UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

Form 10-K

(Mark One)

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the fiscal year ended December 31, 2022

or

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from to

Commission File no. 1-07615

Kirby Corporation

(Exact name of registrant as specified in its charter)

Nevada	**74-1884980**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**
55 Waugh Drive, Suite 1000	
Houston, Texas	**77007**
(Address of principal executive offices)	**(Zip Code)**

Registrant's telephone number, including area code:
713-435-1000

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock	KEX	New York Stock Exchange

Securities registered pursuant to Section 12(g) of the Act:
None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☒ No ☐

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Exchange Act. Yes ☐ No ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer	☒	Accelerated filer	☐
Non-accelerated filer	☐	Smaller reporting company	☐
		Emerging growth company	☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☒

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements. ☐

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to §240.10D-1(b). ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes ☐ No ☒

The aggregate market value of common stock held by non-affiliates of the registrant as of June 30, 2022, based on the closing sales price of such stock on the New York Stock Exchange on June 30, 2022, was $3.6 billion. For purposes of this computation, all executive officers, directors and 10% beneficial owners of the registrant are deemed to be affiliates. Such determination should not be deemed an admission that such executive officers, directors and 10% beneficial owners are affiliates.

As of February 17, 2023, 60,015,000 shares of common stock were outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the Company's definitive proxy statement in connection with the Annual Meeting of Stockholders to be held April 25, 2023, to be filed with the Commission pursuant to Regulation 14A, and the related annual report to be provided to the Company's stockholders pursuant to Rule 14a-3(b) are incorporated by reference into Parts II and III of this report.

KIRBY CORPORATION
2022 FORM 10-K
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PART I

Item 1. ***Business***

THE COMPANY

Kirby Corporation (the "Company") is the nation's largest domestic tank barge operator, transporting bulk liquid products throughout the Mississippi River System, on the Gulf Intracoastal Waterway, and coastwise along all three United States coasts. The Company transports petrochemicals, black oil, refined petroleum products, and agricultural chemicals by tank barge. Through its distribution and services segment ("KDS"), the Company sells after-market service and genuine replacement parts for engines, transmissions, reduction gears, and power generation equipment used in oil and gas and commercial and industrial applications. The Company also rents a variety of power generation and industrial equipment, manufactures and remanufactures oilfield service equipment, including pressure pumping units, and manufactures electric power generation equipment for oilfield service customers.

Unless the context otherwise requires, all references herein to the Company include the Company and its subsidiaries. The Company's principal executive office is located at 55 Waugh Drive, Suite 1000, Houston, Texas 77007, and its telephone number is 713-435-1000. The Company's mailing address is P.O. Box 1745, Houston, Texas 77251-1745. Kirby Corporation is a Nevada corporation and was incorporated in 1969 although the history of the Company goes back to 1921.

Documents and Information Available on Website

The Internet address of the Company's website is http://www.kirbycorp.com. The Company makes available free of charge through its website, all of its filings with the Securities and Exchange Commission ("SEC"), including its Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and amendments to those reports, as soon as reasonably practicable after they are electronically filed with or furnished to the SEC. The SEC maintains an internet site at http://www.sec.gov that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC.

The following documents are available on the Company's website in the Investor Relations section under Corporate Governance:

- Audit Committee Charter
- Compensation Committee Charter
- ESG and Nominating Committee Charter
- Business Ethics Guidelines
- Corporate Governance Guidelines

The Company is required to make prompt disclosure of any amendment to or waiver of any provision of its Business Ethics Guidelines that applies to any director or executive officer or to its chief executive officer, chief financial officer, chief accounting officer or controller or persons performing similar functions. The Company will make any such disclosure that may be necessary by posting the disclosure on its website in the Investor Relations section under Corporate Governance.

BUSINESS AND PROPERTY

The Company, through its subsidiaries, conducts operations in two reportable business segments: marine transportation and distribution and services.

The Company, through its marine transportation segment ("KMT"), is a provider of marine transportation services, operating tank barges and towing vessels transporting bulk liquid products throughout the Mississippi River System, on the Gulf Intracoastal Waterway, and coastwise along all three United States coasts. The Company transports petrochemicals, black oil, refined petroleum products, and agricultural chemicals by tank barge. The Company operates offshore dry-bulk barge and tugboat units engaged in the offshore transportation of dry-bulk cargoes in the United States coastal trade. The segment is a provider of transportation services for its customers and, in almost all cases, does not assume ownership of the products that it transports. All of the Company's vessels operate under the United States flag and are qualified for domestic trade under the Jones Act.

The Company, through KDS, sells after-market service and genuine replacement parts for engines, transmissions, reduction gears, electric motors, drives, and controls, specialized electrical distribution and control systems, energy storage battery systems, and related oilfield services equipment, rebuilds component parts or entire diesel engines, transmissions and reduction gears, and related equipment used in oilfield services, marine, power generation, on-highway and other industrial applications. The Company also rents equipment including generators, industrial compressors, high capacity lift trucks, and refrigeration trailers for use in a variety of industrial markets, and manufactures and remanufactures oilfield service equipment, including pressure pumping units, and manufacturers cementing and pumping equipment as well as coil tubing and well intervention equipment, electric power generation equipment, specialized electrical distribution and control equipment, and high capacity energy storage/battery systems for oilfield service and railroad customers.

The Company has approximately 5,200 employees, the large majority of whom are in the United States.

MARINE TRANSPORTATION

KMT is primarily a provider of transportation services by tank barge for the inland and coastal markets. As of December 31, 2022, the equipment owned or operated by KMT consisted of 1,037 inland tank barges with 23.1 million barrels of capacity, and an average of 277 inland towboats during the fourth quarter of 2022, as well as 29 coastal tank barges with 3.0 million barrels of capacity, 27 coastal tugboats, four offshore dry-bulk cargo barges, four offshore tugboats and one docking tugboat with the following specifications and capacities:

Class of equipment	Number in class	Average age (in years)	Barrel capacities
Inland tank barges (owned and leased):			
Regular double hull:			
20,000 barrels and under	356	15.4	4,154,000
Over 20,000 barrels	629	13.8	18,064,000
Specialty double hull	52	37.0	885,000
Total inland tank barges	1,037	15.5	23,103,000
Inland towboats (owned and chartered):			
800 to 1300 horsepower	31	33.9	
1400 to 1900 horsepower	29	24.0	
2000 to 2400 horsepower	163	11.9	
2500 to 3200 horsepower	40	11.4	
3300 to 4800 horsepower	9	23.1	
Greater than 5000 horsepower	5	23.1	
Total inland towboats	277	16.3	
Coastal tank barges (owned and leased):			
30,000 barrels and under	2	28.1	37,000
50,000 to 70,000 barrels	3	17.3	111,000
80,000 to 90,000 barrels	9	19.1	759,000
100,000 to 110,000 barrels	6	16.5	630,000
120,000 to 150,000 barrels	3	21.0	416,000
Over 150,000 barrels	6	7.1	1,046,000
Total coastal tank barges	29	16.7	2,999,000
Coastal tugboats (owned and chartered):			
2000 to 2900 horsepower	1	47.1	
3000 to 3900 horsepower	2	20.0	
4000 to 4900 horsepower	7	12.9	
5000 to 6900 horsepower	11	6.7	
Greater than 7000 horsepower	6	12.5	
Total coastal tugboats	27	11.8	
			Deadweight Tonnage
Offshore dry-bulk cargo barges (owned)	4	24.1	67,000
Offshore tugboats and docking tugboat (owned and chartered)	5	31.5	

The 277 inland towboats, 27 coastal tugboats, four offshore tugboats and one docking tugboat provide the power source and the 1,037 inland tank barges, 29 coastal tank barges and four offshore dry-bulk cargo barges provide the freight capacity for KMT. When the power source and freight capacity are combined, the unit is called a tow. The Company's inland tows generally consist of one towboat and from one to up to 25 tank barges, depending upon the horsepower of the towboat, the waterway infrastructure capacity and conditions, and customer requirements. The Company's coastal and offshore tows primarily consist of one tugboat and one tank barge or dry-bulk cargo barge.

Marine Transportation Industry Fundamentals

The United States inland waterway system, composed of a network of interconnected rivers and canals that serve the nation as water highways, is one of the world's most efficient transportation systems. The nation's inland waterways are vital to the United States distribution system, with over 1.1 billion short tons of cargo moved annually on United States shallow draft waterways. The inland waterway system extends approximately 26,000 miles, 12,000 miles of which are generally considered significant for domestic commerce, through 38 states, with 635 shallow draft ports. These navigable inland waterways link the United States heartland to the world.

The United States coastal waterway system consists of ports along the Atlantic, Gulf and Pacific coasts, as well as ports in Alaska, Hawaii and on the Great Lakes. Like the inland waterways, the coastal trade is vital to the United States distribution system, particularly the regional distribution of refined petroleum products from refineries and storage facilities to a variety of destinations, including other refineries, distribution terminals, power plants and ships. In addition to distribution directly from refineries and storage facilities, coastal tank barges are used frequently to distribute products from pipelines. Many coastal markets receive refined petroleum products principally from coastal tank barges. Smaller volumes of petrochemicals are distributed from Gulf Coast plants to end users whereas black oil, including crude oil and natural gas condensate, is distributed regionally from refineries and terminals along the United States coast to refineries, power plants and distribution terminals.

Based on cost, safety, and level of emissions, barge transportation is often the most efficient and safest means of surface transportation of bulk commodities when compared to railroads and trucks. The cargo capacity of a 27,500 barrel inland tank barge is the equivalent of 46 railroad tank cars or 144 tractor-trailer tank trucks. A typical Company lower Mississippi River linehaul tow of 15 barges has the carrying capacity of approximately 216 railroad tank cars plus six locomotives, or approximately 1,050 tractor-trailer tank trucks. The Company's inland tank barge fleet capacity of 23.1 million barrels equates to approximately 38,600 railroad tank cars or approximately 121,000 tractor-trailer tank trucks. Furthermore, barging is much more energy efficient. One ton of bulk product can be carried 675 miles by inland barge on one gallon of fuel, compared to 472 miles by railcar or 151 miles by truck. From an emissions perspective, transport by rail and tractor-trailer tank trucks emit approximately 40% and 800%, respectively, more CO_2 per ton mile of cargo transported than by inland tank barge. In the coastal trade, the carrying capacity of a 100,000 barrel tank barge is the equivalent of approximately 165 railroad tank cars or approximately 525 tractor-trailer tank trucks. The Company's coastal tank barge fleet capacity of 3.0 million barrels equates to approximately 5,000 railroad tank cars or approximately 15,700 tractor-trailer tank trucks. Marine transportation generally involves less urban exposure than railroad or truck transportation and operates on a system with few crossing junctures and often in areas relatively remote from population centers. These factors generally help to reduce the number of waterway incidents.

Inland Tank Barge Industry

The Company operates within the United States inland tank barge industry, a diverse and independent mixture of approximately 30 large integrated transportation companies and small operators, as well as captive fleets owned by refining and petrochemical companies. The inland tank barge industry provides marine transportation of bulk liquid cargoes for customers and, in the case of captives, for their own account, throughout the Mississippi River and its tributaries and on the Gulf Intracoastal Waterway. The most significant markets in this industry include the transportation of petrochemicals, black oil, refined petroleum products, and agricultural chemicals. The Company operates in each of these markets. The use of marine transportation by the petroleum and petrochemical industry is a major reason for the location of United States refineries and petrochemical facilities on navigable inland waterways. Texas and Louisiana currently account for approximately 80% of the United States production of petrochemicals. Much of the United States farm belt is likewise situated with access to the inland waterway system, relying on marine transportation of farm products, including agricultural chemicals. The Company's principal distribution system encompasses the Gulf Intracoastal Waterway from Brownsville, Texas, to Port St. Joe, Florida, the Mississippi River System and the Houston Ship Channel. The Mississippi River System includes the Arkansas, Illinois, Missouri, Ohio, Red, Tennessee, Yazoo, Ouachita and Black Warrior Rivers and the Tennessee-Tombigbee Waterway.

The number of tank barges that operate on the inland waterways of the United States increased from 2,750 in 2006 to approximately 4,000 by the end of 2019. The increase from 2,750 tank barges in 2006 to approximately 4,000 by the end of 2019 primarily resulted from increased barge construction and deferred retirements due to strong demand and resulting capacity shortages. The number of industry tank barges has remained relatively constant from 2019 through the end of 2022. The Company's 1,037 inland tank barges represent approximately 26% of the industry's approximately 4,028 inland tank barges.

For 2020, the Company estimated that industry-wide approximately 150 new tank barges were placed in service and 150 tank barges were retired. For 2021, the Company estimated that industry-wide 70 new tank barges were placed in service and between 40 to 50 tank barges were retired. For 2022, the Company estimates that industry-wide 22 new tank barges were placed in service and retirements, net of reactivations, were flat. During 2020, the Company's tank barge utilization decreased from the low to mid-90% range in the 2020 first quarter to the high 60% range during the 2020 fourth quarter as a result of a reduction in demand due to the COVID-19 pandemic. During 2021, the Company's inland barge utilization improved to the mid-to high 80% range by the fourth quarter as the economy began

to recover from the COVID-19 pandemic. During 2022, the Company's inland barge utilization improved to the low 90% range reflecting increased activity levels as a result of higher refinery and petrochemical plant utilization. The Company estimates that approximately 5 to 10 new tank barges have currently been ordered for delivery in 2023. Generally, the risk of an oversupply of tank barges may be mitigated by increased petrochemical, black oil and refined petroleum products volumes from increased production from current facilities, plant expansions, the opening of new facilities, and the fact that the inland tank barge industry has approximately 600 tank barges that are 30 years old or older and approximately 400 of those are 40 years old or older, which could lead to retirement of these older tank barges. The average age of the nation's inland tank barge fleet is approximately 17 years.

The Company's inland division of KMT also owns a shifting operation and fleeting facility for dry cargo barges and tank barges on the Houston Ship Channel, in Freeport and Port Arthur, Texas, and Lake Charles, Louisiana, and a shipyard for building inland towboats and providing routine maintenance on marine vessels. The Company also owns a two-thirds interest in Osprey Line, L.L.C. ("Osprey"), a transporter of project cargoes and cargo containers by barge on the United States inland waterway system.

Coastal Tank Barge Industry

The Company also operates in the United States coastal tank barge industry, operating tank barges in the 195,000 barrels or less category. This market is composed of approximately 20 large integrated transportation companies and small operators. The 195,000 barrels or less category coastal tank barge industry primarily provides regional marine transportation distribution of bulk liquid cargoes along the United States' Atlantic, Gulf and Pacific coasts, in Alaska and Hawaii, and to a lesser extent, on the Great Lakes. Products transported are primarily refined petroleum products and black oil from refineries and storage facilities to a variety of destinations, including other refineries, distribution terminals, power plants and ships, the regional movement of crude oil and natural gas condensate to Gulf Coast, Northeast and West Coast refineries, and the movement of petrochemicals primarily from Gulf Coast petrochemical facilities to end users.

The number of coastal tank barges that operate in the 195,000 barrels or less category is approximately 270, of which the Company operates 29 or approximately 11%. The average age of the nation's coastal tank barge fleet is approximately 16 years. The Company is aware of no specialized coastal articulated tank barge and tugboat units ("ATB") that were delivered in 2022 with no further coastal tank barges currently under construction. The coastal tank barge fleet has approximately 21 tank barges that are over 25 years old. The number of older tank barges, coupled with low industry-wide barge utilization levels and ballast water treatment regulations, could lead to further retirements of these older tank barges in the next few years.

Competition in the Tank Barge Industry

The tank barge industry is very competitive. Competition in this business is based on price and reliability, with many of the industry's customers emphasizing enhanced vetting requirements, an increased emphasis on safety, the environment, and high-quality service consistent with the customer's operational standards. Customers also require that their supplier of tank barge services have the ability to handle a variety of requirements, including distribution capabilities throughout the inland waterway system and coastal markets, high levels of flexibility, and an emphasis on safety, environmental and financial responsibility, as well as appropriate insurance coverage.

In the inland markets, the Company's direct competitors are primarily noncaptive inland tank barge operators. "Captive" fleets are owned by refining and petrochemical companies which occasionally compete in the inland tank barge market, but primarily transport cargoes for their own account. The Company is the largest inland tank barge carrier, both in terms of number of barges and total fleet barrel capacity. The Company's inland tank barge fleet has grown from 71 tank barges in 1988 to 1,037 tank barges as of December 31, 2022, or approximately 26% of the estimated total number of domestic inland tank barges.

In the coastal markets, the Company's direct competitors are the operators of United States tank barges in the 195,000 barrels or less category. Coastal tank barges in the 195,000 barrels or less category have the ability to enter the majority of coastal ports. Ocean-going tank barges and United States product tankers in the 300,000 barrels plus category, excluding the fleet of large tankers dedicated to Alaska crude oil transportation, occasionally compete in the 195,000 barrels or less market to move large volumes of refined petroleum products within the Gulf of Mexico with occasional movements from the Gulf Coast to the East Coast, along the West Coast and from Texas and Louisiana to Florida. However, access to United States ports of approximately 45 such product tankers is limited by terminal size and draft restrictions.

While the Company competes primarily with other tank barge companies, it also competes with companies who operate refined product and petrochemical pipelines, railroad tank cars, and tractor-trailer tank trucks. As noted above, the Company believes that both inland and coastal marine transportation of bulk liquid products enjoy a substantial cost advantage over railroad and truck transportation. The Company believes that refined product and crude oil pipelines, although often a less expensive form of transportation than inland and coastal tank barges, are not as adaptable to diverse products and are generally limited to fixed point-to-point distribution of commodities in high volumes over extended periods of time.

Products Transported

The Company transports petrochemicals, black oil, refined petroleum products, and agricultural chemicals by tank barge throughout the Mississippi River System, on the Gulf Intracoastal Waterway, and coastwise along all three United States coasts. During 2022, the Company's inland marine transportation operation moved over 55 million tons of liquid cargo on the United States inland waterway system.

Petrochemicals. Bulk liquid petrochemicals transported include such products as benzene, styrene, methanol, acrylonitrile, xylene, naphtha and caustic soda. These products are consumed in the production of paper, fiber and plastics. Pressurized products, including butadiene, isobutane, propylene, butane and propane, all requiring pressurized conditions to remain in stable liquid form, are transported in pressure barges. The transportation of petrochemical products represented 49% of the segment's 2022 revenues. Customers shipping these products are petrochemical and refining companies.

Black Oil. Black oil transported includes such products as residual fuel oil, No. 6 fuel oil, coker feedstock, vacuum gas oil, asphalt, carbon black feedstock, crude oil, natural gas condensate and ship bunkers (engine fuel). Such products represented 28% of the segment's 2022 revenues. Black oil customers are refining companies, marketers, and end users that require the transportation of black oil between refineries and storage terminals, to other refineries and to power plants. Ship bunker customers are oil companies and oil traders in the bunkering business.

Refined Petroleum Products. Refined petroleum products transported include the various blends of finished gasoline, gasoline blendstocks, jet fuel, No. 2 oil, heating oil and diesel fuel, and represented 20% of the segment's 2022 revenues. The Company also classifies ethanol in the refined petroleum products category. Customers are oil and refining companies, marketers and ethanol producers.

Agricultural Chemicals. Agricultural chemicals transported represented 3% of the segment's 2022 revenues. Agricultural chemicals include anhydrous ammonia and nitrogen-based liquid fertilizer, as well as industrial ammonia. Agricultural chemical customers consist mainly of domestic and foreign producers of such products.

Demand Drivers in the Tank Barge Industry

Demand for tank barge transportation services is driven by the production volumes of the bulk liquid commodities. Marine transportation demand for the segment's four primary commodity groups, petrochemicals, black oil, refined petroleum products and agricultural chemicals, is based on differing circumstances. While the demand drivers of each commodity are different, the Company has the flexibility, in certain cases, of reallocating inland equipment and coastal equipment among the petrochemical, refined petroleum products and black oil markets as needed.

Petrochemical products are used in both consumer non-durable and durable goods. Bulk petrochemical volumes have historically tracked the general domestic economy and correlate to the United States Gross Domestic Product. During 2020, Gulf Coast petrochemical plants saw reduced production levels as a result of lower demand due to the COVID-19 pandemic thereby decreasing marine transportation volumes of basic petrochemicals to both domestic consumers and terminals for export destinations. In addition, during the 2020 third quarter, the petrochemical complex along the Gulf Coast was impacted by hurricanes and tropical storms, further reducing barge volumes and closing critical waterways for extended periods of time. As a result, barge utilization decreased from the low to mid-90% range during the 2020 first quarter to the high 60% range in the 2020 fourth quarter and then recovered to the mid-to high 80% range in the 2021 fourth quarter as the economy improved. During 2022, utilization improved to the low 90% range by the end of the 2022 fourth quarter reflecting increased activity levels as a result of higher refinery and petrochemical plant utilization. Coastal tank barge utilization for the transportation of petrochemicals increased from the mid-to-high 80% range in 2019 to the low 90% range during 2022 due to a higher percentage of term contracts.

The demand for black oil, including ship bunkers, varies by type of product transported. Demand for transportation of residual oil, a heavy by-product of refining operations, varies with refinery utilization and usage of feedstocks. During 2020 through 2022, the Company continued to transport crude oil and natural gas condensate produced from the Eagle Ford and Permian Basin shale formations in Texas, both along the Gulf Intracoastal Waterway with inland vessels and in the Gulf of Mexico with coastal equipment, and continued to transport Utica crude oil and natural gas condensate downriver from the Mid-Atlantic to the Gulf Coast, albeit, at reduced levels as some of the product was transported by newly constructed pipelines. During 2020, the Company experienced a decrease in volumes being transported along these routes as a result of reduced demand due to the COVID-19 pandemic and oil price volatility during the year. During 2021, volumes recovered from the lows seen in 2020 as economic activity improved. During 2020, the COVID-19 pandemic resulted in reduced demand for crude oil and natural gas condensate movements and resulted in a decrease in black oil tank barge utilization from the low to mid-90% range during the 2020 first half to the mid-60% to low 70% range during the 2020 second half. During 2021, as economic activity improved, black oil tank barge utilization averaged in the mid 70% range during the first nine months of 2021 and recovered to the high 80% range in the 2021 fourth quarter. During 2022, black oil tank barge utilization further

improved to the high 90% range in the 2022 fourth quarter. Coastal black oil tank barge utilization averaged in the high 90% range in 2019 due to the retirement of coastal tank barges throughout the industry and declined slightly to the mid 90% range in 2020 through 2022 despite the reduced demand as a result of the COVID-19 pandemic as utilization was supported by a high percentage of term contracts. Inland and coastal asphalt shipments are generally seasonal, with higher volumes shipped during April through November, months when weather allows for efficient road construction.

Refined petroleum product volumes are driven by United States gasoline and diesel fuel consumption, principally vehicle usage, air travel, and weather conditions. Volumes can also be affected by gasoline inventory imbalances within the United States. Generally, gasoline and No. 2 oil are exported from the Gulf Coast where refining capacity exceeds demand. The Midwest is a net importer of such products. Volumes were also driven by diesel fuel transported to terminals along the Gulf Coast for export to South America. Ethanol, produced in the Midwest, is moved from the Midwest to the Gulf Coast. In the coastal trade, tank barges are frequently used regionally to transport refined petroleum products from a coastal refinery or terminals served by pipelines to the end markets. Many coastal areas rely upon access to refined petroleum products by using marine transportation in the distribution chain. In 2020, coastal refined petroleum products tank barge utilization averaged in the low 60% range due to the COVID-19 pandemic and the resulting reduction in demand and recovered into the low 70% range in the 2021 fourth quarter due to increased business activity and the retirement of underutilized equipment in the 2021 third quarter. During 2022, coastal refined petroleum products tank barge utilization averaged in the low 90% range as activity levels continued to improve.

Demand for marine transportation of domestic and imported agricultural fertilizer is seasonal and directly related to domestic nitrogen-based liquid fertilizer consumption, driven by the production of corn, cotton and wheat. During periods of high natural gas prices, the manufacturing of nitrogen-based liquid fertilizer in the United States is curtailed. During these periods, imported products, which normally involve longer barge trips, replace the domestic products to meet Midwest and South Texas demands. Such products are delivered to the numerous small terminals and distributors throughout the United States farm belt.

Marine Transportation Operations

KMT operated a fleet of 1,037 inland tank barges and an average of 277 inland towboats during the 2022 fourth quarter, as well as 29 coastal tank barges and 27 coastal tugboats. The segment also operated four offshore dry-bulk cargo barges, four offshore tugboats and one docking tugboat transporting dry-bulk commodities in United States coastal trade.

Inland Operations. The segment's inland operations are conducted through a wholly owned subsidiary, Kirby Inland Marine, LP ("Kirby Inland Marine"). Kirby Inland Marine's operations consist of the Canal, Linehaul and River fleets, as well as barge fleeting services.

The Canal fleet transports petrochemical feedstocks, processed chemicals, pressurized products, black oil, and refined petroleum products along the Gulf Intracoastal Waterway, the Mississippi River below Baton Rouge, Louisiana, and the Houston Ship Channel. Petrochemical feedstocks and certain pressurized products are transported from one plant to another plant for further processing. Processed chemicals and certain pressurized products are moved to waterfront terminals and chemical plants. Black oil is transported to waterfront terminals and products such as No. 6 fuel oil are transported directly to the end users. Refined petroleum products are transported to waterfront terminals along the Gulf Intracoastal Waterway for distribution.

The Linehaul fleet transports petrochemical feedstocks, chemicals, agricultural chemicals and lube oils along the Gulf Intracoastal Waterway, Mississippi River and the Illinois and Ohio Rivers. Loaded tank barges are staged in the Baton Rouge area from Gulf Coast refineries and petrochemical plants, and are transported from Baton Rouge, Louisiana to waterfront terminals and plants on the Mississippi, Illinois and Ohio Rivers, and along the Gulf Intracoastal Waterway, on regularly scheduled linehaul tows. Tank barges are dropped off and picked up going up and down river.

The River fleet transports petrochemical feedstocks, chemicals, refined petroleum products, agricultural chemicals and black oil along the Mississippi River System above Baton Rouge. The River fleet operates unit tows, where a towboat and generally a dedicated group of barges operate on consecutive voyages between loading and discharge points. Petrochemical feedstocks and processed chemicals are transported to waterfront petrochemical and chemical plants, while black oil, refined petroleum products and agricultural chemicals are transported to waterfront terminals.

The inland transportation of petrochemical feedstocks, chemicals and pressurized products is generally consistent throughout the year. Transportation of refined petroleum products, certain black oil and agricultural chemicals is generally more seasonal. Movements of black oil, such as asphalt, generally increase in the spring through fall months. Movements of refined petroleum products, such as gasoline blends, generally increase during the summer driving season, while heating oil movements generally increase during the winter months. Movements of agricultural chemicals generally increase during the spring and fall planting seasons.

The marine transportation inland operation moves and handles a broad range of sophisticated cargoes. To meet the specific requirements of the cargoes transported, the inland tank barges may be equipped with self-contained heating systems, high-capacity

pumps, pressurized tanks, refrigeration units, stainless steel tanks, aluminum tanks or specialty coated tanks. Of the 1,037 inland tank barges currently operated, 800 are petrochemical and refined petroleum products barges, 152 are black oil barges, 75 are pressure barges and 10 are refrigerated anhydrous ammonia barges. Of the 1,037 inland tank barges, 999 are owned by the Company and 38 are leased.

The fleet of 277 inland towboats for the 2022 fourth quarter ranges from 800 to 6,100 horsepower. Of the 277 inland towboats, 216 are owned by the Company and 61 are chartered. Towboats in the 800 to 2,100 horsepower classes provide power for barges used by the Canal and Linehaul fleets on the Gulf Intracoastal Waterway and the Houston Ship Channel. Towboats in the 1,400 to 3,200 horsepower classes provide power for both the River and Linehaul fleets on the Gulf Intracoastal Waterway and the Mississippi River System. Towboats above 3,600 horsepower are typically used on the Mississippi River System to move River fleet unit tows and provide Linehaul fleet towing. Based on the capabilities of the individual towboats used in the Mississippi River System, the tows range in size from 10,000 to 30,000 tons.

Marine transportation services for inland movements are conducted under term contracts, which have contract terms of 12 months or longer, or spot contracts, which have contract terms of less than 12 months, with customers with whom the Company has traditionally had long-standing relationships. Typically, term contracts range from one to three years, some of which have renewal options. During 2020 and 2021 approximately 65% of inland marine transportation revenues were under term contracts and 35% were spot contract revenues. During 2022, approximately 60% of inland marine transportation revenues were under term contracts and 40% were spot contract revenues.

All of the Company's inland tank barges used in the transportation of bulk liquid products are of double hull construction and are capable of controlling vapor emissions during loading and discharging operations in compliance with occupational safety and health regulations and air quality regulations.

The Company has the ability to offer its customers optimized distribution capabilities throughout the Mississippi River System and the Gulf Intracoastal Waterway. Such capabilities offer economies of scale from matching tank barges, towboats, products, and destinations efficiently to meet its customers' requirements.

Through the Company's proprietary vessel management computer system, the Company's barge and towboat fleet is dispatched from a centralized dispatch group. The towboats are equipped with cellular and satellite positioning and communication systems that automatically transmit the location of the towboat to the Company's customer service department. Electronic orders are communicated to vessel personnel with reports of towing activities fed back electronically to the customer service department. The electronic interface between the customer service department and the vessel enables matching of customer needs to barge capabilities, thereby promoting efficient utilization of the tank barge and towboat fleet. The Company's customers are able to access information concerning the movement of their cargoes, including barge locations, through the Company's proprietary electronic customer service portal.

Kirby Inland Marine operates the largest commercial tank barge fleeting service (barge storage facilities) in numerous ports, including Houston, Corpus Christi, Freeport and Orange, Texas, Baton Rouge, Lake Charles and New Orleans, Louisiana, Mobile, Alabama, and Greenville, Mississippi. Included in the fleeting service is a shifting operation and fleeting service for dry cargo barges and tank barges on the Houston Ship Channel, in Freeport and Port Arthur, Texas, and Lake Charles, Louisiana. Kirby Inland Marine provides shifting and fleeting service for its own barges, as well as for customers and third party carriers, transferring barges within the areas noted.

Kirby Inland Marine also provides shore-based barge tankermen to the Company and third parties. Services to the Company and third parties cover the Gulf Coast, mid-Mississippi Valley, and the Ohio River Valley.

San Jac Marine, LLC ("San Jac"), a subsidiary of Kirby Inland Marine, owns and operates a shipyard in Channelview, Texas which builds marine vessels for both inland and coastal applications, and provide maintenance and repair services. Kirby Inland Marine also builds inland towboats and performs routine maintenance and repairs at the shipyard.

The Company owns a two-thirds interest in Osprey, which transports project cargoes and cargo containers by barge on the United States inland waterway system.

Coastal Operations. The segment's coastal operations are conducted through wholly owned subsidiaries, Kirby Offshore Marine, LLC ("Kirby Offshore Marine") and Kirby Ocean Transport Company ("Kirby Ocean Transport").

Kirby Offshore Marine provides marine transportation of refined petroleum products, petrochemicals and black oil in coastal regions of the United States. The coastal operations are conducted along the eastern seaboard, western seaboard and the Gulf Coast. The Company also operates equipment, to a lesser extent, in the Eastern and Western Canadian Provinces. The tank barges operating are in the 10,000 to 195,000 barrel capacity range and coastal tugboats in the 2,400 to 10,000 horsepower range. Kirby Offshore Marine's vessels call on various coastal ports from Maine to Texas, servicing refineries, storage terminals and power plants. The Company also services refineries and storage terminals from Southern California to Washington State.

The coastal transportation of refined petroleum products and black oil is impacted by seasonality and is partially dependent on the area of operations. Operations along the West Coast of the United States have been subject to more seasonal variations in demand than the operations along the East Coast and Gulf Coast regions of the United States. Movements of refined petroleum products such as various blends of gasoline are strongest during the summer driving season while heating oil generally increases during the winter months.

The coastal fleet consists of 29 tank barges with 3.0 million barrels of capacity, primarily transporting refined petroleum products, black oil and petrochemicals. The Company owns 28 of the coastal tank barges and leases one barge. Of the 29 coastal tank barges, 21 are refined petroleum products and petrochemical barges and 8 are black oil barges. The Company operates 27 coastal tugboats ranging from 2,400 to 11,000 horsepower, of which 24 are owned by the Company and three are chartered.

Coastal marine transportation services are typically conducted under long-term contracts, primarily one year or longer, some of which have renewal options, for customers with which the Company has traditionally had long-standing relationships. During 2022, approximately 75% of the coastal marine transportation revenues were under term contracts and 25% were spot contract revenues. During 2021, approximately 80% of the coastal marine transportation revenues were under term contracts and 20% were spot contract revenues. During 2020, approximately 85% of the coastal marine transportation revenues were under term contracts and 15% were spot contract revenues.

Kirby Offshore Marine also operates a fleet of two offshore dry-bulk barge and tugboat units involved in the transportation of sugar and other dry products between Florida and East Coast ports. These vessels primarily operate under long-term contracts of affreightment.

Kirby Ocean Transport owns and operates a fleet of two offshore dry-bulk barges, two offshore tugboats and one docking tugboat. Kirby Ocean Transport operates primarily under term contracts of affreightment.

Kirby Ocean Transport is also engaged in the transportation of coal, fertilizer, sugar and other bulk cargoes on a short-term basis between domestic ports and occasionally the transportation of grain from domestic ports to ports primarily in the Caribbean Basin.

Contracts and Customers

Marine transportation inland and coastal services are conducted under term or spot contracts for customers with whom the Company has traditionally had long-standing relationships. Typically, term contracts range from one to three years, some of which have renewal options. The majority of the marine transportation contracts with its customers by revenue are for terms of one year. Most have been customers of KMT for many years and management anticipates continued relationships; however, there is no assurance that any individual contract will be renewed.

A term contract is an agreement with a specific customer to transport cargo from a designated origin to a designated destination at a set rate (affreightment) or at a daily rate (time charter). The rate may or may not include escalation provisions to recover changes in specific costs such as fuel. Time charters, which insulate the Company from revenue fluctuations caused by weather and navigational delays and temporary market declines, represented approximately 58% of the marine transportation's inland revenues under term contracts during 2022 and 2021, and 66% of the revenue under term contracts during 2020. A spot contract is an agreement with a customer to move cargo from a specific origin to a designated destination for a rate negotiated at the time the cargo movement takes place. Spot contract rates are at the current "market" rate and are subject to market volatility. The Company typically maintains a higher mix of term contracts to spot contracts to provide the Company with a reasonably predictable revenue stream while maintaining spot market exposure to take advantage of new business opportunities and customers' peak demands. During 2021 and 2020, approximately 65% of inland marine transportation revenues were under term contracts and 35% were spot contract revenues. During 2022, approximately 60% of inland marine transportation revenues were under term contracts and 40% were spot contract revenues. Coastal time charters represented approximately 85% of the marine transportation's coastal revenues under term contracts in 2021 and approximately 90% of coastal revenues under term contracts in 2022 and 2020.

No single customer of KMT accounted for 10% or more of the Company's revenues in 2022, 2021, or 2020.

Properties

The principal offices of Kirby Inland Marine, Kirby Offshore Marine, Kirby Ocean Transport and Osprey are located in Houston, Texas, in two facilities under leases that expire in December 2027 and December 2035. Kirby Inland Marine's operating locations are on the Mississippi River at Baton Rouge and New Orleans, Louisiana, and Greenville, Mississippi, three locations in Houston, Texas, on or near the Houston Ship Channel, one in Port Arthur, Texas, one in Freeport, Texas, one in Miami, Florida, one in Gibson, Louisiana, one in Lake Charles, Louisiana, several properties in Westwego, Louisiana, one in Corpus Christi, Texas, and one in Orange, Texas. The New Orleans, Gibson, Westwego, Houston, and Orange operating facilities are owned by the Company, and the Baton Rouge, Corpus Christi, Lake Charles, Port Arthur, Freeport, Greenville, and Miami facilities are leased. Kirby Offshore Marine's operating facilities are located in Staten Island, New York, and Seattle, Washington. All of Kirby Offshore Marine's operating facilities are leased, including piers and wharf facilities and office and warehouse space. San Jac's operating location is near the Houston Ship Channel and is owned by the Company.

