DIRECT ECONOMIC EFFECTS OF LACK OF MAINTENANCE DREDGING ON PORT CORPUS CHRISTI CUSTOMERS UTILIZING THE CORPUS CHRISTI SHIP CHANNEL

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for
PORT OF CORPUS CHRISTI

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EXECUTIVE SUMMARY

This study estimated the total direct, immediate effects of two scenarios: a loss of 1 ft of channel depth and a loss of 2 ft of channel depth. The effects were valued at $71.2 million and $120.4 million, respectively, based on 2010 traffic flows and historical rig movements at the Port of Corpus Christi. A high percentage of the estimated economic impact is due to "light loading" of vessels, and most of these losses are associated with lost business opportunities.

Since estimates were generated for 2010—a year in which maritime trade was just beginning to recover from the collapse of 2008-2009—the impact after an economic rebound may be significantly greater than the estimates in this study.

The high level of economic impact resulting from a loss of only 1 or 2 ft of available draft suggests that a significant number of vessels utilizing the Corpus Christi Ship Channel are operating to the maximum degree allowed by current channel depth, and that the cost penalties incurred by a single vessel can be substantial.

The following table summarizes the primary potential direct effects of a loss of either 1 ft or 2 ft of draft given vessel traffic in 2010.

Code	Number of Potentially Affected Vessel Calls	Number of Potentially Affected Berth Calls	Potentially Affected Rig Movements	Total Estimated Dollar Effect (millions)
1-ft Loss Scenario	57	69	1	$71.2
2-ft Loss Scenario	85	97	1	$120.4

BACKGROUND AND PROJECT APPROACH

This report is the result of an effort to identify and quantify the direct, immediate economic impacts that result from a lack of maintenance dredging of the Corpus Christi Ship Channel ("Ship Channel"). The potential impacts were estimated based on vessel traffic occurring in 2010. The effects were identified by assuming either a 1-ft or a 2-ft loss of channel depth from the actual 2010 depth and then examining the effect this loss of depth would have had on vessel traffic operations during the year.

In 2010, Corpus Christi was the sixth largest port in the United States in terms of tonnage. The Ship Channel is approximately 30 miles long and has an authorized depth of 45 ft. The Port owns and operates eight general cargo docks, eleven liquid bulk cargo docks, two bulk material docks, a container terminal, two bagging facilities, a shipside grain elevator, a refrigerated warehouse, cotton warehouses, and a multi-purpose cruise terminal/conference center. In addition, there are approximately 32 privately owned docks, most of which are owned by, and operated exclusively for, the various refineries, chemical plants, and other industries that line the Ship Channel. Appendix A list the dock codes and the maximum sailing draft recorded in 2010 for each dock.

In addition to commodity-type cargo movements, the Ship Channel is also used by several marine fabricators. Rig movements often require the full design depth for the channel across the entire channel design width. When this requirement is not met, fabricators can be expected to incur a significant increase in project expenses when the time comes to move the rig out of the port.

The Ship Channel is a federal channel that is entirely maintained by the U.S. Army Corps of Engineers ("Corps"), while the area between the Ship Channel and berthing facilities is a non-federal responsibility that typically falls to the berth owner. Although the Corps is responsible for maintaining the Ship Channel at its authorized widths and depths, Congress has not appropriated sufficient funds in recent years to do so.

Typically, the local interests will coordinate their dredging activities with those of the Corps by "piggybacking" their contract onto a Corps contract in order to avoid expensive mobilization/de-mobilization costs for the dredging equipment. When the Channel is not maintained, it does not make sense for the local interests to pay to maintain their own dredged depth, since that depth would not be available to them in the Ship Channel anyway.

When the Ship Channel is not maintained to its authorized dimensions, it necessitates a reduction in the amount of cargo a given vessel can carry in order to stay within available draft. Since the operating cost of a vessel is not dependent on the amount of cargo it carries (within certain ranges)—making it essentially a fixed cost—a reduction in the amount of cargo carried

causes an increase in the average unit cost of transportation for that cargo. In the cases where a fixed amount of product is needed, additional vessel calls may be necessary in order to meet demand. For users such as traders, a vessel with reduced cargo is lost business—their opportunities exist for a limited time only and cannot be made up with additional vessel calls.

