

Region 6 - Enforcement & Compliance Assurance Division
INSPECTION REPORT

Inspection Date(s):	April 18-22, 2022	
Media Program:	Air	
Regulatory Program(s)	Clean Air Act Section 112(r) and 40 Code of Federal Regulations (C.F.R.) Part 68 Chemical Accident Prevention Provisions – Risk Management Program (RMP)	
Company Name:	Eagle US 2 LLC	
Facility Name:	Eagle US 2 LLC, Lake Charles Plant	
Facility Physical Location:	1300 PPG Drive	
(city, state, zip code)	Westlake, Louisiana 70669	
Mailing address:	P.O. Box 1000	
(city, state, zip code)	Lake Charles, Louisiana 70602	
County/Parish:	Calcasieu Parish	
Facility Phone Number	(337) 708-4500	
Facility Contact:	Daniel Pund dpund@westlake.com	Process Safety Compliance Supt.
FRS Number:	110000494894	
Identification/Permit Number:	Air Operating Permit ID: 1929-VO, 2229-VO	
Media Identifier Number:	RMP ID: 1000 0008 2082	
NAICS:	32518 (Other Basic Inorganic Chemical Manufacturing) 325998 (All Other Miscellaneous Chemical Product and Preparation Manufacturing)	
SIC:	2869 – Industrial Organic Chemicals	
Personnel participating in inspection:		
Justin McDowell	US EPA Region 6	Inspector/ Enforcement Officer
Howard Cole	US EPA Region 6	Inspector
Keri Meyers	Louisiana Department of Environmental Quality (LDEQ)	Inspector
Glen Jenkins	LDEQ	Inspector
Daniel Pund	Westlake	Process Safety Compliance Supt.
Paula McCain	Westlake	Environmental Manager
Rico Orsot	Westlake	Safety Manager
Komlan Abalo	Westlake	PSM Engineer
Michael Guidry	Westlake	EHS Specialist II
Stephen Billeaudeau	Westlake	Maintenance Supt.
Ricky Sullivan	Westlake	Union Representative
EPA Lead Inspector Signature/Date	Justin McDowell	Date
Supervisor Signature/Date	Sam Tate	Date

Section I – INTRODUCTION

PURPOSE OF THE INSPECTION

United States Environmental Protection Agency (EPA) Region 6 inspectors Justin McDowell and Howard Cole, arrived at the Westlake Eagle US 2 LLC Lake Charles Plant (Westlake) at 9:00 AM on Monday April 18, 2022, for an announced inspection. I met with Westlake representatives for an opening meeting. I presented my credentials and informed Westlake personnel that this was an EPA inspection to determine compliance with the federal Chemical Accident Prevention Program. The scope of the inspection was a partial compliance evaluation (PCE), which included an assessment of the facility's compliance with the Clean Air Act (CAA) Section 112(r), the General Duty Clause, and the Chemical Accident Prevention Provisions in 40 C.F.R. Part 68 and the General Duty Clause. The inspection was conducted in response to an accidental release incident that occurred on January 26, 2022, during which four Westlake employees sustained recordable injuries. The chemical release involved a tank (T-3) containing a hazardous substance, ethylene dichloride, which is not an RMP chemical. Westlake's Risk Management Plan (RMP) is listed as a Program Level Three (3), Title V facility. Ricky Sullivan, representative for the International Association of Machinists (IAM) Local 470 Union, participated in this inspection as an employee representative, pursuant to section 112(r)(6)(L) of the CAA.

FACILITY DESCRIPTION

Westlake Eagle US 2 LLC's Lake Charles facility is part of the ChlorAlkali & Derivatives Strategic Business Unit of the Eagle US 2 Corporation. The whole facility is fully integrated, and produces chlorine, caustic soda (i.e., sodium hydroxide) and various chlorinated hydrocarbons. These chemicals are utilized for many industrial purposes such as water treatment, food processing, medicines, plastics and Freon substitutes. Chlorine, ethyl dichloride (EDC), vinyl chloride and ammonia are manufactured or stored in quantities that exceed EPA Risk Management Program regulatory thresholds. The facility has approximately 1,150 full-time employees and 350 contractors and operates the five operating units 24 hours per day, 365 days per year.

Section II - OBSERVATIONS

On Tuesday April 19, 2022, EPA and LDEQ inspectors were accompanied by Westlake personnel to conduct a tour of the facility, focusing on the EDC, Planar Halogenated Hydrocarbon (PHH) and Ammonia process units. Inspectors viewed the area where the T-3 tank explosion occurred on January 26, 2022, interviewed employees, and took photos. On Thursday April 21, 2022, inspectors conducted a second facility tour that included the Vinyl chloride unit and its sampling station.

Subpart A – General

40 C.F.R. § 68.10 Applicability – Westlake is the owner/operator of a stationary source that has more than a threshold quantity of regulated toxic substances (chlorine and anhydrous ammonia), and more than a threshold quantity of regulated flammable substances (vinyl chloride and ethyl chloride) in one covered processes, as listed at 40 C.F.R. § 68.130; therefore, Westlake is subject to the Chemical Accident Prevention Provisions. Westlake is classified under the North American Industrial Classification System (NAICS) codes 32518 (Other Basic Inorganic Chemical Manufacturing) and 325998 (All Other Miscellaneous Chemical Product and Preparation Manufacturing). Westlake is also subject to the

Occupational Safety and Health Administration (OSHA) process safety management (PSM) standard, 29 C.F.R. § 1910.119.

40 C.F.R. § 68.10 Program Eligibility – Westlake re-submitted its RMP registration five-year update, as required under 40 C.F.R. § 68.190, on March 11, 2021. Westlake's next registration re-submittal is due on March 11, 2026, unless an update or correction is required by 40 C.F.R. § 68.190 or 40 C.F.R. § 68.195 prior to the five-year renewal date.

40 C.F.R. § 68.12 General requirements – Westlake's RMP submission requires the facility to: develop and implement a management system; conduct a hazard assessment; implement the prevention requirements of 40 C.F.R. § 68.65 - § 68.67; develop and implement an emergency response program; and include the data elements from 40 C.F.R. § 68.175 in their RMP.

40 C.F.R. § 68.15 Management – Westlake has developed a management system to oversee the implementation of risk management program elements, and documented the lines of authority defined through an organization chart.

Subpart B – Hazard Assessment

40 C.F.R. § 68.20 Applicability – Westlake has two Program Level 3 processes subject to this subpart. The facility is required to prepare an off-site consequence analysis for both toxics and flammables, and complete the five-year accident history.

40 C.F.R. § 68.22 Off site Consequence Analysis (OCA) Parameters – Westlake used RMP*Comp™ as the technique for modeling the release scenarios. For both the worst-case and alternative case scenarios involving flammables, the facility used the endpoints provided in Appendix A of 40 C.F.R. Part 68, appropriate wind speeds and stability classes, ambient temperatures and humidity values, values for height of the release, and surface roughness values for the release scenario analyses.

40 C.F.R. § 68.25 Worse-case Release Scenario Analysis – Westlake analyzed and reported in the RMP one worst-case release scenario for chlorine, estimated to create the greatest distance to endpoint, and resulting from an accidental release of vinyl chloride from a covered process under worst-case conditions. Westlake also reported one worst-case release scenario, estimated to create the greatest distance to endpoint, and resulting from an accidental release of a regulated flammable substance from a covered process under worst-case conditions.

40 C.F.R. § 68.28 Alternative Release Scenario Analysis – Westlake identified and analyzed at least one alternative release scenario for each regulated toxic substance (chlorine and anhydrous ammonia) held in covered processes, and at least one alternative release scenario to represent all flammable substances held in covered processes (vinyl chloride).