Governmental Regulations

General. The Company's marine transportation operations are subject to regulation by the United States Coast Guard ("USCG"), federal laws, state laws, the laws of other countries when operating in their waters, and certain international conventions. The agencies establish safety requirements and standards and are authorized to investigate incidents.

Most of the Company's tank barges are inspected by the USCG and carry certificates of inspection. The Company's inland and coastal towing vessels and coastal dry-bulk barges are also subject to USCG regulations. The USCG has enacted safety regulations governing the inspection, standards, and safety management systems of towing vessels. The regulations also create many new requirements for design, construction, equipment, and operation of towing vessels. The USCG regulations supersede the jurisdiction of the United States Occupational Safety and Health Administration ("OSHA") and any state regulations on vessel design, construction, alteration, repair, maintenance, operation, equipping, personnel qualifications and manning. The regulations requiring towing vessels to obtain a certificate of inspection became effective for existing towing vessels on July 20, 2018. Other portions of the regulations were phased in following the July 20, 2018 effective date through July 19, 2022, by which time the Company was in full compliance.

All of the Company's coastal tugboats and coastal tank and dry-bulk barges are built to American Bureau of Shipping ("ABS") classification standards and/or statutory requirements issued by the USCG, and are inspected periodically by ABS and/or the USCG to maintain the vessels in class and compliant with all U.S. statutory requirements, as applicable to the vessel. The crews employed by the Company aboard inland and coastal vessels, including captains, pilots, engineers, tankermen and ordinary seamen, are licensed by the USCG.

The Company is required by various governmental agencies to obtain licenses, certificates and permits for its vessels depending upon such factors as the cargo transported, the waters in which the vessels operate and other factors. The Company believes that its vessels have obtained and can maintain all required licenses, certificates and permits required by such governmental agencies for the foreseeable future. The Company's failure to maintain these authorizations could adversely impact its operations.

The Company believes that additional security and environmental related regulations relating to contingency planning requirements could be imposed on the marine industry. Generally, the Company endorses the anticipated additional regulations and believes it is currently operating to standards at least equal to anticipated additional regulations.

Jones Act. The Jones Act is a federal cabotage law that restricts domestic marine transportation in the United States to vessels built and registered in the United States and manned, owned and operated by United States citizens. For a corporation to qualify as a United States citizen for the purpose of domestic trade, it has to be 75% owned and controlled by United States citizens within the meaning of the Jones Act. The Company monitors its citizenship status and meets the requirements of the Jones Act for its owned and operated vessels.

Compliance with United States ownership requirements of the Jones Act is important to the operations of the Company, and a violation of the Jones Act could have a material negative effect on the Company and its vessels' ability to operate. The Company monitors the citizenship of its employees and stockholders and complies with United States build requirements.

User Taxes. Federal legislation requires that inland marine transportation companies pay a user tax based on propulsion fuel used by vessels engaged in trade along the inland waterways that are maintained by the United States Army Corps of Engineers. Such user taxes are designed to help defray the costs associated with replacing major components of the inland waterway system, such as locks and dams. A significant portion of the inland waterways on which the Company's vessels operate is maintained by the Army Corps of Engineers.

The Company presently pays a federal fuel user tax of 29.1 cents per gallon consisting of a 0.1 cent per gallon leaking underground storage tank tax and 29 cents per gallon waterways user tax.

Security Requirements. The Maritime Transportation Security Act of 2002 requires, among other things, submission to and approval by the USCG of vessel and waterfront facility security plans (“VSP” and “FSP”, respectively). The Company maintains approved VSP and FSP and is operating in compliance with the plans for all of its vessels and facilities that are subject to the requirements.

Environmental Regulations

The Company’s operations are affected by various regulations and legislation enacted for protection of the environment by the United States government, as well as many coastal and inland waterway states and international jurisdictions to the extent that the Company’s vessels transit in international waters. Government regulations require the Company to obtain permits, licenses and certificates for the operation of its vessels. Failure to maintain necessary permits or approvals could require the Company to incur costs or temporarily suspend operation of one or more of its vessels. Violations of these laws may result in civil and criminal penalties, fines, or other sanctions.

Water Pollution Regulations. The Federal Water Pollution Control Act of 1972, as amended by the Clean Water Act of 1977 (“Clean Water Act”), the Comprehensive Environmental Response, Compensation and Liability Act of 1981 (“CERCLA”) and the Oil Pollution Act of 1990 (“OPA”) impose strict prohibitions against the discharge of oil and its derivatives or hazardous substances into the navigable waters of the United States. These acts impose civil and criminal penalties for any prohibited discharges and impose substantial strict liability for cleanup of these discharges and any associated damages. Certain states also have water pollution laws that prohibit discharges into waters that traverse the state or adjoin the state, and impose civil and criminal penalties and liabilities similar in nature to those imposed under federal laws.

The OPA and various state laws of similar intent substantially increased over historic levels the statutory liability of owners and operators of vessels for oil spills, both in terms of limit of liability and scope of damages.

The Company manages its exposure to losses from potential discharges of pollutants through the use of well-maintained and equipped vessels, through safety, training and environmental programs, and through the Company’s insurance program. There can be no assurance, however, that any new regulations or requirements or any discharge of pollutants by the Company will not have an adverse effect on the Company.

Clean Water Act. The Clean Water Act establishes the National Pollutant Discharge Elimination System (“NPDES”) permitting program which regulates discharges into navigable waters of the United States. The United States Environmental Protection Agency (“EPA”) regulates the discharge of ballast water and other substances in United States waters under the Clean Water Act. Pursuant to the NPDES program, effective February 6, 2009, the EPA issued regulations requiring vessels 79 feet in length or longer to comply with a Vessel General Permit authorizing ballast water discharges and other discharges incidental to the operation of the vessels. The EPA regulations also imposed technology and water quality based effluent limits for certain types of discharges and established specific inspection, monitoring, recordkeeping and reporting requirements for vessels to ensure effluent limitations are met. The Vessel Incidental Discharge Act (“VIDA”), signed into law on December 4, 2018, established a new framework for the regulation of vessel incidental discharges under the Clean Water Act. VIDA requires the EPA to develop national performance standards for those discharges within two years of enactment and requires the USCG to develop implementation, compliance, and enforcement regulations within two years of the EPA’s promulgation of standards. Under VIDA, all provisions of the Vessel General Permit which became effective December 19, 2013, remain in force and effect until the USCG regulations are finalized. The Company maintains Vessel General Permits and has established recordkeeping and reporting procedures in compliance with the EPA’s interim requirements.

The USCG adopted regulations on ballast water management treatment systems establishing a standard for the allowable concentration of living organisms in certain vessel ballast water discharged in waters of the United States under the National Invasive Species Act. The regulations include requirements for the installation of engineering equipment to treat ballast water by establishing an approval process for ballast water management systems (“BWMS”). The BWMS implementation was suspended until December 2016 at which time the USCG approved manufacturers’ systems that met the regulatory discharge standard equivalent to the International Maritime Organization’s D-2 standard. The phase-in schedule for those existing vessels requiring a system to install a BWMS is dependent on vessel build date, ballast water capacity, and drydock schedule. Compliance with the ballast water treatment regulations requires the installation of equipment on some of the Company’s vessels to treat ballast water before it is discharged. The installation of BWMS equipment will require significant capital expenditures in accordance with the compliance schedule established by the USCG in 33 CFR 151 to complete the installation of the approved system on those existing vessels that require a system in order to comply with the BWMS regulations.

Financial Responsibility Requirement. Commencing with the Federal Water Pollution Control Act of 1972, as amended, vessels over 300 gross tons operating in the Exclusive Economic Zone of the United States have been required to maintain evidence of financial ability to satisfy statutory liabilities for oil and hazardous substance water pollution. This evidence is in the form of a Certificate of Financial Responsibility (“COFR”) issued by the USCG. The majority of the Company’s tank barges are subject to this COFR

requirement, and the Company has fully complied with this requirement since its inception. The Company does not foresee any current or future difficulty in maintaining the COFR certificates under current rules.

Clean Air Regulations. The Federal Clean Air Act of 1979 (“CAA”) requires states to draft State Implementation Plans (“SIPs”) under the National Ambient Air Quality Standards designed to reduce atmospheric pollution for six common air pollutants to levels mandated by this act. The EPA designates areas in the United States as meeting or not meeting the standards. Several SIPs implement the regulation of barge loading and discharging emissions at waterfront facilities as a measure to meet the CAA standard. The implementation of these regulations requires a reduction of hydrocarbon emissions released into the atmosphere during the loading of most petroleum products and the degassing and cleaning of barges for maintenance or change of cargo. These regulations require vessel operators that operate in states with areas of nonattainment of air quality standards under the CAA to install vapor control equipment on their barges. The Company expects that future emission regulations will be developed and will apply this same technology to many chemicals that are handled by barge. Most of the Company’s barges engaged in the transportation of petrochemicals, chemicals and refined petroleum products are already equipped with vapor control systems. Although a risk exists that new regulations could require significant capital expenditures by the Company and otherwise increase the Company’s costs, the Company believes that, based upon the regulations that have been proposed thus far, no material capital expenditures beyond those currently contemplated by the Company and no material increase in costs are likely to be required.

Contingency Plan Requirement. The OPA and several state statutes of similar intent require the majority of the vessels and terminals operated by the Company to maintain approved oil spill contingency plans as a condition of operation. The Company has approved plans that comply with these requirements. The OPA also requires development of regulations for hazardous substance spill contingency plans. The USCG has not yet promulgated these regulations; however, the Company anticipates that they will not be more difficult to comply with than the oil spill plans.

Occupational Health Regulations. The Company’s inspected vessel operations are primarily regulated by the USCG for occupational health standards. Uninspected vessel operations and the Company’s shore-based personnel are subject to OSHA regulations. The Company believes that it is in compliance with the provisions of the regulations that have been adopted and does not believe that the adoption of any further regulations will impose additional material requirements on the Company. There can be no assurance, however, that claims will not be made against the Company for work related illness or injury, or that the further adoption of health regulations will not adversely affect the Company.

Insurance. The Company’s marine transportation operations are subject to the hazards associated with operating vessels carrying large volumes of bulk cargo in a marine environment. These hazards include the risk of loss of or damage to the Company’s vessels, damage to third parties as a result of collision, fire or explosion, adverse weather conditions, loss or contamination of cargo, personal injury of employees and third parties, and pollution and other environmental damages. The Company maintains hull, liability, general liability, workers compensation and pollution liability insurance coverage against these hazards. For shipyard operations, the Company has ship repairer’s liability and builder’s risk insurance. The Company uses a Texas domiciled wholly owned insurance subsidiary, Adaptive KRM, LLC, to provide cost effective risk transfer options to insure certain exposures of the Company and certain of its subsidiaries in KMT and KDS. The Company also maintains insurance to address liabilities arising in connection with KDS.

Environmental Protection. The Company utilizes several programs to further its commitment to environmental responsibility in its operations. Environmental compliance audits, performed with internal and external resources, are performed regularly on the Company's operations. Additionally, the Company employs third party expertise to conduct safety performance, safety management system, and environmental audits on its barge cleaning and shipyard vendors. The Company participates in the American Waterways Operators Responsible Carrier program, which drives continuous improvement towards reducing the barge industry’s impact on the environment. It is also a member of the Blue Sky Maritime Coalition and other organizations focused on reducing greenhouse gas emissions.

Safety. The Company manages its exposure to the hazards associated with its business through safety, training and preventive maintenance efforts. The Company emphasizes its safety commitment through programs oriented toward extensive monitoring of safety performance for the purpose of identifying trends and initiating corrective action, and for continuously improving employee safety behavior and performance.

Training. The Company believes that among the major elements of a successful and productive work force are effective training programs. The Company also believes that training in the proper performance of a job enhances both the safety and quality of the service provided. New technology, regulatory compliance, personnel safety, quality and environmental concerns create additional demands for training. Refer to Human Capital below for further discussion regarding training programs the Company has developed and instituted.

Quality. Kirby Inland Marine has made a substantial commitment to the implementation, maintenance, and improvement of quality assurance systems. Kirby Offshore Marine is certified under ABS ISM standards. These Quality Assurance Systems and certification have enabled both shore and vessel personnel to effectively manage the changes which occur in the working environment, as well as enhancing the Company’s safety and environmental performance.

DISTRIBUTION AND SERVICES

The Company, through its wholly owned subsidiary Kirby Distribution & Services, Inc. and its wholly owned subsidiaries Kirby Engine Systems LLC, (“Kirby Engine Systems”), Stewart & Stevenson LLC (“S&S”), United Holdings LLC (“United”), and Diesel Dash LLC and through Kirby Engine Systems’ wholly owned subsidiaries Marine Systems, Inc. (“Marine Systems”) and Engine Systems, Inc. (“Engine Systems”), serves two markets, commercial and industrial, and oil and gas. The Company sells genuine replacement parts, provides service mechanics to overhaul and repair engines, transmissions, reduction gears and related oilfield service equipment, rebuilds component parts or entire diesel engines, transmissions and reduction gears, electrical motors, drives, and controls, specialized electrical distribution and control systems, energy storage battery systems, and related equipment used in oilfield services, marine, power generation, on-highway, and other commercial and industrial applications. Customers are served through a network of 65 branch locations across 17 states and Colombia, South America, as well as a proprietary on-line marketplace, www.dieseldash.com. The Company manufactures and remanufactures oilfield service equipment, including pressure pumping units, for North American as well as for international oilfield service companies, and oil and gas operator and producer markets. The Company also sells engines, transmissions, power generation systems, and rents equipment including generators, industrial compressors, high capacity lift trucks, and refrigeration trailers for use in a variety of commercial and industrial applications, including for oilfield service and railroad customers.

For the commercial and industrial market, the Company sells Original Equipment Manufacturers (“OEM”) replacement parts and new diesel engines, provides service mechanics and maintains facilities to overhaul and repair diesel engines and ancillary products for marine and on-highway transportation companies, and industrial companies. The Company provides engineering and field services, OEM replacement parts and safety-related products to power generation operators and to the nuclear industry, manufactures engine generator and pump packages for power generation operators and municipalities, offers power generation systems customized for specific commercial and industrial applications, and rents equipment including generators, industrial compressors, high capacity lift trucks, and refrigeration trailers for use in a variety of industrial markets.

For the oil and gas market, the Company sells OEM replacement parts, sells and services diesel engines, pumps and transmissions, manufactures and remanufactures pressure pumping units, manufactures cementing and pumping equipment, as well as coil tubing and well intervention equipment, electric power generation equipment, specialized electrical distribution and control equipment, and high capacity energy storage/battery systems. Customers include oilfield service companies, and oil and gas operators and producers.

No single customer of KDS accounted for 10% or more of the Company’s revenues in 2022, 2021, or 2020. KDS also provides service to KMT, which accounted for approximately 3% of KDS’s 2022 revenues, 2% of the segment’s 2021 revenue, and 3% of the segment's 2020 revenues. Such revenues are eliminated in consolidation and not included in the table below.

The following table sets forth the revenues for KDS (dollars in thousands):

	Year Ended December 31,					
	2022	%	2021	%	2020	%
Service and parts	$ 962,187	82%	$ 813,875	88%	$ 711,051	93%
Manufacturing	205,600	18	109,867	12	56,092	7
	$ 1,167,787	100%	$ 923,742	100%	$ 767,143	100%

Commercial and Industrial Operations

The Company serves the marine, on-highway, power generation, and other commercial and industrial markets primarily in the United States. The commercial and industrial operations represented approximately 56% of the segment’s 2022 revenues.

The Company is engaged in the overhaul and repair of medium-speed and high-speed marine diesel engines and reduction gears, line boring, block welding services and related parts sales for customers in the marine industry. Medium-speed diesel engines have an engine speed of 400 to 1,000 revolutions per minute (“RPM”) with a horsepower range of 800 to 32,000. High-speed diesel engines have an engine speed of over 1,000 RPM and a horsepower range of 50 to 8,375. The Company services medium-speed and high-speed diesel engines utilized in the inland and offshore barge industries. It also services marine equipment and offshore drilling equipment used in the offshore petroleum exploration and oilfield service industry, marine equipment used in the offshore commercial fishing industry, harbor docking vessels, commercial ferries, vessels owned by the United States government and large pleasure crafts.

The Company has marine repair operations throughout the United States providing in-house and in-field repair capabilities and related parts sales. The Company’s emphasis is on service to its customers, and it sends its crews from any of its locations to service customers’ equipment anywhere in the world. The medium-speed operations are located in Houma, Louisiana, Houston, Texas, Chesapeake, Virginia, Paducah, Kentucky, Seattle, Washington, and Tampa, Florida, serving as the authorized distributor for EMD Power Products (“EMD”) throughout the United States. The Company is also a distributor and representative for certain Alfa Laval

products in the Midwest and on the East Coast, Gulf Coast, and West Coast. All of the marine locations are authorized distributors for Falk Corporation reduction gears and Oil States Industries, Inc. clutches. The Chesapeake, Virginia operation concentrates on East Coast inland and offshore dry-bulk, tank barge and harbor docking operators, and the United States government. The Houma, Louisiana operation concentrates on the inland and offshore barge and oilfield services industries. The Tampa, Florida operation concentrates on Gulf of Mexico offshore dry-bulk, tank barge and harbor docking operators. The Paducah, Kentucky operation concentrates on the inland river towboat and barge operators and the Great Lakes carriers. The Seattle, Washington operation concentrates on the offshore commercial fishing industry, the offshore barge industry, the United States government, and other customers in Alaska, Hawaii and the Pacific Rim.

The high-speed marine operations are located in Houston, Texas, Houma, Baton Rouge, Belle Chasse and New Iberia, Louisiana, Paducah, Kentucky, Mobile, Alabama, Lodi and Thorofare, New Jersey, and several locations in Florida. The Company serves as a factory-authorized marine dealer for Caterpillar diesel engines in multiple states. The Company also operates factory-authorized full service marine distributorships/dealerships for Cummins, Detroit Diesel, John Deere, MTU, and Volvo Penta, and Kohler diesel engines, as well as Falk, Lufkin and Twin Disc marine gears. High-speed diesel engines provide the main propulsion for a significant amount of the United States flagged commercial vessels and large pleasure craft vessels, other marine applications, including engines for power generators and barge pumps.

The Company distributes, sells parts for and services diesel engines and transmissions for on-highway use and provides in-house and in-field service capabilities. The Company is the largest on-highway distributor for Allison Transmission and Detroit Diesel/Daimler Truck North America, providing parts, service and warranty on engines, transmissions and related equipment in Arkansas, Colorado, Florida, Louisiana, New Mexico, New York, Oklahoma, Texas, Wyoming, and the country of Colombia. The Company also provides similar service for off-highway use and additionally has distributor rights for Deutz and Isuzu diesel engines. Off-highway applications are primarily surface and underground mining equipment, including loaders, crawlers, crushers, power screens, pumps, cranes, generators, and haul trucks, as well as equipment rental.

The Company is engaged in the overhaul and repair of diesel engines and generators, and related parts sales for power generation customers. The Company is also engaged in the sale and distribution of diesel engine parts, engine modifications, generator modifications, controls, governors and diesel generator packages to the nuclear industry. The Company services users of diesel engines that provide emergency standby, peak and base load power generation. The Company also sells power generation systems that are customized for specific applications and the rental of power generation systems.

The Company has power generation operations throughout the United States providing in-house and in-field repair capabilities and products for power generation applications. Through its Rocky Mount, North Carolina operation, the Company serves as the exclusive worldwide distributor of EMD products to the nuclear industry, the worldwide distributor for Woodward, Inc. products to the nuclear industry, the worldwide distributor of Cooper Machinery Services (“Cooper”) products to the nuclear industry, and owns the assets and technology necessary to support the Nordberg medium-speed diesel engines used in nuclear applications. In addition, the Rocky Mount operation is an exclusive distributor for Norlake Manufacturing Company transformer products to the nuclear industry, an exclusive distributor of Hannon Company generator and motor products to the nuclear industry, and a non-exclusive distributor of analog Weschler Instruments metering products and an exclusive distributor of digital Weschler metering products to the nuclear industry. The Company is also a non-exclusive distributor of Ingersoll Rand air start equipment to the nuclear industry worldwide.

The Company sells pre-packaged and fabricated power generation systems for emergency, standby and auxiliary power for commercial and industrial applications. The Company also offers rental generator systems from 50 to 2,000 kilowatts of power to a broad range of customers. The Company also is engaged in the rental of industrial compressors, high capacity lift trucks, and refrigeration trailers. In addition, the Company provides accessory products such as cables, hoses, fuel cells, air dryers, air compressor boosters and ground heaters. Lastly, the Company is a dealer for Thermo King refrigeration systems for trucks, railroad cars and other land transportation markets in Texas and Colorado.

Commercial and Industrial Customers

The results of the distribution and services industry are largely tied to the industries it serves and, therefore, are influenced by the cycles of such industries. The Company’s major marine customers include inland and offshore barge operators, oilfield service companies, offshore fishing companies, other marine transportation entities, the United States government and large pleasure crafts. Since the marine business is linked to the relative health of the inland towboat, offshore and coastal tugboat, harbor docking tugboat, offshore oilfield service, oil and gas drilling, offshore commercial fishing industries, Great Lakes ore vessels, dredging vessels, coastal ferries, United States government vessels and the pleasure craft industry, there is no assurance that its present gross revenues can be maintained in the future.

The Company's on-highway customers are long-haul and short-haul trucking companies, commercial and industrial companies with truck fleets, buses owned by municipalities and private companies. Off-highway companies include surface and underground mining operations with a large variety of equipment.

The Company's power generation customers are domestic utilities and the worldwide nuclear power industry, municipalities, universities, medical facilities, data centers, petrochemical plants, manufacturing facilities, shopping malls, office complexes, residential and other industrial users.

The Company's rental customers are primarily commercial and industrial companies, and residential customers with short-term rental requirements.

Commercial and Industrial Competitive Conditions

The Company's primary marine competitors are independent distribution and services companies and other factory-authorized distributors, authorized service centers and authorized marine dealers. Certain operators of diesel powered marine equipment also elect to maintain in-house service capabilities. While price is a major determinant in the competitive process, reputation, consistent quality, expeditious service, experienced personnel, access to parts inventories and market presence are also significant factors. A substantial portion of the Company's business is obtained by competitive bids. However, the Company has entered into service agreements with certain operators of diesel powered marine equipment, providing such operators with one source of support and service for all of their requirements at pre-negotiated prices.

The Company is one of a limited number of authorized resellers of EMD, Caterpillar, Cummins, Detroit Diesel, John Deere, MTU and Volvo Penta parts. The Company is also the marine distributor for Falk, Lufkin and Twin Disc reduction gears throughout the United States.

The Company's primary power generation competitors are other independent diesel service companies and manufacturers. While price is a major determinant in the competitive process, reputation, consistent quality, expeditious service, experienced personnel, access to parts inventories and market presence are also significant factors. A substantial portion of the Company's business is obtained by competitive bids.

As noted above, the Company is the exclusive worldwide distributor of EMD, Cooper, Woodward, Nordberg, Norlake and Hannon parts for the nuclear industry, and non-exclusive distributor of Weschler parts and Ingersoll Rand air start equipment for the nuclear industry. Specific regulations relating to equipment used in nuclear power generation require extensive testing and certification of replacement parts. OEM parts need to be properly tested and certified for nuclear applications.

Oil and Gas Operations

The Company is engaged in the distribution and service of high-speed diesel engines, pumps and transmissions, and the manufacture and remanufacture of oilfield service equipment. The oil and gas operations represented approximately 44% of the segment's 2022 revenues. The Company offers custom fabricated oilfield service equipment that is fully tested and field ready. The Company manufactures and remanufactures oilfield service equipment, including pressure pumping units, nitrogen pumping units, cementers, hydration equipment, mud pumps and blenders, coil tubing, well intervention equipment, electric power generation equipment, specialized electrical distribution and control equipment, and high capacity energy storage/battery systems. The Company sells OEM replacement parts, and sells and services diesel engines, electric drives, motors and controls, pumps and transmissions, and offers in-house and in-field service capabilities. The Company is the largest off-highway distributor for Allison Transmission and a major distributor for MTU in North America.

The Company's manufacturing and remanufacturing facilities and service facilities are based in Houston, Texas and Oklahoma City, Oklahoma, both key oil and gas producing regions.

Oil and Gas Customers

The Company's major oil and gas customers include large and mid-cap oilfield service providers, oil and gas operators and producers. The Company has long standing relationships with most of its customers. Since the oil and gas business is linked to the oilfield services industry, and oil and gas operators and producers, there is no assurance that its present gross revenues can be maintained in the future. The results of the Company's oil and gas distribution and services operations are largely tied to the industries it serves and, therefore, are influenced by the cycles of such industries.

Oil and Gas Competitive Conditions

The Company's primary competitors are other oilfield equipment manufacturers and remanufacturers, and equipment service companies. While price is a major determinant in the competitive process, equipment availability, reputation, consistent quality, expeditious service, experienced personnel, access to parts inventories and market presence are also significant factors. A substantial portion of the Company's business is obtained by competitive bids.

Properties

The principal office of KDS is located in Houston, Texas. There are 65 active facilities in KDS, of which 27 facilities are owned and 38 facilities are leased.

The oil and gas operation's principal manufacturing facilities are located in Houston and Austin, Texas and Oklahoma City, Oklahoma, with one location leased and the other two facilities owned by the Company. The oil and gas focused operations have 19 parts and service facilities, with one in Arkansas, two in Colorado, three in Louisiana, one in New Mexico, two in Oklahoma, nine in Texas and one in Wyoming, with many of these facilities shared with the commercial and industrial operations.

The commercial and industrial businesses operate 46 parts and service facilities, with one facility in Alabama, one in Connecticut, one in Colorado, 11 in Florida, two in Kentucky, two in Louisiana, one in Massachusetts, three in New Jersey, one in New York, one in North Carolina, one in Oklahoma, 14 in Texas, one in Virginia, one in Washington and five facilities located in Colombia, South America.

Human Capital

Employment. The Company has approximately 5,200 employees, the large majority of whom are in the United States. The large majority of non-vessel employees work full-time. Vessel employees work varying schedules according to their assignments. The Company has approximately 110 general corporate employees. The Company supports its employees by providing competitive pay and benefits, training, and a respectful and inclusive culture.

KMT has approximately 3,115 employees, of which approximately 2,400 are vessel crew members. None of the segment's inland operations are subject to collective bargaining agreements. The segment's coastal operations include approximately 432 vessel employees, some of which are subject to collective bargaining agreements in certain geographic areas. Approximately 206 Kirby Offshore Marine vessel crew members are subject to a collective bargaining agreement with the Richmond Terrace Bargaining Unit in effect through August 31, 2025. In addition, approximately 107 vessel crew members of Penn Maritime Inc., a wholly owned subsidiary of Kirby Offshore Marine, are represented by the Seafarers International Union under a collective bargaining agreement in effect through May 1, 2025.

KDS has approximately 1,975 employees. None of the United Holdings and Kirby Engine Systems operations are subject to collective bargaining agreements. Approximately 54 S&S employees in New Jersey are subject to a collective bargaining agreement with the Local 15C, International Union of Operating Engineers, AFL-CIO that expires in October 2023. The remaining S&S employees are not subject to collective bargaining agreements.

Training and Development. The Company strives to provide its employees with a rewarding work environment, including the opportunity for success and an opportunity for personal and professional development. The development of its people is a key factor in the Company's employee retention and satisfaction. Its technical and skill training has always been a differentiator and has facilitated the recruitment of new trainees.

For the marine business, the Company's training facility includes state-of-the-art equipment and instruction aids, including a full bridge wheelhouse simulator, a working towboat, two tank barges, and a tank barge simulator for tankermen training. During 2022, approximately 1,673 certificates were issued for the completion of courses at the training facility, of which approximately 1,068 were USCG approved classes and the balance were employee development and Company required classes, including leadership, communication, and navigation courses. The Company uses the Seaman's Church Institute as an additional training resource for its wheelhouse crewmembers. The marine segment provides a clear career progression for vessel personnel from entry level deckhand to captain and regularly reviews promotions from one level to another.

In distribution and services, the Company facilitates training courses via online courses and instructor-led classes that cover a range of skill related topics such as generator knowledge, introduction to hydraulic systems, introduction to electrical diagrams, introduction to transformers, and Electrical Generation Systems Association journeyman study, as well as numerous courses led by its OEM partners. KDS has multiple career progressions within its numerous job groups.

The Company's leadership and managerial training includes an online training curriculum that is available to both supervisory employees and those employees that aspire to move into such roles in the future. It includes a series of classes focused on management essentials which provide in-depth education in specific subjects such as leadership, strategic thinking, coaching and people development, decision making, problem solving, and communication.

In addition, the Company facilitates many training courses that cover a range of topics that enhance specific skill sets, increase productivity, and educate employees about safety and team morale across both business segments. Training classes include environmental, health, and safety classes, compliance, leadership, and general business skills related courses. Environmental, health, and safety topics include defensive and distracted driving, first aid basic and medical emergencies, global safety principles, oil management, and hazardous substances training. Compliance topics include anti-corruption training, cybersecurity awareness, business ethics, compliance, and promoting diversity. Skill related topics include business writing, risk-based thinking, initiating and planning a project, and transitioning into a project management role.

Diversity, Equity, and Inclusion. The Company believes that its culture of inclusion and diversity contributes to a strong workforce that meets its customer’s expectations and business objectives. The Company works diligently to attract the best talent from a diverse range of sources in order to meet the current and future demands of its business. The Company has established relationships with trade schools, world-class universities, professional associations and industry groups to proactively attract talent.

The Company has also implemented several measures and development programs that include training to help increase awareness and drive inclusive behaviors, identifying areas for improvement and providing oversight for hiring, promotions, and mentoring. In 2021, the Company instituted an organization-wide training initiative that expanded the understanding and awareness of diversity and inclusion. Over 5,000 employees successfully completed this training. In 2022, the Company tied diversity objectives as a factor in its safety, operations and ESG components of its short-term performance goals under the Annual Incentive Plan.

Succession Planning. Succession planning is a key responsibility of the CEO and the Chief Human Resources Officer and is a critical annual process for the Company’s senior management and its Board. Senior management reviews their succession plans regularly throughout the year and on an annual basis provides the Board an in-depth review of the top three levels of management. This process looks at qualifications, time in role, readiness to advance, diversity, and required development. The Board engages with many of these individuals through presentations on a variety of projects and subjects. The development initiatives undertaken with those in the succession plan may comprise of 360-degree feedback, high level post graduate work, targeted development work around strengthening a needed competency, or additional industry exposure.

Culture, Engagement, and Social Responsibility. The Company recognizes the importance of employee engagement and has implemented a regular process of surveying its employees to obtain their feedback on both what is working well and areas of improvement. One of the main take-aways from the 2021 survey was 90% of employees surveyed agree that Kirby is committed to Employee Safety, this was a 6% increase over the last survey. Approximately 85% of the Company’s employees believe its culture is responsible for high retention and low turnover. In addition, the survey reflected that employees are engaged and have pride in Kirby and have provided positive feedback on their relationships with their managers.

The Company provides its employees with a rewarding work environment, which includes access to resources for personal and professional development. The Company often participates in community organizations, service projects and matches employee charitable contributions. Through the Kirby Disaster Relief Fund, the Company supports employees in need following natural disasters and other qualified hardships. The Company provides employees with tuition reimbursement and college scholarships for the children of non-executive employees. In addition to standard health and welfare benefits, the Company offers wellness incentives and initiatives that encourages employees to receive an annual wellness checkup.

COVID-19 Pandemic Response. The Company responded to the COVID-19 pandemic in a manner consistent with its Core Values of Safety and People. The Company’s response involved real time decision making needed to continue operations with the least amount of disruption for its customers. The Company implemented measures which included the use of protective equipment, health checks, temperature checks, travel restrictions, protocols for employees whose duties could not be accomplished through remote working arrangements, and implementing technology required for those that could work remotely.

Information about the Company's Executive Officers

The executive officers of the Company are as follows:

Name	Age	Positions and Offices
David W. Grzebinski	61	President and Chief Executive Officer
Raj Kumar	50	Executive Vice President and Chief Financial Officer
Christian G. O'Neil	50	President – Kirby Inland Marine, Kirby Offshore Marine, San Jac Marine, LLC, and Kirby Offshore Wind, LLC
Dorman L. Strahan	66	President – Kirby Engine Systems
Kim B. Clarke	67	Vice President and Chief Human Resources Officer
Ronald A. Dragg	59	Vice President, Controller and Assistant Secretary
Amy D. Husted	54	Vice President, General Counsel and Secretary
Scott P. Miller	44	Vice President and Chief Information Officer
Kurt A. Niemietz	50	Vice President – Investor Relations and Treasurer
William M. Woodruff	62	Vice President – Public and Governmental Affairs

No family relationship exists among the executive officers or among the executive officers and the directors. Officers are elected to hold office until the annual meeting of directors, which immediately follows the annual meeting of stockholders, or until their respective successors are elected and have qualified.

David W. Grzebinski is a Chartered Financial Analyst and holds a Master of Business Administration degree from Tulane University and a degree in chemical engineering from the University of South Florida. He has served as President and Chief Executive Officer since April 2014. He served as President and Chief Operating Officer from January 2014 to April 2014 and as Chief Financial Officer from March 2010 to April 2014. He served as Chairman of Kirby Offshore Marine from February 2012 to April 2013 and served as Executive Vice President from March 2010 to January 2014. Prior to joining the Company in February 2010, he served in various operational and financial positions since 1988 with FMC Technologies Inc. ("FMC"), including Controller, Energy Services, Treasurer, and Director of Global SAP and Industry Relations. Prior to joining FMC, he was employed by Dow Chemical Company in manufacturing, engineering and financial roles.

Raj Kumar is a member of CPA Australia and holds a Master of Business Administration degree from Columbia University in New York City and a Bachelor of Business in Accounting from Deakin University in Australia. He has served as Executive Vice President and Chief Financial Officer since November 2021. Prior to joining the Company, Mr. Kumar served as Vice President and Chief Financial Officer of Dril-Quip, Inc. from 2020 to 2021, Vice President and Chief Accounting Officer from 2019 to 2020, and Vice President and Treasurer from 2017 to 2019. Prior to joining Dril-Quip, he served as Vice President Finance at Frank's International from 2015 to 2017. Prior to that, he served as a segment controller at LyondellBasell and in Division CFO, treasury, strategic planning and corporate development positions at FMC and Dell Technologies.

Christian G. O'Neil holds a Master of Business Administration degree from Rice University, a doctorate of jurisprudence from Tulane University and a bachelor of arts degree from Southern Methodist University. He has served as President of Kirby Inland Marine and Kirby Offshore Marine since January 2018, as President of San Jac Marine, LLC since October 2018, and President of Kirby Offshore Wind, LLC since March 2021. He served as Executive Vice President and Chief Operating Officer of Kirby Inland Marine and Kirby Offshore Marine from May 2016 to January 2018. He also served as Executive Vice President – Commercial Operations of Kirby Inland Marine and Kirby Offshore Marine from April 2014 to May 2016, Vice President – Human Resources of the Company from May 2012 to April 2014, Vice President – Sales for Kirby Inland Marine from 2009 to 2012 and President of Osprey from 2006 through 2008. He has also served in various sales and business development roles at the Company and Osprey. Prior to joining the Company, he served as Sales Manager and Fleet Manager at Hollywood Marine, Inc. ("Hollywood Marine") after joining Hollywood Marine in 1997 which was subsequently merged into the predecessor of Kirby Inland Marine.

Dorman L. Strahan attended Nicholls State University and has served the Company as President of Kirby Engine Systems since May 1999, President of Marine Systems since 1986 and President of Engine Systems since 1996. After joining the Company in 1982 in connection with the acquisition of Marine Systems, he served as Vice President of Marine Systems until 1985.

Kim B. Clarke holds a Bachelor of Science degree from the University of Houston. She has served as Vice President and Chief Human Resources Officer since October 2017. She served as Vice President – Human Resources from December 2016 to October 2017. Prior to joining the Company, she served in senior leadership roles in human resources, safety, information technology and business development as Senior Vice President and Chief Administration Officer for Key Energy Services, Inc. from 2004 to March 2016.

Ronald A. Dragg is a Certified Public Accountant and holds a Master of Science in Accountancy degree from the University of Houston and a degree in finance from Texas A&M University. He has served the Company as Vice President, Controller and Assistant

Secretary since April 2014. He also served as Vice President and Controller from January 2007 to April 2014, as Controller from November 2002 to January 2007, Controller – Financial Reporting from January 1999 to October 2002, and Assistant Controller – Financial Reporting from October 1996 to December 1998. Prior to joining the Company, he was employed by Baker Hughes Incorporated.

