

Esterson, Sarah

From: Lyndon Jones <ljones@pacificethanol.com>
Sent: Tuesday, December 22, 2015 1:53 PM
To: Esterson, Sarah; David Vanthof
Cc: Goodwin, Andrea; Gustafson, Virginia
Subject: RE: CEP - Change Request Schedule for Corn Extraction, Annual Throughput Increase, and Feedstock Change
Attachments: Pacific Ethanol Request for Change Letter Dec 2015.pdf; Zoning corn oil signed 2-27.pdf; Pacific Ethanol Air Permit NOC - Corn Oil Project Rev 041515.pdf; County bldg permits for corn oil.pdf; 61001-PFD-0001 Rev 1 01-19-15.pdf; Attachment 2 Corn Oil PTE Boardman 040615.pdf; Corn oil DEQ air complete.pdf; Pacific Ethanol Columbia Boardman, OR.PDF; DEQ Air corn oil application.pdf; PECOL Site with Fabric Structures Feb 2015.pdf; PECOL Corn Oil Layout 10-2014 Full View w-description.pdf

Sarah,

Please find attached our Request for Change submittal along with supporting documentation. This is for the corn oil extraction and throughput increase. At this time we are not making any feedstock change request. If we did use an alternate feedstock in the future, we know we would need to notify the EFSC in advance.

After review, please let me know if you need other information or clarification of any item.

Regards,

Lyndon T. Jones

Plant Manager

Pacific Ethanol Columbia, LLC | 71335 Rail Loop Dr., PO Box 469, Boardman, OR 97818

Office: 541.945.4999 | Mobile: 541.292.0227 | ljones@pacificethanol.com

From: Esterson, Sarah [mailto:sarah.esterson@state.or.us]

Sent: Monday, December 21, 2015 1:21 PM

To: David Vanthof <vanthofd30@gmail.com>; Lyndon Jones <ljones@pacificethanol.com>

Cc: Goodwin, Andrea <andrea.goodwin@state.or.us>; Gustafson, Virginia <virginia.gustafson@state.or.us>

Subject: RE: CEP - Change Request Schedule for Corn Extraction, Annual Throughput Increase, and Feedstock Change

Hi David,

Please confirm timing of change request submittal related to the corn extraction system, annual throughput increase, and feedstock change. Based on your email on December 11, 2015, we expected to receive CEP's submittal last week. To the extent that any of these modifications have already been implemented at the facility, we strongly encourage timely submittal of the change request documentation.

Thanks,
Sarah

Sarah T. Esterson

Energy Facility Siting Analyst
Oregon Department of Energy
625 Marion Street N.E.

Salem, OR 97301
P:(503) 373-7945
C: (503) 385-6128
Oregon.gov/energy



Leading Oregon to a safe, clean, and sustainable energy future.

From: Esterson, Sarah
Sent: Monday, December 14, 2015 8:26 AM
To: 'David Vanthof' <vanthofd30@gmail.com>
Subject: RE: CEP - Change Request Schedule for Corn Extraction, Annual Throughput Increase, and Feedstock Change

Hi David,

Thanks for the email update. Please keep me posted on timing of submittal.

Thanks,
Sarah

Sarah T. Esterson
Energy Facility Siting Analyst
Oregon Department of Energy
625 Marion Street N.E.
Salem, OR 97301
P:(503) 373-7945
C: (503) 385-6128
Oregon.gov/energy



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From: David Vanthof [<mailto:vanthofd30@gmail.com>]
Sent: Friday, December 11, 2015 4:38 PM
To: Esterson, Sarah <sarah.esterson@state.or.us>
Subject: Re: CEP - Change Request Schedule for Corn Extraction, Annual Throughput Increase, and Feedstock Change

Sarah, apologies but I am just completing the draft letter for Pacific to review. So the letter will not be submitted to you until sometime next week. Hope that is ok. It helped to have your request for further information to craft this letter. Best,

Dave

Sent from my iPhone

On Dec 8, 2015, at 12:00 PM, Esterson, Sarah <sarah.esterson@state.or.us> wrote:

Excellent – thank you for the response!

Regards,

Sarah

Sarah T. Esterson

Energy Facility Siting Analyst
Oregon Department of Energy
625 Marion Street N.E.
Salem, OR 97301
P:(503) 373-7945
C: (503) 385-6128
Oregon.gov/energy



<image001.jpg> <image002.jpg>
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From: David Van't Hof [<mailto:vanthofd30@gmail.com>]
Sent: Tuesday, December 8, 2015 11:59 AM
To: Esterson, Sarah <sarah.esterson@state.or.us>
Cc: Goodwin, Andrea <andrea.goodwin@state.or.us>; Gustafson, Virginia <virginia.gustafson@state.or.us>
Subject: Re: CEP - Change Request Schedule for Corn Extraction, Annual Throughput Increase, and Feedstock Change

Thanks Sarah. Yes, we still plan to submit the letter this week. Sorry for the delay. Best,

Dave

On Tue, Dec 8, 2015 at 10:24 AM, Esterson, Sarah <sarah.esterson@state.or.us> wrote:

Hi David,

Per our email correspondence on November 10, the department requested that CEP provide information required pursuant to OAR 345-027-0050(3) for the proposed corn oil extraction system, annual throughput increase, and change in feedstock by December 10, 2015. Based on your November 18, 2015 email response, we were expecting to receive information on November 20, but have not yet received any information submittal. Please confirm whether CEP still plans to submit information for the change request associated with the three modifications referenced above by December 10, 2015.

Let us know if you have questions or need clarification regarding your upcoming submittal.

Thanks,
Sarah

Sarah T. Esterson

Energy Facility Siting Analyst
Oregon Department of Energy
625 Marion Street N.E.
Salem, OR 97301
P: [\(503\) 373-7945](tel:(503)373-7945)
C: [\(503\) 385-6128](tel:(503)385-6128)
Oregon.gov/energy



<image001.jpg> <image002.jpg>

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From: David Van't Hof [mailto:vanthofd30@gmail.com]

Sent: Wednesday, November 18, 2015 4:34 PM

To: Esterson, Sarah <sarah.esterson@state.or.us>

Cc: Goodwin, Andrea <andrea.goodwin@state.or.us>; Cornett, Todd <todd.cornett@state.or.us>;
Gustafson, Virginia <virginia.gustafson@state.or.us>

Subject: Re: CEP - Change Request Schedule and Request for Additional Information

Sarah, as an update, I am still getting the information needed from Lyndon and hope to submit our letter by Friday. Hope that works on your end. All the best,

Dave

On Tue, Nov 10, 2015 at 4:24 PM, Esterson, Sarah <sarah.esterson@state.or.us> wrote:

Hi David,

Thank you for taking the time to discuss proposed facility modifications for the Columbia Ethanol Project (CEP), including the:

- (1) CO2 Processing Plant
- (2) Sugar Addition System
- (3) Corn Oil Extraction System
- (4) Increase in annual throughput

(5) Change in feedstock

(6) Change to the Bond Requirement established in Site Certificate Condition IV.C.4 and IV.C.5

Per our discussion, the department and the certificate holder (CEP) agree to proceed with preparation of a "Change Request" for facility modifications 1 through 5, referenced above, pursuant to OAR 345-027-0050(3). This process was initiated for the CO2 Processing Plant and Sugar Addition System in 2014, with information most recently submitted by CEP to the department on December 3, 2014. The department will complete review of the information received on December 3, 2014 and will provide a request for additional information (RAI) or will provide confirmation of whether a request for amendment for these modifications is needed by December 4, 2015. The department requests that CEP provide information required pursuant to OAR 345-027-0050(3) for the proposed corn oil extraction system, annual throughput increase, and change in feedstock within 30-days, or by December 10, 2015.

As discussed, proposed facility modification (6) including removal or modification of existing site certificate conditions related to bonding requirements would require an amendment to the site certificate.

The department recognizes that some of the facility modifications have already occurred. Because an investigation of the modification(s) and applicability of an RFA have not yet been completed, it is critical that CEP provide responses to the requested information in a timely manner and that the Change Request process and RFA, if applicable, are completed and/or initiated based on an agreed upon schedule.

Please reply to this email and provide concurrence on the subject matter and schedule described. We look forward to working with you and CEP on this effort.

Thanks,
Sarah

Sarah T. Esterson
Energy Facility Siting Analyst
Oregon Department of Energy
625 Marion Street N.E.
Salem, OR 97301
P: [\(503\) 373-7945](tel:(503)373-7945)
C: [\(503\) 385-6128](tel:(503)385-6128)
Oregon.gov/energy

<image001.jpg> <image002.jpg>



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**Pacific Ethanol, Inc.
Columbia Plant**

Date: December 22, 2015

Todd R Cornett
Division Administrator
Energy Siting Division
Oregon Department of Energy
625 Marion St. NE
Salem, Oregon 97301-3737

RE: Change Request for Corn Oil Extraction System, Volume of Annual Ethanol Production

Dear Mr. Cornett:

Pursuant to OAR 345-027-0050(5), Pacific Ethanol Columbia (PEC) submits this change request for determination whether any of the following changes require amendment to the existing Site Certificate. For the reasons described below, PEC does not think an amendment is required for any of them.

Pursuant to OAR 345-027-0050(1), a certificate holder must submit a request to amend the site certificate to design, construct or operate a facility in a manner different from the description in the site certificate if the proposed change: (a) Could result in a significant adverse impact that the Council has not addressed in an earlier order and the impact affects a resource protected by Council standards; (b) Could impact the certificate holder's ability to comply with a site certificate condition; or, (c) Could require a new condition or change to a condition in the site certificate. OAR 345-027-0050(2) provides a list of proposed changes that do not require an amendment. In order to qualify as a change that does not require an amendment under OAR 345-027-0050(2), the change must be in substantial compliance with the terms and conditions of the site certificate and be a change that is expressly listed in subsections (a) through (e) of the rule. OAR 345-027-0050(2)(a) – (d) are not applicable, but (e) refers "to an aspect or feature of the facility, operating procedures or management structures not addressed in the site certificate." As described further below, the changes fall into that category.

A. Corn Oil Extraction Process

Under the initial Site Certificate Application (the Application) description of proposed activities, and the initial years of actual operation under the Site Certificate, PEC did not extract any corn oil from the processed corn residue remaining after the production of ethanol. Instead, the corn oil was left in the distillers grain and sold to nearby farms and dairies as feed for animals. (See, Page B-3 of the application, describing a resulting by-product of the fermentation process being a wet distillers grain which would be trucked to local dairy and cattle operations for use as feed). The Final Order and Site Certificate used the same description of the production and sale of the wet distillers grain by-product and did not attach any conditions that were specific to the wet distillers grain by-product and sale to nearby operations.

