NL INDUSTRIES INC
Form 10-K
March 11, 2019

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

Annual Report Pursuant to Section 13 OR 15(d) of the Securities Exchange Act of 1934:

For the fiscal year ended December 31, 2018

Commission file number 1-640

NL INDUSTRIES, INC.

(Exact name of Registrant as specified in its charter)

New Jersey	13-5267260
(State or other jurisdiction of incorporation or organization)	(IRS Employer Identification No.)

5430 LBJ Freeway, Suite 1700

Dallas, Texas 75240-2620

(Address of principal executive offices)

Registrant's telephone number, including area code: (972) 233-1700

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

Title of each class	Name of each exchange on which registered
Common stock	New York Stock Exchange

No securities are registered pursuant to Section 12(g) of the Act.

Indicate by check mark:

If the Registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes No

If the Registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes No

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 and (2) has been subject to such filing requirements for the past 90 days. Yes No

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 such files). Yes No

If disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of Registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. Yes No

Indicate by checkmark whether the Registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer or a smaller reporting company or emerging growth company (as defined in Rule 12b-2 of the Act). See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

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.

Whether the Registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes No

The aggregate market value of the 8.3 million shares of voting stock held by nonaffiliates of NL Industries, Inc. as of June 30, 2018 (the last business day of the Registrant's most recently-completed second fiscal quarter) approximated $72.5 million.

As of March 1, 2019, 48,727,484 shares of the Registrant's common stock were outstanding.

Documents incorporated by reference

The information required by Part III is incorporated by reference from the Registrant's definitive proxy statement to be filed with the Commission pursuant to Regulation 14A not later than 120 days after the end of the fiscal year covered by this report.

PART I

ITEM 1. BUSINESS

The Company

NL Industries, Inc. was organized as a New Jersey corporation in 1891. Our common stock trades on the New York Stock Exchange, or the NYSE, under the symbol NL. References to "NL Industries," "NL," the "Company," the "Registrant," "we," "our," "us" and similar terms mean NL Industries, Inc. and its subsidiaries and affiliate, unless the context otherwise requires.

Our principal executive offices are located at Three Lincoln Center, 5430 LBJ Freeway, Suite 1700, Dallas, TX 75240. Our telephone number is (972) 233-1700. We maintain a website at www.nl-ind.com.

Business summary

We are primarily a holding company. We operate in the component products industry through our majority-owned subsidiary, CompX International Inc. (NYSE American: CIX). We operate in the chemicals industry through our noncontrolling interest in Kronos Worldwide, Inc. CompX and Kronos (NYSE: KRO); each file periodic reports with the Securities and Exchange Commission (SEC).

Organization

At December 31, 2018, Valhi, Inc. (NYSE: VHI) held approximately 83% of our outstanding common stock and a wholly-owned subsidiary of Contran Corporation held an aggregate of 92% of Valhi's outstanding common stock. As discussed in Note 1 to our Consolidated Financial Statements, Lisa K. Simmons and Serena Simmons Connelly may be deemed to control Contran, Valhi, and us.

Forward-looking statements

This Annual Report on Form 10-K contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995, as amended. Statements in this Annual Report that are not historical facts are forward-looking in nature and represent management's beliefs and assumptions based on currently available information. In some cases, you can identify forward-looking statements by the use of words such as "believes," "intends," "may," "should," "could," "anticipates," "expects" or comparable terminology, or by discussions of strategies or trends. Although we believe that the expectations reflected in such forward-looking statements are reasonable, we do not know if these expectations will be correct. Such statements by their nature involve substantial risks and uncertainties that could significantly impact expected results. Actual future results could differ materially from those predicted. The factors that could cause actual future results to differ materially from those described herein are the risks and uncertainties discussed in this Annual Report and those described from time to time in our other filings with the SEC and include, but are not limited to, the following:

- Future supply and demand for our products
- The extent of the dependence of certain of our businesses on certain market sectors
- The cyclicality of our businesses (such as Kronos' TiO_2 operations)
- Customer and producer inventory levels
- Unexpected or earlier-than-expected industry capacity expansion (such as the TiO_2 industry)
-

Changes in raw material and other operating costs (such as energy, ore, zinc and brass costs) and our ability to pass those costs on to our customers or offset them with reductions in other operating costs

- Changes in the availability of raw material (such as ore)
- General global economic and political conditions (such as changes in the level of gross domestic product in various regions of the world and the impact of such changes on demand for, among other things, TiO_2 and component products)
- Competitive products and substitute products
- Price and product competition from low-cost manufacturing sources (such as China)

- Customer and competitor strategies
- Potential consolidation of Kronos' competitors
- Potential consolidation of Kronos' customers
- The impact of pricing and production decisions
- Competitive technology positions
- Our ability to protect or defend intellectual property rights
- Potential difficulties in integrating future acquisitions
- Potential difficulties in upgrading or implementing new accounting and manufacturing software systems (such as Kronos' enterprise resource planning system)
- The introduction of trade barriers
- Possible disruption of Kronos' or CompX's business, or increases in our cost of doing business resulting from terrorist activities or global conflicts
- The impact of current or future government regulations (including employee healthcare benefit related regulations)
- Fluctuations in currency exchange rates (such as changes in the exchange rate between the U.S. dollar and each of the euro, the Norwegian krone and the Canadian dollar), or possible disruptions to our business resulting from potential instability resulting from uncertainties associated with the euro or other currencies
- Operating interruptions (including, but not limited to, labor disputes, leaks, natural disasters, fires, explosions, unscheduled or unplanned downtime, transportation interruptions and cyber attacks)
- Decisions to sell operating assets other than in the ordinary course of business
- Kronos' ability to renew or refinance credit facilities
- Our ability to maintain sufficient liquidity
- The timing and amounts of insurance recoveries
    - The extent to which our subsidiaries or affiliates were to become unable to pay us dividends
- Uncertainties associated with CompX's development of new product features
- The ultimate outcome of income tax audits, tax settlement initiatives or other tax matters, including future tax reform
- Our ability to utilize income tax attributes or changes in income tax rates related to such attributes, the benefits of which may or may not have been recognized under the more-likely-than-not recognition criteria
- Environmental matters (such as those requiring compliance with emission and discharge standards for existing and new facilities or new developments regarding environmental remediation at sites related to our former operations)
    - Government laws and regulations and possible changes therein (such as changes in government regulations which might impose various obligations on former manufacturers of lead pigment and lead-based paint, including us, with respect to asserted health concerns associated with the use of such products), including new environmental health and safety regulations
- The ultimate resolution of pending litigation (such as our lead pigment and environmental matters)
- Possible future litigation.

Should one or more of these risks materialize or if the consequences of such a development worsen, or should the underlying assumptions prove incorrect, actual results could differ materially from those currently forecasted or expected. We disclaim any intention or obligation to update or revise any forward-looking statement whether as a result of changes in information, future events or otherwise.

Operations and equity investment

Information regarding our operations and the companies conducting such operations is set forth below. Geographic financial information is included in Note 2 to our Consolidated Financial Statements, which is incorporated herein by reference.

Component Products CompX International Inc. - 87% owned at December 31, 2018	CompX manufactures engineered components that are sold to a variety of industries including recreational transportation (including boats), postal, office and institutional furniture, cabinetry, tool storage, healthcare, gas stations and vending equipment. CompX has three production facilities in the United States.
Chemicals Kronos Worldwide, Inc. - 30% owned at December 31, 2018	Kronos is a leading global producer and marketer of value-added titanium dioxide pigments, or TiO_2, a base industrial product used in imparting whiteness, brightness, opacity and durability to a diverse range of customer applications and end-use markets, including coatings, plastics, paper, inks, food, cosmetics and other industrial and consumer "quality-of-life" products. Kronos has production facilities in Europe and North America. Sales of TiO_2 represented about 94% of Kronos' net sales in 2018, with sales of other products that are complementary to Kronos' TiO_2 business comprising the remainder.

COMPONENT PRODUCTS - COMPX INTERNATIONAL INC.

Industry overview - Through our majority-owned subsidiary, CompX, we manufacture engineered components utilized in a variety of applications and industries. We manufacture mechanical and electrical cabinet locks and other locking mechanisms used in recreational transportation, postal, office and institutional furniture, cabinetry, tool storage and healthcare applications. We also manufacture stainless steel exhaust systems, gauges, throttle controls, wake enhancement systems and trim tabs for the recreational marine and other industries. We continuously seek to diversify into new markets and identify new applications and features for our products, which we believe provide a greater potential for higher rates of earnings growth as well as diversification of risk.

Manufacturing, operations and products - CompX's Security Products business, manufactures mechanical and electrical cabinet locks and other locking mechanisms used in a variety of applications including ignition systems, mailboxes, file cabinets, desk drawers, tool storage cabinets, vending and cash containment machines, high security medical cabinetry, electronic circuit panels, storage compartments and gas station security. CompX's Security Products segment has one manufacturing facility in Mauldin, South Carolina and one in Grayslake, Illinois which is shared with Marine Components. We believe we are a North American market leader in the manufacture and sale of cabinet locks and other locking mechanisms. These products include:

- disc tumbler locks which provide moderate security and generally represent the lowest cost lock to produce;
- pin tumbler locking mechanisms which are more costly to produce and are used in applications requiring higher levels of security, including KeSet® and System 64® (which each allow the user to change the keying on a single lock 64 times without removing the lock from its enclosure), TuBar® and Turbine™; and
- our innovative CompX eLock® and StealthLock® electronic locks which provide stand-alone or networked security and audit trail capability for drug storage and other valuables through the use of a proximity card, magnetic stripe, radio frequency or other keypad credential.

A substantial portion of CompX's Security Products' sales consist of products with specialized adaptations to an individual customer's specifications, some of which are listed above. We also have a standardized product line

suitable for many customers, which is offered through a North American distribution network to locksmith and smaller original equipment manufacturer distributors via our STOCK LOCKS® distribution program.

CompX's Marine Components business manufactures and distributes stainless steel exhaust components, gauges, throttle controls, wake enhancement systems, trim tabs and related hardware and accessories primarily for performance and ski/wakeboard boats. CompX's Marine Components segment has a facility in Neenah, Wisconsin and a facility in Grayslake, Illinois which is shared with Security Products. CompX's specialty Marine Component products are high precision components designed to operate within tight tolerances in the highly demanding marine environment. These products include:

- original equipment and aftermarket stainless steel exhaust headers, exhaust pipes, mufflers and other exhaust components;
- high performance gauges such as GPS speedometers and tachometers;
- mechanical and electronic controls and throttles;
- wake enhancement devices, trim tabs, steering wheels, and billet aluminum accessories; and
- dash panels, LED indicators, wire harnesses and other accessories.

The following table sets forth the location, size and business operations for each of CompX's operating facilities at December 31, 2018:

Facility Name	Business Operations	Location	Size (square feet)
Owned Facilities:			
National [1]	SP	Mauldin, SC	198,000
Grayslake[1]	SP/MC	Grayslake, IL	133,000
Custom[1]	MC	Neenah, WI	95,000
Leased Facilities:			
Distribution Center	SP/MC	Rancho Cucamonga, CA	11,500

SP – Security Products business

MC – Marine Components business

[1] ISO-9001 registered facilities

We believe all of CompX's facilities are well maintained and satisfactory for their intended purposes.

Raw materials - The primary raw materials used in CompX's manufacturing processes are:

- Security Products - zinc and brass (for the manufacture of locking mechanisms).
- Marine Components - stainless steel (for the manufacture of exhaust headers and pipes and wake enhancement systems), aluminum (for the manufacture of throttles and trim tabs) and other components.

These raw materials are purchased from several suppliers, are readily available from numerous sources and accounted for approximately 12% of our total cost of sales for 2018. Total material costs, including purchased components, represented approximately 45% of our cost of sales in 2018.

CompX occasionally enters into short-term commodity-related raw material supply arrangements to mitigate the impact of future price increases in commodity-related raw materials, including zinc, brass and stainless steel. These arrangements generally provide for stated unit prices based upon specified purchase volumes, which help us to stabilize our commodity-related raw material costs to a certain extent. During 2017 and 2018, markets for the primary

commodity-related raw materials used in the manufacture of our locking mechanisms, primarily zinc and brass, generally strengthened, but were moderating at the end of 2018. Over that same period, the market for stainless steel, the primary raw material used for the manufacture of marine exhaust headers and pipes and wake enhancement systems, remained relatively stable. While we expect the markets for our primary commodity-related raw materials to remain stable during 2019, we recognize that economic conditions could introduce renewed

volatility on these and other manufacturing materials. When purchased on the spot market, each of these raw materials may be subject to sudden and unanticipated price increases. When possible, we seek to mitigate the impact of fluctuations in these raw material costs on our margins through improvements in production efficiencies or other operating cost reductions. In the event we are unable to offset raw material cost increases with other cost reductions, it may be difficult to recover those cost increases through increased product selling prices or raw material surcharges due to the competitive nature of the markets served by our products. Consequently, overall operating margins can be affected by commodity-related raw material cost pressures. Commodity market prices are cyclical, reflecting overall economic trends, specific developments in consuming industries and speculative investor activities.

Patents and trademarks - CompX holds a number of patents relating to component products, certain of which we believe to be important to CompX and its continuing business activity. Patents generally have a term of 20 years, and our patents have remaining terms ranging from 1 year to 16 years at December 31, 2018.

Our major trademarks and brand names in addition to CompX® include:

Security Products	Security Products	Marine Components
CompX® Security Products™	Lockview®	CompX Marine®
National Cabinet Lock®	System 64®	Custom Marine®
Fort Lock®	SlamCAM®	Livorsi® Marine
Timberline® Lock	RegulatoR®	Livorsi II® Marine
Chicago Lock®	CompXpress®	CMI Industrial®
STOCK LOCKS®	GEM®	Custom Marine® Stainless Exhaust
KeSet®		The #1 Choice in Performance Boating®
TuBar®		Mega Rim®
StealthLock®		Race Rim®
ACE®		Vantage View®
ACE® II		GEN-X®
CompX eLock®		

Sales, marketing and distribution - A majority of CompX's component sales are direct to large OEM customers through our factory-based sales and marketing professionals supported by engineers working in concert with field salespeople and independent manufacturer's representatives. We select manufacturer's representatives based on special skills in certain markets or relationships with current or potential customers.

In addition to sales to large OEM customers, a substantial portion of CompX's Security Products sales are made through distributors. We have a significant North American market share of cabinet lock security product sales as a result of the locksmith distribution channel. We support our locksmith distributor sales with a line of standardized products used by the largest segments of the marketplace. These products are packaged and merchandised for easy availability and handling by distributors and end users.

We sell to a diverse customer base with only one customer representing 10% or more of our sales in 2018 (United States Postal Service representing 13%). CompX's largest ten customers accounted for approximately 44% of our sales in 2018.

Competition - The markets in which CompX participates are highly competitive. We compete primarily on the basis of product design, including space utilization and aesthetic factors, product quality and durability, price, on-time delivery, service and technical support. We focus our efforts on the middle and high-end segments of the market, where product design, quality, durability and service are valued by the customer. CompX's Security Products segment competes against a number of domestic and foreign manufacturers. CompX's Marine Components segment competes with small domestic manufacturers and is minimally affected by foreign competitors.

Regulatory and environmental matters - CompX's operations are subject to federal, state and local laws and regulations relating to the use, storage, handling, generation, transportation, treatment, emission, discharge,

disposal, remediation of and exposure to hazardous and non-hazardous substances, materials and wastes ("Environmental Laws"). CompX's operations also are subject to federal, state and local laws and regulations relating to worker health and safety. We believe we are in substantial compliance with all such laws and regulations. To date, the costs of maintaining compliance with such laws and regulations have not significantly impacted our results. We currently do not anticipate any significant costs or expenses relating to such matters; however, it is possible future laws and regulations may require us to incur significant additional expenditures.

Employees - As of December 31, 2018, CompX employed 547 people, all in the United States. We believe our labor relations are good at all of our facilities.

CHEMICALS - KRONOS WORLDWIDE, INC.

Business overview - Kronos is a leading global producer and marketer of value-added titanium dioxide pigments, or TiO_2, a base industrial product used in a wide range of applications. Kronos, along with its distributors and agents, sells and provides technical services for its products to approximately 4,000 customers in 100 countries with the majority of sales in Europe, North America and Asia Pacific. We believe that Kronos has developed considerable expertise and efficiency in the manufacture, sale, shipment and service of its products in domestic and international markets.

TiO_2 is a white inorganic pigment used in a wide range of products for its exceptional durability and its ability to impart whiteness, brightness and opacity. TiO_2 is a critical component of everyday applications, such as coatings, plastics and paper, as well as many specialty products such as inks, food and cosmetics. TiO_2 is widely considered to be superior to alternative white pigments in large part due to its hiding power (or opacity), which is the ability to cover or mask other materials effectively and efficiently. TiO_2 is designed, marketed and sold based on specific end-use applications.

TiO_2 is the largest commercially used whitening pigment because it has a high refractive rating, giving it more hiding power than any other commercially produced white pigment. In addition, TiO_2 has excellent resistance to interaction with other chemicals, good thermal stability and resistance to ultraviolet degradation. Although there are other white pigments on the market, we believe there are no effective substitutes for TiO_2 because no other white pigment has the physical properties for achieving comparable opacity and brightness or can be incorporated in as cost-effective a manner. Pigment extenders such as kaolin clays, calcium carbonate and polymeric opacifiers are used together with TiO_2 in a number of end-use markets. However, these products are not able to duplicate the opacity performance characteristics of TiO_2 and we believe these products are unlikely to have a significant impact on the use of TiO_2.

TiO_2 is considered a "quality-of-life" product. Demand for TiO_2 has generally been driven by worldwide gross domestic product and has generally increased with rising standards of living in various regions of the world. According to industry estimates, TiO_2 consumption has grown at a compound annual growth rate of approximately 3% since 1990. Per capita consumption of TiO_2 in Western Europe and North America far exceeds that in other areas of the world, and these regions are expected to continue to be the largest consumers of TiO_2 on a per capita basis for the foreseeable future. We believe that Western Europe and North America currently account for approximately 20% and 17% of global TiO_2 consumption, respectively. Markets for TiO_2 are generally increasing in South America, Eastern Europe, the Asia Pacific region and China and we believe these are significant markets where we expect continued growth as economies in these regions continue to develop and quality-of-life products, including TiO_2, experience greater demand.

Products and end-use markets – Kronos, including its predecessors, we have produced and marketed TiO_2 in North America and Europe, our primary markets, for over 100 years. We believe we are the largest producer of TiO_2 in Europe with 44% of our 2018 sales volumes attributable to markets in Europe. The table below shows our market

share for our significant markets, Europe and North America, for the last three years.

	2016	2017	2018
Europe	17%	17%	13%
North America	16%	18%	17%

Kronos believes it is the leading seller of TiO_2 in several countries, including Germany, with an estimated 8% share of worldwide TiO_2 sales volume in 2018. Overall, Kronos is one of the top six producers of TiO_2 in the world.

Kronos offers its customers a broad portfolio of products that include over 40 different TiO_2 pigment grades under the KRONOS® trademark, which provide a variety of performance properties to meet customers' specific requirements. Kronos' major customers include domestic and international paint, plastics, decorative laminate and paper manufacturers. Kronos ships TiO_2 to its customers in either a powder or slurry form via rail, truck and/or ocean carrier. Sales of our core TiO_2 pigments represented approximately 94% of our net sales in 2018. Kronos and its agents and distributors primarily sell our products in three major end-use markets: coatings, plastics and paper.

The following tables show Kronos' approximate TiO_2 sales volume by geographic region and end use for the year ended December 31, 2018:

Sales volume percentages		Sales volume percentages	
by geographic region		by end-use	
Europe	44%	Coatings	56%
North America	37%	Plastics	27%
Asia Pacific	10%	Paper	7 %
Rest of World	9 %	Other	10%

Some of the principal applications for Kronos' products include the following:

TiO_2 for coatings – Kronos' TiO_2 is used to provide opacity, durability, tinting strength and brightness in industrial coatings, as well as coatings for commercial and residential interiors and exteriors, automobiles, aircraft, machines, appliances, traffic paint and other special purpose coatings. The amount of TiO_2 used in coatings varies widely depending on the opacity, color and quality desired. In general, the higher the opacity requirement of the coating, the greater the TiO_2 content.

TiO_2 for plastics – Kronos produces TiO_2 pigments that improve the optical and physical properties of plastics, including whiteness and opacity. TiO_2 is used to provide opacity to items such as containers and packaging materials, and vinyl products such as windows, door profiles and siding. TiO_2 also generally provides hiding power, neutral undertone, brightness and surface durability for housewares, appliances, toys, computer cases and food packages. TiO_2's high brightness along with its opacity, is used in some engineering plastics to help mask their undesirable natural color. TiO_2 is also used in masterbatch, which is a concentrate of TiO_2 and other additives and is one of the largest uses for TiO_2 in the plastics end-use market. In masterbatch, the TiO_2 is dispersed at high concentrations into a plastic resin and is then used by manufacturers of plastic containers, bottles, packaging and agricultural films.

TiO_2 for paper – Kronos' TiO_2 is used in the production of several types of paper, including laminate (decorative) paper, filled paper and coated paper to provide whiteness, brightness, opacity and color stability. Although Kronos sells its TiO_2 to all segments of the paper end-use market, our primary focus is on the TiO_2 grades used in paper laminates, where several layers of paper are laminated together using melamine resin under high temperature and pressure. The top layer of paper contains TiO_2 and plastic resin and is the layer that is printed with decorative patterns. Paper laminates are used to replace materials such as wood and tile for such applications as counter tops, furniture and

wallboard. TiO_2 is beneficial in these applications because it assists in preventing the material from fading or changing color after prolonged exposure to sunlight and other weathering agents.

TiO_2 for other applications – Kronos produces TiO_2 to improve the opacity and hiding power of printing inks. TiO_2 allows inks to achieve very high print quality while not interfering with the technical requirements of printing machinery, including low abrasion, high printing speed and high temperatures. Kronos' TiO_2 is also used in textile applications where TiO_2 functions as an opacifying and delustering agent. In man-made fibers such as rayon and polyester, TiO_2 corrects an otherwise undesirable glossy and translucent appearance. Without the presence of TiO_2, these materials would be unsuitable for use in many textile applications.

Kronos produces high purity sulfate process anatase TiO_2 used to provide opacity, whiteness and brightness in a variety of cosmetic and personal care products, such as skin cream, lipstick, eye shadow and toothpaste. Kronos' TiO_2 is also found in food products, such as candy and confectionaries, and in pet foods where it is used to obtain uniformity of color and appearance. In pharmaceuticals, Kronos' TiO_2 is used commonly as a colorant in tablet and capsule coatings as well as in liquid medicines to provide uniformity of color and appearance. KRONOS® purified anatase grades meet the applicable requirements of the CTFA (Cosmetics, Toiletries and Fragrances Association), USP and BP (United States Pharmacopoeia and British Pharmacopoeia) and the FDA (United States Food and Drug Administration).

Kronos' TiO_2 business is enhanced by the following three complementary businesses, which comprised approximately 6% of its net sales in 2018:

- Kronos owns and operates two ilmenite mines in Norway pursuant to a governmental concession with an unlimited term. Ilmenite is a raw material used directly as a feedstock by some sulfate-process TiO_2 plants. Kronos supplies ilmenite to its sulfate plants in Europe. Kronos also sells ilmenite ore to third parties, some of whom are our competitors, and it sells an ilmenite-based specialty product to the oil and gas industry. The mines have estimated ilmenite reserves that are expected to last at least 50 years.
- Kronos manufactures and sell iron-based chemicals, which are co-products and processed co-products of sulfate and chloride process TiO_2 pigment production. These co-product chemicals are marketed through its Ecochem division and are primarily used as treatment and conditioning agents for industrial effluents and municipal wastewater as well as in the manufacture of iron pigments, cement and agricultural products.
- Kronos manufactures and sells titanium oxychloride and titanyl sulfate, which are side-stream specialty products from the production of TiO_2. Titanium oxychloride is used in specialty applications in the formulation of pearlescent pigments, production of electroceramic capacitors for cell phones and other electronic devices. Titanyl sulfate productions are used in pearlescent pigments, natural gas pipe and other specialty applications.

Manufacturing, operations and properties – Kronos produces TiO_2 in two crystalline forms: rutile and anatase. Rutile TiO_2 is manufactured using both a chloride production process and a sulfate production process, whereas anatase TiO_2 is only produced using a sulfate production process. Manufacturers of many end-use applications can use either form, especially during periods of tight supply for TiO_2. The chloride process is the preferred form for use in coatings and plastics, the two largest end-use markets. Due to environmental factors and customer considerations, the proportion of TiO_2 industry sales represented by chloride process pigments has increased relative to sulfate process pigments, and in 2018, chloride process production facilities represented approximately 50% of industry capacity. The sulfate process is preferred for use in selected paper products, ceramics, rubber tires, man-made fibers, food products, pharmaceuticals and cosmetics. Once an intermediate TiO_2 pigment has been produced by either the chloride or sulfate process, it is "finished" into products with specific performance characteristics for particular end-use applications through proprietary processes involving various chemical surface treatments and intensive micronizing (milling).

- Chloride process – The chloride process is a continuous process in which chlorine is used to extract rutile TiO_2. The chloride process produces less waste than the sulfate process because much of the chlorine is recycled and feedstock bearing higher titanium content is used. The chloride process also has lower energy requirements and is less labor-intensive than the sulfate process, although the chloride process requires a higher-skilled labor force. The chloride process produces an intermediate base pigment with a wide range of properties.
- Sulfate process – The sulfate process is a batch process in which sulfuric acid is used to extract the TiO_2 from ilmenite or titanium slag. After separation from the impurities in the ore (mainly iron), the TiO_2 is precipitated and calcined to form an intermediate base pigment ready for sale or can be upgraded through finishing treatments.

Kronos produced 536,000 metric tons of TiO_2 in 2018, down from the record 576,000 metric tons it produced in 2017. Kronos' production volumes include its share of the output produced by its TiO_2 manufacturing joint venture discussed below in "TiO_2 manufacturing joint venture." Kronos' average production capacity

utilization rates were approximately 98% of capacity in 2016, full practical capacity in 2017, and approximately 95% in 2018. Kronos' production rates in 2018 were impacted by maintenance activities at certain facilities and by the first quarter implementation of a productivity-enhancing improvement project at its Belgian facility.

Kronos operates facilities throughout North America and Europe, including the only sulfate process plant in North America and four TiO_2 plants in Europe (one in each of Leverkusen, Germany; Nordenham, Germany; Langerbrugge, Belgium; and Fredrikstad, Norway). In North America, Kronos has a TiO_2 plant in Varennes, Quebec, Canada and, through the manufacturing joint venture described below in "TiO_2 Manufacturing Joint Venture," a 50% interest in a TiO_2 plant in Lake Charles, Louisiana.

Kronos' production capacity has increased by approximately 6% over the past ten years due to debottlenecking programs, incurring moderate capital expenditures. Kronos expects to operate its TiO_2 plants at near full practical capacity levels in 2019.

The following table presents the division of our expected 2019 manufacturing capacity by plant location and type of manufacturing process:

		% of capacity by TiO_2 manufacturing process	
Facility	Description	Chloride	Sulfate
Leverkusen, Germany (1)	TiO_2 production, chloride and sulfate process, co-products	30 %	6 %
Nordenham, Germany	TiO_2 production, sulfate process, co-products	-	10
Langerbrugge, Belgium	TiO_2 production, chloride process, co-products, titanium chemicals products	16	-
Fredrikstad, Norway (2)	TiO_2 production, sulfate process, co-products	-	7
Varennes, Canada	TiO_2 production, chloride and sulfate process, slurry facility, titanium chemicals products	15	3
Lake Charles, LA, US (3)	TiO_2 production, chloride process	13	-
Total		74 %	26 %

(1) The Leverkusen facility is located within an extensive manufacturing complex owned by Bayer AG. We own the Leverkusen facility, which represents about one-third of Kronos' current TiO_2 production capacity, but Kronos leases the land under the facility from Bayer under a long-term agreement which expires in 2050. Lease payments are periodically negotiated with Bayer for periods of at least two years at a time. A majority-owned subsidiary of Bayer provides some raw materials including chlorine, auxiliary and operating materials, utilities and services necessary to operate the Leverkusen facility under separate supplies and services agreements.

(2) The Fredrikstad facility is located on public land and is leased until 2063.

(3) Kronos operates the Lake Charles facility in a joint venture with Venator Investments LLC (Venator Investments) (formerly Huntsman P&A Investments LLC), a wholly-owned subsidiary of Venator Group, of which Venator Materials PLC (Venator) owns 100% and the amount indicated in the table above represents the share of TiO_2 produced by the joint venture to which it is entitled. The joint venture owns the land and facility.

Kronos owns the land underlying all of our principal production facilities unless otherwise indicated in the table above.

Kronos also operates two ilmenite mines in Norway pursuant to a governmental concession with an unlimited term. In addition, Kronos operates a rutile slurry manufacturing plant in Lake Charles, Louisiana, which

converts dry pigment primarily manufactured for Kronos at the Lake Charles TiO_2 facility into a slurry form that is then shipped to customers.

Kronos has various corporate and administrative offices located in the U.S., Germany, Norway, Canada, Belgium, France and the United Kingdom and various sales offices located in North America.

TiO_2 manufacturing joint venture - Kronos Louisiana, Inc., one of Kronos' subsidiaries, and Venator Investments each own a 50% interest in a manufacturing joint venture, Louisiana Pigment Company, L.P., or LPC. LPC owns and operates a chloride-process TiO_2 plant located in Lake Charles, Louisiana. Kronos and Venator share production from the plant equally pursuant to separate offtake agreements, unless Kronos and Venator otherwise agree.

A supervisory committee directs the business and affairs of the joint venture, including production and output decisions. This committee is composed of four members, two of whom Kronos appoints and two of whom Venator appoints. Two general managers manage the operations of the joint venture acting under the direction of the supervisory committee. Kronos appoints one general manager and Venator appoints the other.

The joint venture is not consolidated in Kronos' financial statements, because Kronos does not control it. Kronos accounts for its interest in the joint venture by the equity method. The joint venture operates on a break-even basis and therefore Kronos does not have any equity in earnings of the joint venture. Kronos is required to purchase one half of the TiO_2 produced by the joint venture. All costs and capital expenditures are shared equally with Venator with the exception of feedstock (purchased natural rutile ore or slag) and packaging costs for the pigment grades produced. Kronos' share of net costs is reported as cost of sales as the TiO_2 is sold.

Raw materials - The primary raw materials used in chloride process TiO_2 are titanium-containing feedstock (purchased natural rutile ore or slag), chlorine and coke. Chlorine is available from a number of suppliers, while petroleum coke is available from a limited number of suppliers. Titanium-containing feedstock suitable for use in the chloride process is available from a limited but increasing number of suppliers principally in Australia, South Africa, Canada, India and the United States. Kronos purchases chloride process grade slag from Rio Tinto Iron and Titanium Limited under a long-term supply contract which automatically renewed at the end of 2018 and extends through December 31, 2020. The contract automatically renews bi-annually but can be terminated if written notice is given at least twelve months prior to the current contract end date. Kronos also purchases upgraded slag from Rio Tinto Iron and Titanium Limited under a long-term supply contract that expires at the end of 2019. Kronos purchases natural rutile ore primarily from Iluka Resources, Limited under a contract that expires in 2019. In the past Kronos has been, and it expects that we will continue to be, successful in obtaining short-term and long-term extensions to these and other existing supply contracts prior to their expiration. Kronos expects the raw materials purchased under these contracts, and contracts that it may enter into, will meet its chloride process feedstock requirements over the next several years.

The primary raw materials used in sulfate process TiO_2 are titanium-containing feedstock, primarily ilmenite or purchased sulfate grade slag and sulfuric acid. Sulfuric acid is available from a number of suppliers. Titanium-containing feedstock suitable for use in the sulfate process is available from a limited number of suppliers principally in Norway, Canada, Australia, India and South Africa. As one of the few vertically-integrated producers of sulfate process TiO_2, Kronos operates two rock ilmenite mines in Norway, which provided all of the feedstock for our European sulfate process TiO_2 plants in 2018. Kronos expects ilmenite production from its mines to meet its European sulfate process feedstock requirements for the foreseeable future. For Kronos' Canadian sulfate process plant, it purchases sulfate grade slag primarily from Rio Tinto Fer et Titane Inc. under a supply contract that renews annually, subject to termination upon twelve months written notice. Kronos expects the raw materials purchased under these contracts, and contracts that it may enter into, to meet its sulfate process feedstock requirements over the next several years.

Many of Kronos' raw material contracts contain fixed quantities it is required to purchase, or specify a range of quantities within which it are required to purchase. The pricing under these agreements is generally negotiated quarterly or semi-annually.

The following table summarizes Kronos' raw materials purchased or mined in 2018.

Production process/raw material	Raw materials procured or mined (In thousands of metric tons)
Chloride process plants -	
Purchased slag or rutile ore	430
Sulfate process plants:	
Ilmenite ore mined and used internally	328
Purchased slag	24

Sales and marketing – Kronos' marketing strategy is aimed at developing and maintaining strong relationships with new and existing customers. Because TiO_2 represents a significant raw material cost for its customers, the purchasing decisions are often made by its customers' senior management. Kronos works to maintain close relationships with the key decision makers through in-depth and frequent in-person meetings. Kronos endeavors to extend these commercial and technical relationships to multiple levels within its customers' organization using its direct sales force and technical service group to accomplish this objective. Kronos believes this has helped build customer loyalty to Kronos and strengthened our competitive position. Close cooperation and strong customer relationships enable us to stay closely attuned to trends in its customers' businesses. Where appropriate, Kronos works in conjunction with our customers to solve formulation or application problems by modifying specific product properties or developing new pigment grades. Kronos also focuses its sales and marketing efforts on those geographic and end-use market segments where it believes it can realize higher selling prices. This focus includes continuously reviewing and optimizing our customer and product portfolios.

Kronos' marketing strategy is also aimed at working directly with customers to monitor the success of its products in their end-use applications, evaluate the need for improvements in product and process technology and identify opportunities to develop new product solutions for its customers. Kronos' marketing staff closely coordinates with its sales force and technical specialists to ensure that the needs of its customers are met, and to help develop and commercialize new grades where appropriate.

Kronos sells a majority of its products through its direct sales force operating in Europe and North America. Kronos also utilize sales agents and distributors who are authorized to sell its products in specific geographic areas. In Europe, Kronos' sales efforts are conducted primarily through our direct sales force and its sales agents. Kronos' agents do not sell any TiO_2 products other than KRONOS® brand products. In North America, its sales are made primarily through its direct sales force and supported by a network of distributors. In export markets, where it has increased its marketing efforts over the last several years, Kronos' sales are made through its direct sales force, sales agents and distributors. In addition to its direct sales force and sales agents, many of its sales agents also act as distributors to service its customers in all regions. Kronos offers customer and technical service to customers who purchase its products through distributors as well as to its larger customers serviced by its direct sales force.

Kronos sells to a diverse customer base and no single customer comprised 10% or more of its sales in 2018. Kronos' largest ten customers accounted for approximately 33% of sales in 2018.

Neither Kronos business as a whole nor any of its principal product groups is seasonal to any significant extent. However, TiO_2 sales are generally higher in the second and third quarters of the year, due in part to the increase in coatings production in the spring to meet demand during the spring and summer painting seasons. With certain exceptions, Kronos has historically operated its per-unit production costs. As a result, Kronos normally will build inventories during the first and fourth quarters of each year in order to maximize its product availability during the higher demand periods normally experienced in the second and third quarters.

Competition

The TiO_2 industry is highly competitive. Kronos competes primarily on the basis of price, product quality, technical service and the availability of high performance pigment grades. Since TiO_2 is not a traded commodity, its pricing is largely a product of negotiation between suppliers and their respective customers. Price and availability are the most significant competitive factors along with quality and customer service for the majority of our product grades. Increasingly, Kronos is focused on providing pigments that are differentiated to meet specific customer requests and specialty grades that are differentiated from our competitors' products. During 2018, Kronos had an estimated 8% share of worldwide TiO_2 sales volume, and based on sales volumes Kronos believes it is the leading seller of TiO_2 in several countries, including Germany.

Kronos' principal competitors are The Chemours Company, Cristal Global, Venator Materials PLC, Tronox Incorporated and Lomon Billions. The top six TiO_2 producers (i.e. we and our five principal competitors) account for approximately 58% of the world's production capacity. In 2017, one of Venator's European sulfate plants, which has a capacity of 130,000 metric tons, operated at significantly reduced rates due to a fire at the facility. In 2018, Venator announced that the facility would be permanently closed and production of approximately 45,000 tons of specialty and differentiated operating capacity would be restored at other sites.

The following chart shows our estimate of worldwide production capacity in 2018:

Worldwide production capacity - 2018	
Chemours	16%
Cristal	11%
Venator	9 %
Lomon Billions	9 %
Kronos	7 %
Tronox	6 %
Other	42%

Chemours has over one-half of total North American TiO_2 production capacity and is our principal North American competitor. In February 2017, Tronox announced a definitive agreement to acquire the TiO_2 assets of Cristal Global, but this acquisition has been challenged by U.S. antitrust authorities and has not been completed, and it is uncertain whether it will be completed. In 2018, Lomon Billions announced construction plans for an additional 200,000 tons of chloride capacity, which is scheduled to come on line in 2019 and 2020.

Over the past ten years, we and our competitors increased industry capacity through debottlenecking projects, which in part compensated for the shut-down of various TiO_2 plants throughout the world. Although overall industry demand is expected to increase in 2019, Kronos does not expect any significant efforts, other than the Lomon Billions expansion mentioned above, will be undertaken by Kronos or its principal competitors to further increase capacity for the foreseeable future, other than through debottlenecking projects. If actual developments differ from Kronos' expectations, the TiO_2 industry's and Kronos' performance could be unfavorably affected.

The TiO_2 industry is characterized by high barriers to entry consisting of high capital costs, proprietary technology and significant lead times required to construct new facilities or to expand existing capacity. Kronos believes it is unlikely any new TiO_2 plants will be constructed in Europe or North America in the foreseeable future.

