CME Group

Thomas LaSala
Managing Director & Chief Regulatory Officer
Market Regulation

April 15, 2016

VIA ELECTRONIC MAIL
Mr. Christopher Kirkpatrick
Secretary of the Commission
Commodity Futures Trading Commission
Three Lafayette Centre 1155 21st Street, N.W.
Washington, DC 20581

Re: Re-Updated Deliverable Supply Estimates and Underlying Analysis

Dear Mr. Kirkpatrick:

CME Group Inc. ("CME Group")[1] is submitting today for the Commission's consideration a current update of Deliverable Supply estimates for seventeen (17) physical commodities underlying futures contracts listed on CME Group Exchanges in conjunction with recent discussions with Commission Staff. CME Group is providing this updated analysis to assist the Commission in developing spot-month position limit guidance and regulations for both the physical-delivery and cash-settled contract markets.

As the Commission will recall, CME Group has made prior submissions of a similar nature. On March 30, 2015, CME Group submitted to the Commission an updated summary chart of preliminary deliverable supply estimates for the eighteen (18) physical commodities. The preliminary 2015 Estimates were included in the CME Group's response to the Commission's re-opening of the comment period[2] for the "Position Limits for Derivatives" ("Position Limits Proposal")[3] and "Aggregation of Positions" ("Aggregation Proposal") [4]notice of proposed rulemakings.

On April 24, 2015, CME Group then submitted to the Commission finalized 2015 deliverable

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[1] CME Group is the holding company for four separate U.S.-based Exchanges, Including the Chicago Mercantile Exchange Inc. ("CME"), the Board of Trade of the City of Chicago, Inc. ("CBOT"), the New York Mercantile Exchange, Inc. ("NYMEX"), and the Commodity Exchange, Inc. ("COMEX") (collectively, the "CME Group Exchanges" or "Exchanges"). CME Clearing is one of the largest central counterparty clearing services in the world; it provides clearing and settlement services for exchange-traded contracts and over-the-counter ("OTC") derivatives contracts through CME ClearPort®. The CME ClearPort® service mitigates counterparty credit risks, provides transparency to OTC transactions, and brings to bear the exchanges' market surveillance monitoring tools.

[2] See Position Limits for Derivatives and Aggregation of Positions, 80 Fed. Reg. 10022 (Feb. 25, 2015).

[3] See Position limits for Derivatives, 78 Fed.Reg.75680 (Dec. 12, 2013).

[4] See Aggregation of Positions, 78 Fed. Reg. 68946 (Nov. 15, 2013).

supply estimates. The finalized 2015 Estimates were summarized in chart format and detailed individual commodity analyses were also provided.

In today's submission, CME Group is providing a further update of Deliverable Supply to the prior summaries and analyses. Attached is a summary chart as well as the updated detailed analyses.

In establishing a federal spot month limit as considered in the proposed rulemaking, CME Group believes that it is imperative for the Commission to rely upon current, up-to-date deliverable supply estimates from the DCM listing the physical delivery contract. The DCM listing particular physical delivery contracts has the most direct knowledge of the factors described by the Commission as being relevant to calculating deliverable supply and has been making these calculations for decades as part of their own exchange-administered position limits program. The spot month limit therefor should be determined by the exchange listing the physically-settled contract, working with the Commission. CME Group continues to believe that spot-month position limits for physically-delivered and cash-settled contracts should be set equally for the reasons we have stated in our prior comment letters.

Should you have any comments or questions regarding this submission, please contact me by telephone at (212) 299-2897 or by e-mail at thomas.lasala@cmegroup.com; or Joseph Hawrysz, Executive Director Market Surveillance, by telephone at (312) 341-7750 or by e-mail at joe.hawrysz@cmegroup.com; or Christopher Bowen, MD Chief Regulatory Counsel, by telephone at (212) 299-2200 or by e-mail at christopher.bowen@cmegroup.com.

Very truly yours,

Thomas F LaSala
MD, Chief Regulatory Officer

BOARD OF TRADE OF THE CITY OF CHICAGO INC.

ANALYSIS OF DELIVERABLE SUPPLY

CORN FUTURES

APRIL 2016

In estimating deliverable supply for the Corn Futures, the Board of Trade of the City of Chicago Inc. ("CBOT" or "Exchange") relied on long-standing precedent, which provides that the key component in estimating deliverable supply is the portion of typical supply stocks that could reasonably be considered to be readily available for delivery. In its guidance on estimating deliverable supply, the Commodity Futures Trading Commission ("CFTC" or "Commission") states:

> In general, the term "deliverable supply" means the quantity of the commodity meeting a derivative contract's delivery specifications that can reasonably be expected to be readily available to short traders and saleable by long traders at its market value in normal cash marketing channels at the derivative contract's delivery points during the specified delivery period, barring abnormal movement in interstate commerce. Typically, deliverable supply reflects the quantity of the commodity that potentially could be made available for sale on a spot basis at current prices at the contract's delivery points. For a non-financial physical-delivery commodity contract, this estimate might represent product which is in storage at the delivery point(s) specified in the futures contract or can be moved economically into or through such points consistent with the delivery procedures set forth in the contract and which is available for sale on a spot basis within the marketing channels that normally are tributary to the delivery point(s).[1]

Background:

Corn is the most widely produced feed grain in the United States, with most of the crop providing the main energy ingredient in livestock feed. Corn is also processed into a wide range of food and industrial products including fuel ethanol. USDA estimates the 2014/15 U.S. corn crop at 14.2 billion bushels, a 3 percent increase compared to 2013/14. CBOT Corn futures are the global price discovery and risk management benchmark.

Corn Futures Delivery Capacity (Updated Annually):

The following territories are defined for delivery in CBOT Corn futures:

A. Chicago and Burns Harbor, Indiana Switching District - The Chicago Switching District is the area geographically defined by Tariff ICC WTL 8020-Series and that portion of the Illinois Waterway at or above river mile 304 which includes the Calumet Sag Channel and the Chicago Sanitary & Ship Canal. The Burns Harbor, Indiana Switching District is the area geographically defined by the boundaries of Burns Waterway Harbor at Burns Harbor, Indiana which is owned and operated by the Indiana Port Commission.

B. Lockport-Seneca Shipping District - The Lockport-Seneca Shipping District is the portion of the Illinois Waterway below river mile 304 at the junction of the Calumet Sag Channel and the Chicago Sanitary & Ship Canal and above river mile 244.6 at the Marseilles Lock and Dam.

C. Ottawa-Chillicothe Shipping District - The Ottawa-Chillicothe Shipping District is the portion of the Illinois Waterway below river mile 244.6 at the Marseilles Lock and Dam and at or above river mile 170 between Chillicothe and Peoria, IL.

D. Peoria – Pekin Shipping District - The Peoria-Pekin Shipping District is the portion of the Illinois Waterway below river mile 170 between Chillicothe and Peoria, IL and at or above river mile 151 at Pekin, IL.

Facilities approved for delivery on Corn futures are limited in the number of shipping certificates that they may issue to an amount not to exceed 20 times their total daily rate of loading barges, or in the case of the Chicago and Burns Harbor delivery territory, their registered storage capacity. As of March 2016,

[1] http://www.ecfr.gov/cgi-bin/text-idx?SID=74959c3dbae469e2efe0a42b45b8dfae&mc=true&node=ap17.1.38_11201.c&rgn=div9

firms regular for delivery on CBOT Corn futures had approved capacity to issue 11,256 shipping certificates or 56.28 million bushels of corn.

Below are the facilities regular for delivery on Corn futures as of March 2016 along with the maximum number of shipping certificates they may issue, with each shipping certificate equivalent to 5,000 bushels:

Firm	Location	Maximum Certificates Deliverable
Cargill, Inc.	Burns Harbor, IN	1,094
Chicago & Illinois River Marketing, LLC	Chicago, IL	2,462
Cargill, Inc.	Morris, IL	440
CHS Inc.	Morris, Il	220
ADM Grain Company	Morris-E, IL	220
Cargill, Inc.	Seneca, IL	440
ADM Grain Company	Ottawa-N, IL	440
Cargill, Inc.	Ottawa, IL	440
ADM Grain Company	Ottawa-S, IL	220
Maplehurst Farms, Inc.	Ottawa, IL	220
Bunge North America	Ottawa, IL	220
ADM Grain Company	Ottawa, IL	220
Zen-Noh Grain Corporation	Utica, IL	220
Consolidated Grain and Barge Co.	Utica, IL	220
ADM Grain Company	La Salle, IL	220
Zen-Noh Grain Corporation	Peru, IL	220
Consolidated Grain and Barge Co.	Peru, IL	220
ADM Grain Company	Spring Valley, IL	440
Cargill, Inc.	Spring Valley, IL	440
ADM Grain Company	Hennepin, IL	440
Cargill, Inc.	Hennepin, IL	440
Zen-Noh Grain Corp.	Hennepin, IL	220
Consolidated Grain and Barge Co.	Hennepin, IL	220
ADM Grain Company	Henry, IL	220
ADM Grain Company	Lacon, IL	220
Cargill, Inc.	Lacon, IL	440
ADM Grain Company	Creve Coeur, IL	440

Corn Futures Deliverable Supply Procedures and Estimate (Updated Annually):

Each Tuesday the Registrar's Office publishes corn meeting deliverable grades that are in-store as of the previous Friday at all regular delivery facilities. The USDA-AMS publishes a weekly Grain Transportation Report (GTR) that covers developments affecting the transport of grain, both in the domestic and international marketplace (http://www.ams.usda.gov/AMSv1.0/gtr). This weekly publication reports on the latest volume and price data for barges, railroads, trucks, and ocean vessels involved in the transport of grain. Included in this report is the amount of corn shipped through Lock 8 on the Illinois River[2] and through the Illinois River delivery territory for Corn futures.

Deliverable supply is estimated as the stocks of grain in regular facilities on the Friday prior to First Notice Day plus the amount to corn that passes through Lock 8 on the Illinois River during the four weeks prior to First Notice Day. The Exchange believes these measures capture supply going into the delivery period, and is the relevant supply to consider when estimating what would be available for each contract expiration. This is likely a very conservative estimate of deliverable supply because it does not count the significant amount of corn that is likely to enter export channels and could be economically placed into delivery position. While this analysis of deliverable supply does not attempt to include these stocks, they could be estimated to some degree using economic theory. Economic theory and the theory of storage would suggest these uncounted stocks would exceed the stocks reported in the Stocks of Grain report[3].

[2] http://marinas.com/view/lock/155_Illinois_River_Peoria_Lock_IL_United_States

[3] See http://ajae.oxfordjournals.org/content/77/3/512.abstract

Regular delivery facilities are in position to load barges for export; thus, the value of grain in a delivery facility is greater than the value in the country because grain in the country destined for export needs to be transported to a barge loading facility. The cost to store grain includes opportunity cost, and opportunity costs increase with value. Thus, the cost to store grain in position at a regular delivery facility is greater than the cost to store in the country all other factors equal. If there is grain being stored in position at a barge loading facility, it suggests demand for grain in the export market, and theory would suggest a greater amount of stocks destined for export would be stored internally due to the lower cost. The Exchange may, at a later date, decide to estimate these stocks and included them in future deliverable supply estimates.

Futures Contract Expiration	Corn Movement through Lock 8 on the IL River during the 4 Weeks Prior to FND (1M Bushels)	Stocks of Corn in Regular Facilities on the Friday prior to FND (1M Bushels)	Total Stocks (1M Bushels)
Mar-15	8.02	8.17	16.19
Mar-14	4.50	6.80	11.3
Mar-13	6.56	2.19	8.75
Mar-12	24.82	3.11	27.93
Mar-11	14.96	7.07	22.03
MAR AVG	**11.77**	**5.47**	**17.24**
May-15	13.08	7.21	20.29
May-14	21.84	5.42	27.26
May-13	3.49	1.71	5.20
May-12	13.89	2.25	16.14
May-11	17.71	7.32	25.03
MAY AVG	**14.00**	**4.78**	**18.78**
Jul-15	17.87	6.05	23.92
Jul-14	26.98	3.90	30.88
Jul-13	9.37	1.35	10.72
Jul-12	9.54	1.55	11.09
Jul-11	15.14	5.03	20.17
JUL AVG	**15.78**	**3.58**	**19.36**
Sep-15	16.50	3.26	19.76
Sep-14	19.85	1.54	21.39
Sep-13	1.61	0.56	2.17
Sep-12	5.61	0.48	6.09
Sep-11	5.61	2.27	7.88
SEP AVG	**9.84**	**1.62**	**11.46**
Dec-15	10.37	6.11	16.48
Dec-14	10.15	5.41	15.56
Dec-13	13.41	4.80	18.21
Dec-12	4.29	2.12	6.41
Dec-11	20.07	4.47	24.54
DEC AVG	**11.66**	**4.58**	**16.24**
AVG ALL DELV MONTHS	**12.61**	**4.01**	**16.62**

Seasonality:

The Exchange evaluates seasonality on the deliverable supply across all Corn futures contract expirations. To the extent that 25 percent of any contract month's future estimated deliverable supply

falls below the current spot month limit, the Exchange will evaluate whether there is a need to adjust the spot-month position limit for that corresponding contract month. In addition, the Exchange expanded the time period for the Corn deliverable supply analysis to five years because the drought in 2012 reduced production resulting in significant declines in export flows and stocks during the 2012/13 marketing year.

Long Term Contracts:

There is no readily available data on corn under long-term contracts or agreements that could not be delivered on futures and should not be counted in deliverable supply estimates. To get a sense of the extent corn is under long-term agreements and not deliverable, the Exchange reached out to 4 corn regular delivery firms. Feedback from these firms indicates generally zero (0) percent of corn in their facilities is under long-term agreement and could not be delivered against Corn futures. One firm indicated generally zero percent under long-term agreement but at the very most five percent during some limited time frames. Given this feedback and the conservative nature of the estimate, the Exchange does not believe corn stocks under long-term agreements significantly affect deliverable supply.

ANALYSIS OF DELIVERABLE SUPPLY

Based on the above analysis, the Exchange estimates the monthly deliverable supply over the past five years to be 16.62 million bushels or **3,324** contract equivalents (contract size: 5,000 bushels). The current spot month limit of 600 contracts represents **18%** of this estimated monthly deliverable supply.

BOARD OF TRADE OF THE CITY OF CHICAGO INC.

ANALYSIS OF DELIVERABLE SUPPLY

KC HRW WHEAT FUTURES

APRIL 2016

In estimating deliverable supply for the KC HRW Wheat Futures, the Board of Trade of the City of Chicago Inc. ("CBOT" or "Exchange") relied on long-standing precedent, which provides that the key component in estimating deliverable supply is the portion of typical supply stocks that could reasonably be considered to be readily available for delivery. In its guidance on estimating deliverable supply, the Commodity Futures Trading Commission ("CFTC" or "Commission") states:

> In general, the term "deliverable supply" means the quantity of the commodity meeting a derivative contract's delivery specifications that can reasonably be expected to be readily available to short traders and saleable by long traders at its market value in normal cash marketing channels at the derivative contract's delivery points during the specified delivery period, barring abnormal movement in interstate commerce. Typically, deliverable supply reflects the quantity of the commodity that potentially could be made available for sale on a spot basis at current prices at the contract's delivery points. For a non-financial physical-delivery commodity contract, this estimate might represent product which is in storage at the delivery point(s) specified in the futures contract or can be moved economically into or through such points consistent with the delivery procedures set forth in the contract and which is available for sale on a spot basis within the marketing channels that normally are tributary to the delivery point(s).[1]

Background:

All wheat produced in the U.S. in 2014/15 amounted to 2.026 billion bushels, with hard red winter (HRW) wheat, the deliverable class on KC HRW Wheat futures, representing 738.65 million bushels or just over 36 percent of total U.S. wheat production. HRW is high-protein wheat that is primarily milled into flour used in bread production. The USDA projected 2015/16 U.S. HRW wheat crop of 826.91 million bushels, an increase of about 12 percent above 2014/15 numbers.

KC HRW Wheat Futures Delivery Capacity (Updated Annually):

KC Wheat warehouse receipts may be issued from any one of the currently regular for delivery elevators or warehouses located in the following switching limits:

1.) Kansas City, Missouri/Kansas,

2.) Hutchinson, Kansas,

3.) Salina/Abilene, Kansas, or

4.) Wichita, Kansas.

[1] http://www.ecfr.gov/cgi-bin/text-idx?SID=74959c3dbae469e2efe0a42b45b8dfae&mc=true&node=ap17.1.38_11201.c&rgn=div9

Below are the facilities regular for delivery on Wheat futures as of March 2016 along with their storage capacity in bushels and maximum number of warehouse receipts they may issue, with each warehouse receipt equivalent to 5,000 bushels:

Firm	Location	Maximum Receipts
ADM Grain Company	Wolcott	505
Bartlett Grain Company	KCT #1	861
Bartlett Grain Company	River Rail	2,007
Bartlett Grain Company	Fairfax	2,058
Cargill, Inc.	Chouteau	185
Cargill, Inc.	Katy	864
TOTAL KANSAS CITY		**6,480**
ADM Grain Company	Elevator A	814
ADM Grain Company	Elevator B	373
ADM Grain Company	Elevator I	1,367
ADM Grain Company	Elevator J	3,661
Cargill, Inc.	Hutchinson	878
Cargill, Inc.	Hutchinson W	889
TOTAL HUTCHINSON		**7,982**
ADM Grain Company	Salina A	839
Cargill, Inc.	Salina	6,333
Flint Hills Grain, LLC	Abilene	278
The Scoular Company	Salina	2,215
TOTAL SALINA/ABILENE		**9,665**
Bartlett Grain Company, LP	Wichita	2,416
Gavilon Grain, LLC	Wichita	6,108
Ardent Mills, LLC	Wichita	1,136
TOTAL WICHITA		**9,660**

As of March 2016, firms regular for delivery on KC HRW Wheat futures had regular storage capacity of approximately 168.9 million bushels and the ability to issue up to 33,787 warehouse receipts.

KC HRW Wheat Futures Deliverable Supply Procedures and Estimates (Updated Annually):

Each Tuesday the Exchange publishes wheat meeting deliverable grades that are in-store as of the previous Friday at all regular delivery facilities. Deliverable supply is estimated as the stocks of grain in regular facilities on the Friday prior to First Notice Day. Although this measure does not distinguish stocks under long-term agreements, it is likely a very conservative estimate of deliverable supply because it does not count the significant amount of wheat that is likely near the delivery facilities and could easily be placed into delivery position very quickly. The Exchange may, at a later date, decide to estimate these stocks and included them in future deliverable supply estimates.

Futures Contract Expiration	Stocks of Wheat in Regular Facilities on the Friday prior to FND (1M Bushels)
Mar-15	41.07
Mar-14	52.06
Mar-13	62.38
MAR AVG	**51.84**
May-15	36.19
May-14	39.07
May-13	51.75
MAY AVG	**42.34**
Jul-15	50.43
Jul-14	38.87
Jul-13	65.73
JUL AVG	**51.68**
Sep-15	80.38
Sep-14	54.11
Sep-13	88.79
SEP AVG	**74.43**
Dec-15	81.08
Dec-14	55.82
Dec-13	75.94
DEC AVG	**70.95**
AVG ALL DELV MONTHS	**58.24**

Seasonality:

The Exchange evaluates seasonality on the deliverable supply across all KC HRW Wheat futures contract expirations. To the extent that 25 percent of any contract month's future estimated deliverable supply falls below the current spot month limit, the Exchange will evaluate whether there is a need to adjust the spot-month position limit for that corresponding contract month.

Long Term Contracts:

There is no readily available data on KC HRW wheat under long-term contracts or agreements that could not be delivered on futures and should not be counted in deliverable supply estimates. In 2015 an industry focus group examining the performance of the KC HRW wheat contract indicated that there were no significant stocks under long term agreements.

ANALYSIS OF DELIVERABLE SUPPLY

Based on the above analysis, the Exchange estimates the monthly deliverable supply over the past three years to be 58.24 million bushels or **11,648** contract equivalents (contract size: 5,000 bushels). The current spot month limit of 600 contracts represents **5.1%** of this estimated monthly deliverable supply.

BOARD OF TRADE OF THE CITY OF CHICAGO INC.

ANALYSIS OF DELIVERABLE SUPPLY

OAT FUTURES

APRIL 2016

In estimating deliverable supply for the Oat Futures, the Board of Trade of the City of Chicago Inc. ("CBOT" or "Exchange") relied on long-standing precedent, which provides that the key component in estimating deliverable supply is the portion of typical supply stocks that could reasonably be considered to be readily available for delivery. In its guidance on estimating deliverable supply, the Commodity Futures Trading Commission ("CFTC" or "Commission") states:

> In general, the term "deliverable supply" means the quantity of the commodity meeting a derivative contract's delivery specifications that can reasonably be expected to be readily available to short traders and saleable by long traders at its market value in normal cash marketing channels at the derivative contract's delivery points during the specified delivery period, barring abnormal movement in interstate commerce. Typically, deliverable supply reflects the quantity of the commodity that potentially could be made available for sale on a spot basis at current prices at the contract's delivery points. For a non-financial physical-delivery commodity contract, this estimate might represent product which is in storage at the delivery point(s) specified in the futures contract or can be moved economically into or through such points consistent with the delivery procedures set forth in the contract and which is available for sale on a spot basis within the marketing channels that normally are tributary to the delivery point(s).[1]

Background:

Oats are a cereal grain suitable for human consumption but more commonly used in livestock feed. According to the USDA, the 2014/15 U.S. oat crop totaled 70.23 million bushels. An increase of 27.5 percent is predicted for the 2015/16 crop year, with estimated oat production at 89.54 million bushels.

Oats Futures Delivery Capacity (Updated Annually):

Oat shipping certificates may be issued from any of the currently regular for delivery facilities located in one of the following territories:

Oats from regular facilities located within the Chicago Switching District, the Burns Harbor, Indiana Switching District; the Minneapolis, Minnesota or St. Paul, Minnesota Switching Districts, or within the Duluth, Minnesota or Superior, Wisconsin Switching District may be delivered in satisfaction of Oats futures contracts.

Chicago and Burns Harbor, Indiana Switching District - When used in these Rules, the Chicago Switching District will be that area geographically defined by Tariff ICC WTL 8020-Series and that portion of the Illinois Waterway at or above river mile 304 which includes the Calumet Sag Channel and the Chicago Sanitary & Ship Canal. When used in these Rules, Burns Harbor, Indiana Switching District will be that area geographically defined by the boundaries of Burns Waterway Harbor at Burns Harbor, Indiana which is owned and operated by the Indiana Port Commission.

Facilities approved for delivery on Oats futures are limited in the number of shipping certificates that they may issue to an amount not to exceed 20 times their total daily rate of loading barges, or in the case of the Chicago and Burns Harbor delivery territory, their registered storage capacity. As of March 2016, firms regular for delivery on CBOT Oats futures had approved capacity to issue 18,238 shipping certificates or 91.19 million bushels of Oats.

[1] http://www.ecfr.gov/cgi-bin/text-idx?SID=74959c3dbae469e2efe0a42b45b8dfae&mc=true&node=ap17.1.38_11201.c&rgn=div9

Below are the facilities regular for delivery on Oats futures in March 2016 along with the maximum number of shipping certificates they may issue, with each shipping certificate equivalent to 5,000 bushels:

Firm	Location	Maximum Certificates Deliverable
Cargill, Inc.	Burns Harbor , IN	1,553
Chicago & Illinois River Marketing LLC	Chicago, IL	2,462
Duluth Lake Port, LLC	Duluth, MN	834
General Mills Operations, LLC	Duluth, MN	759
General Mills Operations, LLC	Superior, WI	2,714
Hansen-Mueller Co.	Superior, WI	646
WB Duluth Storage, LLC	Duluth, MN	2,200
ADM Grain Co.	St. Paul, MN	373
General Mills Operations, Inc.	Minneapolis, MN	480
General Mills Operations, Inc.	Minneapolis, MN	801
General Mills Operations, Inc.	Fridley, MN	991
General Mills Operations, Inc.	Washburn, MN	710
Riverland Ag Corp.	Minneapolis, MN	265
Riverland Ag Corp.	Shakopee, MN	674
Riverland Ag Corp.	Savage, MN	1,855
Riverland Ag Corp.	Minneapolis, MN	921

Oat Futures Deliverable Supply Procedures and Estimates (Updated Annually):

Each Tuesday the Registrar's Office publishes Oats meeting deliverable grades that are in-store as of the previous Friday at all regular delivery facilities.

Deliverable supply is estimated as the stocks of grain in regular facilities on the Friday prior to First Notice Day[i]. This is likely a very conservative estimate of deliverable supply because it does not count the significant amount of Oats that are likely near the delivery facilities and could easily be placed into delivery position very quickly. The Exchange may, at a later date, decide to estimate these stocks and included them in future deliverable supply estimates.

Futures Contract Expiration	Stocks of Oats in Regular Facilities on the Friday prior to FND (1M Bushels)
Mar-15	14.23
Mar-14	3.66
Mar-13	20.25
Mar-12	31.70
Mar-11	28.14
MAR AVG	**19.6**
May-15	16.83
May-14	5.38
May-13	15.47
May-12	27.12
May-11	27.40
MAY AVG	**18.44**
Jul-15	13.80
Jul-14	6.62
Jul-13	9.61
Jul-12	21.90
Jul-11	33.31
JUL AVG	**17.05**
Sep-15	15.43
Sep-14	7.67
Sep-13	3.22
Sep-12	24.88
Sep-11	27.58
SEP AVG	**15.76**
Dec-15	20.11
Dec-14	12.51
Dec-13	5.47
Dec-12	36.96
Dec-11	28.51
DEC AVG	**20.71**
AVG ALL DELV MONTHS	**18.31**

Seasonality:

The Exchange evaluates seasonality on the deliverable supply across all Oats futures contract expirations. To the extent that 25 percent of any contract month's future estimated deliverable supply falls below the current spot month limit, the Exchange will evaluate whether there is a need to adjust the spot-month position limit for that corresponding contract month. In addition, the Exchange expanded the time period for the Oats deliverable supply analysis to five years because drought in 2012 reduced production resulting in declines in export flows and stocks during the 2012/13 marketing year.

Long Term Contracts:

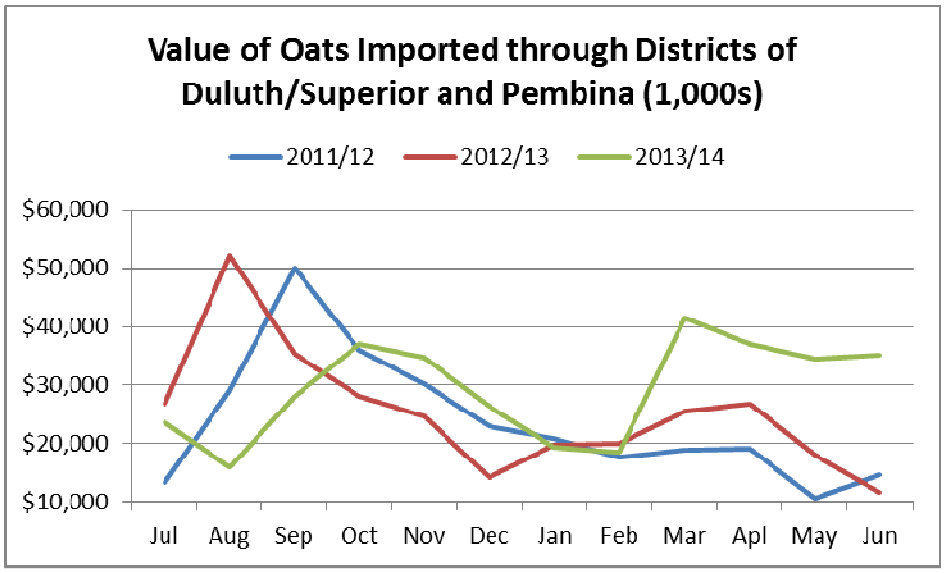
There is no readily available data on oats under long-term contracts or agreements that could not be delivered on futures and should not be counted in deliverable supply estimates. To get a sense of the

extent oats are under long-term agreements and not deliverable, the Exchange reached out to 4 oat regular delivery firms. Feedback from these firms indicates generally zero (0) percent of oats in their facilities are under long-term agreement and could not be delivered against Oat futures. One firm indicated generally zero percent under long-term agreement but at the very most five percent during some limited time frames. In addition, General Mills' Fridley, Minnesota warehouse is adjacent to their Oat mill, and we believe at this time it is possible that stocks in this facility may be primarily committed for milling purposes. Since stocks in individual warehouses are not publicly available, an alternative method to account for these potentially committed stocks is to reduce estimated deliverable supply by the ratio of Fridley deliverable capacity to total Oats deliverable capacity. Fridley is approved to issue 991 certificates (4.955 million bushels) out of a total deliverable capacity of 18,238 certificates (91.19 million bushels), which is approximately 5.4% of total regular storage capacity. Therefore, estimated deliverable supply above is reduced by 5.4%.

ANALYSIS OF DELIVERABLE SUPPLY

Based on the above analysis, the Exchange estimates the monthly deliverable supply over the past five years to be 18.31 million bushels or **3,662** contract equivalents (contract size: 5,000 bushels). Excluding the estimated stocks that may be committed for milling at the Fridley warehouse, this total is reduced by 5.4% or 988,740 bushels (198 contracts), leaving estimated monthly deliverable supply at 17.32 million bushels or 3,464 contracts. The current spot month limit of 600 contracts represents **17%** of this estimated monthly deliverable supply.

[i] At any given time, the deliverable supply of oats will likely contain a high percentage of Canadian oats. CBOT Rules do not have any U.S. origin specifications in Oat futures, and Canadian grown oats that have U.S. Grades may be delivered. In crop year 2011/12, the US imported 69 percent of its oat supply; in 2012/13 64 percent of its oat supply; and in 2013/14 64 percent of its oat supply. The vast majority of these oats are imported through the districts of Duluth Superior and Pembina, ND, both of which are gateways into the Oat futures delivery locations. Imports through Duluth Superior and Pembina accounted for an estimated 84 percent of all oat imports into the U.S. in 2011/12; 86 percent of all oat imports into the U.S. in 2012/13; and 90 percent of all oat imports into the U.S. in 2013/14. In addition, approximately 46 percent of total US oat supply goes toward food, seed, and industrial use while the balance of disappearance goes toward feed and residual use.



BOARD OF TRADE OF THE CITY OF CHICAGO INC.