40 C.F.R. § 68.30 Defining Off site Impacts - Population – Westlake used the MARPLOT mapping program to define the affected off-site population. The documentation describes how the facility estimated the population that would be affected in the distance to endpoint in the RMP, based on a circle with the point of release at the center. The facility used the most recent Census data, estimated to two significant digits, in the documentation.

40 C.F.R. § 68.33 Defining Off site Impacts - Environment – Westlake has identified environmental receptors in the OCA within a circle where the center is the point of the release and included in the circle radius, as determined by the distance to endpoint using methods such as local U.S. Geological Survey (U.S.G.S.) maps or any other data source containing U.S.G.S. data to identify environmental receptors.

40 C.F.R. § 68.36 Review and Update – Westlake has reviewed and updated the offsite consequence analyses at least once every five years.

40 C.F.R. § 68.39 Documentation – For the worst-case and alternative release scenarios, a description of the vessel or pipeline and substance selected, assumptions and parameters used, the rationale for selection, the anticipated effect of the administrative controls and passive mitigation on the release quantity, and the release rate were provided. At the time of the inspection, Westlake failed to maintain documentation in the OCA the presence of offsite public receptors, such as institutions (schools, hospitals, prisons), parks and recreational areas, and major commercial, office, and industrial buildings. **[Area of Concern (AOC 1 - 68.39 (e))]**

40 C.F.R. § 68.42 Five-year accident history – Westlake did not have any reportable accidents listed in the RMP registration at the time of the inspection.

Subpart D – Program 3 Prevention Program

40 C.F.R. § 68.65 Process Safety Information – Westlake compiled written process safety information, which includes information pertaining to the hazards of the regulated substances used or produced by the process, information pertaining to the technology of the process, and information pertaining to the equipment in the process. I reviewed the Safety Data Sheets for the process chemicals used that contains the following data for the hazards of each substance: toxicity information, permissible exposure limits, physical data, reactivity data, corrosivity data, thermal and chemical stability data, and the hazardous effects of inadvertent mixing of materials that could foreseeably occur. I reviewed documentation concerning the technology of the covered processes, which included block flow diagrams, process chemistry, maximum intended inventory, safe upper and lower limits for such items as temperatures, pressures, flows, or compositions and an evaluation of the consequences of deviation. I reviewed documentation pertaining to the equipment of each process, including materials of construction, piping and instrumentation diagrams (P&IDs), electrical classification, process safety valve (PSV) relief system design, design basis, design codes and standards employed, material and energy balances, and other safety systems. Westlake failed to complete a compilation of written process safety information pertaining to certain equipment in the covered processes, including the relief system design and design basis. In the 2018 Compliance Audit, finding #14 stated that the pressure relief systems design basis calculations reviewed were outdated and did not meet current industry requirements. Also, the majority of the other 2,417 legacy relief systems design basis calculations were also outdated. In 2018, the facility decided to conduct a PSV Revalidation Study. At the time of this inspection the re-design packages had been completed for less than 20% of the pressure relieve valves in the Vinyl Chloride Monomer (VCM) Unit EDC Unit, Liquefaction Chlorine Systems-Chlorine units, Derivatives (EDC, Per/ Tri, Vinyl) unit, and Utilities, and no pressure relief valves had been corrected or adjusted in the units. **[AOC 2 – §68.65 (d)(1)(iv)]** Westlake also did not provide for EPA’s review a ventilation system design for the control rooms or shelter-in-place buildings. This was also a finding in the 2018 compliance audit (finding #23) and a repeat finding in the 2021 compliance audit (finding #3). **[AOC 3 – §68.65 (d)(1)(v)]**

40 C.F.R. § 68.67 Process hazard analysis (PHA) – Westlake provided a PHA procedure for review. Westlake performed initial PHAs that identified, evaluated, and controlled the hazards involved in the processes. The facility completes each PHA based on the five-year cycle from the previous PHA, as they are divided among the covered process units. The PHAs performed use the Hazard and Operability Study (HAZOP) methodology to identify hazards. The following PHA recommendations did not address stationary source siting and/or human factors: EC Unit PHA 2018 re-evaluation; EDC – Ethylene section PHA 2018 Revalidation; EDC- HCL Unit PHA 2017 Revalidation; EDC -1 Area PHA 2018 Re-evaluation; EDC-1 Revalidation #4; EDC -2 Area 2018 PHA Re-evaluation; Ethyl Chloride PHA Revalidation #4; LCS PHH OHC Reactor area PHA 2019 Re-evaluation; LKS PHH EVE Reactor and Process area 2020 Re-evaluation; and, the PHH EVC PHA 2020 Revalidation #4. **[AOC 4 – §68.67 (c)(5)/(c)(6)]**

The process hazard analyses were performed by a team with expertise in engineering and process operations, and the team included at least one employee who has experience and knowledge specific to the processes being evaluated. At least every five (5) years after the completion of an initial process hazard analysis, PHAs are updated and revalidated. However, Westlake has not established a system to promptly address the team's findings and recommendations; to assure that the recommendations are resolved in a timely manner; and, to ensure that the resolutions are documented. Management review of PHA recommendations takes up to 1 year to establish risk rankings. This was found in the 2018 compliance audit (Finding #13) and the 2021 compliance audit (Finding #4). The EC Unit PHA Redo 2018, EDC – Ethylene section PHA Revalidation 2018, PHH EVC PHA Revalidation #4, PHH Furnaces & VC Process PHA Revalidation 2014 PHAs have action plans that are overdue or late. The PHA process from initiation to the corrective action plan development to address findings overextends the total timeframe for completion of action items beyond the intended target due dates, based on Risk Rank levels: (1) High-6 months; (2) Medium-12 months; (3) Low-24 months; (4) Acceptable-No further action. The PHAs indicate that several critical hazards need to be addressed: dead legs in piping segments, and ensuring that PSVs relieve to safe locations. **[AOC 5 – §68.67 (e)]**

40 C.F.R. § 68.69 Operating Procedures – Westlake has developed and implemented written operating procedures that provide clear instructions for safely conducting most activities involved in each covered process, consistent with the process safety information, and which address the required elements. Westlake has also developed and implemented safe work practices to provide for the control of hazards during operations such as lockout/tagout and confined space entry. Operating procedures are maintained electronically in the facility's online document database. However, the facility did not have an operating procedure for emptying or de-inventory of the T-3 tank, which was involved in the January 2022 accidental release incident. The only procedure provided was titled: "Filling or pumping out a Vessel," Document 6001-0000-32005, Revision dated April 12, 2019. The facility also failed to certify annually that the operating procedures are current and accurate. This is a repeat finding from LDEQ's 2018 inspection. The PHH SOP Annual Certification due December 26, 2019, was not completed until March 12, 2020, over two months late. The B-EDC/Trans/EC/HCL Standard Operating Procedures (SOP) Certification due November 16, 2018, was not completed until March 11, 2019, which was four months late. **[AOC 6 – §68.69 (c)]**

EPA also noted deficiencies in operating procedures related to the January 26, 2022, release incident. While the T-3 tank did not contain an RMP listed chemical, it is part of the EDC covered process so the requirements under the CAA General Duty Clause Section 112(r)(1) apply. Westlake did not implement its established documented safe work practices to provide for the control of hazards during operations at the T-3 tank, such as lockout/tagout, opening process equipment, and control over entrance into a

stationary source by contractors. Westlake failed to implement the provisions of its internal General Work Permit, Sections 5.2.4 and 5.2.5, by failing to ensure that the operators clearly communicated to the maintenance workers the expected outcome of demolition of the nitrogen piping that would eliminate the nitrogen blanket, and that hot work was prohibited due to the presence of ethylene dichloride in Tank T-3, along with three holes at the top of the tank. The Westlake responsible operator failed to conduct additional visual inspections when the condition or scope of the work changed, or when there were personnel changes from those listed on the permit, in accordance with the General Work Permit, Section 5.2.5.1. Westlake also failed to follow the requirements of its established written Safe Process Piping Equipment, & Vessel Opening (Line Break) Procedure. Westlake did not conduct a Process Opening Field Review or a Line Opening Pre-Job Safety Briefing in accordance with the Line Break Procedure Sections 4.4 and Section 4.5.1 for the opening of process piping containing nitrogen. The Maintenance/Construction Supervisor also did not complete the Job Safety Briefing with the work crew at the job site in accordance with Section 4.5.2. Neither the Equipment Owner/Operator or Maintenance/Construction Supervisor were present during the process piping opening or physical dismantling associated with each permitted activity involving process piping openings containing hazardous material.