Research and development - Kronos employs scientists, chemists, process engineers and technicians who are engaged in research and development, process technology and quality assurance activities in Leverkusen, Germany. These individuals have the responsibility for improving our chloride and sulfate production processes, improving product quality and strengthening Kronos' competitive position by developing new products and applications. Kronos' expenditures for these activities were approximately $13 million in 2016, $18 million in 2017 and $16 million in 2018. Kronos expects to spend approximately $17 million on research and development in 2019.

Kronos continually seeks to improve the quality of its grades and have been successful at developing new grades for existing and new applications to meet the needs of our customers and increase product life cycles. Since the beginning of 2014, Kronos has added nine new grades for pigments and other applications.

Patents, trademarks, trade secrets and other intellectual property rights - Kronos has a comprehensive intellectual property protection strategy that includes obtaining, maintaining and enforcing our patents, primarily in the United States, Canada and Europe. Kronos also protects its trademark and trade secret rights and have entered into license agreements with third parties concerning various intellectual property matters. Kronos has also from time to time been involved in disputes over intellectual property.

Patents – Kronos has obtained patents and have numerous patent applications pending that cover its products and the technology used in the manufacture of our products. Kronos' patent strategy is important to it and its continuing business activities. In addition to maintaining its patent portfolio, Kronos seeks patent protection for its technical developments, principally in the United States, Canada and Europe. U.S. patents are generally in effect for 20 years from the date of filing. Kronos' U.S. patent portfolio includes patents having remaining terms ranging from five years to 18 years.

Trademarks and trade secrets – Kronos trademarks, including KRONOS®, are covered by issued and/or pending registrations, including in Canada and the United States. Kronos protects the trademarks that we use in connection with the products it manufactures and sells and has developed goodwill in connection with its long-term use of its trademarks. Kronos conducts research activities in secret and it protects the confidentiality of its trade secrets through reasonable measures, including confidentiality agreements and security procedures, including data security. Kronos relies upon unpatented proprietary knowledge and continuing technological innovation and other trade secrets to develop and maintain its competitive position. Kronos' proprietary chloride production process is an important part of its technology and its business could be harmed if it fails to maintain confidentiality of its trade secrets used in this technology.

Employees - As of December 31, 2018, Kronos employed the following number of people:

Europe	1,805
Canada	340
United States (1)	50
Total	2,195

(1) Excludes employees of Kronos' LPC joint venture.

Certain employees at each of Kronos' production facilities are organized by labor unions. In Europe, Kronos' union employees are covered by master collective bargaining agreements for the chemical industry that are generally renewed annually. In Canada, Kronos' union employees are covered by a collective bargaining agreement that expires in June 2021. At December 31, 2018, approximately 86% of Kronos' worldwide workforce is organized under collective bargaining agreements. It is possible that there could be future work stoppages or other labor disruptions that could materially and adversely affect its business, results of operations, financial position or liquidity.

Regulatory and environmental matters – Kronos' operations and properties are governed by various environmental laws and regulations which are complex, change frequently and have tended to become stricter over time. These environmental laws govern, among other things, the generation, storage, handling, use and transportation of hazardous materials; the emission and discharge of hazardous materials into the ground, air or water; and the health and safety of our employees. Certain of Kronos' operations are, or have been, engaged in the generation, storage, handling, manufacture or use of substances or compounds that may be considered toxic or hazardous within the meaning of

applicable environmental laws and regulations. As with other companies engaged in similar businesses, certain of Kronos' past and current operations and products have the potential to cause environmental or other damage. Kronos has implemented and continue to implement various policies and programs in an effort to minimize these risks. Kronos' policy is to comply with applicable environmental laws and regulations at all our facilities and to strive to improve its environmental performance. It is possible that future developments, such as stricter requirements in environmental laws and enforcement policies, could adversely affect its operations, including production, handling, use, storage, transportation, sale or disposal of hazardous or toxic substances or require us to make capital and other expenditures to comply, and could adversely affect our consolidated financial position and results of operations or liquidity.

Kronos' U.S. manufacturing operations are governed by federal, state and local environmental and worker health and safety laws and regulations. These include the Resource Conservation and Recovery Act, or RCRA, the Occupational Safety and Health Act, the Clean Air Act, the Clean Water Act, the Safe Drinking Water Act, the Toxic Substances Control Act and the Comprehensive Environmental Response, Compensation and Liability Act, as amended by the Superfund Amendments and Reauthorization Act, or CERCLA, as well as the state counterparts of these statutes. Some of these laws hold current or previous owners or operators of real property liable for the costs of cleaning up contamination, even if these owners or operators did not know of, and were not responsible for, such contamination. These laws also assess liability on any person who arranges for the disposal or treatment of hazardous substances, regardless of whether the affected site is owned or operated by such person. Although Kronos has not incurred and do not currently anticipate any material liabilities in connection with such environmental laws, we may be required to make expenditures for environmental remediation in the future.

While the laws regulating operations of industrial facilities in Europe vary from country to country, a common regulatory framework is provided by the European Union, or the EU. Germany and Belgium are members of the EU and follow its initiatives. Norway is not a member but generally patterns its environmental regulatory actions after those of the EU.

At Kronos' sulfate plant facilities in Germany, it recycles spent sulfuric acid either through contracts with third parties or at its own facilities. In addition, at Kronos' German locations it has a contract with a third-party to treat certain sulfate-process effluents. At Kronos' Norwegian plant, Kronos ships spent acid to a third-party location where it is used as a neutralization agent. These contracts may be terminated by either party after giving three or four years advance notice, depending on the contract.

From time to time, Kronos' facilities may be subject to environmental regulatory enforcement under U.S. and non-U.S. statutes. Typically Kronos establishes compliance programs to resolve these matters. Occasionally, Kronos may pay penalties. To date such penalties have not involved amounts having a material adverse effect on Kronos' consolidated financial position, results of operations or liquidity. Kronos believes that all of its facilities are in substantial compliance with applicable environmental laws.

From time to time, new environmental, health and safety regulations are passed or proposed in the countries in which we operate or sell our products, seeking to regulate our operations or to restrict, limit or classify TiO_2. We believe that we are in substantial compliance with laws applicable to the regulation of TiO_2. However, increased regulatory scrutiny could affect consumer perception of TiO_2 or limit the marketability and demand for TiO_2 or products containing TiO_2 and increase our regulatory and compliance costs.

Kronos' capital expenditures related to ongoing environmental compliance, protection and improvement programs, including capital expenditures which are primarily focused on increasing operating efficiency but also result in improved environmental protection such as lower emissions from its manufacturing facilities, were $17.1 million in 2018 and are currently expected to be approximately $25 million in 2019.

Other

In addition to our 87% ownership of CompX and our 30% ownership of Kronos at December 31, 2018, we also own 100% of EWI RE, Inc., an insurance brokerage and risk management services company. We also hold certain marketable securities and other investments. See Notes 5 and 17 to our Consolidated Financial Statements.

Regulatory and environmental matters - We discuss regulatory and environmental matters in the respective business sections contained elsewhere herein and in Item 3 - "Legal Proceedings." In addition, the information included in Note 17 to our Consolidated Financial Statements under the captions "Lead pigment litigation" and "Environmental matters

and litigation" is incorporated herein by reference.

Insurance - We maintain insurance for our businesses and operations, with customary levels of coverage, deductibles and limits. See also Item 3 – "Legal Proceedings – Insurance coverage claims" and Note 17 to our Consolidated Financial Statements.

Business strategy - We routinely compare our liquidity requirements and alternative uses of capital against the estimated future cash flows we expect to receive from our subsidiaries and affiliates. As a result of this process,

we have in the past and may in the future seek to raise additional capital, incur debt, repurchase indebtedness in the market, modify our dividend policies, consider the sale of our interests in our subsidiaries, affiliates, business, marketable securities or other assets, or take a combination of these and other steps, to increase liquidity, reduce indebtedness and fund future activities. Such activities have in the past and may in the future involve related companies. From time to time, we also evaluate the restructuring of ownership interests among our respective subsidiaries and related companies.

We and other entities that may be affiliated with Contran routinely evaluate acquisitions of interests in, or combinations with, companies, including related companies, perceived by management to be undervalued in the marketplace. These companies may or may not be engaged in businesses related to our current businesses. In some instances, we have actively managed the businesses acquired with a focus on maximizing return-on-investment through cost reductions, capital expenditures, improved operating efficiencies, selective marketing to address market niches, disposition of marginal operations, use of leverage and redeployment of capital to more productive assets. In other instances, we have disposed of the acquired interest in a company prior to gaining control. We intend to consider such activities in the future and may, in connection with such activities, consider issuing additional equity securities and increasing our indebtedness.

Available information - Our fiscal year ends December 31. We furnish our shareholders with annual reports containing audited financial statements. In addition, we file annual, quarterly and current reports, proxy and information statements and other information with the SEC. Our consolidated subsidiary (CompX) and our significant equity method investee (Kronos) also file annual, quarterly, and current reports, proxy and information statements and other information with the SEC. We also make our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments thereto available free of charge through our website at www.nl-ind.com as soon as reasonably practicable after they have been filed with the SEC. We also provide to anyone, without charge, copies of such documents upon written request. Such requests should be directed to the attention of the Corporate Secretary at our address on the cover page of this Form 10-K.

Additional information, including our Audit Committee charter, our Code of Business Conduct and Ethics and our Corporate Governance Guidelines can be found on our website. Information contained on our website is not part of this Annual Report.

We are an electronic filer and the SEC maintains an internet website that contains reports, proxy and information statements and other information regarding issuers that file electronically with the SEC at www.sec.gov.

ITEM 1A. RISK FACTORS

Listed below are certain risk factors associated with us and our businesses. See also certain risk factors discussed in Item 7 – “Management’s Discussion and Analysis of Financial Condition and Results of Operations – Critical Accounting Policies and Estimates.” In addition to the potential effect of these risk factors, any risk factor which could result in reduced earnings or operating losses, or reduced liquidity, could in turn adversely affect our ability to service our liabilities or pay dividends on our common stock or adversely affect the quoted market prices for our securities.

We could incur significant costs related to legal and environmental matters.

We formerly manufactured lead pigments for use in paint. We and others have been named as defendants in various legal proceedings seeking damages for personal injury, property damage and governmental expenditures allegedly caused by the use of lead-based paints. These lawsuits seek recovery under a variety of theories, including public and private nuisance, negligent product design, negligent failure to warn, strict liability, breach of warranty, conspiracy/concert of action, aiding and abetting, enterprise liability, market share or risk contribution liability, intentional tort, fraud and misrepresentation, violations of state consumer protection statutes, supplier negligence and

similar claims. The plaintiffs in these actions generally seek to impose on the defendants responsibility for lead paint abatement and health concerns associated with the use of lead-based paints, including damages for personal injury, contribution and/or indemnification for medical expenses, medical monitoring expenses and costs for educational programs. We have been found liable in one public-nuisance lead pigment case in Santa Clara, California, and have recognized a material liability for such matters. As with all legal proceedings, the outcome is

uncertain. Any additional liability we might incur in the future for these matters could be material. See also Item 3 - "Legal Proceedings - Lead pigment litigation."

Certain properties and facilities used in our former operations are the subject of litigation, administrative proceedings or investigations arising under various environmental laws. These proceedings seek cleanup costs, personal injury or property damages and/or damages for injury to natural resources. Some of these proceedings involve claims for substantial amounts. Environmental obligations are difficult to assess and estimate for numerous reasons, and we may incur costs for environmental remediation in the future in excess of amounts currently estimated. Any liability we might incur in the future could be material. See also Item 3 - "Legal Proceedings - Environmental matters and litigation."

Our assets consist primarily of investments in our operating subsidiaries and affiliates, and we are dependent upon distributions from our subsidiaries and affiliates.

The majority of our operating cash flows are generated by our operating subsidiaries and affiliates, and our ability to service liabilities and to pay dividends on our common stock (to the extent such dividends are declared by our board of directors) depends to a large extent upon the cash dividends or other distributions we receive from our subsidiaries and affiliates. Our subsidiaries and affiliates are separate and distinct legal entities and they have no obligation, contingent or otherwise, to pay such cash dividends or other distributions to us. In addition, the payment of dividends or other distributions from our subsidiaries and affiliates could be subject to restrictions under applicable law, monetary transfer restrictions, currency exchange regulations in jurisdictions in which our subsidiaries and affiliates operate or any other restrictions imposed by current or future agreements to which our subsidiaries and affiliates may be a party, including debt instruments. Events beyond our control, including changes in general business and economic conditions, could adversely impact the ability of our subsidiaries and affiliates to pay dividends or make other distributions to us. If our subsidiaries and affiliates were to become unable to make sufficient cash dividends or other distributions to us, our ability to service our liabilities and to pay dividends on our common stock (if declared) could be adversely affected.

In addition, a significant portion of our assets consist of ownership interests in our subsidiaries and affiliates. If we were required to liquidate any of such securities in order to generate funds to satisfy our liabilities, we may be required to sell such securities at a time or times at which we would not be able to realize what we believe to be the actual value of such assets.

We operate in mature and highly competitive markets, resulting in pricing pressure and the need to continuously reduce costs.

Many of the markets CompX serve are highly competitive, with a number of competitors offering similar products. We focus our efforts on the middle and high-end segment of the market where we feel that we can compete due to the importance of product design, quality and durability to the customer. However, CompX's ability to effectively compete is impacted by a number of factors. The occurrence of any of these factors could result in reduced earnings or operating losses.

- Competitors may be able to drive down prices for our products beyond our ability to adjust costs because their costs are lower than ours, especially products sourced from Asia.
- Competitors' financial, technological and other resources may be greater than our resources, which may enable them to more effectively withstand changes in market conditions.
- Competitors may be able to respond more quickly than we can to new or emerging technologies and changes in customer requirements.
-

Consolidation of our competitors or customers in any of the markets in which we compete may result in reduced demand for our products.

- A reduction of our market share with one or more of our key customers, or a reduction in one or more of our key customers' market share for their end-use products, may reduce demand for our products.

- New competitors could emerge by modifying their existing production facilities to manufacture products that compete with our products.
- We may not be able to sustain a cost structure that enables us to be competitive.
- Customers may no longer value our product design, quality or durability over the lower cost products of our competitors.

Our development of innovative features for current products is critical to sustaining and growing our sales.

Historically, CompX's ability to provide value-added custom engineered products that address requirements of technology and space utilization has been a key element of our success. We spend a significant amount of time and effort to refine, improve and adapt our existing products for new customers and applications. Since expenditures for these types of activities are not considered research and development expense under accounting principles generally accepted in the United States of America ("GAAP"), the amount of our research and development expenditures, which is not significant, is not indicative of the overall effort involved in the development of new product features. The introduction of new product features requires the coordination of the design, manufacturing and marketing of the new product features with current and potential customers. The ability to coordinate these activities with current and potential customers may be affected by factors beyond our control. While we will continue to emphasize the introduction of innovative new product features that target customer-specific opportunities, we do not know if any new product features we introduce will achieve the same degree of success that we have achieved with our existing products. Introduction of new product features typically requires us to increase production volume on a timely basis while maintaining product quality. Manufacturers often encounter difficulties in increasing production volumes, including delays, quality control problems and shortages of qualified personnel or raw materials. As we attempt to introduce new product features in the future, we do not know if we will be able to increase production volumes without encountering these or other problems, which might negatively impact our financial condition or results of operations.

Failure to protect our intellectual property rights or claims by others that we infringe their intellectual property rights could substantially harm our business.

CompX relies on patent, trademark and trade secret laws in the United States and similar laws in other countries to establish and maintain our intellectual property rights in our technology and designs. Despite these measures, any of our intellectual property rights could be challenged, invalidated, circumvented or misappropriated. Others may independently discover our trade secrets and proprietary information, and in such cases we could not assert any trade secret rights against such parties. Further, we do not know if any of our pending trademark or patent applications will be approved. Costly and time-consuming litigation could be necessary to enforce and determine the scope of our intellectual property rights. In addition, the laws of certain countries do not protect intellectual property rights to the same extent as the laws of the United States. Therefore, in certain jurisdictions, we may be unable to protect our technology and designs adequately against unauthorized third party use, which could adversely affect our competitive position.

Third parties may claim that we or our customers are infringing upon their intellectual property rights. Even if we believe that such claims are without merit, they can be time-consuming and costly to defend and distract our management's and technical staff's attention and resources. Claims of intellectual property infringement also might require us to redesign affected technology, enter into costly settlement or license agreements or pay costly damage awards, or face a temporary or permanent injunction prohibiting us from marketing or selling certain of our technology. If we cannot or do not license the infringed technology on reasonable pricing terms or at all, or substitute similar technology from another source, our business could be adversely impacted.

Higher costs of our commodity-related raw materials may decrease our liquidity.

Certain raw materials used in CompX's products are commodities that are subject to significant fluctuations in price in response to world-wide supply and demand as well as speculative investor activity. Zinc and brass are the principal raw materials used in the manufacture of security products. Stainless steel and aluminum are the major raw materials used in the manufacture of marine components. These raw materials are purchased from

several suppliers and are generally readily available from numerous sources. CompX occasionally enters into short-term raw material supply arrangements to mitigate the impact of future increases in commodity-related raw material costs. Materials purchased outside of these arrangements are sometimes subject to unanticipated and sudden price increases. Should our vendors not be able to meet their contractual obligations or should we be otherwise unable to obtain necessary raw materials, we may incur higher costs for raw materials or may be required to reduce production levels, either of which may decrease our liquidity or negatively impact our financial condition or results of operations as we may be unable to offset the higher costs with increases in our selling prices or reductions in other operating costs.

Higher costs or limited availability of our raw materials may reduce our earnings and decrease our liquidity. In addition, many of our raw material contracts contain fixed quantities we are required to purchase.

For Kronos, the number of sources for and availability of certain raw materials is specific to the particular geographical region in which a facility is located. For example, titanium-containing feedstocks suitable for use in Kronos' TiO_2 facilities are available from a limited number of suppliers around the world. Political and economic instability in the countries from which Kronos purchases its raw material supplies could adversely affect their availability. If Kronos' worldwide vendors were unable to meet their contractual obligations and it were unable to obtain necessary raw materials, Kronos could incur higher costs for raw materials or may be required to reduce production levels. Kronos experienced significantly higher ore costs in 2012 which carried over into 2013. Kronos saw moderation in the purchase cost of third-party feedstock ore since 2013 through the first half of 2017; however, the cost of third-party feedstock ore Kronos procured in the last half of 2017 and full year of 2018 is higher as compared to the first half of 2017. Kronos may also experience higher operating costs such as energy costs, which could affect its profitability. Kronos may not always be able to increase its selling prices to offset the impact of any higher costs or reduced production levels, which could reduce its earnings and decrease our liquidity.

Kronos has long-term supply contracts that provide for its TiO_2 feedstock requirements that currently expire through 2020. While Kronos believes it will be able to renew these contracts, there can be no assurance it will be successful in renewing them or in obtaining long-term extensions to them prior to expiration. Kronos' current agreements (including those entered into through January 2019) require it to purchase certain minimum quantities of feedstock with minimum purchase commitments aggregating approximately $594 million in years subsequent to December 31, 2018. In addition, Kronos has other long-term supply and service contracts that provide for various raw materials and services. These agreements require Kronos to purchase certain minimum quantities or services with minimum purchase commitments aggregating approximately $156 million at December 31, 2018. Kronos' commitments under these contracts could adversely affect its financial results if it significantly reduce its production and were unable to modify the contractual commitments.

Demand for, and prices of, certain of Kronos' products are influenced by changing market conditions for its products, which may result in reduced earnings or in operating losses.

Kronos' sales and profitability is largely dependent on the TiO_2 industry. In 2018, 94% of Kronos' sales were attributable to sales of TiO_2. TiO_2 is used in many "quality of life" products for which demand historically has been linked to global, regional and local gross domestic product and discretionary spending, which can be negatively impacted by regional and world events or economic conditions. Such events are likely to cause a decrease in demand for our products and, as a result, may have an adverse effect on our results of operations and financial condition.

Pricing within the global TiO_2 industry over the long term is cyclical and changes in economic conditions, worldwide, can significantly impact Kronos' earnings and operating cash flows. Historically, the markets for many of our products have experienced alternating periods of increasing and decreasing demand. Relative changes in the selling prices for Kronos' products are one of the main factors that affect the level of our profitability. In periods of increasing demand,

Kronos' selling prices and profit margins generally will tend to increase, while in periods of decreasing demand our selling prices and profit margins generally tend to decrease. In addition, pricing may affect customer inventory levels as customers may from time to time accelerate purchases of TiO_2 in advance of anticipated price increases or defer purchases of TiO_2 in advance of anticipated price decreases. Kronos' ability to further increase capacity without additional investment in greenfield or brownfield capacity increases may be

limited and as a result, Kronos' profitability may become even more dependent upon the selling prices of Kronos' products.

The TiO_2 industry is concentrated and highly competitive and Kronos faces price pressures in the markets in which we operate, which may result in reduced earnings or operating losses.

The global market in which Kronos operates its business is concentrated with the top six TiO_2 producers accounting for approximately 58% of the world's production capacity and is highly competitive. Competition is based on a number of factors, such as price, product quality and service. Some of Kronos' competitors may be able to drive down prices for our products if their costs are lower than its costs. In addition, some of its competitors' financial, technological and other resources may be greater than its resources and such competitors may be better able to withstand changes in market conditions. Kronos' competitors may be able to respond more quickly than it can to new or emerging technologies and changes in customer requirements. Further, consolidation of Kronos' competitors or customers may result in reduced demand for our products or make it more difficult for us to compete with its competitors. The occurrence of any of these events could result in reduced earnings or operating losses.

Kronos' leverage may impair our financial condition.

As of December 31, 2018, Kronos' total consolidated debt was approximately $456.6 million, substantially all of which relates to its Senior Secured Notes issued in September 2017. Kronos' level of debt could have important consequences to its stockholders and creditors, including:

- making it more difficult for us to satisfy its obligations with respect to its liabilities;
- increasing its vulnerability to adverse general economic and industry conditions;
- requiring that a portion of its cash flows from operations be used for the payment of interest on its debt, which reduces our ability to use our cash flow to fund working capital, capital expenditures, dividends on our common stock, acquisitions or general corporate requirements;
- limiting the ability of Kronos' subsidiaries to pay dividends to it;
- limiting Kronos' ability to obtain additional financing to fund future working capital, capital expenditures, acquisitions or general corporate requirements;
- limiting Kronos' flexibility in planning for, or reacting to, changes in our business and the industry in which it operates; and
- placing Kronos at a competitive disadvantage relative to other less leveraged competitors.

Indebtedness outstanding under Kronos' revolving North American credit facility and revolving European credit facility accrues interest at variable rates. To the extent market interest rates rise, the cost of Kronos' debt would increase, adversely affecting its financial condition, results of operations and cash flows.

In addition to Kronos' indebtedness, at December 31, 2018 is party to various lease and other agreements (including feedstock ore purchase contracts and other long-term supply and service contracts, as discussed above) pursuant to which, along with its indebtedness, Kronos is committed to pay approximately $498 million in 2019. Kronos' ability to make payments on and refinance its debt and to fund planned capital expenditures depends on its future ability to generate cash flow. To some extent, this is subject to general economic, financial, competitive, legislative, regulatory and other factors that are beyond its control. In addition, Kronos' ability to borrow funds under its revolving credit facilities in the future will, in some instances, depend in part on its ability to maintain specified financial ratios and satisfy certain financial covenants contained in the applicable credit agreement.

Kronos' business may not generate cash flows from operating activities sufficient to enable us to pay its debts when they become due and to fund our other liquidity needs. As a result, Kronos may need to refinance all or a portion of its debt before maturity. Kronos may not be able to refinance any of its debt in a timely manner on favorable terms, if

at all, in the current credit markets. Any inability to generate sufficient cash flows or to refinance

our debt on favorable terms could have a material adverse effect on its financial condition and impact its ability to pay a dividend to us.

Environmental, health and safety laws and regulations, particularly as it relates to Kronos, may result in significant compliance costs or obligations or unanticipated losses which could negatively impact our financial results or limit our ability to operate our business.

From time to time, new environmental, health and safety regulations are passed or proposed in the countries in which we operate or sell our products, seeking to regulate our operations or to restrict, limit or classify TiO_2, or its use. Increased regulatory scrutiny could affect consumer perception of TiO_2 or limit the marketability and demand for TiO_2 or products containing TiO_2, and increase our regulatory compliance obligations and costs. Increased compliance obligations and costs or restrictions on certain TiO_2 applications could negatively impact our future financial results through increased costs of production, or reduced sales which may decrease our liquidity, operating income and results of operations.

Global climate change legislation could negatively impact our financial results or limit our ability to operate our businesses.

CompX operates production facilities in the United States and Kronos operates production facilities in several countries in North America and Europe. We believe that all production facilities are in substantial compliance with applicable environmental laws. Legislation has been passed, or proposed legislation is being considered, to limit greenhouse gases through various means including emissions permits and/or energy taxes. In several production facilities, Kronos consumes large amounts of energy, primarily electricity and natural gas. To date the climate change legislation in effect has not had a material adverse effect on our financial results. However, if further greenhouse gas legislation were to be enacted in one or more countries, it could negatively impact our future results from operations through increased costs of production, particularly as it relates to our energy requirements or our need to obtain emissions permits. If such increased costs of production were to materialize, we may be unable to pass price increases onto our customers to compensate for increased production costs, which may decrease our liquidity, income from operations and results of operations.

Technology failures or cyber security breaches could have a material adverse effect on our operations.

We rely on information technology systems to manage, process and analyze data, as well as to facilitate the manufacture and distribution of our products to and from our plants. We receive, process and ship orders, manage the billing of and collections from our customers, and manage the accounting for and payment to our vendors. Although we have systems and procedures in place to protect our information technology systems, there can be no assurance that such systems and procedures would be sufficiently effective. Therefore, any of our information technology systems may be susceptible to outages, disruptions or destruction as well as cybersecurity breaches or attacks, resulting in a disruption of our business operations, injury to people, harm to the environment or our assets, and/or the inability to access our information technology systems. If any of these events were to occur, our results of operations and financial condition could be adversely affected.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None

ITEM 2. PROPERTIES

Our principal executive offices are located in an office building located at 5430 LBJ Freeway, Dallas, Texas, 75240-2620. The principal properties used in the operations of our subsidiaries and affiliates, including certain risks and uncertainties related thereto, are described in the applicable business sections of Item 1 – “Business.” We believe that

our facilities are generally adequate and suitable for our respective uses.

ITEM 3. LEGAL PROCEEDINGS

We are involved in various legal proceedings. In addition to information that is included below, we have included certain of the information called for by this Item in Note 17 to our Consolidated Financial Statements, and we are incorporating that information here by reference.

Lead pigment litigation

Our former operations included the manufacture of lead pigments for use in paint and lead-based paint. We, other former manufacturers of lead pigments for use in paint and lead-based paint (together, the "former pigment manufacturers"), and the Lead Industries Association (LIA), which discontinued business operations in 2002, have been named as defendants in various legal proceedings seeking damages for personal injury, property damage and governmental expenditures allegedly caused by the use of lead-based paints. Certain of these actions have been filed by or on behalf of states, counties, cities or their public housing authorities and school districts, and certain others have been asserted as class actions. These lawsuits seek recovery under a variety of theories, including public and private nuisance, negligent product design, negligent failure to warn, strict liability, breach of warranty, conspiracy/concert of action, aiding and abetting, enterprise liability, market share or risk contribution liability, intentional tort, fraud and misrepresentation, violations of state consumer protection statutes, supplier negligence and similar claims.

The plaintiffs in these actions generally seek to impose on the defendants responsibility for lead paint abatement and health concerns associated with the use of lead-based paints, including damages for personal injury, contribution and/or indemnification for medical expenses, medical monitoring expenses and costs for educational programs. To the extent the plaintiffs seek compensatory or punitive damages in these actions, such damages are generally unspecified. In some cases, the damages are unspecified pursuant to the requirements of applicable state law. A number of cases are inactive or have been dismissed or withdrawn. Most of the remaining cases are in various pre-trial stages. Some are on appeal following dismissal or summary judgment rulings or a trial verdict in favor of either the defendants or the plaintiffs.

We believe that these actions are without merit, and we intend to continue to deny all allegations of wrongdoing and liability and to defend against all actions vigorously. Other than with respect to the Santa Clara, California public nuisance case discussed below, we do not believe it is probable that we have incurred any liability with respect to all of the lead pigment litigation cases to which we are a party, and with respect to all such lead pigment litigation cases to which we are a party, other than with respect to the Santa Clara case discussed below, we believe liability to us that may result, if any, in this regard cannot be reasonably estimated, because:

- we have never settled any of the market share, intentional tort, fraud, nuisance, supplier negligence, breach of warranty, conspiracy, misrepresentation, aiding and abetting, enterprise liability, or statutory cases (subject to the final outcome of the Santa Clara case discussed below),
- no final, non-appealable adverse verdicts have ever been entered against us (subject to the final outcome of the Santa Clara case discussed below), and
- we have never ultimately been found liable with respect to any such litigation matters, including over 100 cases over a twenty-year period for which we were previously a party and for which we have been dismissed without any finding of liability (subject to the final outcome of the Santa Clara case discussed below).

Accordingly, other than with respect to the Santa Clara case discussed below, we have not accrued any amounts for any of the pending lead pigment and lead-based paint litigation cases filed by or on behalf of states, counties, cities or their public housing authorities and school districts, or those asserted as class actions other than the Santa Clara case noted below. In addition, we have determined that liability to us which may result, if any, cannot be reasonably

estimated at this time because there is no prior history of a loss of this nature on which an estimate could be made and there is no substantive information available upon which an estimate could be based.

In one of these lead pigment cases, in April 2000 we were served with a complaint in County of Santa Clara v. Atlantic Richfield Company, et al. (Superior Court of the State of California, County of Santa Clara, Case

No. 1-00-CV-788657) brought by a number of California government entities against the former pigment manufacturers, the LIA and certain paint manufacturers. The County of Santa Clara sought to recover compensatory damages for funds the plaintiffs have expended or would in the future expend for medical treatment, educational expenses, abatement or other costs due to exposure to, or potential exposure to, lead paint, disgorgement of profit, and punitive damages. In July 2003, the trial judge granted defendants' motion to dismiss all remaining claims. Plaintiffs appealed and the intermediate appellate court reinstated public nuisance, negligence, strict liability, and fraud claims in March 2006. A fourth amended complaint was filed in March 2011 on behalf of The People of California by the County Attorneys of Alameda, Ventura, Solano, San Mateo, Los Angeles and Santa Clara, and the City Attorneys of San Francisco, San Diego and Oakland. That complaint alleged that the presence of lead paint created a public nuisance in each of the prosecuting jurisdictions and sought its abatement. In July and August 2013, the case was tried. In January 2014, the trial court judge issued a judgment finding us, The Sherwin Williams Company and ConAgra Grocery Products Company jointly and severally liable for the abatement of lead paint in pre-1980 homes, and ordered the defendants to pay an aggregate $1.15 billion to the people of the State of California to fund such abatement. The trial court's judgment also found that to the extent any abatement funds remained unspent after four years, such funds were to be returned to the defendants. In February 2014, we filed a motion for a new trial, and in March 2014 the trial court denied the motion. Subsequently in March 2014, we filed a notice of appeal with the Sixth District Court of Appeal for the State of California. On November 14, 2017, the Sixth District Court of Appeal issued its opinion, upholding the trial court's judgment, except that it reversed the portion of the judgment requiring abatement of homes built between 1951 and 1980 which significantly reduced the number of homes subject to the abatement order. In addition, the appellate court ordered the case be remanded to the trial court to recalculate the amount of the abatement fund, to limit it to the amount necessary to cover the cost of investigating and remediating pre-1951 homes, and to hold an evidentiary hearing to appoint a suitable receiver. In addition, the appellate court found that we and the other defendants had the right to seek recovery from liable parties that contributed to a hazardous condition at a particular property. Subsequently, we and the other defendants filed a Petition with the California Supreme Court seeking its review of a number of issues. On February 14, 2018, the California Supreme Court denied such petition.

The Santa Clara case is unusual in that this is the second time that an adverse verdict in a public nuisance lead pigment case has been entered against us (the first adverse verdict against us was ultimately overturned on appeal). Given the appellate court's November 2017 ruling, and the denial of an appeal by the California Supreme Court, we previously concluded that the likelihood of a loss in this case has reached a standard of "probable" as contemplated by ASC 450.

Under the remand ordered by the appellate court, the trial court was required to, among other things, (i) recalculate the amount of the abatement fund, excluding remediation of homes built between 1951 and 1980, (ii) hold an evidentiary hearing to appoint a suitable receiver for the abatement fund and (iii) enter an order or orders setting forth its rulings on these issues. We believe any party will have a right to appeal any of these new decisions to be made by the trial court from the remand of the case. Several uncertainties will still exist with respect to the new decisions to be made by the trial court from the remand of the case, including the following:

- The appellate court remanded the case back to the trial court to recalculate the total amount of the abatement, limiting the abatement to pre-1951 homes. In this regard, NL and the other defendants filed a brief with the trial court proposing a recalculated maximum abatement fund amount of no more than $409 million and plaintiffs filed a brief

proposing an abatement fund amount of $730 million. In September 2018, following a case-management hearing regarding the recalculated abatement fund amount held in August 2018, the trial court issued an order setting the recalculated amount of the abatement fund at $409 million;

- The appellate court upheld NL's and the other defendants' right to seek contribution from other liable parties (e.g. property owners who have violated the applicable housing code) on a house-by-house basis. The method by which the trial court would undertake to determine such house-by-house responsibility, and the outcome of such a house-by-house determination, is not presently known;
- Participation in any abatement program by each homeowner is voluntary, and each homeowner would need to consent to allowing someone to come into the home to undertake any inspection and abatement, as well as consent to the nature, timing and extent of any abatement. The original trial court's judgment unrealistically assumed 100% participation by the affected homeowners. Actual

participation rates are likely to be less than 100% (the ultimate extent of participation is not presently known);

- The remedy ordered by the trial court is an abatement fund. The trial court ordered that any funds unspent after four years are to be returned to the defendants (this provision of the trial court's original judgment was not overturned by the appellate court). As noted above, the actual number of homes which would participate in any abatement, and the nature, timing and extent of any such abatement, is not presently known; and
- We and the other two defendants are jointly and severally liable for the abatement, which means we or either of the two other defendants could ultimately be responsible for payment of the full amount of the abatement fund. However, we do not believe any individual defendant would be 100% responsible for the cost of any abatement, and the allocation of the recalculated amount of the abatement fund ($409 million, as explained below) among the three defendants has not yet been determined.

In May 2018, we and the plaintiffs entered into a settlement agreement pursuant to which, as supplemented, the plaintiffs would be paid an aggregate of $80 million, in return for which we would be dismissed from the case with prejudice and all pending and future claims, causes of action, cross-complaints, actions or proceedings against us and our affiliates for indemnity, contribution, reimbursement or declaratory relief in respect to the case would be barred, discharged and enjoined as a matter of applicable law. Of such $80 million, $65 million would be paid by us and $15 million would be provided by one of our former insurance carriers that has previously placed such amount on deposit with the trial court in satisfaction of potential liability such former carrier might have with respect to the case under certain insurance policies we had with such former carrier. Of such $65 million which would be paid by us, $45 million would be paid upon approval of the terms of the settlement, and the remaining $20 million would be paid in five annual installments beginning four years from such approval ($6 million for the first installment, $5 million for the second installment and $3 million for each of the third, fourth and fifth installments). The settlement agreement is subject to a number of conditions including the trial court's approval of the terms of the settlement (which trial court approval includes a determination that such settlement agreement meets the standards for a "good faith" settlement under applicable California law). The other defendants filed motions with the trial court objecting to the terms of the settlement.

With all of the uncertainties that exist with respect to the new decisions to be made by the trial court from the remand of the case, as noted above, we had previously concluded that the amount of such loss could not be reasonably estimated (nor could a range of loss be reasonably estimated). However, the terms of the settlement agreement entered into by us and the plaintiffs in May 2018, as supplemented, provides evidence that the amount of the loss to us could be reasonably estimated (and provides evidence of the low end of a range of loss to us). For financial reporting purposes, we discounted the five payments aggregating $20 million to be paid in installments to their estimated net present value, using a discount rate of 3.0% per annum. Such net present value is $17 million, and we would begin to accrete such present value amount upon approval of the settlement agreement. Accordingly, in the second quarter of 2018 we recognized a net $62 million pre-tax charge with respect to this matter ($45 million for the amount to be paid by us upon approval of the terms of the settlement and $17 million for the net present value of the five payments aggregating $20 million to be paid by us in installments beginning four years from such approval), representing the net amount we would pay in full settlement of our liability under the terms of the proposed settlement agreement. For purposes of our Consolidated Balance Sheet, we have presented the aggregate $45 million that would be paid to the plaintiffs upon approval of the terms of the settlement and the $15 million that would be paid to the plaintiffs from the amount placed on deposit with the trial court by one of our former insurance carriers (for a total of $60 million) as a current liability, $17 million for the net present value of the five payments aggregating $20 million to be paid by us in installments beginning four years from such approval as a noncurrent liability and the $15 million portion of such aggregate $80 million undiscounted amount which would be funded from the amount placed on deposit with the trial court by one of our former insurance carriers as a current insurance recovery receivable.

In July 2018, we and the other defendants filed appeals with the U.S. Supreme Court, seeking its review of two federal issues in the trial court's original judgment. Review by the U.S. Supreme Court is discretionary, and in October 2018 the U.S. Supreme Court denied the petitions for the Court to hear such appeals.

In September 2018, following a case-management hearing regarding the recalculated abatement fund amount held in August 2018, the trial court issued an order setting the recalculated amount of the abatement fund at

$409 million. Also in September 2018, the trial court denied approval of the settlement agreement, finding among other things that the settlement agreement did not meet the standards for a "good faith" settlement under applicable California law.

Subsequently in October 2018, we filed an appeal of the trial court's denial of approval of the settlement agreement with the Sixth District Court of Appeal for the State of California, asserting among other things that in denying such approval the trial court made several legal errors in applying applicable California law to the terms of the settlement. The plaintiffs filed a brief in support of our appeal. The appellate court has discretion whether to hear such appeal, and the appellate court has not yet issued its decision as to whether it will hear such appeal. There can be no assurance that the appellate court will agree to hear such appeal, or if it agrees to hear such appeal, that it would rule in favor of us and approve the settlement agreement. We continue to believe the settlement agreement satisfies the standards for a "good faith" settlement under applicable California law.