71335 RAIL LOOP DRIVE
BOARDMAN, OREGON 97818
TEL. 541.481.2716
FAX. 541.481.2735
www.pacificethanol.com



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Columbia Plant**

This year, PEC determined that it could capture more value from the wet grain if it first extracted up to 50% of the corn oil from the wet distillers grain and sold the corn oil as a separate feed product. Accordingly, PEC installed a centrifugal separation unit to remove up to 50% of the oil from the wet distillers grain. In comparison to the overall facility and as described further below, all of the changes amounted to less than a 5% increase (e.g. in energy used, concrete used, transportation etc.). No underground piping or other underground construction was required. The following structural changes were made to allow for the corn oil extraction:

1. A new centrifugal separation unit (CSU) was installed. The CSU is comprised of the following:
 - a. The main centrifuge, made of stainless steel and weighing approximately 9,000 pounds. It was installed on a new concrete pad in the Main Process Building.
 - b. Two stainless steel smaller supplemental centrifuges situated next to the main centrifuge on their own concrete pads.
 - c. A jib crane used to install and maintain the centrifuge is next to the centrifuge on its own small concrete pad.
 - d. An evaporation feed tank, stainless steel, 40,000 gallons, takes the stillage from the centrifuges before the stillage goes back into the existing system (into the existing slurry tank and the evaporators from original design).
 - e. A trim heater heats up the stillage/liquid to loosen the oils before entering the centrifuges
 - f. Two reactor tanks, stainless steel, 10,000 gallon vertical tanks, hold the stillage/liquid for continued separation before entering the centrifuges.
 - g. A caustic tank, carbon steel, 10,000 gallons, was added next to the centrifuges. It stores diluted caustic solution for cleaning the centrifuges. Note, this tank was part of the original Facility and has been repurposed for this use.
 - h. 3000 feet of above ground pipe was added to carry stillage and liquid to the centrifuges and back into process and to the corn oil storage tanks.
 - i. Two corn oil storage tanks were installed in the southwest corner of the existing truck loading containment area on new concrete foundations. They store the extracted oil prior to shipment. There are two stainless steel, 20,000 gallon, tanks along with a loadout/recirculation pump.

2. The corn oil extraction involves the following process: Whole stillage processed by the existing decanter centrifuges is flowed thru a trim heater to heat the whole stillage in order to begin separation of oil from the stillage. It flows into two reactor tanks for increased residence time during which additional separation occurs. The stillage then is processed through the new centrifuges for extraction of the oil. The pure corn oil is sent to the two storage tanks to age for a day before shipping while the solids are processed in the pre-existing evaporators. The centrifuges are cleaned every week using the same chemical used for cleaning the rest of the facility.



**Pacific Ethanol, Inc.
Columbia Plant**

3. The corn oil extraction requires approximately a 4% increase in natural gas use and 14% increase in electricity use. The heater uses an additional 2000 to 3000 lb/hr of steam created from natural gas (as compared to 75,000 lb/hr of steam). The system uses an additional 525Kw/700 HP (compared to 3,750 Kw total Facility load). No upgrades or modifications were required to the electrical or natural gas systems.
4. The corn oil extraction process requires less than 1% increase in water use and wastewater discharge. The water is used in the cleaning process and for blowdown of the boiler when making steam in the same fashion as water use for the rest of the facility
5. New concrete foundation pads were poured for the three centrifuges, jib crane, evaporative feed tank, trim heater, two reactor tanks, two corn oil storage tanks, and the caustic tank. The total area prepared was 175 cubic yards and 216 cubic yards of concrete was poured. That is less than 5% of the concrete used on the rest of the facility.
6. The only additional material associated with the extraction process is the use of caustic chemical for cleaning the centrifuges. The same chemical agent is used for cleaning the rest of the facility and the amount needed to clean the new centrifuges is insignificant in comparison to cleaning the overall facility.
7. Necessary building permits were obtained for the installation of the infrastructure and DEQ provided an authority to construct and finding that the additional corn extraction would continue to comply with the existing PEC air permit for the Facility. Copies of the building permits and DEQ authority are attached.
8. There has been no net change to the number of trucks entering or leaving the Project as the number of trucks of corn oil shipped directly reduced the number of feed trucks shipped, so there is a net zero effect on feed truck loads leaving the plant.
9. The added infrastructure did not increase or modify the footprint of the facility. The cost of the corn oil extraction system was approximately \$4.5 million. That is less than 5% of the overall cost of the Facility (which cost over \$100 million to build).

The above described changes did not rise to the level of impacts requiring an amendment under OAR 345-027-0050(1).

With respect to the corn oil extraction process and storage and shipping of the oil, there is no resource protected by Council standards that was addressed in the Final Order and Site Certificate. Accordingly, the addition of the equipment does not significantly alter pre-existing conditions in any way

71335 RAIL LOOP DRIVE
BOARDMAN, OREGON 97818
TEL. 541.481.2716
FAX. 541.481.2735
www.pacificethanol.com



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that could affect a resource protected by the Council standards. The energy and water use, combined, was increased by less than 5 percent. See, OAR 345-027-0050(2)(a), noting that an increase of fuel use under a Site Certificate of not more than 10% is one factor that supports no need to amend a Site Certificate for electricity facilities.¹ The amount of concrete poured was less than 5% of the overall concrete poured for the Facility. There also was no net increase in trucks entering and departing the facility. There was no change to air emissions at the facility under the existing air permit. There was no change to the related and supporting facilities (e.g. no change in natural gas and electrical lines). Also, there was no change to the Facility Site Certificate boundary (See, OAR 345-027-0050(2)(a), noting that no enlargement of the facility site is one factor that supports no need to amend a Site Certificate for electricity facilities). The investment for the system accounts for less than 5% of the overall construction costs for the Facility.

There was no existing condition related to the wet distillers grain processing, storage or shipment. Accordingly, the change could not impair an existing condition. Nor did the corn oil extraction system create a need for a new condition to the Site Certificate. As described above, there is insignificant increase in power and water use, concrete use, and no increase in trucks entering or leaving the Facility. There was no change to air emissions or the existing Air permit. All applicable laws were followed in installing the corn oil extraction system as well. As noted above, building permits and DEQ approval were secured prior to installation.

B. Increase in Volume of Annual Ethanol Production

The Application estimated that total production capacity of ethanol based on the facilities and infrastructure described in the Application would be 35 million gallons per year. The Final Order and Site Certificate made the same observation. However, there is no condition requiring that PEC not produce more than 35 million gallons per year.

- (i) Request to produce more annual production with no change to existing infrastructure.

With several years of operation, PEC has been able to optimize system performance to increase ethanol production above the 35 million gallons per year, with no structural change to existing infrastructure. This is based on a better understanding of the processing capability and efficiencies of the existing system. Accordingly, PEC would like EFSC to acknowledge that PEC may produce whatever amount of ethanol that is feasible under the infrastructure described in the Site Certificate. PEC believes it can produce up to a maximum of 44 million gallons per year.

Such an acknowledgement would not change anything with respect to existing infrastructure. There would be no expansion of types of feedstocks used or addition of any pipes or equipment. The only impacts would be a slight increase in energy and water use, a slight increase in trucks entering the facility (with corn) or leaving the facility (with wet grain or corn oil), and a slight increase in ethanol being shipped by barge from the facility. However, all of those impacts would remain in compliance with existing

¹ While OAR 345-027-0050(2)(a) specifically refers to electricity generating facilities, the same rationale of less than 10% increase in energy use should apply to other types of facilities.



**Pacific Ethanol, Inc.
Columbia Plant**

permits, were fully considered in the Site Certificate process, and their slight increase should be deemed de minimus and not significant enough to trigger an amendment to the Site Certificate.

- (ii) Request to produce more annual production with slight increase to existing infrastructure.

PEC also may, in the future, wish to increase existing infrastructure to enable the Facility to produce up to 50 million gallons of ethanol per year. Specifically, PEC may wish to add a second fermenter, additions to the dehydration system, and addition of one or more storage tanks to allow for greater production. Reaching up to 50 million gallons per year would also increase transportation by up to 20 percent (up to 40 trucks per week) for incoming corn and outgoing wet grain and corn oil. All additional ethanol produced would be barged out of the facility and would not impact road traffic. PEC will come forward with a future change request if and when it is prepared to expand infrastructure.

Sincerely,

Lyndon T Jones
Plant Manager
(541) 945-4999

71335 RAIL LOOP DRIVE
BOARDMAN, OREGON 97818
TEL. 541.481.2716
FAX. 541.481.2735
www.pacificethanol.com



City of Boardman
 PO Box 229
 Boardman, OR, 97818
 Phone: (541) 481-9252 Fax: (541) 481-3244

Sprinkler PERMIT# M15-050S
 JOB LOCATION: 71335 Rail Loop Drive Boardman
 JOB DESCRIPTION: Process Piping - MCC Building for Corn Oil Processing

Permit Type	Sprinkler	Permit Status	Issued
Work Type	New	Date Issued	04/14/2015
Use Type	Industrial	Date Expiration	10/11/2015
Constr. Area (Sq Ft)		Total Valuation	\$350,000.00

Parcels			
Parcel Number	Zone	Subdivision	Lot
04N2502-00100-A4			

Contacts			
Type	Full Name	Main Phone	Address
Applicant	Pacific Ethanol Columbia LLC	(541) 481-2716	71335 Rail Loop Drive Boardman OR 97818
Contact Person	Lyndon Jones	(541) 481-2716	71335 Rail Loop Drive Boardman OR 97818
Owner	Pacific Ethanol	(541) 481-2716	400 Capital Mall, Suite 2060 Sacramento CA 95814

Contractors				
Type	Name	Main Phone	License	License Exp
Builder	Barton Laser Leveling Inc.	(541) 564-9830	105850	2015-04-19

Fees				
Type	Date Paid	Amount	Outstanding	
Commercial Fee	04/28/2015	\$2,416.50	\$0.00	
Permit Issuance Fee	04/28/2015	\$20.00	\$0.00	
State Fee	04/28/2015	\$292.38	\$0.00	
Plan Review Fee	04/28/2015	\$1,583.73	\$0.00	
		\$4,312.61	\$0.00	

Work Items				
Type	Quantity	Unit	Value per Unit	Total Value

Conditions of Issuance
 THE OWNERS OF THIS BUILDING AND THE UNDERSIGNED AGREE TO NOTIFY THE BUILDING OFFICIAL OF ANY CHANGES IN PLANS FOR WHICH THIS PERMIT IS REQUESTED.