40 C.F.R. § 68.71 Training – During the inspection, Westlake provided verbal information regarding their operator training program. EPA reviewed documentation that each employee was trained in an overview of the process and in the operating procedures for currently operating a process, and before being involved in operating a newly assigned process. Initial training records reviewed included emphasis on safety and health hazards, emergency operations, including shutdown, and safe work practices applicable to the employee's job tasks. The facility gives operators test on their training to ascertain and document the operator understands the training. Operators must score 80%. However, refresher training for some employees was not provided at least every three years, or more often if necessary, to each employee involved in operating a process to assure that the employee understands and adheres to the current operating procedures. One employee (KH) in the EDC received refresher training on March 24, 2016. His next refresher training was due March 24, 2019, but was not completed until January 17-19, 2022, two years and ten months late. **[AOC 7 – §68.71 (b)]**

40 C.F.R. § 68.73 Mechanical Integrity (MI)– Westlake failed to implement their established written Mechanical Integrity Program. Westlake did not establish proper documentation in the equipment files/records for inspection deferrals, and did not document the deferral process on a vessel extension form in accordance with Westlake's MI protocol 2305-MP-12, Section 4.4. Westlake also failed to establish inspection plans in accordance with Westlake protocol 2305-MP-12, Section 5.0, Written Procedures-Inspection & Test Plan Use and Development for Pressure Vessels. **[AOC 8 – §68.73 (b)]** The documentation for a simplified short-term deferral must include the current due date for the inspection, test, or examination, the proposed new due date, a review of the current operating conditions, the pressure vessel or pressure-relieving device history, and, consent of the inspector representing or employed by the owner-user and an appropriate operations management representative(s), in accordance with API 510 Section 6.7.1 Simplified Deferral.

Westlake did not conduct installation inspection and testing of new piping installed on piping circuit 60A-02610 in accordance with American Petroleum Institute (API) Standard 570, Section 6.2, Inspection During Installation and Service Changes, Subsection 6.2.1 Piping Installation. **[AOC 9 – §68.73 (d)(1)]** Westlake did not ensure that Class 1 piping circuits received an external inspection and thickness monitoring every five-years, and failed to calculate the corrosion rate, retirement date, remaining life, and next thickness management locations (TML) due dates for piping circuits in accordance with API

570. Westlake failed to ensure that the necessary internal inspections on pressure vessels had been completed in accordance with API Standard 510. Westlake also did not ensure that the API 653 external inspections performed on the roof of tank T-3 on February 16, 2017, and on February 23, 2021, were adequate with respect to the API standard. **[AOC 10 – §68.73 (d)(2)]**

Westlake failed to ensure inspection and testing procedures followed recognized and generally accepted good engineering practices. The frequency of inspections and tests of the Tank T-3 level transmitter was not consistent with the applicable manufacturer recommendations or good engineering practices. The T-3 level transmitter received annual preventative maintenance, inspection and testing from 2015 - 2018. There has been no preventative maintenance performed on the T-3 level transmitter since 2018. **[AOC 11 – §68.73 (d)(3)]**

Isometric PI&Ds furnished for EPA's review included piping circuit thickness measurements for the EDC, PHH, and chlorine piping systems. However, Westlake did not include for each inspection and test involving thickness measurements the date of the inspection or test, the name of the person who performed the inspection or test, or a description of the inspection or test performed for the piping circuits. **[AOC 12 – §68.73 (d)(4)]**

In 2018, the facility decided to conduct a pressure safety valve (PSV) Revalidation Study to and combine the tasks of a reviewing of the design basis calculations along with addressing safety relief valves (SRVs) that did not relieve to a safe location. The first Unit to be evaluated was the Vinyl Chloride Monomer North, which included approximately 450 pressure relief valves. However, Westlake failed to correct deficiencies in their pressure relief devices and pressure relief systems in the VCM Unit, EDC Unit, and other process units, such as but not limited to, the Liquefaction Chlorine Systems-Chlorine units, Derivatives unit, and Utilities (Plant A, Plant B, Plant C). The deficiencies indicated that the devices and systems operated outside acceptable limits, as defined by the process safety information in §68.65, which requires that deficiencies be corrected before further use, or in a safe and timely manner when necessary means are taken to assure safe operation. **[AOC 13 – §68.73 (e)]**

40 C.F.R. § 68.75 Management of Change (MOC) – Westlake has established written procedures to manage changes, except for “replacements in kind”, to process chemicals, technology, equipment, and procedures; and, to changes to stationary sources that affect a covered process. This procedure outlines that the necessary considerations are addressed prior to any change. Employees involved in operating a process whose job tasks will be affected by a change in the process were not trained in the change prior to start-up of the affected part of the process for one MOC activity (MOC 9373). **[AOC 14 – §68.75 (c)]**

40 C.F.R. § 68.77 Pre-startup Safety Review (PSSR) – EPA reviewed records of Westlake's pre-startup safety reviews for associated MOCs. The PSSR for MOC 9373 did not include documentation to confirm that training and/or notification was provided to each employee involved in operating the process prior to implementing the changes. **[AOC 15 – §68.77 (b)(4)]**

40 C.F.R. § 68.79 Compliance Audits – Westlake certified that they evaluated compliance with the provisions of this subpart at least every three years to verify that procedures and practices developed under this subpart are adequate and are being followed. However, for the most recent audit reports completed November 5-9, 2018, October 18-22, 2021, and October 25-29, 2021, Westlake did not promptly determine and document an appropriate response to each of the findings of the compliance audits, and did not document that deficiencies had been corrected. The failure to complete and

document corrective action completion was identified by the repeat findings described in the 2018 and 2021 compliance audits.. **[AOC 16 – §68.79 (d)]**

40 C.F.R. § 68.81 Incident Investigation – Westlake investigated incidents which resulted in, or could reasonably have resulted in, a catastrophic release. However, incident investigations were not initiated within 48 hours after incidents which occurred between 2017-2022 in the EDC, Derivatives Per/Tri, and PHH units. These included the LKC Greater EDC incident on July 4, 2017, and LKC PHH incidents on January 10, 2017, April 28, 2017, August 5, 2017, and June 12, 2019. **[AOC 17 – §68.81 (b)]**

Westlake also did not establish a system to promptly address and resolve the incident report findings and recommendations. Recommendations and corrective actions were not documented. The spreadsheets completed for incident investigation action items did not include the recommendations or the resolutions. **[AOC 18 – §68.81 (e)]** This was also a finding in the 2018 compliance audit (finding #5) that the facility did not document that it had completed actions items after incident investigations.