The trial court has selected a receiver for the abatement fund, but the terms of an order appointing the receiver have not been determined and will be the subject of a further hearing scheduled in March 2019. The trial court has also stated it will not enter the judgment in the case until after the Sixth District Court of Appeal determines whether to hear the appeal regarding our settlement agreement. We expect the judgment will require full payment of all amounts due by us and the other defendants in respect to the abatement fund within sixty days of entry of the judgment.

If the appellate court does not reverse the trial court decision and approve the terms of this or any other settlement agreement between us and the plaintiffs, the proceedings in the trial court under the remand, as discussed above, would continue. In such event, NL's share of the recalculated amount of the abatement fund ($409 million) is not presently known, and other uncertainties exist with respect to the new decisions to be made by the trial court from the remand of the case, as discussed above, including but not limited to the final amount of the abatement fund which will ultimately be expended, particularly because participation in the abatement program by eligible homeowners is voluntary and the ultimate extent of participation and how the abatement fund will be administered is uncertain. As with any legal proceeding, there is no assurance that any appeal would be successful, and it is reasonably possible, based on the outcome of the appeals process and the remand proceedings in the trial court, that NL may in the future incur liability resulting in the recognition of an additional loss contingency accrual that could have a material adverse impact on our results of operations, financial position and liquidity.

In June 2000, a complaint was filed in Illinois state court, Lewis, et al. v. Lead Industries Association, et al (Circuit Court of Cook County, Illinois, County Department, Chancery Division, Case No. 00CH09800.) Plaintiffs seek to represent two classes, one consisting of minors between the ages of six months and six years who resided in housing in Illinois built before 1978, and another consisting of individuals between the ages of six and twenty years who lived in Illinois housing built before 1978 when they were between the ages of six months and six years and who had blood lead levels of 10 micrograms/deciliter or more. The complaint seeks damages jointly and severally from the former pigment manufacturers and the LIA to establish a medical screening fund for the first class to determine blood lead levels, a medical monitoring fund for the second class to detect the onset of latent diseases and a fund for a public education campaign. In April 2008, the trial court judge certified a class of children whose blood lead levels were screened venously between August 1995 and February 2008 and who had incurred expenses associated with such screening. In March 2012, the trial court judge decertified the class. In June 2012, the trial court judge granted plaintiffs the right to appeal his decertification order, and in August 2012 the appellate court granted plaintiffs permission to appeal. In March 2013, the appellate court agreed with the trial court's rationale regarding legislative requirements to screen children's blood lead levels and remanded the case for further proceedings in the trial court. In July 2013, plaintiffs moved to vacate the decertification. In October 2013, the judge denied plaintiffs' motion to vacate the decertification of the class. In March 2014, plaintiffs filed a new class certification motion. In April 2015, a class was certified consisting of parents or legal guardians of children who lived in certain "high risk" areas in Illinois between August 18, 1995 and February 19, 2008, and incurred an expense or liability for having their children's blood

lead levels tested.

In January 2019, the Illinois Supreme Court agreed to hear an interlocutory appeal addressing whether certain parents whose children's lead testing costs were fully paid by Medicaid fell within the certified class of persons who had incurred an expense for such testing. A favorable resolution of that issue could result in a reduction in the number of persons in the certified class.

In November 2018, NL was served with two complaints filed by county governments in Pennsylvania. Each county alleges that NL and several other defendants created a public nuisance by selling and promoting lead-containing paints and pigments in the counties. The plaintiffs seek abatement and declaratory relief. We believe these lawsuits are inconsistent with Pennsylvania law and without merit, and we intend to defend ourselves vigorously.

New cases may continue to be filed against us. We cannot assure you that we will not incur liability in the future in respect of any of the pending or possible litigation in view of the inherent uncertainties involved in court and jury rulings. In the future, if new information regarding such matters becomes available to us (such as a final, non-appealable adverse verdict against us or otherwise ultimately being found liable with respect to such matters), at that time we would consider such information in evaluating any remaining cases then-pending against us as to whether it might then have become probable we have incurred liability with respect to these matters, and whether such liability, if any, could have become reasonably estimable. The resolution of any of these cases could result in the recognition of a loss contingency accrual that could have a material adverse impact on our net income for the interim or annual period during which such liability is recognized and a material adverse impact on our consolidated financial condition and liquidity.

Environmental matters and litigation

Our operations are governed by various environmental laws and regulations. Certain of our businesses are and have been engaged in the handling, manufacture or use of substances or compounds that may be considered toxic or hazardous within the meaning of applicable environmental laws and regulations. As with other companies engaged in similar businesses, certain of our past and current operations and products have the potential to cause environmental or other damage. We have implemented and continue to implement various policies and programs in an effort to minimize these risks. Our policy is to maintain compliance with applicable environmental laws and regulations at all of our plants and to strive to improve environmental performance. From time to time, we may be subject to environmental regulatory enforcement under U.S. and non-U.S. statutes, the resolution of which typically involves the establishment of compliance programs. It is possible that future developments, such as stricter requirements of environmental laws and enforcement policies, could adversely affect our production, handling, use, storage, transportation, sale or disposal of such substances. We believe that all of our facilities are in substantial compliance with applicable environmental laws.

Certain properties and facilities used in our former operations, including divested primary and secondary lead smelters and former mining locations, are the subject of civil litigation, administrative proceedings or investigations arising under federal and state environmental laws and common law. Additionally, in connection with past operating practices, we are currently involved as a defendant, potentially responsible party (PRP) or both, pursuant to the Comprehensive Environmental Response, Compensation and Liability Act, as amended by the Superfund Amendments and Reauthorization Act (CERCLA), and similar state laws in various governmental and private actions associated with waste disposal sites, mining locations, and facilities that we or our predecessors, our subsidiaries or their predecessors currently or previously owned, operated or used, certain of which are on the United States Environmental Protection Agency’s (EPA) Superfund National Priorities List or similar state lists. These proceedings seek cleanup costs, damages for personal injury or property damage and/or damages for injury to natural resources. Certain of these proceedings involve claims for substantial amounts. Although we may be jointly and severally liable for these costs, in most cases we are only one of a number of PRPs who may also be jointly and severally liable, and among whom costs may be shared or allocated. In addition, we are occasionally named as a party in a number of personal injury lawsuits filed in various jurisdictions alleging claims related to environmental conditions alleged to have resulted from our operations.

Obligations associated with environmental remediation and related matters are difficult to assess and estimate for numerous reasons including the:

- complexity and differing interpretations of governmental regulations,
- number of PRPs and their ability or willingness to fund such allocation of costs,
- financial capabilities of the PRPs and the allocation of costs among them,
- solvency of other PRPs,
- multiplicity of possible solutions,

- number of years of investigatory, remedial and monitoring activity required,
- uncertainty over the extent, if any, to which our former operations might have contributed to the conditions allegedly giving rise to such personal injury, property damage, natural resource and related claims and
- number of years between former operations and notice of claims and lack of information and documents about the former operations.

In addition, the imposition of more stringent standards or requirements under environmental laws or regulations, new developments or changes regarding site cleanup costs or the allocation of costs among PRPs, solvency of other PRPs, the results of future testing and analysis undertaken with respect to certain sites or a determination that we are potentially responsible for the release of hazardous substances at other sites, could cause our expenditures to exceed our current estimates. We cannot assure you that actual costs will not exceed accrued amounts or the upper end of the range for sites for which estimates have been made, and we cannot assure you that costs will not be incurred for sites where no estimates presently can be made. Further, additional environmental and related matters may arise in the future. If we were to incur any future liability, this could have a material adverse effect on our consolidated financial statements, results of operations and liquidity.

We record liabilities related to environmental remediation and related matters (including costs associated with damages for personal injury or property damage and/or damages for injury to natural resources) when estimated future expenditures are probable and reasonably estimable. We adjust such accruals as further information becomes available to us or as circumstances change. Unless the amounts and timing of such estimated future expenditures are fixed and reasonably determinable, we generally do not discount estimated future expenditures to their present value due to the uncertainty of the timing of the payout. We recognize recoveries of costs from other parties, if any, as assets when their receipt is deemed probable. We recognize recoveries of costs from other parties, if any, as assets when their receipt is deemed probable. At December 31, 2017 we had not recognized any receivables for recoveries and at December 31, 2018, we have recognized $15.0 million of receivables for recoveries related to the lead pigment litigation in California discussed above.

We do not know and cannot estimate the exact time frame over which we will make payments for our accrued environmental and related costs. The timing of payments depends upon a number of factors, including but not limited to the timing of the actual remediation process; which in turn depends on factors outside of our control. At each balance sheet date, we estimate the amount of our accrued environmental and related costs which we expect to pay within the next twelve months, and we classify this estimate as a current liability. We classify the remaining accrued environmental costs as a noncurrent liability.

On a quarterly basis, we evaluate the potential range of our liability for environmental remediation and related costs at sites where we have been named as a PRP or defendant, including sites for which our wholly-owned environmental management subsidiary, NL Environmental Management Services, Inc., (EMS), has contractually assumed our obligations. At December 31, 2018, we had accrued approximately $98 million related to approximately 35 sites associated with remediation and related matters that we believe are at the present time and/or in their current phase reasonably estimable. The upper end of the range of reasonably possible costs to us for remediation and related matters for which we believe it is possible to estimate costs is approximately $117 million, including the amount currently accrued.

We believe that it is not reasonably possible to estimate the range of costs for certain sites. At December 31, 2018, there were approximately 5 sites for which we are not currently able to reasonably estimate a range of costs. For these sites, generally the investigation is in the early stages, and we are unable to determine whether or not we actually had any association with the site, the nature of our responsibility, if any, for the contamination at the site and the extent of contamination at and cost to remediate the site. The timing and availability of information on these sites is dependent on events outside of our control, such as when the party alleging liability provides information to us. At certain of

these previously inactive sites, we have received general and special notices of liability from the EPA and/or state agencies alleging that we, sometimes with other PRPs, are liable for past and future costs of remediating environmental contamination allegedly caused by former operations. These notifications may assert that we, along with any other alleged PRPs, are liable for past and/or future clean-up costs. As further information becomes available to us for any of these sites, which would allow us to estimate a range of costs, we would at that time adjust our accruals. Any such adjustment could result in the recognition of an accrual that would have a material effect on our consolidated financial statements, results of operations and liquidity.

In June 2008, we received a Directive and Notice to Insurers from the New Jersey Department of Environmental Protection (NJDEP) regarding the Margaret's Creek site in Old Bridge Township, New Jersey. NJDEP alleged that a waste hauler transported waste from one of our former facilities for disposal at the site in the early 1970s. NJDEP referred the site to the EPA, and in November 2009, the EPA added the site to the National Priorities List under the name "Raritan Bay Slag Site." In 2012, EPA notified NL of its potential liability at this site. In May 2013, EPA issued its Record of Decision for the site. In June 2013, NL filed a contribution suit under CERCLA and the New Jersey Spill Act titled NL Industries, Inc. v. Old Bridge Township, et al. (United States District Court for the District of New Jersey, Civil Action No. 3:13-cv-03493-MAS-TJB) against the current owner, Old Bridge Township, and several federal and state entities NL alleges designed and operated the site and who have significant potential liability as compared to NL which is alleged to have been a potential source of material placed at the site by others. NL's suit also names certain former NL customers of the former NL facility alleged to be the source of some of the materials. In January 2014, EPA issued a UAO to NL for clean-up of the site based on the EPA's preferred remedy set forth in the Record of Decision. NL is in discussions with EPA about NL's performance of a defined amount of the work at the site and is otherwise taking actions necessary to respond to the UAO. If these discussions and actions are unsuccessful, NL will defend vigorously against all claims while continuing to seek contribution from other PRPs. In March 2017, in a parallel lawsuit initiated by NL in State court against the State of New Jersey, which has significant potential liability as compared to NL, the New Jersey Supreme Court ruled that the State of New Jersey had not waived its immunity under the Spill Act for its pre-1977 conduct. In August 2017, NL filed an amended complaint in the State court alleging post-1977 conduct by the State that led to contamination. In September 2017, the State filed its answer and counterclaims. NL has denied liability on the State's counterclaims and intends to continue to seek contribution from the State.

In August 2009, we were served with a complaint in Raritan Baykeeper, Inc. d/b/a NY/NJ Baykeeper et al. v. NL Industries, Inc. et al. (United States District Court, District of New Jersey, Case No. 3:09-cv-04117). This is a citizen's suit filed by two local environmental groups pursuant to the Resource Conservation and Recovery Act and the Clean Water Act against NL, current owners, developers and state and local government entities. The complaint alleges that hazardous substances were and continue to be discharged from our former Sayreville, New Jersey property into the sediments of the adjacent Raritan River. The former Sayreville site is currently being remediated by owner/developer parties under the oversight of the NJDEP. The plaintiffs seek a declaratory judgment, injunctive relief, imposition of civil penalties and an award of costs. We have denied liability and will defend vigorously against all claims.

In June 2011, we were served in ASARCO LLC v. NL Industries, Inc., et al. (United States District Court, Western District of Missouri, Case No. 4:11-cv-00138-DGK). The plaintiff brought this CERCLA contribution action against several defendants to recover a portion of the amount it paid in settlement with the U.S. Government during its Chapter 11 bankruptcy in relation to the Tar Creek site, the Cherokee County Superfund Site in southeast Kansas, the Oronogo-Duenweg Lead Mining Belt Superfund Site in Jasper County, Missouri and the Newton County Mine Tailing Site in Newton County, Missouri. We have denied liability and will defend vigorously against all of the claims. In the second quarter of 2012, NL filed a motion to stay the case. In the first quarter of 2013, NL's motion was granted and the court entered an indefinite stay. In the first quarter of 2015, Asarco was granted permission to seek an interlocutory appeal of that stay order. In March 2015, the Eighth Circuit Court of Appeals denied Asarco's request for an interlocutory appeal of the stay order and the trial court's indefinite stay remains in place.

In September 2011, we were served in ASARCO LLC v. NL Industries, Inc., et al. (United States District Court, Eastern District of Missouri, Case No. 4:11-cv-00864). The plaintiff brought this CERCLA contribution action against several defendants to recover a portion of the amount it paid in settlement with the U.S. Government during its Chapter 11 bankruptcy in relation to the Southeast Missouri Mining District. In May 2015, the trial court on its own motion entered an indefinite stay of the litigation. In June 2015, Asarco filed an appeal of the stay in the Eighth Circuit Court of Appeals. NL has moved to dismiss that appeal as improperly filed. In October 2015, the Eighth

Circuit Court of Appeals granted NL's motion to dismiss Asarco's appeal and the trial court's indefinite stay remains in place.

In July 2012, we were served in EPEC Polymers, Inc., v. NL Industries, Inc., (United States District Court for the District of New Jersey, Case 3:12-cv-03842-PGS-TJB). The plaintiff, a landowner of property located across the Raritan River from our former Sayreville, New Jersey operation, claims that contaminants from NL's former Sayreville operation came to be located on its land. The complaint seeks compensatory and punitive damages and

alleges, among other things, trespass, private nuisance, negligence, strict liability, and claims under CERCLA and the New Jersey Spill Act. In April 2016, the case was stayed and administratively terminated pending court-ordered mediation. In October 2017, the parties informed the court that further mediation would not be fruitful. The case was reopened in December 2017. We will continue to deny liability and defend vigorously against all of the claims.

In March 2013, NL received Special Notice from EPA for Operable Unit 1 (OU1), residential area, at the Big River Mine Tailings Superfund Site in St. Francois County, Missouri. The site encompasses approximately eight former mine and mill areas, only one of which is associated with former NL operations, as well as adjacent residential areas. NL initiated a dialog with EPA regarding a potential settlement for this operable unit. In October 2018, NL and the United States entered into a consent decree for OU1. The consent decree was approved by the Court in November 2018 and NL paid all sums due under the consent decree in December 2018. NL's liability for OU1 is now resolved.

In September 2013, EPA issued to NL and 34 other PRPs general notice of potential liability and a demand for payment of past costs and performance of a Remedial Design for the Gowanus Canal Superfund Site in Brooklyn, New York. In March 2014, EPA issued a UAO to NL and approximately 27 other PRPs for performance of the Remedial Design at the site. EPA contends that NL is liable as the alleged successor to the Doehler Die Casting Company, and therefore responsible for any potential contamination at the Site resulting from Doehler's ownership/operation of a warehouse and a die casting plant it owned 90 years ago. NL believes that it has no liability at the Site. NL is currently in discussions with EPA regarding a de minimis settlement and is otherwise taking actions necessary to respond to the UAO. If these discussions are unsuccessful, NL will continue to deny liability and will defend vigorously against all of the claims.

In June 2016, NL and one other party received special notice from EPA for Operable Unit 2 of the Madison County Mines Superfund Site near Fredericktown, Missouri. The Site includes several mining properties in Madison County, Missouri. Operable Unit 2 is a former cobalt mine and refinery that is now owned by another mining company. In the special notice, EPA requested that NL and the other mining company agree to perform a Remedial Investigation/Feasibility Study for Operable Unit 2. NL initiated a dialog with EPA regarding the special notice. In 2018 the cobalt mine portion of the property was sold to a third party. As part of the sale, the buyer agreed to perform any necessary work to manage and perform necessary environmental response actions at the cobalt mine portion of the site.

In August 2017, we were served in Refined Metals Corporation v. NL Industries, Inc., (United States District Court for the Southern District of Indiana, Case 1:17-cv-2565). This is a CERCLA and state law contribution action brought by the current owner of a former secondary lead smelting facility located in Beech Grove, Indiana. We intend to deny liability and will defend vigorously against all claims. In September 2018, the court dismissed the case, holding that all federal claims brought against NL were barred by the statute of limitations and finding that the court lacked jurisdiction to consider the state law claims. In October 2018, Refined Metals filed an appeal with the federal court of appeals. NL will continue to deny liability and will vigorously defend against all claims in the court of appeals.

Other litigation

We have been named as a defendant in various lawsuits in several jurisdictions, alleging personal injuries as a result of occupational exposure primarily to products manufactured by our former operations containing asbestos, silica and/or mixed dust. In addition, some plaintiffs allege exposure to asbestos from working in various facilities previously owned and/or operated by us. There are 109 of these types of cases pending, involving a total of approximately 584 plaintiffs. In addition, the claims of approximately 8,676 plaintiffs have been administratively

dismissed or placed on the inactive docket in Ohio state courts. We do not expect these claims will be re-opened unless the plaintiffs meet the courts' medical criteria for asbestos-related claims. We have not accrued any amounts for this litigation because of the uncertainty of liability and inability to reasonably estimate the liability, if any. To date, we have not been adjudicated liable in any of these matters.

Based on information available to us, including:

- facts concerning historical operations,
- the rate of new claims,
- the number of claims from which we have been dismissed, and
- our prior experience in the defense of these matters,

we believe that the range of reasonably possible outcomes of these matters will be consistent with our historical costs (which are not material). Furthermore, we do not expect any reasonably possible outcome would involve amounts material to our consolidated financial position, results of operations or liquidity. We have sought and will continue to vigorously seek, dismissal and/or a finding of no liability from each claim. In addition, from time to time, we have received notices regarding asbestos or silica claims purporting to be brought against former subsidiaries, including notices provided to insurers with which we have entered into settlements extinguishing certain insurance policies. These insurers may seek indemnification from us.

In addition to the matters described above, we and our affiliates are also involved in various other environmental, contractual, product liability, patent (or intellectual property), employment and other claims and disputes incidental to present and former businesses. In certain cases, we have insurance coverage for these items, although we do not expect additional material insurance coverage for environmental matters. We currently believe that the disposition of all of these various other claims and disputes (including asbestos-related claims), individually or in the aggregate, should not have a material adverse effect on our consolidated financial position, results of operations or liquidity beyond the accruals already provided.

Insurance coverage claims

We are involved in certain legal proceedings with a number of our former insurance carriers regarding the nature and extent of the carriers' obligations to us under insurance policies with respect to certain lead pigment and asbestos lawsuits. The issue of whether insurance coverage for defense costs or indemnity or both will be found to exist for our lead pigment and asbestos litigation depends upon a variety of factors and we cannot assure you that such insurance coverage will be available.

We have agreements with certain of our former insurance carriers pursuant to which the carriers reimburse us for a portion of our future lead pigment litigation defense costs, and one such carrier reimburses us for a portion of our future asbestos litigation defense costs. We are not able to determine how much we will ultimately recover from these carriers for defense costs incurred by us because of certain issues that arise regarding which defense costs qualify for reimbursement. While we continue to seek additional insurance recoveries, we do not know if we will be successful in obtaining reimbursement for either defense costs or indemnity. Accordingly, we recognize insurance recoveries in income only when receipt of the recovery is probable and we are able to reasonably estimate the amount of the recovery.

In January 2014, we were served with a complaint in Certain Underwriters at Lloyds, London, et al v. NL Industries, Inc. (Supreme Court of the State of New York, County of New York, Index No. 14/650103). The plaintiff, a former insurance carrier of ours, is seeking a declaratory judgment of its obligations to us under insurance policies issued to us by the plaintiff with respect to certain lead pigment lawsuits. Other insurers have been added as parties to the case and have also sought a declaratory judgment regarding their obligations under certain insurance policies. NL has filed a counterclaim seeking a declaratory judgment that all of the insurers are obligated to provide NL with certain coverage and seeking damages for breach of contract. The case is now proceeding in the trial court. We believe the insurers' claims are without merit and we intend to defend NL's rights and prosecute NL's claims in this action vigorously.

In February 2014, we were served with a complaint in Zurich American Insurance Company, as successor-in-interest to Zurich Insurance Company, U.S. Branch vs. NL Industries, Inc., and The People of the State of California, acting by and through county Counsels of Santa Clara, Alameda, Los Angeles, Monterey, San Mateo, Solano and Ventura Counties and the city Attorneys of Oakland, San Diego, and San Francisco, et al (Superior Court of California, County of Santa Clara, Case No.: 1-14-CV-259924). In January 2015, an Order of Deposit Under CCP § 572 was entered by the trial court.

We have settled insurance coverage claims concerning environmental claims with certain of our principal former insurance carriers. We do not expect further material settlements relating to environmental remediation coverage.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable

PART II

ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY AND RELATED STOCKHOLDER MATTERS

Our common stock is listed and traded on the New York Stock Exchange (NYSE: NL). As of March 1, 2019, there were approximately 1,800 holders of record of our common stock

Performance graph

Set forth below is a table and line graph comparing the yearly change in our cumulative total stockholder return on our common stock against the cumulative total return of the S&P 500 Composite Stock Price Index and the S&P 500 Industrial Conglomerates Index for the period from December 31, 2013 through December 31, 2018. The graph shows the value at December 31 of each year assuming an original investment of $100 at December 31, 2012 and the reinvestment of dividends.

	December 31,					
	2013	2014	2015	2016	2017	2018
NL common stock	$100	$77	$27	$73	$127	$31
S&P 500 Composite Stock Price Index	100	114	115	129	157	150
S&P 500 Industrial Conglomerates Index	100	101	118	129	118	86

The information contained in the performance graph shall not be deemed “soliciting material” or “filed” with the SEC, or subject to the liabilities of Section 18 of the Securities Exchange Act, except to the extent we specifically request that the material be treated as soliciting material or specifically incorporate this performance graph by reference into a document filed under the Securities Act or the Securities Exchange Act.

Equity compensation plan information

We have an equity compensation plan, which was approved by our shareholders, pursuant to which an aggregate of 200,000 shares of our common stock can be awarded to members of our board of directors. At December 31, 2018, 141,400 shares are available for award under this plan. See Note 15 to our Consolidated Financial Statements.

ITEM 6. SELECTED FINANCIAL DATA

The following selected financial data should be read in conjunction with our Consolidated Financial Statements and Item 7 - “Management’s Discussion and Analysis of Financial Condition and Results of Operations.”

	Years ended December 31,				
	2014	2015	2016	2017	2018
	(In millions, except per share data)				
STATEMENTS OF OPERATIONS DATA:					
Net sales	$103.8	$109.0	$108.9	$112.0	$118.2
Income from component products operations	$13.6	$14.0	$15.6	$15.2	$17.8
Equity in earnings (losses) of Kronos	$30.2	$(52.8)	$13.2	$107.8	$62.3
Net income (loss)	$29.6	$(22.7)	$16.7	$117.8	$(39.0)
Net income (loss) attributable to NL stockholders	$28.5	$(23.9)	$15.3	$116.1	$(41.0)
DILUTED EARNINGS PER SHARE DATA:					
Net income (loss) attributable to NL stockholders	$0.59	$(0.49)	$0.31	$2.38	$(0.84)
Cash dividends per share	$-	$-	$-	$-	$-
Weighted average common shares outstanding	48,679	48,688	48,701	48,711	48,727
BALANCE SHEET DATA (at year end):					
Total assets	$496.2	$349.3	$385.0	$551.6	$547.2
Long-term debt, including current maturities	-	-	0.5	0.5	0.5
NL stockholders' equity	237.0	150.0	177.9	335.3	284.1
Total equity	251.5	165.3	194.3	353.1	303.6
STATEMENTS OF CASH FLOW DATA:					
Net cash provided by (used in):					
Operating activities	$23.6	$27.6	$27.7	$18.6	$17.1
Investing activities	(2.9)	(4.3)	(30.6)	(13.6)	1.3
Financing activities	(0.3)	(0.3)	0.2	(0.3)	(0.3)

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

RESULTS OF OPERATIONS

Business overview

We are primarily a holding company. We operate in the component products industry through our majority-owned subsidiary, CompX International Inc. We also own a noncontrolling interest in Kronos Worldwide, Inc. Both CompX (NYSE American: CIX) and Kronos (NYSE: KRO) file periodic reports with the SEC.

CompX is a leading manufacturer of engineered components utilized in a variety of applications and industries. Through its Security Products operations, CompX manufactures mechanical and electronic cabinet locks and other locking mechanisms used in recreational transportation, postal, office and institutional furniture, cabinetry, tool storage and healthcare applications. CompX also manufactures stainless steel exhaust systems, gauges, throttle controls, wake enhancement systems and trim tabs for the recreational marine and other industries through its Marine Components operations.

We account for our 30% non-controlling interest in Kronos by the equity method. Kronos is a leading global producer and marketer of value-added titanium dioxide pigments. TiO_2 is used for a variety of manufacturing applications including coatings, plastics, paper and other industrial products.

Net income (loss) overview

Our net loss attributable to NL stockholders was $41.0 million, or $.84 per share, in 2018 compared to net income of $116.1 million, or $2.38 per share, in 2017 and $15.3 million, or $.31 per share, in 2016.

As more fully described below, the decrease in our earnings per share attributable to NL stockholders from 2017 to 2018 is primarily due to the net effects of:

- a pre-tax litigation settlement expense of $62 million recognized in the second quarter of 2018;
- a pre-tax marketable equity securities expense of $60.9 million recognized in 2018 as a result of adopting ASU 2016-01 in 2018;
- equity in earnings of Kronos in 2018 of $62.3 million compared to $107.8 million in 2017;
- higher income from operations attributable to CompX of $2.6 million in 2018; and
- higher litigation fees and litigation related costs of $2.4 million in 2018.

As more fully described below, the increase in our earnings per share attributable to NL stockholders from 2016 to 2017 is primarily due to the net effects of:

- equity in earnings from Kronos in 2017 of $107.8 million compared to $13.2 million in 2016,
- lower income from operations attributable to CompX in 2017 of $.4 million,
- lower environmental remediation and related costs of $1.8 million in 2017,
- higher interest and dividend income in 2017 of $1.8 million, and
- a non-cash deferred income tax benefit of $37.5 million recognized in 2017 related to the revaluation of our net deferred income tax liability resulting from the reduction in the U.S. federal corporate income tax rate enacted into law on December 22, 2017.

Our 2018 net loss per share attributable to NL stockholders includes:

- a loss of $1.01 per share related to the litigation settlement expense recognized in the second quarter; and
- a loss, net of income taxes, included in our equity in earnings of Kronos:
- loss of $0.02 per share related to Kronos' tax on global intangible low-tax income, recognized in the fourth quarter; and
- loss of $0.01 per share related to Kronos' reserve for uncertain tax positions, recognized in the first and fourth quarters.

Our 2017 net income per share attributable to NL stockholders includes:

- income of $.77 per share related to a non-cash deferred income tax benefit related to the revaluation of our net deferred income tax liability resulting from the reduction in the U.S. federal corporate income tax rate enacted into law on December 22, 2017,
- income of $.01 per share, net of income taxes, related to insurance recoveries we recognized , and
- income or loss, net of income taxes, included in our equity in earnings of Kronos:
- income of $.76 per share related to Kronos' non-cash deferred income tax benefit recognized as the result of the reversal of its deferred income tax asset valuation allowances associated with its German and Belgian operations, mostly recognized in the second quarter,
- income of $.08 per share related to Kronos' fourth quarter non-cash deferred income tax benefit recognized as the result of the reversal of its deferred income tax asset valuation allowance related to certain U.S. deferred income tax assets of one of its non-U.S. subsidiaries (which subsidiary is treated as a dual resident for U.S. income tax purposes),
- loss of $.31 per share related to Kronos' fourth quarter provisional current income tax expense as a result of a change in the 2017 Tax Act for the one-time repatriation tax imposed on the post-1986 undistributed earnings of Kronos' non-U.S. subsidiaries,
- income of $.05 per share related to Kronos' income tax benefit related to the execution and finalization of an Advance Pricing Agreement between the Canada and Germany, mostly recognized in the third quarter (which includes an $8.6 million non-cash income tax benefit as a result of a net decrease in Kronos' reserve for uncertain tax positions),
- loss of $.02 per share related to Kronos' fourth quarter provisional non-cash deferred income tax expense related to a change in its conclusions regarding its permanent reinvestment assertion with respect to the post-1986 undistributed earnings of Kronos' European subsidiaries, and
- loss of $.02 per share related to Kronos' third quarter loss on prepayment of debt.

Our 2016 net income per share attributable to NL stockholders includes:

- income of $.01 per share, net of income taxes, related to insurance recoveries we recognized, and
- income or loss, net of income taxes, included in our equity in earnings of Kronos:
- income of $.01 per share related to Kronos' insurance settlement gains,
- income of $.01 per share related to Kronos' current income tax benefit related to the execution and finalization of an Advance Pricing Agreement between the U.S. and Canada,
- income of $.01 per share related to Kronos' recognition of a net deferred income tax benefit as the result of a net decrease in its deferred income tax asset valuation allowance related to its German and Belgian operations, and
- loss of $.01 per share related to a net increase in Kronos' reserve for uncertain tax positions.

Outlook

We currently expect our net income attributable to NL stockholders in 2019 to be higher than 2018 primarily due to the $62 million litigation expense recognized in 2018 and lower expected litigation and related costs in 2019 partially offset by lower expected equity in earnings from Kronos.

Critical accounting policies and estimates

The accompanying “Management’s Discussion and Analysis of Financial Condition and Results of Operations” is based upon our Consolidated Financial Statements, which have been prepared in accordance with accounting principles generally accepted in the United States of America (GAAP). The preparation of these financial statements requires us to make estimates and judgments 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 amount of revenues and expenses during the reported period. On an ongoing basis, we evaluate our estimates, including those related to the recoverability of long-lived assets, pension benefit obligations and the underlying actuarial assumptions related thereto, the realization of deferred income tax assets and accruals for litigation, income tax and other contingencies. We base our estimates on historical experience and on various other assumptions we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the reported amounts of assets, liabilities, revenues and expenses. Actual results may differ significantly from previously-estimated amounts under different assumptions or conditions.

The following critical accounting policies affect our more significant judgments and estimates used in the preparation of our Consolidated Financial Statements:

- Contingencies - We record accruals for environmental, legal and other contingencies and commitments when estimated future expenditures associated with such contingencies become probable, and the amounts can be reasonably estimated. However, new information may become available, or circumstances (such as applicable laws and regulations) may change, thereby resulting in an increase or decrease in the amount required to be accrued for such matters (and therefore a decrease or increase in reported net income in the period of such change).

Obligations for environmental remediation costs are difficult to assess and estimate and it is possible that actual costs for environmental remediation will exceed accrued amounts or that costs will be incurred in the future for sites in which we cannot currently estimate our liability. If these events were to occur in 2019, our corporate expenses would be higher than we currently estimate. In addition, we adjust our environmental accruals as further information becomes available to us or as circumstances change. Such further information or changed circumstances could result in an increase in our accrued environmental costs. See Note 17 to our Consolidated Financial Statements.

- Long-lived assets - We assess property and equipment for impairment only when circumstances (as specified in ASC 360-10-35, Property, Plant, and Equipment) indicate an impairment may exist. Our determination is based upon, among other things, our estimates of the amount of future net cash flows to be generated by the long-lived asset (Level 3 inputs) and our estimates of the current fair value of the asset.

Significant judgment is required in estimating such cash flows. Adverse changes in such estimates of future net cash flows or estimates of fair value could result in an inability to recover the carrying value of the long-lived asset, thereby possibly requiring an impairment charge to be recognized in the future. We do not assess our property and equipment for impairment unless certain impairment indicators specified in ASC Topic 360-10-35 are present. We did not evaluate any long-lived assets for impairment during 2018 because no such impairment indicators were present.

- Goodwill - Our net goodwill totaled $27.2 million at December 31, 2018. We perform a goodwill impairment test annually in the third quarter of each year. Goodwill is also evaluated for impairment

at other times whenever an event occurs or circumstances change that would more likely than not reduce the fair value of a reporting unit below its carrying value. All of our net goodwill at December 31, 2018 is related to CompX's security products reporting unit. In 2018 we used the qualitative assessment of ASC 350-20-35, Goodwill, for our 2018 annual impairment test and determined it was not necessary to perform the quantitative goodwill impairment test, as we concluded it is more-likely-than-not that the fair value of CompX's Security Products reporting unit exceeded its carrying amount. See Note 7 to our Consolidated Financial Statements.

When performing a qualitative assessment considerable management judgment is necessary to evaluate the qualitative impact of events and circumstances on the fair value of a reporting unit. Events and circumstances considered in our impairment evaluations, such as historical profits and stability of the markets served, are consistent with factors utilized with our internal projections and operating plan. However, future events and circumstances could result in materially different findings which could result in the recognition of a material goodwill impairment.

- Defined benefit pension plans - We maintain various defined benefit pension plans. The amounts recognized as defined benefit pension expense and the reported amounts of pension asset and accrued pension costs are actuarially determined based on several assumptions, including discount rates, expected rates of returns on plan assets, and expected mortality. Variances from these actuarially assumed rates will result in increases or decreases, as applicable, in the recognized pension obligations, pension expense and funding requirements. These assumptions are more fully described below under the heading "Assumptions on defined benefit pension plans."

- Income taxes - We recognize deferred taxes for future tax effects of temporary differences between financial and income tax reporting. Deferred income tax assets and liabilities for each tax-paying jurisdiction in which we operate are netted and presented as either a noncurrent deferred income tax asset or liability, as applicable. While we have considered future taxable income and ongoing prudent and feasible tax planning strategies in assessing the need for a valuation allowance, it is possible that in the future we may change our estimate of the amount of the deferred income tax assets that would more-likely-than-not be realized in the future resulting in an adjustment to the deferred income tax asset valuation allowance that would either increase or decrease, as applicable, reported net income in the period the change in estimate was made.

We record a reserve for uncertain tax positions where we believe it is more-likely-than-not our position will not prevail with the applicable tax authorities. It is possible that in the future we may change our assessment regarding the probability that our tax positions will prevail that would require an adjustment to the amount of our reserve for uncertain tax positions that could either increase or decrease, as applicable, reported net income in the period the change in assessment was made.

Income from operations of CompX and Kronos is impacted by certain significant judgments and estimates, as summarized below:

- Chemicals (Kronos) - allowance for doubtful accounts, impairment of equity method investments, long-lived assets, defined benefit pension plans, loss accruals and income taxes, and
- Component products (CompX) - impairment of goodwill and long-lived assets, loss accruals and income taxes.

In addition, general corporate and other items are impacted by the significant judgments and estimates for impairment of marketable securities and equity method investments, defined benefit pension plans, deferred income tax asset valuation allowances and loss accruals.

Income (loss) from operations

The following table shows the components of our income (loss) from operations.

	Years ended December 31,			% Change	
	2016	2017	2018	2016-17	2017-18
	(Dollars in millions)				
CompX	$15.6	$15.2	$17.8	(2)%	17 %
Insurance recoveries	0.4	0.4	1.3	(15)	246
Other income, net	-	.2	.6	n/m	279
Litigation settlement expense, net	-	-	(62.0)	-	n/m
Corporate expense	(16.7)	(14.1)	(18.4)	(16)	31
Income (loss) from operations, net	$(0.7)	$1.7	$(60.7)	(338)%	(3,671)%

The following table shows the components of our income (loss) before income taxes exclusive of our income (loss) from operations.

	Year ended December 31,			% Change	
	2016	2017	2018	2016-17	2017-18
	(Dollars in millions)				
Equity in earnings of Kronos	$13.2	$107.8	$62.3	718 %	(42)%
Marketable equity securities	-	-	(60.9)	n/m	n/m
Other components of net periodic pension and OPEB	(0.3)	(0.8)	(0.1)	210 %	(86)%
Interest and dividend income, net	1.7	3.5	5.0	106	42

CompX International Inc.

	Years ended December 31,			% Change	
	2016	2017	2018	2016-17	2017-18
	(Dollars in millions)				
Net sales	$108.9	$112.0	$118.2	3 %	6 %
Cost of sales	73.7	77.2	79.9	5	4
Gross margin	35.2	34.8	38.3	(1)	10
Operating costs and expenses	19.6	19.6	20.5	-	4
Income from operations	$15.6	$15.2	$17.8	(2)	17
Percentage of net sales:					
Cost of sales	67.7 %	68.9 %	67.6 %		
Gross margin	32.3	31.1	32.4		
Operating costs and expenses	18.0	17.5	17.3		
Income from operations	14.3	13.6	15.1		

Net sales - Net sales increased approximately $6.2 million in 2018 compared to 2017 primarily due to higher Marine Components sales volumes to manufacturers of ski/wakeboard boats and larger center-console boats; and to a lesser extent Security Products sales to certain markets, particularly transportation and office furniture. Relative changes in selling prices did not have a material impact on net sales comparisons.