ANALYSIS OF DELIVERABLE SUPPLY

ROUGH RICE FUTURES

APRIL 2016

In estimating deliverable supply for the Rough Rice Futures, the Board of Trade of the City of Chicago Inc. ("CBOT" or "Exchange") relied on long-standing precedent, which provides that the key component in estimating deliverable supply is the portion of typical supply stocks that could reasonably be considered to be readily available for delivery. In its guidance on estimating deliverable supply, the Commodity Futures Trading Commission ("CFTC" or "Commission") states:

> In general, the term "deliverable supply" means the quantity of the commodity meeting a derivative contract's delivery specifications that can reasonably be expected to be readily available to short traders and saleable by long traders at its market value in normal cash marketing channels at the derivative contract's delivery points during the specified delivery period, barring abnormal movement in interstate commerce. Typically, deliverable supply reflects the quantity of the commodity that potentially could be made available for sale on a spot basis at current prices at the contract's delivery points. For a non-financial physical-delivery commodity contract, this estimate might represent product which is in storage at the delivery point(s) specified in the futures contract or can be moved economically into or through such points consistent with the delivery procedures set forth in the contract and which is available for sale on a spot basis within the marketing channels that normally are tributary to the delivery point(s).[1]

Background:

Rough Rice is a major food grain in the United States and arguably the most important food grain globally. USDA estimates the 2014/15 U.S. Rough Rice crop at 221 million cwt.

Rough Rice Futures Delivery Capacity (Updated Annually):

The par delivery points for rough rice are warehouses within the boundaries of the Arkansas counties of Craighead, Jackson, Poinsett, Woodruff, Cross, St. Francis, Lonoke, Prairie, Monroe, Jefferson, Arkansas and DeSha. No warehouse regular for delivery of rough rice shall be located outside the twelve Arkansas counties listed above.

Facilities approved for delivery on Rough Rice futures are limited in the number of warehouse receipts that they may issue. As of March 2016, firms regular for delivery on CBOT Rough Rice futures had approved capacity to issue 11,759 warehouse receipts or 23.518 million cwt of Rough Rice.

Below are the facilities regular for delivery on Rough Rice futures in March 2016 along with the maximum number of warehouse receipts they may issue, with each warehouse receipt equivalent to 2,000 cwt:

Firm	Location	Maximum Receipts Deliverable
CROP MARKETING SERVICES, LLC	McGehee, AR	833
EASTSIDE RICE LLC	Jonesboro, AR	655
ERWIN-KEITH INC.	Wynne, AR	722
FARMER'S GRANARY, INC.	Patterson, AR	450
FARMER'S GRANARY, INC.	McCrory, AR	75
SOUTHERN RICE AND COTTON, LLC	Harrisburg, AR	476

[1] http://www.ecfr.gov/cgi-bin/text-idx?SID=74959c3dbae469e2efe0a42b45b8dfae&mc=true&node=ap17.1.38_11201.c&rgn=div9

Firm	Location	Maximum Receipts Deliverable
HARVEST RICE, INC.	McGehee, AR	592
HARVEST RICE, INC.	Otwell, AR	14
POINSETT RICE & GRAIN, INC.	Cherry Valley, AR	443
POINSETT RICE & GRAIN, INC.	Diaz, AR	631
POINSETT RICE & GRAIN, INC.	Waldenburg, AR	873
PRODUCER'S RICE MILL, INC	Stuttgart, AR	61
PRODUCER'S RICE MILL, INC	Stuttgart, AR	200
PRODUCER'S RICE MILL, INC	Wynne, AR	239
RICELAND FOODS, INC.	Dumas, AR	225
RICELAND FOODS, INC.	Fair Oaks, AR	225
RICELAND FOODS, INC.	Hickory Ridge, AR	169
RICELAND FOODS, INC.	Jonesboro, AR	1,125
RICELAND FOODS, INC.	McGehee, AR	225
RICELAND FOODS, INC.	Newport, AR	180
RICELAND FOODS, INC.	Stuttgart, AR	1,125
RICELAND FOODS, INC.	Waldenburg, AR	425
RICELAND FOODS, INC.	Weiner, AR	225
RICELAND FOODS, INC.	Wheatly, AR	225
WINDMILL RICE COMPANY, LLC	Jonesboro, AR	300
PLANTERS RICE MILL, LLC	Brinkley, AR	250
RITTER GRAIN SERVICES	Otwell, AR	796

Rough Rice Deliverable Supply Procedures and Estimates (Updated Annually):

Each Tuesday the Registrar's Office publishes Rough Rice meeting deliverable grades that are in-store as of the previous Friday at all regular delivery facilities.

Supply is estimated as the stocks of grain meeting deliverable grades in regular facilities on the Friday prior to First Notice Day. The Exchange believes these stocks capture supply going into the delivery period, and is the relevant supply to consider when estimating what would be available for each contract expiration.

Of the 27 warehouses regular for delivery on Rough Rice futures, ten are warehouses connected to rice mills. Of these ten warehouses connected to rice mills, five have a history of delivering warehouse receipts on futures. Assuming warehouses connected to rice mills may be less likely to deliver because rice in these warehouses may be under long-term commitments to the adjacent mill, stocks need to be adjusted to account for this possibility. Warehouses connected to rice mills make up 44 percent of deliverable capacity in Rough Rice futures. Assuming a like percentage of stocks in the Stocks of Grain report are held at warehouses connected to rice mills, and taking into account that half of warehouses connected to rice mills nonetheless have a history of delivery, we reduce stocks by 22 percent (0.44 * .5) to estimate the stocks in warehouses connected to rice mills that may be under long-term commitments to the adjacent rice mill.

This is likely a conservative estimate of deliverable supply because it does not count the significant amount of Rough Rice that is likely near the delivery facilities and could easily be placed into delivery position very quickly. While this estimate of deliverable supply does not attempt to include these stocks, they could be estimated to some degree using economic theory. Economic theory and the theory of storage would suggest these uncounted stocks would likely exceed the stocks reported in the Stocks of Grain report[2]. Regular delivery facilities are in position for feeding domestic milling operations and aggregating for export; thus, the value of rice in most of the regular delivery facilities is greater than the

[2] See http://ajae.oxfordjournals.org/content/77/3/512.abstract

value of rice in the country because rice in the country needs to be transported to be in position for either milling or export. The cost to store rice includes opportunity cost, and opportunity costs increase with value. Thus, the cost to store rice in position at a regular delivery facility is greater than the cost to store in the country all other factors equal. If there is grain being stored in position at a rice mill or terminal rice elevator, it suggests demand for rice, and theory would suggest a greater amount of stocks would be stored internally due to the lower cost. The Exchange may, at a later date, decide to estimate these stocks and included them in future deliverable supply estimates.

Futures Contract Expiration	Stocks of Rough Rice in Regular Facilities on the Friday prior to FND (1M CWTs)	Estimated Deliverable Supply
Jan-15	42.47	33.13
Jan-14	23.82	18.58
Jan-13	17.63	13.75
JAN AVG	**27.97**	**21.82**
Mar-15	42.57	33.20
Mar-14	24.39	19.02
Mar-13	17.24	13.45
MAR AVG	**28.07**	**21.89**
May-15	40.75	31.79
May-14	24.44	19.06
May-13	16.54	12.90
MAY AVG	**27.24**	**21.25**
Jul-15	14.79	11.54
Jul-14	18.11	14.13
Jul-13	10.63	8.29
JUL AVG	**14.51**	**11.32**
Sep-15	12.32	9.61
Sep-14	9.68	7.55
Sep-13	5.29	4.13
SEP AVG	**9.10**	**7.10**
Nov-15	24.73	19.29
Nov-14	43.51	33.94
Nov-13	24.06	18.77
NOV AVG	**30.77**	**24.00**
AVG ALL DELV MONTHS	**22.94**	**17.89**

Seasonality:

The Exchange evaluates seasonality on the deliverable supply across all Rough Rice futures contract expirations. To the extent that 25 percent of any contract month's future estimated deliverable supply falls below the current spot month limit, the Exchange will evaluate whether there is a need to adjust the spot-month position limit for that corresponding contract month.

Long Term Contracts:

There is no readily available data on rice under long-term contracts or agreements with outside entities other than adjacent mills that could not be delivered on futures and should not be counted in deliverable supply estimates. To get a sense of the extent rice is under long-term agreements with outside entities and not deliverable, the Exchange reached out to 8 Rough Rice regular delivery firms. Feedback from these firms indicates generally zero (0) to at most five (5) percent of rice in their facilities is under long-term agreement and could not be delivered against Rough Rice futures. Given this feedback and the conservative nature of the rough rice deliverable supply estimate, the Exchange does not believe rice stocks under long-term agreements with outside entities significantly affect the deliverable supply estimates.

ANALYSIS OF DELIVERABLE SUPPLY

Based on the above analysis, the Exchange estimates the monthly deliverable supply over the past three crop years to be 17.89 million cwt or **8,948** contract equivalents (contract size: 2,000 hundredweight). The current spot month limit of 600 contracts represents **6.7%** of this estimated monthly deliverable supply.

BOARD OF TRADE OF THE CITY OF CHICAGO INC.

ANALYSIS OF DELIVERABLE SUPPLY

SOYBEAN FUTURES

APRIL 2016

In estimating deliverable supply for the Soybean Futures, the Board of Trade of the City of Chicago Inc. ("CBOT" or "Exchange") relied on long-standing precedent, which provides that the key component in estimating deliverable supply is the portion of typical supply stocks that could reasonably be considered to be readily available for delivery. In its guidance on estimating deliverable supply, the Commodity Futures Trading Commission ("CFTC" or "Commission") states:

> In general, the term "deliverable supply" means the quantity of the commodity meeting a derivative contract's delivery specifications that can reasonably be expected to be readily available to short traders and saleable by long traders at its market value in normal cash marketing channels at the derivative contract's delivery points during the specified delivery period, barring abnormal movement in interstate commerce. Typically, deliverable supply reflects the quantity of the commodity that potentially could be made available for sale on a spot basis at current prices at the contract's delivery points. For a non-financial physical-delivery commodity contract, this estimate might represent product which is in storage at the delivery point(s) specified in the futures contract or can be moved economically into or through such points consistent with the delivery procedures set forth in the contract and which is available for sale on a spot basis within the marketing channels that normally are tributary to the delivery point(s).[1]

Background:

Soybeans are the second largest crop produced in the United States. They are crushed to extract their oil and high protein meal. Soybean meal is primarily used as a feed ingredient for livestock, while soybean oil is primarily used in food processing. USDA estimates the 2014/15 U.S. soybean crop at 3.927 billion bushels, a 17 percent increase compared to 2013/14. The USDA projects a similar harvest next season.

Soybean Futures Delivery Capacity (Updated Annually):

Soybean shipping certificates can be issued by any of the currently regular for delivery facilities located in the following territories as defined for delivery in CBOT Soybean futures:

A. Chicago and Burns Harbor, Indiana Switching District - The Chicago Switching District will be that area geographically defined by Tariff ICC WTL 8020-Series and that portion of the Illinois Waterway at or above river mile 304 which includes the Calumet Sag Channel and the Chicago Sanitary & Ship Canal. Burns Harbor, Indiana Switching District will be that area geographically defined by the boundaries of Burns Waterway Harbor at Burns Harbor, Indiana which is owned and operated by the Indiana Port commission.

B. Lockport-Seneca Shipping District - The Lockport-Seneca Shipping District will be that portion of the Illinois Waterway below river mile 304 at the junction of the Calumet Sag Channel and the Chicago Sanitary & Ship Canal and above river mile 244.6 at the Marseilles Lock and Dam.

C. Ottawa-Chillicothe Shipping District - The Ottawa-Chillicothe Shipping District will be that portion of the Illinois Waterway below river mile 244.6 at the Marseilles Lock and Dam and at or above river mile 170 between Chillicothe and Peoria, IL.

[1] http://www.ecfr.gov/cgi-bin/text-idx?SID=74959c3dbae469e2efe0a42b45b8dfae&mc=true&node=ap17.1.38_11201.c&rgn=div9

D. Peoria-Pekin Shipping District - The Peoria-Pekin Shipping District will be that portion of the Illinois Waterway below river mile 170 between Chillicothe and Peoria, IL and at or above river mile 151 at Pekin, IL.

E. Havana-Grafton Shipping District - The Havana-Grafton Shipping District will be that portion of the Illinois Waterway below river mile 151 at Pekin, IL to river mile 0 at Grafton, IL.

F. St. Louis-East St. Louis and Alton Switching Districts - The St. Louis-East St. Louis and Alton Switching Districts will be that portion of the upper Mississippi River below river mile 218 at Grafton, IL and above river mile 170 at Jefferson Barracks Bridge in south St. Louis, MO.

Facilities approved for delivery on Soybean futures are limited in the number of shipping certificates that they may issue to an amount not to exceed 20 times their total daily rate of loading barges, or in the case of the Chicago and Burns Harbor delivery territory, their registered storage capacity. As of March 2016, firms regular for delivery on CBOT Soybean futures had approved capacity to issue 17,636 shipping certificates or 88.18 million bushels of soybeans.

Below are the facilities regular for delivery on Soybeans futures in March 2016 along with the maximum number of shipping certificates they may issue, with each shipping certificate equivalent to 5,000 bushels:

Firm	Location	Maximum Certificates Deliverable
Cargill, Inc.	Burns Harbor, IN	1,094
Chicago & Illinois River Marketing, LLC	Chicago, IL	2,462
Cargill, Inc.	Morris, IL	440
CHS Inc.	Morris, IL	220
ADM Grain Company	Morris-E, IL	220
Cargill, Inc.	Seneca, IL	440
ADM Grain Company	Ottawa-N, IL	440
Cargill, Inc.	Ottawa, IL	440
ADM Grain Company	Ottawa-S, IL	220
Maplehurst Farms, Inc.	Ottawa, IL	220
Bunge North America	Ottawa, IL	220
ADM Grain Company	Ottawa, IL	220
Zen-Noh Grain Corporation	Utica, IL	220
Consolidated Grain and Barge Co.	Utica, IL	220
ADM Grain Company	La Salle, IL	220
Zen-Noh Grain Corporation	Peru, IL	220
Consolidated Grain and Barge Co.	Peru, IL	220
ADM Grain Company	Spring Valley, IL	440
Cargill, Inc.	Spring Valley, IL	440
ADM Grain Company	Hennepin, IL	440
Cargill, Inc.	Hennepin, IL	440
Zen-Noh Grain Corp.	Hennepin, IL	220
Consolidated Grain and Barge Co.	Hennepin, IL	220
ADM Grain Company	Henry, IL	220
ADM Grain Company	Lacon, IL	220
Cargill, Inc.	Lacon, IL	440
ADM Grain Company	Creve Coeur, IL	440
Cargill, Inc.	Havana-N, IL	440
Cargill, Inc.	Havana-S, IL	440
ADM Grain Company	Havana-N, IL	220
ADM Grain Company	Havana-S, IL	440
Cargill, Inc.	Beardstown, IL	440
ADM Grain Company	Beardstown, IL	220

Firm	Location	Maximum Certificates Deliverable
Cargill, Inc.	Meredosia, IL	440
ADM Grain Company	Naples, IL	220
Zen-Noh Grain Corp.	Naples, IL	220
Consolidated Grain and Barge Co.	Naples, IL	220
Cargill, Inc.	Florence, IL	440
CHS, Inc.	Beardstown, IL	220
CHS, Inc.	Havana, IL	220
CHS, Inc.	St. Louis, MO	220
ADM Grain Company	St. Louis, MO	880
Bunge North America	Fairmont City, IL	440
Cargill, Inc.	E. St. Louis, IL	440
Consolidated Grain & Barge Co.	Cahokia, IL	220

Soybean Futures Deliverable Supply Procedures and Estimate (Updated Annually):

Each Tuesday the Registrar's Office publishes soybeans meeting deliverable grades that are in-store as of the previous Friday at all regular delivery facilities. The USDA-AMS publishes a weekly Grain Transportation Report (GTR) that covers developments affecting the transport of grain, both in the domestic and international marketplace (http://www.ams.usda.gov/AMSv1.0/gtr). This weekly publication reports on the latest volume and price data for barges, railroads, trucks, and ocean vessels involved in the transport of grain. Included in this report is the amount of soybeans shipped through Lock 27[2] on the Mississippi River, which is a measure of soybeans that flow through the Illinois River delivery territory for Soybean futures.

Deliverable supply is estimated as the stocks of grain in regular facilities on the Friday prior to First Notice Day plus the amount to soybeans that pass through Lock 27 on the Mississippi River during the four weeks prior to First Notice Day. The Exchange believes these measures capture supply going into the delivery period, and is the relevant supply to consider when estimating what would be available for each contract expiration. Mississippi River Lock 27 soybean movements capture down-bound soybeans that have traveled along the Illinois River and by the Illinois River delivery facilities and the down-bound soybeans that have traveled along the Mississippi River and by the St. Louis, East St. Louis, and Alton delivery territory facilities. This is likely a very conservative estimate of deliverable supply because it does not count the significant amount of soybeans that are likely to enter export channels and could be economically placed into delivery position. While this analysis of deliverable supply does not attempt to include these stocks, they could be estimated to some degree using economic theory. Economic theory and the theory of storage would suggest these uncounted stocks would exceed the stocks reported in the Stocks of Grain report[3]. Regular delivery facilities are in position to load barges for export; thus, the value of grain in a delivery facility is greater than the value in the country because grain in the country destined for export needs to be transported to a barge loading facility. The cost to store grain includes opportunity cost, and opportunity costs increase with value. Thus, the cost to store grain in position at a regular delivery facility is greater than the cost to store in the country all other factors equal. If there is grain being stored in position at a barge loading facility, it suggests demand for grain in the export market, and theory would suggest a greater amount of stocks destined for export would be stored internally due to the lower cost. The Exchange may, at a later date, decide to estimate these stocks and included them in future deliverable supply estimates.

[2] http://marinas.com/view/lock/103_Chain_of_Rocks_Lock_27_Granite_City_IL_United_States

[3] See http://ajae.oxfordjournals.org/content/77/3/512.abstract

Futures Contract Expiration	Soybean Movement through Lock 27 on the MS River during the 4 Weeks Prior to FND (1M Bushels)	Stocks of Soybeans in Regular Facilities on the Friday prior to FND (1M Bushels)	Total Stocks (1M Bushels)
Jan-15	33.51	3.94	37.45
Jan-14	35.38	6.64	42.02
Jan-13	42.07	2.71	44.78
Jan-12	30.17	8.05	38.22
Jan-11	39.68	5.40	45.08
JAN AVG	**36.16**	**5.35**	**41.51**
Mar-15	14.38	3.57	17.95
Mar-14	13.35	5.31	18.66
Mar-13	12.99	1.45	14.44
Mar-12	19.14	6.10	25.24
Mar-11	13.67	5.94	19.61
MAR AVG	**14.71**	**4.47**	**19.18**
May-15	17.23	3.36	20.59
May-14	11.60	3.33	14.93
May-13	5.13	1.47	6.60
May-12	23.04	7.69	30.73
May-11	10.44	4.28	14.72
MAY AVG	**13.49**	**4.03**	**17.51**
Jul-15	17.32	2.95	20.27
Jul-14	9.64	2.00	11.64
Jul-13	6.88	1.39	8.27
Jul-12	19.11	6.81	25.92
Jul-11	11.06	3.07	14.13
JUL AVG	**12.80**	**3.24**	**16.05**
Aug-15	17.02	2.58	19.60
Aug-14	6.60	1.74	8.34
Aug-13	9.42	1.36	10.78
Aug-12	25.76	2.42	28.18
Aug-11	12.90	1.65	14.55
AUG AVG	**14.34**	**1.95**	**16.29**
Sep-15	15.93	1.31	17.24
Sep-14	6.96	1.06	8.02
Sep-13	7.06	1.12	8.18
Sep-12	27.59	1.05	28.64
Sep-11	12.60	1.11	13.71
SEP AVG	**14.03**	**1.13**	**15.16**
Nov-15	35.71	7.09	42.80
Nov-14	28.36	4.97	33.33
Nov-13	23.64	5.50	29.14
Nov-12	32.15	4.93	37.08
Nov-11	15.43	9.46	24.89

Futures Contract Expiration	Soybean Movement through Lock 27 on the MS River during the 4 Weeks Prior to FND (1M Bushels)	Stocks of Soybeans in Regular Facilities on the Friday prior to FND (1M Bushels)	Total Stocks (1M Bushels)
NOV AVG	**27.06**	**6.39**	**33.45**
AVG ALL DELV MONTHS	**18.94**	**3.79**	**22.74**

Seasonality:

The Exchange evaluates seasonality on the deliverable supply across all Soybean futures contract expirations. To the extent that 25 percent of any contract month's future estimated deliverable supply falls below the current spot month limit, the Exchange will evaluate whether there is a need to adjust the spot-month position limit for that corresponding contract month. In addition, the Exchange expanded the time period for the Soybean deliverable supply analysis to five years because the drought in 2012 reduced production resulting in significant declines in export flows and stocks during the 2012/13 marketing year.

Long Term Contracts:

There is no readily available data on soybeans under long-term contracts or agreements that could not be delivered on futures and should not be counted in deliverable supply estimates. To get a sense of the extent soybeans are under long-term agreements and not deliverable, the Exchange reached out to 4 soybean regular delivery firms. Feedback from these firms indicates generally zero (0) percent of soybeans in their facilities are under long-term agreement and could not be delivered against Soybean futures. One firm indicated generally zero percent under long-term agreement but at the very most five percent during some limited time frames. Given this feedback and the conservative nature of the estimate, the Exchange does not believe soybean stocks under long-term agreements significantly affect deliverable supply.

ANALYSIS OF DELIVERABLE SUPPLY

Based on the above analysis, the Exchange estimates the monthly deliverable supply over the past five years to be 22.74 million bushels or **4,548** contract equivalents (contract size: 5,000 bushels). The current spot month limit of 600 contracts represents **13.1%** of this estimated monthly deliverable supply.

BOARD OF TRADE OF THE CITY OF CHICAGO INC.

ANALYSIS OF DELIVERABLE SUPPLY

SOYBEAN MEAL FUTURES

APRIL 2016

In estimating deliverable supply for the Soybean Meal Futures, the Board of Trade of the City of Chicago Inc. ("CBOT" or "Exchange") relied on long-standing precedent, which provides that the key component in estimating deliverable supply is the portion of typical production that could reasonably be considered to be readily available for delivery. In its guidance on estimating deliverable supply, the Commodity Futures Trading Commission ("CFTC" or "Commission") states:

> In general, the term "deliverable supply" means the quantity of the commodity meeting a derivative contract's delivery specifications that can reasonably be expected to be readily available to short traders and saleable by long traders at its market value in normal cash marketing channels at the derivative contract's delivery points during the specified delivery period, barring abnormal movement in interstate commerce. Typically, deliverable supply reflects the quantity of the commodity that potentially could be made available for sale on a spot basis at current prices at the contract's delivery points. For a non-financial physical-delivery commodity contract, this estimate might represent product which is in storage at the delivery point(s) specified in the futures contract or can be moved economically into or through such points consistent with the delivery procedures set forth in the contract and which is available for sale on a spot basis within the marketing channels that normally are tributary to the delivery point(s).[1]

Background:

Soybean meal is a bi-product created by crushing soybeans and is used as a source of protein in livestock feed rations. The USDA estimates 2014/15 soybean meal production at 40.880 million metric tons, a 10.8 percent increase from 2013/14.

Delivery Capacity:

The CBOT Soybean Meal futures contract requires delivered soybean meal to meet the following specifications:

48% Protein Soybean Meal, produced by conditioning ground soybeans and reducing the oil content of the conditioned product by the use of hexane or homologous hydrocarbon solvents. Standard specifications are:

Protein minimum 48.0%
Fat minimum 0.5%
Fiber maximum 3.5%
Moisture (when shipped by Processor) maximum 12.0%

When a bushel of soybeans weighing 60 pounds is crushed, the conventional result is 11 pounds of soybean oil, 44 pounds of 48% protein soybean meal, 4 pounds of hulls, and 1 pound of waste. If the hulls are retained the result is 44% protein soybean meal. In October 1992 the CBOT switched the soybean meal specifications from 44% to 48% protein.

The deliverable capacity allowed by the Exchange for facilities regular to deliver on CBOT Soybean Meal futures is up to 15 times each facility's 24-hour soybean meal production capability plus storage.

Below are the facilities regular for delivery on CBOT Soybean Meal futures and the maximum number of shipping certificates each facility may deliver:

[1] http://www.ecfr.gov/cgi-bin/text-idx?SID=74959c3dbae469e2efe0a42b45b8dfae&mc=true&node=ap17.1.38_11201.c&rgn=div9

FIRM/FACILITY	DAILY RATE OF LOADING (TONS)	MAXIMUM SHIPPING CERTIFICATES BONDED TO ISSUE
Ag Processing Incorporated		
Eagle Grove, IA	1,600	265
Manning, IA	600	115
Mason City, IA	700	114
Emmetsburg, IA	700	117
Sergeant Bluff, IA	1,500	250
Sheldon, IA	840	155
St. Joseph, MO	930	169
Archer-Daniels-Midland Co.		
Decatur, IL	1,452	242
Des Moines, IA	1,012	154
Fostoria, OH	607	104
Frankfurt, IN	695	108
Galesburg, IL	326	58
Mexico, MO	431	79
Quincy, IL	1,496	273
Bunge Milling, Inc.		
Danville, IL	1,700	855
Bunge North America (East), LLC		
Bellevue, OH	800	220
Decatur, IN	2,000	900
Morristown, IN	1,496	284
Bunge North America (ODP West), Inc.		
Council Bluffs, IA	2,500	545
Bunge North America, Inc.		
Cairo, IL	2,000	300
Decatur, AL	1,150	195
Cargill, Inc.		
Bloomington, IL	1,000	90
Cedar Rapids (E), IA	1,500	225
Des Moines, IA	1,100	165
Guntersville, AL	900	188
Iowa Falls, IA	1,500	225
Kansas City, MO	1,500	225
Lafayette, IN	850	128
Sioux City, IA	2,000	330
Sidney, OH	1,500	225
Consolidated Grain & Barge Company		
Mt. Vernon, IN	1,000	210
Incobrasa Industries, LLC		
Gilman, IL	1,000	250
Louis Dreyfus Claypool Holdings, LLC		
Claypool, IN	2,500	475
Owensboro Grain Company, LLC		
Owensboro, KY	1,600	553
Riceland Foods, Incorporated		
Stuttgart, AR	325	98
Solae LLC		
Gibson City, IL	800	220
TOTALS	43,610	9,109

As of March 2016, the CBOT Soybean Meal futures contract had 9,109 contracts (910,900 tons) of delivery capacity.

Deliverable Supply:

The U.S. Census Bureau collected and the USDA published monthly soybean meal production estimates for the U.S. until September 2011 when the *Oilseed Crushings* report was discontinued. The National Oilseed Processors Association (NOPA) continues to publish monthly soybean meal production for its member firms. A list of processing plants included in the NOPA Statistical crush report is available here:

http://www.nopa.org/oilseed-processing/nopa-plant-locations/

Also, here is the link to the NOPA monthly statistical crush report on Thomson Reuters:

http://commoditiesupdates.thomsonreuters.com/nopa/

NOPA reports soybean meal production for 62 processing plants. Of these 62 plants, 32 are regular for delivering on Soybean Meal futures. Additionally, there are four plants that are regular for futures delivery but not part of the NOPA Statistical crush report.

NOPA production and stocks reports are broken down into the following six regions regions:

- Illinois
- Indiana, Kentucky, Ohio, Michigan
- Southeast
- Southwest
- Iowa
- Minnesota, North Dakota, South Dakota, Montana

NOPA Territory	Number of NOPA Reporting Plants	Number of NOPA Plants that are Regular for Delivery	Percentage of NOPA Plants that are Regular for Delivery
Illinois	7	5	71%
Indiana, Kentucky, Ohio, Michigan	12	10	83%
Southeast	10	2	20%
Southwest	12	4	33%
Iowa	13	11	85%
Minnesota, North Dakota, South Dakota, Montana	8	0	0%
TOTAL	62	32	52%

Supply is estimated based on the NOPA reported soybean crush in each region multiplied by the average soybean meal yield during the month prior to each futures delivery. These values are then weighted by the percentage of NOPA member processing plants that are also regular for delivery on CBOT Soybean Meal futures to estimate supply in position for delivery[i]. The estimated supply in position is then converted to estimated deliverable supply by estimating the percentage of production that meets Soybean Meal futures delivery specifications. An example of this calculation using the Illinois territory for November 2013 is as follows:

((((20,069,000 bushels x 48 lbs per bushel)/2000 = 481,656) x .71 = 341,976) x .3783 = 129,360)

Soybean meal meeting 47.5 percent protein may not be rejected in futures delivery. Thus, deliverable supply is the proportion of soybean meal that is 47.5 percent protein or greater.

The University of Minnesota, The American Soybean Association and the Soybean Export Council conduct an annual survey to assess the quality, including the protein content, of U.S. produced soybeans. See, for example:

http://www.extension.umn.edu/agriculture/soybean/seed/

Dividing soybean protein levels by 0.73 provides an estimate of soybean meal that will be produced from those soybeans. Assuming the data are normally distributed, and sample size is large, the University of Minnesota data suggest the following percentage of soybean meal would meet the Exchange's 47.5 percent protein requirement:

Crop Year	Estimated Percentage of Meal that is 47.5 percent protein or greater
2011-12	57.53%
2012-13	37.83%
2013-14	50.80%
2014-15	41.68%

The estimated supply in position is adjusted by these percentages to estimate deliverable supply.