Owner/Authorized Signature <i>on file</i>	Date <i>4-28-15</i>
Print Name	
Issuing initials: <i>ms</i>	Date <i>4-28-15</i>



RECEIPT 15-0097

City of Boardman
PO Box 229
Boardman, OR, 97818
Phone: (541) 481-9252 Fax: (541) 481-3244

Sprinkler PERMIT# M15-050S
JOB LOCATION: 71335 Rail Loop Drive Boardman

04/28/2015

Permit Type	Sprinkler	Permit Status	Issued
Work Type	New	Date Issued	04/14/2015
Use Type	Industrial	Date Expiration	10/11/2015
Job Description	Process Piping - MCC Building for Corn Oil Processing	Total Valuation	\$350,000.00

Fees

Type	Date Paid	Amount	Paid
Commercial Fee	04/28/2015	\$2,416.50	\$2,416.50
Permit Issuance Fee	04/28/2015	\$20.00	\$20.00
State Fee	04/28/2015	\$292.38	\$292.38
Plan Review Fee	04/28/2015	\$1,583.73	\$1,583.73
		\$4,312.61	\$4,312.61

Paid By

Full Name	Main Phone	Address
Pacific Ethanol	(541) 481-2716	400 Capital Mall, Suite 2060 Sacramento, CA 95814

Payment Details

Amount Tendered	Payment Method	Check Number	Comments	Remaining Balance
\$4,312.61	Check	508837		0.0



City of Boardman
 PO Box 229
 Boardman, OR, 97818
 Phone: (541) 481-9252 Fax: (541) 481-3244

Building PERMIT# M15-049B
 JOB LOCATION: 71335 Rail Loop Drive Boardman
 JOB DESCRIPTION: MCC Building for Corn Oil Processing

Permit Type	Building	Permit Status	Issued
Work Type	New	Date Issued	04/14/2015
Use Type	Industrial	Date Expiration	10/11/2015
Constr. Area (Sq Ft)	470.0	Total Valuation	\$3,200,000.00

Parcels	Zone	Subdivision	Lot
Parcel Number 04N2502-00100-A4			

Contacts	Type	Full Name	Main Phone	Address
Owner		Pacific Ethanol	(541) 481-2716	400 Capital Mall, Suite 2060 Sacramento CA 95814
Applicant		Pacific Ethanol Columbia LLC	(541) 481-2716	71335 Rail Loop Drive Boardman OR 97818
Contact Person		Lyndon Jones	(541) 481-2716	71335 Rail Loop Drive Boardman OR 97818

Contractors	Type	Name	Main Phone	License	License Exp
Builder		Barton Laser Leveling Inc.	(541) 564-9830	105850	2015-04-19

Fees	Type	Date Paid	Amount	Outstanding
Permit Fee New Construction		04/28/2015	\$10,637.90	\$0.00
State Fee		04/28/2015	\$1,276.55	\$0.00
Plan Review Fee		04/28/2015	\$6,914.64	\$0.00
Fire Life Safety Review		04/28/2015	\$4,255.16	\$0.00
			\$23,084.25	\$0.00

Work Items	Type	Quantity	Unit	Value per Unit	Total Value
New Construction		1.0	SQ FT	\$3,200,000.00	\$3,200,000.00

Conditions of Issuance
 THE OWNERS OF THIS BUILDING AND THE UNDERSIGNED AGREE TO NOTIFY THE BUILDING OFFICIAL OF ANY CHANGES IN PLANS FOR WHICH THIS PERMIT IS REQUESTED.

Owner/Authorized Signature <i>on file</i>	Date <i>4.28.15</i>
Print Name	
Issuing initials: <i>MS</i>	Date <i>4.28.15</i>



RECEIPT 15-0098

City of Boardman
PO Box 229
Boardman, OR, 97818
Phone: (541) 481-9252 Fax: (541) 481-3244

Building PERMIT# M15-049B
JOB LOCATION: 71335 Rail Loop Drive Boardman

04/28/2015

Permit Type	Building	Permit Status	Issued
Work Type	New	Date Issued	04/14/2015
Use Type	Industrial	Date Expiration	10/11/2015
Job Description	MCC Building for Corn Oil Processing	Total Valuation	\$3,200,000.00

Fees

Type	Date Paid	Amount	Paid
Permit Fee New Construction	04/28/2015	\$10,637.90	\$10,637.90
State Fee	04/28/2015	\$1,276.55	\$1,276.55
Plan Review Fee	04/28/2015	\$6,914.64	\$6,914.64
Fire Life Safety Review	04/28/2015	\$4,255.16	\$4,255.16
		\$23,084.25	\$23,084.25

Paid By

Full Name	Main Phone	Address
Pacific Ethanol	(541) 481-2716	400 Capital Mall, Suite 2060 Sacramento, CA 95814

Payment Details

Amount Tendered	Payment Method	Check Number	Comments	Remaining Balance
\$23,084.25	Check	508837		0.0



Oregon

Kate Brown, Governor

Department of Environmental Quality

Eastern Region Bend Office

475 NE Bellevue Dr., Suite 110

Bend, OR 97701

(541) 388-6146

Fax: (541) 388-8283

TTY: 711

May 5, 2015

Mr. Lyndon Jones, Plant Manager
Pacific Ethanol Columbia, LLC
71335 Rail Loop Drive
Boardman, OR 97818

Re: Notice of Intent to Construct No. 28147
Standard Air Contaminant Discharge Permit
Permit No. 25-0006
Morrow County

On April 22, 2015 the Department received your *Notice of Intent to Construct* to install a Corn Oil Separation System for your facility located at 71335 Rail Loop Drive in Boardman. Processing of this notice is assigned to Doug Welch in our Pendleton office.

You may proceed with construction/modification on or after May 2, 2015; unless the Department notifies you in writing before that date, that the proposed construction/modification is not a Type I change.

In addition to meeting the air quality standards, your facility is also obligated to operate in compliance with the daytime and nighttime noise standards set forth in Oregon Administrative Rule (OAR) 340-35-035(1). A copy of the noise regulations will be provided to you upon request.

If at any time, the Department determines that the proposed construction is not in accordance with applicable statutes, rules, regulations, and orders, the Department will issue an order prohibiting the construction or modification. The order prohibiting construction or modification will be forwarded to the owner or operator by certified mail.

Sincerely,

Nancy Swofford
Air Quality Permit Coordinator
Eastern Region


cc: Doug Welch, DEQ: Pendleton Office/file



NOTICE OF APPROVED CONSTRUCTION COMPLETION

Return this form within 30 days of completion of approved construction.

NC Application Number:	28147	
Permit Number (if applicable):	25-0006-ST-01	
Company Name:	Pacific Ethanol Columbia, LLC	
Street Address:	71335 Rail Loop Dr.	
City, State, Zip Code:	Boardman, OR 97818	
Contact Person:	Lyndon Jones	
Phone Number:	(541) 945-4999	
Brief description of installed facility/equipment:	A vertical centrifuge, tanks, piping, electrical and controls	
Date construction completed:	10/02/2015	
Date placed in operation:	10/15/2015	
Do you wish to apply for tax credits? (yes/no)	NO	

Signature	
<i>I certify that the information contained in this notice, including any schedules and exhibits attached to the notice, are true and correct to the best of my knowledge and belief.</i>	
Name of official:	Lyndon Jones
Title of official:	Plant Manager
Phone number of official:	(541) 945-4999
Date	12/17/2015
Signature of official	

SUBMIT THE COMPLETED NOTICE OF APPROVED CONSTRUCTION COMPLETION FORM TO THE DEPARTMENT REGIONAL OFFICE SHOWN BELOW FOR THE AREA THAT THE SOURCE IS LOCATED:

Oregon Department of Environmental Quality		
Eastern Region, Air Quality 475 NE Bellevue Drive, Suite 110 Bend, OR 97701	Northwest Region, Air Quality 700 NE Multnomah Street, Suite 600 Portland, OR 97232	Western Region, Air Quality 4026 Fairview Industrial Drive Salem, OR 97302



LAND USE APPLICATION
ZONING PERMIT

File Number _____ Date Received _____ Date Deemed Complete _____ Fee \$250.00

Applicant / Contractor: Name(s) Pacific Ethanol Columbia, LLC

Mailing Address PO Box 469, Boardman, OR 97818

Phone (541) 481-2716 E-mail address ljones@pacficethanol.com

Legal Owner (if different from applicant):

Name(s) Port of Morrow

Address Two Marine Drive, Boardman, OR 97818

Property Description:

Township 4N Range 25 Section 2 Tax Lot 100 Zoning Designation PI

Physical Address 71335 Rail Loop Dr., Boardman, OR 97818

Located within a UGB? No if yes, which city? _____ Legal Access Rail Loop Dr.

Subdivision/Partition _____ Lot Width _____ ft Lot Depth _____ ft

Size of Parcel 24.85 leased acres Size of Tract _____ acres

Proposed Set Backs: Front 160 ft Side 155 ft Side 425 ft Rear 68 ft

- Proposed Structures: 1. Corn oil system - see attachment Sq Ft 3,026.5 Bdrms XX Baths XX
2. (3) Fabric Structures # 1, 2 & 3 Sq Ft 13,162 Bdrms XX Baths XX
3. _____ Sq Ft _____ Bdrms _____ Baths _____

Plot Plan: Attach a plot plan showing where on the lot the structures will be located. Identify set backs, existing structures, location of access, septic system, drainfield, and well if applicable. The drawing does not need to be to scale.

Certification: I, the undersigned, acknowledge that I am familiar with the standards and limitations set forth by the Morrow County Zoning and Subdivision Ordinance. I propose to meet all standards set forth by the County's Zoning and Subdivision Ordinance and any applicable State and Federal regulations. I certify that the statements and information provided with this application are true and correct to the best of my knowledge.

Signed: [Signature] (Applicant / Contractor)

[Signature] (Legal Owner) Port of Morrow

Printed: Lyndon Jones (Applicant / Contractor)

(Legal Owner)

If this application is not signed by the property owner, a letter authorizing signature by the applicant must be attached.

