

Region 6 - Enforcement & Compliance Assurance Division
INSPECTION REPORT

Inspection Date(s):	February 14-17, 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:	Petromax Refining Company, LLC	
Facility Name:	Petromax Refining Company, LLC	
Facility Physical Location:	1519 S. Sheldon Road	
(city, state, zip code)	Houston, Texas 77015	
Mailing address:	1519 S. Sheldon Road	
(city, state, zip code)	Houston, Texas 77015	
County/Parish:	Harris County	
Facility Phone Number	(281) 695-9017	
Facility Contact:	Steven Parker	Plant Manager
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FRS Number:	110064465289	
Identification/Permit Number:	N/A	
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SIC:	N/A	
Personnel participating in inspection:		
Charese Simpson	EPA Region 6	Inspector
Kayla Buchanan	EPA Region 6	Inspector
Steven Parker	Petromax	Plant Manager
Andrew Contreras	Petromax	EHS Engineer
Matthew Castor	Petromax	Operations Manager
EPA Lead Inspector Signature/Date		4.11.2022
	Charese Simpson	Date
Supervisor Signature/Date		
	Samuel Tates	Date

Section I – INTRODUCTION

PURPOSE OF THE INSPECTION

United States Environmental Protection Agency (EPA) Region 6 inspectors Charese Simpson and Kayla Buchanan, arrived at the Petromax Refining Company, LLC facility at 9:00 AM on Monday February 14, 2022, for an announced inspection. I met with Steven Parker, Andrew Contreras, and Matthew Castor for an opening meeting. We presented credentials and informed Petromax 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 evaluation of the facility's compliance with the Clean Air Act (CAA) Section 112(r) and the Chemical Accident Prevention Provisions in 40 C.F.R. Part 68 and the General Duty Clause. Petromax's Risk Management Plan (RMP) is listed as a Program Level Three (3), Non-Title V facility. I inquired if an employee representative was available pursuant to section 112(r)(6)(L) of the CAA to participate in this inspection and was informed that the Petromax plant is a non-union facility.

FACILITY DESCRIPTION

Petromax Refining Company, LLC is a manned facility located at 1519 S. Sheldon Road in Houston, Texas 77015. The facility is a 25,000 barrels per day fractionation facility that consists of an atmospheric distillation unit designed to provide products to storage facilities. Crude oil and condensate feed is delivered to the facility by barge or tanker truck and sent to storage tanks. The crude oil/condensate is preheated and desalted to remove saltwater and contaminants. The feed is pumped to the crude charge heater and sent to the fractionation column where the petroleum fractions separate into liquified petroleum gas (LPG), unstabilized naptha, light distillate, middle distillate, heavy distillate, and atmospheric gas oil (AGO). Petromax's regulated "Petroleum Refineries" process includes one RMP-Covered Unit: Crude Fractionation Plant. Petromax handles flammable mixtures that consists of six regulated flammable chemicals under the Risk Management Program – Butane (CAS#106-97-8); Isopentane (CAS#78-78-4); Ethane (CAS#74-84-0); Propane (CAS# 74-98-6), Isobutane (CAS# 75-28-5); and Pentane (CAS# 109-66-0). Approximately 50 full time employees work at the site, in addition to the independent contractors that work at the plant.

Section II – OBSERVATIONS

On Monday February 14, 2022, EPA inspectors were accompanied by Petromax personnel to conduct a tour of the site. We observed the process unit, control room, and tank farm area and concluded to focus this inspection on the Crude Oil/Condensate Fractionation Unit. On Wednesday February 16, 2022, we conducted a walking tour of the facility to the Crude Fractionation process unit and control room. Prior to the tour, we were provided with piping and instrumentation drawings (P&IDs) of the process unit that assisted in the tour. In addition, Petromax provided the EPA inspection team with the safety orientation video prior to making entry to the site.