Net sales increased approximately $3.1 million in 2017 compared to 2016 primarily due to higher Security Products sales volumes to government security, electronic lock and other markets, partially offset by a decrease in sales of security products to an original equipment manufacturer of recreational transportation products. Marine Components

also contributed with higher sales, primarily to the waterski/wakeboard boat market. Relative changes in selling prices did not have a material impact on net sales comparisons.

Cost of sales and gross margin – Cost of sales increased from 2017 to 2018 primarily due to increased sales volumes for both CompX's Security Products and Marine Components businesses. Gross margin dollars and gross profit as a percentage of sales increased from 2017 to 2018 primarily due to greater fixed cost leverage facilitated by higher production volumes for each of our business segments.

Cost of sales increased from 2016 to 2017 primarily due to increased sales volumes for CompX's Security Products and Marine Components businesses, and to a lesser extent higher raw material prices (mostly zinc and brass) and increased employee medical costs. Gross margin dollars in 2017 were comparable to 2016. As a percentage of sales, gross margin for 2017 decreased compared to 2016 due primarily to unfavorable relative changes in customer and product mix, higher raw material prices and increased employee medical costs in CompX's Security Products business, as well as higher manufacturing costs for the CompX's Marine Components business.

Operating costs and expenses – Operating costs and expenses consist primarily of sales and administrative-related personnel costs, sales commissions and advertising expenses directly related to product sales and administrative costs relating to CompX's businesses and its corporate management activities, as well as gains and losses on plant, property and equipment. Operating costs and expenses were comparable in 2016, 2017 and 2018 as a percentage of sales.

Income from operations – As a percentage of net sales, operating income increased from 2017 to 2018 while operating income decreased slightly from 2016 to 2017. Operating margins were primarily impacted by the factors impacting net sales, cost of sales, gross margin and operating costs discussed above.

General – CompX's profitability primarily depends on our ability to utilize our production capacity effectively, which is affected by, among other things, the demand for our products and our ability to control our manufacturing costs, primarily comprised of labor costs and materials. The materials used in our products consist of purchased components and raw materials some of which are subject to fluctuations in the commodity markets such as zinc, brass and stainless steel. Total material costs represented approximately 45% of our cost of sales in 2018, with commodity-related raw materials accounting for approximately 12% of our cost of sales. During 2017 and 2018, markets for the primary commodity-related raw materials used in the manufacture of our locking mechanisms, primarily zinc and brass, generally strengthened, but were moderating at the end of 2018. Over that same period, the market for stainless steel, the primary raw material used for the manufacture of marine exhaust headers and pipes and wake enhancement systems, remained relatively stable. While we expect the markets for our primary commodity-related raw materials to remain stable during 2019, we recognize that economic conditions could introduce renewed volatility on these and other manufacturing materials.

CompX occasionally enter into short-term commodity-related raw material supply arrangements to mitigate the impact of future increases in commodity related raw material costs. See Item 1 - "Business- Raw Materials."

Results by reporting unit

The key performance indicator for CompX's reporting units is the level of their income from operations (see discussion below).

	Years ended December 31,			% Change	
	2016	2017	2018	2016-17	2017-18
	(Dollars in millions)				
Net sales:					
Security Products	$94.7	$96.6	$98.4	2 %	2 %
Marine Components	14.2	15.4	19.8	8	29
Total net sales	$108.9	$112.0	$118.2	3	6
Gross margin:					
Security Products	$31.2	$31.1	$32.9	-	6
Marine Components	4.0	3.7	5.4	(7)	46
Total gross margin	$35.2	$34.8	$38.3	(1)	10
Income from operations:					
Security Products	$20.0	$19.2	$22.0	(4)	14
Marine Components	1.7	1.3	2.7	(21)	104
Corporate operating expenses	(6.1)	(5.3)	(6.9)	13	(30)
Total income from operations	$15.6	$15.2	$17.8	(2)	17
Income from operations margin:					
Security Products	21.1 %	19.9 %	22.3 %		
Marine Components	12.0	8.7	13.8		
Total income from operations margin	14.3	13.6	15.1		

Security Products - Security Products net sales increased 2% to $98.4 million in 2018 compared to $96.6 million in 2017, primarily due to higher sales to the transportation and office furniture markets. As a percentage of sales, gross profit for 2018 increased slightly over 2017 due to lower production costs, including headcount reductions made during the second quarter of 2017, and improved coverage of fixed costs over increased production volumes. Operating costs and expenses for 2018 were slightly lower than 2017. As a result, Security Products operating income as a percentage of net sales for 2018 exceeded 2017.

Security Products net sales increased 2% to $96.6 million in 2017 compared to $94.7 million in 2016, as improved sales to government security, electronic lock and other markets more than offset a decrease of approximately $2.9 million in sales to a customer serving the recreational transportation market. As a percentage of sales, gross profit for 2017 decreased compared to 2016 primarily due to unfavorable relative changes in customer and product mix, and to a lesser extent higher raw material prices (mostly zinc and brass) and increased employee medical costs. Operating costs and expenses for 2017 were comparable to 2016. As a result, Security Products operating income as a percentage of net sales for 2017 was below 2016.

Marine Components - Marine Components net sales increased 29% in 2018 as compared to 2017 as a result of continued strong demand for our products, particularly those sold to the ski/wakeboard boat market as well as to manufacturers of large center-console boats and industrial customers. Gross profit margin and operating income as a percentage of net sales increased in 2018 compared to 2017 principally due to improved fixed cost leverage facilitated by higher production volumes.

Marine Components net sales increased 8% in 2017 as compared to 2016 as a result of continued strong demand for our products, particularly those sold to the ski/wakeboard boat market. Gross profit margin and operating income as a

percentage of net sales decreased in 2017 compared to 2016 principally due to unfavorable relative changes in customer and product mix and higher manufacturing costs, including the impact of personnel turnover in key manufacturing departments.

Outlook – CompX's 2018 sales growth was largely attributable to high demand for our marine products, where we continue to benefit from innovation and diversification in our product offerings to the recreational boat markets. We also increased sales of security products, particularly to the transportation and office furniture markets. In 2019, we will seek to maintain the positive momentum in each of our business segments to grow sales and profitability. We will continue to monitor economic conditions and sales order rates and respond to fluctuations in customer demand through continuous evaluation of staffing levels and consistent execution of our lean manufacturing and cost improvement initiatives. Additionally, we continue to seek opportunities to gain market share in markets we currently serve, to expand into new markets and to develop new product features in order to mitigate the impact of changes in demand as well as broaden our sales base.

General corporate items, interest and dividend income, interest expense, provision for income taxes, noncontrolling interest and related party transactions

Insurance recoveries - We have agreements with certain insurance carriers pursuant to which the carriers reimburse us for a portion of our past lead pigment and asbestos litigation defense costs. Insurance recoveries include amounts we received from these insurance carriers.

The agreements with certain of our insurance carriers also include reimbursement for a portion of our future litigation defense costs. We are not able to determine how much we will ultimately recover from these carriers for defense costs incurred by us because of certain issues that arise regarding which defense costs qualify for reimbursement. Accordingly, these insurance recoveries are recognized when receipt is probable and the amount is determinable. See Note 17 to our Consolidated Financial Statements.

Litigation settlement expense – We recognized a pre-tax $62.0 million litigation settlement expense charge, net of expected insurance recoveries in the second quarter of 2018 related to the lead pigment litigation in California.

Corporate expense - Corporate expenses were $18.4 million in 2018, $4.3 million or 31% higher than in 2017 primarily due to higher litigation and related costs somewhat offset by lower environmental and related costs. Included in corporate expenses are:

- litigation and related costs of $6.2 million in 2018 compared to $3.8 million in 2017, and
- environmental and related costs of $2.7 million in 2018 compared to $3.4 million in 2017.

Corporate expenses were $14.1 million in 2017, $2.7 million or 16% lower than in 2016 primarily due to lower environmental and related costs somewhat offset by higher litigation and related costs. Included in corporate expenses are:

- litigation and related costs of $3.8 million in 2017 compared to $3.5 million in 2016, and
- environmental and related costs of $3.4 million in 2017 compared to $5.2 million in 2016.

Overall, we currently expect that our net general corporate expenses in 2019 will be slightly lower than in 2018 primarily due to lower expected litigation and related costs and environmental and related costs.

The level of our litigation and related expenses varies from period to period depending upon, among other things, the number of cases in which we are currently involved, the nature of such cases and the current stage of such cases (e.g. discovery, pre-trial motions, trial or appeal, if applicable). See Note 17 to our Consolidated Financial Statements. If our current expectations regarding the number of cases in which we expect to be involved during 2019 or the nature of such cases were to change, our corporate expenses could be higher than we currently estimate.

Obligations for environmental remediation costs are difficult to assess and estimate and it is possible that actual costs for environmental remediation will exceed accrued amounts or that costs will be incurred in the future for sites in

which we cannot currently estimate our liability. If these events were to occur in 2019, our corporate expenses would be higher than we currently estimate. In addition, we adjust our environmental accruals as further information becomes available to us or as circumstances change. Such further information or changed

circumstances could result in an increase in our accrued environmental costs. See Note 17 to our Consolidated Financial Statements.

Interest and dividend income – Interest income increased $1.5 million in 2018 compared to 2017 and increased $1.8 million in 2017 compared to 2016 primarily due to higher cash and cash equivalent balances available for investment, higher average outstanding balances under CompX's loan to Valhi under a promissory note (originated late in 2016) and higher average interest rates.

Marketable equity securities – Beginning on January 1, 2018 with the adoption of ASU 2016-01, any unrealized gains or losses on our marketable equity securities are now recognized as a component of other income included in Marketable equity securities on our Consolidated Statements of Operations. See Note 5 to our Consolidated Financial Statements.

Income tax expense (benefit) - We recognized income tax benefits of $2.8 million in 2016, $5.6 million in 2017 and $15.4 million in 2018. As discussed below, our income tax benefit in 2017 includes a non-cash deferred income tax benefit of $37.5 million related to the revaluation of our net deferred income tax liability resulting from the reduction in the U.S. federal corporate income tax rate enacted into law on December 22, 2017.

In accordance with GAAP, we recognize deferred income taxes on our undistributed equity in earnings of Kronos. Because we and Kronos are part of the same U.S. federal income tax group, any dividends we receive from Kronos are nontaxable to us. Accordingly, we do not recognize and we are not required to pay income taxes on dividends from Kronos. Therefore, our full-year effective income tax rate will generally be lower than the U.S. federal statutory income tax rate in years during which we receive dividends from Kronos and recognize equity in earnings of Kronos. Conversely, our effective income tax rate will generally be higher than the U.S. federal statutory income tax rate in years during which we receive dividends from Kronos and recognize equity in losses of Kronos. During interim periods, our effective income tax rate may not necessarily correspond to the foregoing due to the application of accounting for income taxes in interim periods which requires us to base our effective rate on full year projections. We received aggregate dividends from Kronos of $21.1 million in 2016 and 2017 and $23.9 million in 2018. Our effective tax rate attributable to our equity in earnings (losses) of Kronos, including the effect of non-taxable dividends we received from Kronos, was 21.2% in 2016, 28.1% in 2017 and 12.9% in 2018. The reduction in our effective rate attributable to our equity in earnings of Kronos from 2017 to 2018 is primarily attributable to the reduction in the corporate income tax rate discussed below.

On December 22, 2017, H.R.1, formally known as the "Tax Cuts and Jobs Act" ("2017 Tax Act") was enacted into law. This tax legislation, among other changes, (i) reduced the U.S Federal corporate income tax rate from 35% to 21% effective January 1, 2018; (ii) eliminated the domestic production activities deduction beginning in 2018; and (iii) allows for the expensing of certain capital expenditures. Following the enactment of the 2017 Tax Act, the Securities and Exchange Commission issued Staff Accounting Bulletin (SAB) 118 to provide guidance on the accounting and reporting impacts of the 2017 Tax Act. SAB 118 states that companies should account for changes related to the 2017 Tax Act in the period of enactment if all information is available and the accounting can be completed. In situations where companies do not have enough information to complete the accounting in the period of enactment, a company must either 1) record an estimated provisional amount if the impact of the change can be reasonably estimated; or 2) continue to apply the accounting guidance that was in effect immediately prior to the 2017 Tax Act if the impact of the change cannot be reasonably estimated. If estimated provisional amounts are recorded, SAB 118 provides a measurement period of no longer than one year during which companies should adjust those amounts as additional information becomes available in the reporting period within the measurement period in which the adjustment is determined.

Under GAAP, we were required to revalue our net deferred tax liability associated with our net taxable temporary differences in the period in which the new tax legislation was enacted based on deferred tax balances as of the enactment date, to reflect the effect of such reduction in the corporate income tax rate. Other than with respect to temporary differences related to our marketable securities, and certain year-end actuarial valuations associated with our defined benefit pension and OPEB plans, our temporary differences as of December 31, 2017 were not materially different from our temporary differences as of the enactment date. Such revaluation resulted in a non-cash deferred income tax benefit of $37.5 million recognized in continuing operations, reducing our net deferred tax liability. See Note 14 to our Consolidated Financial Statements. During the third quarter of 2018, in conjunction with

finalizing our federal income tax return, we were able to obtain, prepare and analyze the necessary information to complete the accounting related to the revaluation of our net deferred tax liability associated with our U.S. net taxable temporary differences as of December 31, 2017, which resulted in the recognition of an immaterial adjustment to the provisional amount recognized at December 31, 2017. Accordingly, we completed our analysis related to such revaluation as of September 30, 2018.

See Note 14 to our Consolidated Financial Statements for more information about our 2018 income tax items, including a tabular reconciliation of our statutory tax expense (benefit) to our actual tax expense (benefit).

Noncontrolling interest - Noncontrolling interest in net income of CompX attributable to continuing operations is consistent in each of 2016, 2017 and 2018.

Related party transactions - We are a party to certain transactions with related parties. See Notes 1 and 16 to our Consolidated Financial Statements. It is our policy to engage in transactions with related parties on terms, in our opinion, no less favorable to us than we could obtain from unrelated parties.

Equity in earnings of Kronos Worldwide, Inc.

	Years ended December 31,			% Change	
	2016	2017	2018	2016-17	2017-18
	(Dollars in millions)				
Net sales	$1,364.3	$1,729.0	$1,661.9	27 %	(4)%
Cost of sales	1,099.6	1,159.3	1,099.7	5 %	(5)%
Gross margin	$264.7	$569.7	$562.2		
Income from operations	$92.9	$347.8	$330.1	(274)%	(5)%
Other income (loss), net	(11.2)	(23.1)	(16.8)	(106)	(27)
Interest expense	(20.5)	(19.0)	(19.5)	(7)	3
Income before income taxes	61.2	305.7	293.8		
Income tax expense (benefit)	17.9	(48.8)	88.8		
Net income	$43.3	$354.5	$205.0		
Percentage of net sales:					
Cost of sales	80 %	67 %	66 %		
Income from operations	7 %	20 %	20 %		
Equity in earnings of Kronos Worldwide, Inc.	$13.2	$107.8	$62.3		
TiO_2 operating statistics:					
Sales volumes*	559	586	491	5 %	(16)%
Production volumes*	546	576	536	5 %	(7)%
Change in TiO_2 net sales:					
TiO_2 product pricing				22 %	13 %
TiO_2 sales volumes				5 %	(16)%
TiO_2 product mix/other				(1)%	(4)%
Changes in currency exchange rates				1 %	3 %

Total	27	%	(4	)%

* Thousands of metric tons

Industry conditions and 2018 overview – Due to the successful implementation of previously-announced price increases, average selling prices rose throughout 2017 and the first six months of 2018. Kronos started 2018 with average selling prices 27% higher than at the beginning of 2017, and our average selling prices at the end of the second quarter of 2018 were 3% higher than at the end of 2017, with most of the increase occurring during the first quarter. Kronos' average selling prices declined during the third and fourth quarters of 2018. Our average selling prices at the end of the fourth quarter of 2018 were 4% lower than at the end of the third quarter of 2018 and 3% lower than at the end of 2017. Lower prices in the European, Latin American and export markets were partially offset by higher prices in North America at the end of 2018 as compared to the end of 2017. We experienced lower sales volumes in all major markets in 2018 as compared to the record sales volumes achieved in 2017, with the European and export markets having the most significant decreases.

The following table shows our capacity utilization rates during 2017 and 2018.

	2017	2018
First Quarter	100%	95%
Second Quarter	100%	97%
Third Quarter	100%	92%
Fourth Quarter	100%	95%
Overall	100%	95%

Due to a moderate rise in the cost of third-party feedstock ore we procured in 2017 and 2018, our cost of sales per metric ton of TiO_2 sold in 2018 was higher as compared to 2017 (excluding the effect of changes in currency exchange rates).

Net sales – Kronos' net sales decreased 4% or $67.1 million in 2018 compared to 2017, primarily due to the net effect of a 13% increase in average TiO_2 selling prices (which increased net sales by approximately $225 million) and a 16% decrease in sales volumes (which decreased net sales by approximately $277 million). TiO_2 selling prices will increase or decrease generally as a result of competitive market pressures, changes in the relative level of supply and demand as well as changes in raw material and other manufacturing costs.

Kronos' sales volumes decreased 16% in 2018 as compared to the record sales volumes of 2017 primarily due to a combination of factors including (i) lower sales in all major markets resulting from a controlled ramp-up in January 2018 as Kronos brought the second phase of its new global enterprise resource planning system online; (ii) inventory management to assure adequate supply to its customers during the spring and summer necessitated by the lower production volumes in the first three months of the year (as discussed below); (iii) product availability in the second quarter; and (iv) customer inventory level changes in the second, third and fourth quarters as customer inventory levels returned to more normal levels. In addition to the impact of changes in average TiO_2 selling prices and sales volumes, Kronos estimates that changes in currency exchange rates increased its net sales by approximately $49 million, or 3%, as compared to 2017.

Kronos' net sales increased 27% or $364.7 million in 2017 compared to 2016, primarily due to the favorable effects of a 22% increase in average TiO_2 selling prices (which increased net sales by approximately $300 million) and a 5% increase in sales volumes (which increased net sales by approximately $68 million). TiO_2 selling prices will increase or decrease generally as a result of competitive market pressures, changes in the relative level of supply and demand as well as changes in raw material and other manufacturing costs.

Kronos' sales volumes increased primarily due to higher sales most notably in the North American market as well as the European market in 2017 as compared to 2016. Kronos' sales volumes in 2017 set a new overall record for a full-year period. Kronos estimates that changes in currency exchange rates increased its net sales by approximately $16 million, or 1%, as compared to 2016.

Cost of sales and gross margin – Kronos' cost of sales decreased $59.6 million or 5% in 2018 compared to 2017 due to the net impact of a 16% decrease in sales volumes, a 7% decrease in TiO_2 production volumes, higher raw materials and other production costs of approximately $103 million (primarily caused by higher third-party feedstock ore costs) and currency fluctuations (primarily the euro). The decrease in TiO_2 production volumes in

2018 compared to the production volumes in 2017 was primarily due to increased maintenance activities at certain facilities in 2018, and the implementation of a productivity-enhancing improvement project at our Belgian facility in the first quarter of 2018. Kronos' cost of sales as a percentage of net sales decreased to 66% in 2018 compared to 67% in 2017 as the favorable effects of higher average selling prices more than offset the unfavorable effects related to lower production volumes and higher raw materials and other production costs, as discussed above.

Kronos' gross margin as a percentage of net sales increased to 34% in 2018 compared to 33% in 2017. As discussed and quantified above, Kronos' gross margin increased primarily due to the net effect of higher average selling prices, lower sales and production volumes and higher raw materials and other production costs.

Kronos' cost of sales increased $59.7 million or 5% in 2017 compared to 2016 due to the net impact of a 5% increase in sales volumes, efficiencies related to a 5% increase in TiO_2 production volumes, higher raw materials and other production costs of approximately $13 million and currency fluctuations (primarily the euro). Kronos' production volumes in 2017 set a new overall record for a full-year period.

Kronos' cost of sales as a percentage of net sales decreased to 67% in 2017 compared to 80% in 2016 as the favorable effects of higher average selling prices and efficiencies related to higher production volumes more than offset the higher raw materials and other production costs, as discussed above.

Kronos' gross margin as a percentage of net sales increased to 33% in 2017 compared to 20% in 2016. As discussed and quantified above, our gross margin increased primarily due to the net effect of higher average selling prices, higher sales and production volumes and higher raw materials and other production costs.

Other operating income and expense, net – Kronos' selling, general and administrative expense in 2018 was $228.3 million, an increase of $27.7 million compared to 2017 in part due to higher general and administrative costs related to the implementation of a new accounting and manufacturing software system of $11 million, higher shipping and handling costs of $4 million and higher sales support costs of $3 million to better serve our customers. Selling, general and administrative expenses were approximately 14% of net sales in 2018 and 12% of net sales in 2017.

Kronos' other operating income and expense, net in 2017 was $200.6 million, an increase of $32.1 million compared to 2016. Kronos' other operating income and expense, net increased in 2017 in part due to higher shipping and handling costs of $11 million, higher general and administrative costs related to the implementation of a new accounting and manufacturing software system of $8 million higher research, development and certain sales technical support costs of $7 million and currency fluctuations (primarily the euro). Kronos' other operating income and expense, net in 2016 includes income aggregating $4.3 million related to insurance settlement gains from two separate business interruption claims. Selling, general and administrative expenses were approximately 12% of net sales in each of 2016 and 2017.

Income from operations – Kronos' income from operations decreased by $17.7 million, from $347.8 million in 2017 to $330.1 million in 2018. This decrease was due in part to the decrease in gross margin and the increase in selling, general and administrative expense noted above for the comparable periods. Kronos' income from operations as a percentage of net sales was 20% in each of 2018 and 2017. We estimate that changes in currency exchange rates increased income from operations by approximately $33 million in 2018 as compared to 2017.

Kronos' income from operations increased by $254.9 million, from $92.9 million in 2016 to $347.8 million in 2017. Kronos' income from operations as a percentage of net sales increased to 20% in 2017 from 7% in 2016. This increase was driven by the increase in gross margin, discussed above, partially offset by income aggregating $4.3 million related to insurance settlement gains from two separate business interruption claims in 2016. Kronos

estimates that changes in currency exchange rates decreased income from operations by approximately $18 million in 2017 as compared to 2016.

Other non-operating income (expense) – Beginning on January 1, 2018 with the adoption of ASU 2016-01, all of Kronos' marketable equity securities continued to be carried at fair value, but Kronos began recognizing any unrealized gains or losses on the securities in Marketable equity securities in Kronos' Consolidated Statements

of Income. Other components of net periodic pension and postretirement benefits other than pensions, or OPEB, cost decreased $2.4 million in 2018 compared to 2017 primarily due to a higher expected return on plan assets for certain non-U.S. defined benefit plans in 2018. Interest expense in 2018 was comparable to 2017, as higher average debt levels in 2018 resulting from the September 2017 issuance of Kronos' Senior Secured Notes were offset by lower average interest rates on outstanding indebtedness.

Kronos' interest expense decreased $1.5 million from $20.5 million in 2016 to $19.0 million in 2017 primarily due to higher capitalized interest in 2017. We also recognized a loss on prepayment of debt in the third quarter of 2017 aggregating $7.1 million, associated with the prepayment and termination of our term loan indebtedness.

Income tax expense (benefit) – Kronos recognized income tax expense of $88.8 million in 2018 compared to an income tax benefit of $48.8 million in 2017and income tax expense of $17.9 million in 2016. Kronos' income tax expense in 2016 includes a $3.4 million current income tax benefit related to the execution and finalization of an Advance Pricing Agreement between the U.S. and Canada, an aggregate $2.2 million non-cash tax benefit as the result of a net decrease in its deferred income tax valuation allowance and a $2.4 increase to its reserve for uncertain tax positions. As discussed below, Kronos' income tax benefit in 2017 includes the following:

- a $186.7 million non-cash deferred income tax benefit as a result of the reversal of its deferred income tax asset valuation allowances associated with Kronos' German and Belgian operations;

- an $18.7 million non-cash deferred income tax benefit as a result of the reversal of its deferred income tax asset valuation allowance related to certain U.S. deferred income tax assets of one of Kronos' non-U.S. subsidiaries (which subsidiary is treated as a dual resident for U.S. income tax purposes);

- a $76.2 million provisional current income tax expense as a result of the 2017 Tax Act for the one-time repatriation tax imposed on the post-1986 undistributed earnings of its non-U.S. subsidiaries;

- a $4.5 million provisional non-cash deferred income tax expense related to a change in its conclusions regarding its permanent reinvestment assertion with respect to the post-1986 undistributed earnings of its European subsidiaries; and

- an $11.8 million aggregate income tax benefit related to the execution and finalization of an Advance Pricing Agreement between Canada and Germany, mostly recognized in the third quarter (which includes an $8.6 million non-cash income tax benefit as a result of a net decrease in Kronos' reserve for uncertain tax positions).

Kronos' earnings are subject to income tax in various U.S. and non-U.S. jurisdictions. Beginning in 2018 (following enactment of the 2017 Tax Act discussed below), the income tax rates applicable to Kronos' pre-tax earnings (losses) of its non-U.S. operations are generally higher than the income tax rates applicable to its U.S. operations. Excluding the effect of any increase or decrease in its deferred income tax asset valuation allowance or changes in its reserve for uncertain tax positions, Kronos would generally expect its overall effective tax rate to be higher than the U.S. federal statutory tax rate of 21% primarily because of its non-U.S. operations. Prior to 2018, the income tax rates applicable to Kronos' pre-tax earnings (losses) of its non-U.S. operations were generally lower than the U.S. federal statutory tax rate of 35%.

Kronos has substantial net operating loss (NOL) carryforwards in Germany (the equivalent of $541 million for German corporate tax purposes at December 31, 2018) and in Belgium (the equivalent of $16 million for Belgian

corporate tax purposes at December 31, 2018), all of which have an indefinite carryforward period. As a result, Kronos has net deferred income tax assets with respect to these two jurisdictions, primarily related to these NOL carryforwards. The German corporate tax is similar to the U.S. federal income tax, and the German trade tax is similar to the U.S. state income tax (its German trade tax NOLs were fully utilized as of December 31, 2018). Prior to 2017, at June 30, 2015, Kronos concluded that it was required to recognize a non-cash deferred income tax asset valuation allowance under the more-likely-than-not recognition criteria with respect to its German and Belgian net deferred income tax assets. At December 31, 2016 such valuation allowance aggregated $173 million ($153 million

with respect to Germany and $20 million with respect to Belgium). During the first six months of 2017, Kronos recognized an aggregate non-cash deferred income tax benefit of $12.7 million as a result of a net decrease in such deferred income tax asset valuation allowance, due to utilizing a portion of both the German and Belgian NOL during the period. At June 30, 2017, Kronos concluded it had sufficient positive evidence under the more-likely-than-not recognition criteria to support reversal of the entire valuation allowance related to its German and Belgian operations. In accordance with the ASC 740-270 guidance regarding accounting for income taxes at interim dates, the amount of the valuation allowance reversed at June 30, 2017 ($149.9 million, of which $141.9 million related to Germany and $8.0 million related to Belgium) associated with its change in judgment at that date regarding the realizability of the related deferred income tax asset as it relates to future years (i.e. 2018 and after). A change in judgment regarding the realizability of deferred tax assets as it relates to the current year is considered in determining the estimated annual effective tax rate for the year and is recognized throughout the year, including interim periods subsequent to the date of the change in judgment. Accordingly, Kronos' income tax benefit in calendar year 2017 included an aggregate non-cash deferred income tax benefit of $186.7 million associated with the reversal of the German and Belgian valuation allowance, comprised of $12.7 million recognized in the first half of 2017 (noted above) associated with the utilization of a portion of both the German and Belgian NOLs during such period, $149.9 million related to the portion of the valuation allowance reversed as of June 30, 2017 and $24.1 million recognized in the second half of 2017 associated with the utilization of a portion of both the German and Belgian NOLs during such period. Kronos' deferred income tax asset valuation allowance increased $13.7 million in 2017 as a result of changes in currency exchange rates, which increase was recognized as part of other comprehensive income (loss).

On December 22, 2017, the 2017 Tax Act was enacted into law. This new tax legislation, among other changes, (i) reduced the U.S. Federal corporate income tax rate from 35% to 21% effective January 1, 2018; (ii) implemented a territorial tax system and imposed a one-time repatriation tax (Transition Tax) on the deemed repatriation of the post-1986 undistributed earnings of non-U.S. subsidiaries accumulated up through December 31, 2017, regardless of whether such earnings are repatriated; (iii) eliminated U.S. tax on future non-U.S. earnings (subject to certain exceptions); (iv) eliminated the domestic production activities deduction beginning in 2018; (v) eliminated the net operating loss carryback and provides for an indefinite carryforward period subject to an 80% annual usage limitation; (vi) allows for the expensing of certain capital expenditures; (vii) imposed GILTI beginning in 2018; (viii) imposed a base erosion anti-abuse tax (BEAT) beginning in 2018; and (ix) amended the rules limiting the deduction for business interest expense beginning in 2018. Following the enactment of the 2017 Tax Act, the Securities and Exchange Commission issued Staff Accounting Bulletin (SAB) 118 to provide guidance on the accounting and reporting impacts of the 2017 Tax Act. SAB 118 states that companies should account for changes related to the 2017 Tax Act in the period of enactment if all information is available and the accounting can be completed. In situations where companies do not have enough information to complete the accounting in the period of enactment, a company must either 1) record an estimated provisional amount if the impact of the change can be reasonably estimated; or 2) continue to apply the accounting guidance that was in effect immediately prior to the 2017 Tax Act if the impact of the change cannot be reasonably estimated. If estimated provisional amounts are recorded, SAB 118 provides a measurement period of no longer than one year during which companies should adjust those amounts as additional information becomes available in the reporting period within the measurement period in which such adjustment is determined.

Under GAAP, Kronos was required to revalue its net deferred tax asset associated with its U.S. net deductible temporary differences in the period in which the new tax legislation is enacted based on deferred tax balances as of the enactment date, to reflect the effect of such reduction in the corporate income tax rate. Kronos' temporary differences as of December 31, 2017 were not materially different from its temporary differences as of the enactment date, accordingly revaluation of its net deductible temporary differences was based on its net deferred tax asset as of December 31, 2017. Such revaluation was recognized in continuing operations and was not material to Kronos.

Prior to the enactment of the 2017 Tax Act, the undistributed earnings of Kronos' European subsidiaries were deemed to be permanently reinvested (Kronos had not made a similar determination with respect to the undistributed earnings of its Canadian subsidiary). Pursuant to the Transition Tax provisions imposing a one-time repatriation tax on post-1986 undistributed earnings, Kronos recognized a provisional current income tax expense of $76.2 million in the fourth quarter of 2017. The amounts recorded as of December 31, 2017 as a result of the 2017 Tax Act represented estimates based on information available at such date. Kronos elected to pay such tax over an

eight year period beginning in 2018, including approximately $6.1 million which was paid in April 2018 (for the 2017 tax year) and $5.8 million which was paid in 2018 (for the 2018 tax year). During the third quarter of 2018, in conjunction with finalizing its federal income tax return and based on additional information that became available (including proposed regulations issued by the IRS in August 2018 with respect to the Transition Tax), Kronos recognized a provisional income tax benefit of $1.7 million which amount is recorded as a measurement-period adjustment, reducing the provisional income tax expense of $76.2 million recognized in the fourth quarter of 2017. As a result, at December 31, 2018, taking into account the prior Transition Tax installments payments of $11.9 million (noted above), the balance of its unpaid Transition Tax aggregates $62.6 million, which will be paid in quarterly installments over the remainder of the eight year period. Of such $62.6 million, $56.6 million is recorded as a noncurrent payable to affiliate (income taxes payable to Valhi) classified as a noncurrent liability in its Consolidated Balance Sheet at December 31, 2018, and $6.0 million is included with its current payable to affiliate (income taxes payable to Valhi) classified as a current liability (a portion of its noncurrent income tax payable to affiliate was reclassified to its current payable to affiliate for the portion of its 2019 Transition Tax installment due within the next twelve months). Kronos completed its analysis of the Transition Tax provisions within the prescribed measurement period ending December 22, 2018 pursuant to the guidance under SAB 118.

Prior to the enactment of the 2017 Tax Act the undistributed earnings of our European subsidiaries were deemed to be permanently reinvested (Kronos had not made a similar determination with respect to the undistributed earnings of our Canadian subsidiary). As a result of the implementation of a territorial tax system under the 2017 Tax Act, effective January 1, 2018, and the Transition Tax which in effect taxes the post-1986 undistributed earnings of its non-U.S. subsidiaries accumulated up through December 31, 2017, Kronos determined effective December 31, 2017 that all of the post-1986 undistributed earnings of its European subsidiaries are not permanently reinvested. Accordingly, in the fourth quarter of 2017 Kronos recognized an aggregate provisional non-cash deferred income tax expense of $4.5 million based on its reasonable estimates of the U.S. state and non-U.S. income tax and withholding tax liability attributable to all of such previously-considered permanently reinvested undistributed earnings through December 31, 2017. The amounts recorded as of December 31, 2017 as a result of the 2017 Tax Act represented estimates based on information available at such date. Kronos has not made any measurement-period adjustments to the provisional amounts recorded at December 31, 2017 for this item during 2018 because no new information became available during the period that required an adjustment. However, Kronos recorded a non-cash deferred income tax expense of $2.4 million for the U.S. state and non-U.S. income tax and withholding tax liability attributable to the 2018 undistributed earnings of its non-U.S. subsidiaries in 2018, including withholding taxes related to the undistributed earnings of its Canadian subsidiary. Kronos has completed its analysis as it relates to the implementation of a territorial tax system under the 2017 Tax Act within the prescribed measurement period ending December 22, 2018 pursuant to the guidance under SAB 118.

Under U.S. GAAP, as it relates to the new GILTI tax rules, Kronos was allowed to make an accounting policy choice of either (1) treating taxes due on future U.S. inclusions in taxable income related to GILTI as a current-period expense when incurred (the “period cost method”) or (2) factoring such amounts into the measurement of its deferred taxes (the “deferred method”). While its future global operations depend on a number of different factors, Kronos does expect to have future U.S. inclusions in taxable income related to GILTI. Kronos did not record any adjustment related to GILTI during the first nine months of 2018 based on its determination that the impact was not material, and based on the guidance available to us at the time. During the fourth quarter of 2018, and taking into consideration proposed regulations issued by the IRS in November 2018 with respect to various related non-U.S. tax credit provisions, Kronos recognized a current cash income tax expense of $3.7 million for GILTI. In conjunction with the issuance of the proposed regulations, taking into consideration the complexities related to an election to recognize deferred taxes for basis differences that are expected to have a GILTI impact in future years, Kronos has concluded that the appropriate accounting policy election for it is to record GILTI tax as a current-period expense when incurred under the period cost method. As such, Kronos has completed its policy election within the prescribed measurement period ended December 22, 2018 pursuant to the guidance under SAB 118. Similarly, Kronos has evaluated the tax

impact of BEAT, taking into consideration proposed regulations issued by the IRS in December 2018 with respect to BEAT, and determined that the tax law imposed under BEAT has no material impact to Kronos as it has historically not entered into international payments between related parties that are unrelated to cost of goods sold. Its determinations under the GILTI, BEAT and related U.S. tax credit provisions are based on the relevant statutes and guidance provided under the proposed regulations. Given the complexity of the international provisions, it is possible that final regulations could differ from the proposed regulations and

materially impact its determinations with respect to such items. Any material change will be recognized in the period in which the final regulations are published.

Certain U.S. deferred tax attributes of one of its non-U.S. subsidiaries, which subsidiary is treated as a dual resident for U.S. income tax purposes, were subject to various limitations. As a result, Kronos had previously concluded that a deferred income tax asset valuation allowance was required to be recognized with respect to such subsidiary's U.S. net deferred income tax asset because such assets did not meet the more-likely-than-not recognition criteria primarily due to (i) the various limitations regarding use of such attributes due to the dual residency; (ii) the dual resident subsidiary had a history of losses and absent distributions from its non-U.S. subsidiaries, which were previously not determinable, such subsidiary was expected to continue to generate losses; and (iii) a limited NOL carryforward period for U.S. tax purposes. Because Kronos had concluded the likelihood of realization of such subsidiary's net deferred income tax asset was remote, it had not previously disclosed such valuation allowance or the associated amount of the subsidiary's net deferred income tax assets (exclusive of such valuation allowance). Primarily due to changes enacted under the 2017 Tax Act, Kronos concluded it had sufficient positive evidence under the more-likely-than-not recognition criteria to support reversal of the entire valuation allowance related to such subsidiary's net deferred income tax asset, which evidence included, among other things, (i) the inclusion under Transition Tax provisions of significant earnings for U.S. income tax purposes which significantly and positively impacts the ability of such deferred tax attributes to be utilized by us; (ii) the indefinite carryforward period for U.S. net operating losses incurred after December 31, 2017; (iii) an expectation of continued future profitability for its U.S. operations; and (iv) a positive taxable income basket for U.S. tax purposes in excess of the U.S. deferred tax asset related to the U.S. attributes of such subsidiary. Accordingly, in the fourth quarter of 2017 Kronos recognized an $18.7 million non-cash deferred income tax benefit as a result of the reversal of such valuation allowance.

Kronos' effective income tax rate in 2019 is expected to be higher than the U.S. federal statutory rate of 21% because the income tax rates applicable to its earnings (losses) of its non-U.S. operations will be higher than the income tax rates applicable to its U.S. operations. In addition, Kronos' consolidated effective income tax rate in 2019 is expected to be lower than its effective tax rate in 2018 primarily due to the mix of earnings and a decrease in the statutory income tax rate in certain foreign jurisdictions in which it operates.