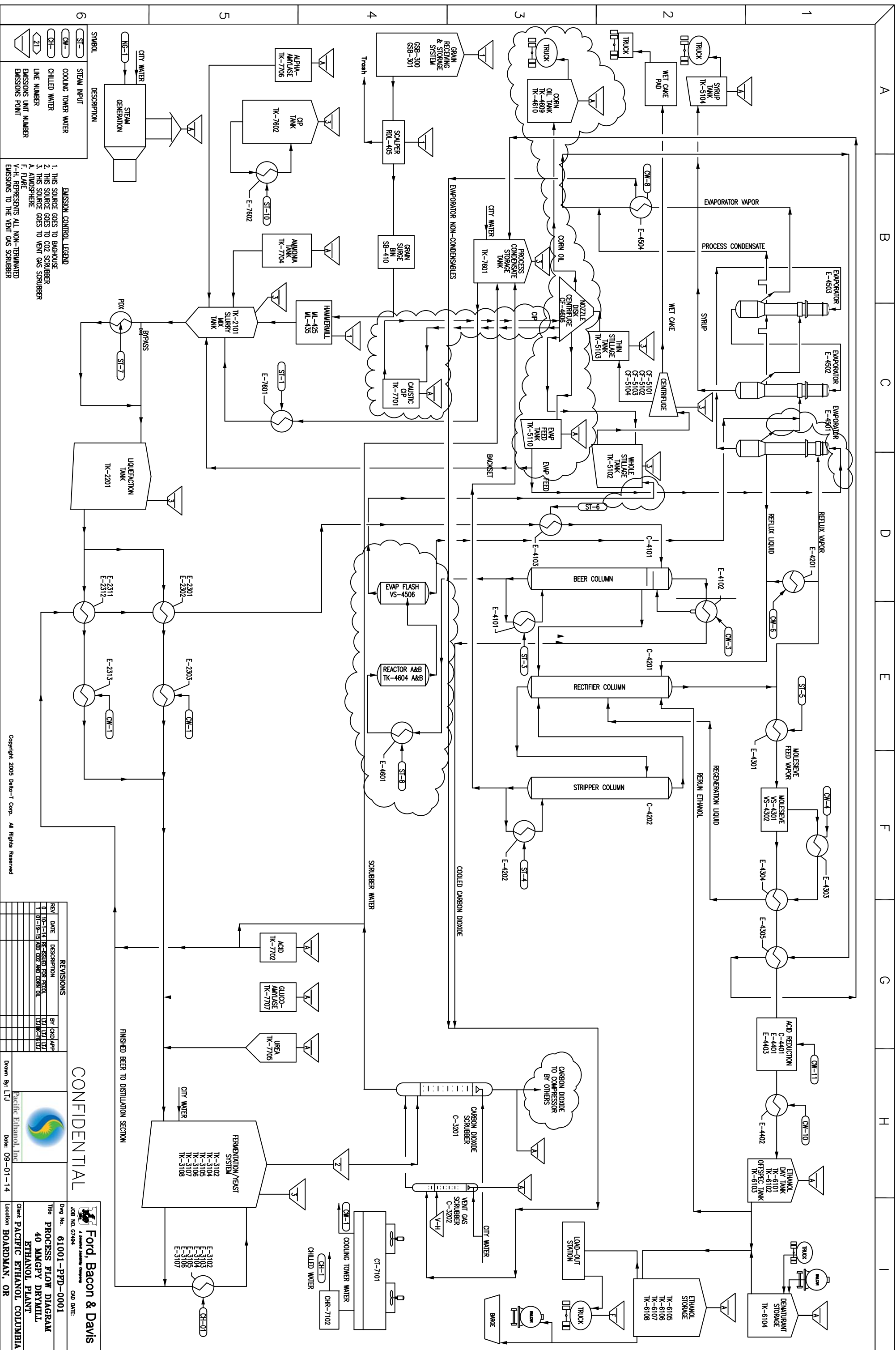
Planning Approval Signature _____ Date _____

Morrow County Planning Department
P.O. Box 40, Irrigon Oregon 97844
(541) 922-4624 FAX: (541) 922-3472

- Distribution: [] Planning Department - Original [] Assessor's Office - Copy [] Building Department
[] Port of Morrow [] Owner [] Applicant [] Building Official

Equipment Area for Corn Oil System	ft	ft	sq ft
Evap feed tank base	15.35	diam	185.1
Jib crane base	10	10	100
Nozzle disk base	6	8	48
Dilute caustic tank base	11.5	diam	103.9
MCC Room Extension	18	16	288
Reactor slab w/3 tank pads	36.5	49.33	1,800.5
Oil tanks base	31	15	465
Oil tank pump pad	6	6	36
		Total Sq Ft	3,026.5

Pacific Ethanol Columbia, LLC 2/26/15



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REV	DATE	DESCRIPTION	BY	CHKD
0	10-14-14	REVISED FOR PERM	LJ	LJ
1	01-19-15	ADD CO2 AND UREA TO	LJ	LJ

CONFIDENTIAL

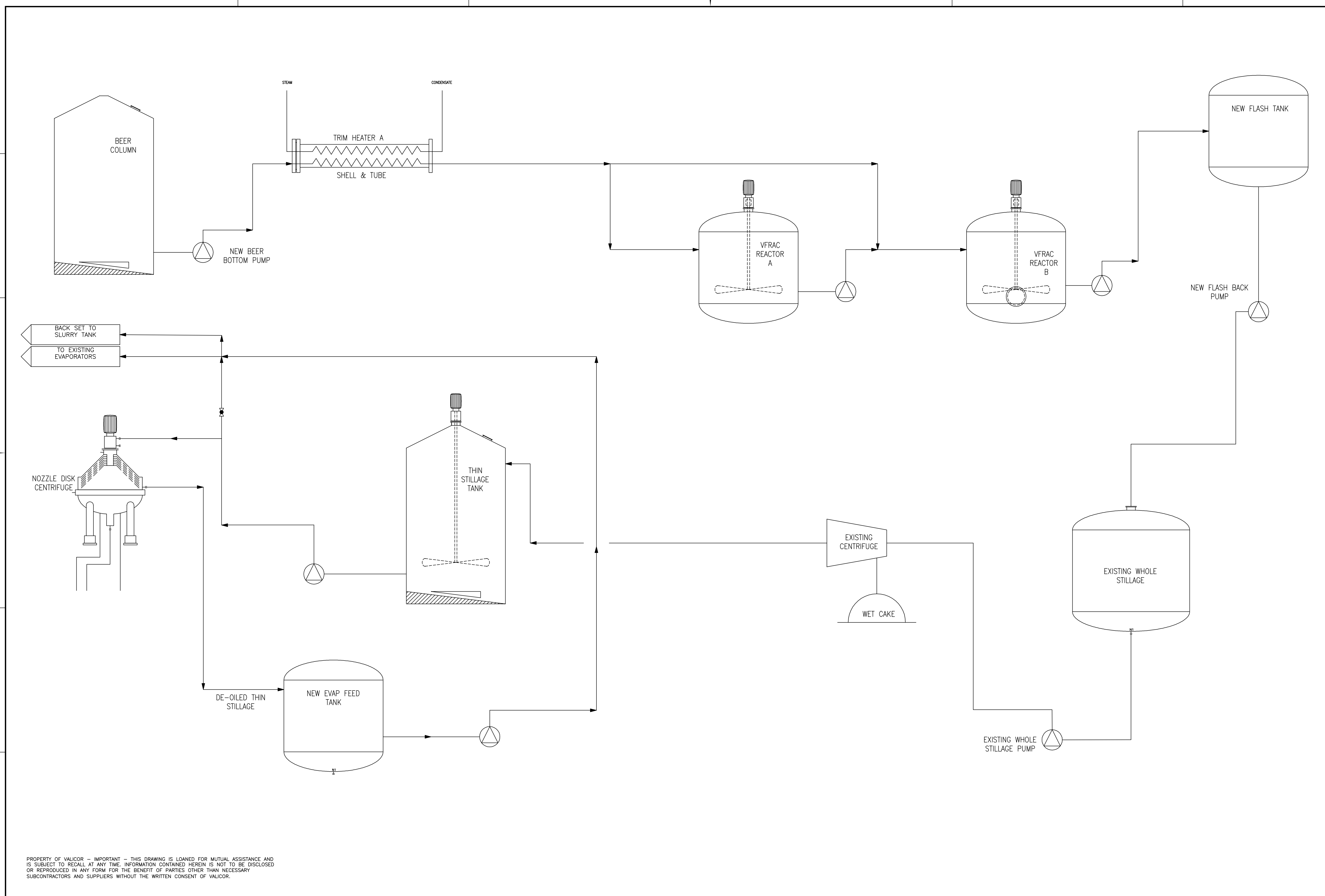
Drawn By: LTJ
Date: 09-01-14

Ford, Bacon & Davis
A Limited Liability Company

Job No. 61001-PPD-0001
Date: 09-01-14

PROCESSED ETHANOL DRYMILL
40 MNGY PLANT
ETHANOL PLANT

Client: PACIFIC ETHANOL COLUMBIA
Location: BOARDMAN, OR



DESIGNED BY:	AP	DATE:	08/08/2013
DRAWN BY:	MRS	DATE:	09/10/2013
APPROVED BY:	AP	DATE:	09/10/2013
CAD FILE:			
XREF FILE:			

REVISION	DESCRIPTION	DATE	BY
B	ISSUED FOR AIR PERMITS	02/09/2015	CO MB
A	ISSUED FOR CLIENT REVIEW	01/23/2014	CO MB

PACIFIC ETHANOL COLUMBIA	
BOARDMAN, OREGON	
VALICOR VFRAC	
PROCESS FLOW DIAGRAM	

VALICOR 7400 Newman Blvd Dexter, MI 48130 Ph: 734-426-9015 Fax: 734-426-9016	
DWG SCALE	SIZE
NTS	D
PROJECT NUMBER	N/A
DRAWING NUMBER	61081-FD-4607
REVISION	B

PROPERTY OF VALICOR - IMPORTANT - THIS DRAWING IS LOANED FOR MUTUAL ASSISTANCE AND IS SUBJECT TO RECALL AT ANY TIME. INFORMATION CONTAINED HEREIN IS NOT TO BE DISCLOSED OR REPRODUCED IN ANY FORM FOR THE BENEFIT OF PARTIES OTHER THAN NECESSARY SUBCONTRACTORS AND SUPPLIERS WITHOUT THE WRITTEN CONSENT OF VALICOR.