Subpart A – General

40 C.F.R. § 68.10 Applicability – Petromax is the owner/operator of a stationary source that has more than threshold quantities of a flammable mixture that consists of six regulated flammable substances (butane, isopentane, ethane, propane, isobutane, and pentane) in the covered process, as listed in 40 C.F.R. § 68.130, and, as such, is subject to the Chemical Accident Prevention Provisions. Petromax is a Non-Title V facility. Petromax is subject to the Occupational Safety and Health Administration (OSHA) process safety management (PSM) standard, 29 C.F.R. § 1910.119, and has one (1) Program Level Three (3) process under OSHA PSM.

40 C.F.R. § 68.10 Program Eligibility – EPA reviewed Petromax’s RMP registration submitted on July 10, 2020, which lists one process that consists of a flammable mixture. Petromax determined that this process met the requirements of Program Level Three (3). For the five years prior to the current RMP registration, the facility has not had an accidental release of a regulated substance that resulted in death, injury, or off-site response at an environmental receptor, per 68.10(g)(1). Since the distance to a flammable endpoint for worst-case release assessments conducted under subpart B and §68.25 includes public receptors, the facility does not meet the criteria to be Program Level One (1).

40 C.F.R. § 68.15 Management – Petromax developed a management system to oversee the implementation of risk management program elements, documented persons responsible for implementing the individual requirements of the risk management program, and defined the lines of authority using its RMP Management Organizational Chart which lists responsibilities. Andrew Contreras, the Petromax Environmental Health and Safety (EHS) Engineer, was the primary point of contact for this inspection.

Subpart B – Hazard Assessment

40 C.F.R. § 68.20 Applicability – Petromax has one (1) Program Level 3 process subject to this subpart. The facility is required to prepare an off-site consequence analysis and complete the five-year accident history.

40 C.F.R. § 68.22 Off-Site Consequence Analysis Parameters – Petromax used parameters required in this part to calculate flammable worst-case and alternative release scenarios. Petromax used RMP*Comp™ and MARPLOT 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 – During the inspection, EPA reviewed documentation from Petromax regarding the worst-case release scenario analysis for the one flammable process. This analysis used both the RMP*Comp™ Model, and additional modeling with MARPLOT. Petromax analyzed and reported in the RMP one worst-case release scenario, estimated to create the greatest distance to endpoint, and resulting from an accidental release of a regulated toxic substance from a covered process under worst-case conditions. The worst-case release quantity was determined by the greatest amount held in a single vessel, considering administrative controls that limit the maximum quantity released.

40 C.F.R. § 68.28 Alternative Release Scenario Analysis – Petromax identified and documented the alternative release scenario to represent all flammable substances held in a covered process, using a

scenario that is likely to occur. The flammable alternative case scenario listed is related to a release in the Liquefied Petroleum Gas (LPG) Loading Area. Petromax utilizes the RMP* Comp™ software, MARPLOT, and off-site consequences guidance calculations; they maintain aerial photos showing the alternative release scenario endpoint distance radius and a circle centered on the approximate location of the unit that is considered in the alternative release scenario, thus meeting the requirements of the regulation.

40 C.F.R. § 68.30 Defining Off-Site Impacts - Population – Petromax 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. In addition, Petromax utilizes the MARPLOT mapping program to define the affected off-site population.

40 C.F.R. § 68.33 Defining Off-Site Impacts - Environment – Petromax identified environmental receptors in the distance to the endpoint or in the vicinity of the facility, as appropriate, in the area maps used for the modeling.

40 C.F.R. § 68.36 Review and Update – Petromax reviewed and updated the off-site consequence analyses at least once every five years, as required by this subpart.

40 C.F.R. § 68.39 Documentation – Petromax 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 – EPA reviewed Petromax's five-year accident history and OSHA 300 Logs from 2017 to present. We did not identify any accidental releases from the covered process that resulted in one or more of the following: on-site deaths, injuries, significant property damage on site, known off-site deaths, injuries, evacuations, sheltering in place, property damage, or environmental damage in its accident history.

