Air Pollutants ("NESHAP") that could not be met without the installation of the Sulfur Recovery from Fuel Gas PCF. Both the NSPS for Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After May 14, 2007, 40 C.F.R. 60 Subpart Ja, and the NESHAP for Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units, 40 C.F.R. 63 Subpart UUU, establish an SO₂ standard for emissions from the Sulfur Recovery Units:

NSPS Subpart Ja

(f) . . . [E]ach owner or operator of an affected sulfur recovery plant shall comply with the applicable emission limits in paragraphs (f)(1) or (2) of this section.

(1) For a sulfur recovery plant with a capacity greater than 20 long tons per day (LTD):

(i) For a sulfur recovery plant with an oxidation control system or a reduction control system followed by incineration, the owner or operator shall not discharge or cause the discharge of any gases into the atmosphere in excess of 250 ppm by volume (dry basis) of sulfur dioxide (SO₂) at zero percent excess air. If the sulfur recovery plant consists of multiple process trains or release points the owner or operator shall comply with the 250 ppmv limit for each process train or release point or comply with a flow rate weighted average of 250 ppmv for all release points from the sulfur recovery plant

40 C.F.R. § 60.102a(f)(1)(i).

NESHAP Subpart UUU

(a) *What emission limitations and work practice standard must I meet? You must:*

(1) Meet each emission limitation in Table 29 of this subpart that applies to you. If your sulfur recovery unit is subject to the NSPS for sulfur oxides in §60.104 of this chapter, you must meet the emission limitations for NSPS units. If your sulfur recovery unit isn't subject to the NSPS for sulfur oxides, you can choose from the options in paragraphs (a)(1)(i) through (ii) of this section:

(i) You can elect to meet the NSPS requirements (Option 1)

40 C.F.R. § 63.1568(a)(1)(i).

In addition, the Refinery is subject to the following Illinois state SO₂ standard for Petroleum and Petrochemical Processes:

(b) No person shall cause or allow the emission of more than 1,000 ppm of sulfur dioxide into the atmosphere from any process emission source in the St. Louis (Illinois) major metropolitan area designed to remove sulfur compounds from the flue gases of petroleum and petrochemical processes.

