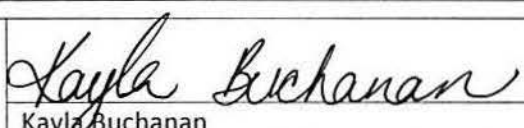
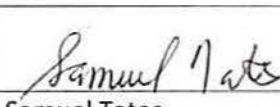


**Region 6 - Enforcement & Compliance Assurance Division
INSPECTION REPORT**

Inspection Date(s):	October 8-11, 2019		
Media:	Air		
Regulatory Program(s)	Title V, RMP Part 68		
Company Name:	KMCO, LLC		
Facility Name:	KMCO, LLC		
Facility Physical Location:	16503 Ramsey Road		
(city, state, zip code)	Crosby, Texas, 77532		
Mailing address:	16503 Ramsey Road		
(city, state, zip code)	Crosby, Texas, 77532		
County/Parish:	Harris County		
Facility Contact:	Mark Kaulen	Plant Manager	
	Mark.Kaulen@kmcoinc.com		
FRS Number:	110000463249		
Identification/Permit Number:	Title V Air Operating Permit # O-01441		
Media Number:	RMP: 100000118623		
NAICS:	325199		
SIC:	2869		
Personnel participating in inspection:			
Kayla Buchanan	EPA	Inspector	(214) 665-6480
Diana Lundelius	EPA	Inspector	(214) 665-7468
Sherronda Phelps	EPA	Inspector	(281) 983-2122
Eddie Lewis	KMCO/Norton Rose Fulbright	Attorney	(713) 651-3760
Mark Kaulen	KMCO	Plant Manager	(832) 870-7492
Brittany Covert	KMCO/Norton Rose Fulbright	Attorney	(713) 651-5372
Eric Tompkins	KMCO	HSSE Director	(409) 454-6994
Kimberly George	KMCO	Director – HR	(281) 328-0287
Matthew Wallace	KMCO	RX II Specialist	(281) 328-0235
Michael Lowry	KMCO	Engineering Manager	(713) 829-6825
EPA Lead Inspector Signature/Date	 Kayla Buchanan		11/21/2019 Date
Supervisor Signature/Date	 Samuel Tate		11/21/2019 Date

Section I – INTRODUCTION

PURPOSE OF THE INSPECTION

Environmental Protection Agency (EPA) Region 6 inspectors Kayla Buchanan, Diana Lundelius, and Sherronda Phelps arrived at KMCO, LLC (KMCO) at 9 a.m. on September 16, 2019, for an announced inspection. We convened an opening conference and met with several representatives from the facility (**Appendix 1**). We presented our credentials to the opening conference attendees and informed them that this was an EPA inspection to determine KMCO's compliance with the Clean Air Act (CAA) Sections 112(r)(1) and 112(r)(7). The scope of the inspection was a partial compliance evaluation of the facility pursuant to 40 CFR Part 68 – Chemical Accident Prevention Provisions. KMCO is a non-union facility. Due to heavy flooding in Houston and surrounding areas caused by Tropical Storm Imelda, this inspection concluded early. I, Kayla Buchanan, returned on October 8, 2019, to complete the inspection.

FACILITY DESCRIPTION

KMCO, located in Crosby, Texas is a manned tolling facility that manufactures specialty chemicals in batch reactions. Approximately forty (40) employees work at the non-union facility. KMCO has four regulated chemicals currently on site: ethylene oxide, propylene oxide, isobutylene, and formaldehyde. Three other chemicals previously covered -sulfur dioxide, ethyl chloride, and ammonia-were recently de-inventoried prior to this inspection. KMCO, LLC purchased the Crosby plant on July 1, 2012 and has owned and operated the facility ever since. Its ownership is currently exploring various business operation options such as selling, disinvesting in, or decommissioning the facility.