A B C D E F

1

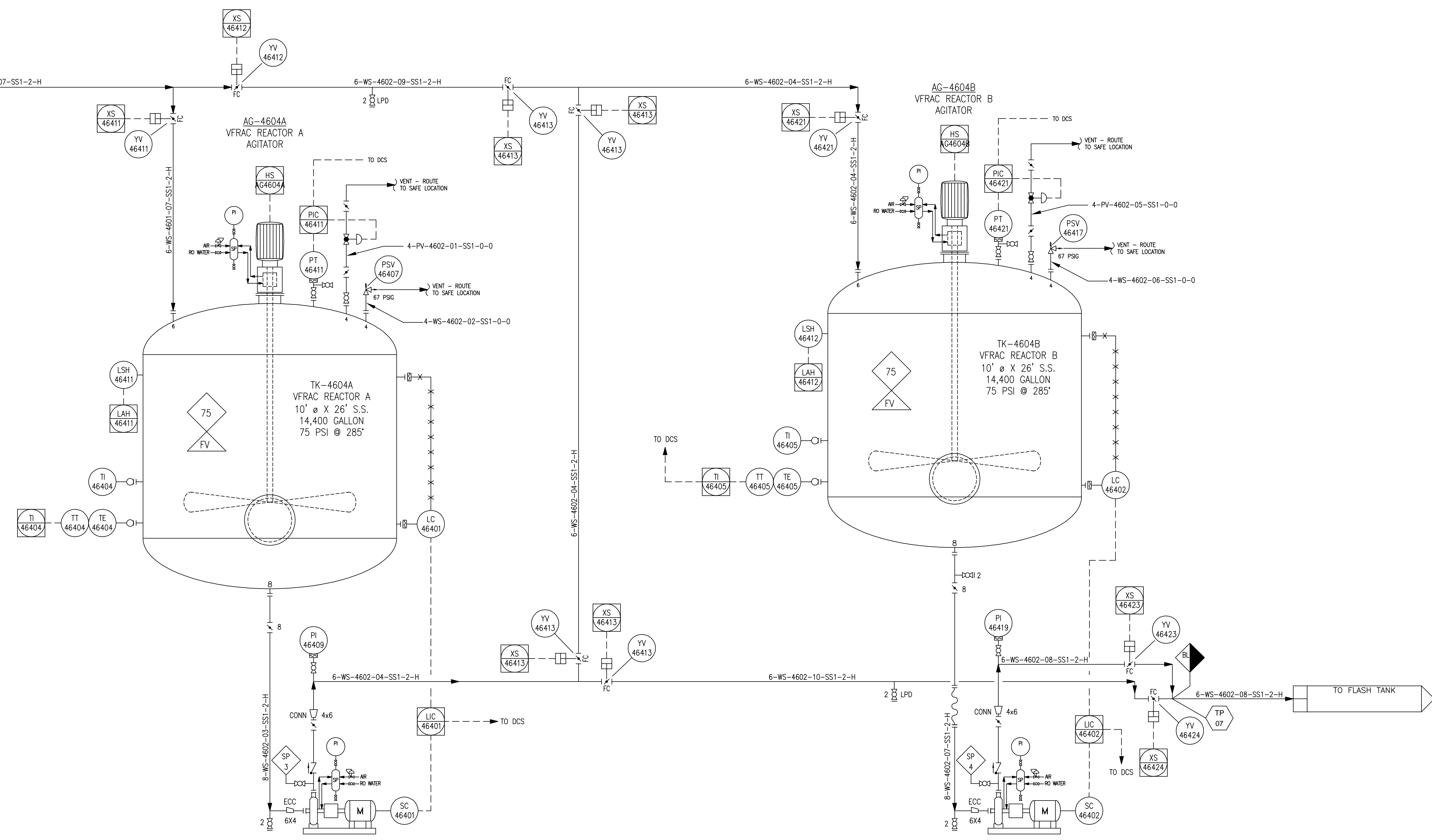
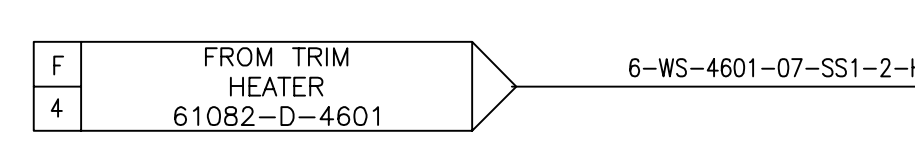
PC-4604A
VFRAC REACTOR A TRANSFER
PUMP
MODEL: CPT 21-4
PUMP SIZE(IN): 6X4
IMPELLER SIZE(IN): 8.5
DIFFERENTIAL PRESSURE(FT): 47
RATED FLOW (GPM): 450
HP: 15

NOTE:
FINAL PUMP SIZE BEING
DETERMINED THEY WILL BE
IDENTICAL.

PC-4604B
VFRAC REACTOR B TRANSFER
PUMP
MODEL: CPT 21-4
PUMP SIZE(IN): 6X4
IMPELLER SIZE(IN): 8.5
DIFFERENTIAL PRESSURE(FT): 73
RATED FLOW (GPM): 450
HP: 15

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NOTE:
ALL VALVES SHOULD BE CLOSE
COUPLED TO AVOID CREATION OF
DEAD LEGS.

PROPERTY OF VALICOR - IMPORTANT - THIS DRAWING IS LOANED FOR MUTUAL ASSISTANCE AND IS SUBJECT TO RECALL AT ANY TIME. INFORMATION CONTAINED HEREIN IS NOT TO BE DISCLOSED OR REPRODUCED IN ANY FORM FOR THE BENEFIT OF PARTIES OTHER THAN NECESSARY SUBCONTRACTORS AND SUPPLIERS WITHOUT THE WRITTEN CONSENT OF VALICOR.

DESIGNED BY	JHB	DATE	06/27/2013
DRAWN BY	MRS	DATE	07/19/2013
APPROVED BY	JHB	DATE	07/22/2013
CAD FILE:			
XREF FILE:			
PACIFIC ETHANOL COLUMBIA BOARDMAN, OR VALICOR VFRAC REACTORS P&ID			
VALICOR 7400 Newman Blvd Dexter, MI 48130 Ph: 734-426-9015 Fax: 734-426-9016			
DWG SCALE	SIZE		
NTS	D		
SRS PROJECT NUMBER VFRAC - WS			
DRAWING NUMBER 61082-PI-4602			
REVISION C			

A B C D E F

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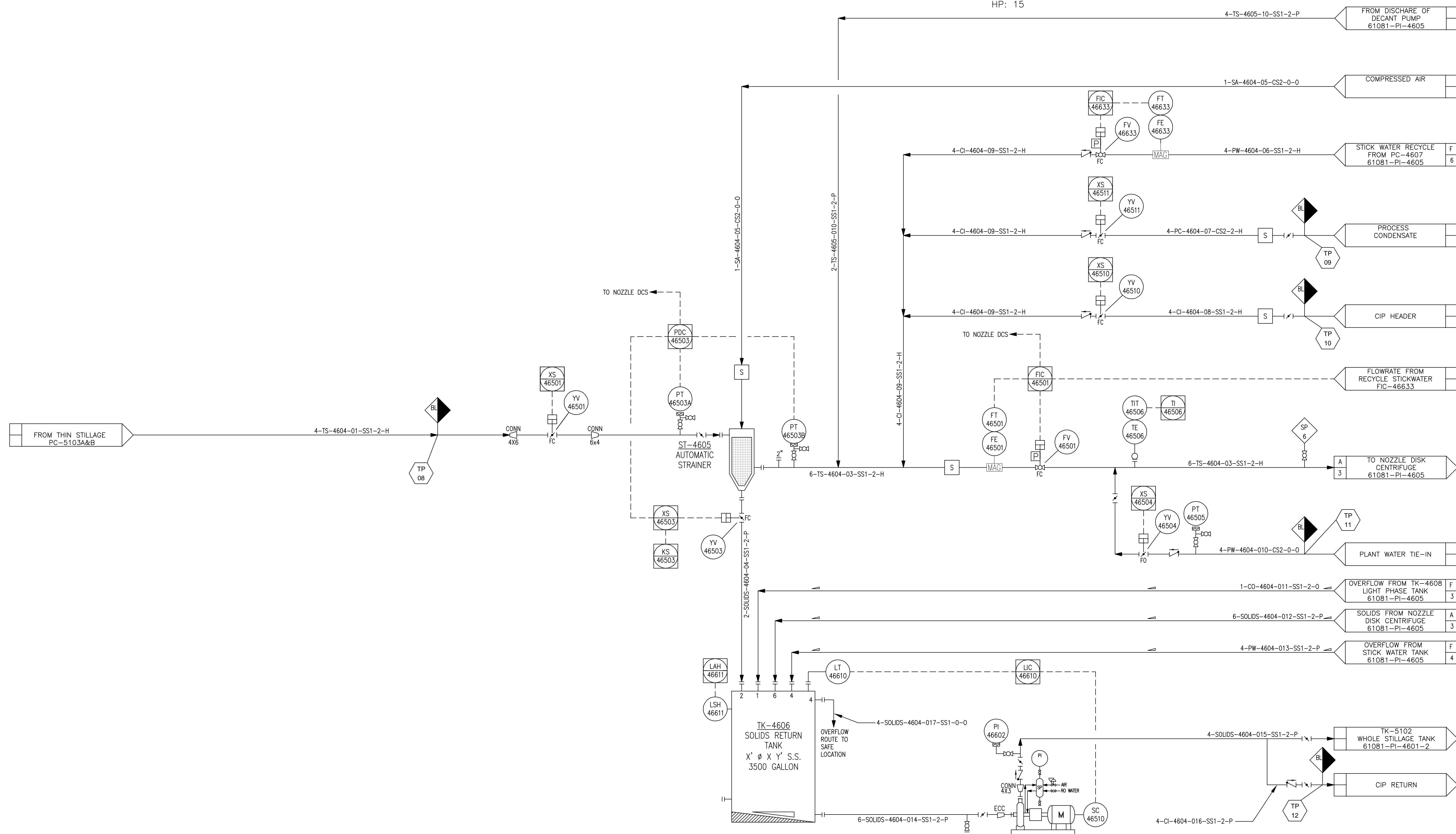
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A B C D E F

PC-4606
 SOLIDS RETURN PUMP
 MODEL: CPT 11-1B
 PUMP SIZE(IN): 3X1.5
 IMPELLER SIZE(IN): 6
 DIFFERENTIAL PRESSURE(FT): 132
 RATED FLOW (GPM): 125
 HP: 15