40 C.F.R. § 68.83 Employee Participation – Westlake has developed a written action plan for implementation of employee participation required by this section. However, the facility has not fully implemented the plan by consulting with employees and their representatives on conducting and developing process hazard analyses, or on the development of other required elements of process safety management in chemical accident prevention provisions. The PHAs for the EDC-1 Revalidation #4 and the EDC-2 PHA Revalidation #4, completed August 21-September 6, 2018, stated that the PHA study results were not communicated to workers who may be affected. **[AOC 19 – 40 C.F.R. § 68.83(c)]**

40 C.F.R. § 68.85 Hot Work Permit – Westlake has an internal procedure that requires the facility to issue hot work permits for hot work operations conducted on or near a covered process. However, EPA noted deficiencies in implementing hot work permit requirements, especially for hot work performed that was related to the January 26, 2022, incident. Westlake failed to issue a hot work permit for the use of a Sawzall device during the maintenance and removal of piping and fittings on a nitrogen line at the T-3 tank.

The permits reviewed did not document that the fire prevention and protection requirements in 29 CFR 1910.252(a)¹ had been performed. The hot work permits also were not adequately completed. This was a finding in the 2018 compliance audit (Finding #18) and a repeat finding in the 2021 compliance audit (Finding #8). Audit issues included: fire watch end time precedes the permit end time; fire watch end time was the same as permit end time; fire watch end time was noted as “30 minutes after job”; only initial atmospheric monitoring readings were recorded instead of recordings taken every 2 hours; no permit end time listed; no fire watch end time recorded; no monitoring instrument serial number or calibration date recorded; name of contractor not listed in the permit; and, fire watch individual assigned was identified by initials only or first name only, or not identified at all in the permit). **[AOC 20 – §68.85 (b) see Table 1.]**

¹ These requirements may be found at <https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.252>.

Table 1

Hot Work Permit Date	Hot Work Location	Permit Deficiency
4/21/2022	VCMS Unit	Permit start time is listed as 7:00 am, end time is listed as 5:00 pm, and fire watch end time is listed as 5:30 pm. However, the permit was returned at approximately 10:50 am after the hot work was completed. The hot work end time and fire watch end times were apparently filled in on the permit before work started. No atmospheric readings were performed after the initial reading was taken before hot work started. Sprinkler systems were marked as not operational. (This was Finding #18 on the 2018 compliance audit and finding #8 on the 2021 compliance audit: "End time for fire watch was prerecorded on active hot work permit.")
4/11/2022	Derivatives Per/Tri unit	Start time was listed as 07:40 am, end time was blank, and fire watch was listed as 4:30 pm
4/13/2022	Derivatives Per/Tri unit	Start time was listed as 7:20 am, end time was listed as 17:30, and fire watch time was listed as 5:30 pm (hot work end time and fire watch end time are the same)
4/19/2022	VCMS unit	Start time was listed as 7:00 am, end time was listed as 5:00 pm, and fire watch time was listed as 5:30 pm. Last atmospheric monitoring was performed at 10:00 am.
4/18/2022	VCMS unit	Start time was listed as 7:00 am, end time was listed as 5:00 pm, and fire watch time was listed as 5:30 pm. Last atmospheric monitoring was performed at 1:40pm.
4/14/2022	VCMS unit	Start time was listed as 7:21 am, end time was not entered, and fire watch time was listed as 6:00 pm
4/13/2022	VCMS unit	Start time was listed as 7:00 am, end time was listed as 5:00 pm, and fire watch time was listed as 5:30 pm. Last atmospheric monitoring was performed at 2:00 pm.
4/12/2022	VCMS unit	Start time was listed as 7:00 am, end time was listed as 5:00 pm, and fire watch time was listed as 5:30pm. Atmospheric monitoring times were listed as occurring at 8:00 am, 10:00 am, 12:35 pm, and 2:35 pm. Monitoring started after the permit start time, and was not consistently conducted every two hours.

40 C.F.R. § 68.87 Contractors – Westlake uses *ISNetWorld* to obtain and evaluate information regarding an owner or operator's safety performance and programs when selecting a contractor. Contractors graded A and B are permitted to work without restrictions. Selecting contractors with grade C involves further consultation, and contractors graded F may not be used without additional authorization from the purchasing and safety groups. Prior to work commencing, the contractor receives orientation from Westlake the facility's requirements for contractors and services manual, which includes safety and health provisions. Contractors must submit their proof of taking Basic Plus safety awareness and orientation program training that can be obtained through the Safety Council of Southwest Louisiana, or an approved reciprocal program. In addition to site-specific and unit-specific orientation, all contractors must have a valid Transportation Workers Identification Card (TWIC) or be escorted at all times. Approved contractors are permitted entry at the facility main gate and their presence on site is

maintained on daily logs. Westlake evaluates the performance of contractors in *ISNetWorld* annually via contractor record audits and contractor field audits.

EPA noted deficiencies in contractor oversight related to the January 26, 2022, incident. Westlake did not ensure that the Turner employees removing a nitrogen line on top of tank T-3 were informed of the potential fire and explosion hazards related to the contractor's work and the process. The Turner employees were not informed that tank T-3 contained ethylene dichloride, a non-RMP flammable material, and that there were holes due to corrosion in the top of the tank. Also, Turner employees were not informed that hot work, such as grinding or cutting, might be necessary to dismantle the nitrogen line, and that locking out the nitrogen line would eliminate the nitrogen blanket for tank T-3, thereby resulting in ethylene dichloride vapor inside the tank. Westlake did not develop and implement safe work practices to control the entrance, presence, and exit of contract employees in a covered process area, as required by this section or as required to maintain a safe facility to prevent accidental releases. Westlake allowed contractors to enter and conduct hot work in an area that contained flammable vapors. Westlake did not coordinate the entrance of Turner contractors assigned to do work on T-3 under separate General Work Permits. **[AOC 21 – §68.87 (b)(4)]**

Subpart E – Emergency Response

40 C.F.R. § 68.90 Applicability – Westlake is designated as a responding stationary source, and is subject to the sections of the rule that apply to responding facilities.

40 C.F.R. § 68.93 Emergency Response Coordination Activities – Westlake failed to coordinate response needs with local emergency planning and response organizations in 2019, 2020, and 2021, including all elements of sections 68.93(a) through (c). **[AOC 22 – §68.93 (a), (b), and (c)]** The deficiencies included failure:

- To determine how the stationary source is addressed in the community emergency response plan;
- To ensure that local response organizations are aware of the regulated substances at the facility, their quantities, the risks presented by the covered processes, and the resources and capabilities at the stationary source to respond to an accidental release of a regulated substance;
- To coordinate with local community responders at least annually;
- To provide the LEPC and response organizations with the stationary source's emergency response plan, emergency action plan, updated emergency contact information, and other information necessary for developing and implementing the local community emergency response plan;
- To request an opportunity to meet with the local emergency planning commission (LEPC) and/or local fire department as appropriate to review and discuss submitted materials; and
- To document coordination with local authorities, including the names of individuals involved and their contact information; the dates of coordination activities; and, the nature of coordination activities.

The most recent changes to section 68.93 went into effect September 21, 2018. Therefore, the first coordination event should have been scheduled and/or completed on or before September 21, 2019, and annually thereafter. Mr. Kevin Boyette (Emergency Response) stated that Westlake has not completed coordination activities with the LEPC and local fire department.

40 C.F.R. § 68.95 Emergency Response Program – Westlake has not fully developed and implemented an emergency response program for the purpose of protecting public health and the environment. The written program does not include procedures for the use of emergency response equipment, and for its

inspection, testing, and maintenance. The facility's fire response equipment is past due for inspection and maintenance service. **[AOC 23– §68.95 (a)(2)]** Fire school annual refresher training was past due for 53 response team members. This was also a finding of the 2021 compliance audit (finding #10). **[AOC 24– §68.95 (a)(3)]**

40 C.F.R. § 68.96 Emergency Response Exercises – Westlake has conducted tabletop drills and exercises in coordination with local emergency planning and response organizations.