Section II - OBSERVATIONS

40 C.F.R. Part 68 – CHEMICAL ACCIDENT PREVENTION PROVISIONS

Subpart A – General

40 C.F.R. § 68.10 Applicability - KMCO is a stationary source facility that has a federal Title V air operating permit, and more than threshold quantities of regulated substances (toxic and flammable) in its process streams; therefore, these regulations are applicable. KMCO re-submitted a Risk Management Program (RMP) plan on February 23, 2018, that describes the processes containing regulated chemicals stored at more than threshold quantities. In addition, this facility is subject to the Occupational Safety and Health Administration's (OSHA) Process Safety Management (PSM) Standard (29 CFR §1910.119), categorizing it as a Program 3 facility.

40 C.F.R. § 68.12 General requirements - I reviewed the re-submission of KMCO's RMP, which they submitted on February 23, 2018. It listed the toxic and flammable chemicals for its Program 3 processes.

40 C.F.R. § 68.15 Management - I reviewed the management system implemented at KMCO that oversees the implementation of the RMP elements. The facility has assigned a qualified person or position that has the overall responsibility for the development, implementation, and integration of the elements.

Subpart B – Hazard Assessment

40 C.F.R. § 68.20 Applicability - KMCO is a Program 3 stationary source subject to this subpart; therefore, it is required to prepare a worst-case release scenario analysis and complete the five-year accident history.

40 C.F.R. § 68.22 Off Site Consequence Analysis Parameters – KMCO employed the parameters specified by EPA in this rule by using the RMP*Comp™ software. I reviewed the offsite consequence analysis and supporting documentation to assure the data was accurate and correct.

40 C.F.R. § 68.25 Worse-case release scenario analysis - KMCO identified and analyzed at least one worst-case scenario for each toxic and flammable substance in its Program 3 processes using the RMP* Comp™ software, thus meeting the requirements of the regulation.

40 C.F.R. § 68.28 Alternative Release Scenario Analysis - KMCO identified and analyzed at least one alternative release scenario for each toxic and flammable substance in its Program 3 processes using the RMP* Comp™ software, thus meeting the requirements of the regulation.

40 C.F.R. § 68.30 Defining off site impacts- Population - KMCO used the most current (2010) Census Bureau population data and the distances to endpoints, as specified in the regulation, to calculate the population numbers reported in their RMP. KMCO used MARPLOT to define the population surrounding the facility. In addition, KMCO provided a Google Earth image documenting the nearest public receptor.

40 C.F.R. § 68.33 Defining off site impacts- Environment - KMCO used US Geological Survey maps data to determine the environmental receptors and the distances to endpoints.

40 C.F.R. § 68.36 Review and Update – KMCO stated that the offsite consequence analyses were updated every five years, as required by this subpart.

40 C.F.R. § 68.39 Documentation- KMCO maintained records of the offsite consequence analyses in accordance with this subpart. These records included:

- documentation of vessels or pipelines;
- substances selected for worse case and alternative release scenarios;
- documentation of estimated quantity released, release rate, and duration of release;
- methodology used to determine distance to endpoint; and,
- data used to estimate population and environmental receptors.

40 C.F.R. § 68.42 Five-year accident history- On April 2, 2019, an incident occurred at KMCO that resulted in extensive property damage, the death of one employee, and the injury of at least four others. A shelter-in-place was issued to community members within one mile of the KMCO facility. Emergency responders to the KMCO incident included KMCO's Emergency Response Team, the Crosby Fire Department, Mutual Aid Mont Belvieu, and Harris County. A preliminary investigation revealed that the incident was caused by a failure in KMCO's process piping which lead to a release of isobutylene (**Appendix 2**). The released isobutylene found an ignition source and caused an explosion. Because this was a qualifying incident, KMCO must submit an update to its RMP with the data required in the regulation by October 2, 2019, (see Section II. Subpart D of this report, 40 C.F.R. § 68.190 Required

updates). KMCO is working with Harris County, the Texas Commission on Environmental Quality (TCEQ), and OSHA to further investigate the cause of the process piping failure.