The work performed in this study accounts for the direct, immediate effects of a channel that is not maintained at its authorized depth. There are other effects that are very real, but are extremely difficult to measure:

- Industrial relocations due to the uncertainty of transportation capacity;
- Diversion of cargo to other ports;
- Loss of ability to compete;
- Effects on national security; and
- Increased probability of a collision, oil spill, fire, or other adverse environmental consequences due to an increase in the number of vessel transits.

Data Analysis

Several data collection and "clean-up" tasks were necessary in order to conduct the analysis. Among them were:

1. Linking the data files obtained from the Port of Corpus Christi Harbormaster Office and the Port Import Export Reporting Service (PIERS) data provided by the Port's General Cargo and Information Representative.
2. Acquiring the tons per centimeter factor[1] for all vessels that would experience a reduction in cargo on board with either a 1-ft or a 2-ft loss of draft.
3. Characterizing the cargo on board vessels, and points of origin and destination for which there was no information in the files.
4. Determining last/next port of call for vessels.
5. Acquiring commodity pricing data for users that were identified as losing business with a loss of draft.
6. Acquiring vessel operating costs and service speeds.

The analysis of vessel call data indicate that vessel calls at 9 docks (or users) would be severely affected as a result of a loss of 1 ft of draft, and 11 docks (or users) would be severely affected as a result of a loss of 2 ft of draft. Table 1 lists these docks.

[1] The tons per centimeter factor indicates how many tons of cargo must be removed from a vessel to cause a change of one cm in draft

Table 1. Potentially Affected Docks with Loss of Draft.

Code	Description	Affected with 1-ft Loss	Affected with 2-ft Loss
BT2	POCCA Bulk Dock #2		X
CPE	ADM/Growmark	X	X
CT1	CITGO #1	X	X
CT3	CITGO #3	X	X
K3	Flint Hills #3		X
KIN	KGSI Ingleside Term.	X	X
O01	POCCA Oil Dock #1	X	X
O04	POCCA Oil Dock #4	X	X
O07	POCCA Oil Dock #7	X	X
V2	Valero #2	X	X
V3	Valero #3	X	X

Port of Corpus Christi Interviews

TTI interviewed 16 businesses and government agencies that are active users of the Corpus Christi Ship Channel. As part of each interview, the TTI researcher discussed the reason for this study, potential impacts of draft or width restrictions, and available data sources that would enable TTI to quantify the effects. The focus was strictly on the impacts of not maintaining the authorized depth, as opposed to the impacts of not increasing the authorized depth. Table 2 lists the entities that were interviewed.

Table 2. Study Interviewees.

Aransas Corpus Christi Pilots	Kiewit Offshore Services, Ltd.
Archer Daniels Midland Company	Magellan Midstream Partners, L.P.
Biehl & Co.	NuStar
CITGO	Occidental Chemical Corporation
Equistar Chemicals, L.P.	Sherwin Alumina Company
Flint Hills Resources	US Coast Guard
Gulf Marine Fabricators	Valero Marketing and Supply Company
Interstate Grain	Vulcan Materials

Despite repeated attempts, TTI was not able to arrange interviews with Celanese Corporation, Fillette Green, or Valls Shipping.

None of the interviewees was aware of any restrictions or limitations on vessel traffic due to problems with channel dimensions during 2010-11. However, when asked about a potential

loss of draft from current conditions, they identified two categories of potential effects. They are described below.

Category 1: Light Loading (Non-Container Vessels)

Category 1 involves vessel calls with a sailing draft that could not be accommodated after a loss of channel depth. Within this category, there are two possible implications: (1) an increase in shipping cost, and (2) the need to leave cargo behind, resulting in a direct loss of business.

Category 2: Deep Draft Rig Movements

When rig fabricators bid on projects, they utilize assumptions regarding the ship channel where they are located. If for any reason, restrictions are placed on the movement of a rig, the cost to complete the project can escalate rapidly. There are three general responses that can occur in this situation: (1) The fabricator can undertake to dredge the channel on its own. However, this is generally not practical because of the time it takes to acquire the necessary permits and the availability of dredge equipment, which at times can be very constrained. (2) The fabricator can remove some of the weight (e.g., drill tower), move the rig offshore, and reinstall the weight components offshore. Due to the cost and safety aspects, this response would be extreme and is avoided if at all possible. (3) The third response—and the most practical—is to install flotation devices on the structures that run between the legs of the drill rig ("sponsons") to lift it out of the water and facilitate the movement along the channel.