Subpart G – Risk Management Plan

40 C.F.R. § 68.190 Updates – Westlake's RMP was last re-submitted on March 11, 2021, for a five-year update.

40 C.F.R. § 68.195 Required corrections – Westlake's next RMP registration re-submission is due by March 11, 2026, unless an update or correction is required by 40 C.F.R. 68.190 or 40 C.F.R. 68.195 prior to the five-year renewal deadline.

Incident Review – Section 112(r)(1) of the CAA, 42 U.S.C. § 7412(r)(1) General Duty Clause

On January 26, 2022, an explosion occurred at the T-3 EDC storage tank. The following events summarize the timeline of the incident:

- Early January 2022 - T-3 tank emptied, pumped to cavitation.
- January 25, 2022 - Vapor identified coming out of T-3 Tank roof.
 - Maintenance went to the T-3 Tank roof and identified holes in the roof that were causing the vapor.
 - A contractor from Turner industries inspected the T-3 Tank roof and the nitrogen control valve and piping on the roof.
 - The Turner inspector identified four pinholes and recommended temporarily patching the holes, and replacing the nitrogen control valve and piping.
 - Westlake operations isolated the tank.
 - During night shift, Turner built scaffolding on the T-3 tank roof to help the Turner contractors safely repair the leaks.
- January 26, 2022 - Westlake issued Turner a work permit to remove and replace the nitrogen control valve and piping on the T-3 Tank roof. The Turner contractors were performing this work shortly before the incident occurred.

Westlake failed to communicate the hazards posed by the chemicals and to assess the impacts of a possible release, failed to maintain a safe facility to prevent an accidental release, and failed to minimize the consequences of the accidental release that occurred, as required by Section 112(r)(1) of the CAA. **[AOC 25]**

Closing Meeting- On the last day of the inspection (April 22, 2022), I conducted a closing conference, during which I presented the following areas of concern identified during the inspection.

Section III – AREAS OF CONCERN

AOC 1 – 40 C.F.R §68.39 (e) Documentation

“The owner or operator shall maintain the following records on the offsite consequence analyses: (e) Data used to estimate population and environmental receptors potentially affected.”

At the time of the inspection, Westlake failed to maintain documentation in the OCA the presence of offsite public receptors, such as institutions (schools, hospitals, prisons), parks and recreational areas, and major commercial, office, and industrial buildings.

AOC 2 – 40 C.F.R §68.65 (d)(1)(iv) Process Safety Information

“(d) Information pertaining to the equipment in the process. (1) Information pertaining to the equipment in the process shall include: (iv) Relief system design and design basis.”

Westlake failed to complete a compilation of written process safety information pertaining to certain equipment in the covered processes, including relief system design and the design basis. In the 2018 Compliance Audit, finding #14 identified that the pressure relief systems design basis calculations were outdated and did not meet current industry requirements. The majority of the 2,417 legacy relief systems design basis calculations were also outdated. At the time of this inspection, re-design packages had been completed for less than 30% of the pressure relieve valves in the Vinyl Chloride Monomer Unit, Ethylene Dichloride Unit, Liquefaction Chlorine Systems-Chlorine Units, Derivatives (EDC, Per/Tri, Vinyl) Units, and Utilities, and no pressure relief valves had been corrected or adjusted, as noted in the 2018 compliance audit:

Compliance Audit Finding #14:

Process Safety Information (PSI) Finding: 10 out of 10 pressure relief systems design basis calculations reviewed were found to be outdated and did not meet current industry requirements. Interviews with facility personnel indicated that the majority of the 2,417 legacy relief systems design basis calculations were of a similar condition. 50 percent of SRV’s field verified in the EDC (ethylene dichloride) unit discharge to locations that may pose a hazard to nearby platforms. Interviews with facility personnel concluded that some of the SRVs vent flammable or toxic vapors and liquids to the atmosphere. There is no documentation in place to confirm that these SRVs vent to a safe location; which is a requirement of API Standard 521.

PSV Revalidation for LCS Plant A Plant B Plant C Utilities.

AOC 3 – 40 C.F.R §68.65 (d)(1)(v) Process Safety Information

“(d) Information pertaining to the equipment in the process. (1) Information pertaining to the equipment in the process shall include: (v) Ventilation system design.”

Westlake failed to develop a ventilation system design for control rooms and shelter-in-place buildings. This was a finding in the 2018 compliance audit (finding #23) and a repeat finding in the 2021 compliance audit (finding #3).

AOC 4 – 40 C.F.R §68.67 (c)(5) and (c)(6) Process Hazard Analysis

“(c) The process hazard analysis shall address: (5) Stationary source siting, (6) Human factors”

The following PHAs and recommendations failed to address stationary source siting and/ or human factors: EC Unit PHA 2018 re-evaluation; EDC – Ethylene section PHA 2018 Revalidation; EDC- HCL Unit PHA 2017 Revalidation; EDC -1 Area PHA 2018 Re-evaluation; EDC-1 Revalidation #4; EDC -2 Area 2018 PHA Re-evaluation; Ethyl Chloride PHA Revalidation #4; LCS PHH OHC Reactor area PHA 2019 Re-evaluation; LKS PHH EVE Reactor and Process area 2020 Re-evaluation; and, the PHH EVC PHA 2020 Revalidation #4.

AOC 5 – 40 C.F.R §68.67 (e) Process Hazard Analysis

“(e) The owner or operator shall establish a system to promptly address the team's findings and recommendations; assure that the recommendations are resolved in a timely manner and that the resolution is documented; document what actions are to be taken; complete actions as soon as possible; develop a written schedule of when these actions are to be completed; communicate the actions to operating, maintenance and other employees whose work assignments are in the process and who may be affected by the recommendations or actions.”

Westlake failed to establish a system to: promptly address the PHA team's findings and recommendations; assure that the recommendations are resolved in a timely manner; and, document that resolutions are completed.

The EC Unit PHA Redo 2018, EDC – Ethylene section PHA Revalidation 2018, PHH EVC PHA Revalidation #4, PHH Furnaces & VC Process PHA Revalidation 2014 PHAs have action plans that are overdue or late. The PHA process from initiation to the corrective action plan development of the plan to address findings overextends the total timeframe for completion of the action items beyond the intended target due dates, based on Risk Rank levels. Westlake also has failed to address several critical hazards noted in the PHAs for dead legs in piping segments and ensuring that PSVs are relieved to safe locations.

AOC 6 – 40 C.F.R §68.69 (c) Operating Procedures

“(c) The operating procedures shall be reviewed as often as necessary to assure that they reflect current operating practice, including changes that result from changes in process chemicals, technology, and equipment, and changes to stationary sources. The owner or operator shall certify annually that these operating procedures are current and accurate.”

The facility failed to certify annually that the operating procedures are current and accurate. This is a repeat finding from LDEQ’s 2018 inspection. The PHH SOP Annual Certification for 2019 due December 26, 2019, was not completed until March 12, 2020, over two months late. The B-EDC/Trans/EC/HCL Standard Operating Procedures (SOP) Certification for 2018 due November 16, 2018, was not completed until March 11, 2019, four months late.

AOC 7 – 40 C.F.R §68.71 (b) Training

“Refresher training. Refresher training shall be provided at least every three years, and more often if necessary, to each employee involved in operating a process to assure that the employee understands and adheres to the current operating procedures of the process. The owner or operator, in consultation with the employees involved in operating the process, shall determine the appropriate frequency of refresher training.”

Westlake failed to ensure that one operator received refresher training at the required three-year interval. The operator’s next refresher training was due March 24, 2019, but was completed January 17-19, 2022, two years and ten months late.