DESIGNED BY	AP	DATE	08/08/2013
DRAWN BY	MRS	DATE	09/10/2013
APPROVED BY	AP	DATE	09/10/2013
CAD FILE:		XREF FILE:	
REVISION		DATE	
A	ISSUED FOR CLIENT REVIEW	01/23/2015	CO
B	ISSUED FOR AIR PERMITS	02/02/2015	CO
C	ISSUED FOR CLIENT REVIEW	02/09/2015	CO
D	ISSUED FOR CLIENT REVIEW	01/23/2015	CO
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G			MB
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PM-4609
SOLIDS RECYCLE PUMP
MODEL: ZP1-130-SM
PUMP SIZE(IN): 3X3
IMPELLER SIZE(IN): N/A
DIFFERENTIAL PRESSURE: 100PSI
RATED FLOW (GPM): 100
HP: 15

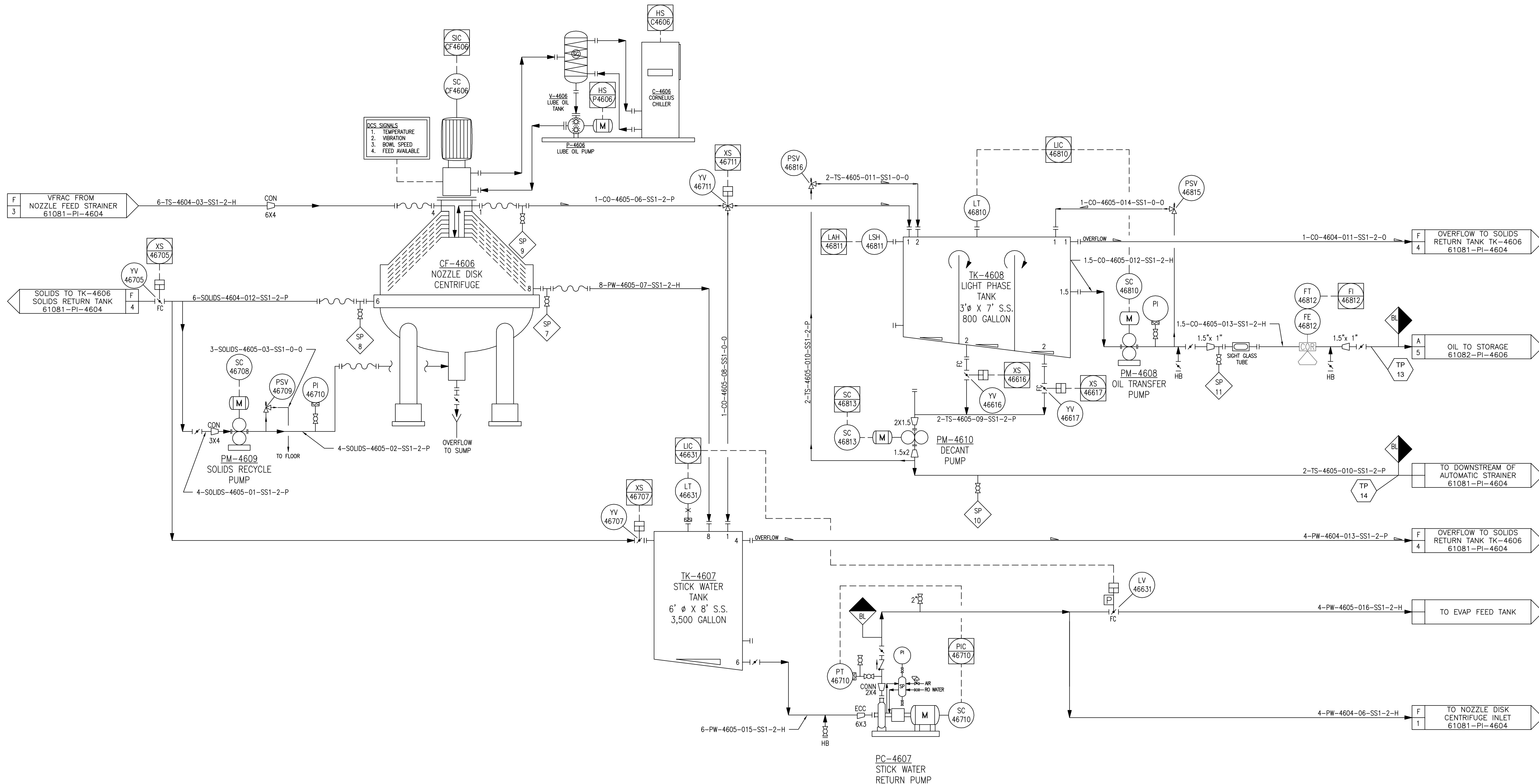
CF-4606
NOZZLE DISK CENTRIFUGE
HP: 305

P-4606
LUBE OIL PUMP

PC-4607
STICK WATER RETURN PUMP
MODEL: CPT 22-2
PUMP SIZE(IN): 3X2
IMPELLER SIZE(IN): 10
DIFFERENTIAL PRESSURE(FT): 231
RATED FLOW (GPM): 400
HP: 50

PM-4610
DECANT PUMP
MODEL: ZP1-30-SM
PUMP SIZE(IN): 1.5X1.5
IMPELLER SIZE(IN): N/A
DIFFERENTIAL PRESSURE: 50PSI
RATED FLOW (GPM): 5
HP: 2

PM-4608
OIL TRANSFER PUMP
MODEL: ZP1-30-SM
PUMP SIZE(IN): 1.5X1.5
IMPELLER SIZE(IN): N/A
DIFFERENTIAL PRESSURE: 60PSI
RATED FLOW (GPM): 10
HP: 2



DATE	08/08/2013	DESIGNED BY	AP
DATE	09/10/2013	DRAWN BY	MRS
DATE	09/10/2013	APPROVED BY	AP
DATE	01/23/2015	CAD FILE:	XREF FILE:
DATE		ISSUED FOR AIR PERMITS	C
DATE		ISSUED FOR CLIENT REVIEW	B
DATE		ISSUED FOR CLIENT REVIEW	A
DATE		REVISION	
DATE		DESCRIPTION	

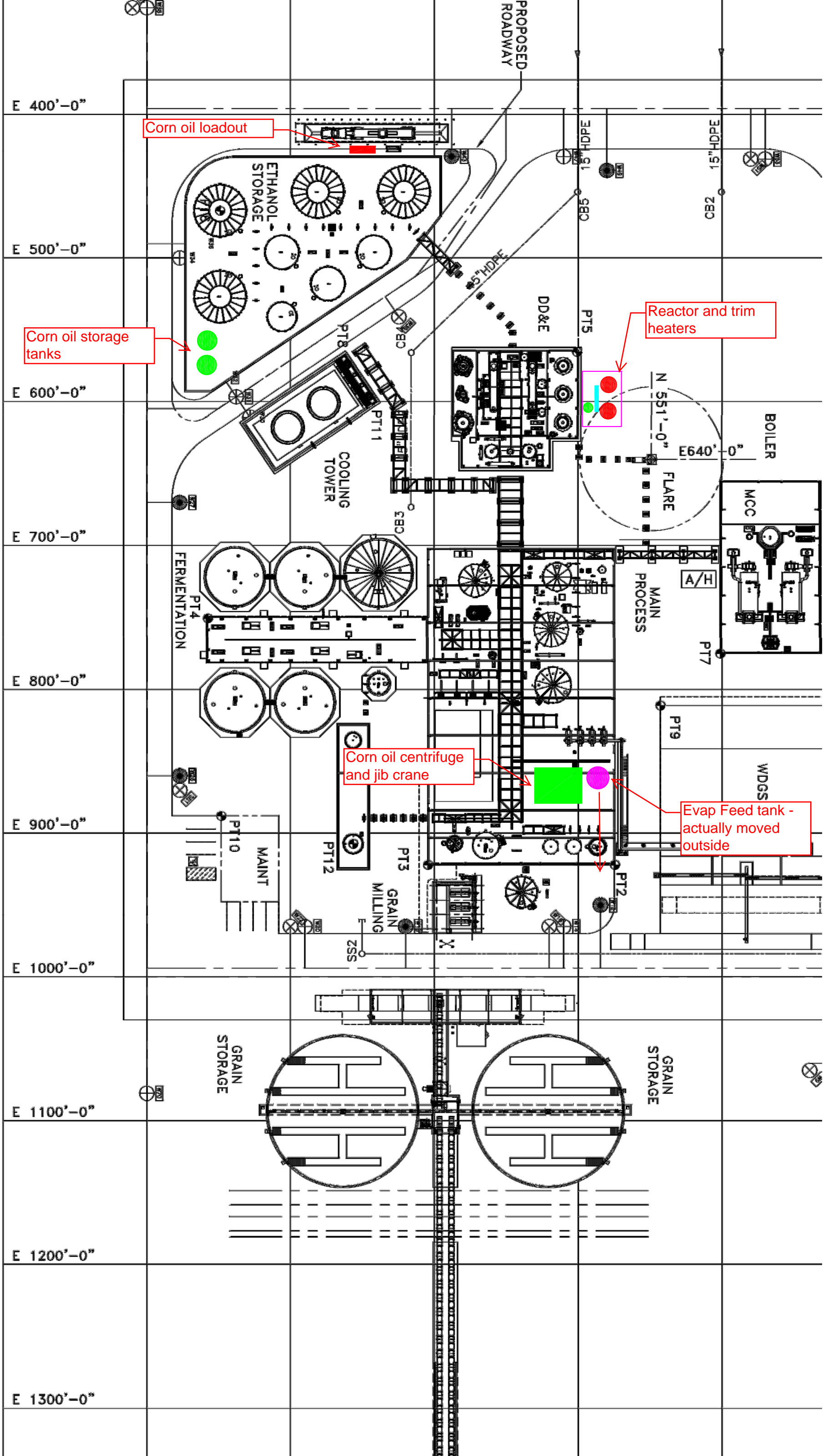
DATE	08/08/2013	DESIGNED BY	AP
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DATE		REVISION	
DATE		DESCRIPTION	

**PACIFIC ETHANOL COLUMBIA
BOARDMAN, OR
VALICOR VFRAC
NOZZLE DISK CENTRIFUGE P&ID**

Valicor
VALICOR
7400 Newman Blvd
Dexter, MI 48130
Ph: 734-426-9015
Fax: 734-426-9016

DWG SCALE	SIZE
NTS	D
PROJECT NUMBER	VFRAC - WS
DRAWING NUMBER	61082-PI-4605
REVISION	C

PROPERTY OF VALICOR - IMPORTANT - THIS DRAWING IS LOANED FOR MUTUAL ASSISTANCE AND IS SUBJECT TO RECALL AT ANY TIME. INFORMATION CONTAINED HEREIN IS NOT TO BE DISCLOSED OR REPRODUCED IN ANY FORM FOR THE BENEFIT OF PARTIES OTHER THAN NECESSARY SUBCONTRACTORS AND SUPPLIERS WITHOUT THE WRITTEN CONSENT OF VALICOR.