I reviewed KMCO's five-year accident history, and I did not identify any additional accidental releases from covered processes that resulted in deaths, injuries, significant property damage on site, known off site deaths, injuries, evacuations, sheltering in place, property damage, or environmental damage. I examined KMCO's OSHA Form 300 logs from 2016 to present and queried the National Response Center (NRC) database to ensure that additional releases from the facility which could possibly be included in the facility's five-year accident history were not omitted. KMCO was unable to produce its OSHA Form 300 log from 2015 while onsite, so I could not confirm that an omission from that year did not occur.

Subpart D- Program 3 Prevention Program

40 C.F.R. § 68.65 Process safety information (PSI) – I reviewed PSI for batch processes KBI 1410, KB 2406, and H3315 Production; these processes involved the RMP chemicals isobutylene and/or ethylene oxide. The PSIs reviewed included process chemistry, as well as the safe upper and lower limits and consequences of deviation from the limits for these units. I reviewed selected design codes and standards employed at the facility for these process units and documentation that the process equipment complies with recognized and generally accepted good engineering practices (RAGAGEP).

The compilation of written process safety information is contained in reference documents referred to as manufacturing procedures, and which included: 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 of the process.

40 C.F.R. § 68.67 Process hazard analysis (PHA) – I discussed KMCO's PHA process with Mark Kaulen. KMCO performed initial PHAs on processes covered by this part and maintained previously revalidated PHAs every five years after the initial completion dates. I reviewed the January 2015, K8/9 Reactor PHA and the August 2016, KB 2405, 2406, 2402, 241, 2413 sections in the K2 and K4 PHAs (**Appendices 3, 4, respectively**). The facility utilized the hazard and operability study (HAZOP) methodology as well as checklists to conduct its PHAs.

The PHAs reviewed primarily addressed: (1) the hazards of the process; (2) the identification of any previous incident which had a likely potential for catastrophic consequences; (3) engineering and administrative controls applicable to the hazards, and their interrelationships; (4) consequences of failure of engineering and administrative controls; (5) Stationary source siting; (6) Human factors; and, (7) A qualitative evaluation of a range of the possible safety and health effects of failure of controls. Identification and potential consequences of natural disasters, such as hurricanes and flooding, were not addressed in either of the PHAs (**AOC #1**). The January 2015, K8/K9 Reactor PHA included a facility siting checklist, however, some of the questions on the checklist were not answered. The August 2016, KB 2405, 2406, 2402, 241, 2413 in the K2 and K4 PHAs did not include a facility siting or human factors checklist, although the change log template indicates that these should be included (**AOC #2**). Moreover, sections 4.30 and 4.31 of the HAZOP do not include facility siting or human factor safety concerns.

The PHAs were performed by a team with expertise in engineering and process operations. The team included at least one employee who had experience and knowledge that was specific to the process being evaluated, and at least one employee who was knowledgeable in the specific PHA methodology used.

KMCO established a system to promptly address the team's findings and recommendations, to assure the recommendations were implemented in a timely manner, and to ensure that the resolutions were documented. The facility also developed a written schedule for action completion. They communicated the actions to operations, maintenance and other employees, whose work assignments were within the process and who may be affected by action recommendations.

40 C.F.R. § 68.69 Operating Procedures – I reviewed KMCO's manufacturing procedures, which included operating procedures for batch processes involving the RMP chemicals isobutylene and ethylene oxide. The manufacturing procedures I reviewed addressed: the steps for each of the operating phases; the consequences of deviation and mechanisms to correct and/or avoid deviation; safety and health considerations; the properties of, and hazards presented by, chemicals used in the process; the precautions necessary to prevent exposure; quality control for raw materials; and, the safety systems and their functions.

I also reviewed KMCO's safe work procedures, including lock out/tag out procedures and confined space entry procedures.

KMCO's operating procedures were accessible to employees via the company's intranet. I requested randomly selected process operators to verbally describe, as well as demonstrate, how to access the operating procedures. All selected process operators were knowledgeable about the proper mechanisms to access the procedures.