AOC 8 – 40 C.F.R §68.73 (b) Mechanical Integrity

“(b) Written procedures. The owner or operator shall establish and implement written procedures to maintain the on-going integrity of process equipment.”

Westlake failed to establish and implement their Mechanical Integrity Program. Westlake did not establish proper documentation in the equipment file record for an inspection deferral and did not document the deferral process on a vessel extension form in accordance Westlake 2305-MP-12, Section 4.4, and Westlake did not document that inspection and testing deferrals were performed in accordance with recognized and generally accepted good engineering practices, such as API 510 Section 6.7, *Deferral of Inspections, Tests, and Examinations* for the following pressure vessels: C-110, T-131, R-401, R-401H, E-31306-A, T-31201, E-31301B/D, T-213, H-31471, T-71207, E-1316, E-91316, E-21305, T-406, D-304a/b/c, C-4, and E-31314.

Westlake failed to establish an inspection plan in accordance with Westlake 2305-MP-12, Section 5.0 Written Procedures-Inspection & Test Plan, Use and Development, for the following pressure vessels: C-110, T-131, R-401, R401H, C-4, E-31306-A, T-31201, E-31314, E-31301B/D, T-213, H-31471, T-71207, E-1316, E-91316, E-21305, T-406, D-304a/b/c, T-300, E-91316, E-21305A, E-21305B, E-31303B, E-1316, E-101, and T-31253.

The documentation for a simplified short-term deferral must include the current due date for the inspection, test, or examination, the proposed new due date, a review of the current operating conditions, the pressure vessel or pressure-relieving device history, and, consent of the inspector representing or employed by the owner-user and an appropriate operations management representative(s), in accordance with API 510 Section 6.7.1 *Simplified Deferral*.

AOC 9 – 40 C.F.R §68.73 (d)(1) Mechanical Integrity

“(d) Inspection and testing. (1) Inspections and tests shall be performed on process equipment.”

Westlake failed to conduct inspections of new piping installed on piping circuit 60A-02610 in accordance with API 570 6.2, *Inspection During Installation and Service Changes*, section 6.2.1 *Piping Installation*, to document base-line thickness measurements to be used as initial thickness readings for corrosion rate calculations, in lieu of nominal and minimum design thickness data in specifications and design datasheets/drawings; facilitate the creation of an accurate corrosion rate calculation after the first in-service thickness measurements are recorded; and, initiate plant inspection records for the piping systems.

AOC 10 – 40 C.F.R §68.73 (d)(2) Mechanical Integrity

“(d) Inspection and testing. (2) Inspection and testing procedures shall follow recognized and generally accepted good engineering practices.”

Westlake failed to ensure that the following Class 1 piping circuits received an external inspection every five-years between April 2017 and April 2022, in accordance with API 570, Section 6.33, *Table 1*: 63A-0050, 60A-01000, 56A-2790, 56A-06870, 56A-06930, 56A-06940, 56A-06950, 56A-06990, 56A-07000, 60A-2330, 60A-2540, 60A-2550, 60A-2560, 60A-2570, 60A-2580, 60A-2590, 60A-2600, and 60A-2610.

Westlake failed to ensure that the following pressure vessels received an external inspection every five-years in accordance with API 510, Section 6.4 and Section 6.33, *Table 1*: T-71207, T-31223, and T-213.

Westlake failed to ensure that Class 1 piping received thickness measurements for corrosion monitoring locations (CMLs) every five-years between April 2017 and April 2022, in accordance with API 570, Section 6.33, *Table 1* for the following Class 1 piping circuits: 56A-2790, 63A-0050, 60A-01000, 60A-01010, 60A-01990, 60A-2330, 60A-2540, 60A-2550, 60A-2560, 60A-2570, 60A-2580, 60A-2590, 60A-2600, and 60A-2610.

Westlake failed to ensure that pressure vessels received thickness measurements for CMLs every ten-years between April 2017 and April 2022, in accordance with API 510, Section 6.5.1 for the following the pressure vessels: T-300, E-91316, E-21305A, E-21305B, E-31303B, E-1316, E-101, and T-31253.

Westlake failed to conduct corrosion under insulation inspections for piping circuits 56A-2680 and 63A-0050 in accordance with API 570, Section 6.4, *Table 2*.

Westlake failed to ensure that pressure vessels 71-2693, 60-2778, 60-2777, 60-2018, 60-2589, 71-2433, 71-4111, and 60-528 received the necessary internal inspections in accordance with API 510 Section. 6.5 *Internal, On-stream, and Thickness Measurement Inspections*, 6.5.1.1 *Inspection Interval*. Westlake did not document that inspection and testing deferrals were performed in accordance with recognized and generally accepted good engineering practices, such as API 510 Section 6.7, *Deferral of Inspections, Tests, and Examinations* for the following pressure vessels: C-110, T-131, R-401, R401H, C-4, E-31306-A, T-31201, E-31314, E-31301B/D, T-213, H-31471, T-71207, E-1316, E-91316, E-21305, T-406, and D-304a/b/c.

Westlake failed to calculate the corrosion rate, retirement date/remaining life, and next TML due dates for the following piping circuits, in accordance with API 570 Sections 5.6.2 and 6.3.3: 10A2120, 10A2230, 56A-02670, 56A-02680, 56A-02780, 56A-02800, 56A-06870, 56A-06930, 56A-06940, 56A-06950, 56A-06990, and 56A-07000.

Westlake failed to calculate the corrosion rate, retirement date/remaining life, and next TML due date for the following pressure vessels in accordance with API 510 Sections 5.5.5.1, and 5.6.2: T-13, C-31101, T-71207, T-31223, T-31201, T-213, C-110, T-131, T-406, R-12501, and E-31314.

Westlake failed to conduct an adequate external inspections of tank T-3 on February 16, 2017, and on February 23, 2021, in accordance with API 653, as the inspection was limited to areas adjacent to the fixed platform walkway and proper access to the roof was not provided. The report for the API 653 External Inspection on February 16, 2017, indicated that the “roof was inspected from the walkway, and there was blistering, and severe corrosion on several welds, and some buckling in the roof plates. Provisions for better roof access would need to be made for further roof inspection.” A recommendation was made to “build scaffold or other means for access to all areas of the roof externally for full visual inspection.”

AOC 11 – 40 C.F.R §68.73 (d)(3) Mechanical Integrity

“(d) Inspection and testing. (3) The frequency of inspections and tests of process equipment shall be consistent with applicable manufacturers' recommendations and good engineering practices, and more frequently if determined to be necessary by prior operating experience.”

Westlake failed to ensure that the frequency of inspections and tests of the tank T-3 level transmitter was consistent with the applicable manufacturer recommendations or good engineering practices. There was no documentation to demonstrate that preventative maintenance, inspection and testing was performed on the T-3 level transmitter since 2018, and no records of engineering or historical analysis to support modifying the inspection and testing schedule for the level transmitter.

AOC 12 – 40 C.F.R §68.73 (d)(4) Mechanical Integrity

“(d) Inspection and testing. (4) The owner or operator shall document each inspection and test that has been performed on process equipment. The documentation shall identify the date of the inspection or test, the name of the person who performed the inspection or test, the serial number or other identifier of the equipment on which the inspection or test was performed, a description of the inspection or test performed, and the results of the inspection or test.”

Westlake failed to include in documentation for each inspection and test involving thickness measurements, as indicated in the isometric P&IDs, the date of the inspection or test, the name of the person who performed the inspection or test, and, a description of the inspection or test performed, for the following piping circuits: 10A2120, 10A2230, 56A-02670, 56A-02680, 56A-02780, 56A-2800, 56A-06870, 56A-06930, 56A-06940, 56A-06950, 56A-06990, 56A-07000, 60A-2330, 60A-2530, 60A-2540, 60A-2550, 60A-2560, 60A-2570, 60A-2580, 60A-2600, 60A-2610, T-13, C-31101, T-71207, T-31223, T-31201, T-213, C-110, T-131, T-406, R-12501, and E-31314 .