Effects of Currency Exchange Rates

Kronos has substantial operations and assets located outside the United States (primarily in Germany, Belgium, Norway and Canada). The majority of its sales from non-U.S. operations are denominated in currencies other than the U.S. dollar, principally the euro, other major European currencies and the Canadian dollar. A portion of its sales generated from its non-U.S. operations is denominated in the U.S. dollar (and consequently Kronos' non-U.S. operations will generally hold U.S. dollars from time to time). Certain raw materials used worldwide, primarily titanium-containing feedstocks, are purchased in U.S. dollars, while labor and other production costs are purchased primarily in local currencies. Consequently, the translated U.S. dollar value of Kronos' non-U.S. sales and operating results are subject to currency exchange rate fluctuations which may favorably or unfavorably impact reported earnings and may affect the comparability of period-to-period operating results. In addition to the impact of the translation of sales and expenses over time, Kronos' non-U.S. operations also generate currency transaction gains and losses which primarily relate to the (i) difference between the currency exchange rates in effect when non-local currency sales or operating costs (primarily U.S. dollar denominated) are initially accrued and when such amounts are settled with the non-local currency, (ii) changes in currency exchange rates during time periods when Kronos' non-U.S. operations are holding non-local currency (primarily U.S. dollars), and (iii) relative changes in the aggregate fair value of currency forward contracts held from time to time. Kronos periodically uses currency forward contracts to manage a portion of its currency exchange risk, and relative changes in the aggregate fair value of any currency forward contracts it holds from time to time serves in part to mitigate the currency transaction gains or losses Kronos would otherwise recognize from the first two items described above.

Overall, Kronos estimates that fluctuations in currency exchange rates had the following effects on its sales and income from operations for the periods indicated.

Impact of changes in currency exchange rates - 2018 vs. 2017

	Transaction gains/(losses) recognized			Translation gains impact of rate changes	Total currency impact 2018 vs. 2017
	2017	2018	Change		
			(In millions)		
Impact on:					
Net sales	$-	$ -	$ -	$ 49	$ 49
Income from operations	(8)	10	18	15	33

The $49 million increase in Kronos' net sales (translation gain) was caused primarily by a weakening of the U.S. dollar relative to the euro, as its euro-denominated sales were translated into more U.S. dollars in 2018 as compared to 2017. The weakening of the U.S. dollar relative to the Canadian dollar and the Norwegian krone in 2018 did not have a significant effect on the reported amount of our net sales, as a substantial portion of the sales generated by our Canadian and Norwegian operations are denominated in the U.S. dollar.

The $33 million increase in income from operations was comprised of the following:

- Approximately $18 million from net currency transaction gains primarily caused by relative changes in currency exchange rates at each applicable balance sheet date between the U.S. dollar and the euro, Canadian dollar and the Norwegian krone, which causes increases or decreases, as applicable, in U.S. dollar-denominated receivables and payables and U.S. dollar currency held by our non-U.S. operations, and
- Approximately $15 million from net currency translation gains primarily caused by a weakening of the U.S. dollar relative to the euro as the positive effects of the weaker U.S. dollar on euro-denominated sales more than offset the unfavorable effects of euro-denominated operating costs being translated into more U.S. dollars in 2018 as compared to 2017, partially offset by the weakening of the U.S. dollar relative to the Canadian dollar, as its local currency-denominated operating costs were translated into more U.S. dollars in 2018 as compared to 2017.

Overall, Kronos estimates that fluctuations in currency exchange rates had the following effects on its sales and income from operations for the periods indicated.

Impact of changes in currency exchange rates - 2017 vs. 2016

	Transaction gains/(losses) recognized			Translation gain/(loss)- impact of rate changes	Total currency impact 2016 vs.2015
	2016	2017	Change		
			(In millions)		
Impact on:					

Net sales	$-	$-	$ -	$ 16	$ 16
Income from operations	6	(8)	(14)	(4)	(18)

The $16 million increase in Kronos' net sales (translation gain) was caused primarily by a weakening of the U.S. dollar relative to the euro (mostly in the fourth quarter), as its euro-denominated sales were translated into more U.S. dollars in 2017 as compared to 2016. The weakening of the U.S. dollar relative to the Canadian dollar and the Norwegian krone in 2017 did not have a significant effect on the reported amount of Kronos' net sales, as a substantial portion of the sales generated by Kronos' Canadian and Norwegian operations are denominated in the U.S. dollar.

The $18 million decrease in Kronos' income from operations was comprised of the following:

- Approximately $14 million from net currency transaction losses caused by relative changes in currency exchange rates at each applicable balance sheet date between the U.S. dollar and the euro, Canadian dollar and the Norwegian krone, which causes increases or decreases, as applicable, in U.S. dollar-denominated receivables and payables and U.S. dollar currency held by Kronos' non-U.S. operations, and
- Approximately $4 million from net currency translation losses primarily caused by a weakening of the U.S. dollar relative to the Canadian dollar, as its local currency-denominated operating costs were translated into more U.S. dollars in 2017 as compared to 2016, and such translation, as it related to the U.S. dollar relative to the euro, had a nominal effect on Kronos' income from operations in 2017 as compared to 2016.

Outlook

During 2018 Kronos operated its production facilities at 95% of practical capacity compared to full practical capacity in 2017. Kronos expects its production volumes in 2019 to be slightly higher as compared to the 2018 production volumes. Assuming current global economic conditions continue and based on anticipated production levels, Kronos also expect its 2019 sales volumes to be higher as compared to 2018 sales volumes. Kronos will continue to monitor current and anticipated near-term customer demand levels and align its production and inventories accordingly.

The cost of third-party feedstock ore Kronos purchased in 2018 was higher as compared to 2017 and such higher cost feedstock ore was reflected in its results of operations beginning in the second quarter of 2018. Consequently, Kronos' cost of sales per metric ton of TiO_2 sold in 2018 was moderately higher than its per-metric ton cost in 2017 (excluding the effect of changes in currency exchange rates) primarily due to higher third-party feedstock ore costs along with the unfavorable effects of lower production volumes. Kronos expects its cost of sales per metric ton of TiO_2 sold in 2019 to be higher than its per-metric ton cost in 2018 primarily due to higher feedstock costs.

Kronos started 2018 with average selling prices 27% higher than the beginning of 2017. Average selling prices increased by an additional 3% in the first six months of 2018 (most of which occurred in the first quarter) and average selling prices decreased by 6% during the last six months of 2018. Industry data indicates that overall TiO_2 inventory held by producers stood at adequate-to-low levels in the last half of 2018. Kronos expects changes in customer inventory levels to continue to decrease through the first quarter of 2019 which could lead to some selling price decreases during the first quarter of 2019.

Overall, Kronos expects its sales in 2019 will be higher as compared to 2018, principally as a result of the favorable impact of higher expected sales volumes partially offset by the unfavorable impact of lower expected average selling prices. In addition, Kronos expects its income from operations in 2019 will be lower as compared to 2018, as the favorable impact of higher expected sales volumes would be more than offset by the unfavorable impact of lower expected average selling prices and higher raw material costs (principally feedstock ore) in 2019.

Due to the constraints of high capital costs and extended lead time associated with adding significant new TiO_2 production capacity, especially for premium grades of TiO_2 products produced from the chloride process, Kronos believes increased and sustained profit margins will be necessary to financially justify major expansions of TiO_2 production capacity required to meet expected future growth in demand. Any major expansion of TiO_2 production capacity, if announced, would take several years before such production would become available to meet future growth in demand.

Kronos' expectations for its future operating results are based upon a number of factors beyond its control, including worldwide growth of gross domestic product, competition in the marketplace, continued operation of competitors, unexpected or earlier-than-expected capacity additions or reductions and technological advances. If actual developments differ from Kronos' expectations, its results of operations could be unfavorably affected.

Assumptions on defined benefit pension plans

Defined benefit pension plans - We maintain various defined benefit pension plans in the U.S. and the U.K. See Note 11 to our Consolidated Financial Statements.

Under defined benefit pension plan accounting, defined benefit pension plan expense and prepaid and accrued pension costs are each recognized based on certain actuarial assumptions, principally the assumed discount rate, the assumed long-term rate of return on plan assets and the assumed increase in future compensation levels. We recognize the full funded status of our defined benefit pension plans as either an asset (for overfunded plans) or a liability (for underfunded plans) in our Consolidated Balance Sheet.

We recognized consolidated defined benefit pension plan expense of $.9 million in 2016, $1.1 million in 2017 and $.7 million in 2018. The funding requirements for these defined benefit pension plans are generally based upon applicable regulations (such as ERISA in the U.S.) and will generally differ from pension expense recognized under GAAP for financial reporting purposes. We made contributions to all of our plans of approximately $.6 million in 2016, $1.0 million in 2017 and $2.8 million in 2018.

The discount rates we use for determining defined benefit pension expense and the related pension obligations are based on current interest rates earned on long-term bonds that receive one of the two highest ratings given by recognized rating agencies in the applicable country where the defined benefit pension benefits are being paid. In addition, we receive third-party advice about appropriate discount rates, and these advisors may in some cases use their own market indices. We adjust these discount rates as of each December 31 valuation date to reflect then-current interest rates on such long-term bonds. We use these discount rates to determine the actuarial present value of the pension obligations as of December 31 of that year. We also use these discount rates to determine the interest component of defined benefit pension expense for the following year.

At December 31, 2018, our projected benefit obligations for defined benefit plans comprised $40.6 million related to U.S. plans and $8.6 million for the U.K. plan, which is associated with a former disposed business. We use different discount rate assumptions in determining our defined benefit pension plan obligations and expense for the plans we maintain in the United States and the U.K. as the interest rate environment differs from country to country.

We used the following discount rates for our defined benefit pension plans:

	Discount rates used for:		
	Obligations at December 31, 2016 and expense in 2017	Obligations at December 31, 2017 and expense in 2018	Obligations at December 31, 2018 and expense in 2019
United States	3.9%	3.5%	4.1%
United Kingdom	2.5%	2.8%	2.8%

The assumed long-term rate of return on plan assets represents the estimated average rate of earnings expected to be earned on the funds invested or to be invested from the plans' assets provided to fund the benefit payments inherent in the projected benefit obligations. Unlike the discount rate, which is adjusted each year based on changes in current long-term interest rates, the assumed long-term rate of return on plan assets will not necessarily change based upon the actual short-term performance of the plan assets in any given year. Defined benefit pension expense each year is based upon the assumed long-term rate of return on plan assets for each plan, the actual fair value of the plan assets as of the beginning of the year and an estimate of the amount of contributions to and distributions from the plan during the year. Differences between the expected return on plan assets for a given year and the actual return are deferred and amortized over future periods based on the average remaining life expectancy of the inactive participants.

At December 31, 2018, approximately 74% of the plan assets were related to plan assets for our plans in the U.S., with the remainder related to the United Kingdom plan. We use different long-term rates of return on plan asset assumptions for our U.S. and U.K. defined benefit pension plan expense because the respective plan assets are invested in a different mix of investments and the long-term rates of return for different investments differ from country to country.

In determining the expected long-term rate of return on plan asset assumptions, we consider the long-term asset mix (e.g. equity vs. fixed income) for the assets for each of our plans and the expected long-term rates of return for such asset components. In addition, we receive third-party advice about appropriate long-term rates of return. At December 31, 2017, all of the assets of our U.S. plan were invested in the Combined Master Retirement Trust (CMRT), a collective investment trust sponsored by Contran to permit the collective investment by certain master trusts which fund certain employee benefit plans sponsored by Contran and certain of its affiliates, including us. During 2018, Contran and the other employer-sponsors (including us) implemented a restructuring of the CMRT, in which a substantial part of each plan's units in the CMRT were redeemed in exchange for a pro-rata portion of a substantial part of the CMRT's investments. Following such restructuring, the plans held directly in the aggregate the investments previously held directly by the CMRT which had been exchanged for CMRT units as part of the restructuring. Certain investments held directly by the CMRT were not part of such restructuring and remain investments of the CMRT. Such restructuring was implemented in part so each plan could more easily align the composition of their plan asset portfolio with the plan's benefit obligations. Such assumed asset mixes are discussed in Note 11 to our Consolidated Financial Statements.

Our U.S. pension plan weighted average asset allocations by asset category were as follows:

	December 31,	
	2017	2018
Equity securities and limited partnerships	62 %	47 %
Fixed income securities	31	46
Other	7	7
Total	100%	100%

We regularly review our actual asset allocation for our U.S and U.K. plans, and will periodically rebalance the investments in the plan to more accurately reflect the targeted allocation.

Our assumed long-term rates of return on plan assets for 2016, 2017 and 2018 were as follows:

	2016	2017	2018
United States	7.5 %	7.5%	7.5%
United Kingdom	5.25%	5.0%	6.5%

Our long-term rate of return on plan asset assumptions in 2019 used for purposes of determining our 2019 defined benefit pension plan expense is 5.5% for the U.S. plan and 2.75% for the U.K. plan.

To the extent that a plan's particular pension benefit formula calculates the pension benefit in whole or in part based upon future compensation levels, the projected benefit obligations and the pension expense would be based in part upon expected increases in future compensation levels. However, we have no active employees participating in our defined benefit pension plans. Such plans are closed to additional participants and assumptions regarding future compensation levels are not applicable for our plans.

In addition to the actuarial assumptions discussed above, because we maintain a defined benefit pension plan in the U.K., the amount of recognized defined benefit pension expense and the amount of net pension asset and net pension liability will vary based upon relative changes in currency exchange rates.

A reduction in the assumed discount rate generally results in an actuarial loss, as the actuarially-determined present value of estimated future benefit payments will increase. Conversely, an increase in the assumed discount

rate generally results in an actuarial gain. In addition, an actual return on plan assets for a given year that is greater than the assumed return on plan assets results in an actuarial gain, while an actual return on plan assets that is less than the assumed return results in an actuarial loss. Other actual outcomes that differ from previous assumptions, such as individuals living longer or shorter than assumed in mortality tables, which are also used to determine the actuarially-determined present value of estimated future benefit payments, changes in such mortality tables themselves or plan amendments, will also result in actuarial losses or gains. These amounts are recognized in other comprehensive income. In addition, any actuarial gains generated in future periods would reduce the negative amortization effect included in earnings of any cumulative unrecognized actuarial losses, while any actuarial losses generated in future periods would reduce the favorable amortization effect included in earnings of any cumulative unrecognized actuarial gains.

During 2018, all of our defined benefit pension plans generated a combined net actuarial loss of approximately $2.7 million. This actuarial loss resulted primarily due to the actual 2018 return on plan assets being lower than the expected returns for our defined benefit pension assets partially offset by the favorable impact of increasing the discount rate assumption for our U.S. plan for December 31, 2018 as compared to December 31, 2017.

Based on the actuarial assumptions described above and our current expectation for what actual average currency exchange rates will be during 2018, we expect to recognize defined benefit pension expense of approximately $1.6 million in 2019. In comparison, we expect to be required to contribute approximately $1.5 million to such plans during 2019.

As noted above, defined benefit pension expense and the amounts recognized as accrued pension costs are based upon the actuarial assumptions discussed above. We believe that all of the actuarial assumptions used are reasonable and appropriate. However, if we had lowered the assumed discount rate by 25 basis points for all of our plans as of December 31, 2018, our aggregate projected benefit obligations would have increased by approximately $.9 million at that date. Such a change would not materially impact our defined benefit pension expense for 2018. Similarly, if we lowered the assumed long-term rate of return on plan assets by 25 basis points for all of our plans, such a change would not materially impact our defined benefit pension expense for 2018.

Non-U.S. Operations

Kronos - Kronos has substantial operations located outside the United States (principally Europe and Canada) for which the functional currency is not the U.S. dollar. As a result, the reported amount of our net investment in Kronos will fluctuate based upon changes in currency exchange rates. At December 31, 2018, Kronos had substantial net assets denominated in the euro, Canadian dollar and Norwegian krone.

LIQUIDITY AND CAPITAL RESOURCES

Consolidated cash flows

Operating activities-

Trends in cash flows from operating activities, excluding the impact of deferred taxes and relative changes in assets and liabilities, are generally similar to trends in our income (loss) from operations. Changes in working capital are primarily related to changes in receivables and inventories (as discussed below) and payables and accrued liabilities. Net cash provided by operating activities was $17.1 million in 2018 compared to $18.6 million in 2017. The $1.5 million net decrease in cash provided by operating activities includes the net effects of:

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higher cash paid for environmental remediation and related costs in 2018 of $8.3 million related to the settlement of an environmental site;

- higher net cash used for relative changes in receivables (excluding insurance recoveries), inventories, prepaid expenses, payables and accrued liabilities in 2018 of $.5 million;
- lower cash paid for taxes in 2018 of $4.8 million primarily due to the impact of the lower U.S. federal corporate income tax rate and the timing of tax payments;

- higher dividends received from Kronos in 2018 of $2.8 million; and
- higher income from operations of CompX in 2018 of $2.6 million.

Net cash provided by operating activities was $18.6 million in 2017 compared to $27.7 million in 2016. The $9.1 million net decrease in cash provided by operating activities includes the net effects of:

- lower income from operations of CompX in 2017 of $.4 million;
- higher net cash used for relative changes in receivables (excluding insurance recoveries), inventories, prepaid expenses, payables and accrued liabilities in 2017 of $1.5 million;
- higher cash paid for taxes in 2017 of $3.0 million;
- higher cash paid for environmental remediation and related costs in 2017 of $6.5 million; and
- higher interest and dividend income in 2017 of $1.8 million.

We do not have complete access to CompX's cash flows in part because we do not own 100% of CompX. A detail of our consolidated cash flows from operating activities is presented in the table below. Intercompany dividends have been eliminated. The reference to NL Parent in the tables below is a reference to NL Industries, Inc., as the parent company of CompX and our other wholly-owned subsidiaries.

	Years ended December 31,		
	2016	2017	2018
	(In millions)		
Net cash provided by (used in) operating activities:			
CompX	$ 13.9	$ 12.6	$ 17.2
NL Parent and wholly-owned subsidiaries	16.0	8.2	2.1
Eliminations	(2.2)	(2.2)	(2.2)
Total	$ 27.7	$ 18.6	$ 17.1

Relative changes in working capital can have a significant effect on cash flows from operating activities. As shown below, our total average days sales outstanding increased from December 31, 2017 to December 31, 2018 primarily as a result of the timing of sales and collections in the last month of 2018 as compared to 2017. As shown below, our average number of days in inventory at December 31, 2018 is comparable to December 31, 2017. The variability in days in inventory among our segments primarily relates to the complexity of the production processes, and therefore the length of time it takes to produce end products, as well as seasonal cycles. For comparative purposes, we have provided 2016 numbers below.

	2016	2017	2018
Days sales outstanding	36 days	38 days	40 days
Days in inventory	79 days	79 days	80 days

Investing activities-

Capital expenditures, substantially all of which relate to CompX, have primarily emphasized improving our manufacturing facilities and investing in manufacturing equipment, utilizing new technologies and increased automation of the manufacturing process, to provide for increased productivity and efficiency in order to meet expected customer demand and properly maintain our facilities and technology infrastructure. Capital expenditures were $3.2 million in 2016, $2.8 million in 2017, and $3.1 million in 2018.

Investing activities also include net loans by CompX to Valhi of $27.4 million in 2016 and $10.8 million in 2017 and net collections of $4.2 million in 2018 under a promissory note receivable from an affiliate. See Note 16 to our Consolidated Financial Statements.

Financing activities-

Cash flows from financing activities include CompX dividends paid to its stockholders other than us aggregating $.3 million in each of 2016, 2017 and 2018. Financing activities in 2016 also includes net borrowings

of $.5 million under our secured revolving credit facility with Valhi entered into in November 2016. See Notes 10 and 16 to our Consolidated Financial Statements.

Prior to 2016, after considering our results of operations, financial conditions and cash requirements for our businesses, our Board of Directors suspended our regular quarterly dividend. The declaration and payment of future dividends, and the amount thereof, is discretionary and is dependent upon these and other factors deemed relevant by our Board of Directors. The amount and timing of past dividends is not necessarily indicative of the amount or timing of any future dividends which might be paid. There are currently no contractual restrictions on the amount of dividends which we may pay. Distributions to noncontrolling interests consist of CompX dividends paid to shareholders other than us.

Outstanding debt obligations

At December 31, 2018, NL had outstanding debt obligations of $.5 million under its secured revolving credit facility with Valhi, and CompX did not have any outstanding debt obligations. We are in compliance with all of the covenants contained in our revolving credit facility with Valhi at December 31, 2018. See Note 10 to our Consolidated Financial Statements.

Kronos' North American and European revolvers and its senior secured notes contain a number of covenants and restrictions which, among other things, restrict its ability to incur additional debt, incur liens, pay dividends or merge or consolidate with, or sell or transfer substantially all of our assets to, another entity, and contains other provisions and restrictive covenants customary in lending transactions of this type. Certain of Kronos' credit agreements contain provisions which could result in the acceleration of indebtedness prior to their stated maturity for reasons other than defaults for failure to comply with typical financial or payment covenants. For example, certain credit agreements allow the lender to accelerate the maturity of the indebtedness upon a change of control (as defined in the agreement) of the borrower. In addition, certain credit agreements could result in the acceleration of all or a portion of the indebtedness following a sale of assets outside the ordinary course of business. Kronos' European revolving credit facility also requires the maintenance of certain financial ratios, and one of such requirements is based on the ratio of net debt to the last twelve months EBITDA of the borrowers. Kronos is in compliance with all of its debt covenants at December 31, 2018. Kronos believes that it will be able to continue to comply with the financial covenants contained in its credit facilities through their maturity.

Future Cash Requirements

Liquidity-

Our primary source of liquidity on an ongoing basis is our cash flow from operating activities and credit facilities with affiliates and banks as further discussed below. We generally use these amounts to fund capital expenditures (substantially all of which relate to CompX), pay ongoing environmental remediation and litigation costs, and provide for the payment of dividends (if declared).

At December 31, 2018, we had aggregate cash, cash equivalents and restricted cash of $121.0 million, substantially all of which was held in the U.S. A detail (in millions) by entity is presented in the table below.

CompX	$45.4
NL Parent and wholly-owned subsidiaries	75.6
Total	$121.0

In addition, at December 31, 2018 we owned 14.4 million shares of Valhi common stock with an aggregate market value of $27.7 million. See Note 5 to our Consolidated Financial Statements. We also owned 35.2 million shares of Kronos common stock at December 31, 2018 with an aggregate market value of $405.7 million. See Note 6 to our Consolidated Financial Statements.

We routinely compare our liquidity requirements and alternative uses of capital against the estimated future cash flows we expect to receive from our subsidiaries and affiliates. As a result of this process, we have in the past

and may in the future seek to raise additional capital, incur debt, repurchase indebtedness in the market or otherwise, modify our dividend policies, consider the sale of our interests in our subsidiaries, affiliates, business, marketable securities or other assets, or take a combination of these and other steps, to increase liquidity, reduce indebtedness and fund future activities. Such activities have in the past and may in the future involve related companies.

We periodically evaluate acquisitions of interests in or combinations with companies (including related companies) perceived by management to be undervalued in the marketplace. These companies may or may not be engaged in businesses related to our current businesses. We intend to consider such acquisition activities in the future and, in connection with this activity, may consider issuing additional equity securities and increasing indebtedness. From time to time, we also evaluate the restructuring of ownership interests among our respective subsidiaries and related companies.

Based upon our expectations of our operating performance, and the anticipated demands on our cash resources we expect to have sufficient liquidity to meet our short-term obligations (defined as the twelve-month period ending December 31, 2019). If actual developments differ materially from our expectations, our liquidity could be adversely affected. In this regard, Valhi has agreed to loan us up to $50 million on a revolving basis. At December 31, 2018, we had $.5 million in outstanding borrowings under this facility, and we had $49.5 million available for future borrowing under the facility. See Note 10 to our Consolidated Financial Statements.

Capital expenditures-

Capital expenditures for 2019 are estimated at approximately $4.8 million, substantially all of which relate to CompX. Capital spending for 2019 is expected to be funded through cash on hand and cash generated from operations.

Dividends-

Because our operations are conducted primarily through subsidiaries and affiliates, our long-term ability to meet parent company-level corporate obligations is largely dependent on the receipt of dividends or other distributions from our subsidiaries and affiliates. A detail of annual dividends we expect to receive from our subsidiaries and affiliates in 2019, based on the number of shares of common stock of these affiliates we own as of December 31, 2018 and their current regular quarterly dividend rate, is presented in the table below. In this regard, in February 2019 Kronos increased its regular quarterly dividend from $.17 per share to $.18 per share, beginning with its dividend payable in March 2019 and CompX increased its regular quarterly dividend from $.05 to $.07 per share, beginning with its dividend payable in March 2019.

	Shares held at December 31, 2018 (In millions)	Quarterly dividend rate	Annual expected dividend (In millions)
Kronos	35.2	$ .18	$ 25.4
CompX	10.8	.07	3.0
Valhi	14.4	.02	1.1
Total expected annual dividends			$ 29.5

Investments in our subsidiaries and affiliates and other acquisitions-

We have in the past and may in the future, purchase the securities of our subsidiaries and affiliates or third-parties in market or privately-negotiated transactions. We base our purchase decisions on a variety of factors, including an

analysis of the optimal use of our capital, taking into account the market value of the securities and the relative value of expected returns on alternative investments. In connection with these activities, we may consider issuing additional equity securities or increasing our indebtedness. We may also evaluate the restructuring of ownership interests of our businesses among our subsidiaries and related companies.

Off balance sheet financing arrangements

Other than operating lease commitments disclosed in Note 17 to our Consolidated Financial Statements, we are not party to any material off-balance sheet financing arrangements

Commitments and contingencies

We are subject to certain commitments and contingencies, as more fully described in Note 17 to our Consolidated Financial Statements or in Part I, Item 3 of this report. In addition to those legal proceedings described in Note 17 to our Consolidated Financial Statements, various legislation and administrative regulations have, from time to time, been proposed that seek to (i) impose various obligations on present and former manufacturers of lead pigment and lead-based paint (including us) with respect to asserted health concerns associated with the use of such products and (ii) effectively overturn court decisions in which we and other pigment manufacturers have been successful. Examples of such proposed legislation include bills which would permit civil liability for damages on the basis of market share, rather than requiring plaintiffs to prove that the defendant's product caused the alleged damage and bills which would revive actions barred by the statute of limitations. While no legislation or regulations have been enacted to date that are expected to have a material adverse effect on our consolidated financial position, results of operations or liquidity, enactment of such legislation could have such an effect.

As more fully described in the notes to our Consolidated Financial Statements, we are party to various debt, leases and other agreements which contractually and unconditionally commit us to pay certain amounts in the future. See Note 10 to our Consolidated Financial Statements. The following table summarizes our contractual commitments as of December 31, 2018 by the type and date of payment.

	Payment due date				
Contractual commitment	2019	2020/2021	2022/2023	2024 and after	Total
	(In millions)				
Indebtedness: principal payments	$-	$ -	$ .5	$ -	$.5
Operating leases	.1	.2	-	-	.3
Purchase obligations	10.8	2.0	-	-	12.8
Fixed asset acquisitions	.3	-	-	-	.3
	$11.2	$ 2.2	$ .5	$ -	$13.9

The timing and amount shown for principal payments on our outstanding indebtedness (which consists of our secured revolving credit facility with Valhi) is based on the contractual maturity date of such indebtedness. Interest expense associated with such outstanding indebtedness at December 31, 2018 is not material. The amount shown for our commitments related to operating leases and fixed asset acquisitions are based upon the contractual payment amount and the contractual payment date for such commitments. The timing and amount shown for raw material and other purchase obligations, which consist of all open purchase orders and contractual obligations (primarily commitments to purchase raw materials) is also based on the contractual payment amount and the contractual payment date for such commitments. Fixed asset acquisitions include firm purchase commitments for capital projects.

The above table does not include:

- Amounts we might pay to fund our defined benefit pension and OPEB plans, as the timing and amount of any such future fundings are unknown and dependent on, among other things, the future performance of defined benefit pension plan assets, interest rate assumptions and actual future retiree medical costs. Our defined benefit pension plans and OPEB plans are discussed in greater detail in Note 11 to our Consolidated Financial Statements. We currently expect we will be required to contribute an aggregate of $1.5 million to our defined benefit pension and OPEB plans during 2019, as discussed in further detail above.
- Any amounts that we might pay to settle any of our uncertain tax positions, as the timing and amount of any such future settlements are unknown and dependent on, among other things, the timing of tax audits. See Note 14 to our Consolidated Financial Statements.
- Any amounts we will pay to settle the Santa Clara, California public nuisance case, see Note 17 to our Consolidated Financial Statements.

Recent Accounting Pronouncements

See Note 19 to our Consolidated Financial Statements.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

General - We are exposed to market risk from changes in currency exchange rates, interest rates, raw materials and equity security prices.

Interest rates - We are exposed to market risk from changes in interest rates, primarily related to our indebtedness. We have an outstanding principal amount of indebtedness of $.5 million at December 31, 2018 bearing interest at prime plus 1.875% (7.375% at December 31, 2018) with a maturity date of December 31, 2023. The carrying value of such outstanding indebtedness approximates its fair value.

We are also exposed to market risk from changes in interest rates, primarily related to CompX's note receivable from affiliate. The outstanding principal amount of indebtedness of $34.0 million at December 31, 2018 bears interest at prime plus 1.0% (6.5% at December 31, 2018). We received interest income of $2.1 million from the note during 2018.

Marketable security prices - We are exposed to market risk due to changes in prices of the marketable securities which we own. The fair value of our equity securities at December 31, 2017 and 2018 was $88.7 million and $27.7 million, respectively. The potential change in the aggregate fair value of these investments, assuming a 10% change in prices, would be $8.9 million and $2.8 million at December 31, 2017 and 2018, respectively.

Raw materials - CompX will occasionally enter into short-term raw material arrangements to mitigate the impact of future increases in raw material costs. Otherwise, we generally do not have long-term supply agreements for our raw material requirements because either we believe the risk of unavailability of those raw materials is low and we believe the price to be stable or because long-term supply agreements for those materials are generally not available. We do not engage in commodity hedging programs.

Other - The above discussion and sensitivity analysis presented above include forward-looking statements of market risk which assume hypothetical changes in market prices. Actual future market conditions will likely differ materially from such assumptions. Accordingly, such forward-looking statements should not be considered to be projections of future events, gains or losses. Such forward-looking statements are subject to certain risks and uncertainties some of which are listed in "Business."

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

The information called for by this Item is contained in a separate section of this Annual Report. See "Index of Financial Statements" (page F-1).

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None

ITEM 9A. CONTROLS AND PROCEDURES

Evaluation of disclosure controls and procedures

We maintain disclosure controls and procedures which, as defined in Exchange Act Rule 13a-15(e), means controls and other procedures that are designed to ensure that information required to be disclosed in the reports that we file or submit to the SEC under the Securities Exchange Act of 1934, as amended (the Act), is recorded, processed, summarized and reported, within the time periods specified in the SEC's rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information we are required to disclose in the reports we file or submit to the SEC under the Act is accumulated and communicated to our management, including our principal executive officer and our principal financial officer, or persons performing

similar functions, as appropriate to allow timely decisions to be made regarding required disclosure. Each of Robert D. Graham, our Vice Chairman of the Board and Chief Executive Officer and Gregory M. Swalwell,

our Executive Vice President and Chief Financial Officer, have evaluated the design and effectiveness of our disclosure controls and procedures as of December 31, 2018. Based upon their evaluation, these executive officers have concluded that our disclosure controls and procedures are effective as of the date of this evaluation.

Management's report on internal control over financial reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting which, as defined by Exchange Act Rule 13a-15(f) means a process designed by, or under the supervision of, our principal executive and principal financial officers, or persons performing similar functions, and effected by the board of directors, management and other personnel, 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 ("GAAP"), and includes those policies and procedures that:

- pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of our assets,
- provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with GAAP, and that receipts and expenditures are being made only in accordance with authorizations of management and directors, and
- provide reasonable assurance regarding prevention or timely detection of an unauthorized acquisition, use or disposition of assets that could have a material effect on our Consolidated Financial Statements.

Our evaluation of the effectiveness of internal control over financial reporting is based upon the framework established in Internal Control – Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission in 2013 (commonly referred to as the "2013 COSO" framework). Based on our evaluation under that framework, we have concluded that our internal control over financial reporting was effective as of December 31, 2018.

This annual report does not include an attestation report of our registered public accounting firm regarding internal control over financial reporting. Management's report was not subject to attestation by our registered public accounting firm pursuant to rules of the SEC that permit us to provide only management's report in this annual report.

Other

As permitted by the SEC, our assessment of internal control over financial reporting excludes (i) internal control over financial reporting of equity method investees and (ii) internal control over the preparation of any financial statement schedules which would be required by Article 12 of Regulation S-X. However, our assessment of internal control over financial reporting with respect to equity method investees did include controls over the recording of amounts related to our investment that are recorded in the consolidated financial statements, including controls over the selection of accounting methods for our investments, the recognition of equity method earnings and losses and the determination, valuation and recording of our investment account balances.

Changes in internal control over financial reporting

There have been no changes to our internal control over financial reporting during the quarter ended December 31, 2018 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Certifications

Our chief executive officer is required to annually file a certification with the New York Stock Exchange (NYSE), certifying our compliance with the corporate governance listing standards of the NYSE. During 2018, our chief executive officer filed such annual certification with the NYSE. The 2018 certification was unqualified.

Our chief executive officer and chief financial officer are also required to, among other things, quarterly file certifications with the SEC regarding the quality of our public disclosures, as required by Section 302 of the Sarbanes-Oxley Act of 2002. We have filed the certifications for the quarter ended December 31, 2018 as Exhibits 31.1 and 31.2 to this Annual Report on Form 10-K.

ITEM 9B. OTHER INFORMATION

Not applicable PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

The information required by this Item is incorporated by reference to our 2019 definitive proxy statement to be filed with the SEC pursuant to Regulation 14A within 120 days after the end of the fiscal year covered by this report.

ITEM 11. EXECUTIVE COMPENSATION

The information required by this Item is incorporated by reference to our 2019 proxy statement.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

The information required by this Item is incorporated by reference to our 2019 proxy statement.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

The information required by this Item is incorporated by reference to our 2019 proxy statement. See also Note 16 to our Consolidated Financial Statements.

ITEM 14. PRINCIPAL ACCOUNTING FEES AND SERVICES

The Information required by this Item is incorporated by reference to our 2019 proxy statement.

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

(a) and (c) Financial Statements

The Registrant

The consolidated financial statements of the Registrant listed on the accompanying Index of Financial Statements (see page F-1) are filed as part of this Annual Report.

50%-or-less persons

The consolidated financial statements of Kronos (30%-owned at December 31, 2017) are incorporated by reference in Exhibit 99.1 of this Annual Report pursuant to Rule 3-09 of Regulation S-X. Management's Report on Internal Control Over Financial Reporting of Kronos is not included as part of Exhibit 99.1. The Registrant is not required to provide any other consolidated financial statements pursuant to Rule 3-09 of Regulation S-X.

(b)Exhibits

We have included as exhibits the items listed in the Exhibit Index. We will furnish a copy of any of the exhibits listed below upon payment of $4.00 per exhibit to cover our cost to furnish the exhibits. Pursuant to Item 601(b)(4)(iii) of Regulation S-K, any instrument defining the rights of holders of long-term debt issues and other agreements related to indebtedness which do not exceed 10% of consolidated total assets as of December 31, 2017 will be furnished to the Commission upon request.

Item No.	Exhibit Index
3.1	Certificate of Amended and Restated Certificate of Incorporation dated May 22, 2008 - incorporated by reference to Exhibit 3.1 of the Registrant's Current Report on Form 8-K (File No. 001-00640) filed with the U.S. Securities and Exchange

	Commission on May 23, 2008.
3.2	Amended and Restated Bylaws of NL Industries, Inc. as of May 23, 2008 - incorporated by reference to Exhibit 3.2 of the Registrant's Current Report on Form 8-K (File No. 001-00640) filed with the U.S. Securities and Exchange Commission on May 23, 2008.
10.1	Lease Contract dated June 21, 1952, between Farbenfabriken Bayer Aktiengesellschaft and Titangesellschaft mit beschrankter Haftung (German language version and English translation thereof) - incorporated by reference to Exhibit 10.14 to the Registrant's Annual Report on Form 10-K (File No. 001-00640) for the year ended December 31, 1985. (P)
10.2	Formation Agreement dated as of October 18, 1993 among

	Tioxide Americas Inc., Kronos Louisiana, Inc. and Louisiana Pigment Company, L.P. - incorporated by reference to Exhibit 10.2 to the Registrant's Quarterly Report on Form 10-Q (File No. 001-00640) for the quarter ended September 30, 1993. (P)
10.3	Joint Venture Agreement dated as of October 18, 1993 between Tioxide Americas Inc. and Kronos Louisiana, Inc. - incorporated by reference to Exhibit 10.3 to the Registrant's Quarterly Report on Form 10-Q (File No. 001-00640) for the quarter ended September 30, 1993. (P)
10.4	Kronos Offtake Agreement dated as of October 18, 1993 between Kronos Louisiana, Inc. and Louisiana Pigment Company, L.P. - incorporated by reference to Exhibit 10.4 to the Registrant's Quarterly Report on Form 10-Q

(File No.
001-00640) for the
quarter ended
September 30,
1993. (P)

Item No.	Exhibit Index
10.5	Amendment No. 1 to Kronos Offtake Agreement dated as of December 20, 1995 between Kronos Louisiana, Inc. and Louisiana Pigment Company, L.P. - incorporated by reference to Exhibit 10.22 to the Registrant's Annual Report on Form 10-K (File No. 001-00640) for the year ended December 31, 1995.
10.6	Tioxide Americas Offtake Agreement dated as of October 18, 1993 between Tioxide Americas Inc. and Louisiana Pigment Company, L.P. - incorporated by reference to Exhibit 10.5

	to the Registrant's Quarterly Report on Form 10-Q (File No. 001-00640) for the quarter ended September 30, 1993. (P)
10.7	Amendment No. 1 to Tioxide Americas Offtake Agreement dated as of December 20, 1995 between Tioxide Americas Inc. and Louisiana Pigment Company, L.P. - incorporated by reference to Exhibit 10.24 to the Registrant's Annual Report on Form 10-K (File No. 001-00640) for the year ended December 31, 1995.
10.8	Parents' Undertaking dated as of October 18, 1993 between ICI American Holdings Inc. and Kronos

	Worldwide, Inc. (f/k/a Kronos, Inc.) - incorporated by reference to Exhibit 10.9 to the Registrant's Quarterly Report on Form 10-Q (File No. 001-00640) for the quarter ended September 30, 1993. (P)
10.9	Allocation Agreement dated as of October 18, 1993 between Tioxide Americas Inc., ICI American Holdings, Inc., Kronos Worldwide, Inc. (f/k/a Kronos, Inc.). and Kronos Louisiana, Inc. - incorporated by reference to Exhibit 10.10 to the Registrant's Quarterly Report on Form 10-Q (File No. 001-00640) for the quarter ended September 30, 1993. (P)
10.10	

	Form of Assignment and Assumption Agreement, dated as of January 1, 1999, between Kronos Inc. (formerly known as Kronos (USA), Inc.) and Kronos International, Inc. - incorporated by reference to Exhibit 10.9 to Kronos International, Inc.'s Registration Statement on Form S-4 (File No. 333-100047).
10.11	Form of Cross License Agreement, effective as of January 1, 1999, between Kronos Inc. (formerly known as Kronos (USA), Inc.) and Kronos International, Inc. - incorporated by reference to Exhibit 10.10 to Kronos International, Inc.'s Registration

	Statement on Form S-4 (File No. 333-100047).
10.12**	Unsecured Revolving Promissory Note dated December 31, 2018 in the original principal amount of $60.0 million executed by Valhi, Inc. and payable to the order of Kronos Worldwide, Inc.
10.13	Restated and Amended Agreement by and between Richards Bay Titanium (Proprietary) Limited (acting through its sales agent Rio Tinto Iron & Titanium Limited) and Kronos (US), Inc. effective January 1, 2016 – incorporated by reference to Exhibit 10.26 to the Kronos Worldwide, Inc. Annual Report on

		Form 10-K (File No. 001-31763) for the year ended December 31, 2015.
10.17 *	Kronos Worldwide, Inc. 2012 Director Stock Plan - incorporated by reference to Exhibit 4.4 of Kronos Worldwide, Inc. Registration statement on Form S-8 (File No. 333-113425). Filed on May 31, 2012.	
10.18 *	CompX International Inc. 2012 Director Stock Plan - incorporated by reference to Exhibit 10.2 of CompX International Inc.'s Annual Report on Form 10-K (File No. 001-00640) for the year ended December 31, 2012.	
10.19 *		

		NL Industries, Inc. 2012 Director Stock Plan - incorporated by reference to Exhibit 4.4 of Registrant's statement on Form S-8 (File No. 001-00640) Filed on May 31, 2012.
10.20**		Second Amended and Restated Agreement Regarding Shared Insurance among CompX International Inc., Contran Corporation, Kronos Worldwide, Inc., NL Industries, Inc. and Valhi, Inc. dated January 25, 2019.
10.21		Intercorporate Services Agreement by and between Contran Corporation and Kronos Worldwide, Inc. - incorporated by reference to Exhibit 10.1 to the Kronos Worldwide,

Inc. Quarterly Report on Form 10-Q (File No. 001-31763) for the quarter ended March 31, 2004.