December 2013-2015 (November 2013-2015 Production)

NOPA Territory	NOPA Crush (1,000 bu)	NOPA Est. Soybean Meal Production (Tons)	Weighting	Estimated Supply in Tons (contracts)	Estimated Deliverable Supply in Tons (contracts)
NOVEMBER 2013					
Illinois	20,069	481,656	71%	341,976	129,370
IN, KY, OH, MI	35,827	859,848	83%	713,674	269,983
Southeast	22,300	535,200	20%	107,040	40,493
Southwest	31,985	767,640	33%	253,321	95,831
Iowa	35,601	854,424	85%	726,260	274,744
MN, ND, SD, MT	14,363	344,712	0%	0	0
ESTIMATED DELIVERABLE SUPPLY 2013				**2,142,271 (21,423 Contracts)**	**810,421 (8,104 Contracts)**
NOVEMBER 2014					
Illinois	19,621	470,904	71%	334,342	169,846
IN, KY, OH, MI	36,483	875,592	83%	726,741	369,184
Southeast	20,909	501,816	20%	100,363	50,984
Southwest	32,543	781,032	33%	257,741	130,932
Iowa	35,779	858,696	85%	729,892	370,785
MN, ND, SD, MT	15,877	381,048	0%	0	0
ESTIMATED DELIVERABLE SUPPLY 2014				**2,149,079 (21,491 Contracts)**	**1,091,732 (10,917 Contracts)**
NOVEMBER 2015					
Illinois	18,168	436,032	71%	309,583	129,034
IN, KY, OH, MI	36,270	870,480	83%	722,498	301,137
Southeast	20,254	486,096	20%	97,219	40,521
Southwest	30,154	723,696	33%	238,820	99,540
Iowa	35,541	852,984	85%	725,036	302,195
MN, ND, SD, MT	15,746	377,904	0%	0	0
ESTIMATED DELIVERABLE SUPPLY 2015				**2,093,156 (20,902 Contracts)**	**872,427 (8,724 Contracts)**

ESTIMATED DELIVERABLE SUPPLY 2013 - 2015				**2,128,169 (21,282 Contracts)**	**924,860 (9,249 Contracts)**

January 2014-2016 (December 2013-2015 Production)

NOPA Territory	NOPA Crush (1,000 bu)	NOPA Est. Soybean Meal Production (Tons)	Weighting	Estimated Supply in Tons (contracts)	Estimated Deliverable Supply in Tons (contracts)
DECEMBER 2013					
Illinois	20,818	499,632	71%	354,739	180,207
IN, KY, OH, MI	37,253	894,072	83%	742,080	376,977
Southeast	23,077	553,848	20%	110,770	56,271
Southwest	32,704	784,896	33%	259,016	131,580
Iowa	36,167	868,008	85%	737,807	374,806
MN, ND, SD, MT	15,364	368,736	0%	0	0
ESTIMATED DELIVERABLE SUPPLY 2013				**2,204,411 (22,044 Contracts)**	**1,119,840 (11,198 Contracts)**
DECEMBER 2014					
Illinois	20,827	499,848	71%	354,892	147,919
IN, KY, OH, MI	37,449	898,776	83%	745,984	310,926
Southeast	21,825	523,800	20%	104,760	43,664
Southwest	32,358	776,592	33%	256,275	106,815
Iowa	36,846	884,304	85%	751,658	313,291
MN, ND, SD, MT	16,078	385,872	0%	0	0
ESTIMATED DELIVERABLE SUPPLY 2014				**2,213,569 (22,136 Contracts)**	**922,615 (9,226 Contracts)**
DECEMBER 2015					
Illinois	18,425	442,200	71%	313,962	130,859
IN, KY, OH, MI	33,501	804,024	83%	667,340	278,147
Southeast	21,171	508,104	20%	101,621	42,356
Southwest	32,267	774,408	33%	255,555	106,515
Iowa	35,740	857,760	85%	729,096	303,887
MN, ND, SD, MT	16,606	398,544	0%	0	0
ESTIMATED DELIVERABLE SUPPLY 2015				**2,067,574 (20,676 Contracts)**	**861,764 (8,618 Contracts)**
ESTIMATED DELIVERABLE SUPPLY 2013-2015				**2,161,851 (21,619 Contracts)**	**968,073 (9,681 Contracts)**

March 2013-2015 (February 2013-2015 Production)

NOPA Territory	NOPA Crush (1,000 bu)	NOPA Est. Soybean Meal Production (Tons)	Weighting	Estimated Supply in Tons (contracts)	Estimated Deliverable Supply in Tons (contracts)
FEBRUARY 2013					
Illinois	17,629	423,096	71%	300,398	113,641
IN, KY, OH, MI	29,828	715,872	83%	594,174	224,776
Southeast	18,949	454,776	20%	90,955	34,408
Southwest	25,842	620,208	33%	204,669	77,426
Iowa	31,618	758,832	85%	645,007	244,006
MN, ND, SD, MT	12,457	298,968	0%	0	0
ESTIMATED DELIVERABLE SUPPLY 2013				**1,835,203 (18,352 Contracts)**	**649,257 (6,943 Contracts)**
FEBRUARY 2014					
Illinois	17,535	420,840	71%	298,796	151,788
IN, KY, OH, MI	31,054	745,296	83%	618,596	314,247
Southeast	20,106	482,544	20%	96,509	49,027
Southwest	28,429	682,296	33%	225,158	114,380
Iowa	32,169	772,056	85%	656,248	333,374
MN, ND, SD, MT	12,319	295,656	0%	0	0
ESTIMATED DELIVERABLE SUPPLY 2014				**1,895,306 (18,953 Contracts)**	**962,815 (9,628 Contracts)**
FEBRUARY 2015					
Illinois	18,671	448,104	71%	318,154	132,607
IN, KY, OH, MI	32,736	785,664	83%	652,101	271,796
Southeast	19,040	456,960	20%	91,392	38,092
Southwest	29,470	707,280	33%	233,402	97,282
Iowa	32,543	781,032	85%	663,877	276,704
MN, ND, SD, MT	14,510	348,240	0%	0	0
ESTIMATED DELIVERABLE SUPPLY 2015				**1,958,927 (19,589 Contracts)**	**816,481 (8,165 Contracts)**
ESTIMATED DELIVERABLE SUPPLY 2013-2015				**1,896,479 (18,965 Contracts)**	**809,518 (8,095 Contracts)**

May 2013-2015 (April 2013-2015 Production)

NOPA Territory	NOPA Crush (1,000 bu)	NOPA Est. Soybean Meal Production (Tons)	Weighting	Estimated Supply in Tons (contracts)	Estimated Deliverable Supply in Tons (contracts)
APRIL 2013					
Illinois	14,009	336,216	71%	238,713	89,230
IN, KY, OH, MI	24,603	590,472	83%	490,092	185,402
Southeast	19,258	462,192	20%	92,438	34,969
Southwest	23,130	555,120	33%	183,190	69,301
Iowa	27,926	670,224	85%	569,690	215,513
MN, ND, SD, MT	11,188	268,512	0%	0	0
ESTIMATED DELIVERABLE SUPPLY 2013				**1,574,124 (15,741 Contracts)**	**595,491 (5,955 Contracts)**
APRIL 2014					
Illinois	16,148	387,552	71%	275,162	139,782
IN, KY, OH, MI	29,712	713,088	83%	591,863	300,666
Southeast	16,081	385,944	20%	77,189	39,212
Southwest	27,302	655,248	33%	216,232	109,846
Iowa	32,116	770,784	85%	655,166	332,824
MN, ND, SD, MT	11,308	271,392	0%	0	0
ESTIMATED DELIVERABLE SUPPLY 2014				**1,815,612 (18,156 Contracts)**	**922,330 (9,223 Contracts)**
APRIL 2015					
Illinois	19,537	468,888	71%	332,910	138,757
IN, KY, OH, MI	32,758	786,192	83%	652,539	271,978
Southeast	20,151	483,624	20%	96,725	40,315
Southwest	30,554	733,296	33%	241,988	100,860
Iowa	33,295	799,080	85%	679,218	283,098
MN, ND, SD, MT	14,068	337,632	0%	0	0
ESTIMATED DELIVERABLE SUPPLY 2015				**2,003,380 (20,034 Contracts)**	**835,009 (8,350 Contracts)**
ESTIMATED DELIVERABLE SUPPLY 2013 - 2015				**1,797,705 (17,977 Contracts)**	**784,277 (7,843 Contracts)**

July 2013-2015 (June 2013-2015 Production)

NOPA Territory	NOPA Crush (1,000 bu)	NOPA Est. Soybean Meal Production (Tons)	Weighting	Estimated Supply in Tons (contracts)	Estimated Deliverable Supply in Tons (contracts)
JUNE 2013					
Illinois	13,779	330,696	71%	234,794	88,823
IN, KY, OH, MI	23,231	557,544	83%	462,762	175,063
Southeast	17,439	418,536	20%	83,707	31,666
Southwest	20,985	503,640	33%	166,201	62,874
Iowa	31,070	745,680	85%	633,828	239,777
MN, ND, SD, MT	12,547	301,128	0%	0	0
ESTIMATED DELIVERABLE SUPPLY 2013				**1,581,292 (15,813 Contracts)**	**598,203 (5,982 Contracts)**
JUNE 2014					
Illinois	12,785	306,840	71%	217,856	110,671
IN, KY, OH, MI	22,912	549,888	83%	456,407	231,855
Southeast	16,474	395,376	20%	79,075	40,170
Southwest	23,292	559,008	33%	184,473	93,712
Iowa	30,996	743,904	85%	632,318	321,218
MN, ND, SD, MT	12,258	294,192	0%	0	0
ESTIMATED DELIVERABLE SUPPLY 2014				**1,570,130 (15,701 Contracts)**	**797,626 (7,976 Contracts)**
JUNE 2015					
Illinois	19,146	459,504	71%	326,248	135,980
IN, KY, OH, MI	32,585	782,040	83%	649,093	270,542
Southeast	18,433	442,392	20%	88,478	36,878
Southwest	28,720	689,280	33%	227,462	94,806
Iowa	33,084	794,016	85%	674,914	281,304
MN, ND, SD, MT	10,505	252,120	0%	0	0
ESTIMATED DELIVERABLE SUPPLY 2015				**1,966,195 (19,662 Contracts)**	**819,510 (8,195 Contracts)**
ESTIMATED DELIVERABLE SUPPLY 2013 - 2015				**1,705,872 (17,059 Contracts)**	**738,446 (7,384 Contracts)**

August 2013-2015 (July 2013-2015 Production)

NOPA Territory	NOPA Crush (1,000 bu)	NOPA Est. Soybean Meal Production (Tons)	Weighting	Estimated Supply in Tons (contracts)	Estimated Deliverable Supply in Tons (contracts)
JULY 2013					
Illinois	13,419	322,056	71%	228,660	86,502
IN, KY, OH, MI	23,331	559,944	83%	464,754	175,816
Southeast	17,989	431,736	20%	86,347	32,665
Southwest	21,993	527,832	33%	174,185	65,894
Iowa	26,612	638,688	85%	542,885	205,373
MN, ND, SD, MT	12,993	311,832	0%	0	0
ESTIMATED DELIVERABLE SUPPLY 2013				**1,496,830 (14,968 Contracts)**	**566,250 (5,662 Contracts)**
JULY 2014					
Illinois	14,112	338,688	71%	240,468	122,158
IN, KY, OH, MI	25,425	610,200	83%	506,466	257,285
Southeast	15,368	368,832	20%	73,766	37,473
Southwest	24,059	577,416	33%	190,547	96,798
Iowa	28,260	678,240	85%	576,504	292,864
MN, ND, SD, MT	12,396	297,504	0%	0	0
ESTIMATED DELIVERABLE SUPPLY 2014				**1,587,752 (15,878 Contracts)**	**806,578 (8,066 Contracts)**
JULY 2015					
Illinois	17,662	423,888	71%	300,960	125,440
IN, KY, OH, MI	33,487	803,688	83%	667,061	278,031
Southeast	18,119	434,856	20%	86,971	36,250
Southwest	30,517	732,408	33%	241,695	100,738
Iowa	30,453	730,872	85%	621,241	258,933
MN, ND, SD, MT	14,989	359,736	0%	0	0
ESTIMATED DELIVERABLE SUPPLY 2015				**1,917,929 (19,179 Contracts)**	**799,393 (7,994 Contracts)**
ESTIMATED DELIVERABLE SUPPLY 2013 - 2015				**1,667,504 (16,675 Contracts)**	**724,074 (7,241 Contracts)**

September 2013-2015 (August 2013-2015 Production)

NOPA Territory	NOPA Crush (1,000 bu)	NOPA Est. Soybean Meal Production (Tons)	Weighting	Estimated Supply in Tons (contracts)	Estimated Deliverable Supply in Tons (contracts)
AUGUST 2013					
Illinois	13,134	315,216	71%	223,803	84,665
IN, KY, OH, MI	19,643	471,432	83%	391,289	148,025
Southeast	17,383	417,192	20%	83,438	31,565
Southwest	20,554	493,296	33%	162,788	61,583
Iowa	28,171	676,104	85%	574,688	217,404
MN, ND, SD, MT	11,617	278,808	0%	0	0
ESTIMATED DELIVERABLE SUPPLY 2013				**1,436,006 (14,360 Contracts)**	**543,241 (5,432 Contracts)**
AUGUST 2014					
Illinois	12,245	293,880	71%	208,655	121,020
IN, KY, OH, MI	23,833	571,992	83%	474,753	241,175
Southeast	15,223	365,352	20%	73,070	37,120
Southwest	20,029	480,696	33%	158,630	80,584
Iowa	26,828	643,872	85%	547,291	278,024
MN, ND, SD, MT	12,475	299,400	0%	0	0
ESTIMATED DELIVERABLE SUPPLY 2014				**1,462,399 (14,624 Contracts)**	**742,899 (7,429 Contracts)**
AUGUST 2015					
Illinois	18,578	445,872	71%	316,569	131,946
IN, KY, OH, MI	29,504	708,096	83%	587,720	244,962
Southeast	16,103	386,472	20%	77,294	32,216
Southwest	26,570	637,680	33%	210,434	87,709
Iowa	29,295	703,080	85%	597,618	249,087
MN, ND, SD, MT	15,253	366,072	0%	0	0
ESTIMATED DELIVERABLE SUPPLY 2015				**1,789,636 (17,896 Contracts)**	**745,920 (7,459 Contracts)**
ESTIMATED DELIVERABLE SUPPLY 2013 - 2015				**1,562,680 (15,627 Contracts)**	**678,353 (6,784 Contracts)**

October 2013-2015 (September 2013-2015 Production)

NOPA Territory	NOPA Crush (1,000 bu)	NOPA Est. Soybean Meal Production (Tons)	Weighting	Estimated Supply in Tons (contracts)	Estimated Deliverable Supply in Tons (contracts)
SEPTEMBER 2013					
Illinois	11,103	266,472	71%	189,195	71,572
IN, KY, OH, MI	24,923	598,152	83%	496,466	187,813
Southeast	15,980	383,520	20%	76,704	29,017
Southwest	19,461	467,064	33%	154,131	58,308
Iowa	26,349	632,376	85%	537,520	203,344
MN, ND, SD, MT	10,862	260,688	0%	0	0
ESTIMATED DELIVERABLE SUPPLY 2013				**1,454,016 (14,540 Contracts)**	**550,054 (5,500 Contracts)**
SEPTEMBER 2014					
Illinois	11,799	283,176	71%	201,055	102,136
IN, KY, OH, MI	25,320	607,680	83%	504,374	256,222
Southeast	12,038	288,912	20%	57,782	29,353
Southwest	18,283	438,792	33%	144,801	73,559
Iowa	20,775	498,600	85%	423,810	215,296
MN, ND, SD, MT	11,754	282,096	0%	0	0
ESTIMATED DELIVERABLE SUPPLY 2014				**1,331,823 (13,318 Contracts)**	**676,566 (6,766 Contracts)**
SEPTEMBER 2015					
Illinois	15,867	380,808	71%	270,374	112,692
IN, KY, OH, MI	30,644	735,456	83%	610,428	254,427
Southeast	15,395	369,480	20%	73,896	30,800
Southwest	23,184	556,416	33%	183,617	76,532
Iowa	27,714	665,136	85%	565,366	235,644
MN, ND, SD, MT	13,901	333,624	0%	0	0
ESTIMATED DELIVERABLE SUPPLY 2015				**1,703,681 (17,037 Contracts)**	**710,094 (7,101 Contracts)**
ESTIMATED DELIVERABLE SUPPLY 2013 - 2015				**1,496,507 (14,965 Contracts)**	**645,571 (6,456 Contracts)**

Seasonality:

The Exchange evaluates seasonality on the deliverable supply across all Soybean Meal futures contract expirations. To the extent that 25 percent of any contract month's future estimated deliverable supply falls below the current spot month limit, the Exchange will evaluate whether there is a need to adjust the spot-month position limit for that corresponding contract month.

Long Term Contracts:

There are no readily available data on soybean meal under long-term contracts or agreements that could not be delivered on futures and should not be counted in deliverable supply estimates. The Exchange is unaware of any significant amount of soybean meal tied to long-term agreements. However, should such agreements begin to exist in significant quantities in the future, they are unlikely to adversely affect estimated deliverable supply. Soybean meal can be produced in real time, and rarely if ever does U.S. crushing capacity operate at 100 percent.

ANALYSIS OF DELIVERABLE SUPPLY

Based on the above analysis, the Exchange estimates the monthly deliverable supply over the past three years to be 784,157 tons or **7,842** contract equivalents (contract size: 100 tons). The current spot month limit of 720 represents **9.1%** of this estimated monthly deliverable supply.

[i] The crushing capacity of plants is proprietary data. In aggregate, however, on 1 January 2015, regular firms had a 30-day crushing capacity of 102,222,270 bushels of soybeans. Without knowing the crushing capacity of NOPA members that are not also regular for delivery on Soybean Meal futures, total NOPA crush capacity has to be estimated. From December 2011 to current, the maximum NOPA crush was during December 2013 when NOPA member firms crushed 165,384,000 bushels of soybeans. Assuming this maximum NOPA crush is near 100 percent of NOPA capacity, Soybean Meal regular firms have crushing capacity that is 62 percent of NOPA capacity. The current Deliverable Supply estimate based on regular firms that are also NOPA members (i.e., does not count the four regular firms that are not NOPA members) uses 52 percent of NOPA reported crush. Thus, the Deliverable Supply estimate is likely a conservative estimate.

BOARD OF TRADE OF THE CITY OF CHICAGO INC.

ANALYSIS OF DELIVERABLE SUPPLY

SOYBEAN OIL FUTURES

APRIL 2016

In estimating deliverable supply for the Soybean Oil Futures, the Board of Trade of the City of Chicago Inc. ("CBOT" or "Exchange") relied on long-standing precedent, which provides that the key component in estimating deliverable supply is the portion of typical production and supply stocks that could reasonably be considered to be readily available for delivery. In its guidance on estimating deliverable supply, the Commodity Futures Trading Commission ("CFTC" or "Commission") states:

> In general, the term "deliverable supply" means the quantity of the commodity meeting a derivative contract's delivery specifications that can reasonably be expected to be readily available to short traders and saleable by long traders at its market value in normal cash marketing channels at the derivative contract's delivery points during the specified delivery period, barring abnormal movement in interstate commerce. Typically, deliverable supply reflects the quantity of the commodity that potentially could be made available for sale on a spot basis at current prices at the contract's delivery points. For a non-financial physical-delivery commodity contract, this estimate might represent product which is in storage at the delivery point(s) specified in the futures contract or can be moved economically into or through such points consistent with the delivery procedures set forth in the contract and which is available for sale on a spot basis within the marketing channels that normally are tributary to the delivery point(s).[1]

Background:

Soybean oil is a bi-product created from crushing soybeans and is a widely consumed vegetable oil and is also used extensively in the production of ink and paint. The USDA estimates 2014/15 soybean oil production at 9.706 million metric tons, a 6.3 percent increase from 2013/14.

Delivery Capacity:

The CBOT Soybean Oil futures contract calls for the delivery of 60,000 pounds of crude soybean oil. Most soybean oil produced in U.S. soybean processing facilities is eligible for delivery on CBOT Soybean Oil futures contracts. The Soybean Oil futures contract requires delivered crude soybean oil meet the following specifications:

(a) It shall be one of the following types: Expeller pressed, expeller pressed degummed, solvent extracted, or solvent extracted degummed. Mixtures of one type with any other is not deliverable;
(b) It shall contain no more than 0.3% moisture and volatile content;
(c) It shall be lighter in green color than Standard "A" and when refined and bleached shall produce a refined and bleached oil of not deeper color than 3.5 red on the Lovibond scale;
(d) It shall refine with a loss not exceeding 5% as determined by the "neutral oil" method;
(e) It shall have a flash point not below 250 degrees Fahrenheit, closed cup method;
(f) It shall contain no more than 1.5% unsaponifiable matter (exclusive of moisture and volatile matter).

No lower grades are deliverable. Higher grades may be delivered at contract price except when the refining loss is less than 5% as determined by the "neutral oil" method, a premium of one percent of the cash market price at the time of loading is paid for each one percent under the 5% loss (fractions figured throughout) with a maximum credit of 4½%.

[1] http://www.ecfr.gov/cgi-bin/text-idx?SID=74959c3dbae469e2efe0a42b45b8dfae&mc=true&node=ap17.1.38_11201.c&rgn=div9

When a bushel of soybeans weighing 60 pounds is crushed, the conventional result is 11 pounds of soybean oil, 44 pounds of 48% protein soybean meal, 4 pounds of hulls, and 1 pound of waste.

The Soybean Oil futures contract has six delivery territories consisting of:

(a) Illinois Territory (That portion of the state of Illinois north of latitude 38°00' N.)
(b) Eastern Territory (Those portions of the states of Indiana and Kentucky west of the Ohio-Indiana border and its extension and north of latitude 38°0 0'N.)
(c) Eastern Iowa Territory (That portion of the state of Iowa east of longitude 93°50'W.)
(d) Southwest Territory (Those portions of the states of Missouri and Kansas north of latitude 38°00'N. and east of longitude 97°00'W.)
(e) Western Territory (Those portions of the states of Iowa west of longitude 93°50'W., and Nebraska east of longitude 97°00'W.)
(f) Northern Territory (Those portions of the states of Minnesota south of latitude 45°10'N., and South Dakota south of latitude 45°10'N., and east o f 97°00'W.)

Soybean oil is a very storable commodity, and the amount of soybean oil the Exchange allows registered delivery facilities to deliver (regular capacity) is based on the lesser of each facilities approved storage space or 20 times their registered daily rate for loading jumbo tank cars. Below are the facilities regular for delivery on CBOT Soybean Oil futures and the maximum number of warehouse receipts each facility may deliver:

FIRM/FACILITIES	REGULAR SPACE (POUNDS)	MAXIMUM WAREHOUSE RECEIPTS ALLOWED TO ISSUE
AG PROCESSING, INCORPORATED		
Dawson, MN	24,000,000	400
Eagle Grove, IA	20,000,000	333
Emmetsburg, IA	88,000,000	1,466
Manning, IA	9,000,000	150
Mason City, IA	36,000,000	600
Omaha, NE	40,000,000	666
Sergeant Bluff, IA	21,000,000	350
Sheldon, IA	19,200,000	320
St. Joseph, MO	24,000,000	400
ARCHER DANIELS MIDLAND CO		
Decatur, IL	118,400,000	1,973
Des Moines, IA	41,750,000	695
Frankfurt, IN	25,900,000	431
Galesburg, IL	11,400,000	190
Lincoln, NE	37,200,000	620
Mexico, MO	29,600,000	493
Quincy, IL	37,000,000	600
BUNGE MILLING, INC.		
Danville, IL	91,500,000	1,016
BUNGE NORTH AMERICA (EAST), LLC		
Decatur, IN	118,950,000	1,333
BUNGE NORTH AMERICA (ODP WEST), INC		
Emporia, KS	36,600,000	416
CARGILL, INC.		
Ackley, IA	240,000,000	3,453
Bloomington, IL	3,900,000	65

FIRM/FACILITIES	REGULAR SPACE (POUNDS)	MAXIMUM WAREHOUSE RECEIPTS ALLOWED TO ISSUE
Buffalo, IA	36,800,000	370
Cedar Rapids, IA	1,920,000	32
Cedar Rapids, (E), IA	9,300,000	155
Des Moines, IA	7,700,000	128
Iowa Falls, IA	20,000,000	233
Kansas City, MO	10,364,000	172
Lafayette, IN	9,000,000	150
Creve Coeur, IL	16,000,000	266
CHS Inc.		
Mankato, MN	6,000,000	100
INCOBRASA INDUSTRIES, LLC		
Gilman, IL	69,000,000	1,110
LOUIS DREYFUS CLAYPOOL HOLDINGS, LLC		
Claypool, IN	30,000,000	370
MINNESOTA SOYBEAN PROCESSORS		
Brewster, MN	29,600,000	493
SOLAE LLC		
Gibson City, IL	48,100,000	800
SOUTH DAKOTA SOYBEAN PROCESSORS, LLC		
Volga, SD	200,700,000	3,316
ZEELAND FARM SERVICES, INC		
Portage, IN	21,000,000	350
TOTALS	1,588,884,000	24,015

As of January 2016, the CBOT Soybean Oil futures contract has over 1.589 billion pounds of approved regular storage capacity and firms may deliver up to 24,015 warehouse receipts.

Deliverable Supply:

The U.S. Census Bureau collected and the USDA published monthly soybean oil production estimates for the U.S. until September 2011 when the *Oilseed Crushings* report was discontinued. The National Oilseed Processors Association (NOPA) continues to publish monthly soybean oil production and storage for its member firms. A list of processing plants included in the NOPA Statistical crush report is available here:

http://www.nopa.org/oilseed-processing/nopa-plant-locations/

Also, here is the link to the NOPA monthly statistical crush report on Thomson Reuters:

http://commoditiesupdates.thomsonreuters.com/nopa/

NOPA reports soybean oil production and stocks for 62 processing plants. Of these 62 plants, 25 of them are regular for delivering on Soybean Oil futures. Additionally, there are 11 plants that are regular for futures delivery but not part of the NOPA Statistical crush report.

NOPA production and stocks reports are broken down into the following six regions:

- Illinois
- Indiana, Kentucky, Ohio, Michigan
- Southeast

- Southwest
- Iowa
- Minnesota, North Dakota, South Dakota, Montana

NOPA Territory	Number of NOPA Reporting Plants	Number of NOPA Plants that are Regular for Delivery	Percentage of NOPA Plants that are Regular for Delivery
Illinois	7	4	57%
Indiana, Kentucky, Ohio, Michigan	12	4	33%
Southeast	10	0	0%
Southwest	12	5	42%
Iowa	13	10	77%
Minnesota, North Dakota, South Dakota, Montana	8	2	25%
TOTAL	62	25	40%

Deliverable supply is estimated based on NOPA reported soybean oil stocks in each of their territories during the month prior to each futures contract delivery. These values are then weighted by the percentage of NOPA member processing plants that are also regular for delivery on CBOT Soybean Oil futures to estimate futures deliverable supply[i].

December 2013-2015 (November 2013-2015 Stocks)

NOPA Territory	NOPA Stocks (1,000 lbs)	Weighting	Estimated Deliverable Supply in (1,000 lbs)
NOVEMBER 2013			
Illinois	302,015	57%	172,149
IN, KY, OH, MI	242,334	33%	79,970
Southeast	120,423	0%	0
Southwest	382,642	42%	160,710
Iowa	389,819	77%	300,161
MN, ND, SD, MT	48,380	25%	12,095
ESTIMATED DELIVERABLE SUPPLY 2013			**725,084 (12,085 Contracts)**
NOVEMBER 2014			
Illinois	210,373	57%	119,913
IN, KY, OH, MI	147,789	33%	48,770
Southeast	106,625	0%	0
Southwest	274,655	42%	115,355
Iowa	226,736	77%	174,587
MN, ND, SD, MT	38,404	25%	9,601
ESTIMATED DELIVERABLE SUPPLY 2014			**468,226 (7,804 Contracts)**
NOVEMBER 2015			
Illinois	246,028	57%	140,236
IN, KY, OH, MI	298,660	33%	98,558
Southeast	123,909	0%	0
Southwest	412,847	42%	173,396
Iowa	306,442	77%	235,960
MN, ND, SD, MT	89,103	25%	22,276
ESTIMATED DELIVERABLE			**670,426**

SUPPLY 2015			**(11,174 Contracts)**
ESTIMATED DELIVERABLE SUPPLY 2013 - 2015			**621,245 (10,354 Contracts)**

January 2014-2016 (December 2013-2015 Stocks)

NOPA Territory	NOPA Stocks (1,000 lbs)	Weighting	Estimated Deliverable Supply in (1,000 lbs)
DECEMBER 2013			
Illinois	332,242	57%	189,378
IN, KY, OH, MI	285,099	33%	94,083
Southeast	142,719	0%	0
Southwest	419,534	42%	176,204
Iowa	441,224	77%	339,742
MN, ND, SD, MT	60,406	25%	15,102
ESTIMATED DELIVERABLE SUPPLY 2013			**814,509 (13,575 Contracts)**
DECEMBER 2014			
Illinois	265,730	57%	151,466
IN, KY, OH, MI	176,001	33%	58,080
Southeast	128,424	0%	0
Southwest	243,195	42%	102,142
Iowa	217,451	77%	167,437
MN, ND, SD, MT	36,762	25%	9,191
ESTIMATED DELIVERABLE SUPPLY 2014			**488,316 (8,139 Contracts)**
DECEMBER 2015			
Illinois	258,636	57%	147,423
IN, KY, OH, MI	310,119	33%	102,339
Southeast	124,364	0%	0
Southwest	378,669	42%	159,041
Iowa	299,626	77%	230,712
MN, ND, SD, MT	109,671	25%	27,418
ESTIMATED DELIVERABLE SUPPLY 2015			**666,933 (11,116 Contracts)**
ESTIMATED DELIVERABLE SUPPLY 2013 - 2015			**656,586 (10,943 Contracts)**

March 2013-2015 (February 2013-2015 Stocks)

NOPA Territory	NOPA Stocks (1,000 lbs)	Weighting	Estimated Deliverable Supply in (1,000 lbs)
FEBRUARY 2013			
Illinois	487,119	57%	277,658
IN, KY, OH, MI	589,768	33%	194,623
Southeast	170,321	0%	0
Southwest	535,170	42%	224,771
Iowa	879,496	77%	677,212
MN, ND, SD, MT	128,178	25%	32,045
ESTIMATED DELIVERABLE SUPPLY 2013			**1,406,309 (23,438 Contracts)**
FEBRUARY 2014			
Illinois	435,156	57%	248,039
IN, KY, OH, MI	379,623	33%	125,276
Southeast	99,712	0%	0
Southwest	330,656	42%	138,876
Iowa	573,937	77%	441,931
MN, ND, SD, MT	73,860	25%	18,465
ESTIMATED DELIVERABLE SUPPLY 2014			**972,587 (16,210 Contracts)**
FEBRUARY 2015			
Illinois	332,873	57%	189,738
IN, KY, OH, MI	234,921	33%	77,524
Southeast	115,391	0%	0
Southwest	248,270	42%	104,273
Iowa	302,706	77%	233,084
MN, ND, SD, MT	87,894	25%	21,974
ESTIMATED DELIVERABLE SUPPLY 2015			**626,593 (10,443 Contracts)**
ESTIMATED DELIVERABLE SUPPLY 2013 - 2015			**1,001,830 (16,697 Contracts)**

May 2013-2015 (April 2013-2015 Stocks)

NOPA Territory	NOPA Stocks (1,000 lbs)	Weighting	Estimated Deliverable Supply in (1,000 lbs)
APRIL 2013			
Illinois	448,539	57%	255,667
IN, KY, OH, MI	575,081	33%	189,777
Southeast	155,943	0%	0
Southwest	514,832	42%	216,229
Iowa	833,562	77%	641,843
MN, ND, SD, MT	109,678	25%	27,420
ESTIMATED DELIVERABLE SUPPLY 2013			**1,330,936 (22,182 Contracts)**
APRIL 2014			
Illinois	425,678	57%	242,636
IN, KY, OH, MI	392,352	33%	129,476
Southeast	106,457	0%	0
Southwest	366,465	42%	153,915
Iowa	698,538	77%	537,874
MN, ND, SD, MT	68,146	25%	17,037
ESTIMATED DELIVERABLE SUPPLY 2014			**1,080,939 (18,016 Contracts)**
APRIL 2015			
Illinois	345,591	57%	196,987
IN, KY, OH, MI	306,637	33%	101,190
Southeast	96,919	0%	0
Southwest	277,478	42%	116,541
Iowa	331,383	77%	255,165
MN, ND, SD, MT	82,977	25%	20,744
ESTIMATED DELIVERABLE SUPPLY 2015			**690,627 (11,510 Contracts)**
ESTIMATED DELIVERABLE SUPPLY 2013 - 2015			**1,034,167 (17,236 Contracts)**

July 2013-2015 (June 2013-2015 Stocks)