35 Ill. Admin. Code § 214.382(b).

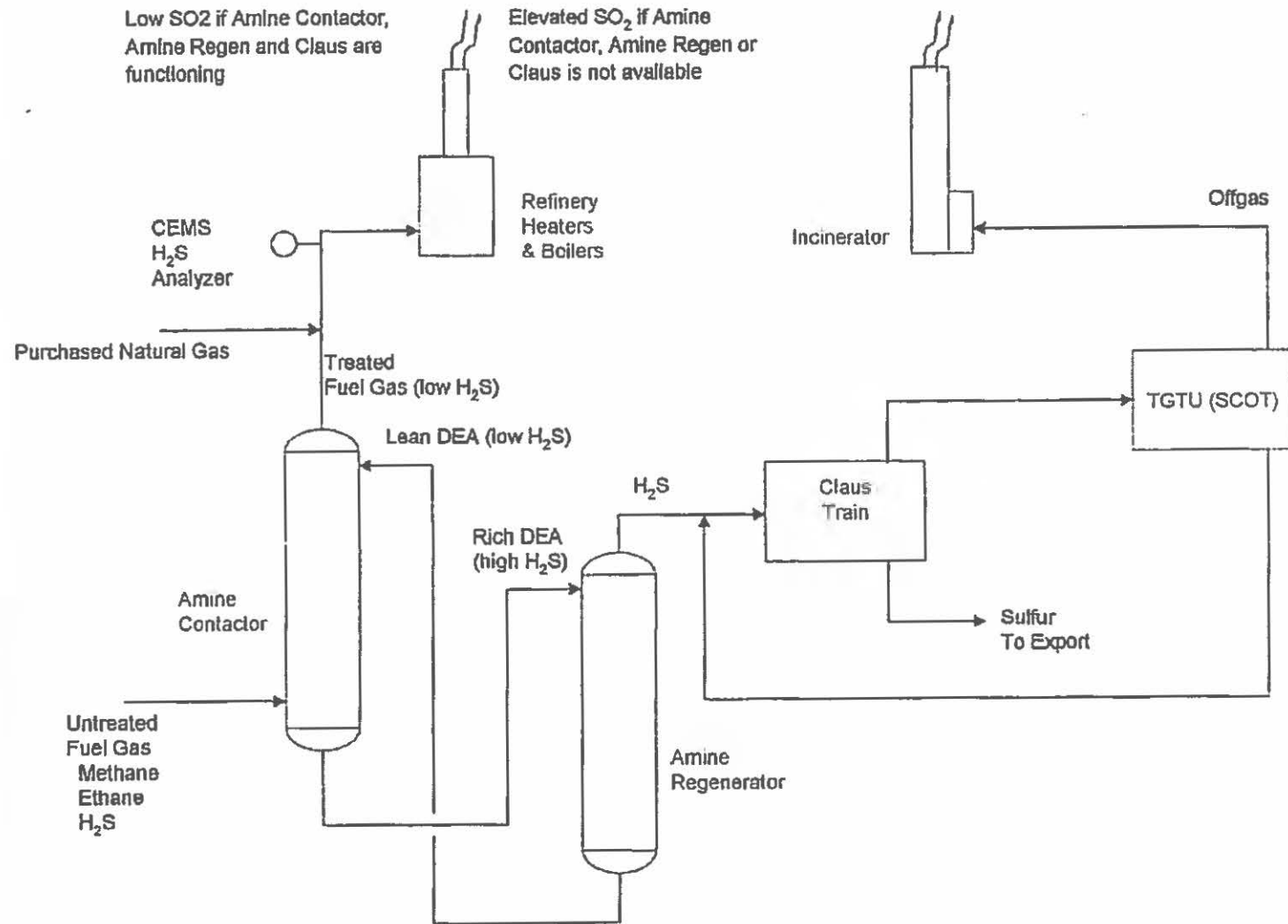
In order for the Refinery to comply with the above-referenced SO₂ standards, the Refinery's fuel gas must be treated to remove H₂S. The Refinery evaluated the most efficient manner in which to achieve these federal and state standards and determined that installation of the Sulfur Recovery from Fuel Gas PCF, as described in the Application and this supplement, was the best option.

Conclusion

Based upon the foregoing supporting information, as well as information included in the present Application, WRB respectfully requests that Illinois EPA recommend **issuance** to the Board of a tax certification covering the subject pollution control equipment.

ATTACHMENT 1
PROCESS FLOW DIAGRAM

Wood River Sulfur Recovery from Fuel Gas Flow Diagram



ATTACHMENT 2
PRIOR PCF DETERMINATIONS



State of Illinois

ENVIRONMENTAL PROTECTION AGENCY

File

Mary A. Gade, Director

2200 Churchill Road, Springfield, IL 62794-9276

FINDING AND CERTIFICATION OF POLLUTION CONTROL FACILITY PURSUANT TO THE REVENUE ACT OF 1939

Applicant:	SHELL OIL COMPANY	I.D. #:	119090AAH
	SA-11A & ROUTE 111	Permit #:	79090040
	ROXANA, ILLINOIS 62084	Book #:	
	ATTN: E.G. JOHNSON	Parcel #:	19-1-08-34-00-000-006

Facility Location: WOOD RIVER MFG. COMPLEX, SULFUR RECOVERY SYSTEM, RAND ROAD, HARTFORD, MADISON COUNTY

Facility Description: SRU/SCOT EQUIPMENT

Issuing Agency: Environmental Protection Agency

Date Received: 12/21/92

EPA - DIVISION OF RECORDS MANAGEMENT
RELEASE

APR 15 2015

REVIEWER EAV

FINDING

The Agency finds that the primary purpose of the facility for which certification is sought is the elimination, prevention or reduction of air pollution.

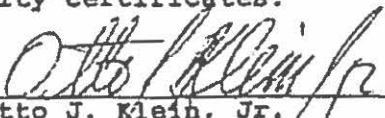
CERTIFICATE

The Environmental Protection Agency, based on information available to it, hereby issues a certificate that the facility identified in the application is a "pollution control facility" for purposes of the Revenue Act of 1939.

This certificate may be revoked or modified by this Agency in accordance with Section 21a-6 of the Revenue Act of 1939.