Amy D. Husted holds a doctorate of jurisprudence from South Texas College of Law and a Bachelor of Science degree in political science from the University of Houston. She has served the Company as Vice President, General Counsel and Secretary since April 2019. She also served as Vice President and General Counsel from January 2017 to April 2019, Vice President – Legal from January 2008 to January 2017 and Corporate Counsel from November 1999 through December 2007. Prior to joining the Company, she served as Corporate Counsel of Hollywood Marine from 1996 to 1999 after joining Hollywood Marine in 1994.

Scott P. Miller holds a Bachelor of Science in Management of Information Systems from Louisiana State University and a Master of Business Administration degree from the University of Houston. He has served as Vice President and Chief Information Officer since April 2019. Prior to joining the Company, he was employed by Key Energy Services, Inc. from May 2006 to March 2019, serving in various senior leadership roles including Managing Director of Strategy, Vice President and Chief Information Officer from March 2013 to December 2015 and as Senior Vice President, Operations Services and Chief Administrative Officer from January 2016 to March 2019.

Kurt A. Niemietz holds a Master of Business Administration degree from St. Mary's University and a degree in accounting from the University of Texas at San Antonio. He has served the Company as Vice President - Investor Relations and Treasurer since July 2022. He also served as Vice President and Treasurer from April 2019 to July 2022. Prior to joining the Company, he was employed by Pacific Drilling from 2013 to 2019, serving in various roles of increasing responsibility, including Treasurer from 2017 to 2019, and in various financial positions with FMC, from 2006 to 2013. Prior to joining FMC, he was employed by Austin, Calvert & Flavin as a buy-side equity analyst.

William M. Woodruff holds a doctorate of jurisprudence from the University of Houston Law Center and a bachelor of science degree from Texas A&M University. He has served as Vice President – Public and Governmental Affairs since October 2017. He served as Director – Public & Government Affairs from 2014 to October 2017 after joining the Company as Director – Government Affairs in 2004. Prior to joining the Company, he was a maritime lawyer in private practice and Vice President and General Counsel of Coastal Towing, Inc.

Item 1A. *Risk Factors*

In addition to the other information set forth elsewhere in this annual report, the following risk factors should be considered carefully when evaluating the Company, as its businesses, results of operations, or financial condition could be materially adversely affected by any of these risks. The following discussion does not attempt to cover factors, such as trends in the United States and global economies or the level of interest rates, among others, that are likely to affect most businesses.

Marine Transportation Segment Risk Factors

The Inland Waterway infrastructure is aging and may result in increased costs and disruptions to KMT. Maintenance of the United States inland waterway system is vital to the Company's operations. The system is composed of over 12,000 miles of commercially navigable waterway, supported by over 240 locks and dams designed to provide flood control, maintain pool levels of water in certain areas of the country and facilitate navigation on the inland river system. The United States inland waterway infrastructure is aging, with more than half of the locks over 50 years old. As a result, due to the age of the locks, scheduled and unscheduled maintenance outages may be more frequent in nature, resulting in delays and additional operating expenses. Currently, 35% of the cost of new construction and major rehabilitation of locks and dams is paid by marine transportation companies through a 29 cent per gallon diesel fuel tax and the remaining 65% of waterway infrastructure and improvement is paid from general federal tax revenues. Failure of the federal government to adequately fund infrastructure maintenance and improvements in the future would have a negative impact on the Company's ability to deliver products for its customers on a timely basis. In addition, any additional user taxes that may be imposed in the future to fund infrastructure improvements would increase the Company's operating expenses.

The Company could be adversely impacted by a marine accident or spill event. A marine accident or spill event could close a portion of the inland waterway system or a coastal area of the United States for an extended period of time. Although statistically marine transportation is the safest means of surface transportation of bulk commodities, accidents do occur, both involving Company equipment and equipment owned by other marine operators.

The Company transports a wide variety of petrochemicals, black oil, refined petroleum products and agricultural chemicals throughout the Mississippi River System, on the Gulf Intracoastal Waterway, and coastwise along all three United States coasts. The Company manages its exposure to losses from potential unauthorized discharges of pollutants through the use of well-maintained and equipped tank barges and towing vessels, through safety, training and environmental programs, and through the Company's insurance

program, but a discharge of pollutants by the Company could have an adverse effect on the Company. Risks may arise for which the Company may not be insured. Claims covered by insurance are subject to deductibles, the aggregate amount of which could be material, and certain policies impose limitations on coverage. Existing insurance coverage may not be able to be renewed at commercially reasonable rates or coverage capacity for certain risks may not be available or adequate to cover future claims. If a loss occurs that is partially or completely uninsured, or the carrier is unable or unwilling to cover the claim, the Company could be exposed to liability.

KMT is dependent on its ability to adequately crew its towing vessels. The Company's vessels are crewed with employees who are licensed or certified by the USCG, including its captains, pilots, engineers and tankermen. The success of KMT is dependent on the Company's ability to adequately crew its vessels. As a result, the Company invests significant resources in training its crews and providing crew members an opportunity to advance from a deckhand to the captain of a Company towboat or tugboat. Inland crew members generally work rotations such as 20 days on, 10 days off rotation, or a 30 days on, 15 days off rotation. For the coastal fleet, crew members are generally required to work rotations such as 14 days on, 14 days off rotation, a 21 days on, 21 days off rotation or a 30 days on, 30 days off rotation, dependent upon the location. The nature of crewmember work schedules and assignments away from home for extended periods require special recruiting and at times it can be difficult to find candidates. With ongoing retirements and competitive labor pressure in KMT, the Company continues to monitor and implement market competitive pay practices. The Company also utilizes an internal development program to train Maritime Academy graduates for vessel leadership positions.

KMT has approximately 3,115 employees, of which approximately 2,400 are vessel crew members. None of the segment's inland operations are subject to collective bargaining agreements. The segment's coastal operations include approximately 432 vessel employees, of whom approximately 313 are subject to collective bargaining agreements in certain geographic areas. Any work stoppages or labor disputes could adversely affect coastal operations in those areas. While the COVID-19 pandemic has caused some crewing issues, to date, the Company has been able to manage its operations with limited vessel delays and disruption of services, including some loss of revenue and incremental costs in the Company's inland and coastal businesses. The Company continues to update its protocols relating to management of COVID-19 variants and provide related employee education as new information and guidance becomes available.

KMT is subject to the Jones Act. KMT competes principally in markets subject to the Jones Act, a federal cabotage law that restricts domestic marine transportation in the United States to vessels built and registered in the United States, and manned, owned and operated by United States citizens. The Company presently meets all of the requirements of the Jones Act for its owned and operated vessels. The loss of Jones Act status could have a significant negative effect on the Company. The requirements that the Company's vessels be United States built and manned by United States citizens, the crewing requirements and material requirements of the USCG, and the application of United States labor and tax laws increases the cost of United States flagged vessels compared to comparable foreign flagged vessels. The Company's business could be adversely affected if the Jones Act or international trade agreements or laws were to be modified or waived as to permit foreign flagged vessels to operate in the United States as these vessels are not subject to the same United States government imposed regulations, laws, and restrictions. Since the events of September 11, 2001, the United States government has taken steps to increase security of United States ports, coastal waters and inland waterways. The Company believes that it is unlikely that the current cabotage provisions of the Jones Act would be eliminated or significantly modified in a way that has a material adverse impact on the Company in the foreseeable future.

The Secretary of Homeland Security is vested with the authority and discretion to waive the Jones Act to such extent and upon such terms as the Secretary may prescribe whenever the Secretary deems that such action is necessary in the interest of national defense. On September 8, 2017, following Hurricanes Harvey and Irma, the Department of Homeland Security issued a waiver of the Jones Act for a 7-day period for shipments from New York, Pennsylvania, Texas and Louisiana to South Carolina, Georgia, Florida and Puerto Rico. The waiver was specifically tailored to address the transportation of refined petroleum products due to disruptions in hurricane-affected areas. On September 11, 2017, the waiver was extended for 11 days and expanded to include additional states. Following Hurricane Maria, on September 28, 2017, the Department of Homeland Security issued a waiver of the Jones Act for movement of products shipped from United States coastwise points to Puerto Rico through October 18, 2017. Two limited waivers of the Jones Act were granted in connection with the shutdown of the Colonial Pipeline in May 2021. In connection with recovery from Hurricane Fiona, in September and October 2022, two limited waivers of the Jones Act were granted to allow diesel and liquefied natural gas deliveries to Puerto Rico. Waivers of the Jones Act, whether in response to natural disasters or otherwise, could result in increased competition from foreign tank vessel operators, which could negatively impact KMT.

KMT is subject to extensive regulation by the USCG, federal laws, other federal agencies, various state laws, the laws of other countries when operating in their waters, and certain international conventions, as well as numerous environmental regulations. The majority of the Company's vessels are subject to inspection by the USCG and carry certificates of inspection. The crews employed by the Company aboard vessels are licensed or certified by the USCG. The Company's marine transportation operations are subject to laws of other countries when operating in their waters. The Company is required by various governmental agencies to obtain licenses, certificates and permits for its owned and operated vessels. The Company's operations are also affected by various United States and state regulations and legislation enacted for protection of the environment. The Company incurs significant expenses and capital

expenditures to comply with applicable laws and regulations and any significant new regulation or legislation, including climate change laws or regulations, could have an adverse effect on the Company.

KMT is subject to natural gas and crude oil prices as well as the volatility of their prices as well as the volatility in production of refined products and petrochemicals in the United States. For 2022, 49% of KMT's revenues were from the movement of petrochemicals, including the movement of raw materials and feedstocks from one refinery or petrochemical plant to another, as well as the movement of more finished products to end users and terminals for export. As a result of the COVID-19 pandemic and petrochemical and refinery plant shutdowns, 2020 and 2021 petrochemical and refined products volumes decreased relative to 2019. Volumes began to recover in 2021 and have continued to increase in 2022 as economic activity improved. The United States petrochemical industry continues to benefit from a low-cost domestically produced natural gas feedstock advantage, producing strong volumes of raw materials and intermediate products for transportation between Gulf Coast petrochemical plants and the transportation of more finished products to terminals for both domestic consumers and for export destinations. In addition, eight new United States petrochemical projects, including expansion of existing plants, were completed during 2022, with an additional six projects scheduled to be completed during 2023. These projects should provide additional movements for KMT. Higher natural gas and crude oil prices are generally better for the Company's businesses; however, higher natural gas prices and other factors could negatively impact the United States petrochemical industry and its production volumes, which could negatively impact the Company.

Demand for tank barge transportation services is driven by the production of volumes of the bulk liquid commodities such as petrochemicals, black oil and refined petroleum products that the Company transports by tank barge. This production can depend on the prevailing level of natural gas and crude oil prices, as well as the volatility of their prices. In general, lower energy prices are good for the United States economy and typically translate into increased petrochemical and refined product demand and therefore increased demand for tank barge transportation services. However, during 2016 and 2017 lower crude oil prices resulted in a decline in domestic crude oil and natural gas condensate production and reduced volumes to be transported by tank barge. The Company estimates that at the beginning of 2015 there were approximately 550 inland tank barges and 35 coastal tank barges in the 195,000 barrels or less category transporting crude oil and natural gas condensate. By the end of 2019, the Company estimates that number of tank barges had declined to 335 inland tank barges and approximately five coastal tank barges transporting crude and natural gas condensate. During 2020, the COVID-19 pandemic and oil price volatility resulted in a sharp decrease in volumes of crude and natural gas condensate being transported. As of the end of 2020, the Company estimates that approximately 100 to 150 inland tank barges and one coastal tank barge were transporting crude and natural gas condensate and at the end of 2021, approximately 160 to 170 inland tank barges and one coastal tank barge were transporting crude and natural gas condensate. As of the end of 2022, the Company estimates that approximately 170 to 200 inland tank barges were transporting crude and natural gas condensate. Volatility in the price of natural gas and crude oil can also result in heightened uncertainty which may lead to decreased production and delays in new petrochemical and refinery plant construction. Increased competition for available black oil and petrochemical barge moves caused by reduced crude oil and natural gas condensate production could have an adverse impact on KMT including as a result of lower spot and term contract rates and/or reluctance to enter into or extend term contracts.

KMT could be adversely impacted by the construction of tank barges by its competitors. At the present time, there are an estimated 4,028 inland tank barges in the United States, of which the Company operates 1,037, or 26%. For 2020, the Company estimated that industry-wide approximately 150 new tank barges were placed in service, six of which were purchased by the Company from another operator, and approximately 150 tank barges were retired, 95 of which were by the Company. For 2021, the Company estimated that industry-wide 70 new tank barges were placed in service, of which none were by the Company, and 90 tank barges were retired, 36 of which were by the Company. For 2022, the Company estimates that industry-wide 22 new tank barges were placed in service and retirements, net of reactivations, were flat. The Company estimates that approximately 5 to 10 new tank barges have currently been ordered for delivery in 2023 and expects a number of older tank barges will be retired, dependent on 2023 market conditions.

The long-term risk of an oversupply of inland tank barges may be mitigated by the fact that the inland tank barge industry has approximately 600 tank barges that are 30 years old or older and approximately 400 of those are 40 years old or older. Given the age profile of the industry inland tank barge fleet and extensive customer vetting standards, the expectation is that these older tank barges will continue to be removed from service and replaced by new tank barges as needed, with the extent of both retirements and new builds dependent on petrochemical and refinery production levels and crude oil and natural gas condensate movements, both of which can have a direct effect on industry-wide tank barge utilization, as well as term and spot contract rates.

Beginning in 2019, a decline in industry-wide demand for the movement of crude oil and natural gas condensate transportation volumes increased available capacity and resulted in some reluctance among certain customers to extend term contracts, which led to an increase in the number of coastal vessels operating in the spot market. In addition, the Company and the industry added new coastal tank barge capacity during 2019, 2020, and 2021. Much of this new capacity was replacement capacity for older vessels anticipated to be retired.

The Company estimates there are approximately 270 tank barges operating in the 195,000 barrels or less coastal industry fleet, the sector of the market in which the Company operates, and approximately 21 of those are over 25 years old. The Company is aware of

one coastal ATB placed in service in 2020, one small specialized coastal ATB in 2021 and no ATBs placed in 2022 by competitors with no further coastal tank barges currently under construction.

Higher fuel prices could increase operating expenses and fuel price volatility could reduce profitability. The cost of fuel during 2022 was approximately 16% of marine transportation revenue. The Company's marine transportation term contracts typically include fuel escalation clauses, or the customer pays for the fuel. However, there is generally a 30 to 120 day delay before contracts are adjusted depending on the specific contract. In general, the fuel escalation clauses are effective over the long-term in allowing the Company to adjust to changes in fuel costs due to fuel price changes; however, the short-term effectiveness of the fuel escalation clauses can be affected by a number of factors including, but not limited to, specific terms of the fuel escalation formulas, fuel price volatility, navigating conditions, tow sizes, trip routing, and the location of loading and discharge ports that may result in the Company over or under recovering its fuel costs. The Company's spot contract rates generally reflect current fuel prices at the time the contract is signed but do not have escalators for fuel.

Significant increases in the construction cost of tank barges and towing vessels may limit the Company's ability to earn an adequate return on its investment in new tank barges and towing vessels. The price of steel, economic conditions, and supply and demand dynamics can significantly impact the construction cost of new tank barges and towing vessels. Over the last 20 years, the Company's average construction price for a new 30,000 barrel capacity inland tank barge has fluctuated up or down significantly. For example, the average construction price for a new 30,000 barrel capacity tank barge in 2009 was approximately 90% higher than in 2000, with increases primarily related to higher steel costs. During 2009, the United States and global recession negatively impacted demand levels for inland tank barges and as a result, the construction price of inland tank barges fell significantly in 2010, primarily due to a significant decrease in steel prices, as well as a decrease in the number of tank barges ordered. The cost of steel, a key material in barge construction, was relatively stable from 2010 through 2019. During 2020, at the onset of the COVID-19 pandemic, steel costs dropped, however, during 2021 and 2022, steel prices rose above 2019 levels due to supply chain disruptions. These increases in steel costs and alterations in supply and demand dynamics, as well as higher labor costs, resulted in construction prices for a new 30,000 barrel tank barge increasing compared to prices in 2017 when there was an industry-wide over-capacity of inland tank barges in the market.

KMT could be adversely impacted by the failure of the Company's shipyard vendors to deliver new vessels according to contractually agreed delivery schedules and terms. The Company contracts with shipyards to build new vessels and currently has vessels under construction. Construction projects are subject to risks of delay and cost overruns, resulting from shortages of equipment, materials and skilled labor; lack of shipyard availability; unforeseen design and engineering problems; work stoppages; weather interference; unanticipated cost increases; unscheduled delays in the delivery of material and equipment; and financial and other difficulties at shipyards including labor disputes, shipyard insolvency and inability to obtain necessary certifications and approvals. A significant delay in the construction of new vessels or a shipyard's inability to perform under the construction contract could negatively impact the Company's ability to fulfill contract commitments and to realize timely revenues with respect to vessels under construction. Significant cost overruns or delays for vessels under construction could also adversely affect the Company's financial condition, results of operations and cash flows. To date, the Company has not experienced significant shipyard delays associated with the COVID-19 pandemic, including at its subsidiary, San Jac.

The Company is subject to competition in KMT. The inland and coastal tank barge industry remains very fragmented and competitive. The Company's primary competitors are noncaptive inland tank barge operators and coastal operators. The Company also competes with companies who operate refined product and petrochemical pipelines, railroad tank cars and tractor-trailer tank trucks. Increased competition from any significant expansion of or additions to facilities or equipment by the Company's competitors could have a negative impact on the Company's results of operations. In addition, the Company's failure to adhere to its safety, reliability and performance standards may impact its ability to retain current customers or attract new customers.

Distribution and Services Segment Risk Factors

KDS could be adversely impacted by future legislation, executive or other governmental orders, or additional regulation of oil and gas extraction, including hydraulic fracturing practices. The Company, through its United and S&S subsidiaries, is a distributor and service provider of engine and transmission related products for the oil and gas services, power generation and transportation industries, and a manufacturer of oilfield service equipment, including pressure pumping units. Various legislative and regulatory initiatives have been proposed that, if passed, could limit or discourage future production of oil and gas. Further, legislation may be enacted by Congress that would authorize the EPA to impose additional regulations on hydraulic fracturing. In addition, a number of states have adopted or are evaluating the adoption of legislation or regulations governing hydraulic fracturing or byproducts of the fracturing process. Related actions may also be taken via executive order. Federal or state legislation, executive or governmental orders, and/or regulations could materially impact customers' operations and greatly reduce or eliminate demand for the Company's pressure pumping fracturing equipment and related products. The Company is unable to predict whether future legislation or any other regulations will ultimately be enacted and, if so, the impact on KDS.

KDS could be adversely impacted by the construction of pressure pumping units by its competitors. During 2020, a significant reduction in oilfield activity as a result of oil price volatility and the COVID-19 pandemic resulted in a decrease to an estimated 6 million horsepower of pressure pumping units working in North America, with an estimated 1.5 million horsepower available to work, and 12 million horsepower stacked and in need of major repair. At the end of 2021, strong commodity prices resulted in an increase in horsepower demand with an estimated 12 million horsepower of pressure pumping units working in North America, with an estimated 8 million horsepower idled and in need of major repair. Supported by stronger commodity prices, surplus horsepower capacity declined as activity levels in North America improved during 2022 resulting in an increase to an estimated 15 million horsepower of pressure pumping units working in North America at the end of 2022, with an estimated 5 million horsepower idled and in need of major repair. Increased expansion of, or additions to, facilities or equipment by the Company's competitors could have a negative impact on the Company's results of operations.

Prevailing natural gas and crude oil prices, as well as the volatility of their prices, could have an adverse effect on KDS business. Lower energy prices generally result in a decrease in the number of oil and gas wells being drilled. Oilfield service companies reduce their capital spending, resulting in decreased demand for new parts and equipment, including pressure pumping units, provided by KDS. This may also lead to order cancellations from customers or customers requesting to delay delivery of new equipment. The Company also services offshore supply vessels and offshore drillings rigs operating in the Gulf of Mexico, as well as internationally. Low energy prices may negatively impact the number of wells drilled in the Gulf of Mexico and international waters. Prolonged downturns in oil and gas prices may cause substantial declines in oilfield service and exploration expenditures and could adversely impact oil and gas manufacturing, remanufacturing, parts and distribution business. In addition, energy price volatility may also result in difficulties in the Company's ability to address variations in production on a timely basis and, therefore, could result in an adverse impact on KDS.

The Company is subject to competition in KDS. The distribution and services industry is very competitive. The segment's oil and gas market's principal competitors are independent distribution and service and oilfield manufacturing companies and other factory-authorized distributors and service centers. In addition, certain oilfield service companies that are customers of the Company also manufacture and service a portion of their own oilfield equipment. Increased competition in the distribution and services industry and continued low price of natural gas, crude oil or natural gas condensate, and resulting decline in drilling for such natural resources in North American shale formations, could result in less oilfield equipment being manufactured and remanufactured, lower rates for service and parts pricing and result in less manufacturing, remanufacturing, service and repair opportunities and parts sales for the Company. For the commercial and industrial market, the segment's primary marine diesel competitors are independent diesel services companies and other factory-authorized distributors, authorized service centers and authorized marine dealers. Certain operators of diesel powered marine equipment also elect to maintain in-house service capabilities. For power generation, the primary competitors are other independent service companies.

Loss of a distributorship or other significant business relationship or disruptions of supply could adversely affect KDS. KDS has had a relationship with EMD, the largest manufacturer of medium-speed diesel engines, for 57 years. The Company, through Kirby Engine Systems, serves as both an EMD distributor and service center for select markets and locations for both service and parts. With the acquisition of S&S in September 2017, the Company added additional EMD exclusive distributorship rights in key states, primarily through the Central, South and Eastern areas of the United States. With the S&S acquisition, the Company became the United States distributor for EMD marine and power generation applications. Sales and service of EMD products account for approximately 3% of the Company's revenues for 2022. Although the Company considers its relationship with EMD to be strong, the loss of the EMD distributorship and service rights, or a disruption of the supply of EMD parts, could have a negative impact on the Company's ability to service its customers. In 2020, with the acquisition of Convoy Servicing Company and Agility Fleet Services, LLC, the Company expanded its dealership network of Thermo King refrigeration systems for trucks, railroad cars, and other land transportation markets in Texas and Colorado. In 2022, sales and service of Thermo King products comprised approximately 5% of the Company's revenues.

United and S&S have maintained continuous exclusive distribution rights for MTU and Allison since the 1940s. United and S&S are two of MTU's top five distributors of off-highway engines in North America, with exclusive distribution rights in multiple states. In addition, as distributors of Allison products, United and S&S have exclusive distribution rights in multiple key growth states. United and S&S are also the distributors for parts, service and warranty on Daimler truck engines and related equipment in multiple states. Sales and service of MTU, Allison, and Daimler products accounted for approximately 14% of the Company's revenues during 2022. Although the Company considers its relationships with MTU, Allison, and Daimler to be strong, the loss of MTU, Allison, or Daimler distributorships and service rights, or a disruption of the supply of MTU or Allison parts, could have a negative impact on the Company's ability to service its customers.

In addition to its relationships with MTU, Allison, and Daimler, the Company also has relationships with many other distributors and parts suppliers and the loss of a distributorship and service rights, or a disruption of the supply of parts from any of these other distributors or part suppliers could also have a negative impact on the Company's ability to service its customers.

General Corporate Risk Factors

The Company is subject to adverse weather conditions in KMT and KDS. KMT is subject to weather condition volatility. Physical impacts of climate change could have a material adverse effect on the Company's costs and operations. There has been public discussion that climate change may be associated with rising sea levels as well as extreme weather conditions such as more intense hurricanes, thunderstorms, tornadoes, drought, and snow or ice storms. Extreme weather conditions may increase the Company’s costs or cause damage to its facilities, and any damage resulting from extreme weather may not be fully insured. Many of the Company’s facilities are located near coastal areas or waterways where rising sea levels or flooding could disrupt the Company’s operations or adversely impact its facilities. Adverse weather conditions such as high or low water on the inland waterway systems, fog and ice, tropical storms, hurricanes, and tsunamis on both the inland waterway systems and throughout the United States coastal waters can impair the operating efficiencies of the marine fleet. Such adverse weather conditions can cause a delay, diversion or postponement of shipments of products and are totally beyond the control of the Company. Tropical storms and hurricanes may also impact the Company’s customers resulting in reduced demand for the Company’s services. In addition, adverse water and weather conditions can negatively affect a towing vessel’s performance, tow size, loading drafts, fleet efficiency, limit navigation periods and dictate horsepower requirements. KDS is also subject to tropical storms and hurricanes impacting its coastal locations and those of its customers as well as tornados impacting its Oklahoma facilities. The risk of flooding as a result of hurricanes and tropical storms as well as other weather events may impede travel via roadways, suspend service work, and impact deliveries and the Company’s ability to fulfill orders or provide services in KDS.

The Company may be unable to make attractive acquisitions or successfully integrate acquired businesses, and any inability to do so may adversely affect the Company’s business and hinder its ability to grow. The Company has made asset and business acquisitions in the past and may continue to make acquisitions of assets or businesses in the future that complement or expand the Company’s current business. The Company may not be able to identify attractive acquisition opportunities. Even if attractive acquisition opportunities are identified, the Company may not be able to complete the acquisition or do so on commercially acceptable terms. The success of any completed acquisition depends on the Company’s ability to integrate the acquired assets or business effectively into the Company’s existing operations. The process of integrating acquired assets or businesses may involve difficulties that require a disproportionate amount of the Company’s managerial and financial resources to resolve. The value of acquired assets or businesses may be negatively impacted by a variety of circumstances unknown to the Company prior to the acquisition. In addition, possible future acquisitions may be larger and for purchase prices significantly higher than those paid for earlier acquisitions. No assurance can be given that the Company will be able to identify additional suitable acquisition opportunities, negotiate acceptable terms, obtain financing for acquisitions on acceptable terms or successfully acquire identified targets. The Company’s failure to achieve synergies, to successfully integrate the acquired businesses and assets into the Company’s existing operations, or to minimize any unforeseen operational difficulties could have a material adverse effect on the Company’s business, financial condition, and results of operations. In addition, agreements governing the Company’s indebtedness from time to time may impose certain limitations on the Company’s ability to undertake acquisitions or make investments or may limit the Company’s ability to incur certain indebtedness and liens, which could limit the Company’s ability to make acquisitions.

The Company’s failure to comply with the Foreign Corrupt Practices Act (“FCPA”), or similar local applicable anti-bribery laws, could have a negative impact on its ongoing operations. The Company’s operations outside the United States require the Company to comply with both United States and international regulations. For example, in addition to any similar applicable local anti-bribery laws, the Company's operations in countries outside the United States are subject to the FCPA, which prohibits United States companies or their employees and third party representatives from providing anything of value to a foreign official for the purposes of influencing any act or decision of these individuals in their official capacity to help obtain or retain business, direct business to any person or corporate entity, or obtain any unfair advantage. The Company has internal control policies and procedures and has implemented training and compliance programs for its employees and third party representatives with respect to the FCPA. However, the Company’s policies, procedures and programs may not always protect it from reckless or criminal acts committed by its employees or third party representatives, and severe criminal or civil sanctions could be the result of violations of the FCPA or any other applicable anti-bribery law in countries where the Company does business. The Company is also subject to the risks that its employees, joint venture partners, and third party representatives outside of the United States may fail to comply with other applicable laws.

The Company is subject to risks associated with possible climate change legislation, regulation and international accords. Greenhouse gas emissions, including carbon emissions or energy use, have increasingly become the subject of a large amount of international, national, regional, state and local attention. International agreements and national, regional, and state legislation and regulatory measures that aim to directly or indirectly limit or reduce greenhouse gas emissions are in various stages of implementation.

The United States Congress has considered, but has not passed, various bills that would create an economy-wide “cap-and-trade” system that would establish a limit (or cap) on overall greenhouse gas emissions and create a market for the purchase and sale of emissions permits or “allowances.” Any proposed cap-and-trade legislation would likely affect the chemical industry due to anticipated increases in energy costs as fuel providers pass on the cost of the emissions allowances, which they would be required to obtain under cap-and-trade to cover the emissions from fuel production and the eventual use of fuel by the Company or its energy suppliers. In addition, cap-and-trade proposals would likely increase the cost of energy, including purchases of diesel fuel, steam and electricity, and

certain raw materials used or transported by the Company. Proposed domestic and international cap-and-trade systems could materially increase raw material and operating costs of the Company's customer base. Future environmental regulatory developments related to climate change in the United States that restrict emissions of greenhouse gases could result in financial impacts on the Company's operations that cannot be predicted with certainty at this time.

In addition, current global trends incorporating carbon neutral policies and reduction in greenhouse gas emissions are driving decarbonization initiatives across all industries to mitigate the impact on climate change and may result in a decline in global and U.S. hydrocarbon usage. Such a decline in hydrocarbon usage (for example, as a result of an increase in electric vehicles) could result in a reduction in demand for (a) the Company's services in KMT to the extent there is reduced demand for crude oil and other feedstocks used and the products produced by the Company's major refining customers and (b) for the Company's products and services in KDS to the extent there is reduced demand in the exploration and production of hydrocarbons by the Company's oil and gas customers.

Loss of a large customer could adversely affect the Company. Five KMT customers accounted for approximately 17% of the Company's 2022 and 2021 revenue, and 18% of 2020 revenue. The Company has contracts with these customers expiring in 2023 through 2026. Three KDS customers accounted for approximately 9% of the Company's 2022 revenue, 6% of 2021 revenue, and 3% of 2020 revenue. Although the Company considers its relationships with these companies to be strong, the loss of any of these customers, or their inability to meet financial obligations, could have an adverse effect on the Company.

The Company relies on critical operating assets including information systems for the operation of its businesses, and the failure of such assets or any critical information system, including as a result of natural disasters, terrorist acts, a cybersecurity attack, or other extraordinary events, may adversely impact its businesses. The Company is dependent on its critical operating assets and technology infrastructure and must maintain and rely upon critical information systems and security of its assets for the effective and safe operation of its businesses. These assets include vessels, vessel equipment, property and facilities, as well as information systems, such as software applications, hardware equipment, and data networks and telecommunications.

The Company's critical assets and information systems, including the Company's proprietary vessel management computer system, are subject to damage or interruption from a number of potential sources, including but not limited to, natural disasters, terrorist acts, cybersecurity attacks, software viruses, and power failures. In addition to standard safety operating procedures, the Company has implemented measures such as business continuity plans, hurricane preparedness plans, emergency recovery processes, and security preparedness plans to protect physical assets and to recover from damage to such assets. The Company has also implemented virus protection software, intrusion detection systems and annual attack and penetration audits to protect information systems to mitigate these risks. However, the Company cannot guarantee that its critical assets or information systems cannot be damaged or compromised.

Any damage or compromise of its critical assets or data security or its inability to use or access these critical assets and information systems could adversely impact the efficient and safe operation of its businesses, or result in the failure to safely operate its equipment, and maintain the confidentiality of data of its customers or its employees and could subject the Company to increased operating expenses or legal action, which could have an adverse effect on the Company. Although to date the Company is unaware of any material data breach or system disruption, including a cyber-attack, the Company cannot provide any assurances that such events and impacts will not be material in the future. The Company's efforts to deter, identify, mitigate and/or eliminate future breaches may require significant additional effort and expense and may not be successful.

Limitations on the Company's ability to obtain, maintain, protect, or enforce its proprietary information and any successful intellectual property challenges or infringement proceedings, including its trade secrets could affect the Company's competitive position. The Company's distribution and services businesses rely on a variety of intellectual property rights for its product and services. The Company's intellectual property could be adversely affected by successful intellectual property challenges or infringement proceedings against it which could materially and adversely affect its competitive position. The Company may also be adversely affected when its patents are unenforceable, where claims allowed are not sufficient to protect its technology or its trade secrets are not adequately protected. The Company's failure to protect its proprietary information and any successful challenges to the Company's intellectual property rights could have an adverse effect on the Company.

A deterioration of the Company's credit profile, disruptions of the credit markets or higher interest rates could restrict its ability to access the debt capital markets or increase the cost of debt. Deterioration in the Company's credit profile may have an adverse effect on the Company's ability to access the private or public debt markets and also may increase its borrowing costs. If the Company's credit profile deteriorates significantly its access to the debt capital markets or its ability to renew its committed lines of credit may become restricted, its cost of debt may increase, or the Company may not be able to refinance debt at the same levels or on the same terms. Because the Company relies on its ability to draw on its Revolving Credit Facility to support its operations as needed, any volatility in the credit and financial markets that prevents the Company from accessing funds on acceptable terms could have an adverse effect on the Company's financial condition and cash flows. Additionally, the pricing grids on Company's Revolving Credit Facility and Term Loan contain a ratings grid that includes a possible increase in borrowing rates if the Company's rating declines. Furthermore, the

Company incurs interest under its Revolving Credit Facility based on floating rates. Floating rate debt creates higher debt service requirements if market interest rates increase, which would adversely affect the Company's cash flow and results of operations.

Corporate responsibility, specifically related to ESG matters, may impose additional costs and expose the Company to new risks. There is an increasing focus from regulators, certain investors, and other stakeholders concerning environmental, social, and governance ("ESG") matters, both in the United States and internationally. The Company communicates certain ESG-related initiatives, goals, and/or aspirations regarding environmental matters, diversity, responsible sourcing and social investments, and other matters in its annual Sustainability Report, on its website, in its filings with the SEC, and elsewhere. These initiatives, goals, or aspirations reflect the Company's current plans and are not guarantees that the Company will be able to achieve them. The standards for tracking and reporting on ESG matters are relatively new, have not been harmonized and continue to evolve. The Company's selection of disclosure frameworks that seek to align with various voluntary reporting standards may change from time to time and may result in a lack of comparative data from period to period. The ESG-related initiatives, goals and/or aspirations could be difficult to achieve and costly to implement, and the Company may be unable to economically develop or deploy technologies to achieve its goals or aspirations, if at all. In addition, the Company could be criticized for the timing, scope or nature of these initiatives, goals, or aspirations, or for any revisions to them. To the extent that the required and voluntary disclosures about ESG matters increase, the Company could be criticized for the accuracy, adequacy, or completeness of such disclosures. The Company's actual or perceived failure to report accurately or achieve its ESG-related initiatives, goals, or aspirations could negatively impact its reputation, result in ESG-focused investors not purchasing and holding Company stock, or otherwise materially harm the Company's business.

Increased prices and inflation could negatively impact the Company's margin performance and financial results. Increased inflation, including rising prices for items, such as raw materials, fuel, parts and components, freight, packaging, supplies, labor and energy increases the Company's costs to provide services and manufacture and distribute the Company's products. The Company does not currently use financial derivatives to hedge against volatility in commodity prices. The Company uses market prices for materials, fuel, parts and components. The Company may be unable to pass these rising costs on to its customers. To mitigate this exposure, the Company attempts to include cost escalation clauses in its longer-term marine transportation contracts whereby certain costs, including fuel, can largely be passed through to its customers. In KDS, the cost of major components for large manufacturing orders is secured with suppliers at the time a customer order is finalized, which limits exposure to cost escalations. Results of operations and margin performance can be negatively affected if the Company is unable to mitigate the impact of these cost increases through contractual means and is unable to increase prices to sufficiently offset the effect of these cost increases.

The Company could be adversely impacted by materials shortages, delays, and disruptions in supply chain. Materials, components, and equipment essential to the Company's operations, such as original equipment manufacturer engines, transmissions, generators, electrical components and steel, are normally readily available, but shortages as a result of supply chain disruptions can adversely impact the Company's operations, particularly where the Company has a relationship with a single supplier for a particular resource. Many of the items essential to the Company's business require the use of shipping services to transport them to the Company's facilities. Shipping delays or disruptions may result in operational slowdowns, especially where materials, components, or equipment are necessary to complete a project or order for the Company's customers, particularly in the manufacturing business of our distribution and services segment. These constraints could have a material adverse effect on the Company and contribute to increased buildup of inventories. In addition, price increases imposed by the Company's vendors for materials and shipping services used in its business, and the inability to pass these increases through to its customers, could have a material adverse effect on the Company.