NOPA Territory	NOPA Stocks (1,000 lbs)	Weighting	Estimated Deliverable Supply in (1,000 lbs)
JUNE 2013			
Illinois	430,070	57%	245,140
IN, KY, OH, MI	489,784	33%	161,629
Southeast	134,964	0%	0
Southwest	456,869	42%	191,885
Iowa	682,521	77%	525,541
MN, ND, SD, MT	103,434	25%	25,859
ESTIMATED DELIVERABLE SUPPLY 2013			**1,150,053 (19,168 Contracts)**
JUNE 2014			
Illinois	363,139	57%	206,989
IN, KY, OH, MI	296,476	33%	97,837
Southeast	164,946	0%	0
Southwest	318,405	42%	133,730
Iowa	632,937	77%	487,361
MN, ND, SD, MT	71,139	25%	17,785
ESTIMATED DELIVERABLE SUPPLY 2014			**943,703 (15,728 Contracts)**
JUNE 2015			
Illinois	364,650	57%	207,851
IN, KY, OH, MI	319,505	33%	105,437
Southeast	115,853	0%	0
Southwest	309,739	42%	130,090
Iowa	391,795	77%	301,682
MN, ND, SD, MT	72,384	25%	18,096
ESTIMATED DELIVERABLE SUPPLY 2015			**763,156 (12,719 Contracts)**
ESTIMATED DELIVERABLE SUPPLY 2013 - 2015			**952,304 (15,872 Contracts)**

August 2013-2015 (July 2013-2015 Stocks)

NOPA Territory	NOPA Stocks (1,000 lbs)	Weighting	Estimated Deliverable Supply in (1,000 lbs)
JULY 2013			
Illinois	389,192	57%	221,839
IN, KY, OH, MI	435,798	33%	143,813
Southeast	162,113	0%	0
Southwest	407,466	42%	171,136
Iowa	567,512	77%	436,984
MN, ND, SD, MT	87,816	25%	21,954
ESTIMATED DELIVERABLE SUPPLY 2013			**995,727 (16,595 Contracts)**
JULY 2014			
Illinois	324,621	57%	185,034
IN, KY, OH, MI	264,585	33%	87,313
Southeast	130,215	0%	0
Southwest	251,624	42%	105,682
Iowa	559,772	77%	431,024
MN, ND, SD, MT	58,262	25%	14,566
ESTIMATED DELIVERABLE SUPPLY 2014			**823,619 (13,727 Contracts)**
JULY 2015			
Illinois	338,228	57%	192,790
IN, KY, OH, MI	307,799	33%	101,574
Southeast	135,681	0%	0
Southwest	351,186	42%	147,498
Iowa	408,112	77%	314,246
MN, ND, SD, MT	83,306	25%	20,827
ESTIMATED DELIVERABLE SUPPLY 2015			**776,935 (12,949 Contracts)**
ESTIMATED DELIVERABLE SUPPLY 2013 - 2015			**865,427 (14,424 Contracts)**

September 2013-2015 (August 2013-2015 Stocks)

NOPA Territory	NOPA Stocks (1,000 lbs)	Weighting	Estimated Deliverable Supply in (1,000 lbs)
AUGUST 2013			
Illinois	334,786	57%	190,828
IN, KY, OH, MI	332,386	33%	109,687
Southeast	154,372	0%	0
Southwest	319,352	42%	134,128
Iowa	465,308	77%	358,287
MN, ND, SD, MT	62,335	25%	15,584
ESTIMATED DELIVERABLE SUPPLY 2013			**808,514 (13,475 Contracts)**
AUGUST 2014			
Illinois	229,669	57%	130,911
IN, KY, OH, MI	233,120	33%	76,930
Southeast	114,000	0%	0
Southwest	187,793	42%	78,873
Iowa	398,150	77%	306,576
MN, ND, SD, MT	50,771	25%	12,693
ESTIMATED DELIVERABLE SUPPLY 2014			**605,982 (10,100 Contracts)**
AUGUST 2015			
Illinois	332,055	57%	189,271
IN, KY, OH, MI	285,955	33%	94,365
Southeast	111,026	0%	0
Southwest	282,965	42%	118,845
Iowa	375,674	77%	289,269
MN, ND, SD, MT	92,495	25%	23,124
ESTIMATED DELIVERABLE SUPPLY 2015			**714,874 (11,915 Contracts)**
ESTIMATED DELIVERABLE SUPPLY 2013 - 2015			**709,790 (11,830 Contracts)**

October 2013-2015 (September 2013-2015 Stocks)

NOPA Territory	NOPA Stocks (1,000 lbs)	Weighting	Estimated Deliverable Supply in (1,000 lbs)
SEPTEMBER 2013			
Illinois	281,034	57%	160,189
IN, KY, OH, MI	267,395	33%	88,240
Southeast	143,481	0%	0
Southwest	269,390	42%	113,144
Iowa	370,551	77%	285,324
MN, ND, SD, MT	40,431	25%	10,108
ESTIMATED DELIVERABLE SUPPLY 2013			**657,006 (10,950 Contracts)**
SEPTEMBER 2014			
Illinois	211,000	57%	120,270
IN, KY, OH, MI	165,143	33%	54,497
Southeast	86,241	0%	0
Southwest	193,330	42%	81,199
Iowa	251,985	77%	194,028
MN, ND, SD, MT	29,181	25%	7,295
ESTIMATED DELIVERABLE SUPPLY 2014			**457,289 (7,621 Contracts)**
SEPTEMBER 2015			
Illinois	290,260	57%	165,448
IN, KY, OH, MI	277,906	33%	91,709
Southeast	101,409	0%	0
Southwest	304,430	42%	127,861
Iowa	304,767	77%	234,671
MN, ND, SD, MT	75,931	25%	18,983
ESTIMATED DELIVERABLE SUPPLY 2015			**638,672 (10,645 Contracts)**
ESTIMATED DELIVERABLE SUPPLY 2013 - 2015			**584,322 (9,739 Contracts)**

Seasonality:

The Exchange evaluates seasonality on the deliverable supply across all Soybean Oil futures contract expirations. To the extent that 25 percent of any contract month's future estimated deliverable supply falls below the current spot month limit, the Exchange will evaluate whether there is a need to adjust the spot-month position limit for that corresponding contract month.

Long Term Contracts:

There is no readily available data on soybean oil under long-term contracts or agreements that could not be delivered on futures and should not be counted in deliverable supply estimates. The Exchange is unaware of any significant amount of soybean oil tied to long-term agreements. The organization of the soybean crush market makes it unlikely much if any oil would ever be contracted under long-term agreements. Soybeans are typically crushed for meal rather than oil, and the U.S. historically carries significant quantities of oil in store. Buyers typically enter long-term agreements when they have concerns about meeting their use needs, which rarely if ever happens with soybean oil.

ANALYSIS OF DELIVERABLE SUPPLY

Most although not all NOPA member soybean oil stocks data would meet CBOT Soybean Oil futures specifications. Unfortunately, NOPA does not distinguish among quality attributes in its monthly statistics. Thus, the Exchange does not try to account for stocks that may not meet Exchange quality specifications. However, this is likely a very conservative estimate because, although stocks not meeting specifications are not subtracted, none of the significant stocks produced and/or stored at plants and storage facilities regular for delivery on Soybean Oil futures that are not NOPA member processing plants are counted.

Based on the above analysis, the Exchange estimates the monthly deliverable supply over the past three years to be approximately 803 million pounds or **13,387** contract equivalents (contract size: 60,000 pounds). The current spot month limit of 540 represents **4%** of this estimated monthly deliverable supply.

[i] The crushing capacity of plants is proprietary data. In aggregate, however, on 1 January 2015, regular firms had a 30-day crushing capacity of 90,316,364 bushels of soybeans. Without knowing the crushing capacity of NOPA members that are not also regular for delivery on Soybean Oil futures, total NOPA crush capacity has to be estimated. From December 2011 to current, the maximum NOPA crush was during December 2013 when NOPA member firms crushed 165,384,000 bushels of soybeans. Assuming this maximum NOPA crush is near 100 percent of NOPA capacity, Soybean Oil regular firms have crushing capacity that is 55 percent of NOPA capacity despite being only 25/62 = 40 percent of NOPA member firms, which suggests plants regular for delivery on Soybean Oil futures are, on average, larger than the average NOPA reporting plant. The current Deliverable Supply estimate based on regular firms that are also NOPA members uses 40 percent of NOPA reported stocks (i.e., the estimate DOES NOT count the eleven regular firms that are not NOPA members). Thus, the Deliverable Supply estimate is likely a very conservative estimate.

BOARD OF TRADE OF THE CITY OF CHICAGO INC.

ANALYSIS OF DELIVERABLE SUPPLY

WHEAT FUTURES

APRIL 2016

In estimating deliverable supply for the Wheat Futures, the Board of Trade of the City of Chicago Inc. ("CBOT" or "Exchange") relied on long-standing precedent, which provides that the key component in estimating deliverable supply is the portion of typical supply stocks that could reasonably be considered to be readily available for delivery. In its guidance on estimating deliverable supply, the Commodity Futures Trading Commission ("CFTC" or "Commission") states:

> In general, the term "deliverable supply" means the quantity of the commodity meeting a derivative contract's delivery specifications that can reasonably be expected to be readily available to short traders and saleable by long traders at its market value in normal cash marketing channels at the derivative contract's delivery points during the specified delivery period, barring abnormal movement in interstate commerce. Typically, deliverable supply reflects the quantity of the commodity that potentially could be made available for sale on a spot basis at current prices at the contract's delivery points. For a non-financial physical-delivery commodity contract, this estimate might represent product which is in storage at the delivery point(s) specified in the futures contract or can be moved economically into or through such points consistent with the delivery procedures set forth in the contract and which is available for sale on a spot basis within the marketing channels that normally are tributary to the delivery point(s).[1]

Background:

All wheat production in the United States this past season was 2.026 billion bushels with soft red winter wheat representing 0.455 billion bushels. Soft red winter wheat, which is the underlying wheat class for the CBOT Wheat futures contract, is primarily used to make cookies, cakes and crackers and also as a livestock feed. USDA estimates the 2015/16 U.S. soft red winter wheat crop at 0.359 billion bushels, a 21.1 percent reduction compared to 2014/15.

CBOT Wheat Futures Delivery Capacity (Updated Annually):

Wheat shipping certificates may be issued from any one of the currently regular for delivery facilities located in the following territories:

A. Chicago and Burns Harbor, Indiana Switching District - The Chicago Switching District is the area geographically defined by Tariff ICC WTL 8020-Series and that portion of the Illinois Waterway at or above river mile 304 which includes the Calumet Sag Channel and the Chicago Sanitary & Ship Canal. The Burns Harbor, Indiana Switching District is the area geographically defined by the boundaries of Burns Waterway Harbor at Burns Harbor, Indiana which is owned and operated by the Indiana Port Commission.

B. The Toledo, Ohio Switching District. – The Toledo, Ohio switching district includes any facility that has a Toledo tariff.

C. St. Louis - Alton Switching District - The St. Louis – Alton Territory shall be on the Mississippi River between Upper River mile markers 205 and 168.

D. The Northwest Ohio Territory shall be shuttle loading facilities within the following 12 counties: Allen, Crawford, Hancock, Hardin, Henry, Huron, Marion, Putnam, Sandusky, Seneca, Wood, and Wyandot.

[1] http://www.ecfr.gov/cgi-bin/text-idx?SID=74959c3dbae469e2efe0a42b45b8dfae&mc=true&node=ap17.1.38_11201.c&rgn=div9

E. The Ohio River facilities shall be river loading facilities on the Ohio River from mile marker 455 to the Mississippi River.

F. The Mississippi River facilities shall be river loading facilities on the Mississippi River downriver from the St. Louis-Alton Switching District to mile marker 715.

Facilities approved for delivery on Wheat futures in the Mississippi River, Ohio River and St. Louis-East St. Louis-Alton territories are limited in the number of shipping certificates that they may issue to an amount not to exceed 20 times their total daily rate of loading barges, while facilities in the Chicago, Burns Harbor, Toledo and Northwest Ohio delivery territories shall not deliver more than their registered storage capacity. As of March 2016, firms regular for delivery on CBOT Wheat futures had approved capacity to issue 41,811 shipping certificates or 209.06 million bushels of wheat.

Below are the facilities regular for delivery on Wheat futures in March 2016 along with the maximum number of shipping certificates they may issue, with each shipping certificate equivalent to 5,000 bushels:

Firm	Location	Max Certificates
Cargill, Inc.	Burns Harbor Elevator Portage, IN	1,553
Chicago & Illinois River Marketing LLC	Elevator B Chicago, IL	2,462
ADM Grain Company	Sauget, IL	220
Archer-Daniels-Midland Co.	St. Louis Elevator St. Louis, MO	314
Bunge North America	Fairmont City, IL	440
Cargill Inc.	Elevator East St. Louis, IL	440
Ardent Mills, LLC	Alton, IL	677
Consolidated Grain and Barge	Cahokia, IL	220
The Andersons	Andersons-Illinois Elevator Maumee, Ohio	3,391
The Andersons	River Elevator Toledo, Ohio	1,240
The Andersons	Conant Street Elevator Maumee, Ohio	656
The Andersons	Edwin Drive Elevator Toledo, Ohio	1,180
The Andersons	Toledo, Ohio (Reynolds Rd)	196
ADM Grain Company	Toledo Elevator Toledo, Ohio	1,959
ADM Grain Company	Ottawa Lake Elevator Ottawa Lake, MI	2,372
ADM Grain Company	Newburgh, IN	440
ADM Grain Company	Evansville, In (Broadway)	440
ADM Grain Company	Evansville, IN (Dixie Flyer)	220
ADM Grain Company	Rockport, IN	440
ADM Grain Company	Mound City, IL	440
ADM Grain Company	Paducah, KY	220
ADM Grain Company	Ledbetter, KY	220
ADM Grain Company	Silver Grove, KY	440
ADM Grain Company	Henderson, KY	220
Bunge North America	Owensboro, KY	220
Bunge North America	Shawneetown, IL	440
Cargill, Inc.	Cincinnati, OH (Kellogg Avenue)	220
Cargill, Inc.	Cincinnati, OH (River Road)	220
Cargill, Inc.	Evansville, IN	220
Cargill, Inc.	Mt. Vernon, IN	440
Consolidated Grain and Barge	Cincinnati, OH (Anderson Ferry)	220
Consolidated Grain and Barge	Cincinnati, Oh (Southside Riverside)	220
Consolidated Grain and Barge	Aurora, IN	220
Consolidated Grain and Barge	Jeffersonville, IN	220
Consolidated Grain and Barge	Mt. Vernon, IN	220
Consolidated Grain and Barge	Mound City, IL	220

Firm	Location	Max Certificates
Consolidated Grain and Barge	Uniontown, KY	220
Consolidated Grain and Barge	Brandenburg, KY	220
Gavilon Grain LLC	Maceo, KY	220
Gavilon Grain LLC	Henderson, KY	440
Owensboro Grain Company	Owensboro, KY	220
ADM Grain Company	New Madrid, MO	440
ADM Grain Company	Memphis, TN	440
Bunge North America	Grand Tower, IL	220
Bunge North America	Hickman, KY	440
Bunge North America	Portageville, MO	440
Bunge North America	Caruthersville, MO	440
Bunge North America	Finley, TN	220
Bunge North America	Blytheville, AR	440
Bunge North America	Osceola, AR (Riverside)	220
Bunge North America	Osceola, AR (Landside)	220
Bunge North America	Memphis, TN	220
Bunge North America	West Memphis, AR	440
Cargill, Inc.	Buffalo Island, MO	220
Cargill, Inc.	New Madrid, MO	220
Cargill, Inc.	Hickman, KY	220
Cargill, Inc.	Tiptonville, TN	220
Consolidated Grain and Barge	Charleston, MO	220
Consolidated Grain and Barge	Cape Girardeau, MO	220
Consolidated Grain and Barge	Caruthersville, MO	220
Consolidated Grain and Barge	Caruthersville, MO (Cottonwood Point)	220
Consolidated Grain and Barge	East Prairie, MO	220
Consolidated Grain and Barge	Scott City, MO	220
Consolidated Grain and Barge	West Memphis, AR	220
Poinsett Rice and Grain, Inc.	Osceola, AR	220
The Scoular Company	Memphis, TN	220
Cargill, Inc.	Lima, OH	385
Interstate Commodities, Inc.	Harpster, OH	455
Sunrise Cooperative	Clyde, OH	1,655
Sunrise Cooperative	Galion, OH	1,397
Sunrise Cooperative	Wakeman, OH	1,756
Heritage Cooperative, Inc.	Upper Sandusky, OH	705
Heritage Cooperative, Inc.	Kenton, OH	720
Legacy Farmers Cooperative	Fostoria, OH	1,710
Legacy Farmers Cooperative	Findlay, OH	583
Legacy Farmers Cooperative	Custar, OH	605

CBOT Wheat Futures Deliverable Supply Procedures and Estimate (Updated Annually):

Each Tuesday the Registrar's Office publishes wheat meeting deliverable grades that are in-store as of the previous Friday at all regular delivery facilities. The USDA-AMS publishes a weekly Grain Transportation Report (GTR) that covers developments affecting the transport of grain, both in the domestic and international marketplace (http://www.ams.usda.gov/AMSv1.0/gtr). This weekly publication reports on the latest volume and price data for barges, railroads, trucks, and ocean vessels involved in the transport of grain. Included in this report is the amount of wheat shipped through Lock 52[2] on the

[2] http://marinas.com/view/lock/31_Ohio_River_Lock_52_Brookport_IL_United_States

Ohio River, which is a measure of wheat flowing through the Ohio River delivery territory for Wheat futures.

Deliverable supply is estimated as the stocks of grain in regular facilities on the Friday prior to First Notice Day plus the amount of wheat that passes through Lock 52 on the Ohio River during the four weeks prior to First Notice Day[3]. This is likely a very conservative estimate of deliverable supply because it does not count the significant amount of wheat that is likely near the delivery facilities and could easily be placed into delivery position very quickly. While this estimate of deliverable supply does not attempt to include these stocks, they could be estimated to some degree using economic theory. Economic theory and the theory of storage would suggest these uncounted stocks would likely exceed the stocks reported in the Stocks of Grain report[4]. Regular delivery facilities on the Ohio and Mississippi Rivers are in position to aggregate wheat for export; thus, the value of wheat in most of the river delivery facilities is greater than the value of wheat in the country because wheat in the country needs to be transported to be in position for export. The cost to store wheat includes opportunity cost, and opportunity costs increase with value. Thus, the cost to store wheat in position at a regular delivery facility is greater than the cost to store in the country all other factors equal. If there is wheat being stored in position in a river facility, it suggests export demand, and theory would suggest a greater amount of stocks would be stored internally due to the lower cost. The Exchange may, at a later date, decide to estimate these stocks and included them in future deliverable supply estimates.

Futures Contract Expiration	Wheat Movement through Lock 52 on the OH River during the 4 Weeks Prior to FND (1M Bushels)	Stocks of Wheat in Regular Facilities on the Friday prior to FND (1M Bushels)	Total Stocks (1M Bushels)
Mar-15	1.42	37.43	38.85
Mar-14	0.53	42.88	43.41
Mar-13	4.84	60.94	65.78
MAR AVG	**2.26**	**47.08**	**49.35**
May-15	1.54	30.25	31.79
May-14	1.80	31.15	32.95
May-13	1.64	41.75	43.39
MAY AVG	**1.66**	**34.38**	**36.04**
Jul-15	2.69	38.75	41.44
Jul-14	0.35	32.27	32.62
Jul-13	1.45	38.95	40.40
JUL AVG	**1.50**	**36.66**	**38.15**
Sep-15	6.52	50.79	57.31
Sep-14	7.76	44.35	52.11
Sep-13	16.51	62.30	78.81
SEP AVG	**10.26**	**52.48**	**62.74**
Dec-15	0.65	49.30	49.95
Dec-14	0.18	42.99	43.17

[3] This analysis does not include SRW wheat flowing down the Illinois and Upper Mississippi Rivers that would also be deliverable on the CBOT Wheat futures contract in the Alton – St. Louis delivery territory. Wheat statistics are available on the lowest lock on the Mississippi River, which would capture these data, but because these stocks are not differentiated between classes and likely contain significant amounts of spring wheat, the Exchange decided not to include these stocks in this analysis. Spring wheat is deliverable on CBOT Wheat futures, but rarely if ever delivered, so this analysis focuses on SRW wheat. Ohio River stocks included in this report are predominantly, if not virtually all, SRW wheat.

[4] See http://ajae.oxfordjournals.org/content/77/3/512.abstract

Futures Contract Expiration	Wheat Movement through Lock 52 on the OH River during the 4 Weeks Prior to FND (1M Bushels)	Stocks of Wheat in Regular Facilities on the Friday prior to FND (1M Bushels)	Total Stocks (1M Bushels)
Dec-13	0.05	54.61	54.66
DEC AVG	**0.29**	**48.97**	**49.26**
AVG ALL DELV MONTHS	**3.20**	**43.91**	**47.11**

Seasonality:

The Exchange evaluates seasonality on the deliverable supply across all Wheat futures contract expirations. To the extent that 25 percent of any contract month's future estimated deliverable supply falls below the current spot month limit, the Exchange will evaluate whether there is a need to adjust the spot-month position limit for that corresponding contract month.

Long Term Contracts:

There is no readily available data on wheat under long-term contracts or agreements that could not be delivered on futures and should not be counted in deliverable supply estimates. To get a sense of the extent wheat is under long-term agreements and not deliverable, the Exchange reached out to 4 wheat regular delivery firms. Feedback from these firms indicates generally zero (0) percent of wheat in their facilities is under long-term agreement and could not be delivered against Wheat futures. One firm indicated generally zero percent under long-term agreement but at the very most five percent during some limited time frames. Given this feedback and the conservative nature of the estimate, the Exchange does not believe wheat stocks under long-term agreements significantly affect deliverable supply.

ANALYSIS OF DELIVERABLE SUPPLY

Based on the above analysis, the Exchange estimates the monthly deliverable supply over the past five years to be 47.11 million bushels or **9,422** contract equivalents (contract size: 5,000 bushels). The current spot month limit of 600 contracts represents **6.3%** of this estimated monthly deliverable supply.

COMMODITY EXCHANGE, INC.

ANALYSIS OF DELIVERABLE SUPPLY

COPPER FUTURES

APRIL 2016

Cash Market Overview

U.S. Copper Production and Reserves[1]

According to the U.S. Geological Survey (USGS) Mineral Commodity Summaries 2015 Publication, in 2014, U.S. mine production of copper was approximately 1.37 million tons and was valued at about $9.7 billion. U.S. mine production increased by about 10% in 2014, mainly owing to significant increases in production in Arizona, New Mexico, and Utah. Copper production at the Bingham Canyon Mine in Utah increased following recovery from a pit-wall failure in 2013, and in May, a 100,000-metric-ton-per-year expansion of copper in concentrate was completed at the Morenci Mine in Arizona. Total U.S. refined production increased by about 8% owing to across-the-board production increases at electrolytic refineries. In 2015, domestic mine and refined production of copper were expected to increase moderately, and according to the International Copper Study Group (ICSG) projections, global refined-copper output was expected to exceed demand owing to lower demand growth in China and a 4.3% growth in global refined production. U.S. Copper reserves were estimated at 35 million tons according to the USGS.

U.S. Copper Consumption

According to the Copper Survey 2015 of the GFMS, a metals research consultancy[2], in 2014, U.S. copper consumption increased by 4% from the year prior to approximately 1.78 million tons.

Exchange Warehouses and Proximity to Copper Mines

To date, Exchange approved copper warehouses are Arizona Commodity Storage, Inc. C. Steinweg (Baltimore), Inc., Henry Bath LLC, MetalStore, LLC, Pacorini Metals USA LLC, Southwest Commodity Warehouses, Inc., Stagecoach Cartage and Distribution, LP, Tucson Port Authority, LLC and Utah Commodity Storage, Inc.

The Exchange currently has three (3) warehouses in Tucson, Arizona, one (1) in Owensboro, Kentucky, three (3) in New Orleans, Louisiana, two (2) in Baltimore, Maryland, one (1) in Toledo, Ohio, two (2) in El Paso, Texas and two (2) in Tooele, Utah.

The warehouses located in Tucson and Tooele are at close proximity to copper mines.

Deliverable Supply Estimates

In estimating deliverable supply for Copper Futures, the Commodity Exchange, Inc. ("COMEX" or "Exchange") relied on long-standing precedent, which provides that the key component in estimating deliverable supply is the portion of typical warehouse stocks that could reasonably be considered to be

[1] http://minerals.usgs.gov/minerals/pubs/commodity/copper/mcs-2015-coppe.pdf

[2] http://trmcs-documents.s3.amazonaws.com/377d4e994bb540b286d7ccf30b81bece_20150506123937_gfms-copper-survey-2015-v3.pdf

readily available for delivery. In its guidance on estimating deliverable supply, the Commodity Futures Trading Commission ("CFTC" or "Commission") states:

> In general, the term "deliverable supply" means the quantity of the commodity meeting a derivative contract's delivery specifications that can reasonably be expected to be readily available to short traders and saleable by long traders at its market value in normal cash marketing channels at the derivative contract's delivery points during the specified delivery period, barring abnormal movement in interstate commerce. Typically, deliverable supply reflects the quantity of the commodity that potentially could be made available for sale on a spot basis at current prices at the contract's delivery points. For a non-financial physical-delivery commodity contract, this estimate might represent product which is in storage at the delivery point(s) specified in the futures contract or can be moved economically into or through such points consistent with the delivery procedures set forth in the contract and which is available for sale on a spot basis within the marketing channels that normally are tributary to the delivery point(s)[3]

Stock Reporting Requirements

Pursuant to the rules of the Exchange, each warehouse is required to report to the Exchange the level of Exchange grade inventory on a daily basis. The inventory shall include eligible and registered copper. Eligible copper shall mean all such copper that is acceptable for delivery against the Copper Futures contract (i.e., which meets the specifications and approved brands of the Copper Futures contract) for which a warrant has not been issued. Registered copper shall mean eligible copper for which a warrant has been issued. Specifically, on a daily basis, each warehouse is required to provide the Exchange (1) the total quantity of registered copper stored at the warehouse, (2) the total quantity of eligible copper stored at the warehouse, and (3) the quantity of eligible copper and registered copper received and shipped from the warehouse.

The copper inventory levels at all Exchange-approved warehouses are made publicly available daily on the Exchange website[4]. Further, the rules of the Exchange require an independent inventory audit to be performed annually to provide a comprehensive reconciliation of stocks stored at warehouses with records maintained by both the Exchange and the warehouses[5].

Deliverable Supply Analysis

The Exchange determined at this time to base its estimates of deliverable supply of copper on registered stock as well as such copper stock meeting all specifications of the Copper Futures contract stored at Exchange approved warehouses.

Table 1 below provides the monthly inventory average of each of registered and eligible copper stored at Exchange-approved warehouses for the period beginning January 2011 through December 2015. As the use of base metal is industrial, a five-year inventory look-back is more representative of the market activity and better captures copper market trends.

Over the five year period beginning January 2011 through December 2015, the monthly average registered copper was **3,687** futures equivalent contracts and the monthly average eligible copper was **551** futures equivalent contracts. Based on the foregoing, the Exchange estimates monthly deliverable

[3] http://www.ecfr.gov/cgi-bin/text-idx?SID=74959c3dbae469e2efe0a42b45b8dfae&mc=true&node=ap17.1.38_11201.c&rgn=div9
[4] http://www.cmegroup.com/market-data/reports/registrar-reports.html
[5] http://www.cmegroup.com/rulebook/NYMEX/1/7.pdf

supply at approximately **4,239** futures equivalent contracts. The current spot month position limit of 1,000 contracts represents **23.59%** of the estimated monthly deliverable supply.

At this time, the Exchange does not account for copper stock meeting all specifications of the Copper Futures contract that is stored at warehouses other than those approved by the Exchange and which can be moved economically into such Exchange-approved warehouses consistent with Appendix C of Part 38. The Exchange may, at a later date, decide to estimate those stocks and include them in future deliverable supply estimates.

Table 1: Monthly Average Stock Levels at Exchange Warehouses

(in Copper Futures equivalent contracts)

Yr-Month	Average Eligible	Average Registered	Average Total
Jan-11	113	5,183	5,296
Feb-11	627	5,580	6,207
Mar-11	729	6,022	6,751
Apr-11	841	5,870	6,711
May-11	804	5,747	6,550
Jun-11	938	5,492	6,430
Jul-11	913	5,563	6,476
Aug-11	858	5,878	6,736
Sep-11	124	6,773	6,898
Oct-11	347	6,731	7,078
Nov-11	255	6,760	7,015
Dec-11	227	6,789	7,017
Jan-12	501	6,641	7,142
Feb-12	558	6,630	7,188
Mar-12	562	6,665	7,227
Apr-12	663	5,847	6,510
May-12	930	4,366	5,296
Jun-12	518	3,990	4,508
Jul-12	278	3,700	3,978
Aug-12	250	3,710	3,959
Sep-12	558	3,461	4,019
Oct-12	208	4,022	4,230
Nov-12	211	4,592	4,803
Dec-12	255	5,177	5,432
Jan-13	141	5,669	5,810
Feb-13	87	5,898	5,985
Mar-13	93	5,959	6,052
Apr-13	1,114	5,438	6,553
May-13	2,446	4,237	6,683
Jun-13	2,254	3,791	6,045

Yr-Month	Average Eligible	Average Registered	Average Total
Jul-13	2,678	2,740	5,419
Aug-13	1,655	2,372	4,027
Sep-13	460	2,179	2,639
Oct-13	374	1,912	2,287
Nov-13	367	1,406	1,773
Dec-13	596	768	1,364
Jan-14	617	721	1,338
Feb-14	334	1,016	1,349
Mar-14	246	888	1,134
Apr-14	216	1,290	1,507
May-14	296	1,083	1,379
Jun-14	165	1,276	1,440
Jul-14	128	1,665	1,793
Aug-14	103	1,960	2,063
Sep-14	604	1,958	2,562
Oct-14	749	1,890	2,639
Nov-14	661	1,627	2,288
Dec-14	598	1,592	2,190
Jan-15	703	1,214	1,917
Feb-15	286	1,215	1,501
Mar-15	175	1,720	1,895
Apr-15	111	1,878	1,989
May-15	50	1,772	1,822
Jun-15	203	1,854	2,057
Jul-15	459	2,403	2,862
Aug-15	153	2,654	2,807
Sep-15	82	3,041	3,123
Oct-15	242	3,430	3,672
Nov-15	463	4,716	5,178
Dec-15	912	4,817	5,729
Average Total	**551**	**3,687**	**4,239**

COMMODITY EXCHANGE, INC.