SPECIAL NOTE: Section 21a-5 and 21a-6 vest the powers and duties with respect to Pollution Control Facility Certification with "...The Pollution Control Board, acting through its Chairman or his specifically authorized delegate. ..." The Chairman of the Pollution Control Board has, by letter dated July 15, 1971, specifically authorized the Director of the Environmental Protection Agency or the Manager of the Tax Certification Section, Division of Air Pollution Control as his delegate with respect to pollution control facility certificates.

DATE: December 22, 1992



 Otto J. Klein, Jr.
 Manager, Tax Certification Section
 Division of Air Pollution Control

cc: Department of Revenue



State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

File

Mary A. Gade, Director

2200 Churchill Road, Springfield, IL 62794-9276

FINDING AND CERTIFICATION OF POLLUTION CONTROL
FACILITY PURSUANT TO THE REVENUE ACT OF 1939

Applicant:	SHELL OIL COMPANY	I.D. #:	119090AAH
	SA-11A & ROUTE 111	Permit #:	72110619
	ROXANA, ILLINOIS 62084	Book #:	
	ATTN: E.G. JOHNSON	Parcel #:	19-1-08-34-00-000-006

Facility Location: WOOD RIVER MFG. COMPLEX, SULFUR RECOVERY SYSTEM,
RAND ROAD, HARTFORD, MADISON COUNTY

Facility Description: FUEL GAS H₂S ABSORBERS

Issuing Agency: Environmental Protection Agency

Date Received: 12/21/92

FINDING

The Agency finds that the primary purpose of the facility for which certification is sought is the elimination, prevention or reduction of air pollution.

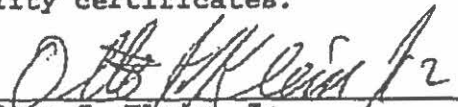
CERTIFICATE

The Environmental Protection Agency, based on information available to it, hereby issues a certificate that the facility identified in the application is a "pollution control facility" for purposes of the Revenue Act of 1939.

This certificate may be revoked or modified by this Agency in accordance with Section 21a-6 of the Revenue Act of 1939.

SPECIAL NOTE: Section 21a-5 and 21a-6 vest the powers and duties with respect to Pollution Control Facility Certification with ". . .The Pollution Control Board, acting through its Chairman or his specifically authorized delegate. . ." The Chairman of the Pollution Control Board has, by letter dated July 15, 1971, specifically authorized the Director of the Environmental Protection Agency or the Manager of the Tax Certification Section, Division of Air Pollution Control as his delegate with respect to pollution control facility certificates.

DATE: December 22, 1992



 Otto J. Kyein, Jr.
 Manager, Tax Certification Section
 Division of Air Pollution Control

cc: Department of Revenue



State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

File

Mary A. Gade, Director

2200 Churchill Road, Springfield, IL 62794-9276

**FINDING AND CERTIFICATION OF POLLUTION CONTROL
FACILITY PURSUANT TO THE REVENUE ACT OF 1939**

Applicant:	SHELL OIL COMPANY	I.D. #: 119090AAH
	SA-11A & ROUTE 111	Permit #: 72110619
	ROXANA, ILLINOIS 62084	Book #:
	ATTN: E.G. JOHNSON	Parcel #: 19-1-08-34-00-000-006

Facility Location: WOOD RIVER MFG. COMPLEX, SULFUR RECOVERY SYSTEM,
RAND ROAD, HARTFORD, MADISON COUNTY

Facility Description: C₃ H₂S ABSORBERS

Issuing Agency: Environmental Protection Agency

Date Received: 12/21/92

FINDING

The Agency finds that the primary purpose of the facility for which certification is sought is the elimination, prevention or reduction of air pollution.

CERTIFICATE

The Environmental Protection Agency, based on information available to it, hereby issues a certificate that the facility identified in the application is a "pollution control facility" for purposes of the Revenue Act of 1939.

This certificate may be revoked or modified by this Agency in accordance with Section 21a-6 of the Revenue Act of 1939.

SPECIAL NOTE: Section 21a-5 and 21a-6 vest the powers and duties with respect to Pollution Control Facility Certification with ". . .The Pollution Control Board, acting through its Chairman or his specifically authorized delegate. . ." The Chairman of the Pollution Control Board has, by letter dated July 15, 1971, specifically authorized the Director of the Environmental Protection Agency or the Manager of the Tax Certification Section, Division of Air Pollution Control as his delegate with respect to pollution control facility certificates.