Subpart D – Program 3 Prevention Program

40 C.F.R. § 68.65 Process Safety Information – Petromax 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. Safety Data Sheets (SDSs) for the process chemicals were provided, and detailed process safety information was provided that contains the following data for the hazards of the substances used: 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. EPA reviewed documentation concerning the technology of the process, which included a block flow diagram, 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 for each covered process. EPA reviewed documentation pertaining to the equipment of the process including: materials of construction, piping and instrumentation diagrams (P&IDs), electrical classification, relief system design and design basis,

ventilation system design, design codes and standards employed, material and energy balances, and safety systems.

40 C.F.R. § 68.67 Process hazard analysis (PHA) – Petromax provided the PHA procedure manual (SWP-039) for EPA’s review. Petromax 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 unit. Petromax conducts PHAs using the Hazard and Operability Study (HAZOP) technology but may supplement with the “What-if” checklist technology, depending on the scope and process covered by the PHA.

Each PHA EPA reviewed addressed the hazards of the process and included: identification of any incident that had a likely potential for catastrophic consequences; engineering and administrative controls applicable to hazards and their interrelationships; consequences of failure of engineering and administrative controls; stationary source siting factors; human factors; and, an evaluation of a range of the possible safety and health effects of failed controls.

Petromax established a system utilizing an Excel spreadsheet 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 are within the process and who may be affected by action recommendations. and action item resolution for PHAs, management of change, and compliance audits. The findings and recommendations for each PHA were documented.

The PHAs were performed by a team with expertise in engineering and process operations. The team included appropriate personnel from Petromax and an engineering consultant with knowledge of the facility and in the specific PHA methodology used.

40 C.F.R. § 68.69 Operating Procedures – Petromax developed and implemented written operating procedures that provide instructions or steps for conducting activities associated with each covered process, consistent with the safety information. The operating procedures EPA reviewed addressed: the steps for each operating phase (initial and normal startup, normal operations, temporary operations, emergency operation and shutdown, normal shutdown, and startup following a turnaround or after emergency shutdown); 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. The covered unit has a shared drive where operating procedures are stored electronically. In addition, hard copies of the operating procedures are kept in the control room and are accessible to process operators. During the inspection, EPA reviewed Petromax’s safe work procedures, including lock out/tag out procedures and confined space entry procedures. The company utilizes confined space and safe work permits which is required prior to any contractor entering a confined space. Petromax is required to annually certify that operating procedures are current and accurate. Petromax provided operating procedure certifications from 2017-2021. The operating procedures are deemed current and accurate.

40 C.F.R. § 68.71 Training – EPA reviewed Petromax’s training program and employee training records with Matthew Castor, Operations Manager. The facility’s training program ensured that each employee presently operating a covered process, and each employee newly assigned to a covered process trained

or tested to qualify as competent in an overview of the process and in the operating procedures that pertain to their duties. Petromax's operators must go through a 6–8-week training program which includes the following: On the job training, testing process that consists of written multiple choice, a series of field demonstration tests, and general interviews conducted between the operator candidate and the testing team.

During the inspection, EPA reviewed training records for six randomly selected employees to ensure that initial and refresher training were documented, that each employee involved in covered operations received and understood the training, and refresher training was administered at least every three years. Out of the six employees randomly selected, Petromax was able to provide the requalification (refresher) training for all employees but was not able to provide the initial trainings for three employees. [AOC #1- 68.71(a)(1)].

40 C.F.R. § 68.73 Mechanical Integrity – I reviewed the documentation of Petromax's mechanical integrity process and procedures, and inspection records for RMP covered equipment. According to Petromax, they do not conduct mechanical integrity inspections, and therefore does not have a Petromax specific training plan for conducting mechanical integrity testing. Petromax's third party contractor, Mistras, stores and documents Petromax's mechanical integrity inspection and testing. In addition, Mistras houses records of scheduled, completed, and future inspection, preventative maintenance tasks, and mechanical integrity training for their contractors in their database system called *Benchmark*. During the inspection, Mistras provided training records of their personnel who are American Petroleum Institute (API) certified. Petromax did not have any overdue inspection or testing on fixed or rotating equipment. Petromax provided loop checks for review during the inspection. There were eleven instances noted where the instrument calibration sheets had missing dates and/or did not identify the name of person conducting the inspection or test. [AOC #2- 68.73 (d)(4)].