ANALYSIS OF DELIVERABLE SUPPLY

GOLD FUTURES

APRIL 2016

In estimating deliverable supply for Gold Futures, the Commodity Exchange, Inc. ("COMEX" or "Exchange") relied on long-standing precedent, which provides that the key component in estimating deliverable supply is the portion of typical depository stocks that could reasonably be considered to be readily available for delivery. In its guidance on estimating deliverable supply, the Commodity Futures Trading Commission ("CFTC" or "Commission") states:

> In general, the term "deliverable supply" means the quantity of the commodity meeting a derivative contract's delivery specifications that can reasonably be expected to be readily available to short traders and saleable by long traders at its market value in normal cash marketing channels at the derivative contract's delivery points during the specified delivery period, barring abnormal movement in interstate commerce. Typically, deliverable supply reflects the quantity of the commodity that potentially could be made available for sale on a spot basis at current prices at the contract's delivery points. For a non-financial physical-delivery commodity contract, this estimate might represent product which is in storage at the delivery point(s) specified in the futures contract or can be moved economically into or through such points consistent with the delivery procedures set forth in the contract and which is available for sale on a spot basis within the marketing channels that normally are tributary to the delivery point(s)[1]

Approved Depositories and Stock Reporting Requirements

To date, Exchange approved gold depositories are Brinks, Inc., Delaware Depository Service Company, HSBC Bank, USA, International Depository Services of Delaware, JP Morgan Chase Bank NA, Malca-Amit USA, LLC, Manfra, Tordella & Brookes, Inc. and Scotia Mocatta.

Pursuant to the rules of the Exchange, each depository is required to report to the Exchange the level of Exchange grade inventory on a daily basis. The inventory shall include eligible and registered gold. Eligible gold shall mean all such gold that is acceptable for delivery against the Gold Futures contract (i.e., which meets the specifications and approved brands of the Gold Futures contract) for which a warrant has not been issued. Registered gold shall mean eligible gold for which a warrant has been issued. Specifically, on a daily basis, each depository is required to provide the Exchange (1) the total quantity of registered gold stored at the depository, (2) the total quantity of eligible gold stored at the depository, and (3) the quantity of eligible gold and registered gold received and shipped from the depository.

The gold inventory levels at all Exchange-approved depositories are made publicly available daily on the Exchange website[2]. Further, the rules of the Exchange require an independent inventory audit to be performed annually to provide a comprehensive reconciliation of stocks stored at depositories with records maintained by both the Exchange and the depository[3].

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[1] http://www.ecfr.gov/cgi-bin/text-idx?SID=74959c3dbae469e2efe0a42b45b8dfae&mc=true&node=ap17.1.38_11201.c&rgn=div9

[2] http://www.cmegroup.com/market-data/reports/registrar-reports.html

[3] http://www.cmegroup.com/rulebook/NYMEX/1/7.pdf

Deliverable Supply Analysis

The Exchange determined at this time to base its estimates of deliverable supply of gold on registered stock as well as such gold stock meeting all specifications of the Gold Futures contract stored at Exchange approved depositories. The Exchange recognizes that gold is used as an investment vehicle and as such some gold stock may be held as a long term investment. While surveys conducted indicated no clear consensus as to how much gold is dedicated to long term investments, the Exchange, in an effort to represent a conservative deliverable supply that may be readily available for delivery, made a determination to discount from its estimate of deliverable supply 50% of its reported eligible gold at this time. The Exchange may, at a later date, decide to estimate those stocks and include them in future deliverable supply estimates.

Table 1 below provides the monthly inventory average of each of registered and eligible gold stored at Exchange-approved depositories for the period beginning January 2013 through December 2015.

Over the three year period beginning January 2013 through December 2015, the monthly average registered gold was **9,211** futures equivalent contracts and the monthly average eligible gold was **70,551** futures equivalent contracts. Based on the foregoing and accounting for a 50% discount of eligible gold stored at Exchange approved depositories, the Exchange estimates monthly deliverable supply at approximately **44,487** futures equivalent contracts. The current spot month position limit of 3,000 contracts represents **6.74%** of the estimated monthly deliverable supply.

At this time, the Exchange does not account for gold stock meeting all specifications of the Gold Futures contract that is stored at depositories other than those approved by the Exchange and which can be moved economically into such Exchange-approved depositories consistent with Appendix C of Part 38. The Exchange may, at a later date, decide to estimate those stocks and include them in future deliverable supply estimates.

Table 1: Monthly Average Stock Levels at Exchange Depositories

(in Gold Futures equivalent contracts)

Yr-Month	Average Eligible	Average Registered	Average Total
13-Jan	86,173	23,379	109,552
13-Feb	79,478	27,734	107,212
13-Mar	70,541	26,155	96,697
13-Apr	62,395	25,938	88,333
13-May	62,669	17,348	80,017
13-Jun	63,018	14,274	77,292
13-Jul	60,845	10,209	71,054
13-Aug	62,016	8,019	70,035
13-Sep	62,939	6,822	69,761
13-Oct	62,953	7,225	70,178
13-Nov	65,710	6,112	71,822
13-Dec	69,526	5,859	75,385
14-Jan	71,946	4,150	76,097
14-Feb	65,261	6,215	71,476
14-Mar	66,321	6,604	72,924

Yr-Month	Average Eligible	Average Registered	Average Total
14-Apr	70,935	7,999	78,934
14-May	72,534	8,063	80,597
14-Jun	73,472	9,208	82,680
14-Jul	75,218	9,267	84,484
14-Aug	84,965	10,859	95,823
14-Sep	85,723	10,115	95,838
14-Oct	79,280	9,262	88,542
14-Nov	72,283	8,635	80,918
14-Dec	71,410	7,679	79,089
15-Jan	71,825	7,706	79,531
15-Feb	74,151	8,043	82,195
15-Mar	73,985	6,740	80,725
15-Apr	72,326	5,924	78,250
15-May	73,951	4,125	78,076
15-Jun	73,830	5,383	79,213
15-Jul	74,024	4,581	78,605
15-Aug	68,776	4,885	73,661
15-Sep	67,663	1,913	69,576
15-Oct	65,422	1,828	67,251
15-Nov	64,376	1,491	65,867
15-Dec	61,899	1,862	63,761
Average Total	**70,551**	**9,211**	**79,763**

COMMODITY EXCHANGE, INC.

ANALYSIS OF DELIVERABLE SUPPLY

SILVER FUTURES

APRIL 2016

In estimating deliverable supply for Silver Futures, the Commodity Exchange, Inc. ("COMEX" or "Exchange") relied on long-standing precedent, which provides that the key component in estimating deliverable supply is the portion of typical depository stocks that could reasonably be considered to be readily available for delivery. In its guidance on estimating deliverable supply, the Commodity Futures Trading Commission ("CFTC" or "Commission") states:

> In general, the term "deliverable supply" means the quantity of the commodity meeting a derivative contract's delivery specifications that can reasonably be expected to be readily available to short traders and saleable by long traders at its market value in normal cash marketing channels at the derivative contract's delivery points during the specified delivery period, barring abnormal movement in interstate commerce. Typically, deliverable supply reflects the quantity of the commodity that potentially could be made available for sale on a spot basis at current prices at the contract's delivery points. For a non-financial physical-delivery commodity contract, this estimate might represent product which is in storage at the delivery point(s) specified in the futures contract or can be moved economically into or through such points consistent with the delivery procedures set forth in the contract and which is available for sale on a spot basis within the marketing channels that normally are tributary to the delivery point(s)[1]

Approved Depositories and Stock Reporting Requirements

To date, Exchange approved silver depositories are Brinks, Inc., CNT Depository, Inc., Delaware Depository Service Company, HSBC Bank, USA, International Depository Services of Delaware, JP Morgan Chase Bank NA, Malca-Amit USA, LLC and Scotia Mocatta.

Pursuant to the rules of the Exchange, each depository is required to report to the Exchange the level of Exchange grade inventory on a daily basis. The inventory shall include eligible and registered silver. Eligible silver shall mean all such silver that is acceptable for delivery against the Silver Futures contract (i.e., which meets the specifications and approved brands of the Silver Futures contract) for which a warrant has not been issued. Registered silver shall mean eligible silver for which a warrant has been issued. Specifically, on a daily basis, each depository is required to provide the Exchange (1) the total quantity of registered silver stored at the depository, (2) the total quantity of eligible silver stored at the depository, and (3) the quantity of eligible silver and registered silver received and shipped from the depository.

The silver inventory levels at all Exchange-approved depositories are made publicly available daily on the Exchange website[2]. Further, the rules of the Exchange require an independent inventory audit to be performed annually to provide a comprehensive reconciliation of stocks stored at depositories with records maintained by both the Exchange and the depository[3].

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[1] http://www.ecfr.gov/cgi-bin/text-idx?SID=74959c3dbae469e2efe0a42b45b8dfae&mc=true&node=ap17.1.38_11201.c&rgn=div9

[2] http://www.cmegroup.com/market-data/reports/registrar-reports.html

[3] http://www.cmegroup.com/rulebook/NYMEX/1/7.pdf

Deliverable Supply Analysis

The Exchange determined at this time to base its estimates of deliverable supply of silver on registered stock as well as such silver stock meeting all specifications of the Silver Futures contract stored at Exchange approved depositories. The Exchange recognizes that silver is used as an investment vehicle and as such some silver stock may be held as a long term investment. While surveys conducted indicated no clear consensus as to how much silver is dedicated to long term investments, the Exchange, in an effort to represent a conservative deliverable supply that may be readily available for delivery, made a determination to discount from its estimate of deliverable supply 50% of its reported eligible silver at this time. The Exchange may, at a later date, decide to estimate those stocks and include them in future deliverable supply estimates.

Table 1 below provides the monthly inventory average of each of registered and eligible silver stored at Exchange-approved depositories for the period beginning January 2013 through December 2015.

Over the three year period beginning January 2013 through December 2015, the monthly average registered silver was **10,495** futures equivalent contracts and the monthly average eligible silver was **23,789** futures equivalent contracts. Based on the foregoing and accounting for a 50% discount of eligible silver stored at Exchange approved depositories, the Exchange estimates monthly deliverable supply at approximately **22,390** futures equivalent contracts. The current spot month position limit of 1,500 contracts represents **6.70%** of the estimated monthly deliverable supply.

At this time, the Exchange does not account for silver stock meeting all specifications of the Silver Futures contract that is stored at depositories other than those approved by the Exchange and which can be moved economically into such Exchange-approved depositories consistent with Appendix C of Part 38. The Exchange may, at a later date, decide to estimate those stocks and include them in future deliverable supply estimates.

Table 1: Monthly Average Stock Levels at Exchange Depositories

(in Silver Futures equivalent contracts)

Yr-Month	Average Eligible	Average Registered	Average Total
13-Jan	22,519	7,716	30,235
13-Feb	24,521	7,455	31,976
13-Mar	24,194	8,503	32,697
13-Apr	24,781	8,293	33,075
13-May	24,237	8,813	33,050
13-Jun	24,557	8,358	32,915
13-Jul	23,601	9,459	33,060
13-Aug	24,835	8,053	32,888
13-Sep	24,031	8,570	32,601
13-Oct	24,558	8,728	33,286
13-Nov	25,016	8,879	33,895
13-Dec	24,001	10,297	34,297
14-Jan	25,502	9,939	35,441
14-Feb	26,128	10,141	36,268
14-Mar	25,890	10,549	36,440

Yr-Month	Average Eligible	Average Registered	Average Total
14-Apr	24,686	10,706	35,392
14-May	23,930	11,130	35,072
14-Jun	23,741	11,414	35,175
14-Jul	23,533	11,565	35,097
14-Aug	23,319	12,057	35,376
14-Sep	23,380	12,956	36,336
14-Oct	22,995	13,294	36,298
14-Nov	22,613	13,089	35,702
14-Dec	22,326	12,918	35,244
15-Jan	21,926	13,203	35,129
15-Feb	21,705	13,596	35,301
15-Mar	21,410	13,930	35,341
15-Apr	22,433	12,630	35,063
15-May	23,391	12,087	35,478
15-Jun	24,529	11,608	36,138
15-Jul	24,063	11,713	35,776
15-Aug	23,227	11,080	34,307
15-Sep	23,731	9,638	33,369
15-Oct	23,905	8,646	32,552
15-Nov	23,534	8,674	32,208
15-Dec	23,672	8,142	31,814
Average Total	**23,789**	**10,495**	**34,286**

NEW YORK MERCANTILE EXCHANGE, INC.

ANALYSIS OF DELIVERABLE SUPPLY

LIGHT SWEET CRUDE OIL FUTURES

APRIL 2016

In estimating deliverable supply for the Light Sweet Crude Oil Futures, the New York Mercantile Exchange, Inc. ("NYMEX" or "Exchange") relied on long-standing precedent, which provides that the key component in estimating deliverable supply is the portion of typical production and supply stocks that could reasonably be considered to be readily available for delivery. In its guidance on estimating deliverable supply, the Commodity Futures Trading Commission ("CFTC" or "Commission") states:

> In general, the term "deliverable supply" means the quantity of the commodity meeting a derivative contract's delivery specifications that can reasonably be expected to be readily available to short traders and saleable by long traders at its market value in normal cash marketing channels at the derivative contract's delivery points during the specified delivery period, barring abnormal movement in interstate commerce. Typically, deliverable supply reflects the quantity of the commodity that potentially could be made available for sale on a spot basis at current prices at the contract's delivery points. For a non-financial physical-delivery commodity contract, this estimate might represent product which is in storage at the delivery point(s) specified in the futures contract or can be moved economically into or through such points consistent with the delivery procedures set forth in the contract and which is available for sale on a spot basis within the marketing channels that normally are tributary to the delivery point(s).[1]

I. Methodology and Data Sources

The Exchange considered three components in evaluating deliverable supply estimates of the Domestic Light Sweet Common Stream Crude Oil for the Cushing, Oklahoma delivery location of the Light Sweet Crude Oil Futures contract:

(1) Crude Oil Production;

(2) Crude Oil Flows to the delivery area; and

(3) Crude Oil Storage in the delivery area.

A. Crude Oil Production

While crude oil production information is, in part, available from other sources, particularly at the state level from energy or tax revenue authorities, the Exchange determined to use production information collected by the U.S. Department of Energy ("DOE") Energy Information Administration ("EIA"). Specifically, the Exchange has chosen to rely on the EIA production data because it constitutes a single source, employing common standards, across all states. The EIA data are highly regarded but they do not provide sufficient breakdown on the quality characteristics of the oil production to determine the subset of total production that would qualify as Domestic Light Sweet under the terms of the futures contract.

B. Crude Oil Flows to the Cushing Delivery Area

To determine the flows of Domestic Light Sweet crude oil into the delivery area, NYMEX consulted with industry executives and professionals from pipeline and storage terminal operators in Cushing as well as other major industry participants. It is noteworthy that the estimates provided here are materially less than the production that can readily access the delivery mechanism and which *could* be delivered due to the fact that the sources we used were specifically knowledgeable about *actual* Cushing deliveries. Thus,

[1] http://www.ecfr.gov/cgi-bin/text-idx?SID=74959c3dbae469e2efe0a42b45b8dfae&mc=true&node=ap17.1.38_11201.c&rgn=div9

the information provided is not what *could be* delivered — the standard which is in accordance with Commission's policy and precedent — but what actually *is* delivered. The Exchange believes that the Cushing delivery mechanism for light sweet crude oil and corresponding commercial secondary market constitutes such a sophisticated and highly-developed commercial market mechanism that, at any time, the actual flows to and stocks in the delivery area represent precisely the deliverable supply sufficient to support the mechanism. In other words, even though at any time there is additional production that *could* be delivered to the delivery mechanism, we are only including what *actually* flows in our estimate of deliverable supply.

C. Crude Oil Storage in the Cushing Delivery Area

Storage data are provided on a weekly basis by EIA. Details are provided for the U.S. Petroleum Administration for Defense Districts ("PADDs") and Cushing. There are five PADDs and, in some cases, they correspond to broad regions. PADD 2 broadly includes the Midwest; PADD 3 broadly includes U.S. Gulf Coast states and New Mexico; PADD 4 contains the Rocky Mountain States excluding New Mexico. Cushing is the only single location where crude oil official inventory numbers are collected and publicly disseminated on a regular basis anywhere in the world. The actual geographic market that is consistently most applicable to the NYMEX crude oil futures contract would, therefore, include much of PADD 2, not just Cushing.

Nonetheless, NYMEX includes only inventories reported at Cushing, so these underestimate relevant storage. As with production, EIA does not provide details on the quality characteristics of stored crude oil, but the industry experts with whom NYMEX consulted consistently estimated that 60% to 70% of the crude oil stored at Cushing qualified as Domestic Light Sweet Common Stream (to be conservative, the Exchange will discount 40% of inventory in its calculation of deliverable supply estimates).

II. The Cushing Physical Delivery Mechanism: Scope of Deliverable Crude Oil

The Cushing physical delivery mechanism is comprised of a network of nearly two dozen pipelines and 10 storage terminals, several with major pipeline manifolds. Two of the storage facilities — Enterprise and Enbridge — and their pipeline manifolds are the core of the Cushing physical delivery mechanism.[2] Physical volumes delivered against the Light Sweet Crude Oil Futures contract within the Enterprise and Enbridge systems are at par value. Any deliveries made on futures contracts elsewhere in Cushing require the seller to compensate the buyer for the lower of the transportation netbacks from these facilities to where the delivery occurs. Detailed information about the inflowing and outflowing pipelines is contained below in Table 2.

Terminating obligations in the Light Sweet Crude Oil Futures contract are fulfilled by delivering any of six "Domestic Production Streams" of crude oil: (i) West Texas Intermediate ("WTI"); (ii) Low Sweet Mix ("Scurry Snyder"); (iii) New Mexican Sweet; (iv) North Texas Sweet; (v) Oklahoma Sweet; or (vi) South Texas Sweet. Additionally, a seventh stream, defined as "The Domestic Common Stream" transported by Enterprise Products (formerly Teppco Pipeline), is also deliverable. Market participants commonly refer to the combination of all of the deliverable streams, including the Domestic Common Stream, as "WTI." In addition, the Domestic Common Stream includes a fungible blend of light sweet streams produced in the U.S. shale oil areas, including the Bakken, Niobrara, and Permian producing areas. Furthermore, each of these light sweet crude oil streams is fungibly blended and included as part of the "Domestic Common Stream" within the complex that comprises the Cushing delivery mechanism, as well as in the WTI physical market which calls for delivery in the Cushing delivery mechanism.

[2] Three of the major sources for the cash-market information provided herein are Plains All America, Enterprise and Enbridge. Enterprise oversees the vast majority of deliveries in the Cushing Delivery Market and, as indicated, Enterprise and Enbridge are the core delivery mechanism operators. Plains and Enbridge account for about 60% of the storage available at Cushing.

III. Physical Market Trading Structure and Term Contracts

A. Physical Market Trading Structure

Typically, there is a chronology of sales and purchases of crude oil in the onshore U.S. market that starts with a sale from producer and finishes with a purchase by an end-user to consume the crude oil. First-sales are from producers to aggregators or other middleman-type firms with delivery at the property where it is produced. The first-sale buyer transports oil downstream from the point of sale. Usually the first-sale buyer resells the oil to someone other than the end-user but sometimes sells directly to the end-user.

Final sales are sales to end-users who when they consume the oil remove it from the supply chain. End-users, however, also resell oil. Such end-user re-sales sometimes occur during the same commercial cycle in which they purchased it; other times, they occur during a later commercial cycle after the oil has been stored for a period of time. Like end-users, other buyers of oil also can either resell it immediately or store it first for some period of time and then resell it later. Thus, it is a common commercial practice that the first-sale and multiple subsequent re-sales occur in the same delivery cycle.

As discussed above, the Cushing delivery market is essentially a major reseller market where buyers either: resell the oil to someone else; store the oil and resell it later; store the oil and then consume it later; or transport it to consume it. The Cushing market is essentially downstream of first-sales. Most of the sales in the Cushing market are for resale and not for either storage or final-sale; in fact, the physical market in "WTI," in which the standard form of delivery is within the pipeline system at Cushing, is estimated to be 10-20 times the multiple of "WTI" oil that flows to Cushing. As such, it is clear that most sales are for resale because they constitute the selling, over-and-over (thus, *re*-selling), of the base physical oil that flows to Cushing. *Argus Media* documents about 5-8 times the flow in "WTI" sales but does not capture all of the sales.[3]

B. Term Contracts

The Exchange has spoken with and interviewed a number of market participants regarding common commercial practices with respect to the use of term contracts in the U.S. onshore crude oil market.[4] The responses we received were consistent and they can be summarized as follows:

- Almost all first-sales of production are sold term; as discussed in the previous section, typically for delivery on the property where it is produced (or nearest gathering pipeline or holding tank), and typically to middleman-firms or aggregators. These middleman-firms typically resell the crude oil to other middleman-firms (or participants performing that function) or to end-users. Typically, the first-sales contracts are "evergreen" contracts that can be discontinued by either party with notice. NYMEX is including evergreen contracts in the "term contracts" category.
- There are no restrictions applied to the resale of crude oil bought first-sale on a term basis from producers. In fact, that would clearly not be applicable because sales are typically to aggregators or others acting in a middleman-firm role with the expressed responsibility of reselling the oil.
- The Cushing market is downstream of first-sales; in other words, Cushing is downstream of any term sales from producers. Thus, even if barrels were sold term by the producer, in the Cushing market those barrels are re-sold and re-delivered by either the purchaser from the producer or a subsequent purchaser from that original purchaser. The Cushing market mechanism, which consists of trading and physical delivery of light sweet crude oil, is a commercial secondary (or *spot*) market which is extremely liquid, comprised of broad participation and results in a substantial quantity of physical delivery of crude oil.

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[3] The commercial market for physical delivery of light sweet crude oil in Cushing is a *secondary* (or *spot*) market mechanism. The number of physical deliveries in this market each month is 240 million barrels or higher (240,000 futures contracts equivalent or higher).

[4] These include: Plains All America, a major Midcontinent aggregator and marketer and operator of pipeline and storage terminals including in Cushing; JSK Consulting, the principal of which is a seasoned Midcontinent oil market participant and professional with 40 years of experience in trading, operating transportation and storage in Cushing, and refining; and an Energy Market Participant Group of several dozen market participants organized through Hunton & Williams LLP to discuss and comment on Regulatory issues.

- Some end-user refiners in the Cushing market purchase specific light sweet crude oil streams, such as Bakken or Niobrara Light Sweet crude oil, on a term basis, and these refiners tend to segregate a portion of the specific light sweet crude streams for processing at their refineries. Based on conversations with refiners in the Cushing market, the Exchange estimates that approximately 10% of the deliverable supply for Cushing is segregated and designated for use by end-user refiners, and therefore is not available for re-sale in the Cushing market. Consequently, the Exchange will reduce its estimate of deliverable supply in Cushing by 10% to account for the specific light sweet streams that are designated for processing and segregated by the end-user refiners.
- Our sources expressly advised us that any production sold long-term was available for potential re-sale, such as during periods of refinery maintenance, and this is especially the case in the Cushing market.

C. Crude Oil Production

The production area that supplies crude oil to Cushing via pipeline and rail is comprised of the following eight (8) states: North Dakota, Montana, Wyoming, Colorado, New Mexico, Onshore Texas, Oklahoma, and Kansas.

In the three-year period of 2013 through 2015, the average production of crude oil available in the eight states was approximately 5.5 million barrels per day. Based on discussions with industry participants, our estimate of the portion of that average production which would qualify as Domestic Light Sweet Common Stream is 50% or higher— i.e., 2.7 million barrels per day. The 2.7 million barrels per day of crude oil production is equivalent to approximately 80 million barrels per month, or 80,000 futures contracts equivalents (contract size: 1,000 barrels).

Table 1 below provides annual production data available for production in the eight states that supply the Cushing crude oil market for the period of 2013 through 2015. The data show that production has been steadily growing in recent years and this trend is expected to continue. As indicated above, the production data are provided not as direct inputs to deliverable supply, but to demonstrate that production levels are more than sufficient to support the actual flows of deliverable product to the delivery location.

D. Crude Oil Flows to the Cushing Delivery Area

Over the last three years, pipeline capacity for delivering crude oil to Cushing increased by about 815,000 b/d according to the EIA[5]. The key development was the construction of the 590,000 b/d TransCanada Keystone pipeline that originates in Hardisty, Alberta, Canada. Until mid-2012, there was only one pipeline that could deliver crude oil from the Midwest to the Gulf Coast. The 96,000-b/d ExxonMobil Pegasus pipeline between Patoka, Illinois and Nederland, Texas originally shipped crude oil northward. The pipeline was reversed in 2006 in order to ship Canadian heavy oil to the Gulf Coast.

Currently, there is approximately 3.0 million b/d of inflow pipeline capacity to Cushing and 2.7 million barrels per day of outflow capacity. In addition, 87.7 million barrels of storage capacity exists in the Cushing area which continues to grow steadily.

The Exchange collects inbound and outbound Cushing crude oil flows periodically but not on an on-going or scheduled basis as such information is proprietary and non-public. Based on information provided by pipeline and storage terminal operators in Table 2 below, as of March 2015, actual flows of crude oil to Cushing have ranged from 1.6 million to 1.8 million barrels per day, with Domestic Light Sweet Common Stream Crude Oil averaging between 920,000 and 1,000,000 barrels per day.[6] On a 30-day monthly basis, actual flows of Domestic Light Sweet Common Stream Crude Oil compute into 27.6 million to 30.0 million barrels per month or 27,600 to 30,000 Light Sweet Crude Oil futures contract equivalents.

[5] http://www.eia.gov/forecasts/steo/special/pdf/2013_sp_02.pdf

[6] The sources were: Plains All America, an aggregator and marketer of crude oil production and pipeline and storage terminal operator at Cushing; Enbridge, a pipeline and storage terminal operator at Cushing; and JSK Consulting, the principal of which is a seasoned Midcontinent oil market participant and professional with 40 years of experience in trading, operating transportation and storage in Cushing, and refining.

As of February 2013, the previous time the Exchange collected such information, Domestic Light Sweet Common Stream Crude Oil flows into Cushing averaged between 665,000 and 750,000 barrels per day as illustrated in Table 3 below. On a 30-day monthly basis, actual flows of Domestic Light Sweet Common Stream Crude Oil ranged from 19.95 million to 22.5 million barrels per month or 19,950 to 22,500 futures contract equivalents. Given that the Exchange only collects such information on a periodic basis, the Exchange is unable to provide a three-year average of Domestic Light Sweet Common Stream Crude Oil flows into Cushing. As such, the Exchange determined to average the 2013 and 2015 estimated flows data collected. The average of the ranges for the 2013 and 2015 Domestic Light Sweet Common Stream Crude Oil flows data into Cushing are 23,775 to 26,250 contract equivalents. The midpoint of the average of the ranges is approximately 25,000 contract equivalents.

E. Crude Oil Storage in the Cushing Delivery Area

As of September 30, 2015, EIA reported that shell storage capacity at Cushing was 87.7 million barrels and working capacity was 73.0 million barrels.[7] Currently, there is substantial excess working capacity at Cushing (nearly 10 million barrels). Finally, it should be noted that, at least on a temporary basis, storage can exceed working capacity and it is common for an individual tank to reach 85-90% of shell capacity (which exceeds the 83% average underlying the EIA estimates).

Table 4 below provides monthly averages of weekly Cushing stocks for the period beginning January 2013 through December 2015 as published by the EIA. During that time period, inventories averaged over 41 million barrels and ranged from about 19 million to 61 million barrels. NYMEX asked operators of storage in Cushing if they would share specific data on quantities of Domestic Light Sweet Common Stream Crude Oil stored at their facilities and they responded that such data were confidential. As discussed above, the Exchange estimated that approximately 60% of the total oil stored at Cushing qualified as Domestic Light Sweet Common Stream Crude Oil. Based on the foregoing, for the 2013 – 2015 period, the monthly average Domestic Light Sweet Common Stream Crude Oil stored at Cushing was approximately 24.9 million barrels or 24,900 futures contract equivalents.

The Exchange has further evaluated both operational practices at storage facilities as well as commercial practices by customers of storage facilities to determine if some components of inventoried product could rightfully be considered *not* to be readily deliverable.

With respect to operational practices, based on discussions with some industry experts, the Exchange conservatively estimates that 6.75% of stored product, on average, is required for operational minimums.[8] This converts into discounting an estimated 1.7 million barrels of Domestic Light Sweet crude oil based on the three-year average storage level (or 1,700 contract equivalents). In applying a discount of 6.75% to account for operational minimums, average monthly Domestic Light Sweet Common Stream Crude Oil for the 2013 – 2015 period is further reduced to approximately 23,200 contract equivalents.

With respect to commercial practices, the Exchange specifically sought whether storage customers were expressly allotting any stored barrels at Cushing for refining and was, therefore, unavailable for secondary market delivery. We consistently heard from market participants that was not the case; that barrels stored at Cushing are not specifically targeted for scheduled refining. Rather, refiners typically store barrels targeted for scheduled refining in tanks on the premises at their respective refineries or at other storage facilities. However, we did hear from one refiner that they keep barrels stored at Cushing for the contingency that there could be some unexpected interruption in their refinery supply; and, rather than refine the barrels stored at Cushing, they use them to trade for other barrels they would refine. Thus, the Exchange determined to further reduce the average monthly Domestic Light Sweet Common Stream crude oil stored at Cushing to account for this *contingency storage* in our estimate of deliverable supply. We estimate this quantity to be 2 million barrels (or 2,000 contract equivalents) of Domestic Light Sweet crude oil. Therefore, for the 2013 – 2015 period, the Exchange estimates stored product at

[7] http://www.eia.gov/petroleum/storagecapacity/table2.pdf Shell capacity is defined by EIA as the design capacity of a petroleum storage tank which is always greater than or equal to working storage capacity.

[8] We have been advised that, for older tanks, the operational minimum is 9% and, for newer tanks, it is 4.5%. Our assessment is that the majority of tanks at Cushing would qualify as newer. Nonetheless, to be conservative, we have applied the mid-point percentage—6.75%-- for all of Cushing.

Cushing (adjusted for quality specifications, operational minimums and contingency storage) and which is readily available for delivery against the Light Sweet Crude Oil futures contract to be approximately 21,200 contract equivalents.

ANALYSIS OF DELIVERABLE SUPPLY

Based on the above analysis, the Exchange determined at this time to base its estimates of deliverable supply on the sum of:

- Storage: 21,200 contract equivalents (which represents the average monthly inventory for the 2013 – 2015 period adjusted to account for quality specifications, operational minimums and contingency storage); and
- Inflow: 25,000 contract equivalents (which represents the midpoint of the average of the ranges of the 2013 and 2015 Domestic Light Sweet Common Stream Crude Oil flows into Cushing).

Additionally, and as noted in the above analysis, the Exchange shall apply a 10% haircut to the sum of inventory and flows into Cushing in order to discount segregated barrels that may be designated for processing by end-user refiners, and typically not available for re-sale in the Cushing market.

Based on the foregoing, the Exchange estimates deliverable supply of crude oil deliverable against the Light Sweet Crude Oil Futures contract at approximately **41,600** futures contract equivalents per month. The current spot month position limit of 3,000 contracts represents **7.2%** of the estimated monthly deliverable supply.