KMCO is required to annually certify that operating procedures are current and accurate. I reviewed the operating procedure certifications for the KMCO plant. KMCO could not produce the 2018 certification documentation and was one month late certifying its 2016 operating procedures (**Appendix 5**) (**AOC #3**). According to the facility, KMCO did not post the 2016 Certification until November 2016 because KMCO's technical representative was out because of an accident.

40 C.F.R. § 68.71 Training – I reviewed KMCO's training program and employee training records with Kimberly George, HR Director. KMCO's training program requires operators to first complete HSSE's site specific orientation and training. Additionally, KMCO requires its operators to complete onboarding and safety awareness training through E-Safety, a computer-based training program. Operators then complete on the job training by shadowing the maintenance group, and unit-specific training that entails new operators being paired with senior operators for four to eight months.

The subpart requires that each employee presently operating a covered process, and each employee newly assigned to a covered process, be trained and/or tested to qualify as competent, based on an overview of the process and in the operating procedures that pertain to their duties. The training must include an emphasis on specific health and safety hazards, emergency operations, and safe work practices. Refresher training must be completed every three years.

KMCO's refresher training consists of *E-Safety* classes, PSM training, equipment function, use training, and, batch event record review. KMCO's training program procedure does not state the required frequency of refresher training for operators (**Appendix 6**). I interviewed an operations specialist employed by KMCO since 2006, who stated that refresher training was provided annually. The human resources (HR) specialist stated that refresher training was provided biennially. The training records available for review did not reveal a consistent refresher training frequency (**AOC #4**). KMCO would not allow EPA to take copies of these records off site. In 2015, KMCO's administrative building flooded and records were destroyed. KMCO's 2012 Compliance Audit noted the lack of documentation for refresher training for operators.

40 C.F.R. § 68.73 Mechanical Integrity - I spoke with Mike Lowry, Engineering Manager, and reviewed the written procedures for KMCO's mechanical integrity program. This regulation requires that the mechanical integrity program apply to all process equipment including (1) Pressure vessels and storage tanks; (2) Piping systems (including piping components such as valves); (3) Relief and vent systems and devices; (4) Emergency shutdown systems; (5) Controls (including monitoring devices and sensors, alarms, and interlocks); and, (6) Pumps. The written mechanical integrity procedures did not account for emergency shutdown systems, controls, or pumps. The mechanical integrity procedures also did not prescribe: how appropriate checks and inspections are performed to assure that equipment is installed properly; how equipment is consistent with design specifications and the manufacturer's instructions; or, how the facility assures that maintenance materials, spare parts and equipment are suitable for the process applications for which they will be used (**Appendices 7-11**) (**AOC #5, #6**).

I reviewed mechanical integrity inspection documentation for piping. The documentation identified 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. I requested documentation for preventative maintenance on pumps, and the inspections and tests of controls. I was provided with monthly life cycle critical bump calibration tests on hydrogen sulfide and low explosive limit monitors for February and March of 2019 (**Appendix 12**). Previous historical documentation was not provided (**AOC #7**).

KMCO's mechanical integrity staff was trained in an overview of the covered fixed equipment process, its hazards, and in the procedures applicable to employee job tasks.

40 C.F.R. § 68.75 Management of Change (MOC) - I reviewed KMCO's MOC Policy (**Appendix 13**). The written MOC procedure assured the facility managed changes to process chemicals, technology, equipment, procedures, and changes to stationary sources that affect a covered process. The procedure assured that the following considerations were addressed prior to any change: technical basis for change, impact of change on safety and health, modifications to operating procedures, necessary time period for the change, and authorization requirements for a proposed change.

Employees whose job tasks will be affected by a change in the process are required to be informed of, and trained in, the change prior to start-up of the process. KMCO's MOC procedure states that the online MOC training notification tab provides a means of documenting that MOC information training has been conducted. The training attendance form (located in the MOC Form tab) serves as the record for more extensive training for changed processes. All training records must be retained with the MOC

package. For each MOC I reviewed, I requested the training records for randomly selected employees who were associated with the required training generated from that MOC training notification tab. KMCO was unable to provide these training records (**AOC #8**).