DATE: December 22, 1992

 Otto J. Klein, Jr.
 Manager, Tax Certification Section
 Division of Air Pollution Control

cc: Department of Revenue



State of Illinois

ENVIRONMENTAL PROTECTION AGENCY

File

Mary A. Gade, Director

2200 Churchill Road, Springfield, IL 62794-9276

FINDING AND CERTIFICATION OF POLLUTION CONTROL FACILITY PURSUANT TO THE REVENUE ACT OF 1939

Applicant:	SHELL OIL COMPANY	I.D. #:	119090AAH
	SA-11A & ROUTE 111	Permit #:	77110609
	ROXANA, ILLINOIS 62084	Book #:	
	ATTN: E.G. JOHNSON	Parcel #:	19-1-08-34-00-000-006

Facility Location: WOOD RIVER MFG. COMPLEX, SULFUR RECOVERY SYSTEM, RAND ROAD, HARTFORD, MADISON COUNTY

Facility Description: C₃/C₄ H₂S ABSORBERS

Issuing Agency: Environmental Protection Agency

Date Received: 12/21/92

FINDING

The Agency finds that the primary purpose of the facility for which certification is sought is the elimination, prevention or reduction of air pollution.

CERTIFICATE

The Environmental Protection Agency, based on information available to it, heraby issues a certificate that the facility identified in the application is a "pollution control facility" for purposes of the Revenue Act of 1939.

This certificate may be revoked or modified by this Agency in accordance with Section 21a-6 of the Revenue Act of 1939.

SPECIAL NOTE: Section 21a-5 and 21a-6 vest the powers and duties with respect to Pollution Control Facility Certification with ". . .The Pollution Control Board, acting through its Chairman or his specifically authorized delegate. . ." The Chairman of the Pollution Control Board has, by letter dated July 15, 1971, specifically authorized the Director of the Environmental Protection Agency or the Manager of the Tax Certification Section, Division of Air Pollution Control as his delegate with respect to pollution control facility certificates.

DATE: December 22, 1992

Otto J. Klein, Jr.

 Otto J. Klein, Jr.
 Manager, Tax Certification Section
 Division of Air Pollution Control

cc: Department of Revenue

Shell Oil Company



P. O. Box 262
Wood River, IL 62095

December 17, 1992

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

RECEIVED

Mr. Otto Klein, Manager Variances Services 12/1 1992
Illinois Environmental Protection Agency
Division of Air Pollution Control
1340 North Ninth Street
Springfield, IL 62794-9276

ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF AIR POLLUTION CONTROL
STATE OF ILLINOIS

Dear Mr. Klein:

SUBJECT: SHELL OIL COMPANY
WOOD RIVER MANUFACTURING COMPLEX
TAX CERTIFICATION FOR SULFUR RECOVERY SYSTEM

Attached are Form APC 151 and necessary attachments requesting certification of our sulfur recovery system as air pollution control facilities for purposes of property tax treatment.

If you have any questions or require further information, please contact Tod Jones at 713-241-3328 or Jay Rankin at 618-255-2737.

Very truly yours,

A handwritten signature in black ink, appearing to read "E. G. Johnson".

E. G. Johnson
Manufacturing Complex Manager
Wood River Manufacturing Complex

Attachments

JDR\L9235201.WCB



STATE OF ILLINOIS ENVIRONMENTAL PROTECTION AGENCY 2200 CHURCHILL ROAD, SPRINGFIELD, ILLINOIS 62706

APPLICATION FOR CERTIFICATION (PROPERTY TAX TREATMENT)

POLLUTION CONTROL FACILITY
 AIR WATER

This Agency is authorized to request this information under Illinois Revised Statutes, 1979, Chapter, 120, Section 302a-5. Disclosure of this information is voluntary. However, failure to comply could prevent your application from being processed or could result in denial of your application for certification. This form has been approved by the Form Management Center.