Item No.	Exhibit Index
10.22	Intercorporate Services Agreement between CompX International Inc. and Contran Corporation effective as of January 1, 2004 - incorporated by reference to Exhibit 10.2 to the CompX International Inc. Annual Report on Form 10-K (File No. 1-13905) for the year ended December 31, 2003.
10.23	Intercorporate Services Agreement by and between Contran Corporation and NL Industries, Inc. effective as of January 1, 2004 - incorporated by reference to Exhibit 10.1 to the NL Industries, Inc. Quarterly Report on Form 10-Q (File No. 001-00640) for the quarter ended March 31, 2004.
10.24	Amended and Restated Tax Agreement between Valhi, Inc. and Kronos Worldwide, Inc. - incorporated by reference to Exhibit 10.1 to the Annual Report on Form 10-K of Kronos Worldwide, Inc. (File No. 001-31763) for the year ended December 31, 2012.

10.25	Amended and Restated Tax Agreement among NL Industries, Inc., Valhi, Inc. and Contran Corporation effective December 1, 2012 incorporated by reference to Exhibit 10.40 to the Annual Report on Form 10-K (File No. 001-00640) of the Registrant for the year ended December 31, 2012.
10.26	Revolving Demand Promissory Note dated December 31, 2017 in the original principal amount of $40.0 million executed by Valhi, Inc. and payable to the order of CompX International Inc. - incorporated by reference to Exhibit 10.5 to the Annual Report on Form 10-K of CompX International Inc. (File No. 1-13905) for the year ended December 31, 2018.
10.27	Loan Agreement between NLKW Holding, LLC, as Borrower, and Valhi, Inc., as Lender, dated as of November 14, 2016 incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K (File No. 001-00640) of the Registrant dated November 14, 2016 and filed on November 15, 2016.

10.28	Pledge and Security Agreement made by and between NLKW Holding, LLC in favor of Valhi, Inc., dated as of November 14, 2016 incorporated by reference to Exhibit 10.2 to the Current Report on Form 8-K (File No. 001-00640) of the Registrant dated November 14, 2016 and filed on November 15, 2016.
10.29	Back-to-Back Loan Agreement between the registrant, as Borrower, and NLKW Holding, LLC, as Lender, dated as of November 14, 2016 incorporated by reference to Exhibit 10.3 to the Current Report on Form 8-K (File No. 001-00640) of the Registrant dated November 14, 2016 and filed on November 15, 2016.
10.30	Back-to-Back Pledge and Security Agreement made by and between the registrant in favor of Valhi, Inc., dated as of November 14, 2016 incorporated by reference to Exhibit 10.4 to the Current Report on Form 8-K (File No. 001-00640) of the Registrant dated November 14, 2016 and filed on November 15, 2016.

10.31		Indenture, dated as of September 13, 2017, among Kronos International, Inc., the guarantors named therein, and Deutsche Bank Trust Company Americas, as trustee, collateral agent, paying agent, transfer agent and registrar – incorporated by reference to Exhibit 4.1 to the Current Report on Form 8-K (File No. 001-31763) of Kronos Worldwide, Inc. dated September 13, 2017 and filed on September 13, 2017.
10.32		Pledge Agreement, dated as of September 13, 2017, among Kronos International, Inc., the guarantors named therein and Deutsche Bank Trust Company Americas, as collateral agent – incorporated by reference to Exhibit 4.2 to the Current Report on Form 8-K (File No. 001-31763) of Kronos Worldwide, Inc. dated September 13, 2017 and filed on September 13, 2017.
21.1 **		Subsidiaries of the Registrant
23.1 **		Consent of PricewaterhouseCoopers LLP with respect to NL's consolidated financial statements.

23.2 **	Consent of PricewaterhouseCoopers LLP with respect to Kronos' consolidated financial statements.
31.1 **	Certification
31.2 **	Certification

Item No.	Exhibit Index
32.1 **	Certification
99.1	Consolidated financial statements of Kronos Worldwide, Inc. - incorporated by reference to Kronos' Annual Report on Form 10-K (File No. 1-31763) for the year ended December 31, 2018.
101.INS **	XBRL Instance Document
101.SCH **	XBRL Taxonomy Extension Schema
101.CAL **	XBRL Taxonomy Extension Calculation Linkbase
101.DEF **	XBRL Taxonomy Extension Definition Linkbase

101.LAB **	XBRL Taxonomy Extension Label Linkbase
101.PRE **	XBRL Taxonomy Extension Presentation Linkbase

*Management contract, compensatory plan or arrangement.
**Filed herewith
(P)Paper exhibits

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.

NL Industries, Inc.

(Registrant)

By: /s/ Robert D. Graham
Robert D. Graham, March 11, 2019
(Vice Chairman and Chief Executive Officer)

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:

/s/ Loretta J. Feehan
Loretta J. Feehan, March 11, 2019
(Chair of the Board (non-executive))

/s/ Robert D. Graham
Robert D. Graham, March 11, 2019
(Vice Chairman and Chief Executive Officer)

/s/ Gregory M. Swalwell
Gregory M. Swalwell, March 11, 2019
(Executive Vice President and
Chief Financial Officer, Principal Financial Officer)

/s/ Amy Allbach Samford
Amy Allbach Samford, March 11, 2019
(Vice President and Controller,

Principal Accounting Officer)

/s/ Keith R. Coogan
Keith R. Coogan, March 11, 2019
(Director)

/s/ John E. Harper
John E. Harper, March 11, 2019
(Director)

/s/ C. H. Moore, Jr.
C. H. Moore, Jr., March 11, 2019
(Director)

/s/ Meredith W. Mendes
Meredith W. Mendes, March 11, 2019
(Director)

/s/ Thomas P. Stafford
Thomas P. Stafford, March 11, 2019
(Director)

NL INDUSTRIES, INC.

Annual Report on Form 10-K

Items 8, 15(a) and 15(c)

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All financial statement schedules have been omitted either because they are not applicable or required, or the information that would be required to be included is disclosed in the Notes to the Consolidated Financial Statements.

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of NL Industries, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of NL Industries, Inc. and its subsidiaries ("the Company") as of December 31, 2018 and 2017, and the related consolidated statements of operations, comprehensive income (loss), stockholders' equity and cash flows for each of the three years in the period ended December 31, 2018, including the related notes (collectively referred to as 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, 2018 and 2017, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2018 in conformity with accounting principles generally accepted in the United States of America.

Change in Accounting Principle

As discussed in Note 1 to the consolidated financial statements, the Company changed the manner in which it accounts for marketable equity securities in 2018.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's consolidated financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) ("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 of these consolidated financial statements 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. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

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.

/s/ PricewaterhouseCoopers LLP

Dallas, Texas

March 11, 2019

We have served as the Company's auditor since 1924.

NL INDUSTRIES, INC. AND SUBSIDIARIES

CONSOLIDATED BALANCE SHEETS

(In thousands, except per share data)

	2017	2018
ASSETS		
Current assets:		
Cash and cash equivalents	$98,316	$116,259
Restricted cash and cash equivalents	3,370	3,727
Accrued insurance recovery related to litigation settlement	-	15,000
Accounts and other receivables, net	10,670	12,440
Receivable from affiliate	1,767	792
Inventories, net	15,382	17,102
Prepaid expenses and other	1,162	1,324
Total current assets	130,667	166,644
Other assets:		
Note receivable from affiliate	38,200	34,000
Marketable securities	88,681	27,740
Investment in Kronos Worldwide, Inc.	229,543	255,565
Goodwill	27,156	27,156
Other assets, net	4,843	4,111
Total other assets	388,423	348,572
Property and equipment:		
Land	5,146	5,151
Buildings	23,044	22,842
Equipment	67,926	67,446
Construction in progress	569	603
	96,685	96,042
Less accumulated depreciation	64,159	64,016
Net property and equipment	32,526	32,026
Total assets	$551,616	$547,242

NL INDUSTRIES, INC. AND SUBSIDIARIES

CONSOLIDATED BALANCE SHEETS (CONTINUED)

(In thousands, except per share data)

	2017	2018
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$4,116	$4,831
Accrued litigation settlement	-	60,000
Accrued and other current liabilities	9,707	10,854
Accrued environmental remediation and related costs	5,302	5,027
Payable to affiliates	429	567
Income taxes	30	44
Total current liabilities	19,584	81,323
Noncurrent liabilities:		
Long-term debt from affiliate	500	500
Accrued pension costs	12,194	10,389
Accrued environmental remediation and related costs	106,607	93,184
Deferred income taxes	49,315	31,373
Long-term litigation settlement	-	17,000
Other	10,338	9,915
Total noncurrent liabilities	178,954	162,361
Equity:		
NL stockholders' equity:		
Preferred stock, no par value; 5,000 shares authorized; none issued	-	-
Common stock, $.125 par value; 150,000 shares authorized; 48,715 and 48,727 shares issued and outstanding	6,089	6,090
Additional paid-in capital	300,866	301,139
Retained earnings	220,104	225,156
Accumulated other comprehensive loss	(191,737)	(248,270)
Total NL stockholders' equity	335,322	284,115
Noncontrolling interest in subsidiary	17,756	19,443
Total equity	353,078	303,558
Total liabilities and equity	$551,616	$547,242

Commitments and contingencies (Notes 14 and 17)

See accompanying notes to consolidated financial statements.

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NL INDUSTRIES, INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF OPERATIONS

(In thousands, except per share data)

	Year ended December 31,		
	2016	2017	2018
Net sales	$108,920	$112,035	$118,217
Cost of sales	73,753	77,210	79,946
Gross margin	35,167	34,825	38,271
Selling, general and administrative expense	19,593	19,587	20,460
Other operating income (expense):			
Insurance recoveries	443	375	1,298
Other income, net	9	170	644
Litigation settlement expense, net	-	-	(62,000)
Corporate expense	(16,741)	(14,084)	(18,419)
Income (loss) from operations	(715)	1,699	(60,666)
Equity in earnings of Kronos Worldwide, Inc.	13,171	107,785	62,316
Other income (expense):			
Marketable equity securities	-	-	(60,941)
Other components of net periodic pension cost	(268)	(832)	(115)
Interest and dividends	1,732	3,570	5,069
Interest expense	(4)	(30)	(37)
Income (loss) before taxes	13,916	112,192	(54,374)
Income tax benefit	(2,777)	(5,634)	(15,361)
Net income (loss)	16,693	117,826	(39,013)
Noncontrolling interest in net income of subsidiary	1,368	1,726	2,004
Net income (loss) attributable to NL stockholders	$15,325	$116,100	$(41,017)
Amounts attributable to NL stockholders:			
Basic and diluted net income (loss) per share	$0.31	$2.38	$(0.84)
Weighted average shares used in the calculation of net income (loss) per share	48,701	48,711	48,727

See accompanying notes to consolidated financial statements.

NL INDUSTRIES, INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)

(In thousands)

	Year ended December 31,		
	2016	2017	2018
Net income (loss)	$16,693	$117,826	$(39,013)
Other comprehensive income (loss), net of tax:			
Marketable equity securities	20,278	25,596	-
Currency translation	(3,475)	11,392	(7,967)
Interest rate swap	55	390	-
Defined benefit pension plans	(3,998)	3,759	(2,335)
Other	(348)	(28)	(162)
Total other comprehensive income (loss), net	12,512	41,109	(10,464)
Comprehensive income (loss)	29,205	158,935	(49,477)
Comprehensive income attributable to noncontrolling interest	1,368	1,726	2,004
Comprehensive income (loss) attributable to NL stockholders	$27,837	$157,209	$(51,481)

See accompanying notes to consolidated financial statements.

NL INDUSTRIES, INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY

Years ended December 31, 2016, 2017 and 2018

(In thousands)

	Common stock	Additional paid-in capital	Retained earnings	Accumulated other comprehensive loss	Noncontrolling interest in subsidiary	Total equity
Balance at December 31, 2015	$ 6,086	$ 300,543	$ 88,679	$ (245,358)	$ 15,301	$ 165,251
Net income (loss)	-	-	15,325	-	1,368	16,693
Other comprehensive loss, net of tax	-	-	-	12,512	-	12,512
Issuance of NL common stock	2	35	-	-	-	37
Cash dividends	-	-	-	-	(332)	(332)
Other, net	-	96	-	-	13	109
Balance at December 31, 2016	6,088	300,674	104,004	(232,846)	16,350	194,270
Net income	-	-	116,100	-	1,726	117,826
Other comprehensive income, net of tax	-	-	-	41,109	-	41,109
Issuance of NL common stock	1	82	-	-	-	83
Cash dividends	-	-	-	-	(333)	(333)
Other, net	-	110	-	-	13	123
Balance at December 31, 2017	6,089	300,866	220,104	(191,737)	17,756	353,078
Change in accounting principle-ASU 2016-01	-	-	46,069	(46,069)	-	-
Balance at January 1, 2018, as adjusted	6,089	300,866	266,173	(237,806)	17,756	353,078
Net income (loss)	-	-	(41,017)	-	2,004	(39,013)
Other comprehensive income (loss), net of tax	-	-	-	(10,464)	-	(10,464)
Issuance of NL common stock	1	119	-	-	-	120
Cash dividends	-	-	-	-	(335)	(335)
Other, net	-	154	-	-	18	172
Balance at December 31, 2018	$ 6,090	$ 301,139	$ 225,156	$ (248,270)	$ 19,443	$ 303,558

See accompanying notes to consolidated financial statements.

NL INDUSTRIES, INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF CASH FLOWS

(In thousands)

	Year ended December 31,		
	2016	2017	2018
Cash flows from operating activities:			
Net income (loss)	$16,693	$117,826	$(39,013)
Depreciation and amortization	3,774	3,734	3,476
Deferred income taxes	(4,330)	(603)	(15,178)
Cash funding of benefit plans in excess of net benefit plan expense	(277)	(603)	(1,875)
Equity in losses (earnings) of Kronos Worldwide, Inc.	(13,171)	(107,785)	(62,316)
Marketable equity securities	-	-	60,941
Dividends received from Kronos Worldwide, Inc.	21,132	21,132	23,948
Other, net	362	283	(2)
Change in assets and liabilities:			
Accounts and other receivables, net	(1,601)	(117)	(16,786)
Inventories, net	(37)	(473)	(1,846)
Prepaid expenses and other	(5)	(177)	(162)
Accounts payable and accrued liabilities	(172)	(1,700)	61,769
Income taxes	18	7	16
Accounts with affiliates	2,075	(3,041)	1,113
Accrued environmental remediation and related costs	3,526	(4,749)	(13,698)
Other noncurrent assets and liabilities, net	(288)	(5,096)	16,689
Net cash provided by operating activities	27,699	18,638	17,076
Cash flows from investing activities:			
Capital expenditures	(3,206)	(2,810)	(3,118)
Promissory notes receivable from affiliate:			
Loans	(36,600)	(52,100)	(46,800)
Collections	9,200	41,300	51,000
Other	-	4	225
Net cash provided by (used in) investing activities	(30,606)	(13,606)	1,307

NL INDUSTRIES, INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF CASH FLOWS (CONTINUED)

(In thousands)

	2016	2017	2018
Cash flows from financing activities:			
Distributions to noncontrolling interests in subsidiary	(332)	(333)	(335)
Indebtedness - borrowings from affiliate	500	-	-
Net cash provided by (used in) financing activities	168	(333)	(335)
Cash, cash equivalents and restricted cash and cash equivalents - net change from:			
Operating, investing and financing activities	(2,739)	4,699	18,048
Balance at beginning of year	100,981	98,242	102,941
Balance at end of year	$98,242	$102,941	$120,989
Supplemental disclosures:			
Cash paid for (received):			
Interest	$4	$30	$34
Income taxes, net	70	3,109	(1,716)

See accompanying notes to consolidated financial statements.

NL INDUSTRIES, INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

December 31, 2018

Note 1 - Summary of significant accounting policies:

Nature of our business - NL Industries, Inc. (NYSE: NL) is primarily a holding company. We operate in the component products industry through our majority-owned subsidiary, CompX International Inc. (NYSE American: CIX). We operate in the chemicals industry through our noncontrolling interest in Kronos Worldwide, Inc. (NYSE: KRO).

Organization - At December 31, 2018, Valhi, Inc. (NYSE: VHI) held approximately 83% of our outstanding common stock and a wholly-owned subsidiary of Contran Corporation held approximately 92% of Valhi's outstanding common stock. All of Contran's outstanding voting stock is held by a family trust established for the benefit of Lisa K. Simmons and Serena Simmons Connelly and their children for which Ms. Simmons and Ms. Connelly are co-trustees, or is held directly by Ms. Simmons and Ms. Connelly or entities related to them. Consequently, Ms. Simmons and Ms. Connelly may be deemed to control Contran, Valhi and us.

Unless otherwise indicated, references in this report to "we," "us" or "our" refer to NL Industries, Inc. and its subsidiaries and affiliate, Kronos, taken as a whole.

Management's estimates - In preparing our financial statements in conformity with accounting principles generally accepted in the United States of America (GAAP), we are required to make estimates and assumptions that affect the reported amounts of our assets and liabilities and disclosures of contingent assets and liabilities at each balance sheet date and the reported amounts of our revenues and expenses during each reporting period. Actual results may differ significantly from previously-estimated amounts under different assumptions or conditions.

Principles of consolidation - Our consolidated financial statements include the financial position, results of operations and cash flows of NL and our wholly-owned and majority-owned subsidiaries, including CompX. We account for the 13% of CompX stock we do not own as a noncontrolling interest. We eliminate all material intercompany accounts and balances. Changes in ownership of our wholly-owned and majority-owned subsidiaries are accounted for as equity transactions with no gain or loss recognized on the transaction unless there is a change in control.

Currency translation - The financial statements of Kronos' non-U.S. subsidiaries are translated to U.S. dollars. The functional currency of Kronos' non-U.S. subsidiaries is generally the local currency of their country. Accordingly, Kronos translates the assets and liabilities at year-end rates of exchange, while they translate their revenues and expenses at average exchange rates prevailing during the year. We accumulate the resulting translation adjustments in stockholders' equity as part of accumulated other comprehensive income (loss), net of related deferred income taxes. Kronos recognizes currency transaction gains and losses in income which is reflected as part of our equity in earnings (losses) of Kronos.

Cash and cash equivalents - We classify bank time deposits and government and commercial notes and bills with original maturities of three months or less as cash equivalents.

Restricted cash equivalents - We classify cash equivalents that have been segregated or are otherwise limited in use as restricted. Such restrictions include cash pledged as collateral with respect to performance obligations or letters of credit required by regulatory agencies for certain environmental remediation sites, cash pledged as collateral with respect to certain workers compensation liabilities, and cash held in trust by our insurance brokerage subsidiary pending transfer to the applicable insurance or reinsurance carrier. To the extent the restricted amount relates to a recognized liability, we classify such restricted amount as either a current or noncurrent asset to correspond with the classification of the liability. To the extent the restricted amount does not relate to a recognized liability, we classify restricted cash as a current asset. Restricted cash equivalents classified as a current asset are presented separately on our Consolidated Balance Sheets, and restricted cash equivalents classified as a noncurrent asset are presented as a component of other assets on our Consolidated Balance Sheets, as disclosed in Note 8.

Marketable securities and securities transactions - We carry marketable securities at fair value. Accounting Standard Codification (ASC) Topic 820, Fair Value Measurements and Disclosures, establishes a consistent framework for measuring fair value and, with certain exceptions, this framework is generally applied to all financial statement items required to be measured at fair value. The standard requires fair value measurements to be classified and disclosed in one of the following three categories:

- Level 1 - Unadjusted quoted prices in active markets that are accessible at the measurement date for identical, unrestricted assets or liabilities;
- Level 2 - Quoted prices in markets that are not active, or inputs which are observable, either directly or indirectly, for substantially the full term of the assets or liability; and
- Level 3 - Prices or valuation techniques that require inputs that are both significant to the fair value measurement and unobservable.

We classify all of our marketable securities as available-for-sale. Prior to 2018, any unrealized gains or losses on the securities were recognized through other comprehensive income, net of deferred income taxes. Beginning on January 1, 2018 with the adoption of ASU 2016-01, Financial Instruments – Overall (Subtopic 825-10): Recognition of Financial Assets and Financial Liabilities, all of our marketable equity securities will continue to be carried at fair value as noted above, but any unrealized gains or losses on the securities are now recognized in Marketable equity securities on our Consolidated Statements of Income. See Note 5. We base realized gains and losses upon the specific identification of the securities sold.

Accounts receivable - We provide an allowance for doubtful accounts for known and estimated potential losses arising from sales to customers based on a periodic review of these accounts.

Inventories and cost of sales - We state inventories at the lower of cost or net realizable value. We generally base inventory costs for all inventory categories on an average cost that approximates the first-in, first-out method. Inventories include the costs for raw materials, the cost to manufacture the raw materials into finished goods and overhead. Depending on the inventory's stage of completion, our manufacturing costs can include the costs of packing and finishing, utilities, maintenance and depreciation, shipping and handling, and salaries and benefits associated with our manufacturing process. We allocate fixed manufacturing overhead costs based on normal production capacity. Unallocated overhead costs resulting from periods with abnormally low production levels are charged to expense as incurred. As inventory is sold to third parties, we recognize the cost of sales in the same period that the sale occurs. We periodically review our inventory for estimated obsolescence or instances when inventory is no longer marketable for its intended use and we record any write-down equal to the difference between the cost of inventory and its estimated net realizable value based on assumptions about alternative uses, market conditions and other factors.

Investment in Kronos Worldwide, Inc. - We account for our 30% non-controlling interest in Kronos by the equity method. Distributions received from Kronos are classified for statement of cash flow purposes using the "nature of distribution" approach under ASC Topic 230. See Note 6.

Goodwill - Goodwill represents the excess of cost over fair value of individual net assets acquired in business combinations. Goodwill is not subject to periodic amortization. We evaluate goodwill for impairment, annually, or when circumstances indicate the carrying value may not be recoverable. See Note 7.

Property and equipment; depreciation expense - We state property and equipment, including purchased computer software for internal use, at cost. We compute depreciation of property and equipment for financial reporting purposes principally by the straight-line method over the estimated useful lives of 15 to 40 years for buildings and 3 to 20 years for equipment and software. We use accelerated depreciation methods for income tax purposes, as permitted. Upon sale or retirement of an asset, the related cost and accumulated depreciation are removed from the

accounts and any gain or loss is recognized in income currently. Expenditures for maintenance, repairs and minor renewals are expensed; expenditures for major improvements are capitalized.

We perform impairment tests when events or changes in circumstances indicate the carrying value may not be recoverable. We consider all relevant factors. We perform impairment tests by comparing the estimated future undiscounted cash flows associated with the asset to the asset's net carrying value to determine whether impairment exists.

Employee benefit plans - Accounting and funding policies for our defined benefit pension and defined contribution retirement plans are described in Note 11. We also provide certain postretirement benefits other than pensions (OPEB), consisting of health care and life insurance benefits, to certain U.S. and Canadian retired employees, which are not material. See Note 12.

Income taxes - We, Valhi and our qualifying subsidiaries are members of Contran's consolidated U.S. federal income tax group (the Contran Tax Group) and we and certain of our qualifying subsidiaries also file consolidated unitary state income tax returns with Contran in qualifying U.S. jurisdictions. As a member of the Contran Tax Group, we are jointly and severally liable for the federal income tax liability of Contran and the other companies included in the Contran Tax Group for all periods in which we are included in the Contran Tax Group. See Note 17. As a member of the Contran Tax Group, we are party to a tax sharing agreement with Valhi and Contran which provides that we compute our provision for income taxes on a separate-company basis using the tax elections made by Contran. Pursuant to our tax sharing agreement, we make payments to or receive payments from Valhi in amounts that we would have paid to or received from the U.S. Internal Revenue Service or the applicable state tax authority had we not been a member of the Contran Tax Group. We made net payments to Valhi for income taxes of less than $.1 million in 2016 and $3.1 million in 2017 and we received net payments from Valhi for income taxes of $1.7 million in 2018.

We recognize deferred income tax assets and liabilities for the expected future tax consequences of temporary differences between the income tax and financial reporting carrying amounts of assets and liabilities, including investments in our subsidiaries and affiliates who are not members of the Contran Tax Group and undistributed earnings of non-U.S. subsidiaries which are not deemed to be permanently reinvested. In addition, we recognize deferred income taxes with respect to the excess of the financial reporting carrying amount over the income tax basis of our direct investment in Kronos common stock because the exemption under GAAP to avoid recognition of such deferred income taxes is not available to us. Deferred income tax assets and liabilities for each tax-paying jurisdiction in which we operate are netted and presented as either a noncurrent deferred income tax asset or liability, as applicable. We periodically evaluate our deferred tax assets in the various taxing jurisdictions in which we operate and adjust any related valuation allowance based on the estimate of the amount of such deferred tax assets that we believe does not meet the more-likely-than-not recognition criteria.

We account for the tax effects of a change in tax law as a component of the income tax provision related to continuing operations in the period of enactment, including the tax effects of any deferred income taxes originally established through a financial statement component other than continuing operations (i.e. other comprehensive income). Changes in applicable income tax rates over time as a result of changes in tax law, or times in which a deferred income tax asset valuation allowance is initially recognized in one year and subsequently reversed in a later year, can give rise to "stranded" tax effects in accumulated other comprehensive income in which the net accumulated income tax (benefit) remaining in accumulated other comprehensive income does not correspond to the then-applicable income tax rate applied to the pre-tax amount which resides in accumulated other comprehensive income. As permitted by GAAP, our accounting policy is to remove any such stranded tax effect remaining in accumulated other comprehensive income, by recognizing an offset to our provision for income taxes related to continuing operations, only at the time when there is no remaining pre-tax amount in accumulated other comprehensive income. For accumulated other comprehensive income related to currency translation, this would occur only upon the sale or complete liquidation of one of our non-U.S. subsidiaries. For defined pension benefit plans and OPEB plans, this would occur whenever one of our subsidiaries which previously sponsored a defined benefit pension or OPEB plan

had terminated such a plan and had no future obligation or plan asset associated with such a plan.

We record a reserve for uncertain tax positions for tax positions where we believe it is more-likely-than-not our position will not prevail with the applicable tax authorities. The amount of the benefit associated with our uncertain tax positions that we recognize is limited to the largest amount for which we believe the likelihood of realization is greater than 50%. We accrue penalties and interest on the difference between tax positions taken on

our tax returns and the amount of benefit recognized for financial reporting purposes. We classify our reserves for uncertain tax positions in a separate current or noncurrent liability, depending on the nature of the tax position. See Note 14.

Environmental remediation costs - We record liabilities related to environmental remediation obligations when estimated future expenditures are probable and reasonably estimable. We adjust these accruals as further information becomes available to us or as circumstances change. We generally do not discount estimated future expenditures to present value. We recognize any recoveries of remediation costs from other parties when we deem their receipt probable. We expense any environmental remediation related legal costs as incurred. At December 31, 2017 we had not recognized any receivables for recoveries and at December 31, 2018 we had accrued insurance recoveries of $15.0 million. See Note 17.

Net sales - Our sales involve single performance obligations to ship our products pursuant to customer purchase orders. In some cases, the purchase order is supported by an underlying master sales agreement, but our purchase order verification notice generally evidences the contract with our customer by specifying the key terms of product and quantity ordered, price and delivery and payment terms. Effective January 1, 2018 with the adoption of Accounting Standards Update ("ASU") No. 2014-09, Revenue from Contracts with Customers (ASC 606) (see Note 2), we record revenue when we satisfy our performance obligations to our customers by transferring control of our products to them, which generally occurs at point of shipment or upon delivery. Such transfer of control is also evidenced by transfer of legal title and other risks and rewards of ownership (giving the customer the ability to direct the use of, and obtain substantially all of the benefits of, the product), and our customers becoming obligated to pay us and such payment being probable of occurring. In certain arrangements we provide shipping and handling activities after the transfer of control to our customer (e.g. when control transfers prior to delivery). In such arrangements shipping and handling are considered fulfillment activities, and accordingly, such costs are accrued when the related revenue is recognized. Prior to the adoption of ASU 2014-09, we recorded sales when our products were shipped and title and other risks and rewards of ownership had passed to the customer, which was generally at the time of shipment (although in some instances shipping terms were FOB destination point, for which we did not recognize revenue until the product was received by our customers).

Revenue is recorded in an amount that reflects the net consideration we expect to receive in exchange for our products. Prices for our products are based on terms specified in published list prices and purchase orders, which generally do not include financing components, noncash consideration or consideration paid to our customers. As our standard payment terms are less than one year, we have elected the practical expedient under ASU 2014-09 and we have not assessed whether a contract has a significant financing component. We state sales net of price, early payment and distributor discounts as well as volume rebates (collectively, variable consideration). Variable consideration, to the extent present, is not material and is recognized as the amount to which we are most-likely to be entitled, using all information (historical, current and forecasted) that is reasonably available to us, and only to the extent that a significant reversal in the amount of the cumulative revenue recognized is not probable of occurring in a future period. Differences, if any, between estimates of the amount of variable consideration to which we will be entitled and the actual amount of such variable consideration have not been material in the past. We report any tax assessed by a governmental authority that we collect from our customers that is both imposed on and concurrent with our revenue-producing activities (such as sales, use, value added and excise taxes) on a net basis (meaning we do not recognize these taxes either in our revenues or in our costs and expenses).

Frequently, we receive orders for products to be delivered over dates that may extend across reporting periods. We invoice for each delivery upon shipment and recognize revenue for each distinct shipment when all sales recognition criteria for that shipment have been satisfied. As scheduled delivery dates for these orders are within a one year period, under the optional exemption provided by ASU 2014-09, we do not disclose sales allocated to future shipments of partially completed contracts.

Selling, general and administrative expenses; advertising costs; research and development costs - Selling, general and administrative expenses include costs related to marketing, sales, distribution, research and development, and administrative functions such as accounting, treasury and finance, as well as costs for salaries and benefits, travel and entertainment, promotional materials and professional fees. We expense advertising costs and research and development costs as incurred. Advertising costs were not significant in any year presented.

Corporate expenses - Corporate expenses include environmental, legal and other costs attributable to formerly-owned business units.

Earnings per share – Basic and diluted earnings per share of common stock is based upon the weighted average number of our common shares actually outstanding during each period.

Note 2 – Business and geographic information:

We operate in the security products industry and marine components industry through our majority ownership of CompX. CompX manufactures and sells security products including locking mechanisms and other security products for sale to the transportation, postal, office and institutional furniture, cabinetry, tool storage, healthcare and other industries with a facility in South Carolina and a facility shared with Marine Components in Illinois. CompX also manufactures and distributes stainless steel exhaust systems, gauges and throttle controls, wake enhancement systems and trim tabs for the recreational marine industry.

The following table disaggregates our net sales by reporting unit, which are the categories that depict how the nature, amount, timing and uncertainty of revenue and cash flows are affected by economic factors (as required by ASC 606).

	Years ended December 31,		
	2016	2017	2018
	(In thousands)		
Net sales:			
Security Products	$94,693	$96,600	$98,383
Marine Components	14,227	15,435	19,834
Total	$108,920	$112,035	$118,217

For geographic information, the point of origin (place of manufacture) for all net sales is the U.S., the point of destination for net sales is based on the location of the customer.

	Years ended December 31,		
	2016	2017	2018
	(in thousands)		
Net sales - point of destination:			
United States	$98,526	$103,646	$108,773
Canada	7,515	5,353	6,436
Other	2,879	3,036	3,008
Total	$108,920	$112,035	$118,217

All of our net property and equipment is located in the United States at December 31, 2017 and 2018.

Note 3 - Accounts and other receivables, net:

	December 31,	
	2017	2018
	(in thousands)	
Trade receivables - CompX	$10,516	$12,210
Accrued insurance recoveries	145	266
Other receivables	79	34
Allowance for doubtful accounts	(70)	(70)
Total	$10,670	$12,440

Accrued insurance recoveries are discussed in Note 17.

Note 4 - Inventories, net:

	December 31,	
	2017	2018
	(in thousands)	
Raw materials	$2,730	$2,661
Work in process	9,836	11,130
Finished products	2,816	3,311
Total	$15,382	$17,102

Note 5 - Marketable securities:

Our marketable securities consist of investments in the publicly-traded shares of our immediate parent company Valhi, Inc. Prior to 2018, any unrealized gains or losses on the securities were recognized through other comprehensive income, net of deferred income taxes. Beginning on January 1, 2018 with the adoption of Accounting Standards Update ("ASU") 2016-01, our marketable equity securities continue to be carried at fair value as noted below, but any unrealized gains or losses on the securities are now recognized as a component of other income included in Marketable equity securities on our Consolidated Statements of Operations.

	Fair value measurement level	Market value	Cost basis	Unrealized gain (loss)
		(In thousands)		
December 31, 2017				
Noncurrent assets				
Valhi common stock	1	$88,681	$24,347	$ 64,334
December 31, 2018				
Noncurrent assets				
Valhi common stock	1	$27,740	$24,347	$ 3,393

At December 31, 2017 and 2018, we held approximately 14.4 million shares of our immediate parent company, Valhi. See Note 1. Our shares of Valhi common stock are carried at fair value based on quoted market prices, representing a Level 1 input within the fair value hierarchy. At December 31, 2017 and 2018, the quoted market prices of Valhi common stock were $6.17 and $1.93 per share, respectively.

The Valhi common stock we own is subject to the restrictions on resale pursuant to certain provisions of the SEC Rule 144. In addition, as a majority-owned subsidiary of Valhi we cannot vote our shares of Valhi common stock under Delaware General Corporation Law, but we do receive dividends from Valhi on these shares, when declared and paid.

Note 6 - Investment in Kronos Worldwide, Inc.:

At December 31, 2017 and 2018, we owned approximately 35.2 million shares of Kronos common stock. The per share quoted market price of Kronos at December 31, 2017 and 2018 was $25.77 and $11.52 per share, respectively, or an aggregate market value of $907.6 million and $405.7 million, respectively. The change in the carrying value of our investment in Kronos during the past three years is summarized below:

	Years ended December 31,		
	2016	2017	2018
	(in millions)		
Balance at the beginning of the year	$140.7	$120.3	$229.5
Equity in earnings of Kronos	13.2	107.8	62.3
Dividends received from Kronos	(21.1)	(21.1)	(23.9)
Equity in Kronos' other comprehensive income (loss):			
Marketable securities	0.7	.9	-
Currency translation	(5.4)	17.5	(10.1)
Interest rate swap	0.1	.6	-
Defined benefit pension plans	(7.8)	3.6	(2.2)
Other postretirement benefit plans	(.1)	(.2)	(.1)
Other	-	0.1	-
Balance at the end of the year	$120.3	$229.5	$255.5

Selected financial information of Kronos is summarized below:

	December 31,	
	2017	2018
	(in millions)	
Current assets	$1,062.5	$1,201.4
Property and equipment, net	506.4	486.4
Investment in TiO_2 joint venture	86.5	81.3
Other noncurrent assets	169.0	129.0
Total assets	$1,824.4	$1,898.1
Current liabilities	$231.5	$233.4
Long-term debt	473.8	455.1
Accrued pension and postretirement benefits	254.2	262.9
Other noncurrent liabilities	110.6	106.9
Stockholders' equity	754.3	839.8
Total liabilities and stockholders' equity	$1,824.4	$1,898.1

	Years ended December 31,		
	2016	2017	2018
	(in millions)		

Net sales	$1,364.3	$1,729.0	$1,661.9
Cost of sales	1,099.6	1,159.3	1,099.7
Income (loss) from operations	92.9	347.8	330.1
Income tax expense (benefit)	17.9	(48.8)	88.8
Net income (loss)	43.3	354.5	205.0

Note 7 - Goodwill:

All of our goodwill recognized is related to our component products operations and was generated from CompX's acquisitions of certain business units. There have been no changes in the carrying amount of our goodwill during the past three years.