AOC 13 – 40 C.F.R §68.73 (e) Mechanical Integrity

“Equipment deficiencies. The owner or operator shall correct deficiencies in equipment that are outside acceptable limits (defined by the process safety information in § 68.65) before further use or in a safe and timely manner when necessary means are taken to assure safe operation.”

Westlake failed to correct deficiencies in their pressure relief devices and pressure relief systems in the Vinyl Chloride Monomer Unit and Ethylene Dichloride (EDC) Unit, and other process units, such as but not limited to, Liquefaction Chlorine Systems-Chlorine units, Derivatives (EDC, Per/ Tri, Vinyl) units, and Utilities (Plant A Plant B Plant C), that were outside acceptable limits, as defined by the process safety information, before further use or in a safe and timely manner when necessary means are taken to assure safe operation. Pressure relief systems design basis calculations were outdated and did not meet current industry requirements, and 50% percent of the safety relief valves in the EDC unit discharge to locations that may pose a hazard to nearby platforms.

The deficiencies were identified in 2018, and there have been no physical changes to any pressure relief valves (PRVs) to correct the deficiencies in the design calculations, or modifications to the PRVs to relieve to a safe location. Additionally, the target date for completion of this project set by Westlake is 2026, which is not considered prompt or in a timely manner, considering the seriousness of the safety issues raised. The 2018 Compliance Audit finding #14 stated: “Process Safety Information (PSI) Finding: 10 out of 10 pressure relief systems design basis calculations reviewed were found to be outdated and did not meet current industry requirements. Interviews with facility personnel indicated that the majority of the 2,417 legacy relief systems design basis calculations were of a similar condition. 50 percent of SRV’s field verified in the EDC (ethylene dichloride) unit discharge to locations that may pose a hazard to nearby platforms. Interviews with facility personnel concluded that some of the SRVs vent flammable or toxic vapors and liquids to the atmosphere. There is no documentation in place to confirm that these SRVs vent to a safe location, which is a requirement of API Standard 521.” At the time of this inspection the design packages for only 20% of the 450 pressure relief valves (PRVs) had been completed in the Vinyl Chloride Unit. Of the 450 pressure relief valves evaluated, 25-30% required a significant change, with half of those due to inlet pressure loss issues that will require changes to set pressures and/or the installation of new PRVs.

AOC 14 – 40 C.F.R §68.75 (c) Management of Change

“(c) Employees involved in operating a process and maintenance and contract employees whose job tasks will be affected by a change in the process shall be informed of, and trained in, the change prior to start-up of the process or affected part of the process.”

Westlake failed to ensure that employees involved in operating a process whose job tasks will be affected by a change in the process were trained in the change prior to start-up of the affected part of the process for MOC 9373.

AOC 15 – 40 C.F.R §68.77 (b)(4) Pre-startup Safety Review

“(b) The pre-startup safety review shall confirm that prior to the introduction of regulated substances to a process: (4) Training of each employee involved in operating a process has been completed.”

Westlake failed to include in the documentation for the PSSR for MOC 9373 a confirmation that training and/or notification was provided to each employee involved in operating the process prior to implementing the changes.

AOC 16 – 40 C.F.R §68.79 (d) Compliance Audits

“(d) The owner or operator shall promptly determine and document an appropriate response to each of the findings of the compliance audit, and document that deficiencies have been corrected.”

For the most recent audit reports completed November 5-9, 2018, October 18-22, 2021, and October 25-29, 2021, Westlake failed to promptly determine and document an appropriate response to each of the findings of the compliance audits, and did not document that the deficiencies had been corrected. The failure to complete and document corrective action completion was identified by the repeat findings described in the 2018 and 2021 compliance audits.

The 2018 Compliance Audit finding #14 identified the following: “Process Safety Information (PSI) Finding: 10 out of 10 pressure relief systems design basis calculations reviewed were found to be outdated and did not meet current industry requirements. Interviews with facility personnel indicated that the majority of the 2,417 legacy relief systems design basis calculations were of a similar condition. 50 percent of SRV’s field verified in the EDC (ethylene dichloride) unit discharge to locations that may pose a hazard to nearby platforms. Interviews with facility personnel concluded that some of the SRVs vent flammable or toxic vapors and liquids to the atmosphere. There is no documentation in place to confirm that these SRVs vent to a safe location, which is a requirement of API Standard 521.” At the time of this inspection the design packages for only 20% of the 450 pressure relief valves had been completed in the Vinyl Chloride Unit.

Westlake failed to promptly determine and document an appropriate response to finding #1 of the 2021 compliance audit. Pressure vessels 71-2693, 60-2778, 60-2777, 60-2018, 60-2589, 71-2433, 71-4111, and 60-528 in chlorine, anhydrous ammonia, and hydrogen chloride service were found not to have received an internal inspection. The response was to “perform reconciliation of information management systems to identify all pressure vessels in chlorine, anhydrous ammonia, and hydrogen

chloride services that don't have internal inspections documented and then create internal inspection plan for each vessel." As of April 18, 2022, the plan to perform reconciliation of information management systems had not yet started. Westlake also failed to document that the deficiencies in their inspection and testing program had been corrected. Pressure vessels 71-2693, 60-2778, 60-2777, 60-2018, 60-2589, 71-2433, 71-4111, and 60-528 have not had the necessary internal inspections, and no dates for planned inspections have been determined.

Westlake failed to promptly determine and document an appropriate response to finding #3 of the 2021 compliance audit. Finding #3 indicated that the ventilation system design could not be verified for buildings that required for shelter-in-place accommodation within the facility. The response was to "prepare a project to evaluate existing buildings for Shelter-In-Place locations. Propose projects for funding for capital (some building modifications) or expense (engineering studies) during mid-year budget cycle. Estimated number of buildings is 62." The due date to conduct an evaluation of 50% of the buildings was March 14, 2022. As of April 18, 2022, the plan to complete the building engineering evaluations for approximately 50% of the Shelter-In-Place locations had not yet begun. The due date to complete an evaluation of 50% of the Shelter-In-Place buildings is December 31, 2024, and the due date to complete the evaluations for all buildings is December 31, 2024.

AOC 17 – 40 C.F.R §68.81(b) Incident Investigation

"(b) An incident investigation shall be initiated as promptly as possible, but not later than 48 hours following the incident."

Incident investigations were not initiated within 48 hours after incidents which occurred between 2017-2022 in the EDC, Derivatives Per/Tri, and PHH units. These included the LKC Greater EDC incident on July 4, 2017, and LKC PHH incidents on January 10, 2017, April 28, 2017, and August 5, 2017.

AOC 18 – 40 C.F.R §68.81(e) Incident Investigation

"(e) The owner or operator shall establish a system to promptly address and resolve the incident report findings and recommendations. Resolutions and corrective actions shall be documented."

Westlake also did not establish a system to promptly address and resolve the incident report findings and recommendations. Recommendations and corrective actions were not documented. The spreadsheets completed for incident investigation action items did not include the recommendations or the resolutions. This was also a finding in the 2018 compliance audit (finding #5) that the facility did not document that it had completed actions items after incident investigations.

AOC 19 – 40 C.F.R §68.83 (c) Employee Participation

"(c) The owner or operator shall provide to employees and their representatives access to process hazard analyses and to all other information required to be developed under this rule."