If a change covered by the MOC policy included a change to PSI or operating procedures, this subpart requires such information be updated accordingly. I reviewed several MOCs that resulted in such changes, but KMCO was unable to provide documentation to confirm that the PSI or operating procedures had been updated (**AOC #9**).

In 2018, KMCO issued a new MOC procedure. I reviewed one MOC completed after the implementation of KMCO's new MOC Procedure in 2018. It included requested information, including MOC training documentation and SOP/PSI/P&ID documentation.

40 C.F.R. § 68.77 Pre-startup review (PSSR) - I reviewed KMCO's written PSSR procedures, as well as various PSSRs completed by the facility in the past five years. The PSSRs reviewed confirmed that, prior to the introduction of a regulated substance into the process, the construction and equipment design were completed in accordance with design specifications, required safety, operating, and maintenance procedures, and with adequate emergency procedures in place. The PSSRs also documented that training of each employee involved in operating the processes was completed.

40 C.F.R. § 68.79 Compliance audits - I reviewed KMCO's two most recent compliance audits in 2013 and 2016 (**Appendix 14, 15**). KMCO did not certify that the audits evaluated compliance with the provisions of this subpart (**AOC #10**) KMCO's compliance audits were conducted by at least one person knowledgeable in the processes, and the team developed a report of the audit findings. The facility did not determine or document an appropriate response to each of the finding of the compliance audits and did not document that the deficiencies were corrected. Several findings from the 2013 audit were repeated in the 2016 audit (**AOC #11**). Mark Kaulen stated that, rather than addressing each individual finding in the 2016 audit, the facility would take a more holistic approach to correcting its deficiencies.

40 C.F.R. § 68.81 Incident investigation - KMCO provided me a list of all incident investigations that occurred within the past five years. After each investigation, KMCO is required to prepare a report which includes the date of incident, the date the investigation began, a description of the incident, the factors that contributed to the incident, and any recommendations resulting from the investigation; however, several of the incident investigation reports were missing some of this information. The regulation requires that the incident investigation teams consist of at least one person knowledgeable in the processes involved, but identification of who was on the incident investigation team was missing from some reports.

The regulation also requires the facility to develop a system to promptly address and resolve the incident report findings and recommendations. These resolutions and corrective actions must be documented. The incident investigation report dated July 29, 2017, did not document the incident investigation team. The report documented corrective actions, but the actions are classified as pending (**Appendix 16**) (**AOC #12, 13, 14**). The incident investigation report dated January 15, 2018, did not document the investigation team. Because of this incident investigation, an employee was assigned an action item to update an operating procedure. This action item was given a due date of March 16, 2019, but the procedure was not updated until approximately eight months later, on November 1, 2019,

(**Appendix 17**). The incident investigation report dated August 7, 2018, did not include the investigation team, nor was the facility able to produce documentation that the resolutions and corrective actions were complete (**Appendix 18**). The incident investigation report dated December 23, 2018, did not include the investigation start date or the investigation team (**Appendix 19**).

40 C.F.R. § 68.83- Employee Participation - I reviewed KMCO's written plan of action regarding the implementation of employee participation at its facility. KMCO's written plan describes how they consult employees and their representatives on the performance and development of process hazard analyses, and on the development of the other elements of process safety management regarding under the rule. The action plan provides employees access to process hazard analyses and to all other information that must be developed under this rule.

40 C.F.R. § 68.85 Hot work permit - I reviewed hot work permits issued by KMCO. Each permit that I reviewed documented that fire prevention and protection requirements had been implemented prior to beginning hot work operations. The permits indicated the dates authorized for hot work and identified the object on which the hot work was performed.