40 C.F.R. § 68.75 Management of Change (MOC) – EPA reviewed Petromax's MOC procedure. The written MOC procedure assured the facility managed changes to process chemicals, technology, equipment, procedures, and changes to stationary sources that effect 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. At the time of the inspection, EPA reviewed the following MOCs: "MOC-2020-002" and "MOC-2021-003". Employees involved in operating a process and maintenance and contract employees whose job tasks will be affected by a change were trained; however, not necessarily prior to start up, according to the MOCs reviewed [AOC #3- 68.75(c)]. If a change resulted in a change to safety information, this subpart requires such information be updated accordingly. I reviewed several MOCs that required such a change, and the information was not updated as required by the regulation. "MOC 2020-002" references a procedure update for the N² and low point drain and Petromax failed to provide the updated operating procedures [AOC #4- 68.75(e)].

40 C.F.R. § 68.77 Pre-startup Safety Review (PSSR) – EPA reviewed Petromax's selected pre-startup safety reviews for the associated MOCs. The PSSRs documented that, when the facility installed a new stationary source, or significantly modified an existing source, a review was conducted 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, with adequate emergency procedures in place, and training.

40 C.F.R. § 68.79 Compliance Audits – Petromax provided their most recent certified RMP Compliance Audit document, conducted in September 2018, according to the audit and certification letter. The September 2018 compliance audit was the first audit conducted after the facility was constructed and became subject to RMP requirements. Although Petromax has a compliance audit scheduled 3 years from the date of the report issuance, EPA noted that the compliance audit should have been completed within three years of the previous audit certification date and not the report date [AOC #5-68.79(a)/(e)]. Petromax 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. Petromax's compliance audit was conducted by at least one person knowledgeable in the processes and they developed a report of the audit findings. Petromax is required to promptly determine and document an appropriate response to each of the findings of the compliance audit, however, Petromax failed to document those deficiencies were corrected [AOC #6- 68.79(d)].

40 C.F.R. § 68.81 Incident Investigation – During the inspection, Petromax provided EPA a list of all incident investigations that occurred within the past five years. Of those reviewed, the incident investigation team consisted of at least one person knowledgeable in the process involved. Petromax has an incident management standard work practice procedure for both near-miss and incident reporting. Petromax investigated each incident that resulted in, or could reasonably have resulted in, a catastrophic release of a regulated substance.

40 C.F.R. § 68.83 Employee Participation – Petromax developed a written plan of action regarding the implementation of the employee participation required by this section, which is integrated into the program elements (SWP-026). Petromax's written plan describes how they consult with employees 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 – Petromax provided their hot work procedure that detailed guidance for hot work/safe work activities at the site. Petromax has two grades of hot work: high energy and low energy. I reviewed several hot work permits that consisted of high energy (welding/cutting). Each permit I reviewed documented that fire prevention and protection requirements were implemented prior to beginning hot work operations. One permit reviewed did not properly indicate the date for the authorized hot work. In addition, it was noted on another hot work permit that the fire watch did not sign his name on the permit to document that a fire watch was present [AOC #7-68.85(b)].

40 C.F.R. § 68.87 Contractors – EPA reviewed Petromax's contractor procedure with Andrew Contreras. Petromax utilizes the *Veriforce* contractor database to evaluate information regarding a contractor's safety performance and programs. Contractors subscribing to the *Veriforce* system are graded on the following components within the database: SSQ Score (a compilation of questions within the Standardized Safety Questionnaire (SSQ)), Total Recordable Incidence Rate (TRIR), OSHA log verification status, EMR verification status, EMR rating, OSHA citation verification status, insurance verification status, and deficiencies. Contractors not meeting the contractor management system requirements 30 days after being connected to Petromax within *Veriforce* shall be ineligible to perform work onsite. All contractor work performed onsite must be permitted by Petromax in accordance with their SWP-002 Safe Work Permits. The Petromax site implements safe work practices consistent with §68.69 (d), to control the entrance, presence and exit of the contractor owner or operator and contract employees via the security gate and badging system.