FOR AGENCY USE

File No.	Date Received	Certification No.	Date	
Sec. A APPLICANT	Company Name Shell Oil Company - Wood River Manufacturing Complex Sulfur Recovery System			
	Person Authorized to Receive Certification E. G. Johnson		Person to Contact for Additional Details: J. D. Rankin - WRMC; I. T. Jones - Houston	
	Street Address: SA-11A and Rte 111		Street Address: SA-11A and Rte 111	
	Municipality, State & Zip Code: Roxana, IL 62084		Municipality, State & Zip Code: Roxana, IL 62084	
	Telephone Number: 618-254-7371		Telephone Number: 618-255-2737 - WRMC; 713-241-3328 - Houston	
	Location of Facility: Hartford, IL		Municipality: Hartford, IL	Township: Wood River
	Street Address: Rand Avenue		County: Madison	Book Number: N/A
	Property Identification Number: 19-1-08-34-00-000-006		Parcel Number: N/A	
	Sec. B MANUFACTURING OPERATIONS	Nature of Operations Conducted at the above location: Petroleum Refining		
		(1) Water Pollution Control Construction Permit No. N/A	Date Issued N/A	
(2) NPDES Permit No. N/A		Date Issued N/A	Expiration Date	
(3) Air Pollution Control Construction Permit No. C-502023		Date Issued 8/9/78	N/A	
(4) Air Pollution Control Operating Permit No. 79090040 (WRR-38)		Date Issued 6/23/92 (renewal date)	6/30/94	
Sec. C MANUFACTURING PROCESS	(1) Describe Unit Process: Unit processes include Distilling, Cat. Cracking, Gas Plants, Alkylation, Aromatics, and Lubricants. Refined oil products are principally propane, motor gasolines, aviation fuels, diesel and heating oils, lubricating oils, heavy fuel oils and asphalt.			
	(2) Materials Used in Process: Crude oil Water Catalysts Chemical additives <i>I.D. 119090AAA</i>			
Sec. D POLLUTION CONTROL FACILITY DESCRIPTION	(1) Describe pollution abatement control facility: See Attachment 1			

Sec. E	(1) Nature of Contaminants or Pollutants:			
		Material Retained, Captured or Recovered		
	Contaminant or Pollutant	DESCRIPTION	DISPOSAL OR USE	
	Sulfur Dioxide	Sulfur	sold as product	
POLUTION CONTROL FACILITY - CONTAMINANTS	(2) Point(s) of Waste Water Discharge:			
	Sour waters from SCOT treated by steam stripping, then discharged to wastewater treatment plant (not covered by this application)			
	Plans and Specifications Attached-----Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			
	(3) Are contaminants (or residues) collected by the control facility?-----Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			
	(4) Date installation completed <u>1/</u> status of installation on date of application <u>Operational</u>			
	(5) a. FAIR CASH VALUE IF CONSIDERED REAL PROPERTY: \$ <u>17,588,036</u>			
	b. FAIR CASH VALUE IF CONSIDERED PERSONAL PROPERTY: \$ <u>17,588,036</u>			
	c. NET SALVAGE VALUE IF CONSIDERED REAL PROPERTY: \$ <u>0</u>			
	d. NET SALVAGE VALUE IF CONSIDERED PERSONAL PROPERTY: \$ <u>0</u>			
	e. PRODUCTIVE GROSS ANNUAL INCOME OF CONTROL FACILITY: \$ <u>4,2814</u>			
f. PRODUCTIVE NET ANNUAL INCOME OF CONTROL FACILITY: \$ <u>0</u>				
g. PERCENTAGE CONTROL FACILITY BEARS TO WHOLE FACILITY VALUE: <u>8.32</u>				
Sec. F	The following information is submitted in accordance with the "Revenue Act of 1939", as amended, and to the best of my knowledge, is true and correct. The facilities claimed herein, are "pollution control facilities" as defined in the Revenue Act of 1939, 120 Par. 502a.			
	SIGNATURE	E.G. Johnson TITLE <u>Manufacturing Complex Manager</u>		
Sec. G	INSTRUCTIONS FOR COMPLETING AND FILING APPLICATION			
	General: Separate applications must be completed for each control facility claimed. Do not mix types (water and air). Where both air and water operations are related, file two applications. If attachments are needed, record them consecutively on an index sheet.			
	Sec. A	Information refers to applicant as listed in the tax records and the person to be contacted for further details or for inspection of facilities. Location of facilities by street and local tax identification system, property identification no., book no., or legal description.		
	Sec. B	Self-explanatory. Submit copies of all permits issued by local pollution control agencies. (e.g. MSD Construction Permit)		
	Sec. C	Refers to manufacturing processes or materials on which pollution control facility is used.		
	Sec. D	Narrative description of the pollution control facility, indicating that its primary purpose is to eliminate, prevent or reduce pollution. State the type of control facility. State permit number, date, and agency issuing permit. A narrative description and a process flow diagram describing the pollution control facility. Include a listing of each major piece of equipment included in the claimed fair cash value for real or personal property. Include an average analysis of the influent and effluent of the control facility stating the collection efficiency.		
	Sec. E	List air contaminants, or water pollution substances released as effluents to the manufacturing processes. List also the final disposal of any contaminants removed from the manufacturing processes. Item (1) - Refers to pollutants and contaminants removed from the process by the pollution control facility. Item (2) - Refers to water pollution but can apply to water-carried wastes from air pollution control facilities. Submit drawings which clearly show (a) Point(s) of discharge to receiving stream, and (b) Sewers and process piping to and from the control facility. Item (3) - If the collected contaminants are disposed of other than as wastes, state the disposition of the materials, and the value in dollars reclaimed by sale or reuse of the collected substances. State the cost of reclamation and related expense. Item (4) - State the date which the pollution control facility was first placed in service and operated. If not, explain. Item (5) - This information is essential to the certification and assessment actions. This accounting data must be completed to activate project review prior to certification by this Agency.		
	Sec. F	Self explanatory. Signature must be a corporate authorized signature.		
	NOTE:	Submit to:	Attention:	Attention:
		Environmental Protection Agency 2200 Churchill Road Springfield, Illinois 62706	Thomas McSwiggin Industrial Tax Certification Unit Division of Water Pollution Control	Otto J. Klein, Jr., Manager Tax Certification Section Division of Air Pollution Control
1/ Sulfur Recovery Units purchased from Anlin Corp. in April 1976. SCOT constructed in 1979.				