We assign goodwill based on the reporting unit (as that term is defined in ASC Topic 350-20-20 Goodwill) which corresponds to CompX's security products operations. We test for goodwill impairment at the reporting unit level. In accordance with ASC 350-20-35, we test for goodwill impairment during the third quarter of each year or when circumstances arise that indicate an impairment might be present.

In 2016, 2017 and 2018, our goodwill was tested for impairment only in the third quarter of each year in connection with our annual testing. No impairment was indicated as part of such annual review of goodwill. As permitted by GAAP, during 2017 and 2018 we used the qualitative assessment of ASC 350-20-35 for our annual impairment test and determined it was not necessary to perform the quantitative goodwill impairment test. During 2016, we used the quantitative assessment of ASC 350-20-35 for our annual impairment test using discounted cash flows to determine the estimated fair value of our Security Products reporting unit. Such discounted cash flows are a Level 3 input as defined by ASC 820-10-35. Prior to 2015, all of the goodwill related to CompX's marine components operations (which aggregated $10.1 million) was impaired, and all of the goodwill related to our wholly-owned subsidiary EWI Re, Inc., (EWI) an insurance brokerage and risk management services company (which aggregated $6.4 million) was impaired. Our gross goodwill at December 31, 2018 was $43.7 million.

Note 8 - Other assets:

	December 31,	
	2017	2018
	(in thousands)	
Restricted cash and cash equivalents	$1,255	$1,003
Pension asset	2,593	1,898
Other	995	1,210
Total	$4,843	$4,111

Note 9 - Accrued and other current liabilities:

	December 31,	
	2017	2018
	(in thousands)	

Employee benefits	$8,269	$9,001
Professional fees and settlements	350	-
Other	1,088	1,853
Total	$9,707	$10,854

Note 10 - Long-term debt:

In November 2016, we entered into a financing transaction with Valhi. Previously, and in contemplation of the financing transaction described herein, we formed NLKW Holding, LLC and capitalized it with 35.2 million shares of the common stock of Kronos held by us.

The financing transaction consisted of two steps. Under the first step, NLKW entered into a $50 million revolving credit facility (the “Valhi Credit Facility”) pursuant to which NLKW can borrow up to $50 million from Valhi (with such commitment amount subject to increase from time to time at Valhi’s sole discretion). Proceeds from any borrowings by NLKW under the Valhi Credit Facility would be available for one or more loans from NLKW to us in

accordance with the terms of the second step of the financing transaction: a Back-to-Back Credit Facility, as described below. Outstanding borrowings under the Valhi Credit Facility bear interest at the prime rate plus 1.875% per annum, payable quarterly, with all amounts due on December 31, 2023. The maximum principal amount which may be outstanding from time-to-time under the Valhi Credit Facility is limited to 50% of the amount determined by multiplying the number of shares of Kronos common stock pledged by the most recent closing price of such security on the New York Stock Exchange. Borrowings under the Valhi Credit Facility are collateralized by the assets of NLKW (consisting primarily of the shares of Kronos common stock pledged) and 100% of the membership interest in NLKW held by us. The Valhi Credit Facility contains a number of covenants and restrictions which, among other things, restrict NLKW's ability to incur additional debt, incur liens, and merge or consolidated with, or sell or transfer substantially all of NLKW's assets to, another entity, and require NLKW to maintain a minimum specified level of consolidated net worth. Upon an event of default, Valhi will be entitled to terminate its commitment to make further loans to NLKW, to declare the outstanding loans (with interest) immediately due and payable, and, in the case of certain insolvency events with respect to NLKW or us, to exercise its rights with respect to the collateral. Such collateral rights include the right to purchase all of the shares of Kronos common stock pledged at a purchase price equal to the aggregate market value of such stock (with such market value determined by an independent third-party valuation provider), less amounts owing to Valhi under the Valhi Credit Facility, with up to 50% of such purchase price being payable by Valhi in the form of an unsecured promissory note bearing interest at the prime rate plus 2.75% per annum, payable quarterly, with all amounts due no later than five years from the date of purchase, and with the remainder of such purchase price payable in cash at the date of purchase.

Contemporaneously with the entering into of the Valhi Credit Facility, NLKW entered into a $50 million revolving credit facility (the "Back-to-Back Credit Facility") with us, pursuant to which we can borrow up to $50 million from NLKW (with such commitment amount subject to increase from time to time in NLKW's sole discretion). Proceeds from any borrowings under the Back-to-Back Credit Facility would be available for our general corporate purposes, including providing resources to assist us in the resolution of certain claims and contingent liabilities which may be asserted against us. Outstanding borrowings under the Back-to-Back Credit Facility bear interest at the same rate and are payable on the same maturity date as are borrowings by NLKW under the Valhi Credit Facility. Borrowings under the Back-to-Back Credit Facility are on an unsecured basis; however, as a condition thereto, we pledged to Valhi as collateral for the Valhi Credit Facility our 100% membership interest in NLKW. Any outstanding borrowings and interest on such borrowings under the Back-to-Back Credit Facility are eliminated in the preparation of the consolidated financial statements.

We had borrowings under the Valhi Credit Facility of $0.5 million as of December 31, 2018. The average interest rate as of and for the year ended December 31, 2018 was 7.375% and 6.78%, respectively. See Note 16. We are in compliance with all of the covenants contained in the Valhi Credit Facility at December 31, 2018.

Note 11 - Employee benefit plans:

Defined contribution plans - We maintain various defined contribution pension plans. Company contributions are based on matching or other formulas. Defined contribution plan expense approximated $2.7 million in 2016, $2.5 million in 2017 and $3.1 million in 2018.

Defined benefit pension plans - We maintain a defined benefit pension plan in the U.S. We also maintain a plan in the United Kingdom related to a former disposed business unit in the U.K. The benefits under our defined benefit plans are based upon years of service and employee compensation. The plans are closed to new participants and no

additional benefits accrue to existing plan participants. Our funding policy is to contribute annually the minimum amount required under ERISA (or equivalent non-U.S.) regulations plus additional amounts as we deem appropriate.

We expect to contribute approximately $1.5 million to all of our defined benefit pension plans during 2019. Benefit payments to all plan participants out of plan assets are expected to be the equivalent of:

Years ending December 31,	Amount (In thousands)
2019	$ 3,584
2020	3,596
2021	3,627
2022	3,638
2023	3,604
Next 5 years	16,885

The funded status of our defined benefit pension plans is presented in the table below.

	December 31,	
	2017	2018
	(In thousands)	
Change in projected benefit obligations (PBO):		
Benefit obligations at beginning of the year	$54,261	$53,978
Interest cost	2,072	1,808
Participant contributions	5	5
Actuarial losses	596	(2,511)
Settlement gain	(315)	-
Change in currency exchange rates	908	(545)
Benefits paid	(3,549)	(3,486)
Benefit obligations at end of the year	53,978	49,249
Change in plan assets:		
Fair value of plan assets at beginning of the year	42,268	44,222
Actual return on plan assets	3,726	(2,237)
Employer contributions	1,006	2,792
Participant contributions	5	5
Change in currency exchange rates	766	(670)
Benefits paid	(3,549)	(3,486)
Fair value of plan assets at end of year	44,222	40,626
Funded status	$(9,756)	$(8,623)
Amounts recognized in the balance sheet:		
Noncurrent pension asset	$2,593	$1,898
Accrued pension costs:		
Current	(155)	(132)
Noncurrent	(12,194)	(10,389)
Total	$(9,756)	$(8,623)
Accumulated other comprehensive loss - actuarial losses, net	$30,435	$31,601

Total	$20,679	$22,978
Accumulated benefit obligations (ABO)	$53,978	$49,249

The amounts shown in the table above for actuarial losses (gains) at December 31, 2017 and 2018 have not been recognized as components of our periodic defined benefit pension cost as of those dates. These amounts will be recognized as components of our periodic defined benefit cost in future years. These amounts, net of deferred income taxes, are recognized in our accumulated other comprehensive income (loss) at December 31, 2017 and 2018. We expect that $1.6 million of the unrecognized actuarial losses will be recognized as a component of our periodic defined benefit pension cost in 2019.

The table below details the changes in other comprehensive income during 2016, 2017 and 2018.

	Years ended December 31,		
	2016	2017	2018
	(In thousands)		
Changes in plan assets and benefit obligations recognized in other comprehensive income (loss):			
Net actuarial gain (loss) arising during the year	$122	$498	$(2,709)
Amortization of unrecognized net actuarial loss	1,474	1,704	1,937
Total	$1,596	$2,202	$(772)

The components of our net periodic defined benefit pension cost are presented in the table below. The amount shown below for the amortization of unrecognized actuarial losses in 2016, 2017 and 2018, net of deferred income taxes, was recognized as a component of our accumulated other comprehensive income (loss) at December 31, 2015, 2016 and 2017, respectively.

	Years ended December 31,		
	2016	2017	2018
	(In thousands)		
Net periodic pension cost:			
Interest cost on PBO	$2,302	$2,072	$1,808
Expected return on plan assets	(2,911)	(2,770)	(3,043)
Recognized actuarial losses	1,474	1,704	1,937
Settlement cost	-	87	-
Total	$865	$1,093	$702

Certain information concerning our defined benefit pension plans (including information concerning certain plans for which ABO exceeds the fair value of plan assets as of the indicated date) is presented in the table below.

	December 31,	
	2017	2018
	(In thousands)	
PBO at end of the year		
U.S. plan	$44,709	$40,643
U.K. plan	9,269	8,606
Total	$53,978	$49,249
Fair value of plan assets at end of the year		
U.S. plan	$32,360	$30,122
U.K. plan	11,862	10,504
Total	$44,222	$40,626
Plans for which the ABO exceeds plan assets (only our U.S. plan):		
PBO	$44,709	$40,643
ABO	44,709	40,643
Fair value of plan assets	32,360	30,122

The weighted-average discount rate assumptions used in determining the actuarial present value of our benefit obligations as of December 31, 2017 and 2018 are 3.4% and 3.9%, respectively. Such weighted-average rates were determined using the projected benefit obligations at each date. Since our plans are closed to new participants and no new additional benefits accrue to existing plan participants, assumptions regarding future compensation levels are not applicable. Consequently, the accumulated benefit obligations for all of our defined benefit pension plans were equal to the projected benefit obligations at December 31, 2017 and 2018.

The weighted-average rate assumptions used in determining the net periodic pension cost for 2016, 2017 and 2018 are presented in the table below. Such weighted-average discount rates were determined using the projected benefit obligations as of the beginning of each year and the weighted-average long-term return on plan assets was determined using the fair value of plan assets as of the beginning of each year.

	Years ended December 31,		
Rate	2016	2017	2018
Discount rate	4.0%	3.7 %	3.4 %
Long-term rate of return on plan assets	7.0%	6.9 %	7.2 %

Variances from actuarially assumed rates will result in increases or decreases in accumulated pension obligations, pension expense and funding requirements in future periods.

At December 31, 2017, substantially all of the assets attributable to our U.S. plan were invested in the Combined Master Retirement Trust (CMRT), a collective investment trust sponsored by Contran to permit the collective investment by certain master trusts that fund certain employee benefit plans sponsored by Contran and certain of its affiliates, including us. For 2016, 2017 and 2018, the long-term rate of return assumption for our U.S. plan assets was 7.5%, based on the long-term asset mix of the assets of the CMRT and the expected long-term rates of return for such asset components as well as advice from Contran's actuaries. During 2018, Contran and the other employer-sponsors (including us) implemented a restructuring of the CMRT, in which a substantial part of each plan's units in the CMRT were redeemed in exchange for a pro-rata portion of a substantial part of the CMRT's

investments. Following such restructuring, the plans held directly in the aggregate the investments previously held directly by the CMRT which had been exchanged for CMRT units as part of the restructuring. Certain investments held directly by the CMRT were not part of such restructuring and remain investments of the CMRT. Such restructuring was implemented in part so each plan could more easily align the composition of their plan asset portfolio with the plan's benefit obligations.

The CMRT unit value is determined semi-monthly, and prior to the 2018 restructuring, the plans had the ability to redeem all or any portion of their investment in the CMRT at any time based on the most recent semi-monthly valuation. However, the plans do not have the right to individual assets held by the CMRT and the CMRT has the sole discretion in determining how to meet any redemption request. For purposes of our plan asset disclosure, we consider the investment in the CMRT at December 31, 2017 as a Level 2 input because (i) the CMRT value is established semi-monthly and the plans have the right to redeem their investment in the CMRT, in part or in whole, at any time based on the most recent value and (ii) observable inputs from Level 1 or Level 2 (or assets not subject to classification in the fair value hierarchy) were used to value approximately 93% of the assets of the CMRT at December 31, 2017 as noted below. CMRT assets not subject to classification in the fair value hierarchy consist principally of certain investments measured at net asset value (NAV) per share in accordance with ASC 820-10. The aggregate fair value of all of the CMRT assets at December 31, 2017, including funds of Contran and its other affiliates that also invest in the CMRT, and supplemental asset mix details of the CMRT are as follows:

	December 31, 2017 (In millions)	
CMRT asset value	$672.4	
CMRT assets comprised of:		
Assets not subject to fair value hierarchy	31	%
Assets subject to fair value hierarchy:		
Level 1	54	
Level 2	8	
Level 3	7	
	100	%
CMRT asset mix:		
Domestic equities, principally publicly traded	33	%
International equities, principally publicly traded	25	
Fixed income securities, principally publicly traded	31	
Privately managed limited partnerships	4	
Hedge funds	5	
Other, primarily cash	2	
	100	%

The assets which remain in the CMRT are principally common stocks and limited partnerships which are not publicly traded, most of which are categorized within Level 3 of the fair value hierarchy. As monetizing events occur for these investments, we and the other plans which hold units in the CMRT will redeem a portion of our CMRT units for the cash generated from such events. For purposes of our plan asset disclosure, we consider the investment in the CMRT at December 31, 2018 as a Level 3 input because (i) most of the remaining assets in the CMRT are categorized within Level 3 of the fair value hierarchy, and (ii) we do not expect to be able to redeem our remaining CMRT units until monetizing events occur with respect to the remaining CMRT assets.

In determining the expected long-term rate of return on our U.S. and non-U.S. plan asset assumptions, we consider the long-term asset mix (e.g. equity vs. fixed income) for the assets for each of our plans and the expected long-term rates of return for such asset components. In addition, we receive third-party advice about appropriate long-term rates of return. In the U.S. we currently have a plan asset target allocation of 40% to equity securities, 45% to fixed income securities, and the remainder is allocated to multi-asset strategies and the CMRT. The expected long-term rate of return for such investments is approximately 9%, 5% and 3%, respectively (before plan administrative expenses). The majority of U.S. plan assets are Level 1 inputs because they are traded in active markets, approximately 29% of our U.S. plan assets are invested in funds that are valued at NAV and not subject to

classification in the fair value hierarchy, and approximately 6% are invested in the CMRT which as noted above is a Level 3 input.

We regularly review our actual asset allocation for each plan, and will periodically rebalance the investments in each plan to more accurately reflect the targeted allocation and/or maximize the overall long-term return when considered appropriate.

The composition of our pension plan assets by fair value level at December 31, 2017 and 2018 is shown in the table below. The amounts shown for plan assets invested in the CMRT include a nominal amount of cash held by our U.S. pension plan which is not part of the plan's investment in the CMRT.

	Fair Value Measurements		
	Total	Quoted Prices in Active Markets (Level 1)	Significant Other Observable Inputs (Level 2)
	(In thousands)		
December 31, 2017:			
CMRT	$32,360	$-	$ 32,360
Other	11,862	11,862	-
Total	$44,222	$11,862	$ 32,360

	Fair Value Measurements				
	Total	Quoted prices in active markets (Level 1)	Significant other observable inputs (Level 2)	Significant unobservable inputs (Level 3)	Assets measured at NAV
	(In thousands)				
December 31, 2018:					
U.S.					
Equities	$11,353	$ 3,423	$ -	$ -	$ 7,930
Fixed income	13,856	13,856	-	-	-
Cash and other	3,250	2,347	-	-	903
CMRT	1,663	-	-	1,663	-

Other	10,504	10,504	-	-	-
Total	$40,626	$ 30,130	$ -	$ 1,663	$ 8,833

Note 12 - Other noncurrent liabilities:

	December 31,	
	2017	2018
	(in thousands)	
Reserve for uncertain tax positions	$7,312	$7,312
Insurance claims and expenses	620	621
OPEB	1,846	1,519
Other	560	463
Total	$10,338	$9,915

Our reserve for uncertain tax positions is discussed in Note 14.

Note 13 - Other operating income (expense):

We have agreements with certain insurance carriers pursuant to which the carriers reimburse us for a portion of our past lead pigment and asbestos litigation defense costs. Insurance recoveries include amounts we received from these insurance carriers.

The agreements with certain of our insurance carriers also include reimbursement for a portion of our future litigation defense costs. We are not able to determine how much we will ultimately recover from these carriers for defense costs incurred by us because of certain issues that arise regarding which defense costs qualify for reimbursement. Accordingly, these insurance recoveries are recognized when the receipt is probable and the amount is determinable. See Note 17.

Note 14 - Income taxes:

The provision for income taxes and the difference between such provision for income taxes and the amount that would be expected using the U.S. federal statutory income tax rate of 35% in 2016 and 2017 and 21% in 2018 are presented below.

	Years ended December 31,		
	2016	2017	2018
	(in millions)		
Expected tax expense (benefit), at U.S. federal statutory income tax rate of 35% in 2016 and 2017 and 21% in 2018	$4.9	$39.3	$(11.4)
Rate differences on equity in earnings of Kronos	(7.4)	(7.4)	(5.0)
Change in federal tax rate, net	-	(37.5)	.8
U.S. state income taxes and other, net	(.3)	-	.2
Income tax benefit	$(2.8)	$(5.6)	$(15.4)
Components of income tax benefit:			
Currently payable (receivable):	$1.5	$(.1)	$(.2)
Deferred income tax benefit	(4.3)	(5.5)	(15.2)
Income tax benefit	$(2.8)	$(5.6)	$(15.4)
Comprehensive provision for income taxes (benefit) allocable to:			
Income (loss) from continuing operations	$(2.8)	$(5.6)	$(15.4)
Other comprehensive income (loss):			
Marketable securities	10.9	14.3	-
Currency translation	(1.8)	6.1	(2.1)
Interest rate swap	-	.2	-
Pension plans	(2.1)	1.9	(.6)
OPEB plans	(.2)	(.1)	-
Total	$4.0	$16.8	$(18.1)

The components of the net deferred tax liability at December 31, 2017 and 2018 are summarized in the following table.

	December 31,			
	2017		2018	
	Assets	Liabilities	Assets	Liabilities
	(In millions)			
Tax effect of temporary differences related to:				
Inventories	$.3	$ -	$.4	$ -
Marketable securities	-	(18.4)	-	(5.6)
Property and equipment	-	(2.7)	-	(2.6)
Accrued OPEB costs	.5	-	.4	-
Accrued pension costs	1.8	-	1.7	-
Accrued employee benefits	1.2	-	1.1	-
Accrued environmental liabilities	24.6	-	33.6	-
Goodwill	-	(1.7)	-	(1.7)
Other accrued liabilities and deductible differences	.4	-	.3	-
Tax Loss & Credit Carryforwards	-	-	1.2	-
Other taxable differences	-	(3.0)	-	(2.4)
Investment in Kronos Worldwide, Inc.	-	(52.3)	-	(57.8)
Adjusted gross deferred tax assets (liabilities)	28.8	(78.1)	38.7	(70.1)
Netting of items by tax jurisdiction	(28.8)	28.8	(38.7)	38.7
Net noncurrent deferred tax asset (liability)	$-	$ (49.3)	$-	$ (31.4)

In accordance with GAAP, we recognize deferred income taxes on our undistributed equity in earnings (losses) of Kronos. Because we and Kronos are part of the same U.S. federal income tax group, any dividends we receive from Kronos are nontaxable to us. Accordingly, we do not recognize and we are not required to pay income taxes on dividends from Kronos. We received aggregate dividends from Kronos of $21.1 million in each of 2016 and 2017 and $23.9 million in 2018. See Note 6. The amounts shown in the table above of our income tax rate reconciliation for rate differences on equity in earnings (losses) of Kronos represents the benefit associated with such non-taxability of the dividends we receive from Kronos, as it relates to the amount of deferred income taxes we recognize on our undistributed equity in earnings (losses) of Kronos.

We believe that we have adequate accruals for additional taxes and related interest expense which could ultimately result from tax examinations. We believe the ultimate disposition of tax examinations should not have a material adverse effect on our consolidated financial position, results of operations or liquidity.

The following table shows the changes in the amount of our uncertain tax positions (exclusive of the effect of interest and penalties) during 2016, 2017 and 2018:

	December 31,

	2016	2017	2018
	(in millions)		
Unrecognized liabilities:			
Balance at the beginning of the period	$12.2	$12.2	$7.3
Change in federal tax rate	-	(4.9)	-
Lapse of applicable statute of limitations	-	-	-
Balance at the end of the period	$12.2	$7.3	$7.3

We and Contran file income tax returns in U.S. federal and various state and local jurisdictions. Our U.S. income tax returns prior to 2014 are generally considered closed to examination by applicable tax authorities. On December 22, 2017, H.R.1, formally known as the "Tax Cuts and Jobs Act" (2017 Tax Act) was enacted into law. This new tax legislation, among other changes, reduces the Federal corporate income tax rate from 35% to 21% effective January 1, 2018, eliminates the domestic production activities deduction and allows for the expensing of certain capital expenditures. Following the enactment of the 2017 Tax Act, the Securities and Exchange Commission issued Staff Accounting Bulletin (SAB) 118 to provide guidance on the accounting and reporting impacts of the 2017 Tax Act. SAB 118 states that companies should account for changes related to the 2017 Tax Act in the period of enactment if all information is available and the accounting can be completed. In situations where companies do not have enough information to complete the accounting in the period of enactment, a company must either 1) record an estimated provisional amount if the impact of the change can be reasonably estimated; or 2) continue to apply the accounting guidance that was in effect immediately prior to the 2017 Tax Act if the impact of the change cannot be reasonably estimated. If estimated provisional amounts are recorded, SAB 118 provides a measurement period of no longer than one year during which companies should adjust those amounts as additional information becomes available.

Under GAAP, we were required to revalue our net deferred tax liability associated with our net taxable temporary differences in the period in which the new tax legislation was enacted based on deferred tax balances as of the enactment date, to reflect the effect of such reduction in the corporate income tax rate. Other than with respect to temporary differences related to our marketable securities, and certain year-end actuarial valuations associated with our defined benefit pension and OPEB plans, our temporary differences as of December 31, 2017 were not materially different from our temporary differences as of the enactment date. Accordingly, revaluation of our temporary differences is based on our net deferred tax liabilities as of December 31, 2017 (except for our temporary differences related to our marketable securities, and certain year-end actuarial valuations associated with our defined benefit pension and OPEB plans, for which such revaluation is based on the deferred income tax asset/liability as of the enactment date). Such revaluation resulted in a non-cash deferred income tax benefit of $37.5 million recognized in continuing operations, reducing our net deferred tax liability. During the third quarter of 2018, in conjunction with finalizing our federal income tax return, we were able to obtain, prepare and analyze the necessary information to complete the accounting related to the revaluation of our net deferred tax liability associated with our U.S. net taxable temporary differences as of December 31, 2017, which resulted in the recognition of an immaterial adjustment to the provisional amount recognized at December 31, 2017. Accordingly, we completed our analysis related to such revaluation as of September 30, 2018.

Income tax matters related to Kronos

Kronos has substantial net operating loss (NOL) carryforwards in Germany (the equivalent of $541 million for German corporate purposes) and in Belgium (the equivalent of $16 million for Belgian corporate tax purposes at December 31, 2018), all of which have an indefinite carryforward period. As a result, Kronos has net deferred income tax assets with respect to these two jurisdictions, primarily related to these NOL carryforwards. The German corporate tax is similar to the U.S. federal income tax, and the German trade tax is similar to the U.S. state income tax (its German trade tax NOLs were fully utilized as of December 31, 2018). Prior to 2017, Kronos concluded that it was required to recognize a non-cash deferred income tax asset valuation allowance under the more-likely-than-not recognition criteria with respect to its German and Belgian net deferred income tax assets. At December 31, 2016 such valuation allowance aggregated $173 million ($153 million with respect to Germany and $20 million with respect to Belgium). During the first six months of 2017, Kronos recognized an aggregate non-cash deferred income tax benefit of $12.7 million as a result of a net decrease in such deferred income tax asset valuation allowance, due to utilizing a portion of both the German and Belgian NOL during the period. At June 30, 2017, Kronos concluded it had sufficient

positive evidence under the more-likely-than-not recognition criteria to support reversal of the entire valuation allowance related to its German and Belgian operations. In accordance with the ASC 740-270 guidance regarding accounting for income taxes at interim dates, the amount of the valuation allowance reversed at June 30, 2017 ($149.9 million, of which $141.9 million related to Germany and $8.0 million related to Belgium) associated with its change in judgment at that date regarding the realizability of the related deferred income tax asset as it relates to future years (i.e. 2018 and after). A change in judgment regarding the realizability of deferred tax assets as it relates to the current year is considered in determining the estimated annual

effective tax rate for the year and is recognized throughout the year, including interim periods subsequent to the date of the change in judgment. Accordingly, Kronos' income tax benefit in calendar year 2017 included an aggregate non-cash deferred income tax benefit of $186.7 million associated with the reversal of the German and Belgian valuation allowance, comprised of $12.7 million recognized in the first half of 2017 (noted above) associated with the utilization of a portion of both the German and Belgian NOLs during such period, $149.9 million related to the portion of the valuation allowance reversed as of June 30, 2017 and $24.1 million recognized in the second half of 2017 associated with the utilization of a portion of both the German and Belgian NOLs during such period. Kronos' deferred income tax asset valuation allowance increased $13.7 million in 2017 as a result of changes in currency exchange rates, which increase was recognized as part of other comprehensive income (loss).

Under GAAP, Kronos was required to revalue its net deferred tax asset associated with its U.S. net deductible temporary differences in the period in which the new tax legislation is enacted based on deferred tax balances as of the enactment date, to reflect the effect of such reduction in the corporate income tax rate. Kronos' temporary differences as of December 31, 2017 were not materially different from its temporary differences as of the enactment date, accordingly revaluation of its net deductible temporary differences was based on its net deferred tax asset as of December 31, 2017. Such revaluation was recognized in continuing operations and was not material to us.

Prior to the enactment of the 2017 Tax Act, the undistributed earnings of Kronos' European subsidiaries were deemed to be permanently reinvested (Kronos had not made a similar determination with respect to the undistributed earnings of its Canadian subsidiary). Pursuant to the Transition Tax provisions imposing a one-time repatriation tax on post-1986 undistributed earnings, Kronos recognized a provisional current income tax expense of $76.2 million in the fourth quarter of 2017. The amounts recorded as of December 31, 2017 as a result of the 2017 Tax Act represented estimates based on information available at such date. Kronos elected to pay such tax over an eight year period beginning in 2018, including approximately $6.1 million which was paid in April 2018 (for the 2017 tax year) and $5.8 million which was paid in 2018 (for the 2018 tax year). During the third quarter of 2018, in conjunction with finalizing its federal income tax return and based on additional information that became available (including proposed regulations issued by the IRS in August 2018 with respect to the Transition Tax), Kronos recognized a provisional income tax benefit of $1.7 million which amount is recorded as a measurement-period adjustment, reducing the provisional income tax expense of $76.2 million recognized in the fourth quarter of 2017. As a result, at December 31, 2018, taking into account the prior Transition Tax installments payments of $11.9 million (noted above), the balance of its unpaid Transition Tax aggregates $62.6 million, which will be paid in quarterly installments over the remainder of the eight year period. Of such $62.6 million, $56.6 million is recorded as a noncurrent payable to affiliate (income taxes payable to Valhi) classified as a noncurrent liability in its Consolidated Balance Sheet at December 31, 2018, and $6.0 million is included with its current payable to affiliate (income taxes payable to Valhi) classified as a current liability (a portion of its noncurrent income tax payable to affiliate was reclassified to its current payable to affiliate for the portion of its 2019 Transition Tax installment due within the next twelve months). Kronos has completed its analysis of the Transition Tax provisions within the prescribed measurement period ending December 22, 2018 pursuant to the guidance under SAB 118.

Prior to the enactment of the 2017 Tax Act the undistributed earnings of Kronos' European subsidiaries were deemed to be permanently reinvested (Kronos had not made a similar determination with respect to the undistributed earnings of its Canadian subsidiary). As a result of the implementation of a territorial tax system under the 2017 Tax Act, effective January 1, 2018, and the Transition Tax which in effect taxes the post-1986 undistributed earnings of its non-U.S. subsidiaries accumulated up through December 31, 2017, Kronos determined effective December 31, 2017 that all of the post-1986 undistributed earnings of its European subsidiaries are not permanently reinvested. Accordingly, in the fourth quarter of 2017 Kronos recognized an aggregate provisional non-cash deferred income tax expense of $4.5 million based on its reasonable estimates of the U.S. state and non-U.S. income tax and withholding tax liability attributable to all of such previously-considered permanently reinvested undistributed earnings through December 31, 2017. The amounts recorded as of December 31, 2017 as a result of the 2017 Tax Act

represented estimates based on information available at such date. Kronos has not made any measurement-period adjustments to the provisional amounts recorded at December 31, 2017 for this item during 2018 because no new information became available during the period that required an adjustment. However, Kronos recorded a non-cash deferred income tax expense of $2.4 million for the U.S. state and non-U.S. income tax and withholding tax liability attributable to the 2018 undistributed earnings of its non-U.S. subsidiaries in 2018, including withholding taxes related to the undistributed earnings of its Canadian subsidiary. Kronos has completed

its analysis as it relates to the implementation of a territorial tax system under the 2017 Tax Act within the prescribed measurement period ending December 22, 2018 pursuant to the guidance under SAB 118.

Under U.S. GAAP, as it relates to the new GILTI tax rules, Kronos is allowed to make an accounting policy choice of either (1) treating taxes due on future U.S. inclusions in taxable income related to GILTI as a current-period expense when incurred (the "period cost method") or (2) factoring such amounts into the measurement of its deferred taxes (the "deferred method"). While its future global operations depend on a number of different factors, Kronos does expect to have future U.S. inclusions in taxable income related to GILTI. Kronos did not record any adjustment related to GILTI during the first nine months of 2018 based on its determination that the impact was not material, and based on the guidance available to us at the time. During the fourth quarter of 2018, and taking into consideration proposed regulations issued by the IRS in November 2018 with respect to various related non-U.S. tax credit provisions, Kronos recognized a current cash income tax expense of $3.7 million for GILTI. In conjunction with the issuance of the proposed regulations, taking into consideration the complexities related to an election to recognize deferred taxes for basis differences that are expected to have a GILTI impact in future years, Kronos has concluded that the appropriate accounting policy election is to record GILTI tax as a current-period expense when incurred under the period cost method. As such, Kronos has completed its policy election within the prescribed measurement period ended December 22, 2018 pursuant to the guidance under SAB 118. Similarly, Kronos has evaluated the tax impact of BEAT, taking into consideration proposed regulations issued by the IRS in December 2018 with respect to BEAT, and determined that the tax law imposed under BEAT has no material impact to Kronos as it has historically not entered into international payments between related parties that are unrelated to cost of goods sold. Its determinations under the GILTI, BEAT and related U.S. tax credit provisions are based on the relevant statutes and guidance provided under the proposed regulations. Given the complexity of the international provisions, it is possible that final regulations could differ from the proposed regulations and materially impact its determinations with respect to such items. Any material change will be recognized in the period in which the final regulations are published.

Certain U.S. deferred tax attributes of one of Kronos' non-U.S. subsidiaries, which subsidiary is treated as a dual resident for U.S. income tax purposes, were subject to various limitations. As a result, Kronos had previously concluded that a deferred income tax asset valuation allowance was required to be recognized with respect to such subsidiary's U.S. net deferred income tax asset because such assets did not meet the more-likely-than-not recognition criteria primarily due to (i) the various limitations regarding use of such attributes due to the dual residency; (ii) the dual resident subsidiary had a history of losses and absent distributions from its non-U.S. subsidiaries, which were previously not determinable, such subsidiary was expected to continue to generate losses; and (iii) a limited NOL carryforward period for U.S. tax purposes. Because Kronos had concluded the likelihood of realization of such subsidiary's net deferred income tax asset was remote, Kronos had not previously disclosed such valuation allowance or the associated amount of the subsidiary's net deferred income tax assets (exclusive of such valuation allowance). Primarily due to changes enacted under the 2017 Tax Act, Kronos concluded it now had sufficient positive evidence under the more-likely-than-not recognition criteria to support reversal of the entire valuation allowance related to such subsidiary's net deferred income tax asset, which evidence included, among other things, (i) the inclusion under Transition Tax provisions of significant earnings for U.S. income tax purposes which significantly and positively impacts the ability of such deferred tax attributes to be utilized by us; (ii) the indefinite carryforward period for U.S. net operating losses incurred after December 31, 2017; (iii) an expectation of continued future profitability for its U.S. operations; and (iv) a positive taxable income basket for U.S. tax purposes in excess of the U.S. deferred tax asset related to the U.S. attributes of such subsidiary. Accordingly, in the fourth quarter of 2017 Kronos recognized an $18.7 million non-cash deferred income tax benefit as a result of the reversal of such valuation allowance.

None of our or Kronos' U.S. and non-U.S. tax returns are currently under examination. As a result of prior audits in certain jurisdictions which are now settled, in 2008 Kronos filed Advance Pricing Agreement Requests with the tax authorities in the U.S., Canada and Germany. These requests have been under review with the respective tax authorities since 2008 and prior to 2016, it was uncertain whether an agreement would be reached between the tax authorities and whether Kronos would agree to execute and finalize such agreements.

- During 2016, Contran, as the ultimate parent of its U.S. Consolidated income tax group, executed and finalized an Advance Pricing Agreement with the U.S. Internal Revenue Service and Kronos' Canadian subsidiary executed and finalized an Advance Pricing Agreement with the Competent Authority for Canada (collectively, the "U.S.-Canada APA") effective for tax years 2005 - 2015. Pursuant to the terms of the U.S.-Canada APA, the U.S. and Canadian tax authorities agreed to certain prior year changes to taxable income of its U.S. and Canadian subsidiaries. As a result of such agreed-upon changes, Kronos recognized a $3.4 million current U.S. income tax benefit in 2016. In addition, Kronos' Canadian subsidiary incurred a cash income tax payment of approximately CAD $3 million (USD $2.3 million) related to the U.S.-Canada APA, but such payment was fully offset by previously provided accruals, and such income tax was paid in the third quarter of 2017.
- During the third quarter of 2017, Kronos' Canadian subsidiary executed and finalized an Advance Pricing Agreement with the Competent Authority for Canada (the "Canada-Germany APA") effective for tax years 2005 - 2017. Pursuant to the terms of the Canada-Germany APA, the Canadian and German tax authorities agreed to certain prior year changes to taxable income of its Canadian and German subsidiaries. As a result of such agreed-upon changes, Kronos reversed a significant portion of its reserve for uncertain tax positions and recognized a non-cash income tax benefit of $8.6 million related to such reversal ($8.1 million recognized in the third quarter of 2017). In addition, Kronos recognized a $2.6 million non-cash income tax benefit related to an increase in its German NOLs and a $.6 million German cash tax refund related to the Canada-Germany APA in the third quarter of 2017.
- During the first quarter of 2018, Kronos' German subsidiary executed and finalized the related Advance Pricing Agreement with the Competent Authority for Germany (the "Germany-Canada APA") effective for tax years 2005 - 2017. In the first quarter of 2018, Kronos recognized a net $1.4 million non-cash income tax benefit related to an APA tax settlement payment between our German and Canadian subsidiaries.

Note 15 - Stockholders' equity:

Long-term incentive compensation plan – We have a long-term incentive plan that provides for the award of stock to our board of directors, and up to a maximum of 200,000 shares can be awarded. We awarded 14,000 shares under this plan in 2016, 9,000 shares in 2017 and 12,600 shares in 2018. At December 31, 2018, 141,400 shares were available for future grants under this plan.

Long-term incentive compensation plan of subsidiaries and affiliates - CompX and Kronos each have a share based incentive compensation plan pursuant to which an aggregate of up to 200,000 shares of their common stock can be awarded to members of their board of directors. At December 31, 2018, Kronos had 149,900 shares available for award and CompX had 156,550 shares available for award.

Dividends – Prior to 2016, after considering our results of operations, financial conditions and cash requirements for our businesses, our Board of Directors suspended our regular quarterly dividend. The declaration and payment of future dividends, and the amount thereof, is discretionary and is dependent upon these and other factors deemed relevant by our Board of Directors.

Accumulated other comprehensive income (loss) - Changes in accumulated other comprehensive income (loss) attributable to NL stockholders, including amounts resulting from our investment in Kronos Worldwide (see Note 6), are presented in the table below.

	Years ended December 31,		
	2016	2017	2018
	(in thousands)		
Accumulated other comprehensive income (loss), net of tax:			
Marketable securities:			
Balance at beginning of year	$195	$20,473	$46,069
Change in accounting principle	-	-	(46,069)
Balance at beginning of year, as adjusted	195	20,473	-
Other comprehensive income (loss):			
Unrealized gain (loss) arising during the year	20,278	25,596	-
Less reclassification adjustment for amounts included in realized loss	-	-	-
Balance at end of year	$20,473	$46,069	$-
Currency translation:			
Balance at beginning of year	$(172,384)	$(175,859)	$(164,467)
Other comprehensive income (loss):			
Arising during the year	(3,475)	11,392	(7,967)
Balance at end of year	$(175,859)	$(164,467)	$(172,434)
Interest rate swap:			
Balance at beginning of year	$(445)	$(390)	$-
Other comprehensive income (loss):			
Unrealized losses arising during the year	(393)	(296)	-
Reclassification adjustments for amounts included in equity in earnings of Kronos	448	686	-
Balance at end of year	$(390)	$-	$-
Defined benefit pension plans:			
Balance at beginning of year	$(72,712)	$(76,710)	$(72,951)
Other comprehensive income (loss):			
Amortization of prior service cost and net losses included in net periodic pension cost	2,655	2,956	(2,335)
Net actuarial gain (loss) arising during the year	(6,653)	803	-
Balance at end of year	$(76,710)	$(72,951)	$(75,286)
Other:			
Balance at beginning of year	$(12)	$(360)	$(388)

Other comprehensive income (loss):			
Net change in balance during year	(348)	(28)	(162)
Balance at end of year	$(360)	$(388)	$(550)
Total accumulated other comprehensive income (loss), net of tax:			
Balance at beginning of year	$(245,358)	$(232,846)	$(191,737)
Change in accounting principle	-	-	(46,069)
Balance at beginning of year, as adjusted	(245,358)	(232,846)	(237,806)
Other comprehensive income (loss)	12,512	41,109	(10,464)
Balance at end of year	$(232,846)	$(191,737)	$(248,270)

See Note 11 for amounts related to our defined benefit pension plans.