APPENDIX

Table 1
U.S. Crude Oil Production[9]
For Eight States that Supply Cushing, Oklahoma
(Thousand Barrels per Day)

Year	Crude Oil Production (Thousand Barrels per Day)
2013	4,542
2014	5,627
2015	6,241
Average	**5,470**

Table 2
Crude Oil Flows to Cushing (as of March 2015)
(Barrels/Day)[10]

Incoming Pipelines	Capacity	Owner	Estimated Flows (in Barrels/Day)
Keystone XL (from Steele City, NE)	575,000	Transcanada	200,000 - 250,000 BD (Heavy sour)
Basin Pipeline (Permian)	450,000	Plains	250,000 (80% WTI)
Centurion North Pipeline (Permian)	120,000	Occidental	95,000 - 100,000 (100% WTI)
Spearhead Pipeline (Canada)	210,000	Enbridge	150,000 - 175,000 (Canadian sour)
Flanagan South (Canada/Bakken)	585,000	Enbridge	400,000 - 450,000 (10% WTI, 90% Sour)
White Cliffs Pipeline (Niobrara)	150,000	Rose Rock	100,000 - 120,000 (100% WTI)
Plains Cashion, OK Pipeline	100,000	Plains	80,000 (100% WTI)
Mississippi Lime Pipeline	175,000	Plains	110,000 (100% WTI)
Pony Express Pipeline (Niobrara)	320,000	Tallgrass	180,000 – 200,000 (100% WTI)
Hawthorn (Stroud to Cushing)	90,000	Hawthorn	20,000 – 25,000 (100% WTI)
Great Salt Plains	30,000	JP Energy	15,000 – 20,000 (100% WTI)
Northern Cimarron	30,000	Rose Rock	15,000 – 20,000 (100% WTI)
Midcontinent Pipeline	30,000	Sunoco Logistics	25,000 – 30,000 (100% WTI)
Glass Mountain Pipeline	140,000	Rose Rock	40,000 – 50,000 (100% WTI)
TOTAL In-Bound Capacity	**3.0 Million Capacity**		**WTI Flow: 920,000 – 1,000,000 B/D**

Outgoing Pipelines	Capacity (B/D)	Owner
Seaway Pipeline	850,000	Enterprise
Keystone MarketLink	700,000	Transcanada
BP#1 (to Chicago)	180,000	BP
Occidental Centurion South	60,000	Occidental
Ozark (to Wood River, IL)	235,000	Enbridge
Osage (to Eldorado, KS)	150,000	Magellan/NCRA
Coffeyville CVR pipeline	110,000	CVR Energy
Phillips (to Ponca City, OK)	122,000	ConocoPhillips
Phillips (to Borger, TX)	59,000	NuStar
PAA Red River Pipeline	30,000	Plains All America
Sun (twin lines to Tulsa)	70,000	Sunoco
PAA Cherokee	50,000	Plains
West Tulsa (to Tulsa)	50,000	Enbridge
Eagle (to Ardmore)	20,000	Blue Knight
Magellan Tulsa	30,000	Magellan
Diamond Pipeline (to Memphis)	200,000	Plains (in 2016)

TOTAL Out-bound Capacity 2.7 Million B/D

[9] The production listed here includes North Dakota, Montana, Wyoming, Colorado, New Mexico, Onshore Texas, Oklahoma, and Kansas. The web link is: http://www.eia.gov/dnav/pet/pet_crd_crpdn_adc_mbblpd_a.htm

[10] Sources: Plains All American Pipeline Company, JSK Consulting, and other industry sources.

Table 3

Crude Oil Flows to Cushing (as of February 2013) (Barrels/Day)[11]

Incoming Pipelines	Capacity	Owner	Estimated Flows (in Barrels/Day)
Keystone XL Pipeline	590,000	Transcanada	200,000 to 225,000 BD (Heavy sour)
Basin Pipeline	450,000	Plains	400,000 to 440,000 (75% WTI)
Occidental Pipeline	120,000	Occidental	100,000 to 120,000 (100% WTI)
Spearhead Pipeline	240,000	Enbridge	120,000 to 140,000 (Canadian sour)
White Cliffs Pipeline	70,000	SemGroup	65,000 to 70,000 (100% WTI)
Plains Oklahoma Pipeline	100,000	Plains	90,000 to 100,000 (100% WTI)
Cherokee Pipeline	50,000	Plains	40,000 to 50,000 (100% Sour)
Ark City Pipeline	30,000	SemGroup	25,000 to 30,000 (100% WTI)
MV Magellan Pipeline	30,000	SemGroup	25,000 to 30,000 (100% WTI)
Midcontinent Pipeline	50,000	Sunoco	45,000 to 50,000 (100% WTI)
Bakken Crude via Rail	90,000	Various	15,000 to 20,000 (100% WTI)
TOTAL ESTIMATE	**1.820 Million B/D**		**WTI Flow: 665,000 – 750,000 B/D**

[11] Sources: Plains All American Pipeline Company, JSK Consulting, and other industry sources.

Table 4
Cushing Storage[12]
Average of Weekly Stocks
(in Thousand Barrels)

Year	Month	Stock
2013	Jan	51,253
	Feb	50,711
	Mar	49,567
	Apr	50,551
	May	49,916
	Jun	49,193
	Jul	44,798
	Aug	37,432
	Sep	33,254
	Oct	33,618
	Nov	39,174
	Dec	40,412
2014	Jan	41,058
	Feb	35,099
	Mar	29,081
	Apr	26,474
	May	22,750
	Jun	21,226
	Jul	19,480
	Aug	19,496
	Sep	20,263
	Oct	20,274
	Nov	23,559
	Dec	28,080
2015	Jan	36,601
	Feb	46,689
	Mar	55,300
	Apr	61,381
	May	60,368
	Jun	57,183
	Jul	57,312
	Aug	57,389
	Sep	54,483
	Oct	53,569
	Nov	57,549
	Dec	61,150
Three-Year Average		**41,547**

[12] http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=W_EPC0_SAX_YCUOK_MBBL&f=W

NEW YORK MERCANTILE EXCHANGE, INC.

ANALYSIS OF DELIVERABLE SUPPLY

HENRY HUB NATURAL GAS FUTURES

APRIL 2016

In estimating deliverable supply for the Henry Hub Natural Gas Futures, the New York Mercantile Exchange, Inc. ("NYMEX" or "Exchange") relied on long-standing precedent, which provides that the key component in estimating deliverable supply is the portion of typical production and supply stocks that could reasonably be considered to be readily available for delivery. In its guidance on estimating deliverable supply, the Commodity Futures Trading Commission ("CFTC" or "Commission") states:

> In general, the term "deliverable supply" means the quantity of the commodity meeting a derivative contract's delivery specifications that can reasonably be expected to be readily available to short traders and saleable by long traders at its market value in normal cash marketing channels at the derivative contract's delivery points during the specified delivery period, barring abnormal movement in interstate commerce. Typically, deliverable supply reflects the quantity of the commodity that potentially could be made available for sale on a spot basis at current prices at the contract's delivery points. For a non-financial physical-delivery commodity contract, this estimate might represent product which is in storage at the delivery point(s) specified in the futures contract or can be moved economically into or through such points consistent with the delivery procedures set forth in the contract and which is available for sale on a spot basis within the marketing channels that normally are tributary to the delivery point(s).[1]

I. Methodology and Data Sources

The Exchange considered four factors in evaluating the Henry Hub natural gas deliverable supply estimates:

(1) Geographic extent of the market;
(2) Natural gas production that can flow to the delivery location;
(3) Delivery capacity of the delivery mechanism; and
(4) Storage information.

A. Geographic Extent of the Market

The geographic extent of the market defines both the sources from which supplies can be readily provided as well as the destinations into which supply can be re-delivered. The Henry Hub delivery mechanism is part of a broader geographic market that encompasses U.S. Gulf Coast (USGC) area production, sales and re-sales. This includes production from Texas, Louisiana, Mississippi and Alabama, USGC area storage and USGC area pipelines and supporting facilities.

B. Natural Gas Production

To determine production estimates, NYMEX reviewed information gathered from two sources: Bentek, a wholly-owned subsidiary of Platts and the U.S. Department of Energy ("DOE") Energy Information Administration ("EIA").

Bentek is an industry leader in the provision of data aggregation and collation from the Interstate Natural Gas Pipelines' electronic bulletin boards.[2] Interstate natural gas pipelines are subject to Federal Energy Regulatory Commission ("FERC") oversight and jurisdiction. As part of its regulatory oversight, FERC

[1] http://www.ecfr.gov/cgi-bin/text-idx?SID=74959c3dbae469e2efe0a42b45b8dfae&mc=true&node=ap17.1.38_11201.c&rgn=div9

[2] Bentek collects details on the flow of interstate pipeline natural gas from the production source, commonly known as the wellhead, to the local distribution company's (including municipal operated distributors) delivery point, commonly known as its city-gate, beyond which point the pipeline ceases to be a federally regulated interstate pipeline.

requires interstate pipelines to operate publicly accessible electronic bulletin boards which provide information on scheduling, available capacity and natural gas flows on a near real-time basis. Among other things, Bentek collects and disseminates collated data from these electronic bulletin boards daily. Given this, the Bentek data presented can be more current than the EIA data, which are typically subject to a minimum two-month delay in publication.

EIA data are a definitive source for production information and EIA does provide marketed production data for Federal U.S. Gulf Coast offshore production as well as onshore production for individual states such as Louisiana and Texas; these data include, however, some onshore production that would not be able to readily access the delivery point.

Bentek provides greater geographic detail than the EIA data by providing both U.S. Gulf Coast offshore and onshore natural gas production that has ready access to the delivery point. As is discussed below, NYMEX believes that the Bentek data underestimates the total production with ready access to the Henry Hub but, nonetheless, represents a reasonable basis for production estimates.

C. Henry Hub Delivery Capacity

The source of the Henry Hub pipeline receipt and delivery capacity is the Sabine Pipe Line Co. website. As part of FERC regulation, interstate pipelines are required to provide daily capacity information that includes receipt and delivery design, scheduled and available for all certificated interconnections.[3]

D. State of Louisiana and Producing Area Natural Gas Storage

Storage data are provided on a weekly basis by EIA and are approximately four business days old upon release. These data are provided by general region—East, West and Producing. Producing includes the U.S. Gulf Coast region which includes the delivery location for the Henry Hub Natural Gas Futures contract. The EIA also collects data at the individual state level but provides these data with a time lag of approximately six months. At these frequencies of release, there are no official storage data with greater geographic detail than either the Producing region or state level.

II. The Henry Hub Physical Delivery Mechanism

The Henry Hub consists of interconnections with 12 interstate and intrastate pipelines and related infrastructure. The Henry Hub is owned and operated by EnLink Midstream. The deliveries pipelines source their natural gas from the U.S. Gulf Coast region, both onshore and offshore, which extends from Texas to Alabama. Henry Hub has two compressor stations that enable natural gas to move from lower pressure pipeline Henry Hub receipt interconnections to higher pressure downstream Henry Hub pipelines.

Henry Hub also offers an intra-Hub tracking and transfer service, a form of in-system title transfer and documentation, to accommodate trading and delivery needs of its customers. This service, which is offered by Sabine Hub Services Company, a non-federal jurisdictional subsidiary of EnLink Midstream, enhances the natural gas trading environment for producers, marketers, and end-users with respect to meeting their physical and financial requirements. In addition, the number of interruptible transportation customers of Henry Hub has grown to approximately 160 market participants.

III. Physical Market Trading Structure and Term Contracts

A. Physical Market Trading Structure

Typically, there is a chronology of sales and purchases of natural gas in the U.S. market that starts with a sale from producer and finishes with a purchase by an end-user to consume the natural gas, typically far downstream of the U.S. Gulf Coast. First-sales are from producers to marketers or other middleman-type firms with delivery at the production point or where natural gas first enters the pipeline system (or liquids processing facility attached to the system). The first-sale buyer transports it from the point of sale

[3] http://www.sabinepipeline.com//.

downstream. Typically, the first-sale buyer resells the natural gas to someone other than the end-user. Sales to end-users, who do not further resell the natural gas but ultimately consume it, are final-sales.

As implied, sometimes end-users also resell natural gas, frequently during the same commercial cycle in which they purchased it. Other buyers of resold natural gas also either resell it or store it and resell it later. A common commercial practice is the first-sale and multiple subsequent re-sales occurring in the same delivery cycle; this line of re-sales usually includes a final sale, but not always, since a significant portion of natural gas is stored.

Henry Hub is essentially an active reseller market where buyers either: resell the natural gas to someone else at Henry Hub; transport it downstream for delivery and re-sale to someone else; transport it downstream to consume it; or transport it downstream to store it. Most of the sales and deliveries in the Henry Hub are comprised of volumes for re-sale, storage or final-sales. In fact, the commercial physical market in Henry Hub sales is estimated to be 6-10 times the multiple of physical natural gas that flows through Henry Hub, which is a direct indication that most sales are for re-sale. Platts *Gas Daily* and *Inside F.E.R.C.* publish transaction information for delivery at Henry Hub but do not capture all transactions that occur at the Henry Hub.

B. Term Contracts

The Exchange contacted and surveyed natural gas market participants regarding common commercial practices, including the use of term contracts, in the North American natural gas market.[4] The responses we received were consistent and can be summarized as follows:

- Most first-sales of production are sold term, as indicated above, typically for delivery on the producing property or nearest entry to the pipeline system, including liquids processing plants, and typically to middleman-firms. These middleman-firms typically resell the natural gas to other middleman-firms or to market participants performing that function or to end-users. Gulf Coast market participants estimated re-sales ranging from 50% to over 90%—skewing towards the higher end. Some market participants indicated they did not know of exceptions but did not estimate 100% of first sales to be ultimately resold.
- No restrictions typically apply to the resale of natural gas bought first-sale on a term basis from producers. In fact, restrictions would clearly not be applicable because sales are typically to marketers or others acting in a middleman-firm role with the expressed responsibility of reselling the natural gas. The participants with whom we spoke indicated that they had not encountered any restrictions. Several market participants did point out that "burner-tip" sales—i.e. to utilities—could entail a restriction on the utility from reselling the natural gas; however, they made clear that such sales, in their experience, were downstream of first-sales and first re-sales as well, especially in the U.S. Gulf Coast.
- Henry Hub is largely downstream of first-sales; some first-sales take place there but, typically, not as part of a term sale. Consequently, natural gas production that is readily accessible to Henry Hub in terms of transportation is also readily accessible commercially. Natural gas that has readily accessible transportation to Henry Hub is not otherwise committed and unavailable to be delivered at Henry Hub.
- Term sales do not result in reductions to the deliverable supply for Henry Hub. All market participants agreed that natural gas purchased on a term sale is available for re-sale and delivery, including to the Henry Hub and that all market participants downstream of first-sales participate in the market for resale (as some first-sellers do).
- Our sources expressly advised us that any production sold long-term was available for re-sale, which is especially the case in the U.S. Gulf Coast market and the Henry Hub.

[4] The Exchange contacted 15 firms, surveying 10, as well as a market participant group that included several dozen members. The individually contacted firms included major producers and marketers. The Energy Market Participant Group was organized through Hunton & Williams LLP to discuss and comment on regulatory issues.

IV. Deliverable Supply Estimates and Supporting Data

The factors considered in evaluating deliverable supply are natural gas production, deliverable capacity at the Henry Hub, and natural gas storage.

A. Natural Gas Production

The Exchange reviewed monthly data reported by EIA for Federal Offshore – Gulf of Mexico Natural Gas Marketed Production (Table 1 below) from January 2013 through December 2015. The monthly average offshore natural gas production for the 2013 – 2015 three-year period was approximately 10,910 contract equivalents, 10,461 contract equivalents, and 11,091 contract equivalents, respectively (contract size: 10,000 MMbtu). Federal Offshore production is a subset of production that is readily accessible to be delivered at the Henry Hub.

The Exchange also reviewed monthly data reported by EIA for Louisiana Natural Gas Marketed Production (Table 2 below) and Texas Natural Gas Marketed Production (Table 3 below) from January 2013 through December 2015. The monthly average onshore production for Louisiana for the 2013 – 2015 three-year period was approximately 19,668 contract equivalents, 16,502 contract equivalents, and 16,107 contract equivalents, respectively. The monthly average onshore production for Texas for the 2013 – 2015 three-year period was approximately 63,613 contract equivalents, 66,278 contract equivalents, and 65,581 contract equivalents, respectively.

However, the onshore Louisiana and Texas production data includes production from certain regions of the states that would not be readily accessible to the Henry Hub. Consequently, even though EIA is the pre-eminent official source for production data, the Exchange relied on production estimates reported by Bentek which captures data for specific offshore and onshore areas that are accessible to the Henry Hub.

Table 5 provides Bentek's estimates of daily natural gas production accessible to the Henry Hub for Onshore and Offshore Louisiana, Texas, Mississippi and Alabama in million cubic feet for the period beginning January 2013 through December 30, 2015. According to Bentek, average monthly onshore production accessible to the Henry Hub for the 2013 – 2015 period was approximately 6,651 contract equivalents, 7,683 contract equivalents, and 7,647 contract equivalents (through December 30), respectively. Average offshore production accessible to the Henry Hub for the 2013 – 2015 period was approximately 12,579 contract equivalents, 11,706 contract equivalents, and 11,883 contract equivalents (through December 30), respectively. Additionally, as illustrated in Table 6 below, for the 2013 – 2015 period, annual average offshore natural gas production accessible to the Henry Hub as estimated by Bentek yielded totals that were comparable to EIA's annual average of Federal offshore production. It should be noted that Bentek's offshore production data includes state offshore production that is directed to the Interstate pipeline system.

Total annual average of onshore and offshore production as estimated by Bentek for the period beginning January 2013 through December 30, 2015 is approximately 19,230 contract equivalents, 19,389 contract equivalents, and 19,530 contract equivalents, respectively.

The Exchange monitors production regularly and, in light of the continued production in the Gulf Coast region and other areas, anticipates the continuing central role provided by the Henry Hub as a delivery mechanism for natural gas. The production quantities included in these estimates represent production that is tendered in the secondary (or spot) market and which could easily access the Henry Hub delivery mechanism to dependably fulfill a secondary (or spot) market delivery at the Henry Hub. The actual delivery path for production depends on the actual commercial activity each month in the secondary market, including delivery obligations for NYMEX natural gas contracts. There are multiple delivery points (including the Henry Hub) where such secondary market deliveries can take place for this production and the actual delivery locations for specific production each month fluctuates with its corresponding secondary market transactions.

B. Henry Hub Deliverable Capacity

According to the Henry Hub pipeline receipt and delivery operating capacity as published on the Sabine Pipe Line Co. website, the inflowing natural gas daily receipts capacity is 3,295,000 MMBtu which

converts into 330 contract equivalents per day or 9,885 contract equivalents per 30-day month. The daily deliveries capacity at Henry Hub, outflowing natural gas, is 3,535,000 MMBtu which converts into 354 contract equivalents per day or 10,605 contract equivalents per month.

In evaluating delivery capacity, given that the outflowing natural gas deliveries capacity is greater than the inflowing natural gas receipts capacity, the Exchange determined at this time to use the inflowing natural gas receipts capacity, which is the lower of the two numbers, in its evaluation of deliverable supply.

In evaluating delivery capacity, the Exchange also considered the inclusion of displacement capacity[5]. While the Exchange believes, after consultation with the pipeline operator, that the use of displacement capacity is a common cash market practice it was determined not to include displacement capacity as part of our calculation of deliverable supply at this time pending further discussions with the CFTC. The Exchange reserves the right to include displacement capacity in future deliverable supply estimates.

C. Natural Gas Storage in State of Louisiana and Producing Area

The Exchange reviewed monthly data reported by EIA for Louisiana Natural Gas Underground Storage Volume (Table 4 below) from January 2013 through December 2015. The monthly average for storage for Louisiana and producing regions (Alabama, Arkansas, Kansas, Louisiana, Mississippi, New Mexico, Oklahoma, and Texas) for the 2013 – 2015 three-year period was approximately 55,813 contract equivalents, 47,616 contract equivalents, and 55,393 contract equivalents, respectively.

D. Deliverable Supply Estimates

Given that each of production levels and storage levels exceed deliverable capacity, as noted above, deliverable capacity continues to be the constraining factor in estimating deliverable supply.

Based on the above analysis, the Exchange determined at this time to base its estimates of deliverable supply solely on inflowing natural gas receipts capacity at the Henry Hub which is equivalent to **9,885** contracts per month. The current spot month position limit of 1,000 contracts represents **10.12%** of the estimated monthly deliverable supply.

While the Exchange is currently not taking into consideration displacement capacity in estimating the deliverable supply, the Exchange may, at a later date, decide to incorporate displacement capacity and include it in future deliverable supply estimates.

[5] Displacement refers to the common practice of accommodating the scheduling and transportation of natural gas in opposite directions at pipeline interconnection points. Where such bi-directional flows or system nominations are common, displacement increases the effective flow capacity. The use of displacement is standard practice at the Henry Hub.

Table 1
Federal Offshore--Gulf of Mexico Natural Gas Marketed Production
(Million Cubic Feet)[6]

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2013	122,965	108,629	116,449	114,285	113,213	102,690	108,099	102,742	107,506	100,771	106,685	105,214
2014	100,452	93,774	103,420	104,596	109,516	105,900	108,321	109,226	105,039	109,222	100,101	105,795
2015	108,877	96,940	97,809	111,017	114,502	109,801	120,019	122,924	120,208	114,334	104,494	110,023

Table 2
Louisiana Natural Gas Marketed Production
(Million Cubic Feet)[7]

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2013	228,977	204,548	218,897	206,367	210,568	199,400	200,804	191,853	176,492	175,214	170,376	176,706
2014	173,029	156,685	172,996	167,701	174,748	167,660	166,320	164,210	159,604	166,081	153,174	158,079
2015	163,798	148,728	167,471	161,164	162,149	153,466	158,691	165,771	163,482	166,172	160,600	161,383

Table 3
Texas Natural Gas Marketed Production
(Million Cubic Feet)[8]

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2013	617,230	564,330	628,321	614,536	646,009	631,642	652,114	655,657	642,237	663,355	657,546	660,641
2014	628,628	568,415	643,131	640,032	672,480	659,045	677,194	684,948	666,487	691,123	697,106	724,754
2015	657,404	604,638	670,753	652,429	668,317	656,716	675,828	677,396	656,702	664,386	640,540	644,569

Table 4
Louisiana Natural Gas Underground Storage Volume
(Million Cubic Feet)[9]

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2013	561,546	511,573	467,174	481,002	505,921	537,031	569,075	588,459	615,642	642,357	627,163	590576
2014	473,183	408,941	361,674	377,855	407,709	437,801	473,821	499,937	537,662	586,921	579,766	568,661
2015	511,096	438,064	439,515	484,426	520,941	537,873	555,603	576,235	610,054	650,392	665,923	656,992

[6] http://tonto.eia.gov/dnav/ng/hist/n9050fx2m.htm
[7] http://www.eia.gov/dnav/ng/hist/n9050la2m.htm
[8] http://www.eia.gov/dnav/ng/hist/n9050tx2m.htm
[9] http://www.eia.gov/dnav/ng/hist/n5030la2m.htm

Table 5
US Gulf Natural Gas Production Accessible to Henry Hub
(Million Cubic Feet per Day)[10]

Available LA/TX/MS/AL Natural Gas Supply	2015	2014	2013
Bentek LA Offshore YTD	2,593	2,668	2,947
Bentek LA Onshore YTD	434	476	666
Bentek TX Offshore YTD	282	242	261
Bentek TX Onshore YTD	2,063	2,043	1,503
Bentek MS Offshore YTD	562	444	358
Bentek AL Offshore YTD	524	548	627
Bentek AL-MS-FL Onshore YTD	52	42	48
Total Bentek LA, TX, MS/AL	6,510	6,463	6,410
Daily Contract Equivalent (CE)	651	646	641
30-Day Month CE	19,530	19,389	19,230
25% of 30-Day Month CE	4,883	4,847	4,808

Available Natural Gas Supply	2015	2014	2013
Total Bentek Offshore LA, TX, MS/AL	3,961	3,902	4,193
Daily Contract Equivalent (CE)	396.10	390.20	419
30-Day Month CE	11,883	11,706	12,579

Available Natural Gas Supply	2015	2014	2013
Total Bentek Onshore LA, TX, MS/AL	2,549	2,561	2,217
Daily Contract Equivalent (CE)	255	256	222
30-Day Month CE	7,647	7,683	6,651

Table 6
Monthly Average Offshore Production Accessible to Henry Hub Estimated by Bentek vs. EIA Monthly Average of Federal Offshore Production
(In Contract Equivalents)

Year	Bentek	EIA
2013	12,579	10,910
2014	11,706	10,461
2015	11,883 (through December 30)	11,091

[10] Source: Bentek

NEW YORK MERCANTILE EXCHANGE, INC.

ANALYSIS OF DELIVERABLE SUPPLY

NY HARBOR ULSD FUTURES

APRIL 2016

In estimating deliverable supply for the NY Harbor ULSD Futures, the New York Mercantile Exchange, Inc. ("NYMEX" or "Exchange") relied on long-standing precedent, which provides that the key component in estimating deliverable supply is the portion of typical production and supply stocks that could reasonably be considered to be readily available for delivery. In its guidance on estimating deliverable supply, the Commodity Futures Trading Commission ("CFTC" or "Commission") states:

> In general, the term "deliverable supply" means the quantity of the commodity meeting a derivative contract's delivery specifications that can reasonably be expected to be readily available to short traders and saleable by long traders at its market value in normal cash marketing channels at the derivative contract's delivery points during the specified delivery period, barring abnormal movement in interstate commerce. Typically, deliverable supply reflects the quantity of the commodity that potentially could be made available for sale on a spot basis at current prices at the contract's delivery points. For a non-financial physical-delivery commodity contract, this estimate might represent product which is in storage at the delivery point(s) specified in the futures contract or can be moved economically into or through such points consistent with the delivery procedures set forth in the contract and which is available for sale on a spot basis within the marketing channels that normally are tributary to the delivery point(s).[1]

I. Methodology and Data Sources

The Exchange considered three components in evaluating deliverable supply estimates of Ultra Low Sulfur Diesel ("ULSD") for the New York Harbor delivery location of the NY Harbor ULSD Futures contract:

A. Refinery production and Net Imports/Exports;

B. Pipeline/barge flows from PADD 3 to the delivery area;

C. Storage levels in the delivery area.

The Exchange determined to use data collected by the U.S. Department of Energy ("DOE") Energy Information Administration ("EIA") for its analysis and evaluation of deliverable supply estimates for ULSD in New York Harbor. The EIA provides detailed data on the key components of deliverable supply. The EIA provides such data on a weekly, monthly, and annual basis. As part of this analysis, the Exchange is including estimated pipeline flows from the U.S. Gulf Coast refining region to the Northeast, based on data provided by the EIA.

II. Introduction

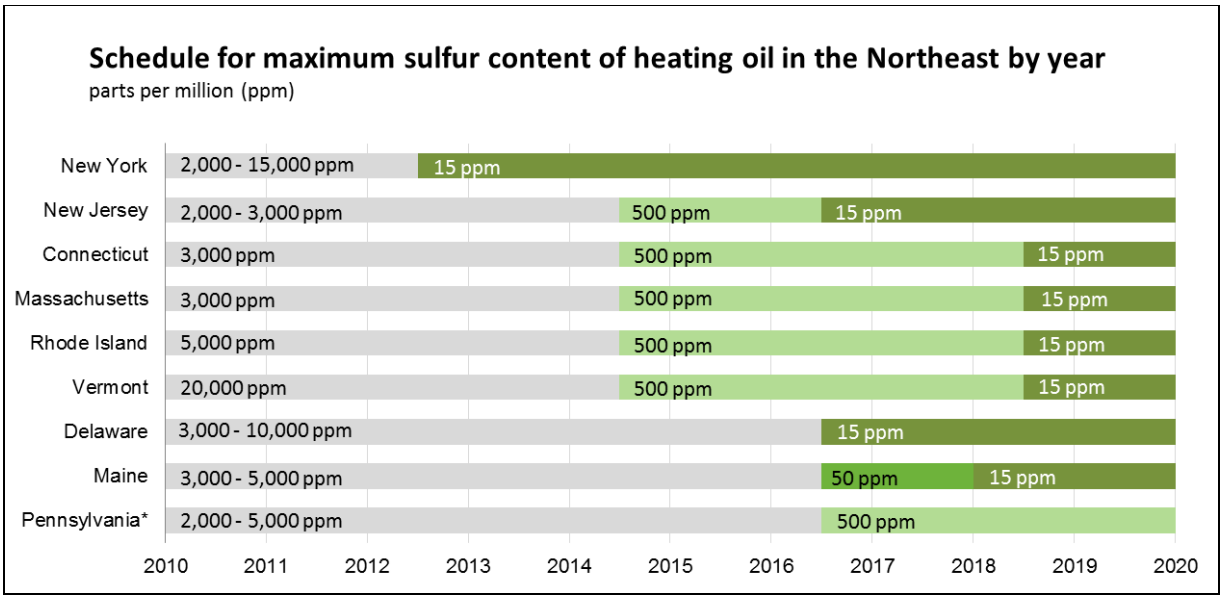
ULSD is a distillate fuel that has a dual-use as heating oil and as a transportation fuel. As of December 1, 2010, all on-highway diesel fuel consumed in the United States is ULSD as mandated by federal regulations. Unlike diesel fuel used in transportation, heating oil has no federal sulfur content restrictions. However, various State initiatives to apply comparable sulfur limits to heating oil are in planning or implementation stages in the Northeast, the main heating oil consuming region.

According to the EIA, New England and the Central Atlantic Coast of the United States (collectively known as the "Northeast" for data purposes) are the main consumers of heating oil, typically accounting for 80% of the sales. As of July 1, 2012 the New York State mandated that all heating oil sold for residential, commercial and industrial heating applications within the State contain no more than 15 parts per million (ppm) of sulfur. Following New York's footsteps, New Jersey intends to gradually transition to

[1] http://www.ecfr.gov/cgi-bin/text-idx?SID=74959c3dbae469e2efe0a42b45b8dfae&mc=true&node=ap17.1.38_11201.c&rgn=div9

15ppm sulfur content in 2016. Furthermore by 2018 Vermont, Massachusetts and Maine plan to transition to ULSD for heating purposes. Figure 1 below is a summary of the specification changes to Heating Oil by State.

Figure 1 - Heating Oil Sulfur Specification Changes per State[2]



The NY Harbor ULSD Futures contract is the main benchmark used for pricing the distillate products market, which includes diesel fuel, heating oil, and jet fuel. The Exchange has amended the grade and quality specifications in response to changes in environmental regulations in the Northeast, requiring cleaner, lower sulfur diesel standards for heating oil. Effective beginning with the May-2013 delivery month, the NY Harbor ULSD Futures contract required delivery of on-road ULSD with a maximum of 15ppm sulfur content.

After transitioning to lower sulfur grade in May-2013, the NY Harbor ULSD Futures serves as a dual-use contract that is a price reference and hedging instrument for both the heating oil and on-road diesel markets. The heating oil pool will eventually be fully integrated into the ULSD market and the widespread adoption of a 15ppm sulfur content limit for heating oil is likely to encourage the development of a seamless ULSD distillate market throughout the entire East Coast, according to the EIA. Consequently, due to the phase-out of high-sulfur heating oil delivery specifications, the Exchange has focused its deliverable supply analysis on the ULSD sector of the distillate fuel market.