ATTACHMENT 1

SHELL WRMC
SULFUR RECOVERY SYSTEM
APPLICATION FOR TAX CERTIFICATION
AIR POLLUTION CONTROL EQUIPMENT

All crude oil processed at WRMC contains sulfur in amounts varying from 0.2% to 3.5%. IPCB Air Pollution Regulation, Part 214 "Sulfur Limitations" limits SO₂ emissions from combustion of fuel gas. In addition, refined products such as distillates must be treated to remove sulfur compounds in order to meet USEPA requirements. Sulfur Plants using the "Claus" process are used within industry to meet these requirements. In the absence of the SO₂ emission limitations either directly on refinery fuel gas or indirectly by means of product quality restrictions placed on fuels, it would be uneconomical to operate these units. Following is a description of pollution control facilities for which tax certification is requested. Together this equipment makes up the sulfur recovery system.

DEA SYSTEM

Diethanolamine (DEA) is continuously circulated between H₂S absorbers at Shell, Clark, and Amoco refineries, and steam strippers at the Sulfur Recovery Unit. The absorbers remove sulfur from refinery fuel gases and from other light hydrocarbon streams. Steam strippers are used to strip the H₂S from the DEA at the Sulfur Recovery Unit. Certification is requested only for the Shell absorbers.

SULFUR RECOVERY UNIT (SRU)

The Sulfur Recovery Unit consists of three H₂S strippers, three separate Claus trains, and an incinerator. Each train consists of an H₂S boiler and two sets of sulfur converters and scrubbers. H₂S from the strippers is fed to the H₂S boilers where it is combined with a limited supply of air and combusted. Burning is limited so that the SO₂ produced and the unburned H₂S are in the correct 2:1 ratio for conversion to elemental sulfur. The boilers also produce 50 psig steam for use in the plant. Exit gas from the H₂S boiler flows to the first stage converters, where the SO₂ and H₂S are reacted to form elemental sulfur. The unconverted SO₂, H₂S, and produced sulfur vapor flow through heat exchangers and are then contacted with liquid sulfur in the first stage sulfur scrubber. Condensed sulfur flows to product storage. The remaining gases from the first stage scrubber flow through heat exchangers and then to the second stage converter. There additional amounts of SO₂ and H₂S are converted to elemental sulfur. The remaining unconverted SO₂, H₂S plus produced sulfur vapor in the exit gases from that converter flow to the second stage sulfur scrubber to condense sulfur vapor.