Note 16 - Related party transactions:

We may be deemed to be controlled by Ms. Simmons and Ms. Connelly. See Note 1. Corporations that may be deemed to be controlled by or affiliated with such individuals sometimes engage in (a) intercorporate transactions such as guarantees, management and expense sharing arrangements, shared fee arrangements, joint ventures, partnerships, loans, options, advances of funds on open account, and sales, leases and exchanges of assets, including securities issued by both related and unrelated parties and (b) common investment and acquisition strategies, business combinations, reorganizations, recapitalizations, securities repurchases, and purchases and sales (and other acquisitions and dispositions) of subsidiaries, divisions or other business units, which transactions have involved both related and unrelated parties and have included transactions which resulted in the acquisition by one related party of a publicly-held noncontrolling interest in another related party. While no transactions of the type described above are planned or proposed with respect to us other than as set forth in these financial statements, we continuously consider, review and evaluate, and understand that Contran and related entities consider, review and evaluate such transactions. Depending upon the business, tax and other objectives then relevant, it is possible that we might be a party to one or more such transactions in the future.

Current receivables and payables to affiliates are summarized in the table below:

	December 31,	
	2017	2018
	(In thousands)	
Current receivables from affiliates:		
Refundable income taxes from Valhi	$1,767	$249
Other - trade items	-	543
Total	$1,767	$792
Current payables to affiliates:		
Other - trade items	$429	$567

From time to time, we may have loans and advances outstanding between us and various related parties, pursuant to term and demand notes. We generally enter into these loans and advances for cash management purposes. When we loan funds to related parties, we are generally able to earn a higher rate of return on the loan than the lender would earn if the funds were invested in other instruments and when we borrow from related parties, we are generally able to pay a lower rate of interest than we would pay if we borrowed from unrelated parties. While certain of such loans may be of a lesser credit quality than cash equivalent instruments otherwise available to us, we believe that we have evaluated the credit risks involved and reflected those credit risks in the terms of the applicable loans. On November 14, 2016, NLKW entered into the Valhi Credit Facility whereby, we could borrow up to $50 million. NLKW had borrowings outstanding of $0.5 million as of December 31, 2018 under the Valhi Credit Facility, and we incurred a

nominal amount of interest expense under such credit facility for the year ended December 31, 2016, 2017 and 2018. See Note 10. In addition, in August 2016 CompX entered into an unsecured revolving demand promissory note with Valhi whereby CompX has agreed to loan Valhi up to $40 million. CompX's loan to Valhi bears interest at prime plus 1.00%, payable quarterly, with all principal due on demand, but in any event no earlier than December 31, 2020. The amount of CompX's outstanding loans to Valhi at any time is at its discretion. At December 31, 2018, the outstanding principal balance receivable from Valhi under the promissory note was $34.0 million. Interest income (including unused commitment fees) on CompX's loan to Valhi was $.2 million in 2016, $1.8 million in 2017 and $2.1 million in 2018. On December 31, 2018 (one day after CompX's 2018 fiscal year, but on the last day of the fiscal year for Valhi), CompX loaned $6.0 million to Valhi, increasing the outstanding principal balance receivable from Valhi under the promissory note to $40.0 million.

Under the terms of various intercorporate services agreements (ISAs) we enter into with Contran, employees of Contran will provide certain management, tax planning, financial and administrative services to the company on a fee basis. Such charges are based upon estimates of the time devoted by the Contran employees to our affairs and the compensation and other expenses associated with those persons. Because of the number of companies affiliated with Contran, we believe we benefit from cost savings and economies of scale gained by not having certain management, financial and administrative staffs duplicated at each entity, thus allowing certain Contran employees to provide services to multiple companies but only be compensated by Contran. The net ISA fees charged to us by Contran, (including amounts attributable to Kronos for all periods) aggregated approximately $24.5 million in 2016 and 2017 and $32.0 million in 2018. This agreement is renewed annually.

Contran and certain of its subsidiaries and affiliates, including us, purchase certain of their insurance policies as a group, with the costs of the jointly-owned policies being apportioned among the participating companies. Tall Pines Insurance Company and EWI RE, Inc. provide for or broker certain insurance policies for Contran and certain of its subsidiaries and affiliates, including us. Tall Pines purchases reinsurance from third-party insurance carriers with an A.M. Best Company rating of generally at least A- (excellent) for substantially all of the risks it underwrites. Tall Pines is a subsidiary of Valhi and EWI is a subsidiary of Valhi and us. Consistent with insurance industry practices, Tall Pines and EWI receive commissions from insurance and reinsurance underwriters and/or assess fees for the policies that they provide or broker. The aggregate premiums paid to Tall Pines and EWI by us (including amounts attributable to Kronos for all periods, including its Louisiana Pigment Company joint venture), were $11.3 million in 2016, $11.8 million in 2017 and $12.6 million in 2018. These amounts principally represent payments for insurance premiums, which include premiums or fees paid to Tall Pines or fees paid to EWI. These amounts also include payments to insurers or reinsurers through EWI for the reimbursement of claims within our applicable deductible or retention ranges that such insurers or reinsurers paid to third parties on our behalf, as well as amounts for claims and risk management services and various other third-party fees and expenses incurred by the program. We expect these relationships with Tall Pines and EWI will continue in 2019.

With respect to certain of such jointly-owned policies, it is possible that unusually large losses incurred by one or more insured party during a given policy period could leave the other participating companies without adequate coverage under that policy for the balance of the policy period. As a result, and in the event that the available coverage under a particular policy would become exhausted by one or more claims, Contran and certain of its subsidiaries and affiliates, including us, have entered into a loss sharing agreement under which any uninsured loss arising because the available coverage had been exhausted by one or more claims will be shared ratably amongst those entities that had submitted claims under the relevant policy. We believe the benefits in the form of reduced premiums and broader coverage associated with the group coverage for such policies justifies the risk associated with the potential for any uninsured loss.

Contran and certain of its subsidiaries, including us, participate in a combined information technology data recovery program that Contran provides from a data recovery center that it established. Pursuant to the program, Contran and certain of its subsidiaries, including us, as a group share information technology data recovery services. The program apportions its costs among the participating companies. The aggregate amount we paid to Contran for such services (including amounts attributable to Kronos for all periods) was $158,000 in 2016, $161,000 in 2017 and $312,000 in 2018. We expect that this relationship with Contran will continue in 2019.

Note 17 - Commitments and contingencies:

Lead pigment litigation

Our former operations included the manufacture of lead pigments for use in paint and lead-based paint. We, other former manufacturers of lead pigments for use in paint and lead-based paint (together, the "former pigment manufacturers"), and the Lead Industries Association (LIA), which discontinued business operations in 2002, have been named as defendants in various legal proceedings seeking damages for personal injury, property damage and governmental expenditures allegedly caused by the use of lead-based paints. Certain of these actions have been filed by or on behalf of states, counties, cities or their public housing authorities and school districts, and certain others have been asserted as class actions. These lawsuits seek recovery under a variety of theories, including public and private nuisance, negligent product design, negligent failure to warn, strict liability, breach of warranty, conspiracy/concert of action, aiding and abetting, enterprise liability, market share or risk contribution liability, intentional tort, fraud and misrepresentation, violations of state consumer protection statutes, supplier negligence and similar claims.

The plaintiffs in these actions generally seek to impose on the defendants responsibility for lead paint abatement and health concerns associated with the use of lead-based paints, including damages for personal injury, contribution and/or indemnification for medical expenses, medical monitoring expenses and costs for educational programs. To the extent the plaintiffs seek compensatory or punitive damages in these actions, such damages are generally unspecified. In some cases, the damages are unspecified pursuant to the requirements of applicable state law. A number of cases are inactive or have been dismissed or withdrawn. Most of the remaining cases are in various pre-trial stages. Some are on appeal following dismissal or summary judgment rulings or a trial verdict in favor of either the defendants or the plaintiffs.

We believe that these actions are without merit, and we intend to continue to deny all allegations of wrongdoing and liability and to defend against all actions vigorously. Other than with respect to the Santa Clara, California public nuisance case discussed below, we do not believe it is probable that we have incurred any liability with respect to all of the lead pigment litigation cases to which we are a party, and with respect to all such lead pigment litigation cases to which we are a party, other than with respect to the Santa Clara case discussed below, we believe liability to us that may result, if any, in this regard cannot be reasonably estimated, because:

- we have never settled any of the market share, intentional tort, fraud, nuisance, supplier negligence, breach of warranty, conspiracy, misrepresentation, aiding and abetting, enterprise liability, or statutory cases (subject to the final outcome of the Santa Clara case discussed below),
- no final, non-appealable adverse verdicts have ever been entered against us (subject to the final outcome of the Santa Clara case discussed below), and
- we have never ultimately been found liable with respect to any such litigation matters, including over 100 cases over a twenty-year period for which we were previously a party and for which we have been dismissed without any finding of liability (subject to the final outcome of the Santa Clara case discussed below).

Accordingly, other than with respect to the Santa Clara case discussed below, we have not accrued any amounts for any of the pending lead pigment and lead-based paint litigation cases filed by or on behalf of states, counties, cities or their public housing authorities and school districts, or those asserted as class actions other than the Santa Clara case noted below. In addition, we have determined that liability to us which may result, if any, cannot be reasonably estimated at this time because there is no prior history of a loss of this nature on which an estimate could be made and there is no substantive information available upon which an estimate could be based.

In one of these lead pigment cases, in April 2000 we were served with a complaint in County of Santa Clara v. Atlantic Richfield Company, et al. (Superior Court of the State of California, County of Santa Clara, Case No. 1-00-CV-788657) brought by a number of California government entities against the former pigment manufacturers, the LIA and certain paint manufacturers. The County of Santa Clara sought to recover compensatory damages for funds the plaintiffs have expended or would in the future expend for medical treatment, educational expenses, abatement or other costs due to exposure to, or potential exposure to, lead paint, disgorgement of profit,

and punitive damages. In July 2003, the trial judge granted defendants' motion to dismiss all remaining claims. Plaintiffs appealed and the intermediate appellate court reinstated public nuisance, negligence, strict liability, and fraud claims in March 2006. A fourth amended complaint was filed in March 2011 on behalf of The People of California by the County Attorneys of Alameda, Ventura, Solano, San Mateo, Los Angeles and Santa Clara, and the City Attorneys of San Francisco, San Diego and Oakland. That complaint alleged that the presence of lead paint created a public nuisance in each of the prosecuting jurisdictions and sought its abatement. In July and August 2013, the case was tried. In January 2014, the trial court judge issued a judgment finding us, The Sherwin Williams Company and ConAgra Grocery Products Company jointly and severally liable for the abatement of lead paint in pre-1980 homes, and ordered the defendants to pay an aggregate $1.15 billion to the people of the State of California to fund such abatement. The trial court's judgment also found that to the extent any abatement funds remained unspent after four years, such funds were to be returned to the defendants. In February 2014, we filed a motion for a new trial, and in March 2014 the trial court denied the motion. Subsequently in March 2014, we filed a notice of appeal with the Sixth District Court of Appeal for the State of California. On November 14, 2017, the Sixth District Court of Appeal issued its opinion, upholding the trial court's judgment, except that it reversed the portion of the judgment requiring abatement of homes built between 1951 and 1980 which significantly reduced the number of homes subject to the abatement order. In addition, the appellate court ordered the case be remanded to the trial court to recalculate the amount of the abatement fund, to limit it to the amount necessary to cover the cost of investigating and remediating pre-1951 homes, and to hold an evidentiary hearing to appoint a suitable receiver. In addition, the appellate court found that we and the other defendants had the right to seek recovery from liable parties that contributed to a hazardous condition at a particular property. Subsequently, we and the other defendants filed a Petition with the California Supreme Court seeking its review of a number of issues. On February 14, 2018, the California Supreme Court denied such petition.

The Santa Clara case is unusual in that this is the second time that an adverse verdict in a public nuisance lead pigment case has been entered against us (the first adverse verdict against us was ultimately overturned on appeal). Given the appellate court's November 2017 ruling, and the denial of an appeal by the California Supreme Court, we previously concluded that the likelihood of a loss in this case has reached a standard of "probable" as contemplated by ASC 450.

Under the remand ordered by the appellate court, the trial court was required to, among other things, (i) recalculate the amount of the abatement fund, excluding remediation of homes built between 1951 and 1980, (ii) hold an evidentiary hearing to appoint a suitable receiver for the abatement fund and (iii) enter an order setting forth its rulings on these issues. We believe any party will have a right to appeal any of these new decisions to be made by the trial court from the remand of the case. Several uncertainties will still exist with respect to the new decisions to be made by the trial court from the remand of the case, including the following:

- The appellate court remanded the case back to the trial court to recalculate the total amount of the abatement, limiting the abatement to pre-1951 homes. In this regard, NL and the other defendants filed a brief with the trial court proposing a recalculated maximum abatement fund amount of no more than $409 million and plaintiffs filed a brief proposing an abatement fund amount of $730 million. In September 2018, following a case-management hearing regarding the recalculated abatement fund amount held in August 2018, the trial court issued an order setting the recalculated amount of the abatement fund at $409 million;
-

The appellate court upheld NL's and the other defendants' right to seek contribution from other liable parties (e.g. property owners who have violated the applicable housing code) on a house-by-house basis. The method by which the trial court would undertake to determine such house-by-house responsibility, and the outcome of such a house-by-house determination, is not presently known;

- Participation in any abatement program by each homeowner is voluntary, and each homeowner would need to consent to allowing someone to come into the home to undertake any inspection and abatement, as well as consent to the nature, timing and extent of any abatement. The original trial court's judgment unrealistically assumed 100% participation by the affected homeowners. Actual participation rates are likely to be less than 100% (the ultimate extent of participation is not presently known);

- The remedy ordered by the trial court is an abatement fund. The trial court ordered that any funds unspent after four years are to be returned to the defendants (this provision of the trial court's original judgment was not overturned by the appellate court). As noted above, the actual number of homes which would participate in any abatement, and the nature, timing and extent of any such abatement, is not presently known; and
- We and the other two defendants are jointly and severally liable for the abatement, which means we or either of the two other defendants could ultimately be responsible for payment of the full amount of the abatement fund. However, we do not believe any individual defendant would be 100% responsible for the cost of any abatement, and the allocation of the recalculated amount of the abatement fund ($409 million, as explained below) among the three defendants has not yet been determined.

In May 2018, we and the plaintiffs entered into a settlement agreement pursuant to which, as supplemented, the plaintiffs would be paid an aggregate of $80 million, in return for which we would be dismissed from the case with prejudice and all pending and future claims, causes of action, cross-complaints, actions or proceedings against us and our affiliates for indemnity, contribution, reimbursement or declaratory relief in respect to the case would be barred, discharged and enjoined as a matter of applicable law. Of such $80 million, $65 million would be paid by us and $15 million would be provided by one of our former insurance carriers that has previously placed such amount on deposit with the trial court in satisfaction of potential liability such former carrier might have with respect to the case under certain insurance policies we had with such former carrier. Of such $65 million which would be paid by us, $45 million would be paid upon approval of the terms of the settlement, and the remaining $20 million would be paid in five annual installments beginning four years from such approval ($6 million for the first installment, $5 million for the second installment and $3 million for each of the third, fourth and fifth installments). The settlement agreement is subject to a number of conditions including the trial court's approval of the terms of the settlement (which trial court approval includes a determination that such settlement agreement meets the standards for a "good faith" settlement under applicable California law). The other defendants filed motions with the trial court objecting to the terms of the settlement.

With all of the uncertainties that exist with respect to the new decisions to be made by the trial court from the remand of the case, as noted above, we had previously concluded that the amount of such loss could not be reasonably estimated (nor could a range of loss be reasonably estimated). However, the terms of the settlement agreement entered into by us and the plaintiffs in May 2018, as supplemented, provides evidence that the amount of the loss to us could be reasonably estimated (and provides evidence of the low end of a range of loss to us). For financial reporting purposes, we discounted the five payments aggregating $20 million to be paid in installments to their estimated net present value, using a discount rate of 3.0% per annum. Such net present value is $17 million, and we would begin to accrete such present value amount upon approval of the settlement agreement. Accordingly, in the second quarter of 2018 we recognized a net $62 million pre-tax charge with respect to this matter ($45 million for the amount to be paid by us upon approval of the terms of the settlement and $17 million for the net present value of the five payments aggregating $20 million to be paid by us in installments beginning four years from such approval), representing the net amount we would pay in full settlement of our liability under the terms of the proposed settlement agreement. For purposes of our Consolidated Balance Sheet, we have presented the aggregate $45 million that would be paid to the plaintiffs upon approval of the terms of the settlement and the $15 million that would be paid to the plaintiffs from the amount placed on deposit with the trial court by one of our former insurance carriers (for a total of $60 million) as a current liability, $17 million for the net present value of the five payments aggregating $20 million to be paid by us in installments beginning four years from such approval as a noncurrent liability and the $15 million portion of such aggregate $80 million undiscounted amount which would be funded from the amount placed on deposit with the trial court by one of our former insurance carriers as a current insurance recovery receivable.

In July 2018, we and the other defendants filed appeals with the U.S. Supreme Court, seeking its review of two federal issues in the trial court's original judgment. Review by the U.S. Supreme Court is discretionary, and in October 2018 the U.S. Supreme Court denied the petitions for the Court to hear such appeals.

In September 2018, following a case-management hearing regarding the recalculated abatement fund amount held in August 2018, the trial court issued an order setting the recalculated amount of the abatement fund at $409 million. Also in September 2018, the trial court denied approval of the settlement agreement, finding among

other things that the settlement agreement did not meet the standards for a “good faith” settlement under applicable California law.

Subsequently in October 2018, we filed an appeal of the trial court’s denial of approval of the settlement agreement with the Sixth District Court of Appeal for the State of California, asserting among other things that in denying such approval the trial court made several legal errors in applying applicable California law to the terms of the settlement. The plaintiffs filed a brief in support of our appeal. The appellate court has discretion whether to hear such appeal, and the appellate court has not yet issued its decision as to whether it will hear such appeal. There can be no assurance that the appellate court will agree to hear such appeal, or if it agrees to hear such appeal, that it would rule in favor of us and approve the settlement agreement. We continue to believe the settlement agreement satisfies the standards for a “good faith” settlement under applicable California law.

The trial court has selected a receiver for the abatement fund, but the terms of an order appointing the receiver have not been determined and will be the subject of a further hearing scheduled in March 2019. The trial court has also stated it will not enter the judgment in the case until after the Sixth District Court of Appeal determines whether to hear the appeal regarding our settlement agreement. We expect the judgment will require full payment of all amounts due by us and the other defendants in respect to the abatement fund within sixty days of entry of the judgment.

If the appellate court does not reverse the trial court decision and approve the terms of this or any other settlement agreement between us and the plaintiffs, the proceedings in the trial court under the remand, as discussed above, would continue. In such event, NL’s share of the recalculated amount of the abatement fund ($409 million) is not presently known, and other uncertainties exist with respect to the new decisions to be made by the trial court from the remand of the case, as discussed above, including but not limited to the final amount of the abatement fund ($409 million) which will ultimately be expended, particularly because participation in the abatement program by eligible homeowners is voluntary and the ultimate extent of participation and how the abatement fund will be administered is uncertain. As with any legal proceeding, there is no assurance that any appeal would be successful, and it is reasonably possible, based on the outcome of the appeals process and the remand proceedings in the trial court, that NL may in the future incur liability resulting in the recognition of an additional loss contingency accrual that could have a material adverse impact on our results of operations, financial position and liquidity.

In November 2018, NL was served with two complaints filed by county governments in Pennsylvania. Each county alleges that NL and several other defendants created a public nuisance by selling and promoting lead-containing paints and pigments in the counties. The plaintiffs seek abatement and declaratory relief. We believe these lawsuits are inconsistent with Pennsylvania law and without merit, and we intend to defend ourselves vigorously.

New cases may continue to be filed against us. We cannot assure you that we will not incur liability in the future in respect of any of the pending or possible litigation in view of the inherent uncertainties involved in court and jury rulings. In the future, if new information regarding such matters becomes available to us (such as a final, non-appealable adverse verdict against us or otherwise ultimately being found liable with respect to such matters), at that time we would consider such information in evaluating any remaining cases then-pending against us as to whether it might then have become probable we have incurred liability with respect to these matters, and whether such liability, if any, could have become reasonably estimable. The resolution of any of these cases could result in the recognition of a loss contingency accrual that could have a material adverse impact on our net income for the interim or annual period during which such liability is recognized and a material adverse impact on our consolidated financial condition and liquidity.

Environmental matters and litigation

Our operations are governed by various environmental laws and regulations. Certain of our businesses are and have been engaged in the handling, manufacture or use of substances or compounds that may be considered toxic or hazardous within the meaning of applicable environmental laws and regulations. As with other companies engaged in similar businesses, certain of our past and current operations and products have the potential to cause environmental or other damage. We have implemented and continue to implement various policies and programs in an effort to minimize these risks. Our policy is to maintain compliance with applicable environmental laws and

regulations at all of our plants and to strive to improve environmental performance. From time to time, we may be subject to environmental regulatory enforcement under U.S. and non-U.S. statutes, the resolution of which typically involves the establishment of compliance programs. It is possible that future developments, such as stricter requirements of environmental laws and enforcement policies, could adversely affect our production, handling, use, storage, transportation, sale or disposal of such substances. We believe that all of our facilities are in substantial compliance with applicable environmental laws.

Certain properties and facilities used in our former operations, including divested primary and secondary lead smelters and former mining locations, are the subject of civil litigation, administrative proceedings or investigations arising under federal and state environmental laws and common law. Additionally, in connection with past operating practices, we are currently involved as a defendant, potentially responsible party (PRP) or both, pursuant to the Comprehensive Environmental Response, Compensation and Liability Act, as amended by the Superfund Amendments and Reauthorization Act (CERCLA), and similar state laws in various governmental and private actions associated with waste disposal sites, mining locations, and facilities that we or our predecessors, our subsidiaries or their predecessors currently or previously owned, operated or used, certain of which are on the United States Environmental Protection Agency's (EPA) Superfund National Priorities List or similar state lists. These proceedings seek cleanup costs, damages for personal injury or property damage and/or damages for injury to natural resources. Certain of these proceedings involve claims for substantial amounts. Although we may be jointly and severally liable for these costs, in most cases we are only one of a number of PRPs who may also be jointly and severally liable, and among whom costs may be shared or allocated. In addition, we are occasionally named as a party in a number of personal injury lawsuits filed in various jurisdictions alleging claims related to environmental conditions alleged to have resulted from our operations.

Obligations associated with environmental remediation and related matters are difficult to assess and estimate for numerous reasons including the:

- complexity and differing interpretations of governmental regulations,
- number of PRPs and their ability or willingness to fund such allocation of costs,
- financial capabilities of the PRPs and the allocation of costs among them,
- solvency of other PRPs,
- multiplicity of possible solutions,
    - number of years of investigatory, remedial and monitoring activity required,
- uncertainty over the extent, if any, to which our former operations might have contributed to the conditions allegedly giving rise to such personal injury, property damage, natural resource and related claims and
- number of years between former operations and notice of claims and lack of information and documents about the former operations.

In addition, the imposition of more stringent standards or requirements under environmental laws or regulations, new developments or changes regarding site cleanup costs or the allocation of costs among PRPs, solvency of other PRPs, the results of future testing and analysis undertaken with respect to certain sites or a determination that we are potentially responsible for the release of hazardous substances at other sites, could cause our expenditures to exceed our current estimates. We cannot assure you that actual costs will not exceed accrued amounts or the upper end of the range for sites for which estimates have been made, and we cannot assure you that costs will not be incurred for sites where no estimates presently can be made. Further, additional environmental and related matters may arise in the future. If we were to incur any future liability, this could have a material adverse effect on our consolidated financial statements, results of operations and liquidity.

We record liabilities related to environmental remediation and related matters (including costs associated with damages for personal injury or property damage and/or damages for injury to natural resources) when estimated future

expenditures are probable and reasonably estimable. We adjust such accruals as further information becomes available to us or as circumstances change. Unless the amounts and timing of such estimated future expenditures are fixed and reasonably determinable, we generally do not discount estimated future expenditures to their present value due to the uncertainty of the timing of the payout. We recognize recoveries of costs from other parties, if any, as assets when their receipt is deemed probable. At December 31, 2017, we did not

recognized any receivables for recoveries and at December 31, 2018 we have recognized $15.0 million of receivables for recoveries related to the lead pigment litigation in California discussed above.

We do not know and cannot estimate the exact time frame over which we will make payments for our accrued environmental and related costs. The timing of payments depends upon a number of factors, including but not limited to the timing of the actual remediation process; which in turn depends on factors outside of our control. At each balance sheet date, we estimate the amount of our accrued environmental and related costs which we expect to pay within the next twelve months, and we classify this estimate as a current liability. We classify the remaining accrued environmental costs as a noncurrent liability.

The table below presents a summary of the activity in our accrued environmental costs during the past three years. The amount charged to expense is included in corporate expense on our Consolidated Statements of Operations.

	Years ended December 31,		
	2016	2017	2018
	(In thousands)		
Balance at the beginning of the year	$113,133	$116,658	$111,909
Additions charged to expense, net	5,152	3,376	2,735
Payments, net	(1,627)	(8,125)	(16,433)
Balance at the end of the year	$116,658	$111,909	$98,211
Amounts recognized in the balance sheet:			
Current liability	$13,350	$5,302	$5,027
Noncurrent liability	103,308	106,607	93,184
Balance at the end of the year	$116,658	$111,909	$98,211

On a quarterly basis, we evaluate the potential range of our liability for environmental remediation and related costs at sites where we have been named as a PRP or defendant, including sites for which our wholly-owned environmental management subsidiary, NL Environmental Management Services, Inc., (EMS), has contractually assumed our obligations. At December 31, 2018, we had accrued approximately $98 million related to approximately 35 sites associated with remediation and related matters that we believe are at the present time and/or in their current phase reasonably estimable. The upper end of the range of reasonably possible costs to us for remediation and related matters for which we believe it is possible to estimate costs is approximately $117 million, including the amount currently accrued. These accruals have not been discounted to present value.

We believe that it is not possible to estimate the range of costs for certain sites. At December 31, 2018, there were approximately 5 sites for which we are not currently able to estimate a range of costs. For these sites, generally the investigation is in the early stages, and we are unable to determine whether or not we actually had any association with the site, the nature of our responsibility, for the contamination at the site, if any, and the extent of contamination at and cost to remediate the site. The timing and availability of information on these sites is dependent on events outside of our control, such as when the party alleging liability provides information to us. At certain of these previously inactive sites, we have received general and special notices of liability from the EPA and/or state agencies alleging that we, sometimes with other PRPs, are liable for past and future costs of remediating environmental contamination allegedly caused by former operations. These notifications may assert that we, along with any other alleged PRPs, are liable for past and/or future clean-up costs. As further information becomes available to us for any

of these sites which would allow us to estimate a range of costs, we would at that time adjust our accruals. Any such adjustment could result in the recognition of an accrual that would have a material effect on our consolidated financial statements, results of operations and liquidity.

Insurance coverage claims

We are involved in certain legal proceedings with a number of our former insurance carriers regarding the nature and extent of the carriers' obligations to us under insurance policies with respect to certain lead pigment and asbestos lawsuits. The issue of whether insurance coverage for defense costs or indemnity or both will be found to exist for our lead pigment and asbestos litigation depends upon a variety of factors and we cannot assure you that such insurance coverage will be available.

We have agreements with three former insurance carriers pursuant to which the carriers reimburse us for a portion of our future lead pigment litigation defense costs, and one such carrier reimburses us for a portion of our future asbestos litigation defense costs. We are not able to determine how much we will ultimately recover from these carriers for defense costs incurred by us because of certain issues that arise regarding which defense costs qualify for reimbursement. While we continue to seek additional insurance recoveries, we do not know if we will be successful in obtaining reimbursement for either defense costs or indemnity. Accordingly, we recognize insurance recoveries in income only when receipt of the recovery is probable and we are able to reasonably estimate the amount of the recovery.

Other litigation

In addition to the litigation described above, we and our affiliates are also involved in various other environmental, contractual, product liability, patent (or intellectual property), employment and other claims and disputes incidental to present and former businesses. In certain cases, we have insurance coverage for these items, although we do not expect additional material insurance coverage for environmental matters. We currently believe the disposition of all of these various other claims and disputes (including asbestos-related claims), individually and in the aggregate, should not have a material adverse effect on our consolidated financial position, results of operations or liquidity beyond the accruals already provided.

Concentrations of credit risk

Component products are sold primarily in North America to original equipment manufacturers. The ten largest customers related to our operations accounted for approximately 46% in 2016 and 44% in each of 2017 and 2018. One customer of CompX's Security Products business accounted for 14% of total sales in 2016, 16% in 2017 and 13% in 2018. Another customer of CompX's Security Products business accounted for approximately 11% in 2016.

Other

Rent expense principally for CompX operating facilities and equipment was not significant in 2016, 2017 and 2018 and at December 31, 2018, future minimum rentals under noncancellable operating leases are also not significant.

Income taxes

We and Valhi are a party to a tax sharing agreement providing for the allocation of tax liabilities and tax payments as described in Note 1. Under applicable law, we, as well as every other member of the Contran Tax Group, are each jointly and severally liable for the aggregate federal income tax liability of Contran and the other companies included in the Contran Tax Group for all periods in which we are included in the Contran Tax Group. Valhi has agreed, however, to indemnify us for any liability for income taxes of the Contran Tax Group in excess of our tax liability computed in accordance with the tax sharing agreement.

Note 18 - Financial instruments:

The following table presents the financial instruments that are not carried at fair value but which require fair value disclosure as December 31, 2017 and 2018:

	December 31, 2017		December 31, 2018	
	Carrying Amount	Fair Value	Carrying Amount	Fair Value
	(In thousands)			
Cash, cash equivalents and restricted cash	$102,941	$102,941	$120,989	$120,989
Noncontrolling interest in CompX common stock	17,756	22,224	19,443	22,871

The fair value of our noncontrolling interest in CompX stockholders' equity is based upon its quoted market price at each balance sheet date, which represents Level 1 inputs. Due to their near-term maturities, the carrying amounts of accounts receivable and accounts payable are considered equivalent to fair value.

Note 19 – Recent accounting pronouncements:

Adopted

On January 1, 2018, we adopted ASU 2014-09, Revenue from Contracts with Customers (Topic 606) for all contracts which were not completed as of January 1, 2018 using the modified retrospective method. Prior to adoption of this standard, we recorded sales when our products were shipped and title and other risks and rewards of ownership had passed to our customer, which was generally at the time of shipment (although in some instances shipping terms were FOB destination point, for which we did not recognize revenue until the product was received by our customer). Following adoption of this standard, we record sales when we satisfy our performance obligations to our customers by transferring control of our products to them, which we have determined is at the same point in time that we recognized revenue prior to adoption of this new standard. Accordingly, the adoption of ASU 2014-09 as of January 1, 2018 did not have a material impact on our consolidated financial statements, and we believe adoption of this standard will have a minimal effect on our revenues on an ongoing basis. See Note 2.

On January 1, 2018, we adopted ASU 2016-01, Financial Instruments-Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities, which addresses certain aspects related to the recognition, measurement, presentation and disclosure of financial instruments. The ASU requires equity investments (except for those accounted for under the equity method of accounting or those that result in the consolidation of the investee) to generally be measured at fair value with changes in fair value recognized in net income (previously, changes in fair value of such securities were recognized in other comprehensive income). The amendment also requires a number of other changes, including among others: simplifying the impairment assessment for equity instruments without readily determinable fair values; eliminating the requirement for public business entities to disclose methods and assumptions used to determine fair value for financial instruments measured at amortized cost; requiring an exit price notion when measuring the fair value of financial instruments for disclosure purposes; and requiring separate presentation of

financial assets and liabilities by measurement category and form of asset. We adopted the new standard prospectively. The most significant aspect of adopting this ASU is the requirement to recognize changes in fair value of our available-for-sale marketable equity securities in net income. At December 31, 2017, our entire portfolio of marketable securities consisted of marketable equity securities. Upon adoption of the ASU on January 1, 2018, the entire balance of our accumulated other comprehensive income related to marketable securities of $46.1 million was reclassified to our beginning retained earnings pursuant to the transition requirements of the ASU.

In March 2017, the Financial Accounting Standards Board ("FASB") issued ASU 2017-07, Compensation— Retirement Benefits (Topic 715) Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost, which requires that the service cost component of net periodic defined benefit pension and OPEB cost be reported in the same line item as other compensation costs for applicable employees incurred during the period. Other components of such net benefit cost are required to be presented in the income statement

separately from the service cost component, and below income from operations (if such a subtotal is presented). These other net benefit cost components must be disclosed either on the face of the financial statements or in the notes to the financial statements. In addition only the service cost component is eligible for capitalization in assets where applicable (inventory or internally constructed fixed assets for example). We adopted the amendments in ASU 2017-07 beginning in the first quarter of 2018, with retrospective presentation in our Consolidated Statements of Operations. We began applying ASU 2017-07 prospectively beginning on January 1, 2018 as it relates to the capitalization of the service cost component of net benefit cost into assets (primarily inventory). We are availing ourselves of the practical expedient that permits us to use amounts we previously disclosed as components of our net periodic defined benefit pension and OPEB cost for periods prior to the adoption of this ASU as the estimation basis for applying the retrospective presentation requirements. As a result, we have reclassified $.3 million and $.8 million previously classified as part of corporate expense for 2016 and 2017, respectively, to “Other components of net periodic pension and OPEB cost” in our Consolidated Statements of Operations.

Pending Adoption

In February 2016, the FASB issued ASU 2016-02, Leases (Topic 842), which is a comprehensive rewriting of the lease accounting guidance which aims to increase comparability and transparency with regard to lease transactions. The primary change for leases currently classified as operating leases is the balance sheet recognition of a lease asset for the right to use the underlying asset and a lease liability for the lessee’s obligation to make payments. The ASU, as amended, also requires increased qualitative disclosure about leases in addition to quantitative disclosures currently required. We will adopt ASU 2016-02 beginning in the first quarter of 2019. Due to our minimal utilization of lease financing, we have concluded that the adoption of this standard will not have a material effect on our consolidated financial statements.

Note 20 - Quarterly results of operations (unaudited):

	Quarter ended			
	March 31	June 30	Sept. 30	Dec. 31
	(In millions, except per share data)			
Year ended December 31, 2017				
Net sales	$29.9	$30.0	$27.0	$25.1
Gross margin	9.7	9.5	8.2	7.4
Net income	8.8	41.6	17.8	49.6
Amounts attributable to NL stockholders:				
Net income	8.3	41.2	17.5	49.1
Income per common share	$.17	$.85	$.36	$1.00
Year ended December 31, 2018				
Net sales	$28.4	$32.4	$30.0	$27.4
Gross margin	9.5	11.2	9.6	7.9
Net income (loss)	14.7	(42.0)	(14.9)	3.1
Amounts attributable to NL stockholders:				
Net income (loss)	14.2	(42.6)	(15.4)	2.8

Income (loss) per common share	$.29	$(.87)	$(.32)	$.06

We recognized the following amounts during 2017:

- income of $37.5 million in the fourth quarter related to a non-cash deferred income tax benefit related to the revaluation of our net deferred income tax liability resulting from the reduction in the U.S. federal corporate income tax rate enacted into law on December 22, 2017 (see Note 14),
- income of $1.0 million in the first quarter, $31.1 million in the second quarter, $1.5 million in the third quarter, and $3.2 million in the fourth quarter, each net of income taxes, included in our equity in

earnings of Kronos related to a non-cash deferred income tax benefit recognized as the result of the reversal of Kronos' deferred income tax asset valuation allowance associated with its German and Belgian operations (see Note 14),

- loss of $15.1 million in the fourth quarter, net of income taxes, included in our equity in earnings of Kronos related to Kronos' current income tax expense recognized as the result of change in the 2017 Tax Act enacted on December 22, 2017 for the one-time repatriation tax imposed on the post-1986 undistributed earnings of Kronos' non-U.S. subsidiaries (see Note 14),
- income of $3.7 million in the fourth quarter, net of income taxes, included in our equity in earnings of Kronos related to Kronos' non-cash deferred income tax benefit recognized as the result of the reversal of Kronos' deferred income tax asset valuation allowance related to certain U.S. deferred income tax assets of one of Kronos' non-U.S. subsidiaries (which subsidiary is treated as a dual resident for U.S. income tax purposes) (see Note 14),
- income of $2.2 million in the third quarter, net of income taxes, included in our equity in earnings of Kronos related to the execution and finalization of an Advanced Pricing Agreement between Canada and Germany, mostly in the third quarter (see Note 14),
- loss of $.9 million in the fourth quarter, net of income taxes, included in our equity in earnings of Kronos related to Kronos' non-cash deferred income tax expense as a result of a change in its conclusions regarding Kronos' permanent reinvestment assertion with respect to the post-1986 undistributed earnings of its European subsidiaries (see Note 14), and
- loss of $.9 million in the third quarter, net of income taxes, included in our equity in earnings of Kronos related to Kronos' loss on prepayment of debt.

We recognized the following amounts during 2018:

- loss of $49.0 million, net of income taxes, in the second quarter related to the litigation settlement expense (see Note 17); and
- loss of $.9 million in the fourth quarter, net of income taxes, included in our equity in earnings of Kronos related to Kronos' current income tax expense on global intangible low-tax income.

The sum of the quarterly per share amounts may not equal the annual per share amounts due to relative changes in the weighted average number of shares used in the per share computations.