CATEGORY 1: LIGHT LOADING

Vessel Call Selection and Data Acquisition

Category 1 includes vessel calls whose sailing draft in 2010 was greater than the actual 2010 channel depth minus a 1-ft or 2-ft adjustment. Within this category, there are two possible implications: (1) an increase in shipping cost, and (2) the need to leave cargo behind, resulting in a direct loss of business.

Fifty-seven (57) vessel calls were identified that would potentially be affected by a loss of 1 ft of draft from 2010 conditions. Eighty-five (85) vessel calls were identified that would potentially be affected by a loss of 2 ft of draft from 2010 conditions. In both data sets, 11 of these vessel calls involved more than one facility on the Ship Channel (10 calls included 2 facilities, 1 call included 3 facilities). Four of the selected vessel calls did not have any corresponding entries in the PIERS dataset (one of these was a domestic shipment, and domestic shipments are not included in PIERS). TTI was able to obtain most of the required movement information from the Harbormaster's database and from IHS Fairplay/Lloyd's Register (*www.sea-web.com*); however, the information needed to determine whether these shipments were for the account of a trader was not available. For 4 of the shipments, TTI assumed non-trader activity because other shipments of the same commodity on the same vessels were non-trader activity. For the remaining two (including the domestic shipment), TTI assumed non-trader activity because it was the more conservative (lowest impact) choice.

Calculations

Once the appropriate vessels were selected, TTI added the vessel's tons per centimeter (TPC) factor and service speed from IHS Fairplay/Lloyd's Register. In order to avoid carrying forward any errors that might be in the Harbormaster's database, TTI verified each selected vessel's pertinent design information against IHS Fairplay/Lloyd's Register.

In this analysis, the effect of an increase in unit costs is levied against all cargo on board the vessel. Because some of the vessels calling at the Port of Corpus Christi do not carry cargo only for Corpus Christi, it was not possible to determine the total amount of cargo on board specifically for the Port of Corpus Christi call. Therefore, TTI used the vessel's sailing draft as reported in the Harbormaster's database, the vessel's deadweight tonnage capacity (adjusted for water, bunkers, crew, etc.), and the TPC factor to determine the approximate tonnage on board the vessel at the time of its arrival/departure.

Based on interviews in prior research, TTI has identified cargoes that are typically handled by commodity traders—primarily oil and steel. Oil and steel traders often use third parties to

store and handle their cargo. The other cargoes most likely to be "fully loaded" cargoes (and therefore subject to a loss of business) are primarily cement, aggregates, grain, and scrap metal. The appropriate classification of each shipment was accomplished by consulting importer, exporter, and vessel agency information in the PIERS records for the selected shipments. It was assumed that additional commodity quantities were available to the trader for shipment or delivery. Additionally, the tonnage capacity sacrificed by vessels in this category was deemed to be lost business.

For the remaining shipments, TTI calculated the increased unit cost for the affected shipments. Table 3 shows the number of vessel calls potentially affected by draft restrictions under Category 1.

Table 3. Vessel Calls Subject to Light Loading - 2010.

TOTALS	Number of Vessel Calls		
	Total	Unit cost increases only	Unit cost increase & lost business
Outbound - 1 ft loss	3	1	2
Inbound – 1 ft loss	54	33	21
Total	**57**	**34**	**23**
Outbound - 2 ft loss	7	3	4
Inbound – 2 ft loss	78	56	22
Total	**85**	**59**	**26**

Table 4 indicates the number of calls at each berth included in the selected vessel calls. The number of affected berths is higher than the number of vessel calls for both the 1-ft loss and 2-ft loss scenarios. This is because in both scenarios there were 10 calls to two berths and 1 call to 3 berths. This results in the number of affected berths being 12 greater than the number of vessel calls.

Table 4. Potentially Affected Berths.