New York Harbor Delivery Region

New England and the Central Atlantic Coast of the United States, collectively defined by the EIA as the "Northeast", is a well-connected and integrated geographical region in terms of oil and products infrastructure. The region is part of the larger PADD 1 (Petroleum Administration Defense District), and more specifically defined by PADD 1A (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont) and PADD1B (Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania).[3]

Located in both New York and New Jersey, the New York Harbor area is the largest oil importing and third largest container port in the nation, and is the main oil and refined products pricing and trading hub. Petroleum products in New York Harbor are supplied by refineries located in New Jersey, Delaware and

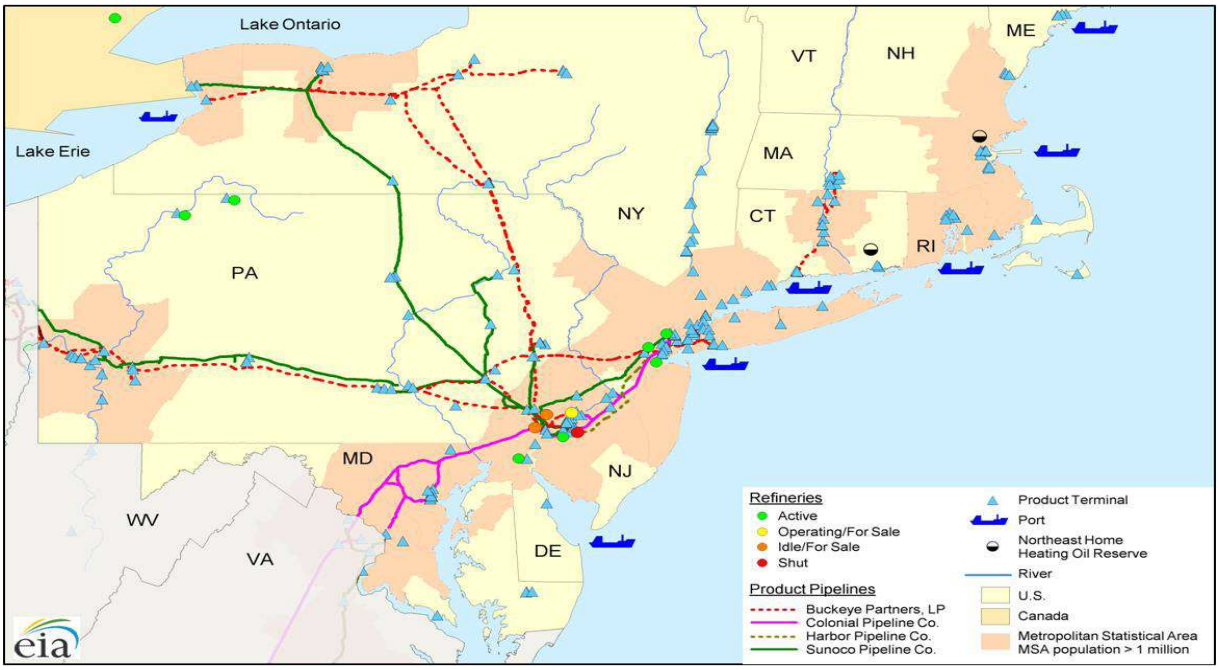
[2] http://www.eia.gov/forecasts/steo/special/winter/2014_winter_fuels.pdf
[3] http://www.eia.gov/analysis/petroleum/nerefining/prelim/

Pennsylvania, all located within 100 miles of the New York Harbor area. East Coast refineries, a majority of which are located in New Jersey and Philadelphia, send products by local pipelines into New York Harbor.

Many of the petroleum products delivered to New York Harbor are redistributed to smaller ports where they supply local demand. In particular, the Hudson River, which meets the Atlantic Ocean in New York Harbor, provides a major inland water route for petroleum product barges supplying eastern New York and parts of western New England. Significant volumes are shipped to New England via barge from New York Harbor. On the other side of the State, western New York product markets are primarily supplied from Canada at the Port of Buffalo, and via the Buckeye and Sunoco pipeline systems from Pennsylvania and the Midwest[4].

The Colonial Pipeline is the largest refined products pipeline in the US and a key products supply link for the Northeast. The pipeline connects the Northeast to refinery output from the US Gulf Coast and foreign imports, principally from Canada, Virgin Islands, Caribbean and Europe. Colonial's network of pipelines crosses 13 states, serving more than 265 marketing terminals in the Southern and Eastern United States. The pipeline provides a link from the US Gulf Coast to the New York Harbor area through the south and across the Eastern seaboard. It generally takes from 14 to 24 days for a product batch on the Colonial Pipeline to get from Houston, Texas to the New York Harbor, with 18.5 days the average time. The Philadelphia-area refineries are strategically located along the Colonial Pipeline.

Figure 2 - Northeast Refined Products Market Logistics[5]



Earlier in 2011, Colonial expanded the northern end of its Houston-to-New York system, adding 100,000 barrels per day (b/d) of capacity. In addition, the company completed a series of system upgrades leading to more than 100,000 b/d of capacity for distillates[6] specifically serving the New Jersey, Pennsylvania, and New York markets. Also, Colonial Pipeline added an additional 100,000 b/d of gasoline and

[4] http://205.254.135.7/state/state-energy-profiles-analysis.cfm?sid=NY
[5] Source: EIA, http://www.eia.gov/analysis/petroleum/nerefining/update/pdf/neprodmkts.pdf
[6] http://www.eia.gov/pressroom/presentations/sieminski_10102012.pdf

distillates capacity in early 2013[7] to meet demand in on the northern portion of the line (Greensboro, NC to Linden, NJ).

In the U.S., there are 139 operating refineries and three idle refineries with total atmospheric crude oil distillation capacity of 17.9 million b/d, a 101,000 b/d increase in capacity from January 1, 2013[8]. On the East Coast (PADD 1), there are nine operable refineries, with 1.1 million b/d of atmospheric crude distillation capacity. The region has 475,800 b/d of fluid catalytic cracking (FCC) capacity. PADD 1 includes all states in New England, the Mid-Atlantic, and the South Atlantic and is subdivided into three sub-PADDs.

• PADD 1A – New Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut

• PADD 1B – New York, Pennsylvania, New Jersey, Delaware, Maryland, Washington DC

• PADD 1C - West Virginia, Virginia, North Carolina, South Carolina, Georgia, Florida

Supply dynamics for each of the three sub-PADDs vary. PADD 1A, New England, has no refineries and relies on imports and transfers from other PADDs, primarily PADD 1B. PADD 1C, the South Atlantic, also has no operating refineries and relies primarily on pipeline transfers and marine shipments from PADD 3 and imports. PADD 1B is supplied by a combination of in-region refineries, transfers from other PADDs, primarily from PADD 3, and imports[9].

As stated above, the majority of PADD 1B refineries are located in New Jersey, Delaware and Pennsylvania, and within 100 miles of the New York Harbor area. These refineries are directly connected to the New York Harbor market by local pipelines and/or waterborne barges. In 2013, production from refineries in PADD 1B supplied 48% and 73% of the region's gasoline and distillate needs, respectively, according to the EIA. A list of Northeast refineries is provided in Table 1.

Table 1 – Mid-Atlantic (PADD 1B) Refineries

Name	State	Owner	Capacity	Status
Port Reading	NJ	Hess	70,000 b/d	CLOSED
Marcus Hook	PA	Sunoco Logistics	178,000 b/d	CLOSED. Being converted to NGL storage.
Delaware City Refinery	DE	PBF Energy	182,200 b/d	Operational
Perth Amboy	NJ	Buckeye Partners	80,000 b/d (Asphalt only)	Operational
Bayway Refinery	NJ	Phillips 66 Company	238,000 b/d	Operational
Paulsboro Asphalt	NJ	Nustar Asphalt Refining	70,000 b/d (Asphalt only)	Operational
Paulsboro Refining	NJ	PBF Energy LLC	160,000 b/d	Operational
Bradford	PA	American Refining Group	11,000 b/d	Operational
Philadelphia	PA	Philadelphia Energy Solutions/Carlyle Group	335,000 b/d	Operational
Warren	PA	United Refining Inc.	65,000 b/d	Operational
Trainer	PA	Monroe Energy LLC/Delta Airlines	185,000 b/d	Operational

[7] http://www.colpipe.com/press_release/pr_114.asp
[8] http://www.eia.gov/todayinenergy/detail.cfm?id=16911
[9] http://www.eia.gov/petroleum/refinery/outage/pdf/refinery_outage.pdf

III. Deliverable Supply Estimates

A. Refinery Production and Net Imports

According to EIA data from 2013 through 2015, and as presented in Table 2 below, the three-year average of refinery ULSD production in PADD 1 was 282,000 barrels per day, or 8.5 million barrels per month.

Table 2 – PADD 1 Refinery Production, Imports, and Exports

ULSD (<15 ppm Sulfur), Thousand b/d (Annual Averages)	2013	2014	2015	Average
Refinery and Blender Net Production[10]	276	286	285	282
Imports[11]	8	28	28	21
Exports[12]	62	29	20	37
Net Imports	-54	-1	8	-16
Total (Production + Net Imports)	**222**	**285**	**293**	**266**

The New York Harbor area is the largest oil import hub in the US. According to the EIA's import data by port of entry, ULSD imports into the New York Harbor area (which encompasses New Jersey and New York, NY ports) averaged 21,000 barrels per day for the three-year period of 2013 through 2015. Further, ULSD exports from PADD 1 averaged 37,000 barrels per day for the same three-year period. Thus, there were net exports of 16,000 barrels per day for the three-year period. In total, refinery production and net exports averaged 266,000 barrels per day for the period of 2013 through 2015. In conversations with market participants, it was explained that a portion of the Philadelphia refinery production is used to supply the Pennsylvania market via the Buckeye Laurel Pipeline. Based on EIA's prime supplier sales data[13], the Exchange estimates that the ULSD supplied to Pennsylvania was approximately 115,000 barrels per day for the three-year period of 2013 through 2015. Therefore, the Exchange reduced the total refinery production and net exports by 115,000 to account for ULSD supplied to Pennsylvania. Consequently, the total refinery production and net exports available for the New York Harbor market is approximately 150,000 barrels per day, which is equivalent to 4.5 million barrels per month.

B. Pipeline Flows and Net Receipts

Nearly all pipeline and barge ULSD shipments into PADD 1 originate in the Gulf Coast. While the EIA provides weekly data on PADD 1 ULSD barge and pipeline receipts (See Table 3 below), it does not provide specific flow data by Colonial Pipeline delivery point or port of entry. The ULSD shipments from PADD 3 have risen steadily, as shown in Table 3. The Colonial Pipeline does not publicly disclose pipeline flow data, but market participants have stated that approximately 25% to 30% of total PADD 3 ULSD shipments arrive in the New York Harbor via Colonial Pipeline. Therefore, the Exchange estimates that approximately 188,000 barrels per day are shipped to New York Harbor from PADD 3 via Colonial Pipeline (25% of 750,000 barrels per day).

[10] EIA, Annual averages based on weekly data, http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=WD0TP_R10_2&f=W
[11] EIA, Annual averages based on Monthly Import Data by Company for NY and NJ ports only, http://www.eia.gov/petroleum/imports/companylevel/
[12] EIA, Annual Export Data, http://www.eia.gov/dnav/pet/pet_move_exp_dc_R10-Z00_mbblpd_a.htm
[13] EIA Prime Supplier Sales Volumes by State, http://www.eia.gov/dnav/pet/pet_cons_prim_dcu_SPA_a.htm

Table 3 – Shipments of ULSD from PADD 3

Shipments by Pipeline, Tanker, and Barge, Thousand b/d (EIA Annual Data)	2013	2014	2015	Average
PADD 3 Shipments[14] to PADD 1	736	730	788	**752**

C. Inventories of ULSD in the New York Harbor Market

New York Harbor has a petroleum bulk terminal storage capacity of over 75 million barrels, making it the largest petroleum product hub in the country. IMTT or the International-Matex Tank Terminals is a privately-held storage and handling company, and holds about one third of storage market share in New York Harbor. The IMTT terminal in Bayonne, New Jersey has 620 tanks, 16 million barrels total capacity ranging in size from 5,000 gallons through 250,000 barrels. The IMTT terminal holds 5 to 8 million barrels of distillate fuels in storage according to market sources.

In addition to commercial stocks held in New York Harbor terminals, the Northeast Heating Oil Reserve, which was established in 2000 to provide heating fuel supply security in the Northeast, is stored in three terminals in the NY Harbor area: Perth Amboy, New Jersey, and New Haven and Groton, Connecticut. The storage terminal located at Perth Amboy is the largest of the three, with a capacity of almost 1 million barrels.

The three-year average of ULSD stocks held in the Central Atlantic, or PADD 1B, region is approximately 16.2 million barrels (See Table 4). According to market participants, the New York Harbor area, which includes storage terminals in New York and New Jersey, accounts for 50% to 60% of the inventories reported in EIA's PADD 1B statistics. Using a conservative estimate of 50% of PADD 1B inventories, the average stock level of ULSD is estimated to be approximately 8.1 million barrels in New York Harbor.

Table 4 – Central Atlantic (PADD 1B) ULSD Stocks

Thousand Barrels (Annual Averages using Weekly Data)	PADD 1[15]	PADD 1B (Central Atlantic)[16]
2013	25,963	13,751
2014	25,730	13,542
2015	35,610	21,452
Average	**29,101**	**16,248**

Based on estimates from industry experts, we determined that the operational minimum levels for storage tanks in the New York Harbor area are approximately 10%. Therefore, we estimate that approximately 0.8 million of the 8.1 million barrels of stored ULSD are used for operations, leaving 7.3 million barrels available for spot month delivery.

[14] http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=pet&s=md0mx_r10r30_1&f=a
[15] http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=WD0ST_R10_1&f=W
[16] http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=WD0ST_R1Y_1&f=W

ANALYSIS OF DELIVERABLE SUPPLY

Based on the above analysis, the Exchange determined at this time to base its estimates of deliverable supply on the sum of:

A. *Refinery Production + Net Exports: 150,000 b/d x 30 days = 4.5 million barrels per month*

B. *Pipeline/Barge Flows: 188,000 b/d x 30 days = 5.6 million barrels*

C. *Storage levels in the delivery area = 7.3 million barrels*

The Exchange estimates the monthly deliverable supply of ULSD to the New York Harbor (NYH) to be approximately 17.4 million barrels, which is equivalent to **17,400** contracts per month (contract size 42,000 gallons or 1,000 barrels). The current spot month position limit for the NY Harbor ULSD Futures contract is 1,000 contracts or **5.7%** of the estimated monthly deliverable supply.

APPENDIX

1. PADD 1, ULSD Production[17], thousand barrels per day

2013	Jan	271
	Feb	220
	Mar	241
	Apr	302
	May	303
	Jun	317
	Jul	320
	Aug	311
	Sep	310
	Oct	242
	Nov	243
	Dec	239
2014	Jan	221
	Feb	228
	Mar	262
	Apr	303
	May	317
	Jun	328
	Jul	308
	Aug	298
	Sep	307
	Oct	315
	Nov	274
	Dec	272
2015	Jan	272
	Feb	196
	Mar	238
	Apr	284
	May	296
	Jun	315
	Jul	303
	Aug	312
	Sep	264
	Oct	326
	Nov	326
	Dec	274

[17]EIA, Monthly averages using weekly data: http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=WD0TP_R10_2&f=W

2. PADD 1[18] and PADD 1B[19] ULSD Stocks (in Thousand Barrels)

		PADD 1	PADD 1B
2013	Jan	25,802	13,527
	Feb	21,973	11,341
	Mar	22,153	10,895
	Apr	22,964	11,162
	May	25,058	11,570
	Jun	27,853	14,742
	Jul	30,964	17,624
	Aug	30,897	18,058
	Sep	30,843	18,343
	Oct	26,077	14,176
	Nov	23,261	11,702
	Dec	24,328	12,569
2014	Jan	21,891	10,893
	Feb	18,042	8,557
	Mar	20,878	9,410
	Apr	23,635	12,033
	May	23,734	11,524
	Jun	25,852	12,614
	Jul	30,272	15,982
	Aug	31,857	18,185
	Sep	31,990	18,272
	Oct	31,097	17,955
	Nov	24,544	14,256
	Dec	23,556	11,734
2015	Jan	27,725	13,738
	Feb	24,069	12,669
	Mar	19,868	9,249
	Apr	23,430	11,573
	May	29,480	16,082
	Jun	33,178	19,281
	Jul	38,696	24,234
	Aug	43,727	28,200
	Sep	45,626	29,817
	Oct	46,297	30,557
	Nov	46,952	31,025
	Dec	48,271	31,303

[18] EIA, Monthly averages using weekly data: http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=WD0ST_R10_1&f=W
[19] EIA, Monthly averages using weekly data: http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=WD0ST_R1Y_1&f=W

NEW YORK MERCANTILE EXCHANGE, INC.

ANALYSIS OF DELIVERABLE SUPPLY

PALLADIUM FUTURES

APRIL 2016

In estimating deliverable supply for Palladium Futures, the New York Mercantile Exchange, Inc. ("NYMEX" or "Exchange") relied on long-standing precedent, which provides that the key component in estimating deliverable supply is the portion of typical depository stocks that could reasonably be considered to be readily available for delivery. In its guidance on estimating deliverable supply, the Commodity Futures Trading Commission ("CFTC" or "Commission") states:

> In general, the term "deliverable supply" means the quantity of the commodity meeting a derivative contract's delivery specifications that can reasonably be expected to be readily available to short traders and saleable by long traders at its market value in normal cash marketing channels at the derivative contract's delivery points during the specified delivery period, barring abnormal movement in interstate commerce. Typically, deliverable supply reflects the quantity of the commodity that potentially could be made available for sale on a spot basis at current prices at the contract's delivery points. For a non-financial physical-delivery commodity contract, this estimate might represent product which is in storage at the delivery point(s) specified in the futures contract or can be moved economically into or through such points consistent with the delivery procedures set forth in the contract and which is available for sale on a spot basis within the marketing channels that normally are tributary to the delivery point(s)[1]

Approved Depositories and Stock Reporting Requirements

To date, Exchange approved palladium depositories are Brinks, Inc., CNT Depository, Inc., Delaware Depository Service Company, HSBC Bank, USA, International Depository Services of Delaware, JP Morgan Chase Bank NA, Malca-Amit USA, LLC, Manfra, Tordella & Brookes, Inc. and Scotia Mocatta.

Pursuant to the rules of the Exchange, each depository is required to report to the Exchange the level of Exchange grade inventory on a daily basis. The inventory shall include eligible and registered palladium. Eligible palladium shall mean all such palladium that is acceptable for delivery against the Palladium Futures contract (i.e., which meets the specifications and approved brands of the Palladium Futures contract) for which a warrant has not been issued. Registered palladium shall mean eligible palladium for which a warrant has been issued. Specifically, on a daily basis, each depository is required to provide the Exchange (1) the total quantity of registered palladium stored at the depository, (2) the total quantity of eligible palladium stored at the depository, and (3) the quantity of eligible palladium and registered palladium received and shipped from the depository.

The palladium inventory levels at all Exchange-approved depositories are made publicly available daily on the Exchange website[2]. Further, the rules of the Exchange require an independent inventory audit to be performed annually to provide a comprehensive reconciliation of stocks stored at depositories with records maintained by both the Exchange and the depository[3].

[1] http://www.ecfr.gov/cgi-bin/text-idx?SID=74959c3dbae469e2efe0a42b45b8dfae&mc=true&node=ap17.1.38_11201.c&rgn=div9
[2] http://www.cmegroup.com/market-data/reports/registrar-reports.html
[3] http://www.cmegroup.com/rulebook/NYMEX/1/7.pdf

Deliverable Supply Analysis

The Exchange determined at this time to base its estimates of deliverable supply of palladium on registered stock as well as such palladium stock meeting all specifications of the Palladium Futures contract stored at Exchange approved depositories. The Exchange recognizes that palladium may at times be used as an investment vehicle and as such some palladium stock may be held as a long term investment. While surveys conducted indicated no clear consensus on how much palladium was dedicated to long term investments, there was consensus that investment demand for palladium typically accounts for a much smaller portion of total physical supply compared to gold and silver.

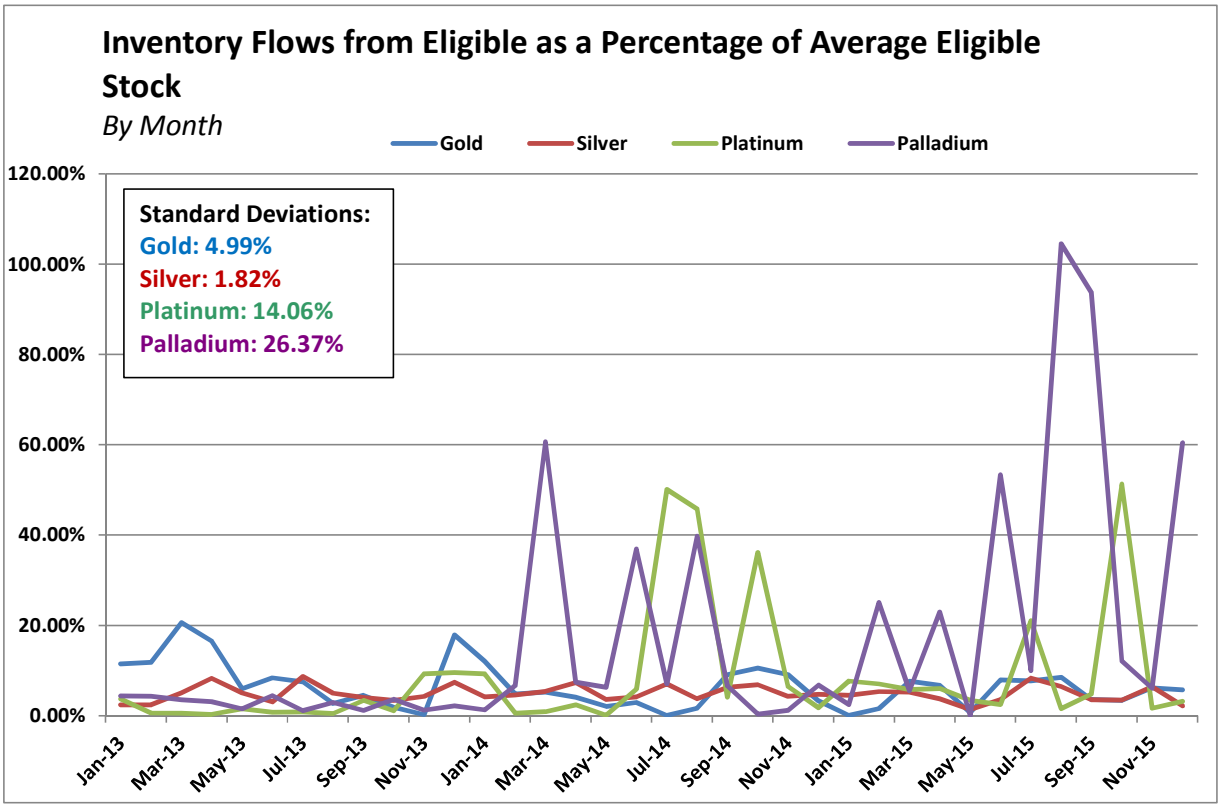
Data from GFMS, a metals research consultancy, notes that retail investment, which it classifies as the sale of coins and bullion to small-scale, less sophisticated investors, in platinum and palladium was roughly 1.9% and 0.5% of total physical demand in 2014, respectively. This compares to 25.9% for gold and 18.5% for silver. [4]

Withdrawals of eligible palladium and platinum from NYMEX depositories and adjustments of that eligible metal to warranted status are typically larger, in terms of percentage of eligible stock, than similar withdrawals and adjustments in the COMEX gold and silver markets. Furthermore, the standard deviation of these statistics are larger for palladium and platinum, suggesting that withdrawals and adjustments from eligible to warranted are proportionally larger than those of gold and silver. These two factors suggest that a greater portion of the eligible palladium and platinum stock is readily available to the marketplace.

Chart 1 below illustrates withdrawals from eligible stock and adjustments from eligible to registered stock as a percentage of monthly average eligible stock and the standard deviations of that data. These withdrawals and adjustments are taken as a percentage of average eligible stock of that metal during that month to adjust for the inventory size. Generally, the chart below shows that as a percentage of average eligible stock, flows of metal are relatively larger in the Platinum Group Metals (PGMs) than in gold and silver. By taking the monthly total withdrawals and adjustments as a percentage of average eligible stock, a turnover ratio is created which illustrates the magnitude of stock movements out of eligible inventory over each month. By taking the standard deviation of these monthly statistics, it is evident that changes in in platinum and palladium eligible stocks as measured by standard deviation, at 14.40 percent and 26.00 percent, respectively, have more dispersion around the mean than those of gold and silver, 5.14 percent and 1.80 percent, respectively. The mean withdrawal for both platinum and palladium are already greater, as a percentage of eligible stock, than for gold and silver. The larger dispersions, however, further show that greater proportions of platinum and palladium are withdrawn from eligible or adjusted to warranted stock.

[4] Thomson Reuters GFMS Annual Surveys 2015 – Gold, Silver, Platinum & Palladium

Chart 1:



Based on the foregoing, and in order to represent a conservative deliverable supply that is readily available for delivery, the Exchange made a determination to discount from its estimate of deliverable supply 10% of its reported eligible palladium as opposed to the higher discount levied in the gold and silver deliverable supply analyses. The Exchange may, at a later date, decide to estimate those stocks and include them in future deliverable supply estimates.

Table 1 below provides the monthly inventory average of each of registered and eligible palladium stored at Exchange-approved depositories for the period beginning January 2013 through December 2015.

Over the period beginning January 2013 through December 2015, the monthly average registered palladium was **1,190** futures equivalent contracts and the monthly average eligible palladium was **2,330** futures equivalent contracts. Based on the foregoing and accounting for a 10% discount of eligible palladium stored at Exchange approved depositories, the Exchange estimates monthly deliverable supply at approximately **3,287** futures equivalent contracts. The current spot month position limit of 100 contracts represents **3.04%** of the estimated monthly deliverable supply.

At this time, the Exchange does not account for palladium stock meeting all specifications of the Palladium Futures contract that is stored at depositories other than those approved by the Exchange and which can be moved economically into such Exchange-approved depositories consistent with Appendix C of Part 38. The Exchange may, at a later date, decide to estimate those stocks and include them in future deliverable supply estimates.

Table 1: Monthly Average Stock Levels at Exchange Depositories

(in Palladium Futures equivalent contracts)

Yr-Month	Average Eligible	Average Registered	Average Total
13-Jan	3,168	2,350	5,518
13-Feb	3,174	2,263	5,438
13-Mar	3,252	2,370	5,622
13-Apr	3,579	1,904	5,483
13-May	3,617	1,826	5,443
13-Jun	3,736	1,789	5,524
13-Jul	3,985	1,713	5,698
13-Aug	3,949	1,703	5,651
13-Sep	3,912	1,711	5,622
13-Oct	4,219	1,339	5,557
13-Nov	4,188	1,302	5,490
13-Dec	4,117	1,344	5,461
14-Jan	4,271	1,157	5,428
14-Feb	4,151	1,162	5,313
14-Mar	2,957	1,820	4,776
14-Apr	2,669	1,401	4,070
14-May	2,671	1,379	4,050
14-Jun	2,381	1,481	3,862
14-Jul	1,972	1,388	3,360
14-Aug	1,474	1,379	2,853
14-Sep	1,249	1,439	2,688
14-Oct	1,242	1,270	2,512
14-Nov	1,333	911	2,243
14-Dec	1,454	733	2,188
15-Jan	1,423	776	2,199
15-Feb	1,182	755	1,937
15-Mar	1,456	381	1,837
15-Apr	1,466	343	1,809
15-May	1,194	343	1,538
15-Jun	970	506	1,476
15-Jul	945	450	1,395
15-Aug	562	425	988
15-Sep	562	467	1,029
15-Oct	535	382	917
15-Nov	499	377	876
15-Dec	358	501	859
Average Total	**2,330**	**1,190**	**3,520**

NEW YORK MERCANTILE EXCHANGE, INC.

ANALYSIS OF DELIVERABLE SUPPLY

PLATINUM FUTURES

APRIL 2016

In estimating deliverable supply for Platinum Futures, the New York Mercantile Exchange, Inc. ("NYMEX" or "Exchange") relied on long-standing precedent, which provides that the key component in estimating deliverable supply is the portion of typical depository stocks that could reasonably be considered to be readily available for delivery. In its guidance on estimating deliverable supply, the Commodity Futures Trading Commission ("CFTC" or "Commission") states:

> In general, the term "deliverable supply" means the quantity of the commodity meeting a derivative contract's delivery specifications that can reasonably be expected to be readily available to short traders and saleable by long traders at its market value in normal cash marketing channels at the derivative contract's delivery points during the specified delivery period, barring abnormal movement in interstate commerce. Typically, deliverable supply reflects the quantity of the commodity that potentially could be made available for sale on a spot basis at current prices at the contract's delivery points. For a non-financial physical-delivery commodity contract, this estimate might represent product which is in storage at the delivery point(s) specified in the futures contract or can be moved economically into or through such points consistent with the delivery procedures set forth in the contract and which is available for sale on a spot basis within the marketing channels that normally are tributary to the delivery point(s)[1]

Approved Depositories and Stock Reporting Requirements

To date, Exchange approved platinum depositories are Brinks, Inc., CNT Depository, Inc., Delaware Depository Service Company, HSBC Bank, USA, International Depository Services of Delaware, JP Morgan Chase Bank NA, Malca-Amit USA, LLC, Manfra, Tordella & Brookes, Inc. and Scotia Mocatta.

Pursuant to the rules of the Exchange, each depository is required to report to the Exchange the level of Exchange grade inventory on a daily basis. The inventory shall include eligible and registered platinum. Eligible platinum shall mean all such platinum that is acceptable for delivery against the Platinum Futures contract (i.e., which meets the specifications and approved brands of the Platinum Futures contract) for which a warrant has not been issued. Registered platinum shall mean eligible platinum for which a warrant has been issued. Specifically, on a daily basis, each depository is required to provide the Exchange (1) the total quantity of registered platinum stored at the depository, (2) the total quantity of eligible platinum stored at the depository, and (3) the quantity of eligible platinum and registered platinum received and shipped from the depository.

The platinum inventory levels at all Exchange-approved depositories are made publicly available daily on the Exchange website[2]. Further, the rules of the Exchange require an independent inventory audit to be performed annually to provide a comprehensive reconciliation of stocks stored at depositories with records maintained by both the Exchange and the depository[3].