40 C.F.R. § 68.87 Contractors – I reviewed KMCO's policy for the requirements of its contractors (**Appendix 20**). KMCO is required to obtain and evaluate information regarding the contract owner or operator's safety performance and programs. To become an approved contractor at the facility, the contractor must complete a Contractor Safety Evaluation Questionnaire and meet certain criteria prescribed by the facility. In its policy, KMCO states that it will complete monthly evaluations of its contractors. The plant manager confirmed that this had not been not completed for several years; however, several job audit forms for February and March of 2019 were provided (**Appendix 21**). An Evaluation of Contractor Safety & Health Performance & Compliance with OSHA PSM Standard Form was provided for two contractors (**Appendix 22**).

KMCO is required to inform contract owners or operators of the known potential fire, explosion, or toxic release hazards related to the contractor's work and the process. To fulfill this requirement, KMCO implemented a site-specific orientation for contractors through the Industrial Safety Training Council. The orientation covers various safety topics such as confined space, fire watch, and process safety management. KMCO developed and implemented safe work practices to control the entrance, presence by limiting badge distribution to employees who complete the site-specific orientation.

Subpart E- Emergency Response

40 C.F.R. § 68.90 Applicability- KMCO employees are first responders that respond to fires and releases on site. KMCO coordinates its responses with the local fire department in Crosby, Texas.

40 C.F.R. § 68.95 Emergency response program- I reviewed KMCO's emergency response program, including its emergency response plan (**Appendix 23**). The plan included procedures for informing the public and local emergency response agencies about accidental releases, procedures and measures for emergency response after an accidental release of a regulated substance, and training for all employees in relevant procedures. The plan did not include documentation of proper first-aid and emergency medical treatment necessary to treat accidental human exposures, or procedures for the use, inspection, testing, and maintenance of emergency response equipment (**AOC #15**).

Subpart G- Risk Management Plan

40 C.F.R. § 68.190 Required updates- KMCO resubmitted its RMP on February 23, 2018.

40 C.F.R. § 68.195 Required corrections- KMCO's next RMP re-submission was due within six months of the April 2, 2019, accident (on or by October 2, 2019), because the incident meets the requirement to be included in the five-year accident history, as required by 40 C.F.R. § 68.42. To date, this update has not been made. (**AOC #16**).

Section III – AREAS OF CONCERN

1. **40 C.F.R. § 68.67(c)(1) Process hazard analysis (PHA)** requires KMCO's process hazard analysis to address the hazards of the process. Because of its location, KMCO did not evaluate the potential effects of natural disasters on its covered processes.
2. **40 C.F.R. § 68.67(c)(5) and (6) Process hazard analysis (PHA)** require KMCO's process hazard analyses to address stationary source siting and human factors. The January 2015, K8/K9 Reactor PHA included a partially complete facility siting checklist and the August 2016, KB 2405, 2406, 2402, 241, 2413 in K2 and K4 PHAs did not include the facility siting or human factors checklists, although the change log template indicates they should be included.
3. **40 C.F.R. § 68.69(c) Operating Procedures** requires KMCO to certify annually that its operating procedures are current and accurate. KMCO could not produce the 2018 certification documentation and was one month late certifying its 2016 operating procedures.
4. **40 C.F.R. § 68.71(b) Training** requires KMCO to provide refresher training at least every three years, and more often if necessary. KMCO's training program procedure does not state the required frequency of refresher training for operators. The training records available for review did not reveal a consistent refresher training frequency.
5. **40 C.F.R. § 68.73(b) Mechanical Integrity** requires KMCO to establish and implement mechanical integrity procedures to maintain the ongoing integrity of process equipment. The procedures shall apply to all process equipment including (1) Pressure vessels and storage tanks; (2) Piping systems (including piping components such as valves); (3) Relief and vent systems and devices; (4) Emergency shutdown systems; (5) Controls (including monitoring devices and sensors, alarms, and interlocks) and, (6) Pumps. KMCO's mechanical procedures did not account for emergency shutdown systems, controls, or pumps.
6. **40 C.F.R. § 68.73(f) Mechanical Integrity** requires KMCO to perform appropriate checks and inspections to assure that equipment is installed properly, consistent with design specifications and the manufacturer's instructions, and to assure that maintenance materials, spare parts and equipment are suitable for the process applications for which they will be used. KMCO's mechanical integrity procedures did not address how it confirms that this quality assurance is performed and documented.