Exit gases from the second stage Claus trains, if fed directly to the incinerator, would in many cases exceed the Illinois 1000 ppm SO2 emissions limitation. To consistently achieve this limit, this stream is fed to the Shell Claus Offgas Treatment Unit (SCOT) for further treatment. Certification is requested for the entire Sulfur Recovery Unit.

SHELL CLAUS OFFGAS TREATMENT (SCOT)

The SCOT process basic equipment consists of a reduction reactor , quench tower, H2S absorber, and solvent stripper. The reactor reduces all sulfur compounds in the feed gas to H2S in the presence of hydrogen. The reactor effluent is then cooled in a quench tower by direct contact with water. Cooled gases are fed to an H2S absorber where the solvent methyldiethanolamine (MDEA) is used to selectively adsorb the H2S. The remaining gases, consisting of CO2, water vapor, nitrogen, and trace H2S, are vented to the incinerator for combustion. H2S concentrations in the gas are sufficiently low so that SO2 concentrations from the incinerator meet the 1000 ppmv emissions limitation. The fat MDEA containing the H2S is stripped, with the H2S returned to the Sulfur Recovery Unit for sulfur recovery. Certification is requested for the entire SCOT Unit.

IEPA-DAPC operating permits for the above equipment are as follows:

<u>Equipment</u>	<u>Permit No.</u>
SRU/SCOT	79090040
Fuel gas H2S absorbers	72110619 (Gas Plants)
C3 H2S absorbers	72110619 (Gas Plants)
C3/C4 H2S absorbers	72110609 (Sats Gas Plants)

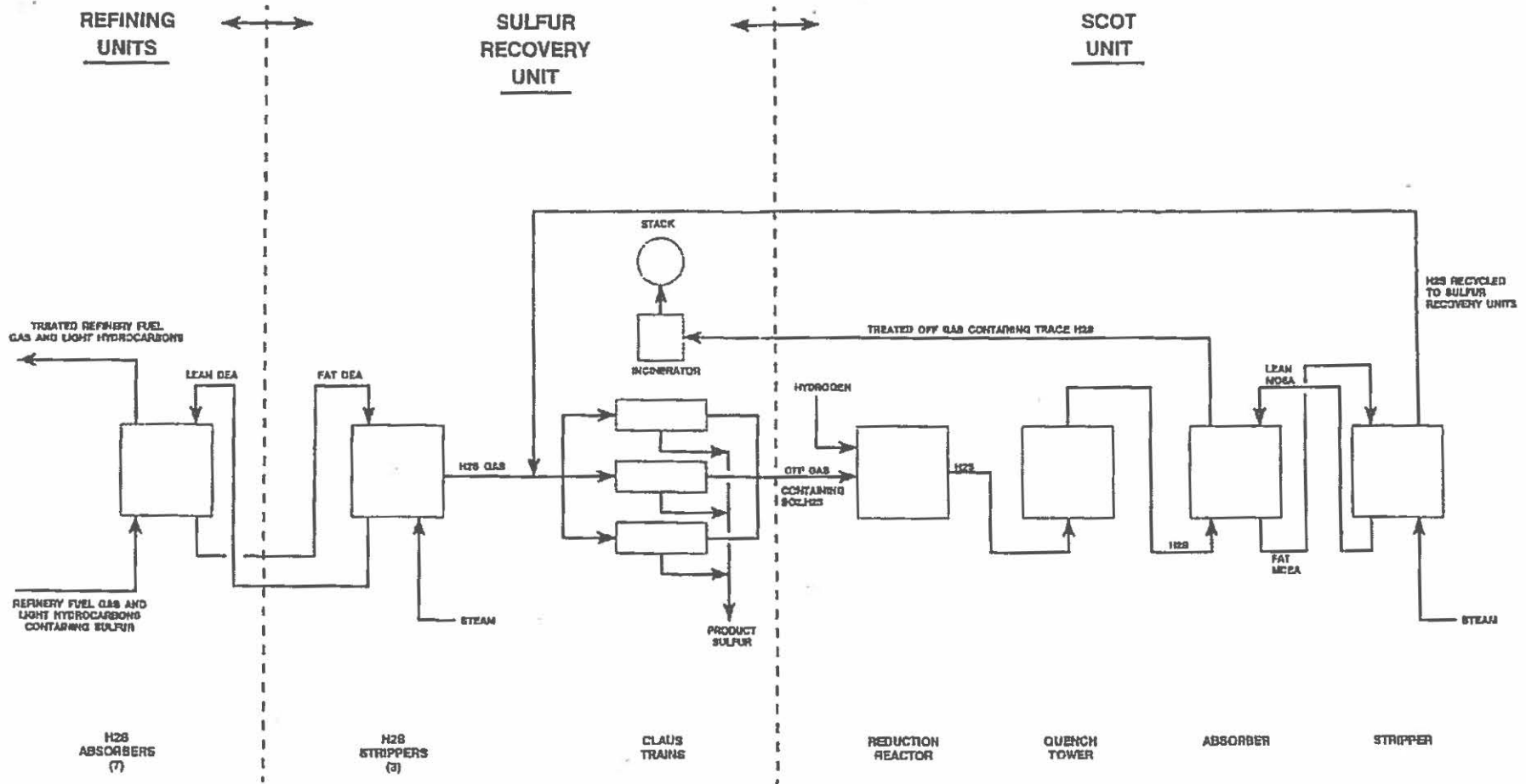
Block flow diagram for the facilities is attached. Additional drawings and information are on file with IEPA's Division of Air Pollution Control, Permit Section.