Continuing impacts resulting from actual or threatened health epidemics, and pandemics or other major health crisis could materially and adversely affect our business, financial condition and results of operations. The Company's business could be impacted adversely by the effects of public health epidemics, pandemics or other major heath crises (which we refer to collectively as public health crises). Actual or threatened public health crises may have a number of adverse impacts, including volatility in the global economy, impacts to our customers' business operations, or significant disruptions in waterborne transportation of cargoes, and supply chain activity, caused by a variety of factors such as quarantines, supplier factory and office closures, or other government-imposed restrictions, any of which could adversely impact our business, financial condition, and results of operations. In response to the COVID-19 pandemic, various countries, including the United States, either mandated or recommended business closures, travel restrictions or limitations, social distancing, and/or self-quarantine, among other restrictions. Additionally, various state and local governments in locations where the Company operates took similar actions. Governments have removed, eased, reinstated, or implemented new protocols or restrictions in response to reassessment of the risk of COVID-19, based in part on, changing levels of infection and hospitalization rates. There has been and continues to be a negative impact on the global and United States economies and supply chains, including the oil and gas industry, which has created delays and reduced demand for the Company's products and services and in some cases, resulted in delays in performance of its contracts with customers.

The Company is unable to predict the extent to which major health crisis or other public health threats that may arise in the future may affect the global and United States economies and supply chain, which could have a material impact on its business. The degree to which any future disease outbreaks or public health threats may impact the Company's revenues, results of operations and

financial condition is uncertain and will depend on future developments. The impact of the COVID-19 pandemic or other epidemics or pandemics may also exacerbate other risks discussed above, any of which could have a material effect on the Company.

Item 1B. ***Unresolved Staff Comments***

Not applicable.

Item 2. ***Properties***

The information appearing in Item 1 under "Marine Transportation– Properties" and "Distribution and Services– Properties" is incorporated herein by reference. The Company believes that its facilities are adequate for its needs and additional facilities would be available if required.

Item 3. ***Legal Proceedings***

See Note 14, Contingencies and Commitments to the Company's financial statements.

Item 4. ***Mine Safety Disclosures***

Not applicable.

PART II

Item 5. ***Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities***

The Company's common stock is traded on the New York Stock Exchange under the symbol KEX. Additional market information for this item is incorporated by refence to the annual report to be provided to the Company's stockholders pursuant to Rule 14a-3(b).

As of February 17, 2023, the Company had 60,015,000 outstanding shares held by approximately 410 stockholders of record; however, the Company believes the number of beneficial owners of common stock exceeds this number. Information for this item relating to equity compensation plans is incorporated by reference to the definitive proxy statement to be filed by the Company with the Commission pursuant to Regulation 14A within 120 days of the close of the fiscal year ended December 31, 2022. See also Note 8, Stock Award Plans to the Company's financial statements for additional information.

The Company does not have an established dividend policy. Decisions regarding the payment of future dividends will be made by the Board of Directors based on the facts and circumstances that exist at that time. Since 1989, the Company has not paid any dividends on its common stock. The Company's credit agreements contain covenants restricting the payment of dividends by the Company at any time when there is a default under the agreements.

Item 6. ***Reserved***

Item 7. ***Management's Discussion and Analysis of Financial Condition and Results of Operations***

Statements contained in this Form 10-K that are not historical facts, including, but not limited to, any projections contained herein, are forward-looking statements and involve a number of risks and uncertainties. Such statements involve risks and uncertainties. Such statements can be identified by the use of forward-looking terminology such as "may," "will," "expect," "anticipate," "estimate," or "continue," or the negative thereof or other variations thereon or comparable terminology. The actual results of the future events described in such forward-looking statements in this Form 10-K could differ materially from those stated in such forward-looking statements. Among the factors that could cause actual results to differ materially are: adverse economic conditions, industry competition and other competitive factors, adverse weather conditions such as high water, low water, tropical storms, hurricanes, tsunamis, fog and ice, tornados, COVID-19 or other pandemics, marine accidents, lock delays, fuel costs, interest rates, construction of new equipment by competitors, government and environmental laws and regulations, and the timing, magnitude and number of acquisitions made by the Company. For a more detailed discussion of factors that could cause actual results to differ from those presented in forward-looking statements, see Item 1A-Risk Factors. Forward-looking statements are based on currently available information and the Company assumes no obligation to update any such statements.

For purposes of Management's Discussion, all net earnings per share attributable to Kirby common stockholders are "diluted earnings (loss) per share." The weighted average number of common shares outstanding applicable to diluted earnings (loss) per share for 2022, 2021, and 2020 were 60,329,000, 60,053,000, and 59,912,000, respectively. Refer to the Company's Annual Report on Form 10-K for the year ended December 31, 2021 for management's discussion and analysis of financial condition and results of operations for 2021 compared to 2020.

Overview

The Company is the nation's largest domestic tank barge operator, transporting bulk liquid products throughout the Mississippi River System, on the Gulf Intracoastal Waterway, and coastwise along all three United States coasts. The Company transports petrochemicals, black oil, refined petroleum products and agricultural chemicals by tank barge. Through KDS, the Company provides after-market service and parts for engines, transmissions, reduction gears, and related equipment used in oilfield services, marine, power generation, on-highway, and other industrial applications. The Company also rents equipment including generators, industrial compressors, and high capacity lift trucks, and refrigeration trailers for use in a variety of industrial markets, and manufactures and remanufactures oilfield service equipment, including pressure pumping units, manufactures cementing and pumping equipment as well as coil tubing and well intervention equipment, electric power generation equipment, specialized electrical distribution and control equipment, and high capacity energy storage/battery systems for oilfield service and railroad customers.

The following table summarizes key operating results of the Company (in thousands, except per share amounts):

	Year Ended December 31,		
	2022	2021	2020
Total revenues	$ 2,784,754	$ 2,246,660	$ 2,171,408
Net earnings (loss) attributable to Kirby	$ 122,291	$ (246,954)	$ (272,546)
Net earnings (loss) per share attributable to Kirby common stockholders – diluted	$ 2.03	$ (4.11)	$ (4.55)
Net cash provided by operating activities	$ 294,128	$ 321,576	$ 444,940
Capital expenditures	$ 172,606	$ 98,015	$ 148,185

The 2022 fourth quarter included $3.3 million before taxes, $2.4 million after taxes, or $0.04 per share of severance expense. The 2022 fourth quarter also included $0.9 million before taxes, $0.6 million after taxes, or $0.01 per share of professional fees related to the Company's strategic alternatives review. The 2022 second quarter included $1.5 million before taxes, $1.3 million after taxes, or $0.02 per share of severance expense.

The 2021 third quarter included $340.7 million before taxes, $275.1 million after taxes, or $4.58 per share, non-cash charges related to impairment of long-lived assets related to coastal marine transportation equipment and impairment of goodwill in KMT. See Note 7, Impairments and Other Charges in the financial statements for additional information. The 2021 fourth quarter was also impacted by a one-time deferred tax provision of $5.7 million or $0.09 per share related to a change in Louisiana tax law. See Note 9, Taxes on Income for additional information.

The 2020 first quarter included $561.3 million before taxes, $433.3 million after taxes, or $7.24 per share, non-cash charges related to inventory write-downs, impairment of long-lived assets, including intangible assets and property and equipment, and impairment of goodwill in KDS. See Note 7, Impairments and Other Charges for additional information. In addition, the 2020 first quarter was favorably impacted by an income tax benefit of $50.8 million or $0.85 per share related to net operating losses generated in 2018 and 2019 used to offset taxable income generated between 2013 and 2017. See Note 9, Taxes on Income for additional information.

Cash provided by operating activities in 2022 decreased compared to 2021 primarily due to the receipt of a tax refund of $119.5 million, including accrued interest, for the Company's 2019 federal tax return during the 2021 first quarter, partially offset by higher revenues and operating income in both KMT and KDS in 2022 from improved business activity levels. During 2022, capital expenditures of $172.6 million included $147.2 million in KMT and $25.4 million in KDS and corporate, more fully described under cash flow and capital expenditures below.

The Company projects net cash flow from operations in 2023 of between $480 million and $580 million. The Company has applied for and been awarded grants from various government entities totaling approximately $3.5 million related to certain emission reduction projects which it expects to receive reimbursements for in 2023.

The Company's debt-to-capitalization ratio decreased to 26.2% at December 31, 2022 from 28.7% at December 31, 2021, primarily due to repayments in 2022 under the 2024 Term Loan and an increase in total equity, which improved as a result of net earnings attributable to Kirby of $122.3 million during 2022, partially offset by treasury stock purchases of $22.9 million. The Company's debt outstanding as of December 31, 2022 and December 31, 2021 is detailed in Long-Term Financing below.

Marine Transportation

The following table summarizes the Company's marine transportation fleet:

	December 31,	
	2022	2021
Inland tank barges:		
Owned	999	983
Leased	38	42
Total	1,037	1,025
Barrel capacity (in millions)	23.1	22.9
Active inland towboats (quarter average):		
Owned	216	211
Chartered	61	44
Total	277	255
Coastal tank barges:		
Owned	28	30
Leased	1	1
Total	29	31
Barrel capacity (in millions)	3.0	3.1
Coastal tugboats:		
Owned	24	26
Chartered	3	3
Total	27	29
Offshore dry-bulk cargo barges (owned)	4	4
Offshore tugboats and docking tugboat (owned and chartered)	5	5

The Company also owns shifting operations and fleeting facilities for dry cargo barges and tank barges on the Houston Ship Channel and in Freeport and Port Arthur, Texas, and Lake Charles, Louisiana, and a shipyard for building towboats and performing routine maintenance near the Houston Ship Channel, as well as a two-thirds interest in Osprey Line, L.L.C., which transports project cargoes and cargo containers by barge.

For 2022, 58% of the Company's revenues were generated by KMT. The segment's customers include many of the major petrochemical and refining companies that operate in the United States. Products transported include intermediate materials used to produce many of the end products used widely by businesses and consumers — plastics, fibers, paints, detergents, oil additives and paper, among others, as well as residual fuel oil, ship bunkers, asphalt, gasoline, diesel fuel, heating oil, crude oil, natural gas condensate and agricultural chemicals. Consequently, the Company's marine transportation business is directly affected by the volumes produced by the Company's petroleum, petrochemical and refining customer base.

KMT's revenues for 2022 increased 22% compared to 2021 and operating income increased 116%, compared to 2021. The increases for 2022 were primarily due to improved term and spot pricing and utilization in the inland market when compared to 2021, as well as

higher fuel rebills in the inland and coastal markets. Revenues and operating income in 2022 were impacted by record low water levels on the Mississippi River during the 2022 fourth quarter, which increased delay days compared to 2021. Also, the 2022 first quarter was impacted by the COVID-19 Omicron variant as increased cases of the virus among the Company's mariners led to crewing challenges, lost revenue and increased operating costs. Revenues and operating income in 2021 were impacted by Hurricane Ida which shut down almost the entire Southeast Louisiana refinery and chemical complex and key waterways for an extended period of time during the third quarter. Winter Storm Uri also heavily impacted the 2021 first quarter with the shutdown of many Gulf Coast refineries and chemical plants for an extended period of time starting in mid-February. These emergency shutdowns resulted in significantly reduced liquids production and lower volumes for the Company's inland marine transportation market during the 2021 first quarter. For 2022 and 2021, the inland tank barge fleet contributed 79% and 76%, respectively, and the coastal fleet contributed 21% and 24%, respectively, of marine transportation revenues.

Overall inland tank barge utilization levels improved in 2022 as compared to 2021, ranging from the mid-80% range during the 2022 first quarter, the low-90% range during the 2022 second and third quarters and the 90% range in the 2022 fourth quarter. The 2022 fourth quarter utilization held steady from the 2022 third quarter despite headwinds as a result of record low water levels on the Mississippi River. During 2021, reduced demand as a result of the COVID-19 pandemic and the resulting economic slowdown contributed to lower barge utilization. Inland tank barge utilization levels ranged from the mid-70% range during the 2021 first quarter, the low to mid-80% range during the 2021 second quarter, the low-80% range during the 2021 third quarter and the mid-to high 80% range during the 2021 fourth quarter. The 2021 first quarter was impacted by reduced volumes as a result of Winter Storm Uri, whereas the 2021 second quarter was favorably impacted by the Colonial Pipeline outage in May. The 2021 third quarter was negatively impacted by Hurricane Ida.

Coastal tank barge utilization levels during 2022 averaged in the low-90% range in the 2022 first and second quarters and low to mid-90% range during the 2022 third and fourth quarters as there was modest improvement in customer demand. For 2021, coastal tank barge utilization levels averaged in the mid-70% range during the 2021 first quarter, the low to mid-70% range during the 2021 second quarter, the mid-70% range during the 2021 third quarter and the 90% range during the 2021 fourth quarter. The increase in coastal tank barge utilization during the 2021 fourth quarter was primarily due to the retirement of underutilized barges in the 2021 third quarter. Barge utilization in the coastal marine fleet continued to be impacted by the oversupply of tank barges in the coastal industry during 2022 and 2021.

Approximately 60% of the inland marine transportation revenues were under term contracts and 40% were spot contract revenues in 2022. Approximately 65% of the inland marine transportation revenues were under term contracts and 35% were spot contract revenues in 2021. Term contracts provide the operations with a reasonably predictable revenue stream. Inland time charters, which insulate the Company from revenue fluctuations caused by weather and navigational delays and temporary market declines, represented 58% of the inland revenues under term contracts during both 2022 and 2021. During 2022 and 2021, approximately 75% and 80%, respectively, of coastal revenues were under term contracts and 25% and 20%, respectively, were spot contract revenues. Coastal time charters represented approximately 90% of coastal revenues under term contracts during 2022 compared to 85% during 2021. Term contracts have contract terms of 12 months or longer, while spot contracts have contract terms of less than 12 months.

The following table summarizes the average range of pricing changes in term and spot contracts renewed during 2022 compared to contracts renewed during the corresponding quarter of 2021:

	Three Months Ended			
	March 31, 2022	**June 30, 2022**	**September 30, 2022**	**December 31, 2022**
Inland market:				
Term increase	7% – 9%	14% – 16%	13% – 15%	10% – 15%
Spot increase	15% – 20%	15% – 18%	23% – 27%	20% – 25%
Coastal market (a):				
Term increase	4% – 6%	10% – 12%	19% – 21%	10% – 12%
Spot increase	4% – 6%	10% – 12%	18% – 22%	15% – 20%

(a) Spot and term contract pricing in the coastal market are contingent on various factors including geographic location, vessel capacity, vessel type, and product serviced.

Effective January 1, 2022, annual escalators for labor and the producer price index on a number of inland multi-year contracts resulted in rate increases on those contracts of approximately 5%, excluding fuel.

The 2022 marine transportation operating margin was 8.4% compared to 4.8% for 2021.

Distribution and Services

The Company, through KDS, sells genuine replacement parts, provides service mechanics to overhaul and repair engines, transmissions, reduction gears and related oilfield services equipment, rebuilds component parts or entire diesel engines, transmissions and reduction gears, and related equipment used in oilfield services, marine, power generation, on-highway and other industrial applications. The Company also rents equipment including generators, industrial compressors, high capacity lift trucks, and refrigeration trailers for use in a variety of industrial markets, and manufactures and remanufactures oilfield service equipment, including pressure pumping units, manufactures cementing and pumping equipment as well as coil tubing and well intervention equipment, electric power generation equipment, specialized electrical distribution and control equipment, and high capacity energy storage/battery systems for oilfield service and railroad customers. The Company sells and manufactures various products used in oil and gas and industrial applications, including those used in hydraulic fracturing and refrigeration systems that, as compared to conventional offerings, reduce emissions. These products made up approximately 16% of KDS's revenues in 2022.

During 2022, KDS generated 42% of the Company's revenues, of which 82% was generated from service and parts and 18% from manufacturing. The results of KDS are largely influenced by cycles of the oilfield service industry and oil and gas operator and producer markets, marine, power generation, on-highway and other industrial markets.

Distribution and services revenues for 2022 increased 26% compared to 2021 and operating income increased 143% compared to 2021. In the commercial and industrial market, the increases in 2022 compared to 2021 were primarily attributable to strong economic activity across the U.S. which resulted in higher business levels in the marine and on-highway businesses. Increased product sales in Thermo King also contributed favorably to 2022 results. These results were partially offset by continuing supply chain constraints and delays. Results for the commercial and industrial market in 2021 were impacted by Winter Storm Uri with reduced activity levels at many locations across the southern U.S. during the 2021 first quarter. For 2022 and 2021, the commercial and industrial market contributed 56% and 63%, respectively, of the distribution and services revenues.

In the oil and gas market, revenues improved compared to 2021 due to higher oilfield activity which resulted in increased demand for new transmissions and parts in the distribution business. Although the manufacturing business was heavily impacted by supply chain delays, the business continues to experience increased orders and deliveries of new environmentally friendly pressure pumping equipment and power generation equipment for electric fracturing. For 2022 and 2021, the oil and gas market contributed 44% and 37%, respectively, of the distribution and services revenues.

The distribution and services operating margin for 2022 was 5.7% compared to 3.0% for 2021.

Outlook

Refinery and petrochemical utilization levels remain at high levels. This is favorable for the Company's barge utilization, which is strong in both inland and coastal markets, and for pricing, which continues to increase. In KDS, despite ongoing supply chain constraints and delays, demand for the Company's products and services continues to grow. Overall, the Company expects both KMT and KDS to deliver improved financial results in 2023. The Company continues to closely monitor the ever-changing economic landscape related to the impact of higher interest rates and possible recessionary headwinds as it moves through 2023.

In the inland marine transportation market, conditions are expected to continue to remain favorable in 2023 driven by continued strong barge utilization, improvements in the spot market, renewals of expiring term contracts at higher rates and modest net new barge construction in the industry. The impacts of rising costs from inflationary pressures, including significantly higher fuel prices, are expected to be recovered as term contracts renew and contract escalators reprice in 2023. In coastal marine, improvements in demand and pricing are anticipated in 2023, but revenues and operating income are expected to be impacted by higher planned shipyard maintenance days and ballast water treatment installations on certain vessels during 2023.

KDS results are largely influenced by the cycles of the oil and gas, marine, power generation, on-highway and other related industrial markets. In the oil and gas market, high commodity prices, increasing rig counts, and growing well completions activity are expected to result in increased demand for original equipment manufacturer products, parts, and services as well as for new environmentally friendly pressure pumping equipment and power generation equipment for electric fracturing. In commercial and industrial, favorable economic activity is expected to result in increased demand in power generation, marine repair, and on-highway. However, ongoing supply chain issues and long lead times are expected in the near term, contributing to some volatility as deliveries of products possibly shifting between quarters in 2023 and into 2024.

Critical Accounting Policies and Estimates

The preparation of financial statements in conformity with United States generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. The Company evaluates its estimates and assumptions on an ongoing basis based on a combination of historical information and various other assumptions that are believed to be reasonable under the particular circumstances. Actual results may differ from these estimates based on different assumptions or conditions. The Company believes the critical accounting policies that most impact the consolidated financial statements are described below. It is also suggested that the Company's significant accounting policies, as described in the Company's financial statements in Note 1, Summary of Significant Accounting Policies, be read in conjunction with this Management's Discussion and Analysis of Financial Condition and Results of Operations.

Accounts Receivable. The Company extends credit to its customers in the normal course of business. The Company regularly reviews its accounts and estimates the amount of uncollectible receivables each period and establishes an allowance for uncollectible amounts. The amount of the allowance is based on the age of unpaid amounts, information about the current financial strength of customers, and other relevant information. Estimates of uncollectible amounts are revised each period, and changes are recorded in the period they become known. Historically, credit risk with respect to these trade receivables has generally been considered minimal because of the financial strength of the Company's customers; however, a United States or global recession or other adverse economic condition could impact the collectability of certain customers' trade receivables which could have a material effect on the Company's results of operations.

Property, Maintenance and Repairs. Property is recorded at cost; improvements and betterments are capitalized as incurred. Depreciation is recorded using the straight-line method over the estimated useful lives of the individual assets. When property items are retired, sold, or otherwise disposed of, the related cost and accumulated depreciation are removed from the accounts with any gain or loss on the disposition included in the statement of earnings. Maintenance and repairs on vessels built for use on the inland waterways are charged to operating expense as incurred and includes the costs incurred in USCG inspections unless the shipyard extends the life, improves the operating capacity of the vessel, or replaces significant components of the vessel which results in the costs being capitalized. The Company's ocean-going vessels are subject to regulatory drydocking requirements after certain periods of time to be inspected, have planned major maintenance performed and be recertified by the ABS. These recertifications generally occur twice in a five-year period. The Company defers the drydocking expenditures incurred on its ocean-going vessels due to regulatory marine inspections by the ABS and amortizes the costs of the shipyard over the period between drydockings, generally 30 or 60 months, depending on the type of major maintenance performed. Drydocking expenditures that extend the life, improve the operating capability of the vessel, or replace significant components of the vessel result in the costs being capitalized. Routine repairs and maintenance on ocean-going vessels are expensed as incurred. Interest is capitalized on the construction of new ocean-going vessels.

The Company performs an impairment assessment whenever events or changes in circumstances indicate that the carrying amount of long-lived assets may not be recoverable. If a triggering event is identified, the Company compares the carrying amount of the asset group to the estimated undiscounted future cash flows expected to result from the use of the asset group. If the carrying amount of the asset group exceeds the estimated undiscounted future cash flows, the Company measures the amount of the impairment by comparing the carrying amount of the asset group to its estimated fair value. Assets to be disposed of are reported at the lower of the carrying amount or fair value less costs to sell. There are many assumptions and estimates underlying the determination of an impairment event or loss, if any. The assumptions and estimates include, but are not limited to, estimated fair market value of the assets and estimated future cash flows expected to be generated by these assets, which are based on additional assumptions such as asset utilization, length of service the asset will be used, and estimated salvage values. Although the Company believes its assumptions and estimates are reasonable, deviations from the assumptions and estimates could produce a materially different result.

Goodwill. The excess of the purchase price over the fair value of identifiable net assets acquired in transactions accounted for as a purchase is included in goodwill. Management monitors the recoverability of goodwill on an annual basis, or whenever events or circumstances indicate that interim impairment testing is necessary. The amount of goodwill impairment, if any, is typically measured based on projected discounted future operating cash flows using an appropriate discount rate and valued based on the excess of a reporting unit's carrying amount over its fair value, incorporating all tax impacts caused by the recognition of the impairment loss. The assessment of the recoverability of goodwill will be impacted if estimated future operating cash flows are not achieved. There are many assumptions and estimates underlying the determination of an impairment event or loss, if any. Although the Company believes its assumptions and estimates are reasonable, deviations from the assumptions and estimates could produce a materially different result.

Accrued Insurance. The Company is subject to property damage and casualty risks associated with operating vessels carrying large volumes of bulk liquid and dry cargo in a marine environment. The Company maintains insurance coverage against these risks subject to a deductible, below which the Company is liable. In addition to expensing claims below the deductible amount as incurred, the Company also maintains a reserve for losses that may have occurred but have not been reported to the Company, or are not yet fully developed. The Company uses historic experience and actuarial analysis by outside consultants to estimate an appropriate level of accrued liabilities. If the actual number of claims and magnitude were substantially greater than assumed, the required level of accrued liabilities for claims incurred but not reported or fully developed could be materially understated. The Company records receivables from its insurers for incurred claims above the Company's deductible. If the solvency of the insurers became impaired, there could be an adverse impact on the accrued receivables and the availability of insurance.

Acquisitions

On March 31, 2022, the Company paid $3.9 million in cash to purchase assets of a gearbox repair company in KDS.

During 2021, the Company purchased four inland tank barges from a leasing company for $7.5 million in cash. The Company had been leasing the barges prior to the purchase.

On October 4, 2021, the Company paid $1.6 million in cash to purchase assets of an energy storage systems manufacturer based in Texas which have been key to the development of new power generation solutions for electric fracturing equipment.

During 2020, the Company purchased six newly constructed inland pressure barges for $39.4 million in cash.

On April 1, 2020, the Company completed the acquisition of the inland tank barge fleet of Savage Inland Marine, LLC ("Savage") for $279 million in cash. Savage's tank barge fleet consisted of 92 inland tank barges with approximately 2.5 million barrels of capacity and 45 inland towboats. The Savage assets that were acquired primarily move petrochemicals, refined products, and crude oil on the Mississippi River, its tributaries, and the Gulf Intracoastal Waterway. The Company also acquired Savage's ship bunkering business and barge fleeting business along the Gulf Coast.

On January 3, 2020, the Company completed the acquisition of substantially all the assets of Convoy for $37.2 million in cash. Convoy is an authorized dealer for Thermo King refrigeration systems for trucks, railroad cars and other land transportation markets for North and East Texas and Colorado.

Financing of these purchases and acquisitions was through borrowings under the Company's Revolving Credit Facility and cash provided by operating activities.

Results of Operations

The following table sets forth the Company's marine transportation and distribution and services revenues and the percentage of each to total revenues for the comparable periods (dollars in thousands):

	Year Ended December 31,					
	2022	%	2021	%	2020	%
Marine transportation	$ 1,616,967	58%	$ 1,322,918	59%	$ 1,404,265	65%
Distribution and services	1,167,787	42	923,742	41	767,143	35
	$ 2,784,754	100%	$ 2,246,660	100%	$ 2,171,408	100%

Marine Transportation

The following table sets forth a year over year comparison of KMT's revenues, costs and expenses, operating income and operating margins (dollars in thousands):

	Year Ended December 31,				
	2022	2021	% Change	2020	% Change
Marine transportation revenues	$ 1,616,967	$ 1,322,918	22 %	$ 1,404,265	(6)%
Costs and expenses:					
Costs of sales and operating expenses	1,146,657	924,380	24	907,119	2
Selling, general and administrative	128,340	119,017	8	111,182	7
Taxes, other than on income	28,235	30,527	(8)	35,528	(14)
Depreciation and amortization	177,551	185,979	(5)	186,798	—
	1,480,783	1,259,903	18	1,240,627	2
Operating income	$ 136,184	$ 63,015	116 %	$ 163,638	(61)%
Operating margins	8.4 %	4.8 %		11.7 %	

The following table shows the marine transportation markets serviced by the Company, the marine transportation revenue distribution, products moved and the drivers of the demand for the products the Company transports:

Markets Serviced	2022 Revenue Distribution	Products Moved	Drivers
Petrochemicals	49%	Benzene, Styrene, Methanol, Acrylonitrile, Xylene, Naphtha, Caustic Soda, Butadiene, Propylene	Consumer non-durables — 70% Consumer durables — 30%
Black Oil	28%	Residual Fuel Oil, Coker Feedstock, Vacuum Gas Oil, Asphalt, Carbon Black Feedstock, Crude Oil, Natural Gas Condensate, Ship Bunkers	Fuel for Power Plants and Ships, Feedstock for Refineries, Road Construction
Refined Petroleum Products	20%	Gasoline, No. 2 Oil, Jet Fuel, Heating Oil, Diesel Fuel, Ethanol	Vehicle Usage, Air Travel, Weather Conditions, Refinery Utilization
Agricultural Chemicals	3%	Anhydrous Ammonia, Nitrogen-Based Liquid Fertilizer, Industrial Ammonia	Corn, Cotton and Wheat Production, Chemical Feedstock Usage

2022 Compared to 2021

Marine Transportation Revenues

KMT's revenues for 2022 increased 22% compared to 2021 and operating income increased 116%, compared to 2021. The increases for 2022 were primarily due to improved term and spot pricing and utilization in the inland market when compared to 2021 as well as higher fuel rebills in the inland and coastal markets. Revenues and operating income in 2022 were impacted by record low water levels on the Mississippi River during the 2022 fourth quarter, which increased delay days compared to 2021. Also, the 2022 first quarter was impacted by the COVID-19 Omicron variant as increased cases of the virus among the Company's mariners led to crewing challenges, lost revenue and increased operating costs. Revenues and operating income in 2021 were impacted by Hurricane Ida which shut down almost the entire Southeast Louisiana refinery and chemical complex and key waterways for an extended period of time during the third quarter. Winter Storm Uri also heavily impacted the 2021 first quarter with the shutdown of many Gulf Coast refineries and chemical plants for an extended period of time starting in mid-February. These emergency shutdowns resulted in significantly reduced liquids production and lower volumes for the Company's inland marine transportation market during the 2021 first quarter. For 2022 and 2021, the inland tank barge fleet contributed 79% and 76%, respectively, and the coastal fleet contributed 21% and 24%, respectively, of marine transportation revenues.

Overall inland tank barge utilization levels improved in 2022 compared to 2021, ranging from the mid-80% range during the 2022 first quarter, the low-90% range during the 2022 second and third quarters and the 90% range in the 2022 fourth quarter. The 2022 fourth quarter utilization held steady from the 2022 third quarter despite headwinds as a result of record low water levels on the Mississippi River. During 2021, reduced demand as a result of the COVID-19 pandemic and the resulting economic slowdown contributed to lower barge utilization. Inland tank barge utilization levels ranged from the mid-70% range during the 2021 first quarter, the low to mid-80% range during the 2021 second quarter, the low 80% range during the 2021 third quarter and the mid-to high 80% range during the 2021 fourth quarter. The 2021 first quarter was impacted by reduced volumes as a result of Winter Storm Uri, whereas

the 2021 second quarter was favorably impacted by the Colonial Pipeline outage in May. The 2021 third quarter was negatively impacted by Hurricane Ida.

Coastal tank barge utilization levels during 2022 averaged in the low-90% range in the 2022 first and second quarters and low to mid-90% range during the 2022 third and fourth quarters as there was some modest improvement in customer demand. For 2021, coastal tank barge utilization levels averaged in the mid-70% range during the 2021 first quarter, the low to mid-70% range during the 2021 second quarter, the mid-70% range during the 2021 third quarter and the 90% range during the 2021 fourth quarter. The increase in coastal tank barge utilization during the 2021 fourth quarter was primarily due to the retirement of underutilized barges in the 2021 third quarter. Barge utilization in the coastal marine fleet continued to be impacted by the oversupply of tank barges in the coastal industry during 2022 and 2021.

The petrochemical market, the Company's largest market, contributed 49% of marine transportation revenues for 2022, reflecting increased volumes and utilization from Gulf Coast petrochemical plants for both domestic consumption and to terminals for export destinations as a result of improved economic conditions following the height of the COVID-19 pandemic. During the 2021 first quarter, as much as 80% of U.S. chemical plant capacity was offline at the peak of Winter Storm Uri, contributing to significantly reduced volumes and revenues; however, volumes and revenues sequentially improved in the 2021 second quarter as chemical plants resumed full operations by May. During the 2021 third quarter, volumes declined again as numerous Louisiana chemical plants were shut down for an extended period of time as a result of Hurricane Ida.

The black oil market, which contributed 28% of marine transportation revenues for 2022, reflected improved demand as refinery utilization and production levels of refined petroleum products and fuel oils increased following the height of the COVID-19 pandemic. During 2022, the Company transported crude oil and natural gas condensate produced from the Permian Basin and the Eagle Ford shale formation in Texas, both along the Gulf Intracoastal Waterway with inland vessels and in the Gulf of Mexico with coastal equipment. Additionally, the Company transported volumes of Utica natural gas condensate downriver from the Mid-Atlantic to the Gulf Coast and Canadian and Bakken crude downriver from the Midwest to the Gulf Coast. During the 2021 first quarter, U.S. refinery utilization dropped to near 40% during the peak of Winter Storm Uri, contributing to significantly reduced volumes and revenues. Although refinery utilization increased back to near 90% in the 2021 second quarter contributing to sequentially increased volumes and revenues, volumes declined again during the 2021 third quarter as Louisiana refineries were shut down for an extended period of time as a result of Hurricane Ida.

The refined petroleum products market, which contributed 20% of marine transportation revenues for 2022, reflected increased volumes in the inland market as refinery utilization and product levels improved following the height of the COVID-19 pandemic. During the 2021 first quarter, U.S. refinery utilization dropped to near 40% during the peak of Winter Storm Uri, contributing to significantly reduced volumes and revenues. Although refinery utilization increased back to near 90% in the 2021 second quarter contributing to sequentially increased volumes and revenues, volumes declined again during the 2021 third quarter as Louisiana refineries were shut down for an extended period of time as a result of Hurricane Ida.

The agricultural chemical market, which contributed 3% of marine transportation revenues for 2022, reflected improved demand for transportation of both domestically produced and imported products, primarily due to improved economic conditions following the height of the COVID-19 pandemic.

Inland operations incurred 10,244 delay days in 2022, 7% more than the 9,605 delay days that occurred during 2021. Delay days measure the lost time incurred by a tow (towboat and one or more tank barges) during transit when the tow is stopped due to weather, lock conditions, or other navigational factors. Delay days for 2022 and 2021 were impacted by hurricanes and tropical storms, poor operating conditions due to heavy wind and fog along the Gulf Coast, water conditions on the Mississippi River System, and closures of key waterways, including the Gulf Intracoastal Waterway, due in part to lock maintenance projects.

Approximately 60% of the inland marine transportation revenues were under term contracts and 40% were spot contract revenues in 2022. Approximately 65% of the inland marine transportation revenues were under term contracts and 35% were spot contract revenues in 2021. Term contracts provide operations with a reasonably predictable revenue stream. Inland time charters, which insulate the Company from revenue fluctuations caused by weather and navigational delays and temporary market declines, represented 58% of the inland revenues under term contracts during both 2022 and 2021. During 2022 and 2021, approximately 80% and 85%, respectively, of coastal revenues were under term contracts and 20% and 15%, respectively, were spot contract revenues. Coastal time charters represented approximately 90% of coastal revenues under term contracts during 2022 compared to 85% during 2021. Term contracts have contract terms of 12 months or longer, while spot contracts have contract terms of less than 12 months.

The following table summarizes the average range of pricing changes in term and spot contracts renewed during 2022 compared to contracts renewed during the corresponding quarter of 2021:

	Three Months Ended			
	March 31, 2022	June 30, 2022	September 30, 2022	December 31, 2022
Inland market:				
Term increase	7% – 9%	14% – 16%	13% – 15%	10% – 15%
Spot increase	15% – 20%	15% – 18%	23% – 27%	20% – 25%
Coastal market (a):				
Term increase	4% – 6%	10% – 12%	19% – 21%	10% – 12%
Spot increase	4% – 6%	10% – 12%	18% – 22%	15% – 20%

(a) Spot and term contract pricing in the coastal market are contingent on various factors including geographic location, vessel capacity, vessel type, and product serviced.

Effective January 1, 2022, annual escalators for labor and the producer price index on a number of inland multi-year contracts resulted in rate increases on those contracts of approximately 5%, excluding fuel.

Marine Transportation Costs and Expenses

Total costs and expenses for 2022 increased 18% compared to 2021. Costs of sales and operating expenses for 2022 increased 24% compared to 2021 primarily reflecting improved business activity levels, inflationary cost pressures and increased fuel costs as well as incremental costs associated with the COVID-19 Omicron variant during the 2022 first quarter.

The inland marine transportation fleet operated an average of 271 towboats during 2022, of which an average of 59 were chartered, compared to 250 during 2021, of which an average of 35 were chartered. The increase was primarily due to increasing business activity levels. Generally, variability in demand or anticipated demand, as tank barges are added to or removed from the fleet, as chartered towboat availability changes, or as weather or water conditions dictate, the Company charters in or releases chartered towboats in an effort to balance horsepower needs with current requirements. The Company has historically used chartered towboats for approximately one-fourth of its horsepower requirements.

Inland operations consumed 48.4 million gallons of diesel fuel in 2022 compared to 46.8 million gallons consumed during 2021. The average price per gallon of diesel fuel consumed during 2022 was $3.70 per gallon compared to $2.13 per gallon for 2021. Fuel escalation and de-escalation clauses are typically included in term contracts and are designed to rebate fuel costs when prices decline and recover additional fuel costs when fuel prices rise; however, there is generally a 30 to 120 day delay before contracts are adjusted. Spot contracts do not have escalators for fuel.

Selling, general and administrative expenses for 2022 increased 8% compared to 2021 as the Company was confronted with inflationary cost pressures. The increase is primarily due to higher salary and wage increases effective July 1, 2022, increased incentive compensation accruals and severance expense. Business activity levels in 2021 were impacted by COVID-19 and the resulting economic slowdown as well as Winter Storm Uri during the 2021 first quarter and Hurricane Ida during the 2021 third quarter.

Depreciation and amortization for 2022 decreased slightly compared to 2021. The decrease was primarily due to retirements, sales and impairment of marine equipment during 2022 and 2021.