7. **40 C.F.R. § 68.73(d) Mechanical Integrity** requires KMCO to perform inspections and tests on process equipment. Each inspection and test must be documented. KMCO could not provide historical inspection records for its emergency shutdown systems, controls, or pumps.
8. **40 C.F.R. § 68.75(c) Management of Change (MOC)** requires KMCO to inform and train employees involved in operating a process, and maintenance and contract employees whose job tasks will be affected by a change in the process, in such changes prior to start-up of the process or an affected part of the process. KMCO was unable to provide documentation demonstrating that its operators, maintenance, and contract employees were trained in changes prior to the startup of its covered processes. KMCO also did not implement its own management of change procedure by not maintaining the documentation with the MOC.
9. **40 C.F.R. § 68.75(d) and (e) Management of Change (MOC)** require KMCO to update information if a change to a process results in a change in PSI or operating procedures. KMCO was unable to provide documentation demonstrating that PSI or operating procedures were updated when a change in a process required such an update.
10. **40 C.F.R. § 68.79(a) Compliance audits** requires KMCO to certify that they have 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. KMCO did not certify its 2013 or 2016 Compliance Audits. Its 2013 Compliance Audit did not evaluate to provisions of this subpart.
11. **40 C.F.R. § 68.79(d) Compliance audits** requires KMCO to promptly determine and document an appropriate response to each of the findings of the compliance audit, and document that deficiencies have been corrected. KMCO did not document an appropriate response to each of the findings from the 2013 and 2016 audits, nor did it document that deficiencies have been corrected.
12. **40 C.F.R. § 68.81(c) Incident investigation** requires KMCO to establish an incident investigation team that consists of at least one person knowledgeable in the process involved, including a contract employee if the incident involved work of the contractor, and other persons with appropriate knowledge and experience to thoroughly investigate and analyze the incident. KMCO did not identify the incident investigation team in its incident investigation reports.
13. **40 C.F.R. § 68.81(d) Incident investigation** requires KMCO to prepare a report at the conclusion of an incident investigation which includes at a minimum: (1) Date of incident; (2) Date investigation began; (3) A description of the incident; (4) The factors that contributed to the incident; and, (5) Any recommendations resulting from the investigation. KMCO did not include all the required information in its incident investigation reports.
14. **40 C.F.R. § 68.81(e) Incident investigation** requires KMCO to establish a system to promptly address and resolve the incident report findings and recommendations and to document resolutions and corrective actions. KMCO did not consistently address incident report findings promptly, or document resolutions and corrective actions.
15. **40 C.F.R. § 68.95(a) Emergency response program** requires KMCO to maintain an emergency response plan that contains at least the following elements: procedures for informing the public

and local emergency response agencies about accidental releases; documentation of proper first-aid and emergency medical treatment necessary to treat accidental human exposures; procedures and measures for emergency response after an accidental release of a regulated substance; procedures for the use of emergency response equipment and for its inspection, testing, and maintenance. KMCO's emergency response plan did not include documentation of proper first-aid and emergency medical treatment necessary to treat accidental human exposures, or procedures for the use, inspection, testing, and maintenance of emergency response equipment.

16. **40 C.F.R. § 68.195(a) Required corrections** requires KMCO to submit the data required under §§ 68.168, 68.170(j), and 68.175(l), for any accidental release meeting the five-year accident history reporting criteria of §68.42, within six months of the release, or by the time the RMP is updated under § 68.190, whichever is earlier. KMCO did not update its five-year accident history within six months (on or by October 2, 2019) for the April 2, 2019, release.

Section IV – FOLLOW UP

EPA received the information listed below from KMCO after exiting the Facility on October 11, 2019:

KMCO provided the following documents to EPA on October 22, 2019 and November 10, 2019 respectively:

- KMCO's PHA procedure (KMCO_00004152-4167)
- 2013 MOC procedure (KMCO_00009398-KMCO_00009405).