Corn oil loadout

Corn oil storage tanks

Reactor and trim heaters

Corn oil centrifuge and jib crane

Evap Feed tank - actually moved outside

Attachment 2

Notice of Intent to Construct - Permit # 25-0006-ST-01

Pacific Ethanol

Corn Oil Extraction

Potential to Emit Summary

Emissions Source	VOC	VOC
	(tpy)	(tpm)
Corn Oil Loadout	0.57	0.05
Equipment Leaks	0.09	0.007461
Storage Tanks	NA	NA

Corn Oil Loadout Emissions

Loadout Rate (1000 gal/yr)	Loadout Method	Saturation Factor ¹ S	Bulk Liquid Temperature ² T (deg R)	Vapor Pressure ³ P (psia)	Molecular Weight ³ M (lb/mol)	VOC Loading Loss ⁴ LL (lb/1000gal loaded)	VOC Total Loading Loss (lb/yr)	VOC Total Loading Loss (tpy)
2400	truck	1.45	580	0.158	96.09	0.473	1135.78	0.57

¹ Saturation factor obtained from AP-42 Ch.5 - Table 5.2-1, for splash loading of trucks/rail cars in dedicated normal service.

² Bulk liquid temperature selected as maximum worst case.

³ Corn oil properties assumed to be same as for furfural. P and M obtained from Tanks 4.09D for furfural. (see below)

⁴ Loading loss calculated based on AP-42 Ch.5, Sec 5.2.2 Eq(1).

Calculations:

$$L_L \text{ (lb/Mgal)} = 12.46 \text{ SPM/T}$$

$$\text{VOC (tpy)} = \text{Loadout Rate (Mgal/yr)} * L_L \text{ (lb VOC/Mgal loaded)} / 2000 \text{ lb/ton}$$

Corn Oil (as furfural) Vapor Pressure:

VP_COEF_A	6.575		<i>Corn oil vapor pressure calculated based on the properties for furfural (very conservative).</i>
VP_COEF_B	1198.7		<i>Antoine's coefficients obtained from Tanks 4.09D for furfural.</i>
VP_COEF_C	162.8		
Temperature	120	deg F	<i>Arbitrary worst case max. temp selected to demonstrate the low VP (< 0.75 psia) at such T.</i>
	48.889	deg C	$T (^{\circ}\text{C}) = [T(^{\circ}\text{F}) - 32]/5/9$
log VP	0.912	mm Hg	$\log \text{VP (mm Hg)} = A - [B / (T(^{\circ}\text{C}) + C)]$
Vapor pressure	8.174	mm Hg	$\text{VP (psia)} = \text{VP (mm Hg)} * 14.7 \text{ psia}/760 \text{ mmHg}$
	0.158	psia	

NOTE: Furfural is the closest match in the EPA TANKS Program. If Corn Oil is added to the EPA TANKS Program in the future, calculations will be adjusted.

Equipment Leak Emissions

Component Type	Service	Component Counts ¹	TOC Weight ⁴ (%)	VOC Emission Factor ² (kg/hr/source)	VOC Emission Factor (lb/hr/source)	Control Efficiency ³ (%)	VOC Emissions (lb/hr)	VOC Emissions (tpy)
Valves	Gas/Vapor	0	10%	0.00597	0.01316	87	0.000000	0.000000
	Light Liquid	24	10%	0.00403	0.00889	84	0.003412	0.014946
	Heavy Liquid	0	10%	0.00023	0.00051	0	0.000000	0.000000
Pumps	Light Liquid	2	10%	0.0199	0.04388	69	0.002721	0.011916
	Heavy Liquid	0	10%	0.00862	0.01901	0	0.000000	0.000000
Compressors	Gas/Vapor	0	10%	0.228	0.50274	0	0.000000	0.000000
PRV (w/o RD or CVS)	Gas/Vapor	0	10%	0.104	0.22932	87	0.000000	0.000000
Connectors (flanges)	All	35	10%	0.00183	0.00404	0	0.014123	0.061859
Open Ended Lines	All	1	10%	0.0008	0.00186	0	0.000186	0.000816
Total		62					0.02	0.09

¹ Component count is a conservative estimate, based on as is engineering. Counts will be verified upon startup and emission calcs adjusted accordingly.

² Emission Factors obtained from Table 2-1 of EPA Protocol for Leak Emissions Rates EPA-453/R-95-017, November 1995.

³ Control efficiency obtained from Table 5-2 of EPA Protocol for Leak Emissions Rates EPA-453/R-95-017, November 1995.

⁴ Conservatively assumed to be 10% VOC. Most sources estimate VOC at 1%.

Calculations:

$VOC (lb/hr) = Component Count \times EF (lb/hr/source) \times (1 - \% Control Eff)$

$VOC (tpy) = VOC (lb/hr) \times 8760 op hr/yr / 2000 lb/ton$

Valves	Gas/Vapor
Valves	Light Liquid
Pumps	Light Liquid
PRV	Gas/Vapor
Flanges/Connectors	All

Storage Tank Emissions

Pacific Ethanol will have 2 - 20,000 gal corn oil storage tanks located outside.

Most MSDSs for corn oil advise the vapor pressure for corn oil is "negligible" or "unavailable" and one lists the vapor pressure as <0.05 mmHg. In any case, it is not expected to be volatile and storage tank emissions are assumed to be negligible. Further determination will be taken upon oil production and the proper steps taken if this expectation proves to be incorrect.

Tank specifications (per tank)

Capacity: 20,000 gal/tank
Tank heated? yes
Roof? Fixed roof



**Pacific Ethanol, Inc.
Columbia Plant**

April 15, 2015

OR DEQ
Permit Coordinator
Eastern Region
475 NE Bellevue, Ste. 110
Bend, OR 97701

RE: Pacific Ethanol Columbia, LLC
Notice of Intent to Construct

Dear Permit Coordinator:

Please find enclosed 2 copies of Form AQ104 for our project to install a Corn Oil Separation System.

Please let me know if additional information is required.

Sincerely,

Lyndon Jones
Plant Manager
Pacific Ethanol Columbia, LLC
(541) 945-4999

71335 RAIL LOOP DRIVE
BOARDMAN, OREGON 97818
TEL. 541.481.2716
FAX. 541.481.2735
www.pacificethanol.com


NOTICE OF INTENT TO CONSTRUCT

**FORM AQ104
ANSWER SHEET**

FOR DEQ USE ONLY	
Permit Number:	Regional Office:
Application No:	Date Received :

1. Source Number: 25-0006-ST-01	
2. Company	3. Facility Location
Legal Name: Pacific Ethanol Columbia, LLC Ownership type:	Name: Pacific Ethanol Columbia, LLC Plant start date:
Mailing Address:400 Capitol Mall, Suite 2060	Street Address:71335 Rail Loop Drive
City, State, Zip Code: Sacramento, CA 95814-4436	City, County, Zip Code: Boardman, OR Morrow County 97818
Number of Employees (corporate): 180	Number of Employees (plant site): 34

4. Site Contact Person	5. Industrial Classification Code(s)
Name: Lyndon T. Jones	SIC: 2869, 4961, 2048 NAICS: 325193, 221330, 311119
Title: Plant Manager	
Phone number: 541-945-4999	6. Type of construction/change: (see instructions) Type 1
Fax number: 541-481-2735	
e-mail address:ljones@pacificethanol.com	

7. Signature	
<i>I certify that the information contained in this notice, including any schedules and exhibits attached to the notice, are true and correct to the best of my knowledge and belief.</i>	
Lyndon T. Jones	Plant Manager (541) 945-4999
_____ Name of official (Printed or Typed)	_____ Title of official and phone number
	April 14, 2015
_____ Signature of official	_____ Date

SUBMIT TWO COPIES OF THE COMPLETED NOTICE OF INTENT TO CONSTRUCT TO THE DEPARTMENT REGIONAL OFFICE SHOWN BELOW:

Oregon Department of Environmental Quality
Eastern Region
475 NE Bellevue, Suite 110
Bend, OR 97701

Construction Information

8. Description of proposed construction:
The estimated annual production of com oil is 2.4MM gal/yr.

The following equipment will be added to support the process described below:

- Two 20,000 gallon Com Oil storage tanks; vents to atmosphere - negligible emissions
- Two 14,400 gallon heat/mixing reactor tanks
- One Nozzle Disc Centrifuge
- One Evap Feed Tank; vents to atmosphere - negligible emissions
- One Evap Flash Tank
- One Trim Heater; fed from existing boilers (additional 10,000 lb/hr) - no increase in emissions
- Valves and PRVs identified in Attachment 1 - no increase in emissions

Beer bottoms will be drawn off from the beerwell and processed through a trim heater. The beer bottoms emissions from the trim heater will be processed back through the evaporators in a closed system. The condensate will exit the trim heater and be returned to the steam condensate system through a closed system. The trim heater will raise the temperature prior to entering the reactor tanks, sequentially, which will maintain the heat and mix the beer bottoms prior to flash tank, then the liquid goes to the existing whole stillage tank and decanters already permitted. The decanters separates the wet cake and thin stillage, which is then fed to the new nozzle disk centrifuge to generate the corn oil. Stickwater is centrate that is less than 10% solids and this material is routed to the Evap Feed Tank and then to the existing thin stillage system. Those solids are then sent back to the whole stillage tank. The corn oil that is centrifuged goes to the light phase tank and then to the two 20,000 gallon storage tanks. The storage tanks hold the material to load onto trucks for shipment. Corn oil has a VOC content of 1% and therefore not subject to LDAR.

9. Will the construction increase the capacity of the facility? N If yes, how much?

10. Will the construction increase pollutant emissions? N If yes, how much (see question 18)?

11. Will the construction cause new pollutant emissions? N If yes, which pollutants and how much?

12. Estimated timing of construction.

a. Commence date:	3/15/15
b. Begin date:	4/15/15
c. Completion date:	5/15/15

13. Will tax credits be requested once construction is completed? No

14. Attach relevant forms from Form Series AQ200, Device/Process Forms.

15. Attach relevant forms from Form Series AQ300, Control Device Description Forms, if applicable.

16. Attach process flow diagram.

17. Attach a city map or drawing showing the facility location.

18. If applicable, attach a Land Use Compatibility Statement.

Esterson, Sarah

From: Esterson, Sarah
Sent: Friday, January 15, 2016 3:59 PM
To: 'Lyndon Jones'; David Vanthof
Cc: 'drichards@pacificethanol.com'; Paul Koehler; FRANCE Renee M; Cornett, Todd; Gustafson, Virginia; Kilsdonk, Duane
Subject: CEP Change Request 2 Evaluation - Corn Oil Extraction/Annual Ethanol Prod. Increase
Attachments: CEP Change Request 2 Eval Final 2016-01-15.pdf

Good afternoon Lyndon,

Please find attached the department's evaluation of CEP's change request documentation for the corn oil extraction system and annual increase in ethanol production. As stated in the letter, a request for amendment (RFA) is required for both proposed modifications. The department requests for CEP to submit an RFA for the proposed modifications on or before **April 11, 2016**. We would like to discuss our evaluation during the Jan. 22 site visit to ensure all questions/comments related to our evaluation of amendment applicability are addressed.