Dock	# of Potentially Affected Berth Calls	
	1-ft Loss	2-ft Loss
POCCA Bulk Dock #2		1
ADM/Growmark	2	4
CITGO #1	1	1
CITGO #3	20	35
Flint Hills #3		1
KGSI Ingleside Term.	1	1
POCCA Oil Dock #1	22	24
POCCA Oil Dock #4	2	5
POCCA Oil Dock #7	3	4
Valero #2	4	4
Valero #3	14	17
TOTAL	**69**	**97**

Valuation

The valuation of the effect of the loss of draft was performed as follows:

- The vessel operating costs were calculated for each vessel.
    - The hourly at sea and in port costs for each vessel class were obtained from the Corps' Institute for Water Resources. Using the vessel's service speed and the distance between Corpus Christi and the port of origin/destination for the primary commodity being transported, the length of the voyage in hours was calculated. This results in a conservative estimate of the time in transit since a vessel will have to travel at less than service speed under certain weather conditions and in many cases there were intervening port calls between the origin/destination port and Corpus Christi (it was assumed those calls would have been made regardless of the conditions). Therefore, only the basic costs incurred to cover the distance between the two ports were considered.
- The unit transportation cost increase was calculated for each vessel.
    - The vessel operating cost was divided by the estimated total cargo capacity at the 2010 limiting draft. This value is the standard unit cost.
    - The vessel operating cost was divided by the total cargo that could be carried if the vessel were loaded to the capacity allowed after a loss of 1 ft or 2 ft of draft.
    - The difference between the standard unit cost and the reduced draft unit cost is the unit cost increase due to light loading.
- The monetary impact of the loss of draft is equal to the sum of the unit cost increase due to light loading multiplied by the estimated tonnage actually transported by the

selected vessel, plus the cost to transport the tonnage that was "left behind" due to light loading, where appropriate.

For "lost business" shipments:

- TTI calculated the difference between the tonnage the vessel should be able to transport at 2010 limiting drafts and the tonnage it would have been able to transport with a loss of 1 ft or 2 ft of draft. This difference was classified as "lost tonnage" resulting in lost business.
- It was determined that the 57 shipments in the 1-ft loss scenario included 4 commodities at the 4-digit PIERS code level, while the 85 shipments in the 2-ft loss scenario included 8 commodities. Potential lost cargo in the 1-ft loss scenario included two of these categories and the 2-ft loss scenario included four categories, which required assignment of unit monetary values in order to determine the total value of the potentially lost cargo. Table 5 displays the calendar year average values of these commodities per metric ton. Appendix B describes how these prices were determined.

Table 5. Commodity Prices for Category 1

Commodity	Unit Value (2010$/MT)
Gas Oil/Diesel	$680.40
Pet Coke	$91.80
Petroleum/Crude & Fuel Oil	$556.80
Sorghum	$340.26

The two primary effects to consider are: (1) the increased unit costs for shipments affected by a loss of draft and (2) the value of lost cargo. Table 6 and Table 7 show the two types of economic penalty estimated for light loading of inbound and outbound vessels. The table further apportions the inbound and outbound costs into two vessel components: (1) costs for those vessels that experience an increase in freight unit costs only and (2) costs for those vessels that experience an increase in freight unit costs as well as lost business.

Table 6. Economic Impact of Light Loading with Loss of 1 ft – 2010.

TOTALS	Minus 1 Ft		
	Increased Unit Costs	Lost Business	Total Cost
Total Category 1 Effect			
Outbound	$53,933	$1,950,809	$2,004,742
Inbound	$2,492,838	$57,176,613	$59,669,451
Total	**$2,546,771**	**$59,127,422**	**$61,674,193**
Subset a: Vessels with Lost Business			
Outbound	$53,933	$1,950,809	$2,004,742
Inbound	$855,363	$57,176,613	$58,031,976
Total	**$909,296**	**$59,127,422**	**$60,036,718**
Subset b: Vessels with Increased Unit Costs Only			
2010 Out	$0	$0	$0
2010 In	$1,637,475	$0	$1,637,475
Total	**$1,637,475**	**$0**	**$1,637,475**

Minor discrepancies due to rounding

Table 7. Economic Impact of Light Loading with Loss of 2 ft– 2010.

TOTALS	Minus 2 Ft		
	Increased Unit Costs	Lost Business	Total Cost
Total Category 1 Effect			
Outbound	$573,464	$3,427,497	$4,000,961
Inbound	$6,299,937	$100,621,351	$106,921,288
Total	**$6,873,401**	**$104,048,848**	**$110,922,249**
Subset a: Vessels with Lost Business			
Outbound	$135,538	$3,427,497	$3,563,035
Inbound	$1,483,635	$100,621,351	$102,104,986
Total	**$1,619,173**	**$104,048,848**	**$105,668,021**
Subset b: Vessels with Increased Unit Costs Only			
2010 Out	$437,927	$0	$437,927
2010 In	$4,816,302	$0	$4,816,302
Total	**$5,254,229**		**$5,254,229**

Minor discrepancies due to rounding

CATEGORY 2: DEEP DRAFT RIG MOVEMENTS

Whereas vessel traffic tends to flow in cycles of weeks and months, movements involving completed rigs take years to develop. For this reason, a one-year sample of traffic is sufficient for analyzing vessels, but not rigs. In order to be able to fully account for the expected effect of a reduction channel depth on the cost of moving a rig in from or out to sea during any given year, it was necessary to look at a longer period of time.