Marine Transportation Operating Income and Operating Margins

KMT operating income for 2022 increased 116% compared to 2021. The operating margin was 8.4% for 2022 compared to 4.8% for 2021. The increase in operating income and operating margin were primarily due to increased barge utilization and higher term and spot contract pricing in the inland and coastal markets, partially offset by increased fuel prices as well as the impact of the COVID-19 Omicron variant during the 2022 first quarter. The 2021 results were impacted by a reduction in demand due to the COVID-19 pandemic and reduced volumes as a result of Hurricane Ida and Winter Storm Uri.

Distribution and Services

The following table sets forth a year over year comparison of KDS's revenues, costs and expenses, operating income (loss) and operating margins (dollars in thousands):

	Year Ended December 31,				
	2022	2021	% Change	2020	% Change
Distribution and services revenues	$ 1,167,787	$ 923,742	26 %	$ 767,143	20 %
Costs and expenses:					
Costs of sales and operating expenses	913,624	728,855	25	604,238	21
Selling, general and administrative	163,642	141,100	16	140,449	—
Taxes, other than on income	6,708	5,607	20	6,392	(12)
Depreciation and amortization	16,776	20,573	(18)	28,255	(27)
	1,100,750	896,135	23	779,334	15
Operating income (loss)	$ 67,037	$ 27,607	143 %	$ (12,191)	326 %
Operating margins	5.7 %	3.0 %		(1.6)%	

The following table shows the markets serviced by the Company, the revenue distribution, and the customers for each market:

Markets Serviced	2022 Revenue Distribution	Customers
Commercial and Industrial	56%	Inland River Carriers — Dry and Liquid, Offshore Towing — Dry and Liquid, Offshore Oilfield Services — Drilling Rigs & Supply Boats, Harbor Towing, Dredging, Great Lakes Ore Carriers, Pleasure Crafts, On and Off-Highway Transportation, Power Generation, Standby Power Generation, Pumping Stations, Mining
Oil and Gas	44%	Oilfield Services, Oil and Gas Operators and Producers

2022 Compared to 2021

Distribution and Services Revenues

KDS revenues for 2022 increased 26% compared to 2021. In the commercial and industrial market, the increase was primarily attributable to strong economic activity across the U.S. which resulted in higher business levels in the marine and on-highway businesses. The commercial and industrial market's 2021 results were impacted by Winter Storm Uri with reduced activity levels at many locations across the southern U.S. during the first quarter. For 2022 and 2021, the commercial and industrial market contributed 56% and 63%, respectively, of KDS revenues.

The oil and gas market revenues increase compared to 2021 primarily due to higher oilfield activity which resulted in increased demand for new transmissions and parts in the distribution business. Although the manufacturing business was heavily impacted by supply chain delays, the business continued to experience increased orders and deliveries of new environmentally friendly pressure pumping equipment and power generation equipment for electric fracturing. For 2022 and 2021, the oil and gas market contributed 44% and 37%, respectively, of KDS revenues.

Distribution and Services Costs and Expenses

Total costs and expenses for 2022 increased 23% compared to 2021 reflecting higher costs of sales and operating expenses as a result of inflationary cost pressures and higher demand in the marine and on-highway businesses in commercial and industrial markets, as well as increased demand in the oil and gas market due to higher oilfield activity levels.

Selling, general and administrative expenses for 2022 increased 16% compared to 2021. The increase was primarily due to salaries and costs related to the acquisition of assets of an energy storage systems manufacturer in the 2021 fourth quarter which included engineering talent required to further the Company's electrification efforts, continued inflationary cost pressures, annual salary raises, higher incentive compensation accruals and severance expense.

Depreciation and amortization for 2022 decreased 18% compared to 2021. The decrease was primarily due to sales of property and equipment and reduced capital spending during 2021.

Distribution and Services Operating Income (Loss) and Operating Margins

Operating income for KDS for 2022 increased 143% compared to 2021. The operating margin was 5.7% for 2022 compared to 3.0% for 2021. The results reflect increased business levels in both the commercial and industrial and oil and gas markets, partially offset by higher costs and expenses due to increased activity levels.

General Corporate Expenses

General corporate expenses for 2022, 2021, and 2020 were $18.6 million, $13.8 million and $11.1 million, respectively. General corporate expenses were higher in 2022 than 2021 primarily due to increased salaries and wages, higher incentive compensation accruals, higher legal and professional fees, and severance expense.

Gain on Disposition of Assets

The Company reported net gains on disposition of assets of $8.3 million, $5.8 million, and $0.1 million in 2022, 2021, and 2020, respectively. The net gains were predominantly from the sales or retirements of marine equipment.

Other Income and Expenses

The following table sets forth a year over year comparison of impairments and other charges, other income, noncontrolling interests, and interest expense (dollars in thousands):

	Year Ended December 31,				
	2022	2021	% Change	2020	% Change
Impairments and other charges	$ —	$ (340,713)	(100)%	$ (561,274)	(39)%
Other income	$ 16,677	$ 10,001	67%	$ 8,147	23%
Noncontrolling interests	$ (470)	$ (183)	157%	$ (954)	(81)%
Interest expense	$ (44,588)	$ (42,469)	5%	$ (48,739)	(13)%

Impairments and Other Charges

No impairments were recognized during 2022. For 2021, impairments and other charges includes $340.7 million before taxes, $275.1 million after taxes, or $4.58 per share, non-cash charges related to impairment of long-lived assets related to coastal marine transportation equipment and impairment of goodwill in KMT.

See Note 7, Impairments and Other Charges for additional information.

Other Income

Other income for 2022, 2021, and 2020 includes income of $13.9 million, $8.2 million and $6.2 million, respectively, for all components of net benefit costs except the service cost component related to the Company's defined benefit plans.

Interest Expense

The following table sets forth average debt, average interest rate, and capitalized interest excluded from interest expense (dollars in thousands):

	Year Ended December 31,		
	2022	2021	2020
Average debt	$ 1,171,317	$ 1,293,446	$ 1,567,523
Average interest rate	3.8%	3.2%	3.1%

Interest expense for 2022 increased 5% compared to 2021, primarily due to a higher average interest rate, partially offset by a lower average debt outstanding as a result of debt repayments.

(Provision) Benefit for Taxes on Income

On November 13, 2021, the voters of the state of Louisiana approved a constitutional amendment that removed the corporate tax deduction for federal income taxes paid and lowered the corporate income tax rate from 8% to 7.5% effective January 1, 2022. The result of the amendment was an increase in the effective Louisiana state income tax rate, net of deduction for federal income tax, from 6.3% to 7.5%. As a result of the amendment, the Company recognized a one-time deferred tax provision of $5.7 million during the

fourth quarter of 2021 due to remeasuring the Company's Louisiana and U.S. deferred tax assets and liabilities based on the new effective Louisiana state income tax rate.

Financial Condition, Capital Resources and Liquidity

Balance Sheet

The following table sets forth a year over year comparison of the significant components of the balance sheets (dollars in thousands):

	December 31,				
	2022	2021	% Change	2020	% Change
Assets:					
Current assets	$ 1,211,759	$ 1,003,865	21 %	$ 1,047,971	(4)%
Property and equipment, net	3,633,462	3,678,515	(1)	3,917,070	(6)
Operating lease right-of-use assets	154,507	167,730	(8)	174,317	(4)
Investment in affiliates	2,171	2,134	2	2,689	(21)
Goodwill	438,748	438,748	—	657,800	(33)
Other intangibles, net	51,463	60,070	(14)	68,979	(13)
Other assets	62,814	48,001	31	55,348	(13)
	$ 5,554,924	$ 5,399,063	3 %	$ 5,924,174	(9)%
Liabilities and stockholders' equity:					
Current liabilities	$ 642,197	$ 543,772	18 %	$ 466,032	17 %
Long-term debt, net — less current portion	1,076,326	1,161,433	(7)	1,468,546	(21)
Deferred income taxes	625,884	574,152	9	606,844	(5)
Operating lease liabilities — less current portion	142,140	159,672	(11)	163,496	(2)
Other long-term liabilities	23,209	71,252	(67)	131,703	(46)
Total equity	3,045,168	2,888,782	5	3,087,553	(6)
	$ 5,554,924	$ 5,399,063	3 %	$ 5,924,174	(9)%

2022 Compared to 2021

Current assets as of December 31, 2022 increased 21% compared to December 31, 2021. Trade accounts receivable increased 16% primarily due to increased business activity in both KMT and KDS. Other accounts receivable decreased 24%, primarily due to recoveries on the settlement of insurance claims. Inventories increased by 39% primarily due to higher activity and the impact of supply chain delays in KDS resulting in buildup for projects that are expected to be delivered in 2023.

Property and equipment, net of accumulated depreciation, at December 31, 2022 decreased 1% compared to December 31, 2021. The decrease reflected $193.9 million of depreciation expense and $31.0 million of property disposals, partially offset by $175.6 million of capital additions (including accrued capital expenditures) and $3.9 million primarily related to the acquisition of assets during 2022, more fully described under Cash Flows and Capital Expenditures below.

Operating lease right-of-use assets as of December 31, 2022 decreased 8% compared to December 31, 2021, primarily due to lease amortization expense, partially offset by new leases acquired.

Other intangibles, net, as of December 31, 2022 decreased 14% compared to December 31, 2021, primarily due to amortization.

Other assets as of December 31, 2022 increased 31% compared to December 31, 2021, primarily due to an increase in pension assets.

Current liabilities as of December 31, 2022 increased 18% compared to December 31, 2021. Accounts payable increased 40%, primarily due to higher business activity levels in KMT and KDS. Accrued liabilities decreased 13%, primarily due to the settlement of insurance claims. Deferred revenues increased 64%, primarily due to deposits on equipment expected to be shipped in 2023 in KDS.

Long-term debt, net – less current portion, as of December 31, 2022, decreased 7% compared to December 31, 2021, primarily reflecting repayments of $145.0 million under the Term Loans, partially offset by the issuance of $60 million of debt under the 3.46% series A notes on October 20, 2022. Net debt discounts and deferred issuance costs were $3.7 million (excluding $1.8 million attributable to the Revolving Credit Facility included in other assets on the balance sheet) at December 31, 2022 and $3.6 million at December 31, 2021.

Deferred income taxes as of December 31, 2022 increased 9% compared to December 31, 2021, primarily reflecting the 2022 deferred tax provision of $37.8 million.

Operating lease liabilities – less current portion, as of December 31, 2022 decreased 11% compared to December 31, 2021, primarily due to lease payments made, partially offset by new leases acquired and liability accretion.

Other long-term liabilities as of December 31, 2022 decreased 67% compared to December 31, 2021, primarily due to a decrease in pension liabilities and amortization of intangible liabilities.

Total equity as of December 31, 2022 increased 5% compared to December 31, 2021, primarily due to net earnings attributable to Kirby of $122.3 million and other comprehensive income of $42.8 million for 2022, partially offset by treasury stock purchases of $22.9 million.

Retirement Plans

The Company sponsors a defined benefit plan for its inland vessel personnel and shore based tankermen. The plan benefits are based on an employee's years of service and compensation. The plan assets consist primarily of equity and fixed income securities. The Company's pension plan funding strategy is to make annual contributions in amounts equal to or greater than amounts necessary to meet minimum government funding requirements. No pension contributions to that plan were made in 2022, 2021 or 2020.

On April 12, 2017, the Company amended its pension plan to cease all benefit accruals for periods after May 31, 2017 for certain participants. Participants grandfathered and not impacted were those, as of the close of business on May 31, 2017, who either (a) had completed 15 years of pension service or (b) had attained age 50 and completed 10 years of pension service. Participants non-grandfathered are eligible to receive discretionary 401(k) plan contributions.

On February 14, 2018, with the acquisition of Higman Marine, Inc. ("Higman"), the Company assumed Higman's pension plan (the "Higman Pension Plan") for its inland vessel personnel and office staff. On March 27, 2018, the Company amended the Higman Pension Plan to close it to all new entrants and cease all benefit accruals for periods after May 15, 2018 for all participants. The Company made contributions to the Higman Pension Plan of $0.9 million, $0.5 million and $2.2 million for the years ended December 31, 2022, 2021 and 2020, respectively.

The aggregate fair value of plan assets of the Company's pension plans was $341.1 million and $430.8 million at December 31, 2022, and December 31, 2021, respectively.

The Company's investment strategy focuses on total return on invested assets (capital appreciation plus dividend and interest income). The primary objective in the investment management of assets is to achieve long-term growth of principal while avoiding excessive risk. Risk is managed through diversification of investments within and among asset classes, as well as by investing in asset classes offering sufficient liquidity and trading history.

The Company makes various assumptions when determining defined benefit plan costs including, but not limited to, the current discount rate and the expected long-term return on plan assets. Discount rates are determined annually and are based on a yield curve that consists of a hypothetical portfolio of high quality corporate bonds with maturities matching the projected benefit cash flows. The Company used discount rates of 5.5% for both the Kirby pension plan and the Higman pension plan in 2022 and 3.0% for the Kirby pension plan and 3.1% for the Higman pension plan in 2021. The Company estimates that every 0.1% decrease in the discount rate results in an increase in the accumulated benefit obligation ("ABO") of approximately $3.7 million. The Company assumed that plan assets would generate a long-term rate of return of 6.75% in both 2022 and 2021. The Company developed its expected long-term rate of return assumption by evaluating input from investment consultants and comparing historical returns for various asset classes with its actual and targeted plan investments. The Company believes that long-term asset allocation, on average, will approximate the targeted allocation.

Long-Term Financing

The following table summarizes the Company's outstanding debt (in thousands):

	December 31, 2022	December 31, 2021
Long-term debt, including current portion:		
Revolving Credit Facility due July 29, 2027 (a)	$ —	$ —
Term Loan due July 29, 2027 (a)	170,000	—
Term Loan due March 27, 2024 (b)	—	315,000
3.29% senior notes due February 27, 2023	350,000	350,000
4.2% senior notes due March 1, 2028	500,000	500,000
3.46% senior notes due January 19, 2033	60,000	—
Credit line due June 30, 2024	—	—
Bank notes payable	3,292	1,934
	1,083,292	1,166,934
Unamortized debt discount and issuance costs (c)	(3,674)	(3,567)
	$ 1,079,618	$ 1,163,367

(a) Variable interest rate of 5.8% at December 31, 2022.
(b) Variable interest rate of 1.5% at December 31, 2021.
(c) Excludes $1.8 million attributable to the 2027 Revolving Credit Facility included in other assets at December 31, 2022 and $1.4 million attributable to the 2024 Revolving Credit Facility included in other assets at December 31, 2021.

At the beginning of 2022, the Company had an amended and restated credit agreement (the "2024 Credit Agreement") with a group of commercial banks, with JPMorgan Chase Bank, N.A. as the administrative agent bank, that allowed for an $850 million unsecured revolving credit facility (the "2024 Revolving Credit Facility") and an unsecured term loan (the "2024 Term Loan") with a maturity date of March 27, 2024. The 2024 Term Loan was prepayable, in whole or in part, without penalty.

On July 29, 2022, the Company entered into a new credit agreement (the "2027 Credit Agreement") with a group of commercial banks, with JPMorgan Chase Bank, N.A. as the administrative agent bank that allows for a $500 million unsecured revolving credit facility (the "2027 Revolving Credit Facility") and a $250 million unsecured term loan (the "2027 Term Loan") with a maturity date of July 29, 2027. The 2027 Credit Agreement replaced the 2024 Credit Agreement. In conjunction with entering into the 2027 Credit Agreement, on July 29, 2022, the Company borrowed $35 million under the 2027 Revolving Credit Facility and $250 million under the 2027 Term Loan to repay borrowings under the 2024 Term Loan. In the fourth quarter of 2022, the Company repaid $80.0 million under the 2027 Term Loan prior to scheduled maturities. As a result, no repayments are required until June 30, 2025. Outstanding letters of credit under the 2027 Revolving Credit Facility were $5.1 million and available borrowing capacity was $494.9 million as of December 31, 2022.

The 2027 Term Loan is repayable in quarterly installments with no repayments required until June 30, 2025, in increasing percentages of the original principal amount of the loan, with the remaining unpaid balance of approximately $43.8 million payable upon maturity, assuming no prepayment. Borrowings under the 2027 Credit Agreement may be used for general corporate purposes including acquisitions. The 2027 Revolving Credit Facility includes a $25 million commitment which may be used for standby letters of credit.

The Company has $350 million of 3.29% senior unsecured notes due February 27, 2023 (the "2023 Notes"). No principal payments are required until maturity.

On February 3, 2022, the Company entered into a note purchase agreement for the issuance of $300 million of unsecured senior notes with a group of institutional investors, consisting of $60 million of 3.46% series A notes ("Series A Notes") and $240 million of 3.51% series B notes ("Series B Notes"), each due January 19, 2033 (collectively, the "2033 Notes"). The Series A Notes were issued on October 20, 2022, and the Series B Notes were issued on January 19, 2023. No principal payments will be required until maturity. Beginning in 2023, interest payments of $5.3 million are due semi-annually on January 19 and July 19 of each year, with the exception of the first payment on January 19, 2023, which was $0.5 million.

The Company has a $10.0 million line of credit ("Credit Line") with Bank of America, N.A. ("Bank of America") for short-term liquidity needs and letters of credit, with a maturity date of June 30, 2024. Outstanding letters of credit under the $10.0 million credit line were $0.6 million and available borrowing capacity was $9.4 million as of December 31, 2022.

As of December 31, 2022, the Company was in compliance with all covenants under its debt instruments. For additional information about the Company's debt instruments, see Note 5, Long-Term Debt.

Cash Flow and Capital Expenditures

The Company generated net cash provided by operating activities of $294.1 million, $321.6 million, and $444.9 million for the years ended December 31, 2022, 2021, and 2020, respectively. The 9% decrease in 2022 as compared to 2021 was primarily due to a tax refund of $119.5 million, including accrued interest, for the Company's 2019 federal tax return which was received in the 2021 first quarter. As activity levels increased in 2022, KMT and KDS saw increased revenues and operating income. However, inventory levels increased approximately 39% in 2022 as a result of higher activity and having to manage supply chain constraints seen especially in KDS during 2022. Accounts receivable increased during 2022 because of increased revenues which was offset by higher levels of accounts payable due to the increased business activity levels. Increases in KMT revenues and operating income were driven by increased barge utilization and higher term and spot contract pricing in the inland and coastal markets during 2022. KMT revenues and operating income during 2021 were negatively impacted by Winter Storm Uri in the 2021 first quarter and Hurricane Ida in the 2021 third quarter.

During 2022, 2021, and 2020, the Company generated cash of $36.9 million, $51.3 million, and $17.3 million, respectively, from proceeds from the disposition of assets, and $3.9 million, $0.6 million, and $0.4 million, respectively, from proceeds from the exercise of stock options.

For 2022, cash generated was used for capital expenditures of $172.6 million (net of an increase in accrued capital expenditures of $3.0 million), including $8.3 million for inland towboat construction and $164.3 million primarily for upgrading existing marine equipment and marine transportation and distribution and services facilities. The Company also used $3.9 million for acquisitions of businesses and marine equipment, more fully described under Acquisitions above.

For 2021, cash generated was used for capital expenditures of $98.0 million (net of an increase in accrued capital expenditures of $18.6 million), including $6.2 million for inland towboat construction and $91.8 million primarily for upgrading existing marine equipment and marine transportation and distribution and services facilities. The Company also used $9.1 million for acquisitions of businesses and marine equipment, more fully described under Acquisitions above.

Treasury Stock Purchases

During 2022, the Company purchased 0.4 million shares of its common stock for $22.9 million, at an average price of $59.32 per share. The Company did not purchase any treasury stock during 2021 or 2020. On January 30, 2023, the Board approved a five million share increase in the Company's repurchase authorization. As of February 17, 2023, the Company had approximately 6.0 million shares available under its existing repurchase authorizations. Historically, treasury stock purchases have been financed through operating cash flows and borrowings under the Company's Revolving Credit Facility. The Company is authorized to purchase its common stock on the New York Stock Exchange and in privately negotiated transactions. When purchasing its common stock, the Company is subject to price, trading volume and other market considerations. Shares purchased may be used for reissuance upon the exercise of stock options or the granting of other forms of incentive compensation, in future acquisitions for stock or for other appropriate corporate purposes.

Liquidity and Capital Resources

Funds generated from operations are available for acquisitions, capital expenditure projects, common stock repurchases, repayments of borrowings and for other corporate and operating requirements. In addition to net cash flow provided by operating activities, as of February 17, 2023, the Company had cash equivalents of $316.5 million, availability of $494.9 million under its Revolving Credit Facility and $9.4 million available under its Credit Line.

Neither the Company, nor any of its subsidiaries, is obligated on any debt instrument, swap agreement, or any other financial instrument or commercial contract which has a rating trigger, except for pricing grids on its 2027 Credit Agreement.

The Company expects to continue to be able to fund expenditures for acquisitions, capital construction projects, common stock repurchases, repayment of borrowings, and for other operating requirements both in the short term and in the long term from a combination of available cash and cash equivalents, funds generated from operating activities, and available financing arrangements.

The 2027 Revolving Credit Facility's commitment is in the amount of $500 million and expires July 29, 2027. The 2023 Notes do not mature until February 27, 2023 and require no prepayments. The Company intends to use a combination of the proceeds from the issuance of the 2033 Notes in October 2022 and January 2023 and availability under the 2027 Revolving Credit Facility to repay the 2023 Notes upon maturity. The 4.2% senior unsecured notes do not mature until March 1, 2028 and require no prepayments. The 2027 Term Loan in the amount of $250 million is subject to quarterly installments, beginning June 30, 2025, in increasing percentages of the

original principal amount of the loan, with the remaining unpaid balance of approximately $43.8 million payable on July 29, 2027, assuming no prepayments. The 2027 Term Loan is prepayable, in whole or in part, without penalty.

There are numerous factors that may negatively impact the Company's cash flow in 2023. For a list of significant risks and uncertainties that could impact cash flows, see Note 14, Contingencies and Commitments in the financial statements, and Item 1A — Risk Factors. Amounts available under the Company's existing financing arrangements are subject to the Company continuing to meet the covenants of the credit facilities as described in Note 5, Long-Term Debt in the financial statements.

The Company has issued guaranties or obtained standby letters of credit and performance bonds supporting performance by the Company and its subsidiaries of contractual or contingent legal obligations of the Company and its subsidiaries incurred in the ordinary course of business. The aggregate notional value of these instruments is $19.3 million at December 31, 2022, including $12.2 million in letters of credit and $7.1 million in performance bonds. All of these instruments have an expiration date within two years. The Company does not believe demand for payment under these instruments is likely and expects no material cash outlays to occur in connection with these instruments.

The Company's marine transportation term contracts typically contain fuel escalation clauses, or the customer pays for the fuel. However, there is generally a 30 to 120 day delay before contracts are adjusted depending on the specific contract. In general, the fuel escalation clauses are effective over the long-term in allowing the Company to recover changes in fuel costs due to fuel price changes. However, the short-term effectiveness of the fuel escalation clauses can be affected by a number of factors including, but not limited to, specific terms of the fuel escalation formulas, fuel price volatility, navigating conditions, tow sizes, trip routing, and the location of loading and discharge ports that may result in the Company over or under recovering its fuel costs. The Company's spot contract rates generally reflect current fuel prices at the time the contract is signed but do not have escalators for fuel.

The Company currently leases various facilities and equipment under cancelable and noncancelable operating leases. Future minimum lease payments under operating leases that have initial noncancelable lease terms in excess of one year are detailed in Note 6, Leases. Lease payments for towing vessels exclude non-lease components. The Company estimates that non-lease components comprise approximately 70% of charter rental costs, related to towboat crew costs, maintenance and insurance.

The Company's pension plan funding strategy is to make annual contributions in amounts equal to or greater than amounts necessary to meet minimum government funding requirements. The ABO is based on a variety of demographic and economic assumptions, and the pension plan assets' returns are subject to various risks, including market and interest rate risk, making an accurate prediction of the pension plan contribution difficult resulting in the Company electing to only make an expected pension contribution forecast of one year. As of December 31, 2022, the Company's pension plan funding was 105% of the pension plans' ABO, including the Higman pension plan. The Company expects to make additional pension contributions of $8.4 million in 2023.

While inflationary pressures have increased in the second half of 2021 and into 2022, the Company has certain mechanisms designed to help mitigate the impacts of rising costs. For example, KMT has long-term contracts which generally contain cost escalation clauses whereby certain costs, including fuel as noted above, can be largely passed through to its customers. Spot contract rates include the cost of fuel and are subject to market volatility. In KDS, the cost of major components for large manufacturing orders is secured with suppliers at the time a customer order is finalized, which limits exposure to inflation. The repair portion of KDS is based on prevailing current market rates.

Accounting Standards

For a discussion of recently issued accounting standards, see Note 1, Summary of Significant Accounting Policies.

Item 7A. *Quantitative and Qualitative Disclosures about Market Risk*

The Company is exposed to risk from changes in interest rates on certain of its outstanding debt. The outstanding loan balances under the Company's bank credit facilities bear interest at variable rates based on prevailing short-term interest rates in the United States and Europe. A 1% increase in variable interest rates would impact the 2022 interest expense by $1.7 million based on balances outstanding at December 31, 2022, and would change the fair value of the Company's debt by approximately 1%.

Item 8. *Financial Statements and Supplementary Data*

The response to this item is submitted as a separate section of this report (see Item 15, page 77 and pages 47 to 76 of this report).

Item 9. *Changes in and Disagreements with Accountants on Accounting and Financial Disclosure*

Not applicable.

Item 9A. ***Controls and Procedures***

Disclosure Controls and Procedures. The Company's management, with the participation of the Chief Executive Officer and the Chief Financial Officer, has evaluated the Company's disclosure controls and procedures (as defined in Rule 13a-15(e) under the Securities Exchange Act of 1934 ("Exchange Act")), as of December 31, 2022, as required by Rule 13a-15(b) under the Exchange Act. Based on that evaluation, the Chief Executive Officer and the Chief Financial Officer concluded that, as of December 31, 2022, the disclosure controls and procedures were effective to ensure that information required to be disclosed by the Company in the reports that it files or submits under the Exchange Act (i) is recorded, processed, summarized and reported within the time periods specified in the Securities and Exchange Commission's rules and forms and (ii) is accumulated and communicated to the Company's management, including the Chief Executive Officer and the Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosure.

Management's Annual Report on Internal Control Over Financial Reporting. Management of the Company is responsible for establishing and maintaining adequate internal control over financial reporting (as defined in Rule 13a-15(f) under the Exchange Act). The Company's management, with the participation of the Chief Executive Officer and the Chief Financial Officer, evaluated the effectiveness of the Company's internal control over financial reporting as of December 31, 2022 using the framework in *Internal Control — Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on that evaluation, management concluded that the Company's internal control over financial reporting was effective as of December 31, 2022. KPMG LLP, the Company's independent registered public accounting firm, has audited the Company's internal control over financial reporting, as stated in their report which is included herein.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Changes in Internal Control Over Financial Reporting. There were no changes in the Company's internal control over financial reporting during the quarter ended December 31, 2022 that have materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting.

Item 9B. ***Other Information***

Not applicable

Item 9C. ***Disclosure Regarding Foreign Jurisdictions that Prevent Inspections***

Not applicable

PART III

Items 10 Through 14.

The information for these items is incorporated by reference to the definitive proxy statement to be filed by the Company with the Commission pursuant to Regulation 14A within 120 days of the close of the fiscal year ended December 31, 2022, except for the information regarding executive officers which is provided under Item 1.

Report of Independent Registered Public Accounting Firm

To the Stockholders and Board of Directors
Kirby Corporation:

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of Kirby Corporation and subsidiaries (the Company) as of December 31, 2022 and 2021, the related consolidated statements of earnings, comprehensive income, stockholders' equity, and cash flows for each of the years in the three-year period ended December 31, 2022, and the related notes (collectively, the consolidated financial statements). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2022 and 2021, and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2022, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2022, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission, and our report dated February 20, 2023 expressed an unqualified opinion on the effectiveness of the Company's internal control over financial reporting.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that: (1) relates to accounts or disclosures that are material to the consolidated financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of a critical audit matter does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Evaluation of potential impairment indicators for coastal marine transportation equipment

As discussed in Note 1 to the consolidated financial statements, the Company performs an impairment assessment when circumstances indicate that the carrying amount of its long-lived assets may not be recoverable. If a triggering event is identified, the Company compares the carrying amount of the asset group to the estimated undiscounted future cash flows expected to result from the use of the asset group. If the carrying amount of the asset group exceeds the estimated undiscounted future cash flows, the Company measures the amount of the impairment by comparing the carrying amount of the asset group to its estimated fair value. Recoverability of marine transportation equipment is assessed based on vessel classes. Marine Transportation equipment as of December 31, 2022, was $4,837,379,000, a portion of which related to coastal marine transportation equipment.

We identified the evaluation of potential impairment indicators for coastal marine transportation equipment as a critical audit matter. Evaluating the Company's judgments in determining whether there was a triggering event required a high degree of subjective auditor judgment.

The following are the primary procedures we performed to address this critical audit matter. We evaluated the design and tested the operating effectiveness of certain internal controls related to the Company's process to identify and assess triggering events that indicate that the carrying amount of coastal marine transportation equipment may not be recoverable. This included controls related to the consideration of contract pricing by vessel class and market conditions in the determination of a triggering event. We assessed the Company's identification of triggering events, including consideration of executed contract pricing and break-even costs by vessel class in addition to other certain qualitative considerations. We compared certain data used by the Company to relevant executed contracts, historical results, and analyst and industry reports. We evaluated the Company's responses related to the elements considered and whether the Company omitted any significant internal or external elements in its evaluation.

/s/ KPMG LLP

We have served as the Company's auditor since 1992.

Houston, Texas
February 21, 2023

Report of Independent Registered Public Accounting Firm

To the Stockholders and Board of Directors
Kirby Corporation:

Opinion on Internal Control Over Financial Reporting

We have audited Kirby Corporation and subsidiaries' (the Company) internal control over financial reporting as of December 31, 2022, based on criteria established in Internal Control – Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission. In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2022, based on criteria established in Internal Control – Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Company as of December 31, 2022 and 2021, the related consolidated statements of earnings, comprehensive income, stockholders' equity, and cash flows for each of the years in the three-year period ended December 31, 2022, and the related notes (collectively, the consolidated financial statements), and our report dated February 20, 2023 expressed an unqualified opinion on those consolidated financial statements.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Annual Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ KPMG LLP

Houston, Texas
February 21, 2023

KIRBY CORPORATION AND CONSOLIDATED SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS

	December 31,	
	2022	2021
	($ in thousands)	
ASSETS		
Current assets:		
Cash and cash equivalents	$ 80,577	$ 34,813
Accounts receivable:		
Trade — less allowance for doubtful accounts of $7,684 ($8,177 in 2021)	483,406	417,958
Other	114,556	149,964
Inventories — net	461,848	331,350
Prepaid expenses and other current assets	71,372	69,780
Total current assets	1,211,759	1,003,865
Property and equipment:		
Marine transportation equipment	4,837,379	4,789,994
Land, buildings and equipment	614,764	602,857
	5,452,143	5,392,851
Accumulated depreciation	(1,818,681)	(1,714,336)
Property and equipment — net	3,633,462	3,678,515
Operating lease right-of-use assets	154,507	167,730
Investment in affiliates	2,171	2,134
Goodwill	438,748	438,748
Other intangibles, net	51,463	60,070
Other assets	62,814	48,001
Total assets	$ 5,554,924	$ 5,399,063
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Bank notes payable	$ 3,292	$ 1,934
Income taxes payable	323	—
Accounts payable	278,081	199,088
Accrued liabilities:		
Interest	11,630	11,379
Insurance premiums and claims	65,088	111,117
Employee compensation	55,851	39,331
Taxes — other than on income	30,169	44,740
Other	42,014	29,511
Current portion of operating lease liabilities	36,444	33,902
Deferred revenues	119,305	72,770
Total current liabilities	642,197	543,772
Long-term debt, net — less current portion	1,076,326	1,161,433
Deferred income taxes	625,884	574,152
Operating lease liabilities — less current portion	142,140	159,672
Other long-term liabilities	23,209	71,252
Total long-term liabilities	1,867,559	1,966,509
Contingencies and commitments	—	—
Equity:		
Kirby stockholders' equity:		
Common stock, $0.10 par value per share. Authorized 120,000,000 shares, issued 65,472,000	6,547	6,547
Additional paid-in capital	859,345	854,512
Accumulated other comprehensive income — net	16,853	(25,966)
Retained earnings	2,468,730	2,346,439
Treasury stock — at cost, 5,565,000 shares in 2022 and 5,361,000 shares in 2021	(308,598)	(295,208)
Total Kirby stockholders' equity	3,042,877	2,886,324
Noncontrolling interests	2,291	2,458
Total equity	3,045,168	2,888,782
Total liabilities and equity	$ 5,554,924	$ 5,399,063

See accompanying notes to consolidated financial statements.

KIRBY CORPORATION AND CONSOLIDATED SUBSIDIARIES
CONSOLIDATED STATEMENTS OF EARNINGS

	Year Ended December 31,		
	2022	2021	2020
	($ in thousands, except per share amounts)		
Revenues:			
Marine transportation	$ 1,616,967	$ 1,322,918	$ 1,404,265
Distribution and services	1,167,787	923,742	767,143
Total revenues	2,784,754	2,246,660	2,171,408
Costs and expenses:			
Costs of sales and operating expenses	2,060,941	1,652,961	1,510,818
Selling, general and administrative	302,692	266,911	258,272
Taxes, other than on income	35,071	36,251	42,000
Depreciation and amortization	201,443	213,718	219,921
Impairments and other charges	—	340,713	561,274
Gain on disposition of assets	(8,279)	(5,761)	(118)
Total costs and expenses	2,591,868	2,504,793	2,592,167
Operating income (loss)	192,886	(258,133)	(420,759)
Other income	16,677	10,001	8,147
Interest expense	(44,588)	(42,469)	(48,739)
Earnings (loss) before taxes on income	164,975	(290,601)	(461,351)
(Provision) benefit for taxes on income	(42,214)	43,830	189,759
Net earnings (loss)	122,761	(246,771)	(271,592)
Less: Net earnings attributable to noncontrolling interests	(470)	(183)	(954)
Net earnings (loss) attributable to Kirby	$ 122,291	$ (246,954)	$ (272,546)
Net earnings (loss) per share attributable to Kirby common stockholders:			
Basic	$ 2.04	$ (4.11)	$ (4.55)
Diluted	$ 2.03	$ (4.11)	$ (4.55)

See accompanying notes to consolidated financial statements.

KIRBY CORPORATION AND CONSOLIDATED SUBSIDIARIES
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

	Year Ended December 31,		
	2022	2021	2020
	($ in thousands)		
Net earnings (loss)	$ 122,761	$ (246,771)	$ (271,592)
Other comprehensive income (loss), net of taxes:			
Pension and postretirement benefits	43,868	36,547	(23,320)
Foreign currency translation adjustments	(1,049)	(1,061)	(333)
Total other comprehensive income (loss), net of taxes	42,819	35,486	(23,653)
Total comprehensive income (loss), net of taxes	165,580	(211,285)	(295,245)
Net earnings attributable to noncontrolling interests	(470)	(183)	(954)
Comprehensive income (loss) attributable to Kirby	$ 165,110	$ (211,468)	$ (296,199)

See accompanying notes to consolidated financial statements.