Please ensure that the RFA is submitted to the following ODOE staff:

Todd Cornett at todd.cornett@state.or.us
Ginny Gustafson at Virginia.gustafson@state.or.us
Sarah Esterson at sarah.esterson@state.or.us

Thanks,
Sarah

Sarah T. Esterson
Energy Facility Siting Analyst
Oregon Department of Energy
625 Marion Street N.E.
Salem, OR 97301
P:(503) 373-7945
C: (503) 385-6128
Oregon.gov/energy



Leading Oregon to a safe, clean, and sustainable energy future.



Oregon

Kate Brown, Governor



625 Marion St. NE
Salem, OR 97301-3737
Phone: (503) 378-4040
Toll Free: 1-800-221-8035
Fax: (503) 373-7806
www.Oregon.gov/ENERGY

January 15, 2016

Mr. Lyndon T. Jones
Plant Manager, Pacific Ethanol, Inc.
71335 Rail Loop Drive
PO Box 469
Boardman, Oregon 97818

Sent via email: ljones@pacificethanol.com; vanthofd30@gmail.com; drichards@pacificethanol.com ;
paulk@pacificethanol.com

RE: Change Request Evaluation – Corn Oil Extraction System and Annual Ethanol Production Increase

Dear Mr. Jones,

The Oregon Department of Energy (department) has reviewed Columbia Ethanol Project's (CEP) Change Request documentation submitted on December 22, 2015 for the corn oil extraction system and annual ethanol production increase (proposed modifications). After reviewing the documentation, the department has determined that a site certificate amendment is required pursuant to OAR 345-027-0050(1).

Applicable Rule Requirements

OAR 345-027-0050(1) requires a certificate holder to submit a request to amend the site certificate to design, construct or operate a facility in a manner different from the description in the site certificate if the proposed change:

- (a) Could result in a significant adverse impact that the Council has not addressed in an earlier order and the impact affects a resource protected by Council standards;
- (b) Could impact the certificate holder's ability to comply with a site certificate condition; or,
- (c) Could require a new condition or change to a condition in the site certificate.

OAR 345-027-0050(2) provides a list of proposed changes that do not require an amendment. Under that rule, in order to qualify as a change that does not require an amendment, the change must be in substantial compliance with the terms and conditions of the site certificate and be a change that is expressly listed in subsections (a) through (e) of the rule. OAR 345-027-0050(2)(a) – (d) are not applicable to CEP.

The energy facility is addressed in Section III.A of the site certificate. CEP has stated that the construction and operation of the proposed modifications meet the requirements of OAR 345-027-0050(2)(e) as an "aspect or feature of the facility, operating procedures or management structures not addressed in the site certificate." However, based on the department's evaluation, the proposed modifications would be considered substantial modifications to the energy facility, as described in Section III.A of the site certificate.

Energy Facility Modifications

Ethanol Production Process

As described in Section III.A of the site certificate, the energy facility produces ethanol by mixing ground corn with water and enzymes to make a mash. The mash is then cooked in a series of retention tanks to break the complex sugars down into simple (fermentable) sugars. Yeast and additional enzymes are added to produce a liquid, containing 10 to 15 percent ethanol by weight, and a solids by-product called distiller's wet grain (DWGS). Liquid (10-15 percent ethanol) is piped to the Distillation, Drying and Evaporation (DD&E) Building, where it is separated from carbon dioxide and water vapor to produce a liquid that is 100 percent ethanol. Ethanol is then stored in ethanol storage tanks prior to shipment. DWGS is transferred and stored in the Wet Cake Building, and transported offsite for local dairy and cattle feed.

As described above, the ethanol production process generates a solids by-product (DWGS). The proposed corn oil extraction system would substantially modify the ethanol production process by adding a multi-phase process to the DWGS process. The multi-phase process includes new tanks (reactors, heated, flash and evaporative), a trim heater, centrifuges, piping and a jib crane which would be used to separate and heat the by-product produced during ethanol production for oil extraction. The extracted oil would then be piped to two, new heated storage tanks located within the ethanol storage area to age for a day before shipping while the remaining solids would be processed in the pre-existing evaporators.

Ethanol Production Capacity

The ethanol production capacity of CEP is described in Section III.A of the site certificate and indicates that the energy facility is capable of producing 35 million gallons per year (MMgy) of ethanol. CEP proposes to increase the maximum annual ethanol production from 35 to 44 MMgy, representing an annual increase of 25 percent. Based on the department's review of the site certificate, an annual ethanol production increase of 25 percent represents a substantial modification from the nameplate capacity described in Section III.A of the site certificate.

Site Certificate Amendment Applicability

Proposed Corn Oil Extraction System

Based on the department's evaluation of OAR 345-027-0050(1), operation of the proposed corn oil extraction system could impact CEP's ability to comply with existing site certificate conditions VI.A.3 and VII.1, and could require a change to existing site certificate condition IV.C.4. The department's evaluation of OAR 345-027-0050(1) is summarized below.

OAR 345-027-0050(1)(b)

- **Mandatory Condition VI.A.3 The certificate holder shall design, construct, operate, and retire the facility: (a) Substantially as described in the site certificate:** The proposed corn oil extraction system would include six tanks, with capacities ranging from 10,000 to 40,000-gallons, piping, three centrifuges, a crane, and trim heater. The process is estimated to produce 2.4 MMgy of oil, for sale and distribution. This process would result in a substantial change in energy facility operation as described in Section III.A of the site certificate and therefore could impact the certificate holder's ability to comply with this condition.

- **General Condition VII.1 The general arrangement of the Columbia Ethanol Project shall be substantially as shown in the ASC.** The proposed corn oil extraction system would include six tanks, with capacities ranging from 10,000 to 40,000-gallons, piping, three centrifuges, a crane, and trim heater. The equipment and arrangement of the proposed corn oil extraction system would result in a substantial change from the general arrangement shown in the ASC (Exhibit C, Figure C-3) and therefore could impact the certificate holder’s ability to comply with this condition.

OAR 345-027-0050(1)(c)

- **Retirement and Financial Assurance Condition IV.C.4 Within 30 days after the effective date of the site certificate, the certificate holder shall submit to the State of Oregon, through the Council, a bond or letter of credit in the amount of \$800,000 (in Second Quarter 2007 dollars) naming the State of Oregon, acting by and through the Council, as beneficiary or payee.** Construction cost of the proposed corn oil extraction system was estimated by the certificate holder to be \$4.5 million. The retirement cost of the proposed corn oil extraction system was not provided to the department in CEP’s Change Request documentation, but is assumed to require in excess of the \$800,000 previously estimated for retirement of the energy facility. Therefore, a change to this condition could be required.

Proposed Increase in Annual Ethanol Production

Based on the department’s evaluation of OAR 345-027-0050(1), a 25 percent increase in annual ethanol production could result in a significant adverse impact that the Council has not addressed in an earlier order and the impact could affect a resource (soils, recreation and public services) protected by Council standards, and could impact CEP’s ability to comply with existing site certificate conditions VI.A.3. The department’s evaluation of OAR 345-027-0050(1) is summarized below.

OAR 345-027-0050(1)(a)

- **Soil Protection:** A 25 percent increase in annual ethanol production is assumed to result in an increase in cooling tower drift (i.e. deposition of solids), which could increase chemical factors impacting soils, vegetation and other adjacent land uses. While the department does not anticipate a significant adverse impact to soils, an updated drift analysis or assessment of maximum impacts from changes in cooling tower recirculation rate and associated drift from the cooling towers, with proposed modifications, was not provided. Therefore, the proposed increase in annual ethanol production could result in a significant adverse impact that the Council has not addressed in an earlier order and the impact could affect a resource (soils) protected by Council standards.
- **Recreation:** A 25 percent increase in annual ethanol production would result in a “slight” increase in daily truck traffic, as stated by the certificate holder. While the department does not anticipate a significant adverse impact to recreational opportunities within the analysis area, an analysis of peak daily traffic impacts from the facility, with proposed modifications, was not provided. Therefore, the proposed increase in annual ethanol production could result in a significant adverse impact that the Council has not addressed in an earlier order and the impact could affect a resource (recreational opportunities) protected by Council standards.
- **Public Services:** A 25 percent increase in annual ethanol production would result in a “slight” increase in daily truck traffic, as stated by the certificate holder. While the department does not anticipate a significant adverse impact on public services (roadways) within the analysis area, an

analysis of peak daily traffic impacts from the facility, with proposed modifications, was not provided. Therefore, the proposed increase in annual ethanol production could result in a significant adverse impact that the Council has not addressed in an earlier order and the impact could affect a resource (public services) protected by Council standards.

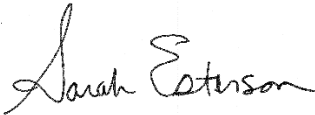
OAR 345-027-0050(1)(b)

- **Condition VI.A.3 The certificate holder shall design, construct, operate, and retire the facility: (a) Substantially as described in the site certificate:** Section III.A of the site certificate describes the maximum annual ethanol production of the facility as 35 MMgy. The proposed increase from 35 to 44 MMgy represents a 25 percent increase and would be a substantial change from the site certificate description. Therefore, the proposed increase in annual ethanol production could impact the certificate holder's ability to comply with this condition.

Amendment Applicability Determination

For the reasons described above, an amendment to the site certificate is required for the proposed modifications. The department requests submittal of a Request for Amendment (RFA) on or before **April 11, 2016**. If you have any questions, please do not hesitate to call or email.

Sincerely,



Sarah Esterson, Siting Analyst
Oregon Department of Energy
E: Sarah.esterson@state.or.us
P: (503) 373-7945

cc (via e-mail distribution)

Todd Cornett, Oregon Department of Energy
Duane Kilsdonk, Oregon Department of Energy
Virginia Gustafson, Oregon Department of Energy
Renee France, Oregon Department of Justice