The Port Authority provided a log of rig movements for inspection. There were 86 rig movements during the period 2006-2010. Eight of these movements had a recorded sailing draft greater than 30 feet—1.6 movements per year. Six of these were inbound movements; two were outbound movements. If the actual channel depth were reduced by either 1 ft or 2 ft and an underkeel requirement of 5 ft were imposed, any rig needing more than 38 ft of draft would be affected. Of the 8 deep draft movements, one outbound movement would have been affected (2009). The rig fabricators indicated that they have 3 rigs that will need maximum draft for outbound movements in the next 18 months, bringing the number of potentially affected deep draft rigs which will have used the channel over an approximate 7-year period (2006-2012) to 4—an average of .6 rigs per year. Since the fabricators indicated that they already have three rigs that will depart in the next 18 months, it is reasonable to include one rig in this analysis, whether the loss of draft is 1 ft or 2 ft.

Three general responses can occur when the channel depth is less than anticipated:

1. **Dredge:** The fabricator can undertake to dredge the channel on its own. This is the least costly alternative, but it is generally not practical because of the time it takes to acquire the necessary permits and the availability of dredge equipment, which at times can be very constrained. Based on the historical dredging data for the last 12 years provided by the Corps of Engineers and shown in Table 8 below, the average cost of dredging the channels needed for rig movements would be approximately $2.0 million (2010 prices).

   An additional amount would be needed to prepare dredge disposal areas, a non-federal responsibility. There have been only three instances in the last 12 years where the Corps has recorded a "contribution" toward maintenance dredging, which typically consists of the non-federal cost of preparing dredge disposal areas, relocating utilities, and similar activities associated with dredging. In 2001, the non-federal cost was $297,598; in 2003, it was $250,000; and in 2005, it was $191,433. None of these costs was for the reaches a fabricator would have to dredge, but they indicate the costs that should be expected when maintenance/preparation of dredge disposal areas is required. Since there is no such activity recorded after 2005, it is reasonable to assume

some site preparation would be required if dredging took place in 2010 or later. This study assumes a cost of $250,000. This would bring the fabricator's cost of dredging to $2.3 million.

Table 8. Historical Dredging Cost Information

FY	Reach	Yards	Real Dollars	Notes
1998		0		
1999	EC	1,417,492	$2,397,113	
2000	LQ	0	$50,000	
2001	LQ	1,873,000	$2,065,266	Also dredged CC Bay thru Main TB and Rincon--not shown here
2002		0		LQ Junction was included with GIWW work--not shown here
2003	EC	1,141,795	$2,080,000	LQ Junction was included with GIWW work--not shown here
2004	EC	1,721	$770,645	
2005	LB & LQ	1,679,948	$3,114,721	
2006		0		
2007	EC	954,566	$2,470,499	
2008		0		
2009		0		
2010	LQ	2,320,149	$6,482,243	$2.79 Unit price
TOTAL		**9,388,671**	**$19,430,487**	$2.07 Avg unit price
Average Yards		722,205		
Cost @2010 unit price			**$2,017,763**	

Reaches: EC=Entrance Channel, LB=Lower Bay, LQ=La Quinta Channel

2. **Remove weight:** The fabricator can remove some of the weight (e.g., drill tower), move the rig offshore, and reinstall the weight components offshore. Due to the cost and safety aspects, this response would be extreme and is avoided if at all possible. The estimated cost of this alternative, according to the rig fabricators, is approximately $100 million.