[1] http://www.ecfr.gov/cgi-bin/text-idx?SID=74959c3dbae469e2efe0a42b45b8dfae&mc=true&node=ap17.1.38_11201.c&rgn=div9

[2] http://www.cmegroup.com/market-data/reports/registrar-reports.html

[3] http://www.cmegroup.com/rulebook/NYMEX/1/7.pdf

Deliverable Supply Analysis

The Exchange determined at this time to base its estimates of deliverable supply of platinum on registered stock as well as such platinum stock meeting all specifications of the Platinum Futures contract stored at Exchange approved depositories. The Exchange recognizes that platinum may at times be used as an investment vehicle and as such some platinum stock may be held as a long term investment. While surveys conducted indicated no clear consensus on how much platinum was dedicated to long term investments, there was consensus that investment demand for platinum typically accounts for a much smaller portion of total physical supply compared to gold and silver.

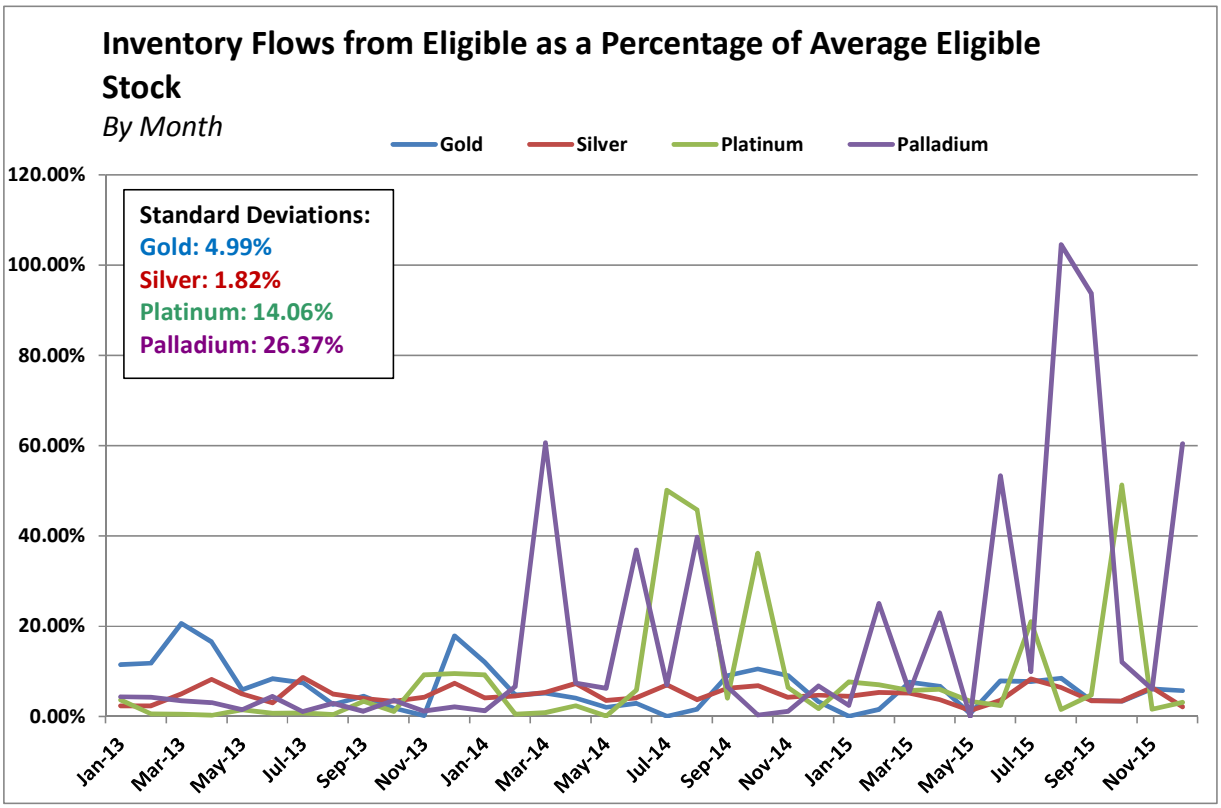
Data from GFMS, a metals research consultancy, notes that retail investment, which it classifies as the sale of coins and bullion to small-scale, less sophisticated investors, in platinum and palladium was roughly 1.9% and 0.5% of total physical demand in 2014, respectively. This compares to 25.9% for gold and 18.5% for silver. [4]

Withdrawals of eligible platinum and palladium from NYMEX depositories and adjustments of that eligible metal to warranted status are typically larger, in terms of percentage of eligible stock, than similar withdrawals and adjustments in the COMEX gold and silver markets. Furthermore, the standard deviation of these statistics are larger for platinum and palladium, suggesting that withdrawals and adjustments from eligible to warranted are proportionally larger than those of gold and silver. These two factors suggest that a greater portion of the eligible platinum and palladium stock is readily available to the marketplace.

Chart 1 below illustrates withdrawals from eligible stock and adjustments from eligible to registered stock as a percentage of monthly average eligible stock and the standard deviations of that data. These withdrawals and adjustments are taken as a percentage of average eligible stock of that metal during that month to adjust for the inventory size. Generally, the chart below shows that as a percentage of average eligible stock, flows of metal are relatively larger in the Platinum Group Metals (PGMs) than in gold and silver. By taking the monthly total withdrawals and adjustments as a percentage of average eligible stock, a turnover ratio is created which illustrates the magnitude of stock movements out of eligible inventory over each month. By taking the standard deviation of these monthly statistics, it is evident that changes in in platinum and palladium eligible stocks as measured by standard deviation, at 14.40 percent and 26.00 percent, respectively, have more dispersion around the mean than those of gold and silver, 5.14 percent and 1.80 percent, respectively. The mean withdrawal for both platinum and palladium are already greater, as a percentage of eligible stock, than for gold and silver. The larger dispersions, however, further show that greater proportions of platinum and palladium are withdrawn from eligible or adjusted to warranted stock.

[4] Thomson Reuters GFMS Annual Surveys 2015 – Gold, Silver, Platinum & Palladium

Chart 1:



Based on the foregoing, and in order to represent a conservative deliverable supply that is readily available for delivery, the Exchange made a determination to discount from its estimate of deliverable supply 10% of its reported eligible platinum as opposed to the higher discount levied in the gold and silver deliverable supply analyses. The Exchange may, at a later date, decide to estimate those stocks and include them in future deliverable supply estimates.

Table 1 below provides the monthly inventory average of each of registered and eligible platinum stored at Exchange-approved depositories for the period beginning January 2013 through December 2015.

Over the period beginning January 2013 through December 2015, the monthly average registered platinum was **1,158** futures equivalent contracts and the monthly average eligible platinum was **2,652** futures equivalent contracts. Based on the foregoing and accounting for a 10% discount of eligible platinum stored at Exchange approved depositories, the Exchange estimates monthly deliverable supply at approximately **3,545** futures equivalent contracts. The current spot month position limit of 500 contracts represents **14.10%** of the estimated monthly deliverable supply.

At this time, the Exchange does not account for platinum stock meeting all specifications of the Platinum Futures contract that is stored at depositories other than those approved by the Exchange and which can be moved economically into such Exchange-approved depositories consistent with Appendix C of Part 38. The Exchange may, at a later date, decide to estimate those stocks and include them in future deliverable supply estimates.

Table 1: Monthly Average Stock Levels at Exchange Depositories

(in Platinum Futures equivalent contracts)

Yr-Month	Average Eligible	Average Registered	Average Total
13-Jan	2,356	1,939	4,294
13-Feb	2,727	1,501	4,228
13-Mar	2,843	1,433	4,276
13-Apr	2,844	1,834	4,678
13-May	2,917	1,699	4,617
13-Jun	2,922	1,696	4,533
13-Jul	2,912	1,700	4,612
13-Aug	3,147	1,407	4,553
13-Sep	3,184	1,622	4,807
13-Oct	3,197	2,517	5,714
13-Nov	3,483	1,607	5,091
13-Dec	3,531	1,486	5,017
14-Jan	3,125	1,875	4,999
14-Feb	3,396	1,588	4,985
14-Mar	3,586	1,339	4,926
14-Apr	3,853	1,086	4,939
14-May	3,984	922	4,906
14-Jun	3,973	911	4,884
14-Jul	3,218	1,272	4,490
14-Aug	2,233	802	3,036
14-Sep	2,191	735	2,926
14-Oct	1,987	905	2,892
14-Nov	2,186	547	2,733
14-Dec	2,173	529	2,702
15-Jan	2,033	666	2,699
15-Feb	2,085	586	2,671
15-Mar	2,058	589	2,647
15-Apr	1,956	658	2,615
15-May	1,907	675	2,582
15-Jun	1,885	687	2,572
15-Jul	1,585	956	2,541
15-Aug	1,528	991	2,518
15-Sep	1,912	574	2,485
15-Oct	1,823	848	2,671
15-Nov	2,358	773	3,131
15-Dec	2,381	719	3,101
Average Total	**2,652**	**1,158**	**3,808**

NEW YORK MERCANTILE EXCHANGE, INC.

ANALYSIS OF DELIVERABLE SUPPLY

RBOB GASOLINE FUTURES

APRIL 2016

In estimating deliverable supply for the RBOB Gasoline Futures, the New York Mercantile Exchange, Inc. ("NYMEX" or "Exchange") relied on long-standing precedent, which provides that the key component in estimating deliverable supply is the portion of typical production and supply stocks that could reasonably be considered to be readily available for delivery. In its guidance on estimating deliverable supply, the Commodity Futures Trading Commission ("CFTC" or "Commission") states:

> In general, the term "deliverable supply" means the quantity of the commodity meeting a derivative contract's delivery specifications that can reasonably be expected to be readily available to short traders and saleable by long traders at its market value in normal cash marketing channels at the derivative contract's delivery points during the specified delivery period, barring abnormal movement in interstate commerce. Typically, deliverable supply reflects the quantity of the commodity that potentially could be made available for sale on a spot basis at current prices at the contract's delivery points. For a non-financial physical-delivery commodity contract, this estimate might represent product which is in storage at the delivery point(s) specified in the futures contract or can be moved economically into or through such points consistent with the delivery procedures set forth in the contract and which is available for sale on a spot basis within the marketing channels that normally are tributary to the delivery point(s).[1]

I. Methodology and Data Sources

The Exchange considered three components in evaluating deliverable supply estimates of RBOB Gasoline for the New York Harbor delivery location of the RBOB Gasoline Futures contract:

(1) Refinery and Blender Production;

(2) Pipeline flows and net receipts to the delivery area;

(3) Storage levels in the delivery area.

The Exchange determined to use data collected by the U.S. Department of Energy ("DOE") Energy Information Administration ("EIA") for its analysis and evaluation of deliverable supply estimates for RBOB Gasoline in New York Harbor. The EIA provides detailed data on the key components of deliverable supply. The EIA provides such data on a weekly, monthly, and annual basis.

II. Introduction

The New York Harbor RBOB Gasoline Futures contract is the main benchmark used for pricing of gasoline in the U.S. petroleum products market. The U.S. gasoline market represents a large physical market, with total U.S. refinery capacity of 9.0 million to 9.5 million barrels per day of gasoline.

In the U.S. gasoline market, there are two main formulations for gasoline: Reformulated Gasoline and Conventional Gasoline, as required by a complex network of federal and state regulations. The U.S. Environmental Protection Agency ("EPA") administers the Clean Air Act ("CAA") requirements, and various state agencies regulate their own specific air rules. Under the CAA, the urban areas with the highest levels of smog pollution are required to use clean-burning Reformulated Gasoline blended with 10% ethanol. These urban areas include the entire Northeastern United States, California, Chicago, Atlanta, and Houston. These areas account for approximately 40% of U.S. gasoline demand. The 10% ethanol blending requirement in Reformulated Gasoline requires that the ethanol be segregated from the gasoline at the wholesale level in the pipeline distribution system. So in the wholesale market, the gasoline is shipped unfinished (without the ethanol) and it is called Reformulated Blendstock for Oxygen

[1] http://www.ecfr.gov/cgi-bin/text-idx?SID=74959c3dbae469e2efe0a42b45b8dfae&mc=true&node=ap17.1.38_11201.c&rgn=div9

Blending (RBOB). The ethanol blending occurs at the last stage of the delivery process when the gasoline is loaded into the tanker truck for retail delivery.

A. New York Harbor Delivery Region

New England and the Central Atlantic Coast of the United States, collectively defined by the EIA as the "Northeast", is a well-connected and integrated geographical region in terms of oil and products infrastructure. The region is part of the larger PADD 1[2] (Petroleum Administration Defense District), and more specifically defined by PADD 1A (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont) and PADD1B (Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania).[3]

Located in both New York and New Jersey, the New York Harbor area is the largest oil importing and third largest container port in the nation, and is the main oil and refined products pricing and trading hub. Petroleum products in New York Harbor are supplied by refineries located in New Jersey, Delaware and Pennsylvania, all located within 100 miles of the New York Harbor area. East Coast refineries, a majority of which are located in New Jersey and Philadelphia, send products by local pipelines into New York Harbor.

Many of the petroleum products delivered to New York Harbor are redistributed to smaller ports where they supply local demand. In particular, the Hudson River, which meets the Atlantic Ocean in New York Harbor, provides a major inland water route for petroleum product barges supplying eastern New York and parts of western New England. Significant volumes are shipped to New England via barge from New York Harbor. On the other side of the state, western New York product markets are primarily supplied from Canada at the Port of Buffalo, and via the Buckeye and Sunoco pipeline systems from Pennsylvania and the Midwest[4].

B. Refineries and Refinery Capacity Overview

The Colonial Pipeline is the largest refined products pipeline in the US and a key products supply link for the Northeast. The pipeline connects the Northeast to refinery output from the US Gulf Coast and foreign imports, principally from Canada, Virgin Islands, Caribbean and Europe. Colonial's network of pipelines crosses 13 states, serving more than 265 marketing terminals in the Southern and Eastern United States. The pipeline provides a link from the US Gulf Coast to the New York Harbor area through the south and across the Eastern seaboard. It generally takes from 14 to 24 days for a product batch on the Colonial Pipeline to get from Houston, Texas to the New York Harbor, with 18.5 days the average time. The Trainer, Marcus Hook and Philadelphia refineries are strategically located along the pipeline.

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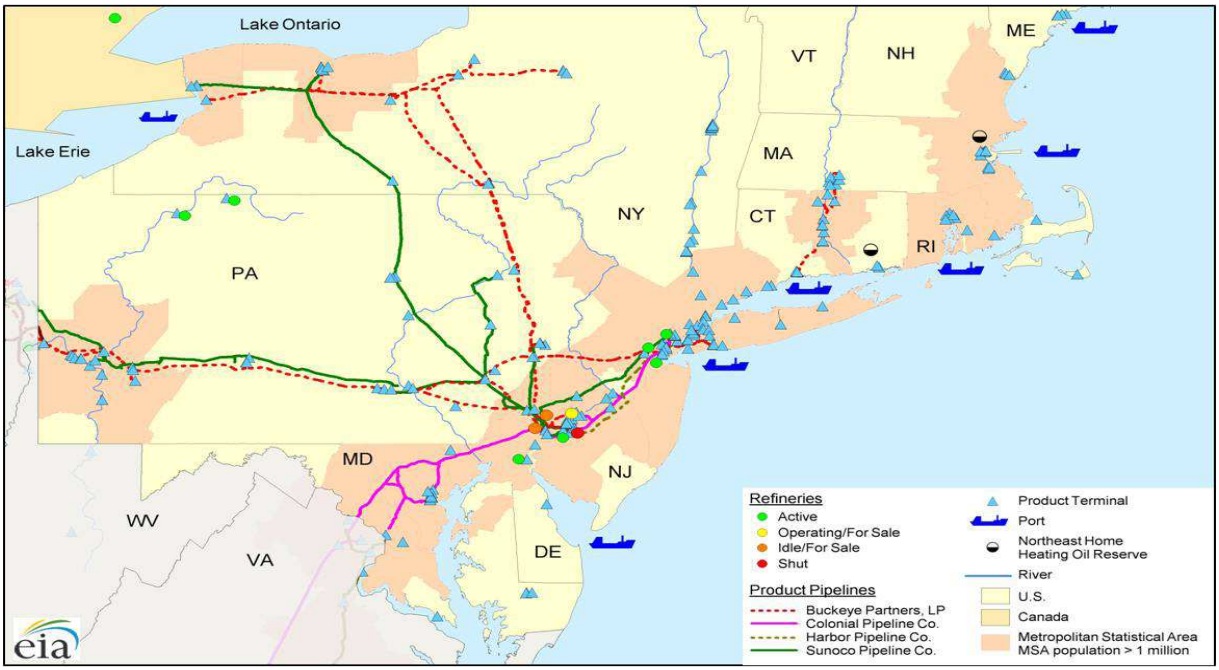
[2] http://www.eia.gov/tools/glossary/index.cfm
[3] http://www.eia.gov/analysis/petroleum/nerefining/prelim/
[4] http://205.254.135.7/state/state-energy-profiles-analysis.cfm?sid=NY

Figure 1 - Northeast Refined Products Market Logistics[5]



Earlier in 2011, Colonial Pipeline expanded the northern end of its Houston-to-New York system, adding 100,000 b/d of capacity. In addition, the company completed a series of system upgrades leading to more than 100,000 b/d of capacity for distillates[6] specifically serving the New Jersey, Pennsylvania, and New York markets. Also, Colonial Pipeline added an additional 100,000 b/d of gasoline and distillates capacity in early 2013[7] to meet demand on the northern portion of the line (Greensboro, NC to Linden, NJ).

In the U.S., there were 139 operating refineries and three idle refineries in the US with total atmospheric crude oil distillation capacity (ACDU) of 17.9 million barrels per day (bbl/d), a 101,000 bbl/d increase in capacity from January 1, 2013[8]. The East Coast (PADD 1) has nine refineries, which are currently operating, with 1.1 million barrels per day (b/d) of atmospheric crude distillation capacity. The region has 475,800 bbl/d of fluid catalytic cracking (FCC) capacity. PADD 1 includes all states in New England, the Mid-Atlantic, and the South Atlantic and is subdivided into three sub-PADDs.

• PADD 1A – New Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut

• PADD 1B – New York, Pennsylvania, New Jersey, Delaware, Maryland, Washington DC

• PADD 1C - West Virginia, Virginia, North Carolina, South Carolina, Georgia, Florida

Supply dynamics for each of the three sub-PADDs vary. PADD 1A, New England, has no refineries and relies on imports and transfers from other PADDs, primarily PADD 1B. PADD 1C, the South Atlantic, also has no operating refineries and relies primarily on pipeline transfers and marine shipments from PADD 3 and imports. PADD 1B is supplied by a combination of in-region refineries, transfers from other PADDs -- primarily from PADD 3 but also from PADD 2 -- and imports[9]. As stated above, the majority of PADD 1B refineries are located in New Jersey, Delaware and Pennsylvania, and within 100 miles of the New York

[5] http://www.eia.gov/analysis/petroleum/nerefining/update/pdf/neprodmkts.pdf
[6] http://www.eia.gov/pressroom/presentations/sieminski_10102012.pdf
[7] http://www.colpipe.com/home/news-media/press-releases/pressdetail?ID=7cb2e327-d0b3-6eb4-9c07-ff00009907dd
[8] http://www.eia.gov/todayinenergy/detail.cfm?id=16911
[9] http://www.eia.gov/pressroom/testimonies/howard_03192012.pdf

Harbor area. These refineries are directly connected to the New York Harbor market by local pipelines and/or waterborne barges. A list of Northeast refineries is provided in Table 1.

Table 1 – Mid-Atlantic (PADD 1B) Refineries

Name	State	Owner	Capacity	Status
Port Reading	NJ	Hess	70,000 b/d	CLOSED
Marcus Hook	PA	Sunoco Logistics	178,000 b/d	CLOSED. Being converted to NGL storage.
Delaware City Refinery	DE	PBF Energy	182,200 b/d	Operational
Perth Amboy	NJ	Buckeye Partners	80,000 b/d (Asphalt only)	Operational
Bayway Refinery	NJ	Phillips 66 Company	238,000 b/d	Operational
Paulsboro Asphalt	NJ	Nustar Asphalt Refining	70,000 b/d (Asphalt only)	Operational
Paulsboro Refining	NJ	PBF Energy LLC	160,000 b/d	Operational
Bradford	PA	American Refining Group	11,000 b/d	Operational
Philadelphia	PA	Philadelphia Energy Solutions/Carlyle Group	335,000 b/d	Operational
Warren	PA	United Refining Inc.	65,000 b/d	Operational
Trainer	PA	Monroe Energy LLC/Delta Airlines	185,000 b/d	Operational

III. Deliverable Supply Estimates

A. Refinery and Blender Production

In recent years, Northeast refineries supplied about 40% of gasoline (and 60% of the ULSD) consumed in the Northeast. Net receipts from the Gulf Coast and imports supply the remainder of the market.[10] The EIA provides gasoline production data for RBOB Gasoline that is produced by both refiners and blenders, under the category of "refiner and blender net production" as shown in Table 2 below. The majority of PADD 1 refineries are located in New Jersey, Delaware and Pennsylvania, with direct connection to the New York Harbor market by pipelines and/or waterborne barges. In addition, the "refiner and blender" category includes RBOB produced by blenders that use imported gasoline blending components.

Blenders are significant producers of RBOB gasoline, and a vast amount of RBOB blending components are sourced through imported gasoline blendstocks that enter via the New York Harbor. Generally gasoline blenders are large trading companies that operate in the global market, such as Vitol, Morgan Stanley, JP Morgan, Glencore, Cargill, Koch, Trafigura, and Northville. Given that the blenders' production of RBOB is sourced from imported gasoline blending components, these imported components are imbedded in the category of "blender" production. Therefore, given that imported gasoline blending components are included in the "blender" production category, the Exchange will include only the EIA's "Refiner and Blender Net Production" category as the key component of New York Harbor supply (and not *add* imports).

According to EIA data from 2013 through 2015, and as presented in Table 2 below, the three-year average of RBOB production by refiners and blenders in PADD 1 was 1.22 million barrels per day, or 36.6 million barrels per month. The RBOB gasoline that is produced in PADD 1 is in the vicinity of New York Harbor, and the majority of this RBOB is transshipped and/or stored in NYH terminals.

[10] http://www.eia.gov/pressroom/testimonies/howard_03192012.pdf

Table 2 – PADD 1 Production and Net Imports

RBOB Gasoline, in thousand b/d	2013	2014	2015	Average
Refinery and Blender Net Production[11]	1,196	1,217	1,250	**1,221**
Imports of RBOB Gasoline Blending Components[12]	186	132	167	**162**
Exports[13]	0	0	0	**0**

In conversations with market participants, it was explained that a portion of the Philadelphia refinery production is used to supply the Pennsylvania market via the Buckeye Laurel Pipeline. Based on EIA's prime supplier sales data[14], the Exchange estimates that the gasoline supplied to Pennsylvania was approximately 200,000 barrels per day for the three-year period of 2013 through 2015. Therefore, the Exchange reduced the total refinery and blender net production by 200,000 barrels per day to account for gasoline supplied to Pennsylvania directly from Philadelphia-area refineries. Consequently, the total refinery and blender net production available for the New York Harbor market is approximately 1.0 million barrels per day, which is equivalent to 30.0 million barrels per month.

Further, according to input from market participants, approximately 30% to 40% of RBOB production is committed to retail distribution networks, and the remaining portion is available for re-selling in the spot market. Therefore, at least 60% of PADD 1 production of RBOB would be available for re-selling in the New York Harbor spot market. Consequently, we estimate that approximately 18.0 million barrels of RBOB would be deliverable in New York Harbor.

The majority of gasoline imports into PADD 1 arrive in the New York Harbor area, the largest oil import hub in the US. According to industry sources, approximately 50% of PADD 1 imports occur in the New York Harbor area. According to EIA data from 2013 through 2015, average imports of RBOB blending components into PADD 1 were approximately 160,000 b/d. It is worth emphasizing that blenders have the flexibility to produce RBOB gasoline using either imported blending components or other gasoline blending components. However, as previously mentioned, to prevent potential double-counting of imported blending components with domestic as reported by the EIA, the Exchange will not use imports in its deliverable supply analysis.

B. Pipeline Flows and Net Receipts

The US Gulf Coast, or PADD 3, refining capacity accounts for 50% of total US production of refined products, and provides approximately 284,000 b/d of RBOB gasoline to PADD 1 (See Table 3 below) via pipeline and water. However, the majority of PADD 1 pipeline receipts of RBOB from PADD 3 do not end up in the New York Harbor area as they are delivered at points further south of NYH in the Washington, DC metropolitan area. According to market participants, only about 25% to 30% of PADD 1 gasoline pipeline receipts are delivered to the New York Harbor area at Linden, NJ. Therefore, using the 25% estimate for RBOB pipeline shipments of 284,000 b/d, the pipeline supply to New York Harbor accounts for approximately 70,000 barrels per day, or 2.1 million barrels per month.

[11] EIA, http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=WGRRPP12&f=W
[12] EIA, http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=pet&s=m_epobgrr_im0_r10-z00_mbbld&f=a
[13] EIA, http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=MGREXP11&f=M
[14] EIA Prime Supplier Sales Volumes by State, http://www.eia.gov/dnav/pet/pet_cons_prim_dcu_SPA_a.htm

Table 3 – RBOB Movements from PADD 3 into PADD 1[15]

Year	(Barrels per Day)
2013	273,989
2014	283,950
2015	294,303
Average	**284,081**

C. Inventories of Gasoline in the New York Harbor Market

New York Harbor has a petroleum bulk terminal storage capacity of over 75 million barrels, making it the largest petroleum product hub in the country. The three-year average of gasoline stocks held in the Central Atlantic region, or PADD1b, including New York, New Jersey, and Pennsylvania is approximately 30.3 million barrels (See Table 4 below). According to market participants, the New York Harbor RBOB market accounts for 25% to 30% of the inventories reported in EIA's PADD 1B inventory statistics. Using a conservative estimate of 25% of PADD 1b inventories, the average stock level of gasoline is estimated to be about 7.6 million barrels in New York Harbor. Based on estimates from industry experts, we determined that the operational minimum levels for storage tanks in the New York Harbor area are approximately 10%. Therefore, we estimate that approximately 750,000 barrels of the approximately 7.6 million barrels of stored gasoline in New York Harbor is used for operations, leaving 6.8 million barrels available for spot month delivery from inventory.

Table 4 – Gasoline Stocks in PADD 1B[16]

Year	Inventory (in Thousand Barrels)
2013	31,531
2014	28,773
2015	31,695
Average	**30,333**

While the EIA does not report RBOB blending component stocks data for PADD 1B specifically, weekly statistics are provided for PADD 1. Accordingly, stocks of RBOB blending components in PADD 1 averaged approximately 18.8 million barrels in 2013-2015[17].

ANALYSIS OF DELIVERABLE SUPPLY

Based on the above analysis, the Exchange determined at this time to base its estimates of deliverable supply on the sum of:

A. Refinery and Blender Production = 18.0 million barrel

B. Pipeline flows to the delivery area = 2.1 million barrels

C. Storage levels in the delivery area = 6.8 million barrels

The Exchange estimates the monthly deliverable supply of RBOB gasoline to the New York Harbor to be approximately 26.9 million barrels, which is equivalent to **26,900** contracts per month (contract size 42,000 gallons or 1,000 barrels). The current spot month position limit for the New York Harbor RBOB Gasoline Futures Contract is 1,000 contracts or **3.7%** of the estimated monthly deliverable supply.

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[15] EIA, Annual Data in barrels per day, http://www.eia.gov/dnav/pet/pet_move_ptb_dc_R10-R30_mbbl_a.htm
[16] http://www.eia.gov/dnav/pet/pet_stoc_wstk_dcu_r1y_w.htm
[17] http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=pet&s=m_epobgrr_sae_r10_mbbl&f=m

APPENDIX

A. PADD 1, Refiner and Blender Production[18] (Monthly Average using Weekly Data in Thousands B/D)

Year	Month	Total
2013	Jan	1,095
	Feb	1,125
	Mar	1,157
	Apr	1,200
	May	1,241
	Jun	1,279
	Jul	1,265
	Aug	1,235
	Sep	1,173
	Oct	1,189
	Nov	1,200
	Dec	1,177
2014	Jan	1,107
	Feb	1,140
	Mar	1,185
	Apr	1,218
	May	1,251
	Jun	1,279
	Jul	1,263
	Aug	1,252
	Sep	1,230
	Oct	1,223
	Nov	1,228
	Dec	1,233
2015	Jan	1,178
	Feb	1,176
	Mar	1,195
	Apr	1,194
	May	1,269
	Jun	1,309
	Jul	1,292
	Aug	1,307
	Sep	1,274
	Oct	1,273
	Nov	1,256
	Dec	1,268

B. PADD 1B (Central Atlantic) Total Gasoline Stocks [19]

Monthly Averages based on Weekly Stocks of Gasoline (Thousand Barrels)	

[18] http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=WGRRPP12&f=W
[19] http://www.eia.gov/dnav/pet/pet_stoc_wstk_dcu_r1y_w.htm

Year		
2013	Jan	27,785
	Feb	33,009
	Mar	33,254
	Apr	32,564
	May	33,535
	Jun	32,820
	Jul	29,789
	Aug	30,038
	Sep	29,423
	Oct	30,405
	Nov	26,113
	Dec	27,436
2014	Jan	31,419
	Feb	31,481
	Mar	30,570
	Apr	28,589
	May	29,369
	Jun	30,032
	Jul	30,664
	Aug	29,445
	Sep	26,912
	Oct	25,058
	Nov	24,548
	Dec	27,141
2015	Jan	34,349
	Feb	37,506
	Mar	36,773
	Apr	35,686
	May	33,838
	Jun	28,800
	Jul	27,854
	Aug	28,521
	Sep	29,039
	Oct	31,631
	Nov	27,827
	Dec	28,304

Product	Asset Class	Current Exchange Spot Month Limit	Current Exchange Spot as % of DSE	25% of DSE Contract Equivalents	DSE Contract Equivalents
CBOT Wheat	Agricultural	600	6%	2,356	9,422
CBOT Corn	Agricultural	600	18%	831	3,324
KC HRW Wheat	Agricultural	600	5%	2,912	11,648
CBOT Oats	Agricultural	600	17%	866	3,464
CBOT Rough Rice	Agricultural	600 / 200 / 250	7%	2,237	8,948
CBOT Soybean	Agricultural	600	13%	1,137	4,548
CBOT Soybean Meal	Agricultural	720	9%	1,961	7,842
CBOT Soybean Oil	Agricultural	540	4%	3,347	13,387
COMEX Gold	Metal	3,000	7%	11,122	44,487
COMEX Silver	Metal	1,500	7%	5,598	22,390
COMEX Copper	Metal	1,000	24%	1,060	4,239
NYMEX Platinum	Metal	500	14%	886	3,545
NYMEX Palladium	Metal	100	3%	822	3,287
NYMEX Crude Oil	Energy	3,000	7%	10,400	41,600
NYMEX NYH ULSD	Energy	1,000	6%	4,350	17,400
NYMEX NYH RBOB Gasoline	Energy	1,000	4%	6,725	26,900
NYMEX Natural Gas	Energy	1,000	10%	2,471	9,885