KIRBY CORPORATION AND CONSOLIDATED SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS

	Year Ended December 31,		
	2022	2021	2020
		($ in thousands)	
Cash flows from operating activities:			
Net earnings (loss)	$ 122,761	$ (246,771)	$ (271,592)
Adjustments to reconcile net earnings (loss) to net cash provided by operations:			
Depreciation and amortization	201,443	213,718	219,921
Provision (credit) for doubtful accounts	1,183	(138)	3,716
Provision (benefit) for deferred income taxes	37,782	(44,419)	25,163
Gain on disposition of assets	(8,279)	(5,761)	(118)
Impairments and other charges	—	340,713	561,274
Amortization of share-based compensation	13,865	15,713	14,722
Amortization of major maintenance costs	29,031	33,213	30,214
Other	(283)	(640)	(90)
Increase (decrease) in cash flows resulting from changes in:			
Accounts receivable	(31,550)	29,126	(124,941)
Inventory	(127,095)	(19,248)	47,076
Other assets	(27,801)	(38,335)	(29,994)
Income taxes payable	1,975	480	8,826
Accounts payable	75,996	15,951	(39,795)
Accrued and other liabilities	5,100	27,974	558
Net cash provided by operating activities	294,128	321,576	444,940
Cash flows from investing activities:			
Capital expenditures	(172,606)	(98,015)	(148,185)
Acquisitions of businesses and marine equipment, net of cash acquired	(3,900)	(9,115)	(354,972)
Proceeds from disposition of assets and other	36,905	51,342	17,310
Net cash used in investing activities	(139,601)	(55,788)	(485,847)
Cash flows from financing activities:			
Borrowings (payments) on bank credit facilities, net	1,358	(248,105)	250,024
Borrowings on long-term debt	310,000	—	—
Payments on long-term debt	(395,000)	(60,000)	(150,000)
Payment of debt issue costs	(1,977)	—	—
Proceeds from exercise of stock options	3,887	629	353
Payments related to tax withholding for share-based compensation	(3,408)	(2,856)	(3,193)
Treasury stock purchases	(22,901)	—	—
Return of investment to noncontrolling interests and other	(722)	(981)	(676)
Net cash provided by (used in) financing activities	(108,763)	(311,313)	96,508
Increase (decrease) in cash and cash equivalents	45,764	(45,525)	55,601
Cash and cash equivalents, beginning of year	34,813	80,338	24,737
Cash and cash equivalents, end of year	$ 80,577	$ 34,813	$ 80,338
Supplemental disclosures of cash flow information:			
Cash paid (received) during the period:			
Interest paid	$ 42,816	$ 40,878	$ 48,721
Income taxes paid (refunded), net	$ 2,553	$ (116,648)	$ (35,571)
Operating cash outflow from operating leases	$ 44,229	$ 44,089	$ 43,639
Non-cash investing activity:			
Capital expenditures included in accounts payable	$ 2,996	$ 18,633	$ (13,280)
Right-of-use assets obtained in exchange for lease obligations	$ 22,799	$ 33,842	$ 46,511

See accompanying notes to consolidated financial statements.

KIRBY CORPORATION AND CONSOLIDATED SUBSIDIARIES
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY

	Common Stock		Additional Paid-in-Capital	Accumulated Other Comprehensive Income	Retained Earnings	Treasury Stock		Noncontrolling Interests	Total
	Shares	Amount				Shares	Amount		
					(in thousands)				
Balance at December 31, 2019	65,472	$ 6,547	$ 835,899	$ (37,799)	$ 2,865,939	(5,513)	$ (301,963)	$ 2,969	$ 3,371,592
Stock option exercises	—	—	26	—	—	15	327	—	353
Issuance of stock for equity awards, net of forfeitures	—	—	(5,668)	—	—	103	5,668	—	—
Tax withholdings on equity award vesting	—	—	—	—	—	(39)	(3,193)	—	(3,193)
Amortization of share-based compensation	—	—	14,722	—	—	—	—	—	14,722
Total comprehensive loss, net of taxes	—	—	—	(23,653)	(272,546)	—	—	954	(295,245)
Return of investment to noncontrolling interests	—	—	—	—	—	—	—	(676)	(676)
Balance at December 31, 2020	65,472	$ 6,547	$ 844,979	$ (61,452)	$ 2,593,393	(5,434)	$ (299,161)	$ 3,247	$ 3,087,553
Stock option exercises	—	—	21	—	—	12	608	—	629
Issuance of stock for equity awards, net of forfeitures	—	—	(6,201)	—	—	113	6,201	—	—
Tax withholdings on equity award vesting	—	—	—	—	—	(52)	(2,856)	—	(2,856)
Amortization of share-based compensation	—	—	15,713	—	—	—	—	—	15,713
Total comprehensive loss, net of taxes	—	—	—	35,486	(246,954)	—	—	183	(211,285)
Return of investment to noncontrolling interests	—	—	—	—	—	—	—	(972)	(972)
Balance at December 31, 2021	65,472	$ 6,547	$ 854,512	$ (25,966)	$ 2,346,439	(5,361)	$ (295,208)	$ 2,458	$ 2,888,782
Stock option exercises	—	—	757	—	—	58	3,130	—	3,887
Issuance of stock for equity awards, net of forfeitures	—	—	(9,789)	—	—	178	9,789	—	—
Tax withholdings on equity award vesting	—	—	—	—	—	(54)	(3,408)	—	(3,408)
Amortization of share-based compensation	—	—	13,865	—	—	—	—	—	13,865
Treasury stock purchases	—	—	—	—	—	(386)	(22,901)	—	(22,901)
Total comprehensive income, net of taxes	—	—	—	42,819	122,291	—	—	470	165,580
Return of investment to noncontrolling interests	—	—	—	—	—	—	—	(637)	(637)
Balance at December 31, 2022	65,472	$ 6,547	$ 859,345	$ 16,853	$ 2,468,730	(5,565)	$ (308,598)	$ 2,291	$ 3,045,168

See accompanying notes to consolidated financial statements.

(1) Summary of Significant Accounting Policies

Principles of Consolidation. The consolidated financial statements include the accounts of Kirby Corporation and all majority-owned subsidiaries (the "Company"). All investments in which the Company owns 20% to 50% and exercises significant influence over operating and financial policies are accounted for using the equity method. All material intercompany accounts and transactions have been eliminated in consolidation. Certain reclassifications have been made to reflect the current presentation of financial information. Such reclassifications have no impact on previously reported net earnings (loss), stockholders' equity, or cash flows.

Accounting Policies

Cash Equivalents. Cash equivalents consist of all short-term, highly liquid investments with maturities of three months or less at date of purchase.

Accounts Receivable. In the normal course of business, the Company extends credit to its customers. The Company regularly reviews the accounts and makes adequate provisions for probable uncollectible balances. It is the Company's opinion that the accounts have no impairment, other than that for which provisions have been made. Included in accounts receivable-trade as of December 31, 2022 and 2021 were $139.5 million and $92.7 million, respectively, of accruals for revenues earned which have not been invoiced as of the end of each year.

The Company's marine transportation and distribution and services operations are subject to hazards associated with such businesses. The Company maintains insurance coverage against these hazards with insurance companies. Included in accounts receivable-other as of December 31, 2022 and 2021 were $27.7 million and $69.6 million, respectively, of receivables from insurance companies to cover claims in excess of the Company's deductible.

Concentrations of Credit Risk. Financial instruments which potentially subject the Company to concentrations of credit risk are primarily trade accounts receivables. The Company's marine transportation customers include the major oil refining and petrochemical companies. The distribution and services customers are oilfield service companies, oil and gas operators and producers, on-highway transportation companies, marine transportation companies, commercial fishing companies, construction companies, power generation companies, and the United States government. The Company regularly reviews its accounts and estimates the amount of uncollectible receivables each period and establishes an allowance for uncollectible amounts. The amount of the allowance is based on the age of unpaid amounts, information about the current financial strength of customers, and other relevant information. Estimates of uncollectible amounts are revised each period, and changes are recorded in the period they become known.

Property, Maintenance and Repairs. Property is recorded at cost or acquisition date fair value; improvements and betterments are capitalized as incurred. Depreciation is recorded using the straight-line method over the estimated useful lives of the individual assets as follows: marine transportation equipment, 5-40 years; buildings, 10-40 years; other equipment, 2-10 years; and leasehold improvements, term of lease. When property items are retired, sold, or otherwise disposed of, the related cost and accumulated depreciation are removed from the accounts with any gain or loss on the disposition included in the statement of earnings. Maintenance and repairs on vessels built for use on the inland waterways are charged to operating expense as incurred and includes the costs incurred in United States Coast Guard ("USCG") inspections unless the shipyard extends the life, improves the operating capacity, or replaces significant components of the vessel, which results in the costs being capitalized.

Drydocking on Ocean-Going Vessels. The Company's ocean-going vessels are subject to regulatory drydocking requirements after certain periods of time to be inspected, have planned major maintenance performed and be recertified by the American Bureau of Shipping ("ABS"). These recertifications generally occur twice in a five-year period. The Company defers the drydocking expenditures incurred on its ocean-going vessels due to regulatory marine inspections by the ABS and amortizes the costs of the shipyard over the period between drydockings, generally 30 or 60 months, depending on the type of major maintenance performed. Drydocking expenditures that extend the life, improve the operating capability, or replace significant components of the vessel are capitalized. The Company recognized amortization of major maintenance costs of $29.0 million, $33.2 million, and $30.2 million for the years ended December 31, 2022, 2021, and 2020, respectively, in costs of sales and operating expenses. Routine repairs and maintenance on ocean-going vessels are expensed as incurred. Interest is capitalized on the construction of new ocean-going vessels. For the years ended December 31, 2022, 2021 and 2020, no interest was capitalized.

Environmental Liabilities. The Company expenses costs related to environmental events as they are incurred or when a loss is considered probable and reasonably estimable.

Goodwill. The excess of the purchase price over the fair value of identifiable net assets acquired in transactions accounted for as a purchase is included in goodwill. The Company conducted its annual goodwill impairment tests at November 30, 2022, 2021, and 2020.

The Company also conducted interim goodwill impairment tests at September 30, 2021 and March 31, 2020. Refer to Note 7, Impairments and other charges for more information. The Company will continue to conduct goodwill impairment tests as of November 30 of subsequent years, or whenever events or circumstances indicate that interim impairment testing is necessary. The amount of goodwill impairment, if any, is typically measured based on a combination of projected discounted future operating cash flows using an appropriate discount rate and a market approach for comparable companies. The following table summarizes the changes in goodwill (in thousands):

	Marine Transportation	Distribution and Services	Total
Balance at December 31, 2020 (gross)	$ 505,784	$ 560,155	$ 1,065,939
Accumulated impairment and amortization	(18,574)	(389,565)	(408,139)
Balance at December 31, 2020	487,210	170,590	657,800
Impairment	(219,052)	—	(219,052)
Balance at December 31, 2021 (gross)	505,784	560,155	1,065,939
Accumulated impairment and amortization	(237,626)	(389,565)	(627,191)
Balance at December 31, 2021 and 2022	$ 268,158	$ 170,590	$ 438,748

Other Intangibles. Other intangibles include assets for favorable contracts and customer relationships, distributorship and dealership agreements, trade names and non-compete agreements and liabilities for unfavorable leases and contracts. The following table summarizes the balances of other intangible assets and other intangible liabilities (in thousands):

	December 31,	
	2022	2021
Other intangible assets – gross	$ 203,242	$ 203,217
Accumulated amortization	(151,779)	(143,147)
Other intangible assets – net	$ 51,463	$ 60,070
Other intangible liabilities – gross	$ 13,860	$ 13,860
Accumulated amortization	(13,280)	(12,120)
Other intangible liabilities – net	$ 580	$ 1,740

The costs of intangible assets and liabilities are amortized to expense in a systematic and rational manner over their estimated useful lives. For the years ended December 31, 2022, 2021, and 2020, the amortization expense for intangibles was $7.6 million, $7.8 million, and $9.2 million, respectively. Estimated net amortization expense for amortizable intangible assets and liabilities for the next five years (2023 – 2027) is approximately $8.0 million, $8.5 million, $8.5 million, $6.3 million, and $5.0 million, respectively, and $14.6 million thereafter. As of December 31, 2022, the weighted average amortization period for intangible assets and liabilities was approximately 7 years.

Revenue Recognition. The majority of marine transportation revenue is derived from term contracts, ranging from one to three years, some of which have renewal options, and the remainder is from spot contracts. The majority of the term contracts by revenue are for terms of one year. The Company provides marine transportation services for its customers and, in almost all cases, does not assume ownership of the products it transports. A term contract is an agreement with a specific customer to transport cargo from a designated origin to a designated destination at a set rate or at a daily rate. The rate may or may not escalate during the term of the contract, however, the base rate generally remains constant and contracts often include escalation provisions to recover changes in specific costs such as fuel. A spot contract is an agreement with a customer to move cargo from a specific origin to a designated destination for a rate negotiated at the time the cargo movement takes place. Spot contract rates are at the current "market" rate, including fuel, and are subject to market volatility. The Company uses a voyage accounting method of revenue recognition for its marine transportation revenues which allocates voyage revenue based on the percent of the voyage completed during the period. The performance of the service is invoiced as the transaction occurs and payment is required depending on each specific customer's credit.

Distribution products and services are generally sold based upon purchase orders or preferential service agreements with the customer that include fixed or determinable prices. Parts sales are recognized when control transfers to the customer, generally when title passes upon shipment to customers. Service revenue is recognized over time as the service is provided using measures of progress utilizing hours worked or costs incurred as a percentage of estimated hours or expected costs. Revenue from rental agreements is recognized on a straight-line basis over the rental period. The Company recognizes the revenues on manufacturing activities upon shipment and transfer of control to the customer. The transactions in the distribution and services segment ("KDS") are typically invoiced as parts are shipped or upon the completion of the service job. Contract manufacturing activities are generally invoiced upon shipment and the Company will often get deposits from its customers prior to starting work, or progress payments during the project depending on the credit worthiness of the customer and the size of the project.

Stock-Based Compensation. The Company has share-based compensation plans covering selected officers and other key employees as well as the Company's Board of Directors. Stock-based grants made under the Company's stock plans are recorded at fair value on the date of the grant and the cost for all grants made under the director plan and for grants made under the employee plan is generally recognized ratably over the vesting period of the restricted stock unit ("RSU"), stock option, or restricted stock, however, the employee plan includes a provision for the continued vesting of unvested stock options and RSUs for employees who meet certain years of service and age requirements at the time of their retirement. The provision results in shorter expense accrual periods on stock options and RSUs granted to employees who are nearing retirement and meet the service and age requirements. Stock option grants are valued at the date of grant as calculated under the Black-Scholes option pricing model. The Company accounts for forfeitures as they occur. The Company's stock-based compensation plans are more fully described in Note 8, Stock Award Plans.

Taxes on Income. The Company follows the asset and liability method of accounting for income taxes. Under the asset and liability method, deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax basis and operating loss and tax credit carryforwards. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date.

Accrued Insurance. Accrued insurance liabilities include estimates based on individual incurred claims outstanding and an estimated amount for losses incurred but not reported ("IBNR") or fully developed based on past experience. Insurance premiums, IBNR losses and incurred claim losses, in excess of the Company's deductible for the years ended December 31, 2022, 2021, and 2020, were $39.1 million, $37.8 million, and $30.6 million, respectively.

Treasury Stock. The Company follows the average cost method of accounting for treasury stock transactions.

Impairment of Long-lived Assets and for Long-lived Assets to Be Disposed Of. The Company performs an impairment assessment whenever events or changes in circumstances indicate that the carrying amount of long-lived assets may not be recoverable.

Recoverability on marine transportation assets is assessed based on vessel classes, not on individual assets, because identifiable cash flows for individual marine transportation assets are not available. Projecting customer contract volumes allows estimation of future cash flows by projecting pricing and utilization by vessel class but it is not practical to project which individual marine transportation asset will be utilized for any given contract. Because customers generally do not specify which particular vessel is used, prices are quoted based on vessel classes not individual assets. Nominations of vessels for specific jobs are determined on a day by day basis and are a function of the equipment class required and the geographic position of vessels within that class at that particular time as vessels within a class are interchangeable and provide the same service. The Company's vessels are mobile assets and equipped to operate in geographic regions throughout the United States and the Company has in the past and expects to continue to move vessels from one region to another when it is necessary due to changing markets and it is economical to do so. Barge vessel classes are based on similar capacities, hull type, and type of product and towing vessels are based on similar hull type and horsepower.

If a triggering event is identified, the Company compares the carrying amount of the asset group to the estimated undiscounted future cash flows expected to result from the use of the asset group. If the carrying amount of the asset group exceeds the estimated undiscounted future cash flows, the Company measures the amount of the impairment by comparing the carrying amount of the asset group to its estimated fair value. Assets to be disposed of are reported at the lower of the carrying amount or fair value less costs to sell.

Fair Value Measurements. The accounting guidance for using fair value to measure certain assets and liabilities establishes a three tier value hierarchy, which prioritizes the inputs to valuation techniques used in measuring fair value. These tiers include: Level 1, defined as observable inputs such as quoted prices in active markets for identical assets or liabilities; Level 2, defined as inputs other than quoted prices in active markets that are either directly or indirectly observable; and Level 3, defined as unobservable inputs in which little, if any, market data exists, therefore requiring an entity to develop its own assumptions about the assumptions that market participants would use in pricing the asset or liability. The fair value of the Company's debt instruments is described in Note 5, Long-Term Debt.

Accounting Standards

In December 2019, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") 2019-12, "Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes" ("ASU 2019-12") which simplifies the accounting for income taxes by removing certain exceptions to the general principles in Topic 740, Income Taxes. The Company adopted ASU 2019-12 on January 1, 2021. There was no material impact on the Company's financial statements or disclosures upon adoption of ASU 2019-12.

(2) Acquisitions

On March 31, 2022, the Company paid $3.9 million in cash to purchase assets of a gearbox repair company in KDS. Assets acquired consisted primarily of property and equipment.

The Company purchased four inland tank barges from a leasing company for $7.5 million in cash during 2021. The Company had been leasing the barges prior to the purchase.

On October 4, 2021, the Company paid $1.6 million in cash to purchase assets of an energy storage systems manufacturer based in Texas which have been key to the development of new power generation solutions for electric fracturing equipment. Assets acquired and liabilities assumed consisted primarily of a right of use lease asset and lease liability for an operating lease assumed as part of the acquisition.

During 2020, the Company purchased six newly constructed inland pressure barges for $39.4 million in cash.

On April 1, 2020, the Company completed the acquisition of the inland tank barge fleet of Savage Inland Marine, LLC ("Savage") for $279 million in cash. Savage's tank barge fleet consisted of 92 inland tank barges with approximately 2.5 million barrels of capacity and 45 inland towboats. The Savage assets that were acquired primarily move petrochemicals, refined products, and crude oil on the Mississippi River, its tributaries, and the Gulf Intracoastal Waterway. The Company also acquired Savage's ship bunkering business and barge fleeting business along the Gulf Coast. The Company considers Savage to be a natural extension of the current marine transportation segment ("KMT"), expanding the capabilities of the Company's inland based marine transportation business and lowering the average age of its fleet.

On January 3, 2020, the Company completed the acquisition of substantially all the assets of Convoy Servicing Company and Agility Fleet Services, LLC (collectively "Convoy") for $37.2 million in cash. Convoy is an authorized dealer for Thermo King refrigeration systems for trucks, railroad cars and other land transportation markets for North and East Texas and Colorado.

The fair values of the assets acquired and liabilities assumed from the Savage and Convoy acquisitions recorded at the respective acquisition dates were as follows (in thousands):

	Savage	Convoy
Accounts receivable	$ —	$ 5,677
Inventories	—	11,771
Prepaid expenses	1,067	177
Property and equipment	210,065	415
Operating lease right-of-use assets	27,085	3,713
Goodwill	81,635	10,309
Other intangibles	2,300	17,170
Total assets	$ 322,152	$ 49,232
Accounts payable and accrued liabilities	$ 68	$ 8,339
Operating lease liabilities, including current portion	43,085	3,713
Total liabilities	$ 43,153	$ 12,052
Net assets acquired	$ 278,999	$ 37,180

The Company acquired customer relationships with an estimated value of $2.3 million from Savage with an amortization period of 10 years. Acquisition related costs of $0.4 million, consisting primarily of legal and other professional fees, were expensed as incurred to selling, general and administrative expense. All goodwill recorded for the Savage acquisition will be deductible for tax purposes.

The Company acquired intangible assets from Convoy with a weighted average amortization period of 11 years, consisting of $9 million for customer relationships with an amortization period of 10 years, $8 million for distributorships with an amortization period of 12 years and $0.2 million for non-compete agreements with an amortization period of three years. All goodwill recorded for the Convoy acquisition will be deductible for tax purposes.

(3) Revenues

The following table sets forth the Company's revenues by major source (in thousands):

	Year Ended December 31,		
	2022	2021	2020
Marine transportation segment:			
Inland transportation	$ 1,277,010	$ 1,005,145	$ 1,094,630
Coastal transportation	339,957	317,773	309,635
	$ 1,616,967	$ 1,322,918	$ 1,404,265
Distribution and services segment:			
Commercial and industrial	$ 651,566	$ 578,011	$ 566,326
Oil and gas	516,221	345,731	200,817
	$ 1,167,787	$ 923,742	$ 767,143

The Company's revenue is measured based on consideration specified in its contracts with its customers. The Company recognizes revenue over time as it provides services to its customers, or at the point in time that control over a part or product transfers to its customer.

Contract Assets and Liabilities. Contract liabilities represent advance consideration received from customers, and are recognized as revenue over time or at a point in time as the related performance obligation is satisfied. Revenues recognized during the years ended December 31, 2022, 2021, and 2020, that were included in the opening contract liability balances were $61.7 million, $40.9 million and $38.5 million, respectively. The Company has recognized all contract liabilities within the deferred revenues financial statement caption on the balance sheet. The Company did not have any contract assets at December 31, 2022 or December 31, 2021. The Company applies the practical expedient that allows non-disclosure of information about remaining performance obligations that have original expected durations of one year or less.

(4) Segment Data

The Company's operations are aggregated into two reportable business segments as follows:

Marine Transportation — Provides marine transportation by United States flagged vessels principally of liquid cargoes throughout the United States inland waterway system, along all three United States coasts, and to a lesser extent, in United States coastal transportation of dry-bulk cargoes. The principal products transported include petrochemicals, black oil, refined petroleum products and agricultural chemicals.

Distribution and Services — Provides after-market service and genuine replacement parts for engines, transmissions, reduction gears and related equipment used in oilfield services, marine, power generation, on-highway, and other industrial applications. The Company also rents equipment including generators, industrial compressors, high capacity lift trucks, and refrigeration trailers for use in a variety of industrial markets, and manufactures and remanufactures oilfield service equipment, including pressure pumping units, electric power generation equipment, specialized electrical distribution and control equipment, and high capacity energy storage/battery systems for oilfield service and railroad customers.

The Company's two reportable business segments are managed separately based on fundamental differences in their operations. The Company's accounting policies for the business segments are the same as those described in Note 1, Summary of Significant Accounting Policies. The Company evaluates the performance of its segments based on the contributions to operating income of the respective segments, and before income taxes, interest, gains or losses on disposition of assets, other nonoperating income, noncontrolling interests, accounting changes, and nonrecurring items. Intersegment revenues, based on market-based pricing, of KDS from KMT of $31.9 million, $23.6 million, and $27.8 million in 2022, 2021, and 2020, respectively, as well as the related intersegment profit of $3.2 million, $2.4 million, and $2.8 million in 2022, 2021, and 2020, respectively, have been eliminated from the tables below.

The following tables set forth by reportable segment the revenues, profit or loss, total assets, depreciation and amortization, and capital expenditures attributable to the principal activities of the Company (in thousands):

	Year Ended December 31,		
	2022	2021	2020
Revenues:			
Marine transportation	$ 1,616,967	$ 1,322,918	$ 1,404,265
Distribution and services	1,167,787	923,742	767,143
	$ 2,784,754	$ 2,246,660	$ 2,171,408
Segment profit (loss):			
Marine transportation	$ 136,184	$ 63,015	$ 163,638
Distribution and services	67,037	27,607	(12,191)
Other	(38,246)	(381,223)	(612,798)
	$ 164,975	$ (290,601)	$ (461,351)
Depreciation and amortization:			
Marine transportation	$ 177,551	$ 185,979	$ 186,798
Distribution and services	16,776	20,573	28,255
Other	7,116	7,166	4,868
	$ 201,443	$ 213,718	$ 219,921
Capital expenditures:			
Marine transportation	$ 147,170	$ 84,353	$ 133,990
Distribution and services	21,713	8,104	4,854
Other	3,723	5,558	9,341
	$ 172,606	$ 98,015	$ 148,185

	December 31,	
	2022	2021
Total assets:		
Marine transportation	$ 4,285,647	$ 4,319,080
Distribution and services	1,041,841	892,603
Other	227,436	187,380
	$ 5,554,924	$ 5,399,063

The following table presents the details of "Other" segment profit (loss) (in thousands):

	Year Ended December 31,		
	2022	2021	2020
General corporate expenses	$ (18,614)	$ (13,803)	$ (11,050)
Gain on disposition of assets	8,279	5,761	118
Impairments and other charges	—	(340,713)	(561,274)
Interest expense	(44,588)	(42,469)	(48,739)
Other income	16,677	10,001	8,147
	$ (38,246)	$ (381,223)	$ (612,798)

The following table presents the details of "Other" total assets (in thousands):

	December 31,	
	2022	2021
General corporate assets	$ 225,265	$ 185,246
Investment in affiliates	2,171	2,134
	$ 227,436	$ 187,380

(5) Long-Term Debt

The following table presents the carrying value and fair value of debt outstanding (in thousands):

	December 31,			
	2022		2021	
	Carrying Value	Fair Value	Carrying Value	Fair Value
Revolving Credit Facility due July 29, 2027 (a)	$ —	$ —	$ —	$ —
Term Loan due July 29, 2027 (a)	170,000	170,000	—	—
Term Loan due March 27, 2024 (b)	—	—	315,000	315,000
3.29% senior notes due February 27, 2023	350,000	352,275	350,000	358,390
4.2% senior notes due March 1, 2028	500,000	477,660	500,000	549,239
3.46% senior notes due January 19, 2033	60,000	42,647	—	—
Credit Line due June 30, 2024	—	—	—	—
Bank notes payable	3,292	3,292	1,934	1,934
	1,083,292	1,045,874	1,166,934	1,224,563
Unamortized debt discounts and issuance costs (c)	(3,674)	—	(3,567)	—
	$ 1,079,618	$ 1,045,874	$ 1,163,367	$ 1,224,563

(a) Variable interest rate of 5.8% at December 31, 2022.
(b) Variable interest rate of 1.5% at December 31, 2021.
(c) Excludes $1.8 million attributable to the 2027 Revolving Credit Facility included in other assets at December 31, 2022 and $1.4 million attributable to the 2024 Revolving Credit Facility included in other assets at December 31, 2021.

The fair value of debt outstanding was determined using inputs characteristic of a Level 2 fair value measurement.

The following table presents borrowings and payments under the bank credit facilities (in thousands):

	Year Ended December 31,		
	2022	2021	2020
Borrowings on bank credit facilities	$ 175,545	$ 6,162	$ 582,277
Payments on bank credit facilities	(174,187)	(254,267)	(332,253)
	$ 1,358	$ (248,105)	$ 250,024

The aggregate payments due on the long-term debt in each of the next five years were as follows (in thousands):

2023	353,292
2024	—
2025	—
2026	—
2027	170,000
Thereafter	560,000
	$ 1,083,292

At the beginning of 2022, the Company had an amended and restated credit agreement (the "2024 Credit Agreement") with a group of commercial banks, with JPMorgan Chase Bank, N.A. as the administrative agent bank, that allowed for an $850 million unsecured revolving credit facility (the "2024 Revolving Credit Facility") and an unsecured term loan (the "2024 Term Loan") with a maturity date of March 27, 2024. The 2024 Term Loan was prepayable, in whole or in part, without penalty.

On July 29, 2022, the Company entered into a new credit agreement (the "2027 Credit Agreement") with a group of commercial banks, with JPMorgan Chase Bank, N.A. as the administrative agent bank that allows for a $500 million unsecured revolving credit facility (the "2027 Revolving Credit Facility") and a $250 million unsecured term loan (the "2027 Term Loan") with a maturity date of July 29, 2027. The 2027 Credit Agreement replaced the 2024 Credit Agreement. In conjunction with entering into the 2027 Credit Agreement, on July 29, 2022, the Company borrowed $35 million under the 2027 Revolving Credit Facility and $250 million under the 2027 Term Loan to repay borrowings under the 2024 Term Loan. In the fourth quarter of 2022, the Company repaid $80.0 million under the 2027 Term Loan prior to scheduled maturities. As a result, no repayments are required until June 30, 2025. Outstanding letters of credit under the 2027 Revolving Credit Facility were $5.1 million and available borrowing capacity was $494.9 million as of December 31, 2022.

The 2027 Term Loan is repayable in quarterly installments, with no repayments until June 30, 2025, in increasing percentages of the original principal amount of the loan, with the remaining unpaid balance of approximately $43.8 million payable upon maturity, assuming no prepayment. The 2027 Term Loan is prepayable, in whole or in part, without penalty. The 2027 Credit Agreement provides for a variable interest rate based on the Secured Overnight Financing Rate ("SOFR") or a base rate calculated with reference to the prime rate quoted by The Wall Street Journal, the Federal Reserve Bank of New York Rate plus 0.5%, or the adjusted SOFR rate for a one month interest period plus 1.0%, among other factors (the "Alternate Base Rate"). The interest rate varies with the Company's credit rating and is currently 137.5 basis points over SOFR or 37.5 basis points over the Alternate Base Rate. The 2027 Credit Agreement contains certain financial covenants including an interest coverage ratio and debt-to-capitalization ratio. In addition to financial covenants, the 2027 Credit Agreement contains covenants that, subject to exceptions, restrict debt incurrence, mergers and acquisitions, sales of assets, dividends and investments, liquidations and dissolutions, capital leases, transactions with affiliates, and changes in lines of business. The 2027 Credit Agreement specifies certain events of default, upon the occurrence of which the maturity of the outstanding loans may be accelerated, including the failure to pay principal or interest, violation of covenants and default on other indebtedness, among other events. Borrowings under the 2027 Credit Agreement may be used for general corporate purposes including acquisitions. The 2027 Revolving Credit Facility includes a $25 million commitment which may be used for standby letters of credit.

The Company has $350 million of 3.29% senior unsecured notes due February 27, 2023 (the "2023 Notes"). No principal payments are required until maturity. The 2023 Notes contain certain covenants on the part of the Company, including an interest coverage covenant, a debt-to-capitalization covenant, and covenants relating to liens, asset sales and mergers, among others. The 2023 Notes also specify certain events of default, upon the occurrence of which the maturity of the notes may be accelerated, including failure to pay principal and interest, violation of covenants or default on other indebtedness, among others.

The Company has $500 million of 4.2% senior unsecured notes due March 1, 2028 (the "2028 Notes") with U.S. Bank National Association, as trustee. No principal payments are required until maturity. Interest payments of $10.5 million are due semi-annually on March 1 and September 1 of each year. The 2028 Notes are unsecured and rank equally in right of payment with the Company's other unsecured senior indebtedness. The 2028 Notes contain certain covenants on the part of the Company, including covenants relating to liens, sale-leasebacks, asset sales and mergers, among others. The 2028 Notes also specify certain events of default, upon the occurrence of which the maturity of the notes may be accelerated, including failure to pay principal and interest, violation of covenants or default on other indebtedness, among others.

On February 3, 2022, the Company entered into a note purchase agreement for the issuance of $300 million of unsecured senior notes with a group of institutional investors, consisting of $60 million of 3.46% series A notes ("Series A Notes") and $240 million of 3.51% series B notes ("Series B Notes"), each due January 19, 2033 (collectively, the "2033 Notes"). The Series A Notes were issued on October 20, 2022, and the Series B Notes were issued on January 19, 2023. No principal payments will be required until maturity. Beginning in 2023, interest payments of $5.3 million are due semi-annually on January 19 and July 19 of each year, with the exception of the first payment on January 19, 2023, which was $0.5 million. The 2033 Notes are unsecured and rank equally in right of payment with the Company's other unsecured senior indebtedness. The 2033 Notes contain certain covenants on the part of the Company, including an interest coverage covenant, a debt-to-capitalization covenant, and covenants relating to liens, asset sales and mergers, among others. The 2033 Notes also specify certain events of default, upon the occurrence of which the maturity of the notes may be accelerated, including failure to pay principal and interest, violation of covenants or default on other indebtedness, among others. The 3.29% unsecured senior notes due February 27, 2023 (the "2023 Notes") are excluded from short term liabilities because the Company intends to use a combination of the proceeds from the issuance of the 2033 Notes and availability under the 2027 Revolving Credit Facility to repay the 2023 Notes upon maturity.

The Company has a $10.0 million line of credit ("Credit Line") with Bank of America, N.A. ("Bank of America") for short-term liquidity needs and letters of credit, with a maturity date of June 30, 2024. The Credit Line allows the Company to borrow at an interest rate agreed to by Bank of America and the Company at the time each borrowing is made or continued. The Company had no borrowings outstanding under the Credit Line as of December 31, 2022. Outstanding letters of credit under the Credit Line were $0.6 million and available borrowing capacity was $9.4 million as of December 31, 2022.

The Company also had $3.3 million and $1.9 million of short-term unsecured loans outstanding, as of December 31, 2022 and 2021, respectively, related to its South American operations.

As of December 31, 2022, the Company was in compliance with all covenants under its debt instruments.

(6) Leases

The Company currently leases various facilities and equipment under cancelable and noncancelable operating leases. The accounting for the Company's leases may require judgments, which include determining whether a contract contains a lease, allocating the consideration between lease and non-lease components, and determining the incremental borrowing rates. Leases with an initial noncancelable term of 12 months or less are not recorded on the balance sheet and the related lease expense is recognized on a

straight-line basis over the lease term. The Company has also elected to combine lease and non-lease components on all classes of leased assets, except for leased towing vessels for which the Company estimates approximately 70% of the costs relate to service costs and other non-lease components. Variable lease costs relate primarily to real estate executory costs (i.e. taxes, insurance and maintenance).

Future minimum lease payments under operating leases that have initial noncancelable lease terms in excess of one year were as follows (in thousands):

2023	$ 41,227
2024	32,716
2025	24,807
2026	21,467
2027	19,253
Thereafter	95,582
Total lease payments	235,052
Less: imputed interest	(56,468)
Operating lease liabilities	$ 178,584

The following table summarizes lease costs (in thousands):

	Year Ended December 31,		
	2022	2021	2020
Operating lease cost	$ 42,319	$ 40,786	$ 43,810
Variable lease cost	1,780	1,793	1,550
Short-term lease cost	25,365	17,914	25,387
Sublease income	(305)	(1,032)	(1,143)
Total lease cost	$ 69,159	$ 59,461	$ 69,604

The following table summarizes other supplemental information about the Company's operating leases:

	December 31,		
	2022	2021	2020
Weighted average discount rate	4.1%	3.8%	4.1%
Weighted average remaining lease term	9 years	9 years	10 years

(7) Impairments and Other Charges

During the third quarter of 2021, the Company decided to exit the Hawaii marine transportation market, selling marine transportation equipment including four coastal tank barges, seven coastal tugboats, and certain other assets for aggregate cash proceeds of $17.2 million. In addition, as of September 30, 2021, the Company retired and classified as held for sale, an additional 12 coastal tank barges and four coastal tugboats which were underutilized. The sales and retirements of coastal marine transportation equipment resulted in an aggregate non-cash impairment charge of $97.5 million to reduce the carrying value of these assets to their estimated sales prices, net of costs to sell.

As a result of the sale of the Hawaii marine transportation equipment, and the decision to retire certain additional underutilized coastal tank barges and tugboats, the Company concluded that a triggering event had occurred and performed interim quantitative impairment tests as of September 30, 2021 for certain of KMT's long-lived assets and goodwill within the coastal marine market.

The Company determined the estimated fair value of such long-lived assets using a combination of a cost approach, a discounted cash flow analysis, and a market approach. The Company determined the estimated fair value of the reporting unit using a combination of a discounted cash flow analysis and a market approach for comparable companies. These analyses included management's judgment regarding short-term and long-term internal forecasts, updated for recent events, appropriate discount rates, and capital expenditures using inputs characteristic of a Level 3 fair value measurement.

In performing the impairment test of certain long-lived assets within KMT, the Company determined that the carrying value of certain long-lived assets, including certain coastal marine transportation equipment and operating lease right-of-use assets, were no longer recoverable, resulting in a non-cash impairment charge of $24.2 million during the three months ended September 30, 2021 to reduce such long-lived assets to fair value.

Based upon the results of the goodwill impairment test, the Company concluded that the carrying value of one reporting unit in KMT exceeded its estimated fair value. The carrying value of the reporting unit, including goodwill, and after recording impairments of

long-lived assets identified above, exceeded its estimated fair value, resulting in a non-cash goodwill impairment charge of $219.1 million for the three months ended September 30, 2021.