3. **Add flotation:** The third response—and the most practical—is to install flotation devices on the structures that go between the on the legs of the drill rig ("sponsons") to lift it out of the water and facilitate the movement along the channel. TTI spoke with the two major rig fabricators to discuss the estimated cost of adding flotation to the rigs in order to move them. One of them responded with the following estimates:

Table 9. Cost of Adding Flotation to Rigs

Cost Component	Cost
Fabrication	$6,000,000
Installation	$1,000,000
Removal	$2,000,000
Disposal	$500,000
TOTAL	**$9,500,000**

The other fabricator indicated that this was in the range of what should be expected. Therefore, a cost of $9.5 million was selected as the cost necessary for a rig fabricator to react to a lack of channel depth by installing additional flotation.

For purposes of this analysis, the estimated cost for Option 3 is the selected cost for estimating the economic penalty by one rig movement. The category 2 cost is **$9,500,000**.

APPENDIX A:
DOCK CODES WITH SAILING DRAFT INFORMATION

Table A-1. Dock Code Listing With Maximum Sailing Drafts

CODE	DOCK NAME	Max Sailing Draft 2010 (ft)
AGG	VULCAN MATERIALS CO	40.0000
AKR	GULF MARINE FABRICAT	36.0000
BAY	BAY LTD.	34.5833
BT1	POCCA BULK DOCK #1	41.7500
BT2	POCCA BULK DOCK #2	42.5833
C01	POCCA CARGO DOCK #1	0.0000
C08*	POCCA CARGO DOCK #8	43.7500
C09	POCCA CARGO DOCK #9	39.4167
C10	POCCA CARGO DOCK #10	40.0833
C12	POCCA CARGO DOCK #12	32.0833
C14	POCCA CARGO DOCK #14	18.2500
C15*	POCCA CARGO DOCK #15	43.2500
CPE	ADM/GROWMARK	43.2500
CT1	CITGO #1	44.5000
CT3	CITGO #3	45.2500
CT8	CITGO #8	35.6667
HEI	HELIX INGLESIDE	29.5000
IE	INTERSTATE GRAIN	39.2500
K3	FLINT HILLS #3	42.5000
KIN	KGSI INGLESIDE TERM.	43.0833
KWT	KIEWIT OFFSHORE SERV	36.0000
NSI	N.S.INGLESIDE	22.0000
O01	POCCA OIL DOCK #1	45.1667
O04	POCCA OIL DOCK #4	45.7500
O07	POCCA OIL DOCK #7	44.8333
O08	POCCA OIL DOCK #8	42.0000
O09	POCCA OIL DOCK #9	24.7500
O11*	POCCA OIL DOCK #11	43.7500
OCC	OCCIDENTAL CHEMICAL	41.2500
REN	SHERWIN ALUMINA	38.0000
TDE	TEX DCKS & RAIL-EAST	38.5833
TDR*	TEX DCKS & RAIL-WEST	44.5000
V2	VALERO #2	45.1667
V3	VALERO #3	45.1667

**These drafts were in the "potentially affected" draft range, but the vessels associated with these drafts were not involved in cargo transfer operations.*

APPENDIX B:
DETERMINATION OF COMMODITY VALUES

Gas Oil/Diesel

Price information was obtained from the Energy Information Administration (EIA). The specific price used was the yearly average spot price for U.S. Gulf Coast Ultra-Low Sulfur No. 2 Diesel Fuel (Dollars per Gallon). A conversion factor of 42 gallons/bbl and 7.5 bbl/metric ton was used to convert barrels to metric tons. EIA provides this factor in the price worksheet used to determine the price.

The Gas Oil/Diesel unit price for 2010: $680.40/MT.

Petroleum/Crude & Fuel Oil

Price information was obtained from EIA. The specific price used was for "Weekly All Countries Spot Price FOB Weighted by Estimated Export Volume (Dollars per Barrel)." A conversion factor of 7.33 bbl/ metric ton was used to convert barrels to metric tons. BP provides this factor on its website.

The crude oil unit price for 2010 is: $556.80/MT.

Pet Coke

Pet coke price information was obtained from the CEMBUREAU's 2010 Activity Report. The information for US Gulf FOB price was estimated using the graph on page 32 of the report titled "Petcoke Price January 2003 – beginning May 2011".

The estimated pet coke unit price for year 2010 is: $91.80/MT.

Sorghum

Sorghum prices for 2010 were obtained from USDA's Economic Research Service publication "Food Grains Yearbook Sorghum, Gulf Port Prices for No. 2 Yellow".

The yearly price for Sorghum was calculated by averaging the monthly prices. The sorghum unit price for 2010 is: $340.26/MT.