Typical influent, effluent, and removal efficiency of the Sulfur Recovery Unit/SCOT process are as follows:

	Influent Fat DEA	Effluent Incinerator Emissions	Typical Sulfur Removal Efficiency (of SRU)	(of SCOT)
Sulfur	3.5% wt ¹ (as S)	300 ppmv (as SO ₂)	92%	7.8%

1. Equal to approximately 250 long tons sulfur per day.

JDR
12/92



NOTES:
1) DEA AND MDEA ARE SOLVENTS

BLOCK FLOW DIAGRAM - SHELL OIL COMPANY
WOOD RIVER MANUFACTURING COMPLEX
IEPA - DAPC TAX CERTIFICATION
SULFUR RECOVERY SYSTEM



ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397

BRUCE RAUNER, GOVERNOR

LISA BONNETT, DIRECTOR

Memorandum

Technical Recommendation for Tax Certification Approval

Date: November 23, 2015

To: Robb H. Layman, Assistant Counsel, Division of Legal Counsel

From: Raymond E. Pilapil, Manager, Permits Section *REP*

Subject: WRB Refining LLC TC-9-9-15C

The Illinois EPA received a request on September 9, 2015, from WRB Refining, LLC, for an Illinois EPA recommendation regarding tax certification of air pollution control facilities pursuant to 35 Ill. Adm. Code 125.204. The application consolidated prior materials submitted for the Sulfur Recovery from Fuel Gas Project, which has been pending for some time due to the need for additional technical consideration. Based on consultations with your staff, the following recommendation for your approval is made:

The air pollution control facilities in this request include the following:

Sulfur Recovery from the Fuel Gas Project, which removes sulfur compounds from fuel gas produced at the refinery and therefore prevents emissions of sulfur oxides that would otherwise be caused in the combustion of the fuel gas in the refinery's various heaters and boiler operations. Because the primary purpose of this system, which encompasses emission units at the Fuel Gas Treater and two Sulfur Recovery Units, is to reduce or prevent air pollution, it can be certified as a pollution control facility.

This facility is located at 900 South Central Avenue, Roxana
The property identification number is Part of 19-1-08-34-00-000-006

Based on the information included in this submittal, it is your staff's engineering judgment that the proposed facility may be considered "Pollution Control Facilities" under 35 IAC 125.200(a), with the primary purpose of eliminating, preventing, or reducing air pollution, or as otherwise provided in this section, and therefore eligible for tax certification from the Illinois Pollution Control Board. Therefore, this memorandum recommends that the Board issue the requested tax certification for this facility.

Exhibit B