During the first quarter of 2020, Kirby's market capitalization declined significantly compared to the fourth quarter of 2019. Over the same period, the overall United States stock market also declined significantly amid market volatility. In addition, as a result of uncertainty surrounding the outbreak of COVID-19 and a sharp decline in oil prices during the 2020 first quarter, many of the Company's oil and gas customers responded by quickly cutting 2020 capital spending budgets and activity levels quickly declined. Lower activity levels resulted in a decline in drilling activity, resulting in lower demand for new and remanufactured oilfield equipment and related parts and service in KDS. As a result, the Company concluded that a triggering event had occurred and performed interim quantitative impairment tests as of March 31, 2020 for certain of KDS's long-lived assets and goodwill.

The Company determined the estimated fair value of such long-lived assets and reporting units using a discounted cash flow analysis and a market approach for comparable companies. This analysis included management's judgment regarding short-term and long-term internal forecasts, updated for recent events, appropriate discount rates, and capital expenditures using inputs characteristic of a Level 3 fair value measurement.

In performing the impairment test of long-lived assets within KDS, the Company determined that the carrying value of certain long-lived assets, including property and equipment as well as intangible assets associated with customer relationships, tradenames, and distributorships, were no longer recoverable, resulting in an impairment charge of $165.3 million (including $148.9 million impairment of intangible assets other than goodwill and $16.4 million impairment of property and equipment) to reduce such long-lived assets to fair value during the three months ended March 31, 2020.

Based upon the results of the goodwill impairment test, the Company concluded that the carrying value of one reporting unit in KDS exceeded its estimated fair value. For the three months ended March 31, 2020, the goodwill impairment charge of $388.0 million was calculated as the amount that the carrying value of the reporting unit, including goodwill, and after recording impairments of long-lived assets identified above, exceeded its estimated fair value, incorporating all tax impacts caused by the recognition of the impairment loss.

In addition, the Company determined cost exceeded net realizable value for certain oilfield and pressure pumping related inventory, resulting in an $8.0 million non-cash write-down during the three months ended March 31, 2020.

(8) Stock Award Plans

The Company has share-based compensation plans which are described below. The compensation cost that has been charged against earnings for the Company's stock award plans and the income tax benefit recognized in the statement of earnings for stock awards were as follows (in thousands):

	Year Ended December 31,		
	2022	2021	2020
Compensation cost	$ 13,865	$ 15,713	$ 14,722
Income tax benefit	$ 3,533	$ 4,410	$ 4,143

The Company has an employee stock award plan for selected officers and other key employees which provides for the issuance of RSUs, stock options, restricted stock awards, and performance awards. Restricted stock and RSUs generally vest ratably over five years, however, the plan includes a provision for the continued vesting of unvested stock options and RSUs for employees who meet certain years of service and age requirements at the time of their retirement. The provision results in shorter expense accrual periods on stock options and RSUs granted to employees who are nearing retirement and meet the service and age requirements. At December 31, 2022, there were 2,180,005 shares available for future grants under the Plan.

The exercise price for each option equals the fair market value per share of the Company's common stock on the date of grant. Substantially all stock options outstanding under the plan have terms of seven years and vest ratably over three years. No performance awards payable in stock have been awarded under the plan and no outstanding stock options under the employee plan were issued with stock appreciation rights.

The following is a summary of the stock option activity under the employee plan described above:

	Outstanding Non-Qualified or Nonincentive Stock Option Awards	Weighted Average Exercise Price
Outstanding at December 31, 2021	537,767	$ 70.66
Exercised	(47,436)	$ 68.09
Forfeited or expired	(94,166)	$ 74.50
Outstanding at December 31, 2022	396,165	$ 70.06

The following table summarizes information about the Company's outstanding and exercisable stock options under the employee plan at December 31, 2022:

	Options Outstanding				Options Exercisable		
Range of Exercise Prices	Number Outstanding	Weighted Average Remaining Contractual Life in Years	Weighted Average Exercise Price	Aggregated Intrinsic Value (in thousands)	Number Exercisable	Weighted Average Exercise Price	Aggregated Intrinsic Value (in thousands)
$51.23	56,207	0.1	$ 51.23		56,207	$ 51.23	
$64.89 – $68.50	66,097	1.4	$ 67.65		66,097	$ 67.65	
$73.29 – $75.50	267,156	3.1	$ 74.25		237,050	$ 74.37	
$84.90	6,705	3.3	$ 84.90		6,705	$ 84.90	
$51.23 – $84.90	396,165	2.4	$ 70.06	$ 737	366,059	$ 69.80	$ 737

The following is a summary of the restricted stock award activity under the employee plan described above:

	Unvested Restricted Stock Award Shares	Weighted Average Grant Date Fair Value Per Share
Nonvested balance at December 31, 2021	18,424	$ 68.72
Vested	(17,769)	$ 68.75
Forfeited	(655)	$ 67.70
Nonvested balance at December 31, 2022	—	$ —

No restricted stock awards were granted under the employee plan during 2022, 2021, and 2020.

The following is a summary of RSU activity under the employee plan described above:

	Unvested RSUs	Weighted Average Grant Date Fair Value Per Unit
Nonvested balance at December 31, 2021	590,979	$ 61.07
Granted	208,766	$ 66.13
Vested	(149,565)	$ 64.43
Forfeited	(91,361)	$ 60.69
Nonvested balance at December 31, 2022	558,819	$ 62.13

The weighted average grant date fair value of RSUs granted for the years ended December 31, 2022, 2021, and 2020 was $66.13, $51.36, and $73.04, respectively.

During February 2023, the Company granted 180,425 RSUs to selected officers and other key employees under its employee stock award plan, which vest ratably over five years.

The Company has a stock award plan for nonemployee directors of the Company which provides for the issuance of stock options and restricted stock. The director plan provides for automatic grants of restricted stock to nonemployee directors after each annual meeting of stockholders. In addition, the director plan allows for the issuance of stock options or restricted stock in lieu of cash for all

or part of the annual director fee at the option of the director. The exercise prices for all options granted under the plan are equal to the fair market value per share of the Company's common stock on the date of grant. The terms of the options are ten years. The restricted stock issued after each annual meeting of stockholders vests six months after the date of grant. Options granted and restricted stock issued in lieu of cash director fees vest in equal quarterly increments during the year to which they relate. At December 31, 2022, 374,751 shares were available for future grants under the director plan. The director stock award plan is intended as an incentive to attract and retain qualified independent directors.

The following is a summary of the stock option activity under the director plan described above:

	Outstanding Non-Qualified or Nonincentive Stock Option Awards		Weighted Average Exercise Price
Outstanding at December 31, 2021	88,980	$	80.82
Exercised	(20,500)	$	62.19
Expired	(12,000)	$	87.35
Outstanding at December 31, 2022	56,480	$	86.19

The following table summarizes information about the Company's outstanding and exercisable stock options under the director plan at December 31, 2022:

	Options Outstanding						Options Exercisable				
Range of Exercise Prices	Number Outstanding	Weighted Average Remaining Contractual Life in Years		Weighted Average Exercise Price		Aggregate Intrinsic Value	Number Exercisable		Weighted Average Exercise Price		Aggregate Intrinsic Value
$70.65 – $85.30	32,480	1.6	$	76.34			32,480	$	76.34		
$99.52	24,000	1.1	$	99.52			24,000	$	99.52		
$70.65 – $99.52	56,480	1.4	$	86.19	$	—	56,480	$	86.19	$	—

The following is a summary of the restricted stock award activity under the director plan described above:

	Unvested Restricted Stock Award Shares		Weighted Average Grant Date Fair Value Per Share
Nonvested balance at December 31, 2021	3,337	$	58.70
Granted	28,696	$	64.61
Vested	(30,335)	$	63.92
Nonvested balance at December 31, 2022	1,698	$	65.36

The weighted average grant date fair value of restricted stock awards granted under the director plan for the years ended December 31, 2022, 2021, and 2020 were $64.61, $65.13, and $49.84, respectively.

The total intrinsic value of all stock options exercised under all of the Company's plans was $0.4 million, $0.1 million, and $0.7 million for the years ended December 31, 2022, 2021, and 2020, respectively.

The total fair value of all the restricted stock vestings under all of the Company's plans was $3.2 million, $5.3 million, and $5.6 million for the years ended December 31, 2022, 2021, and 2020, respectively. The actual tax benefit realized for tax deductions from restricted stock vestings was $0.8 million, $1.5 million, and $1.6 million for the years ended December 31, 2022, 2021, and 2020, respectively.

The total fair value of all the RSU vestings under the Company's employee plan was $9.5 million, $4.4 million and $5.2 million for the years ended December 31, 2022, 2021, and 2020 respectively. The actual tax benefit realized for tax deductions from RSU vestings was $2.4 million, $1.2 million and $1.5 million for the years ended December 31, 2022, 2021, and 2020, respectively.

As of December 31, 2022, there was $0.1 million of unrecognized compensation cost related to restricted stock and $16.2 million related to nonvested RSUs. The restricted stock is expected to be recognized over a weighted average period of approximately 0.4 years and RSUs over approximately 2.9 years.

The weighted average per share fair value of stock options granted during the year ended December 31, 2020 was $20.19. The fair value of the stock options granted during the year ended December 31, 2020 was $2.3 million. There were no stock options granted under the employee plan during the years ended December 31, 2022 and 2021 and no stock options granted under the director plan during the years ended December 31, 2022, 2021 and 2020. The Company currently uses treasury stock shares for restricted stock grants, RSU vestings, and stock option exercises. The fair value of each stock option was determined using the Black-Scholes option pricing model.

The key input variables used in valuing the stock options granted were as follows:

	Year Ended December 31,
	2020
Dividend yield	None
Average risk-free interest rate	1.3 %
Stock price volatility	28 %
Estimated option term	5.3 years

(9) Taxes on Income

Earnings (loss) before taxes on income and details of the provision (benefit) for taxes on income were as follows (in thousands):

	Year Ended December 31,		
	2022	2021	2020
Earnings (loss) before taxes on income:			
United States	$ 164,590	$ (290,181)	$ (461,569)
Foreign	385	(420)	218
	$ 164,975	$ (290,601)	$ (461,351)
Provision (benefit) for taxes on income:			
U.S. Federal:			
Current	$ 513	$ (460)	$ (218,613)
Deferred	34,980	(48,843)	37,436
	$ 35,493	$ (49,303)	$ (181,177)
U.S. State:			
Current	$ 3,793	$ 1,560	$ 3,421
Deferred	2,802	4,424	(12,273)
	$ 6,595	$ 5,984	$ (8,852)
Foreign:			
Current	$ 126	$ (511)	$ 270
	$ 126	$ (511)	$ 270
Consolidated:			
Current	$ 4,432	$ 589	$ (214,922)
Deferred	37,782	(44,419)	25,163
	$ 42,214	$ (43,830)	$ (189,759)

On November 13, 2021, the voters of the state of Louisiana approved a constitutional amendment that removed the corporate tax deduction for federal income taxes paid and lowered the corporate income tax rate from 8% to 7.5% effective January 1, 2022. The result of the amendment was an increase in the effective Louisiana state income tax rate, net of deduction for federal income tax, from 6.3% to 7.5%. As a result of the amendment, the Company recognized a one-time deferred tax provision of $5.7 million during the fourth quarter of 2021 due to remeasuring the Company's Louisiana and U.S. deferred tax assets and liabilities based on the new effective Louisiana state income tax rate.

On March 27, 2020, the United States Congress passed and the President signed the Coronavirus Aid, Relief, and Economic Security Act ("CARES Act") into law to address the COVID-19 pandemic. One provision of the CARES Act allows net operating losses generated in 2018 through 2020 to be carried back up to five years. Pursuant to this provision of the CARES Act, the Company recorded a net federal current benefit for taxes on income for the year ended December 31, 2020 due to carrying back net operating losses

generated between 2018 and 2020 used to offset taxable income generated between 2013 and 2017. Net operating losses carried back to tax years 2013 through 2017 are applied at a federal tax rate of 35% applicable to those tax years, compared to a 21% tax rate effective at December 31, 2020. Net operating losses generated in 2018 and 2019 were used to offset taxable income generated between 2013 and 2017 taxed at 35% resulting in a tax benefit of $59.7 million and a decrease in the Company's deferred tax asset related to federal net operating losses of $88.3 million.

At December 31, 2022 and 2021, the Company had a federal income tax receivable of $70.4 million and $71.0 million, respectively, included in Accounts Receivable – Other on the balance sheet. During 2021, the Company received a tax refund of $119.5 million, including accrued interest, for its 2019 tax return related to net operating losses being carried back to offset taxable income generated between 2014 and 2017. During 2020, the Company received a tax refund of $30.6 million for its 2018 tax return related to net operating losses being carried back to offset taxable income generated during 2013.

The Company's provision (benefit) for taxes on income varied from the statutory federal income tax rate due to the following:

	Year Ended December 31,		
	2022	2021	2020
United States income tax statutory rate	21.0%	21.0%	21.0%
State and local taxes, net of federal benefit	3.1	(1.7)	1.2
CARES Act – net operating loss carryback	—	—	21.3
Other – net	1.5	(4.2)	(2.4)
	25.6%	15.1%	41.1%

The tax effects of temporary differences that give rise to significant portions of the deferred tax assets and liabilities were as follows (in thousands):

	December 31,	
	2022	2021
Deferred tax assets:		
Allowance for doubtful accounts	$ 1,556	$ 1,657
Inventory	11,679	13,180
Insurance accruals	4,856	4,052
Deferred compensation	7,703	6,081
Unrealized (gain) loss on defined benefit plans	(5,532)	6,126
Goodwill and other intangibles	52,847	65,852
Operating loss carryforwards	79,699	89,966
Retirement benefits	5,472	7,194
Other	9,962	6,247
	168,242	200,355
Valuation allowances	(19,960)	(20,095)
	148,282	180,260
Deferred tax liabilities:		
Property	(671,830)	(655,550)
Deferred state taxes	(87,445)	(83,491)
Other	(14,891)	(15,371)
	(774,166)	(754,412)
	$ (625,884)	$ (574,152)

During 2022, the Company generated federal taxable income which was completely offset by federal net operating loss carryforwards. The Company had federal operating loss deferred tax assets of $47.9 million and $57.2 million at December 31, 2022 and 2021, respectively.

The Company had state operating loss deferred tax assets of $26.6 million and $27.6 million at December 31, 2022 and 2021, respectively. The valuation allowance for state deferred tax assets as of December 31, 2022 and 2021 was $14.8 million and $14.9 million, respectively, related to the Company's state net operating loss carryforwards based on the Company's determination that it is more likely than not that the deferred tax assets will not be realized. Expiration of these state net operating loss carryforwards vary by state through 2029 and none will expire in fiscal 2023.

As of December 31, 2022 and 2021, the Company had a Canadian net operating loss carryforward of $5.2 million which expires between 2037 and 2042. A full valuation allowance has been provided for this asset.

The Company or one of its subsidiaries files income tax returns in the United States federal jurisdiction and various state jurisdictions. The Company's federal income tax returns for the 2017 through 2020 tax years are currently under examination. With few exceptions, the Company and its subsidiaries' state income tax returns are open to audit under the statute of limitations for the 2016 through 2021 tax years.

As of December 31, 2022, the Company has provided a liability of $0.8 million for unrecognized tax benefits related to various income tax issues which includes interest and penalties. The amount that would impact the Company's effective tax rate, if recognized, is $0.6 million, with the difference between the total amount of unrecognized tax benefits and the amount that would impact the effective tax rate being primarily related to the federal tax benefit of state income tax items. It is not reasonably possible to determine if the liability for unrecognized tax benefits will significantly change prior to December 31, 2023 due to the uncertainty of possible examination results.

A reconciliation of the beginning and ending amount of the liability for unrecognized tax benefits is as follows (in thousands):

	Year Ended December 31,		
	2022	2021	2020
Balance at beginning of year	$ 737	$ 783	$ 883
Additions based on tax positions related to the current year	13	13	262
Additions for tax positions of prior years	66	281	114
Reductions for tax positions of prior years	(154)	(340)	(266)
Settlements	—	—	(210)
Balance at end of year	$ 662	$ 737	$ 783

The Company accounts for interest and penalties related to uncertain tax positions as part of its provision for federal and state income taxes. The Company had $0.1 million of accrued liabilities for the payment of interest and penalties at both December 31, 2022 and 2021.

(10) Earnings Per Share

The following table presents the components of basic and diluted earnings (loss) per share (in thousands, except per share amounts):

	Year Ended December 31,		
	2022	2021	2020
Net earnings (loss) attributable to Kirby	$ 122,291	$ (246,954)	$ (272,546)
Undistributed earnings allocated to restricted shares	(33)	—	—
Earnings (loss) available to Kirby common stockholders — basic	122,258	(246,954)	(272,546)
Undistributed earnings allocated to restricted shares	33	—	—
Undistributed earnings reallocated to restricted shares	(33)	—	—
Earnings (loss) available to Kirby common stockholders — diluted	$ 122,258	$ (246,954)	$ (272,546)
Shares outstanding:			
Weighted average common stock issued and outstanding	60,055	60,099	60,021
Weighted average unvested restricted stock	(17)	(46)	(109)
Weighted average common stock outstanding — basic	60,038	60,053	59,912
Dilutive effect of stock options and restricted stock units	291	—	—
Weighted average common stock outstanding — diluted	60,329	60,053	59,912
Net earnings (loss) per share attributable to Kirby common stockholders:			
Basic	$ 2.04	$ (4.11)	$ (4.55)
Diluted	$ 2.03	$ (4.11)	$ (4.55)

Certain outstanding options to purchase approximately 0.4 million, 0.6 million, and 0.7 million shares of common stock were excluded in the computation of diluted earnings per share as of December 31, 2022, 2021, and 2020, respectively, as such stock options would have been antidilutive. Certain outstanding RSUs to convert to 7,000 and 11,000 shares of common stock were also excluded in the computation of diluted earnings per share as of December 31, 2021 and 2020, respectively, as such RSUs would have been antidilutive. No RSUs were antidilutive at December 31, 2022.

(11) Inventories

The following table presents the details of inventories (in thousands):

	December 31, 2022	December 31, 2021
Finished goods	$ 358,702	$ 260,707
Work in process	103,146	70,643
	$ 461,848	$ 331,350

(12) Retirement Plans

The Company sponsors a defined benefit plan (the "Kirby Pension Plan") for its inland vessel personnel and shore based tankermen. The plan benefits are based on an employee's years of service and compensation. The plan assets consist primarily of equity and fixed income securities.

On April 12, 2017, the Company amended the Kirby Pension Plan to cease all benefit accruals for periods after May 31, 2017 for certain participants. Participants grandfathered and not impacted were those, as of the close of business on May 31, 2017, who either (a) had completed 15 years of pension service or (b) had attained age 50 and completed 10 years of pension service. Participants non-grandfathered are eligible to receive discretionary 401(k) plan contributions.

On February 14, 2018, with the acquisition of Higman Marine, Inc. ("Higman"), the Company assumed Higman's pension plan (the "Higman Pension Plan") for its inland vessel personnel and office staff. On March 27, 2018, the Company amended the Higman Pension Plan to close it to all new entrants and cease all benefit accruals for periods after May 15, 2018 for all participants. The Company made contributions to the Higman Pension Plan of $0.9 million, $0.5 million and $2.2 million for the years ended December 31, 2022, 2021 and 2020, respectively.

The aggregate fair value of plan assets of the Company's pension plans was $341.1 million and $430.8 million at December 31, 2022 and 2021, respectively. Pension assets were allocated among asset categories as follows:

Asset Category	December 31, 2022	December 31, 2021	Current Minimum, Target and Maximum Allocation Policy		
U.S. equity securities	50 %	51 %	45 %	— 50%	— 55%
International equity securities	20	20	12 %	— 20%	— 28%
Debt securities	30	29	20 %	— 30%	— 40%
Cash and cash equivalents	—	—	0 %	— 0%	— 0%
	100 %	100 %			

At December 31, 2022 and 2021, $4.8 million and $5.4 million, respectively, was held in cash as well as debt and equity securities classified within Level 1 of the valuation hierarchy. There were no investments within Level 3 of the valuation hierarchy at December 31, 2022 and 2021. All other plan assets are invested in common collective trusts and valued using the net asset value per share practical expedient and therefore not valued within the valuation hierarchy.

The Company's investment strategy focuses on total return on invested assets (capital appreciation plus dividend and interest income). The primary objective in the investment management of assets is to achieve long-term growth of principal while avoiding excessive risk. Risk is managed through diversification of investments within and among asset classes, as well as by investing in asset classes offering sufficient liquidity and trading history.

The Company makes various assumptions when determining defined benefit plan costs including, but not limited to, the current discount rate and the expected long-term return on plan assets. Discount rates are determined annually and are based on a yield curve that consists of a hypothetical portfolio of high quality corporate bonds with maturities matching the projected benefit cash flows. The Company assumed that plan assets would generate a long-term rate of return of 6.75% in both 2022 and 2021. The Company developed its expected long-term rate of return assumption by evaluating input from investment consultants comparing historical returns for various asset classes with its actual and targeted plan investments. The Company believes that its long-term asset allocation, on average, will approximate the targeted allocation.

The Company's pension plan funding strategy is to make annual contributions in amounts equal to or greater than amounts necessary to meet minimum government funding requirements. The plan's benefit obligations are based on a variety of demographic and economic assumptions, and the pension plan assets' returns are subject to various risks, including market and interest rate risk, making an accurate

prediction of the pension plan contribution difficult. The Company's pension plan funding was 105% of the pension plans' accumulated benefit obligation at December 31, 2022, including both the Kirby Pension Plan and the Higman Pension Plan.

The Company sponsors an unfunded defined benefit health care plan that provides limited postretirement medical benefits to employees who met minimum age and service requirements, and to eligible dependents. The plan limits cost increases in the Company's contribution to 4% per year. The plan is contributory, with retiree contributions adjusted annually. The plan eliminated coverage for future retirees as of December 31, 2011. The Company also has an unfunded defined benefit supplemental executive retirement plan ("SERP") that was assumed in an acquisition in 1999. That plan ceased to accrue additional benefits effective January 1, 2000.

The following table presents the change in benefit obligation and plan assets for the Company's defined benefit plans and postretirement benefit plan (in thousands):

	Pension Benefits				Other Postretirement Benefits	
	Pension Plans		SERP		Postretirement Welfare Plan	
	2022	2021	2022	2021	2022	2021
Change in benefit obligation						
Benefit obligation at beginning of year	$ 495,272	$ 508,694	$ 1,033	$ 1,174	$ 582	$ 629
Service cost	6,538	7,961	—	—	—	—
Interest cost	14,779	14,239	29	31	17	17
Actuarial (gain) loss	(158,816)	(20,208)	(74)	(12)	(58)	104
Gross benefits paid	(12,665)	(11,967)	(155)	(160)	(109)	(168)
Settlements	(5,599)	(3,447)	—	—	—	—
Benefit obligation at end of year	$ 339,509	$ 495,272	$ 833	$ 1,033	$ 432	$ 582
Accumulated benefit obligation at end of year	$ 325,274	$ 469,508	$ 833	$ 1,033	$ 432	$ 582
Weighted-average assumption used to determine benefit obligation at end of year						
Discount rate (a)	5.5%	3.0% / 3.1%	5.5%	3.0%	5.5%	3.0%
Rate of compensation increase	Service-based table	Service-based table	—	—	—	—
Health care cost trend rate						
Initial rate	—	—	—	—	6.50%	6.25%
Ultimate rate	—	—	—	—	5.0%	5.0%
Years to ultimate	—	—	—	—	2029	2027
Change in plan assets						
Fair value of plan assets at beginning of year	$ 430,821	$ 395,137	$ —	$ —	$ —	$ —
Actual return on plan assets	(72,402)	50,619	—	—	—	—
Employer contribution	906	479	155	160	109	168
Gross benefits paid	(12,665)	(11,967)	(155)	(160)	(109)	(168)
Settlements	(5,599)	(3,447)	—	—	—	—
Fair value of plan assets at end of year	$ 341,061	$ 430,821	$ —	$ —	$ —	$ —

(a) The 2022 discount rate was 5.5% for both the Kirby Pension Plan and the Higman Pension Plan. The 2021 discount rate was 3.0% for the Kirby Pension Plan and 3.1% for the Higman Pension Plan.

During the year ending December 31, 2022, actual returns on plan assets performed less than expected which deteriorated the funding position but the overall funded position at December 31, 2022 was improved due to a decrease in the benefit obligation primarily due to an increase in the discount rate.

During the year ended December 31, 2021, the funded position improved due to a decrease in the benefit obligation primarily due to an increase in the discount rate and actual returns on plan assets performing better than expected.

The following table presents the funded status and amounts recognized in the Company's consolidated balance sheet for the Company's defined benefit plans and postretirement benefit plan (in thousands):

	Pension Benefits				Other Postretirement Benefits	
	Pension Plans		SERP		Postretirement Welfare Plan	
	2022	2021	2022	2021	2022	2021
Funded status at end of year						
Fair value of plan assets	$ 341,061	$ 430,821	$ —	$ —	$ —	$ —
Benefit obligations	(339,509)	(495,272)	(833)	(1,033)	(432)	(582)
Funded status and amount recognized at end of year	$ 1,552	$ (64,451)	$ (833)	$ (1,033)	$ (432)	$ (582)
Amounts recognized in the consolidated balance sheets						
Noncurrent asset	18,695	—	—	—	—	—
Current liability	—	—	(106)	(128)	(49)	(49)
Long-term liability	(17,143)	(64,451)	(727)	(905)	(383)	(533)
Amounts recognized in accumulated other comprehensive income						
Net actuarial (gain) loss	$ (25,449)	$ 32,600	$ 324	$ 428	$ (2,299)	$ (2,634)
Prior service cost (credit)	—	—	—	—	—	—
Accumulated other compensation income	$ (25,449)	$ 32,600	$ 324	$ 428	$ (2,299)	$ (2,634)

The following table presents the expected cash flows for the Company's defined benefit plans and postretirement benefit plan (in thousands):

	Pension Benefits				Other Postretirement Benefits	
	Pension Plans		SERP		Postretirement Welfare Plan	
	2022	2021	2022	2021	2022	2021
Expected employer contributions						
First year	$ 8,374	$ 145	$ —	$ —	$ —	$ —
Expected benefit payments (gross)						
Year one	$ 16,312	$ 15,480	$ 108	$ 130	$ 50	$ 50
Year two	16,899	16,678	104	104	49	49
Year three	17,808	17,598	99	100	47	48
Year four	18,650	18,382	94	96	45	47
Year five	19,707	19,127	90	91	43	45
Next five years	110,417	109,845	359	381	176	194

The components of net periodic benefit cost and other changes in plan assets and benefit obligations recognized in other comprehensive income for the Company's defined benefit plans were as follows (in thousands):

	Pension Benefits					
	Pension Plans			SERP		
	2022	2021	2020	2022	2021	2020
Components of net periodic benefit cost						
Service cost	$ 6,538	$ 7,961	$ 7,671	$ —	$ —	$ —
Interest cost	14,779	14,239	15,630	29	31	40
Expected return on plan assets	(28,399)	(26,244)	(23,790)	—	—	—
Amortization of actuarial loss	34	4,193	2,399	30	40	35
Net periodic benefit cost	(7,048)	149	1,910	59	71	75
Other changes in plan assets and benefit obligations recognized in other comprehensive income						
Current year actuarial (gain) loss	(58,015)	(44,583)	31,616	(74)	(12)	55
Recognition of actuarial loss	(34)	(4,193)	(2,399)	(30)	(40)	(35)
Total recognized in other comprehensive income	(58,049)	(48,776)	29,217	(104)	(52)	20
Total recognized in net periodic benefit cost and other comprehensive income	$ (65,097)	$ (48,627)	$ 31,127	$ (45)	$ 19	$ 95
Weighted average assumptions used to determine net periodic benefit cost						
Discount rate (a)	3.0% / 3.1%	2.8% / 2.9%	3.5% / 3.1%	3.0%	2.8%	3.5%
Expected long-term rate of return on plan assets	6.75%	6.75%	6.75%	—	—	—
Rate of compensation increase	Service-based table	Service-based table	Service-based table	—	—	—

(a) The 2022 discount rate for benefit cost is 3.0% for the Kirby Pension Plan and 3.1% for the Higman Pension Plan. The 2021 discount rate for benefit cost is 2.8% for the Kirby Pension Plan and 2.9% for the Higman Pension Plan.

The components of net periodic benefit cost and other changes in benefit obligations recognized in other comprehensive income for the Company's postretirement benefit plan were as follows (in thousands):

	Other Postretirement Benefits		
	Postretirement Welfare Plan		
	2022	2021	2020
Components of net periodic benefit cost			
Interest cost	$ 17	$ 17	$ 22
Amortization of actuarial gain	(394)	(451)	(522)
Net periodic benefit cost	(377)	(434)	(500)
Other changes in benefit obligations recognized in other comprehensive income			
Current year actuarial loss (gain)	(58)	104	84
Recognition of actuarial gain	394	451	522
Total recognized in other comprehensive income	336	555	606
Total recognized in net periodic benefit cost and other comprehensive income	$ (41)	$ 121	$ 106
Weighted average assumptions used to determine net periodic benefit cost			
Discount rate	3.0%	2.8%	3.5%
Health care cost trend rate:			
Initial rate	6.25%	6.50%	6.75%
Ultimate rate	5.0%	5.0%	5.0%
Years to ultimate	2027	2025	2025

The Company also contributes to a multiemployer pension plan pursuant to a collective bargaining agreement which covers certain vessel crew members of its coastal operations and expires on April 30, 2025. The Company began participation in the Seafarers Pension Trust ("SPT") with the Penn Maritime, Inc. acquisition on December 14, 2012.

Contributions to the SPT are made currently based on a per day worked basis and charged to expense as incurred and included in costs of sales and operating expenses in the consolidated statement of earnings. During 2022 and 2021, the Company made contributions of $0.5 million in each year to the SPT. The Company's contributions to the SPT did not exceed 5% of total contributions to the SPT in 2021. Total contributions for 2022 are not yet available. The Company did not pay any material surcharges in 2022 and 2021.

The federal identification number of the SPT is 13-6100329 and the Certified Zone Status is Green at December 31, 2021. The Company's future minimum contribution requirements under the SPT are unavailable because actuarial reports for the 2022 plan year are not yet complete and such contributions are subject to negotiations between the employers and the unions. The SPT was not in endangered or critical status for the 2021 plan year, the latest period for which a report is available, as the funded status was in excess of 100%. Based on the most recent communication from the SPT, there would be no withdrawal liability if the Company chose to withdraw from the SPT although the Company currently has no intention of terminating its participation in the SPT.

The Company also contributes to a multiemployer pension plan pursuant to a collective bargaining agreement which covers certain employees of KDS in New Jersey and expires on October 8, 2023. The Company began participation in the Central Pension Fund of the International Union of Operating Engineers and Participating Employers ("CPF") with the Stewart & Stevenson LLC acquisition on September 13, 2017.

Contributions to the CPF are made currently based on a fixed hourly rate for each hour worked or paid basis (in some cases contributions are made as a percentage of gross pay) and charged to expense as incurred and included in costs of sales and operating expenses in the consolidated statement of earnings. During 2022 and 2021, the Company made contributions of $0.7 million in each year to the CPF. Total contributions for the 2022 plan year are not yet available. The Company did not pay any material surcharges in 2022 and 2021.

The federal identification number of the CPF is 36-6052390 and the Certified Zone Status is Green at January 31, 2023. The Company's future minimum contribution requirements under the CPF are unavailable because actuarial reports for the 2022 plan year, which ended January 31, 2023, are not yet complete and such contributions are subject to negotiations between the employers and the unions. The CPF was not in endangered or critical status for the 2021 plan year, ending January 31, 2022, the latest period for which a report is available, as the funded status was 103%. There would be no withdrawal liability if the Company chose to withdraw from the CPF although the Company currently has no intention of terminating its participation in the CPF.

In addition to the defined benefit plans, the Company sponsors various defined contribution plans for substantially all employees. The aggregate contributions to the plans were $27.9 million, $25.9 million, and $25.5 million in 2022, 2021, and 2020, respectively.

(13) Other Comprehensive Income (Loss)

The Company's changes in other comprehensive income (loss) were as follows (in thousands):

	Year Ended December 31,								
	2022			2021			2020		
	Gross Amount	Income Tax (Provision) Benefit	Net Amount	Gross Amount	Income Tax Provision	Net Amount	Gross Amount	Income Tax (Provision) Benefit	Net Amount
Pension and postretirement benefits (a):									
Amortization of net actuarial (gain) loss	$ (330)	$ 81	$ (249)	$ 3,782	$ (952)	$ 2,830	$ 1,912	$ (483)	$ 1,429
Actuarial gains (losses)	58,147	(14,030)	44,117	44,491	(10,774)	33,717	(31,755)	7,006	(24,749)
Foreign currency translation adjustments	(1,049)	—	(1,049)	(1,061)	—	(1,061)	(333)	—	(333)
Total	$ 56,768	$ (13,949)	$ 42,819	$ 47,212	$ (11,726)	$ 35,486	$ (30,176)	$ 6,523	$ (23,653)

(a) Actuarial gains (losses) are amortized into other income (expense). (See Note 12 – Retirement Plans)

(14) Contingencies and Commitments

In 2009, the Company was named by the Environmental Protection Agency (the "EPA") as a Potentially Responsible Party ("PRP") in addition to a group of approximately 250 named PRPs under the Comprehensive Environmental Response, Compensation and Liability Act of 1981 ("CERCLA") with respect to a Superfund site, the Portland Harbor Superfund site ("Portland Harbor") in Portland, Oregon. The site was declared a Superfund site in December 2000 as a result of historical heavily industrialized use due to manufacturing, shipbuilding, petroleum storage and distribution, metals salvaging, and electrical power generation activities which led to contamination of Portland Harbor, an urban and industrial reach of the lower Willamette River located immediately downstream of downtown Portland. The Company's involvement arises from four spills at the site after it was declared a Superfund site, as a result of predecessor entities' actions in the area. To date, there is no information suggesting the extent of the costs or damages to be claimed from the 250 notified PRPs. Based on the nature of the involvement at the Portland Harbor site, the Company believes its potential contribution is de minimis; however, to date neither the EPA nor the named PRPs have performed an allocation of potential liability in connection with the site nor have they provided costs and expenses in connection with the site.

On February 20, 2015, the Company was served as a defendant in a Complaint originally filed on August 14, 2014, in the U.S. District Court of the Southern District of Texas - Houston Division, *USOR Site PRP Group vs. A&M Contractors, USES, Inc. et al.* This is a civil action pursuant to the provisions of CERCLA and the Texas Solid Waste Disposal Act for recovery of past and future response costs incurred and to be incurred by the USOR Site PRP Group for response activities at the U.S. Oil Recovery Superfund Site. The property was a former sewage treatment plant owned by defendant City of Pasadena, Texas from approximately 1945 until it was acquired by U.S. Oil Recovery in January 2009. Throughout its operating life, the U.S. Oil Recovery facility portion of the USOR Site received and performed wastewater pretreatment of municipal and Industrial Class I and Class II wastewater, characteristically hazardous waste, used oil and oily sludges, and municipal solid waste. Associated operations were conducted at the MCC Recycling facility portion of the USOR Site after it was acquired by U.S. Oil Recovery from the City of Pasadena in January 2009. The EPA and the PRP Group entered into an Administrative Settlement Agreement and Order for Remedial Investigation Study ("Study") in May 2015. The Study has not been completed by EPA to date. The Company joined as a member of the PRP Group companies at its pro-rata allocated share.

On October 13, 2016, the Company, as a successor to Hollywood Marine, Inc. ("Hollywood Marine"), was issued a General Notice under CERCLA by the EPA in which it was named as a PRP for liabilities associated with the SBA Shipyard Site located near Jennings, Louisiana (the "Site"). The Site was added to the EPA's National Priorities List of sites under CERCLA in September 2016. SBA used the facility for construction, repair, retrofitting, sandblasting, and cleaning and painting of barges beginning in 1965. Three barge slips and a dry dock are located off the Mermentau River. The slips were used to dock barges during cleaning or repair. In 2001, a group of PRPs that had been former customers of the SBA Shipyard facility formed an organization called the SSIC Remediation, LLC (hereinafter, "the PRP Group Companies") to address removal actions at the Site. In 2002, EPA approved an Interim Measures/Removal Action of Hazardous/Principal Threat Wastes at SBA Shipyards, Inc. (pursuant to RCRA Section 3008(h)) that was proposed by SBA Shipyard and the PRP Group Companies. Interim removal activities were conducted from March 2001 through January 2005 under an EPA 2002 Order and Agreement. In September 2012, the Louisiana Department of Environmental Quality requested EPA address the Site under CERCLA authority. The Company, as a successor to Hollywood Marine, joined the PRP Group Companies. The PRP Group Companies have submitted a draft Study work plan to EPA for their review and comment. Higman was named as a PRP in connection with its activities at the Site. Higman is not a participant in the PRP Group Companies.