KMCO provided the following documents to EPA on December 5, 2019:

- OSHA 300 Log for 2015 (KMCO_00009320-KMCO_00009320)
- 2017 Presentation to address the findings from the PSM Audit (KMCO_00009333-KMCO_00009365)
- Facility Siting Checklist that addresses natural disasters used to conduct PHAs (KMCO_00009321-KMCO_00009327)
- KMCO's Overall Reliability and Maintenance Procedure outlining requirements for testing and inspection of rotating equipment (KMCO_00009366-KMCO_00009387)
- Timeline of Testing/Inspections for controls/rotating equipment (KMCO_00009388-KMCO_00009390)
- Procedure to prioritize critical maintenance on controls/rotating equipment (KMCO 00009391-KMCO 00009394)
- 12/23/18 Odor Complaint Reality Chart (KMCO_00009328- KMCO 00009332)
- Inspections and Testing for Emergency Response Equipment (KMCO_00009395 KMCO_00009397)

EPA requested the following information from KMCO on November 4, 2019, after exiting the Facility on October 11, 2019; however, KMCO was unable to locate these records:

- Training Records, Standard Operating Procedures (SOP), PSI, and Process and Instrumentation Drawing (P&ID) Updates for the following MOCs:
 - o KMCO_00008945
 - o KMCO_00008985
 - o KMCO_00008986
 - o KMCO_00008987
 - o KMCO_00008988
 - o KMCO_00008989
 - o KMCO_00008990
 - o KMCO_00008991
 - o KMCO_00008992

Section V – LIST OF APPENDICES

Appendix 1 – Opening Conference Sign-in Sheet

CBI Appendices (not included in published version of the report)

Appendix 2 – Chemical Safety Board (CSB) Factual Update September 17, 2019

(KMCO_00009228-00009244)

Appendix 3 – HAZOP Study Report H3315 in K8/9 January 2015 (KMCO_00008164-00008224)

Appendix 4 – HAZOP Study Report KB2405, 2406, 2402, 2413 in K2 and K4 (KMCO_00009197-00009215, KMCO_00009216-9226)

Appendix 5 – Operating Procedure Certifications 2015-2017 (KMCO_00009891-00008983)

Appendix 6 – KMCO Quality Procedures Employee Training (KMCO_00008786-00008791)

Appendix 7 – KMCO Maintenance Mechanical Integrity Procedure (KMCO_00001243-00001247)

Appendix 8 – Safety Relief Device Inspection Procedure (KMCO_00001248-00001250)

Appendix 9 – Atmospheric Storage Tank Inspection Procedure (KMCO_00001258-00001261)

Appendix 10 – Piping Inspection Procedure (KMCO_00001255-00001257)

Appendix 11 – Pressure Vessel Inspection Procedure (KMCO_00001258-00001261)

Appendix 12 – February, March 2019 Monthly Life Critical Bump Test on Various Meters & Sensors (KMCO_00001067-0000170)

Appendix 13 – KMCO Management of Change Procedure (KMCO_00000231-00000244)

Appendix 14 – 2013 PSM Audit Report for 20XX Audit (KMCO_00008295-00008315)

Appendix 15 – 2016 PSM Audit Report for 20XX Audit (KMCO_00008318-00008377)

Appendix 16 – 7/29/2017 Incident Investigation Report

Appendix 17 – 1/15/2018 Incident Investigation Report

Appendix 18 – 8/7/2018 Incident Investigation Report

Appendix 19 – 12/23/2018 Incident Investigation Report

Appendix 20 – KMCO Requirements for Safety of Contractors (KMCO_00004770-00004778)

Appendix 21 – KMCO Job Audit Forms (KMCO_00009262-00009263)

Appendix 22 – Evaluation of Contractor Safety & Health Performance & Compliance with OSHA PSM Standard Forms (KMCO_00009119-00009127, KMCO_00008970-00008971)

Appendix 23 – KMCO Emergency Response Plan (KMCO_00000048-00000063)