The facility has not consulted with employees and their representatives on conducting and developing process hazard analyses, or on the development of other required elements of process safety

management in chemical accident prevention provisions. The PHAs for the EDC-1 Revalidation #4 and the EDC-2 PHA Revalidation #4, completed August 21-September 6, 2018, stated that the PHA study results were not communicated to workers who may be affected.

AOC 20 – 40 C.F.R §68.85 (b) Hot Work Permit

“(b) The permit shall document that the fire prevention and protection requirements in 29 CFR 1910.252(a) have been implemented prior to beginning the hot work operations; it shall indicate the date(s) authorized for hot work; and identify the object on which hot work is to be performed. The permit shall be kept on file until completion of the hot work operations.”

Westlake failed to adequately document that fire prevention and protection requirements in 29 CFR 1910.252(a) had been performed. Hot work permits were not adequately completed. This was a finding in the 2018 compliance audit (Finding #18) and a repeat finding in the 2021 compliance audit (Finding #8). Audit issues included: fire watch end time precedes the permit end time; fire watch end time was the same as permit end time; fire watch end time was noted as “30 minutes after job”; only initial atmospheric monitoring readings were recorded instead of recordings taken every 2 hours; no permit end time listed; no fire watch end time recorded; no monitoring instrument serial number or calibration date recorded; name of contractor not listed in the permit; and, fire watch individual assigned was identified by initials only or first name only, or not identified at all in the permit. See Table 1 on page 9 of the inspection report for the complete summary of hot work permit deficiencies.

AOC 21 – 40 C.F.R §68.87 (b)(4) Contractors

“(b) Owner or operator responsibilities. (4) The owner or operator shall develop and implement safe work practices consistent with § 68.69(d), to control the entrance, presence, and exit of the contract owner or operator and contract employees in covered process areas.”

Westlake failed to develop and implement safe work practices consistently to control the entrance, presence, and exit of contract employees to and from a covered process area. Westlake allowed subcontractors to enter and conduct hot work in an area that contained flammable vapors. Westlake did not coordinate the entrance of Turner subcontractors assigned to do work on tank T-3 under separately issued General Work Permits.

AOC 22 – 40 C.F.R §68.93 (a)(b)(c) Emergency Response

“(a) Coordination shall occur at least annually, and more frequently, if necessary, to address changes: At the stationary source; in the stationary source's emergency response and/or emergency action plan; and/or in the community emergency response plan.”

“(b) Coordination shall include providing to the local emergency planning and response organizations: The stationary source's emergency response plan if one exists; emergency action plan; updated emergency contact information; and other information necessary for developing and implementing the local emergency response plan. For responding stationary sources, coordination shall also include consulting with local emergency response officials to establish appropriate schedules and plans for field

and tabletop exercises required under § 68.96(b). The owner or operator shall request an opportunity to meet with the local emergency planning committee (or equivalent) and/or local fire department as appropriate to review and discuss those materials.”

“(c) The owner or operator shall document coordination with local authorities, including: The names of individuals involved and their contact information (phone number, email address, and organizational affiliations); dates of coordination activities; and nature of coordination activities.”

Westlake failed to coordinate its emergency response program with local emergency planning and response organizations in 2019, 2020, and 2021, which includes all elements of sections 68.93(a) through (c).

AOC 23 – 40 C.F.R §68.95 (a)(2) Emergency Response

“(a) The owner or operator shall develop and implement an emergency response program for the purpose of protecting public health and the environment. Such program shall include the following elements: (2) Procedures for the use of emergency response equipment and for its inspection, testing, and maintenance”

Westlake failed to fully develop and implement an emergency response program for the purpose of protecting public health and the environment. The written program does not include procedures for the use of emergency response equipment, and for its inspection, testing, and maintenance. The facility’s fire response equipment is past due for inspection and maintenance service.

AOC 24 – 40 C.F.R §68.93 (a)(3) Emergency Response

“(a) The owner or operator shall develop and implement an emergency response program for the purpose of protecting public health and the environment. Such program shall include the following elements: (3) Training for all employees in relevant procedures”

Fire school annual refresher training was past due for 53 response team members. This was also a finding of the 2021 compliance audit (Audit finding #10).

AOC 25 – 112(r)(1) of the CAA, 42 U.S.C. § 7412(r)(1) General Duty Clause

January 26, 2022, Incident Findings

“Section 112(r)(1) of the CAA, 42 U.S.C. § 7412(r)(1), otherwise known as the “General Duty Clause” states the following: “(r) Prevention of Accidental Releases (1) Purpose and General Duty –The owners and operators of stationary sources producing, processing, handling or storing such substances have a general duty, in the same manner and to the same extent as section 654, title 29 of the United States Code, to identify hazards which may result from such releases using appropriate hazard assessment techniques, to design and maintain a safe facility taking such steps

as are necessary to prevent releases, and to minimize the consequences of accidental release which do occur.”

Westlake failed to communicate the hazards posed by the chemicals and to assess the impacts of a possible release, failed to maintain a safe facility to prevent an accidental release, and failed to minimize the consequences of the accidental release that occurred.

Westlake failed to have a current operating procedure that adequately provided instructions for emptying or de-inventory of the T-3 tank such that no flammable chemicals remained inside the tank. The only procedure provided was titled “Filling or pumping out a Vessel,” Document 6001-0000-32005, Revision dated April 12, 2019.

Westlake failed to implement its established documented safe work practices to provide for the control of hazards during operations at the T-3 tank, such as lockout/tagout, opening process equipment, and control over entrance into a stationary source by contractors. Westlake failed to implement the provisions of its internal General Work Permit, Sections 5.2.4 and 5.2.5, by failing to ensure that the operators clearly communicated to the maintenance workers the expected outcome of demolition of the nitrogen piping that would eliminate the nitrogen blanket, and that hot work was prohibited due to the presence of ethylene dichloride in Tank T-3, along with three holes at the top of the tank. The Westlake responsible operator failed to conduct additional visual inspections when the condition or scope of the work changed, or when there were personnel changes from those listed on the permit. Westlake also failed to follow the requirements of its established written Safe Process Piping Equipment, & Vessel Opening (Line Break) Procedure. Westlake did not conduct a Process Opening Field Review or a Line Opening Pre-Job Safety Briefing for the opening of process piping containing nitrogen. The Maintenance/Construction Supervisor also failed to complete the Job Safety Briefing with the work crew at the job site. Neither the Equipment Owner/Operator or Maintenance/Construction Supervisor were present during the process piping opening or physical dismantling associated with each permitted activity involving process piping openings containing hazardous material.

Westlake failed to issue a hot work permit that conformed to the facility’s established internal procedure for the use of a Sawzall device during the maintenance and removal of piping and fittings on a nitrogen line associated with the T-3 tank.

Westlake failed to ensure that the Turner employees removing a nitrogen line on top of tank T-3 were informed of the potential fire and explosion hazards related to the contractor’s work and the process. The Turner employees were not informed that T-3 contained ethylene dichloride, a hazardous flammable material, and that there were holes due to corrosion at the top of the tank. Also, Turner employees were not informed that hot work such as grinding or cutting might be necessary to dismantle the nitrogen line, and that locking out the nitrogen line would remove the nitrogen blanket on tank T-3, resulting in ethylene dichloride vapor build up inside tank T-3.

Section IV – FOLLOW UP

The following information was received by EPA on April 22, 2022, after exiting the Facility on April 22, 2022: Confidential Business Information supporting information related to the Areas of Concern documented in this report.

Section V – LIST OF APPENDICES

Appendix 1 – Photo Log

Appendix 1 Photo Log

Photo taken on April 19, 2022, at 9:22 AM Central Standard Time.
Location/direction: Eagle US 2 LLC, Lake Charles, LA Plant, Facing Southwest
Photo subject: EDC Unit; T-3 tank