With respect to the above sites, the Company has accrued a liability, if applicable, for its estimated potential liability for its portion of the EPA's past costs claim based on information developed to date including various factors such as the Company's liability in proportion to other PRPs and the extent to which such costs are recoverable from third parties.

On October 13, 2016, the tug Nathan E. Stewart and barge DBL 55, an ATB owned and operated by Kirby Offshore Marine, LLC, a wholly owned subsidiary of the Company, ran aground at the entrance to Seaforth Channel on Atholone Island, British Columbia. The grounding resulted in a breach of a portion of the Nathan E. Stewart's fuel tanks causing a discharge of diesel fuel into the water. The USCG and the NTSB designated the Company as a party of interest in their investigation as to the cause of the incident. The Canadian authorities including Transport Canada and the Canadian Transportation Safety Board investigated the cause of the incident. On October 10, 2018, the Heiltsuk First Nation filed a civil action in the British Columbia Supreme Court against a subsidiary of the Company, the master and pilot of the tug, the vessels and the Canadian government seeking unquantified damages as a result of the incident. On May 1, 2019, the Company filed a limitation action in the Federal Court of Canada seeking limitation of liability relating to the incident as provided under admiralty law. The Heiltsuk First Nation's civil claim has been consolidated into the Federal Court limitation action as of July 26, 2019 and it is expected that the Federal Court of Canada will decide all claims against the Company. The Company is unable to estimate the potential exposure in the civil proceeding. The Company has various insurance policies covering liabilities including pollution, property, marine and general liability and believes that it has satisfactory insurance coverage for the cost of cleanup and salvage operations as well as other potential liabilities arising from the incident. The Company believes its accrual of such estimated liability is adequate for the incident and does not expect the incident to have a material adverse effect on its business or financial condition.

In addition, the Company is involved in various legal and other proceedings which are incidental to the conduct of its business, none of which in the opinion of management will have a material effect on the Company's financial condition, results of operations or cash flows. Management believes its accrual of such estimated liability is adequate and believes that it has adequate insurance coverage or has meritorious defenses for these other claims and contingencies.

Certain Significant Risks and Uncertainties. The preparation of financial statements in conformity with United States generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements, and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates. However, in the opinion of management, the amounts would be immaterial.

The Company has issued guaranties or obtained standby letters of credit and performance bonds supporting performance by the Company and its subsidiaries of contractual or contingent legal obligations of the Company and its subsidiaries incurred in the ordinary course of business. The aggregate notional value of these instruments is $19.3 million at December 31, 2022, including $12.2 million in letters of credit and $7.1 million in performance bonds. All of these instruments have an expiration date within two years. The Company does not believe demand for payment under these instruments is likely and expects no material cash outlays to occur in connection with these instruments.

(15) Related Party Transactions

David W. Grzebinski, President and Chief Executive Officer of the Company, is a member of the board of directors for ABS, a not-for-profit that provides global classification services to the marine, offshore and gas industries. The Company paid ABS $1.3 million in 2022, $1.6 million in 2021, and $2.4 million in 2020 to perform audits and surveys of the Company's vessels in the ordinary course of business.

Mr. Grzebinski is a member of the board of directors of UK Protection & Indemnity Association ("UK P&I"), a mutual marine protection and indemnity organization that provides protection and indemnity insurance for third party liabilities and expenses arising from vessel operations. The Company's marine fleet is insured on a pro rata share basis through UK P&I and Standard Mutual. The Company paid $3.4 million during 2022 in premiums for coverage in the 2022-2023 policy period, $3.2 million during 2021 in premiums for coverage in the 2021-2022 policy period, and $3.0 million in 2020 in premiums for coverage in the 2020-2021 policy period in the ordinary course of business.

Amy D. Husted, Vice President, General Counsel and Secretary of the Company, is a member of the board of directors of Signal Mutual Indemnity Association Ltd ("Signal"), a group self-insurance not-for-profit organization authorized by the U.S. Department of Labor as a longshore worker's compensation insurance provider. The Company has been a member of Signal since it was established in 1986. The Company paid Signal $0.8 million in 2022, $0.6 million in 2021 and $0.7 million in 2020 in the ordinary course of business.

The husband of Ms. Husted is a partner in the law firm of Clark Hill PLC. The Company paid the law firm $1.0 million in 2022, $2.9 million in 2021, and $1.6 million in 2020 for legal services in connection with matters in the ordinary course of business.

The brother of Christian G. O'Neil, President of Kirby Inland Marine, LP, Kirby Offshore Marine, LLC, San Jac Marine, LLC and Kirby Offshore Wind, LLC, is a partner in the law firm of W. Sean O'Neil Attorney at Law. The Company paid the law firm $135,000 in 2022 for legal services in the ordinary course of business.

PART IV

Item 15. ***Exhibits and Financial Statement Schedules***

1. *Financial Statements*

Included in Part III of this report on pages 47 to 76:

Report of Independent Registered Public Accounting Firm (KPMG LLP, Houston, TX, PCAOB ID 185).
Report of Independent Registered Public Accounting Firm.
Consolidated Balance Sheets, December 31, 2022 and 2021.
Consolidated Statements of Earnings, for the years ended December 31, 2022, 2021, and 2020.
Consolidated Statements of Comprehensive Income, for the years ended December 31, 2022, 2021, and 2020.
Consolidated Statements of Cash Flows, for the years ended December 31, 2022, 2021, and 2020.
Consolidated Statements of Stockholders' Equity, for the years ended December 31, 2022, 2021, and 2020.
Notes to Consolidated Financial Statements, for the years ended December 31, 2022, 2021, and 2020.

2. *Financial Statement Schedules*

All schedules are omitted as the required information is inapplicable or the information is presented in the consolidated financial statements or related notes.

3. *Exhibits*

EXHIBIT INDEX

Exhibit Number		Description of Exhibit
3.1	—	Restated Articles of Incorporation of the Company with all amendments to date (incorporated by reference to Exhibit 3.1 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2014).
3.2	—	Bylaws of the Company with all amendments to date (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed with the Commission on October 28, 2022).
4.1	—	See Exhibits 3.1 and 3.2 hereof for provisions of our Restated Articles of Incorporation of the Company with all amendments to date and the Bylaws of the Company with all amendments to date (incorporated, respectively, by reference to Exhibit 3.1 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2014 and Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed with the Commission on October 28, 2022).
4.2	—	Long-term debt instruments are omitted pursuant to Item 601(b)(4) of Regulation S-K. The Registrant will furnish copies of such instruments to the Commission upon request.
10.1	—	Note Purchase Agreement dated February 3, 2022 (incorporated by reference to Exhibit 10.1 to the Registrant's Form 8-K filed with the Commission on February 8, 2022).
10.2	—	Credit Agreement dated July 29, 2022 among Kirby Corporation, JPMorgan Chase Bank, N.A., as Administrative Agent, and the banks named therein (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed with the Commission on July 29, 2022).
10.3†	—	Incentive and Retention Award Agreement of David W. Grzebinski dated February 25, 2021 (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed with the Commission on February 26, 2021).
10.4†	—	Incentive and Retention Award Agreement of Christian G. O'Neil dated February 25, 2021 (incorporated by reference to Exhibit 10.2 to the Registrant's Current Report on Form 8-K filed with the Commission on February 26, 2021).
10.5†	—	Annual Incentive Plan Guidelines for 2022 (incorporated by reference to Exhibit 10.11 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2021).
10.6†*	—	Annual Incentive Plan Guidelines for 2023.
10.7†	—	2005 Stock and Incentive Plan (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed with the Commission on April 29, 2021).

Exhibit Number		Description of Exhibit
10.8†	—	2000 Nonemployee Director Stock Plan (incorporated by reference to Exhibit 10.2 to the Registrant's Current Report on Form 8-K filed with the Commission on April 29, 2021).
10.9†	—	Nonemployee Director Compensation Program (incorporated by reference to Exhibit 10.2 to the Registrant's Quarterly Report on Form 10-Q for the quarter ended March 31, 2018).
10.10†	—	Deferred Compensation Plan for Key Employees (As Amended and Restated Effective April 1, 2022 and incorporated by reference to Exhibit 10.3 to the Registrant's Quarterly Report on Form 10-Q filed with the Commission on May 9, 2022).
10.11†	—	Change of Control Agreement by and between Kirby Corporation and David W. Grzebinski dated May 16, 2022 (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed with the Commission on May 20, 2022).
10.12†	—	Change of Control Agreement by and between Kirby Corporation and Raj Kumar dated May 16, 2022 (incorporated by reference to Exhibit 10.2 to the Registrant's Current Report on Form 8-K filed with the Commission on May 20, 2022).
10.13†	—	Change of Control Agreement by and between Kirby Corporation and Christian G. O'Neil dated May 16, 2022 (incorporated by reference to Exhibit 10.3 to the Registrant's Current Report on Form 8-K filed with the Commission on May 20, 2022).
10.14†	—	Change of Control Agreement by and between Kirby Corporation and Amy D. Husted dated May 16, 2022 (incorporated by reference to Exhibit 10.4 to the Registrant's Current Report on Form 8-K filed with the Commission on May 20, 2022).
10.15†	—	Letter Agreement dated June 5, 2022 between the Company and Joseph H. Reniers (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K/A filed with the Commission on June 9, 2022).
10.16†	—	Enhanced Transition Assistance Agreement dated June 5, 2022 between the Company and Joseph H. Reniers (incorporated by reference to Exhibit 10.2 to the Registrant's Current Report on Form 8-K/A filed with the Commission on June 9, 2022).
10.17	—	Cooperation Agreement dated February 3, 2023 by and among the Company and JCP Investment Management, LLC and certain of its affiliates and associates (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed with the Commission on February 3, 2023).
21.1*	—	Consolidated Subsidiaries of the Registrant.
23.1*	—	Consent of Independent Registered Public Accounting Firm.
31.1*	—	Certification of Chief Executive Officer Pursuant to Rule 13a-14(a).
31.2*	—	Certification of Chief Financial Officer Pursuant to Rule 13a-14(a).
32*	—	Certification Pursuant to 18 U.S.C. Section 1350 (As adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002).
101.INS*	—	Inline XBRL Instance Document - the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document
101.SCH*	—	Inline XBRL Taxonomy Extension Schema Document
101.CAL*	—	Inline XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF*	—	Inline XBRL Taxonomy Extension Definitions Linkbase Document
101.LAB*	—	Inline XBRL Taxonomy Extension Label Linkbase Document
101.PRE*	—	Inline XBRL Taxonomy Extension Presentation Linkbase Document
104*	—	Cover Page Interactive Data File (embedded within the Inline XBRL document)

* Filed herewith.
† Management contract, compensatory plan or arrangement.

Item 16. ***Form 10-K Summary***

Not applicable

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

KIRBY CORPORATION
(REGISTRANT)

By: /s/ RAJ KUMAR

Raj Kumar
Executive Vice President and
Chief Financial Officer

Dated: February 21, 2023

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

Signature	Capacity	Date
/s/ JOSEPH H. PYNE **Joseph H. Pyne**	Chairman of the Board and Director	February 21, 2023
/s/ DAVID W. GRZEBINSKI **David W. Grzebinski**	President, Chief Executive Officer, and Director (Principal Executive Officer)	February 21, 2023
/s/ RAJ KUMAR **Raj Kumar**	Executive Vice President and Chief Financial Officer (Principal Financial Officer)	February 21, 2023
/s/ RONALD A. DRAGG **Ronald A. Dragg**	Vice President, Controller and Assistant Secretary (Principal Accounting Officer)	February 21, 2023
/s/ ANNE-MARIE N. AINSWORTH **Anne-Marie N. Ainsworth**	Director	February 21, 2023
/s/ RICHARD J. ALARIO **Richard J. Alario**	Director	February 21, 2023
/s/ TANYA S. BEDER **Tanya S. Beder**	Director	February 21, 2023
/s/ BARRY E. DAVIS **Barry E. Davis**	Director	February 21, 2023
/s/ ROCKY B. DEWBRE **Rocky B. Dewbre**	Director	February 21, 2023
/s/ SUSAN W. DIO **Susan W. Dio**	Director	February 21, 2023
/s/ RICHARD R. STEWART **Richard R. Stewart**	Director	February 21, 2023
/s/ WILLIAM M. WATERMAN **William M. Waterman**	Director	February 21, 2023
/s/ SHAWN D. WILLIAMS **Shawn D. Williams**	Director	February 21, 2023

Exhibit 10.6

ANNUAL INCENTIVE PLAN

2023 Plan Year

Guidelines

KIRBY CORPORATION

January 2023

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Introduction

Kirby Corporation (together with its subsidiaries, "Kirby" or the "Company") established the 2023 Annual Incentive Plan (the "Plan") to focus employees of the Company on identifying and achieving business strategies that lead to increased stockholder value. The Plan is also intended to reward superior performance by employees and their contribution to achieving Kirby's objectives.

Certain aspects of this Plan are complex. Although these Guidelines establish rules for Plan operation, those rules may not work in all circumstances. Therefore, the Compensation Committee of the Kirby Board of Directors has discretion to interpret these Guidelines to assure the awards are consistent with the Plan's purposes and the Company's interests. All decisions by the Compensation Committee shall be final and binding.

Unless resolutions of the Compensation Committee expressly provide otherwise, awards granted under the Plan shall constitute performance awards granted under Article IV of the Kirby Corporation 2005 Stock and Incentive Plan and are subject to the terms and provisions of such Plan that apply to performance awards.

The Plan may be amended, modified or terminated at any time without prior notice by written authorization of the Compensation Committee or the Board of Directors of Kirby Corporation.

The 2023 Annual Incentive Plan

Each award granted under the Plan is an award for Company performance or a combination of Company and Business Group performance. Awards are generally based on achieving the Company Performance Goal as well as additional Company, Business Group and individual performance measures and objectives. Once the Company Performance Goal is reached, participants in the Plan become eligible for an incentive bonus payment.

All amounts paid to participants pursuant to the Plan shall be subject to any policy relating to the recovery of erroneously awarded incentive compensation that may hereafter be adopted by the Company to comply with Securities and Exchange Commission rules or New York Stock Exchange listing standards.

Plan Objectives

The key objectives of the Plan are:

- Provide an annual incentive plan that drives performance toward objectives critical to creating stockholder value.
- Offer competitive cash compensation opportunities to key Kirby employees.
- Reward outstanding achievement by employees who directly affect Kirby's results.
- Assist Kirby in attracting and retaining high quality employees.
- Reflect both quantitative and qualitative performance factors in actual bonus payouts.
- Ensure that incentive payments made by the Company are fully deductible by the Company.

Business Groups

The following Business Groups are designated for purposes of the Plan:

Kirby Corporate Services ("KCS")	ThermoKing ("TK/CON")
Kirby Inland Marine, LP ("KIM")[1]	Kirby Engine Systems, Inc. ("KES")
Kirby Offshore Marine, LLC ("KOM")	Atlantic and Florida Detroit Diesel Allison ("DDAs")
S&S and United (S&S UE)	KDS Consolidated (KDS)

[1] KIM includes Kirby Ocean Transport Company, San Jac Marine and Osprey Line, LLC.

Performance Period

Performance is measured on a calendar year basis for the Plan. The Performance Period begins on January 1, 2023 and ends on December 31, 2023. Except as expressly provided in these Guidelines in the case of new employees or termination of employment, incentive compensation payments under the Plan are for the full year 2023 and shall not be reduced for the period between the commencement of the Performance Period and the date on which the Compensation Committee approves these Guidelines and the individual bonus targets for participants in the Plan.

Eligibility

- Generally, managerial employees and KIM wheelhouse employees classified as Captain, Relief Captain or Pilot, are eligible for participation. Selection for participation in the Plan is based upon each position's ability to impact long-term financial results of the Company and designation by management.

- To be eligible to receive an incentive payment under the Plan, participants must be employed on the last day of the Performance Period and on the date bonuses are paid for the Performance Period, unless their termination reason is death or disability or if they meet the requirements of a retirement.

For the purposes of the Plan, the definition of retirement is a calculation resulting in either 65 years of age on termination date or age plus service is greater than or equal to 80.

- Participation in the Plan in 2023 does not guarantee participation in similar plans in future years. Participants in the Plan or in similar plans in future years will be notified annually of their selection for participation.

Individual Bonus Targets

Each participant will be assigned a target bonus level defined as a percentage of base salary earned during the Performance Period. This bonus target is based on competitive market practices, as well as the employee's ability to impact long-term Company performance. Market practices will be determined using data from either general industry, the marine transportation industry or the diesel engine services industry, depending upon the individual position being considered.

Aggregate Payment Amount

At the end of the year, a preliminary incentive payment amount will first be calculated for each participant in the Plan to determine the Aggregate Payment Amount for all participants for the year. The preliminary incentive payment amount for each participant will be calculated as of December 31, 2023 based on the target incentive level for such participant and the calculation formulas described in these Guidelines. The Aggregate Payment Amount under the Plan shall equal the sum of all such preliminary incentive payment amounts.

The Company will be obligated to pay out the full Aggregate Payment Amount to eligible participants, subject to the discretion of the Compensation Committee, and the Chief Executive Officer to the extent authorized under these Guidelines, with respect to the allocation of the Aggregate Payment Amount among individual participants. Therefore, the Company's obligation to pay out the Aggregate Payment Amount becomes fixed on the last day of the Performance Period.

The Compensation Committee, and the Chief Executive Officer if applicable, may determine the amount of the bonus paid to any participant based on the performance measures described in the Plan or any other criteria deemed appropriate in its discretion, provided that in no event will the aggregate incentive payments made pursuant to the Plan exceed the Aggregate Payment Amount.

Performance Measures
The performance measures for the Plan are:

- EBITDA (Earnings before interest, taxes, depreciation and amortization)
- EPS (Earnings per share)
- OP/ESG (metrics set on annual basis)

Annual performance targets will be established for each measure based on Kirby's budget for the year and each of the performance measures will have the following weight in calculating the preliminary incentive payment amount for each participant:

Performance Measures for Incentive Payment Calculations				
Division	**Business Group**	**Measure 1**	**Measure 2**	**Measure 3**
Corporate	Kirby Corporate Services (KCS)	EBITDA 40%	EPS 40%	OP/ESG 20%
Marine	Kirby Inland Marine (KIM)[1]	EBITDA 80%		OP/ESG 20%
Marine	Kirby Offshore Marine (KOM)	EBITDA 80%		OP/ESG 20%
Marine	Marine Shared (Marine)	EBITDA 80%		OP/ESG 20%
D&S	Kirby Engine Systems (KES)	EBITDA 80%		OP/ESG 20%
D&S	ThermoKing (TK/CON)[2]	EBITDA 80%		OP/ESG 20%
D&S	Detroit Diesel Allison (DDAs)	EBITDA 80%		OP/ESG 20%
D&S	United Engines (S&S MFG)	EBITDA 80%		OP/ESG 20%
D&S	S&S Rental (S&S MFG)	EBITDA 80%		OP/ESG 20%
D&S	S&S Distribution/Training (S&S MFG)	EBITDA 80%		OP/ESG 20%
D&S	S&S Manufacturing (S&S MFG)	EBITDA 80%		OP/ESG 20%
D&S	KDS Consolidated (KDS)	EBITDA 80%		OP/ESG 20%

(1) KIM includes Kirby Ocean Transport Company and Osprey Line, LLC. and San Jac. Marine, LP
(2) Thermo King includes Convoy
(3) EBITDA (Earnings before interest, taxes, depreciation and amortization)
(4) Earnings per share

Business Group Weighting
Calculation of the preliminary incentive payment amount for Business Group employees will be based primarily on Business Group performance with a defined portion based on Company performance. Calculation of the preliminary incentive payment amount for employees of KCS will be based on Company performance. Specific weightings are set forth in the following table:

Business Group	Corp	KIM	KOM	KDS	KES
KCS	100%				
KIM	30%	70%			
KOM	30%		70%		
Marine President (Marine)	50%	35%	15%		
Marine Shared (Marine)	30%	50%	20%		
KES	30%				70%
KES President	50%				50%
United/S&S	30%			70%	
DDAs	30%			70%	
TK/CON	30%			70%	
KDS President (KDS)	50%			50%	
KDS Shared (KDS)	30%			70%	

Performance Standards for Incentive Payment Calculations

Corporate and Kirby Inland Marine			
Performance Level	**Definition**	**Relationship to Budget**	**% of Target Used for Calculation**
Below Threshold	Performance did not meet minimum level	less than 80% of budget	0%
Threshold	Minimum acceptable performance for payout	80% of budget	50%
Target	Expected performance at stretch level	100% of budget	100%
Maximum	Outstanding performance	120% of budget	200%

Kirby Offshore Marine			
Performance Level	**Definition**	**Relationship to Budget**	**% of Target Used for Calculation**
Below Threshold	Performance did not meet minimum level	less than 60% of budget	0%
Threshold	Minimum acceptable performance for payout	60% of budget	50%
Target	Expected performance at stretch level	100% of budget	100%
Maximum	Outstanding performance	150% of budget	200%

S&S Distribution, Rental, United, Training Center, KDS MFG			
Performance Level	**Definition**	**Relationship to Budget**	**% of Target Used for Calculation**
Below Threshold	Performance did not meet minimum level	less than 60% of budget	0%
Threshold	Minimum acceptable performance for payout	60% of budget	50%
Target	Expected performance at stretch level	100% of budget	100%
Maximum	Outstanding performance	140% of budget	200%

ThermoKing, Detroit Diesel Allison			
Performance Level	**Definition**	**Relationship to Budget**	**% of Target Used for Calculation**
Below Threshold	Performance did not meet minimum level	less than 60% of budget	0%
Threshold	Minimum acceptable performance for payout	60% of budget	50%
Target	Expected performance at stretch level	100% of budget	100%
Maximum	Outstanding performance	150% of budget	200%

KDS President & Shared Employees			
Performance Level	**Definition**	**Relationship to Budget**	**% of Target Used for Calculation**
Below Threshold	Performance did not meet minimum level	less than 70% of budget	0%
Threshold	Minimum acceptable performance for payout	70% of budget	50%
Target	Expected performance at stretch level	100% of budget	100%
Maximum	Outstanding performance	130% of budget	200%

KES – Kirby Engine Systems			
Performance Level	**Definition**	**Relationship to Budget**	**% of Target Used for Calculation**
Below Threshold	Performance did not meet minimum level	less than 75% of budget	0%
Threshold	Minimum acceptable performance for payout	75% of budget	50%
Target	Expected performance at stretch level	100% of budget	100%
Maximum	Outstanding performance	135% of budget	200%

- Between the threshold and maximum percentages of budget achieved for each performance measure, there is a linear relationship between the percentage of budget achieved and the resulting percentage of the target payout percentage used in calculating payout amounts. As examples, 90% of budget for KIM would result in 75% of target used in the calculation of a preliminary payment amount and 105% of budget would result in 125% of target used for the calculation of a preliminary payment amount.
- The target amount determined for each performance measure is then multiplied by the weight for the performance measure and the results are added together to produce a total Company or Business Group payout percentage of the target incentive that is applied to each individual participant to calculate the Aggregate Payout Amount under the Plan.
- The Compensation Committee and the Chief Executive Officer shall in their discretion allocate the Aggregate Payment Amount among eligible participants; provided that only the Compensation Committee shall have the authority to allocate payment amounts to eligible participants (i) who are "officers" for purposes of Section 16 of the Securities Exchange Act of 1934, (ii) whose bonus target is 50% or more of base salary or (iii) whose base salary is $250,000 or more (collectively "Specified Participants"). In allocating the Aggregate Payment Amount, the Compensation Committee and the Chief Executive Officer may consider, but shall not be bound by, the preliminary incentive payment amount calculated for each participant.
- The Compensation Committee has discretion to modify the performance measures or adjust the calculation of the preliminary incentive payment amounts to adjust for acquisitions, divestures and other material business events.
- The aggregate amount of incentive payments made to participants in the Plan must equal the Aggregate Payment Amount.
- Notwithstanding the foregoing or any provision of the Plan to the contrary, no participant may receive an amount more than 200% of the individual bonus target established for such participant (the "Maximum Payment").

Administration

Incentive Payments
A participant's final incentive bonus payment is paid out in cash within 90 days following the end of the Company's fiscal year, based on audited financial statements of the Company.

Eligibility Limitation
Participants must be employed by the Company on the last day of the Performance Period and on the date bonuses are paid in order to receive a bonus, unless otherwise provided for in the Plan.

Special Circumstances
The Compensation Committee will have the sole authority to resolve disputes related to Plan administration. Decisions made by the Compensation Committee will be final and binding on all participants. The Compensation Committee has the sole discretion to determine the bonuses for newly hired, terminated, transferred and promoted employees, but will generally award bonuses based on the following provisions.

New Employees
For employees hired after the beginning of a Performance Period who are selected for participation in the Plan, the preliminary incentive payment will be prorated for the portion of the Performance Period during which they were employees of the Company, subject to the Termination of Employment restrictions.

Termination of Employment
If a participant's employment terminates prior to the last day of the Performance Period or prior to the date bonuses are paid for the Performance Period, for any reason other than death, retirement or disability, the participant will be ineligible to receive a bonus.

If a participant's employment terminates before the end of the full Performance Period or before the date bonuses are paid for the Performance Period as a result of death, retirement or disability, the preliminary incentive payment for the participant (or the participant's heirs) will be prorated at the end of the Performance Period based upon actual performance and base wages earned while employed during the Performance Period.

Transfer
The preliminary incentive payment for a participant who is transferred between Business Groups during the year will be a weighted bonus based upon the time spent at each of the Business Groups. In calculating a weighted bonus, relevant Company and Business Group performance measures will be calculated for the full Performance Period and then a blended bonus will be calculated based on the time spent at each Business Group.

Promotions
The preliminary incentive payment for a participant who is promoted or reassigned during any Performance Period and whose bonus target is subsequently increased or decreased will be a weighted bonus, based on the service before and after the promotion or reassignment.

Compensation Committee
The Plan shall be administered by the Compensation Committee. The Compensation Committee shall have the authority to interpret the provisions of the Plan and these Guidelines, to adopt such rules for carrying out the Plan as it may deem advisable, to decide conclusively all questions arising with respect to the Plan and to make all other determinations and take all other actions necessary or desirable for the administration of the Plan. All decisions and acts of the Compensation Committee shall be final and binding upon all affected parties.

In administering the Plan the Compensation Committee will:

- Approve the designation of Business Groups within the Company
- Approve the Company Performance Goal
- Approve other performance measures used and the Threshold, Target and Maximum budget performance levels for purposes of calculating preliminary incentive payment amounts and the Aggregate Payment Amount
- Approve linkage for participants to Company and Business Group performance
- Approve the individual bonus targets for all Specified Participants
- Approve the Aggregate Payment Amount to be paid to participants in the Plan
- Determine in its discretion the final incentive payments for participants.

The total amount of the incentive payments made to participants pursuant to the Plan must equal, and may not exceed, the Aggregate Payment Amount.

Chief Executive Officer (CEO)
The CEO has primary responsibility for recommending Plan Guidelines to the Committee and for delegating administrative duties associated with the Plan. The Compensation Committee may delegate additional administrative duties to the CEO or any Company officer. The CEO may make recommendations, subject to Compensation Committee approval, with respect to the incentive payment to any participant.

Chief Financial Officer (CFO)
The CFO is responsible for calculating performance under the Plan. The CFO will:

- Provide annual reports to the Compensation Committee and the CEO on each Business Group's performance at the end of the fiscal year
- Maintain a financial information system that reports results on an estimated quarterly and annual basis
- Coordinate with the Company's auditors to properly recognize any accounting expense associated with incentive payments under the Plan
- Provide the VP – of HR with the performance results of each Business Group as well as overall Company performance

Chief Human Resources Officer (CHRO)
The CHRO has responsibility for administration of the Plan and will:

- Develop and recommend eligible participants and target bonus guidelines
- Coordinate communications with participants, including materials to facilitate understanding the Plan's objectives and goals

- Calculate participants' preliminary incentive payment amounts, using the performance factors provided by the CFO
- Process paperwork approving individual incentive payments

Business Group Presidents and Vice Presidents will:

- Recommend participants in the Plan
- Coordinate with the CFO to determine any significant changes in business conditions for purposes of reviewing the Threshold, Target and Maximum performance objectives
- Assure that participants are informed of the actual incentive payment to be made for the Performance Period

EXHIBIT 21.1

KIRBY CORPORATION
CONSOLIDATED SUBSIDIARIES OF THE REGISTRANT
AT DECEMBER 31, 2022

	Domicile of Incorporation
KIRBY CORPORATION – PARENT AND REGISTRANT	Nevada
SUBSIDIARIES OF THE PARENT AND REGISTRANT	
Kirby Corporate Services, LLC	Delaware
KIM Holdings, Inc.	Delaware
Kirby Terminals, Inc.	Texas
Sabine Transportation Company	Delaware
AFRAM Carriers, Inc.	Delaware
Kirby Distribution & Services, Inc.	Delaware
Kirby Tankships, Inc.	Delaware
Kirby Ocean Transport Company	Delaware
Kirby Offshore Marine, LLC	Delaware
Adaptive KRM, LLC	Texas
K Equipment, LLC	Texas
The Hollywood Camp, LLC	Texas
CONTROLLED SUBSIDIARIES	
KIM Partners, LLC (Subsidiary of KIM Holdings, Inc.)	Louisiana
Kirby Inland Marine, LP (KIM Holdings, Inc. 1% General Partner, KIM Partners, LLC 99% Limited Partner)	Delaware
Greens Bayou Fleeting, LLC (subsidiary of Kirby Inland Marine, LP)	Texas
Dixie Carriers, Inc. (subsidiary of Kirby Inland Marine, LP)	Texas
Osprey Line, L.L.C. (Kirby Inland Marine, LP 66 2/3%)	Texas
San Jac Marine, LLC (subsidiary of Kirby Inland Marine, LP)	Delaware
Diesel Dash LLC (subsidiary of Kirby Distribution & Services, Inc.)	Delaware
Kirby Engine Systems LLC (subsidiary of Kirby Distribution & Services, Inc.)	Delaware
Marine Systems, Inc. (subsidiary of Kirby Engine Systems LLC)	Louisiana
Engine Systems, Inc. (subsidiary of Kirby Engine Systems LLC)	Delaware
United Holdings LLC (subsidiary of Kirby Distribution & Services, Inc.)	Delaware
United Engines LLC (subsidiary of United Holdings LLC)	Colorado
UE Manufacturing LLC (subsidiary of United Holdings LLC)	Colorado
Thermo King of Houston, LLC (subsidiary of United Holdings LLC)	Texas
Thermo King of Dallas, LLC (subsidiary of United Holdings LLC)	Texas
San Antonio Thermo King, Inc. (subsidiary of Thermo King of Houston, LLC)	Texas
Kirby Offshore Marine Operating, LLC (subsidiary of Kirby Offshore Marine, LLC)	Delaware
Kirby Offshore Wind, LLC (subsidiary of Kirby Offshore Marine, LLC)	Delaware
Kirby Offshore Marine Hawaii, LLC (subsidiary of Kirby Offshore Marine Operating, LLC)	Delaware
Kirby Offshore Marine Pacific, LLC (subsidiary of Kirby Offshore Marine Operating, LLC)	Delaware
Kirby Offshore Marine, Inc. (subsidiary of Kirby Offshore Marine Operating, LLC)	Delaware
Inversiones Kara Sea SRL (subsidiary of Kirby Offshore Marine Operating, LLC)	Venezuela
K-Sea Canada Holdings, Inc. (subsidiary of Kirby Offshore Marine, Inc.)	Delaware
Penn Maritime Inc. (subsidiary of Kirby Offshore Marine, LLC)	Delaware
Capella Marine Leasing, LLC (Kirby Offshore Marine Pacific, LLC 50%)	Oregon
Stewart & Stevenson LLC (subsidiary of Kirby Distribution & Services, Inc.)	Delaware
Stewart & Stevenson Power Products LLC (subsidiary of Stewart & Stevenson LLC)	Delaware
Stewart & Stevenson Canada Inc. (subsidiary of Stewart & Stevenson LLC)	Canada
Stewart & Stevenson de las Americas Colombia Ltda. (Stewart & Stevenson Petroleum Services LLC 1% General Partner, Stewart & Stevenson LLC 99% Limited Partner)	Colombia
Stewart & Stevenson de Venezuela, S.A. (subsidiary of Stewart & Stevenson LLC 99.95%)	Venezuela
Hunt Power Systems LLC (subsidiary of Stewart & Stevenson LLC)	Delaware
Stewart & Stevenson Petroleum Services LLC (subsidiary of Stewart & Stevenson LLC)	Delaware
Stewart & Stevenson Manufacturing Technologies LLC (subsidiary of Stewart & Stevenson LLC)	Delaware
Stewart & Stevenson Acquisition LLC (subsidiary of Stewart & Stevenson LLC)	Delaware
Stewart & Stevenson FDDA LLC (subsidiary of Stewart & Stevenson LLC)	Delaware
Transmissions Y Embragues, S.A. (subsidiary of Stewart & Stevenson de Venezuela, S.A.)	Venezuela

Stewart & Stevenson Hong Kong Limited (subsidiary of Stewart & Stevenson Petroleum Services LLC)	Hong Kong
Stewart and Stevenson Healthcare Technologies, LLC (subsidiary of Stewart & Stevenson LLC)	Texas
Higman Marine, Inc. (subsidiary of Kirby Inland Marine, LP)	Delaware
Higman Barge Lines, Inc. (subsidiary of Higman Marine, Inc.)	Delaware
Higman Marine Services, Inc. (subsidiary of Higman Marine, Inc.)	Delaware
Higman Service Corporation (subsidiary of Higman Marine, Inc.)	Delaware
Alamo Barge Lines, LLC (subsidiary of Kirby Inland Marine, LP)	Delaware
Empty Barge Lines, Inc. (subsidiary of Kirby Inland Marine, LP)	Texas
Empty Barge Lines II, Inc. (subsidiary of Kirby Inland Marine, LP)	Texas
Empty Barge Lines III, Inc. (subsidiary of Kirby Inland Marine, LP)	Texas
EBL Marine I LLC (subsidiary of Kirby Inland Marine, LP)	Texas
EBL Marine II LLC (subsidiary of Kirby Inland Marine, LP)	Texas
EBL Marine III LLC (subsidiary of Kirby Inland Marine, LP)	Texas

EXHIBIT 23.1

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the registration statements (Nos. 333-57625, 333-72592, 333-129290, 333-129333, 333-152565, 333-152566, 333-184598, 333-184599 and 333-265397) on Form S-8 and (Nos.333-220974 and 333-222858) on Form S-3 of our reports dated February 21, 2023, with respect to the consolidated financial statements of Kirby Corporation and the effectiveness of internal control over financial reporting.

/s/ KPMG LLP

Houston, Texas
February 21, 2023

EXHIBIT 31.1

CERTIFICATION OF CHIEF EXECUTIVE OFFICER

In connection with the filing of the report on Form 10-K for the year ended December 31, 2022 by Kirby Corporation, David W. Grzebinski certifies that:

1. I have reviewed this report on Form 10-K of Kirby Corporation (the "registrant");

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

/s/ DAVID W. GRZEBINSKI

David W. Grzebinski
President and Chief Executive Officer

Dated: February 21, 2023

EXHIBIT 31.2

CERTIFICATION OF CHIEF FINANCIAL OFFICER

In connection with the filing of the report on Form 10-K for the year ended December 31, 2022 by Kirby Corporation, Raj Kumar certifies that:

1. I have reviewed this report on Form 10-K of Kirby Corporation (the "registrant");

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

/s/ RAJ KUMAR

Raj Kumar
Executive Vice President and
Chief Financial Officer

Dated: February 21, 2023

EXHIBIT 32

Certification Pursuant to Section 18 U.S.C. Section 1350
(As adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002)

In connection with the filing of the Annual Report on Form 10-K for the year ended December 31, 2022 (the "Report") by Kirby Corporation (the "Company"), each of the undersigned hereby certifies that:

1. The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and

2. The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ DAVID W. GRZEBINSKI
David W. Grzebinski
President and Chief Executive Officer

/s/ RAJ KUMAR
Raj Kumar
Executive Vice President and
Chief Financial Officer

Dated: February 21, 2023