Subpart E – Emergency Response

40 C.F.R. § 68.90 Applicability – Petromax is designated as a “non-responding” stationary source in case of an accidental release of a regulated substance, therefore, the facility need not comply with the requirements of part 68.95.

40 C.F.R. § 68.93 Emergency Response Coordination Activities – Petromax coordinates with Harris County Fire Department and North Channel Local Emergency Planning Committee (LEPC). During the time of the inspection, Petromax provided a document of coordination with local authorities that included the names of the individuals involved, their contact information, and the nature of the coordination for the recent coordination activities that took place on February 15, 2022.

40 C.F.R. § 68.96 Emergency Response Exercises – As part of coordination with local emergency response officials required by §68.93, Petromax consulted with officials to establish an appropriate frequency for field exercises.

Subpart G – Risk Management Plan

40 C.F.R. § 68.190 Updates – Petromax’s RMP was re-submitted on July 10, 2020.

40 C.F.R. § 68.195 Required corrections – Petromax’s next RMP registration re-submission is due by July 10, 2025, 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.

Section III – AREAS OF CONCERN

AOC 1 – 40 C.F.R §68.71(a)(1) Training

“(a)(1) Each employee presently involved in operating a process, and each employee before being involved in operating a newly assigned process, shall be trained in an overview of the process and in the operating procedures as specified in § 68.69. The training shall include emphasis on the specific safety and health hazards, emergency operations including shutdown, and safe work practices applicable to the employee's job tasks.”

Out of the six employees randomly selected, Petromax was able to provide the requalification (refresher) training for all employees but was not able to provide the initial trainings for three employees.

AOC 2 – 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.”

Petromax provided loop checks for review during the inspection. There were eleven instances noted where the instrument calibration sheets had missing dates and/or did not identify the name of person conducting the inspection or test.

AOC 3 – 40 C.F.R §68.75(c) Management of Change (MOC)

“(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.”

At the time of the inspection, I reviewed the following MOCs: “MOC-2020-002” and “MOC-2021-003”. Employees involved in operating a process and maintenance and contract employees whose job tasks will be affected by a change were trained; however, not necessarily prior to start up, according to the MOCs reviewed.

AOC 4 – 40 C.F.R §68. 68.75(e) Management of Change (MOC)

“(e) If a change covered by this paragraph results in a change in the process safety information required by § 68.65 of this part, such information shall be updated accordingly.”

I reviewed several MOCs that required such a change, and the information was not updated as required by the regulation. “MOC 2020-002” references a procedure update for the N² and low point drain in which Petromax failed to provide the updated operating procedures.

AOC 5 – 40 C.F.R §68.79(a)/(e) Compliance Audit

“(a) The owner or operator shall 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.”

“(e) The owner or operator shall retain the two (2) most recent compliance audit reports.”

Although Petromax has a compliance audit scheduled 3 years from the date of the report issuance, EPA noted that the compliance audit should have been completed within three years of the previous audit certification date and not the report date.

AOC 6 – 40 C.F.R §68.79 (d) Compliance Audit

“(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.”

Petromax is required to promptly determine and document an appropriate response to each of the findings of the compliance audit, however, Petromax failed to document those deficiencies were corrected.

AOC 7 – 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.”

Each permit I reviewed documented that fire prevention and protection requirements were implemented prior to beginning hot work operations. One permit reviewed did not properly indicate the date for the authorized hot work. In addition, it was noted on another hot work permit that the fire watch did not sign his name on the permit to document that a fire watch was present.

Closing Meeting - EPA Region 6 inspectors Charese Simpson and Kayla Buchanan conducted a closing conference at Petromax on February 17, 2022, after this inspection. During the closing conference, I reviewed the Areas of Concern noted during the inspection.

Section IV – FOLLOW UP

Documents received on March 14, 2022, were Training records, safe work practices, and PHA procedure, in support of Area of Concern Findings.

Section V – LIST OF APPENDICES

There are no photos, videos, or other appendices to this report.