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1.0 PURPOSE

1.1 The purpose of this procedure is for Marathon's Detroit Refinery to adopt and comply with the guidelines set forth in the Refining Standard Practice "Work Permit" (RSP-1128-000).

2.0 SCOPE

2.1 This work permit program applies to all Michigan Refining Division (MRD) employees, contractors, and visitors to ensure that all work conditions and equipment are safe, and will remain so while work is being performed, and must be followed to ensure compliance with all applicable standards and regulations.

3.0 PROCEDURE

3.1 RESPONSIBILITIES

3.1.1 Owning Department Supervisor/Designee

3.1.1.1 Ensure that management processes are in place to carry out the appropriate functions of the work permit system.

3.1.1.2 Ensure that all persons within their areas of responsibility have received the appropriate work permit training.

3.1.1.3 Ensure that work permits are being filled out completely and correctly.

3.1.1.4 Ensure that equipment is properly prepared to turn over to maintenance.

3.1.1.5 Co-sign all confined space entry permits on Marathon property.

3.1.1.6 Co-sign cold work on process equipment that cannot be verified de-pressured, attended hot work, hot work on process equipment that cannot be verified de-pressured in an area that is owned by the Operations department and Product Control (i.e. Complexes 1-6).

NOTE: When work is performed in the laboratory, the permit must be written by a permit writer trained supervisor OR by a permit writer trained laboratory technician. If written by a laboratory technician, then a supervisor must sign-off as the Supervisor/Designee (supervisor may be a non-laboratory supervisor).

3.1.1.7 Verify that the permit is correct and appropriate requirements are listed as understood by the work scope provided prior to the completion of the joint job site visit.

3.1.1.8 Forward the completed/cancelled work permit to the Safety Department, who is responsible for records retention of permits.

3.1.1.9 Provide or recommend disciplinary action for members of the owning department who intentionally neglect the provisions written in this procedure.

3.1.2 Owning Department Personnel

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3.1.2.1 Ensure that the equipment for release to the servicing representative(s) and the environment surrounding the job are in a safe condition.

3.1.2.2 Inspect the Isolation and Blind Lists to ensure any needed isolations are accounted for and signed off as completed.

3.1.2.3 Participate in the joint job site visit, as required.

3.1.2.4 Ensure the correct issuance and cancellation of work permits in the area and/or equipment under their control.

3.1.2.5 The owning department shall be responsible for completing these sections of the permit:

- Permit extension
- Operator relief change Section
- Additional Permits or Competent Persons Section
- Emergency Contacts Section
- Joint job site visit
- Job Site Preparation Section
- Hot Work Section
- Confined Space Precautions Section
- Atmospheric Monitoring Section

3.1.2.6 Both the owning department and the servicing group representatives share responsibility for completing these sections of the permit:

- Required Permits Section
- Exact Location
- Work description
- Potential hazards/chemicals
- Personal Protective Equipment (PPE) & Related Requirements Section
- Required Signatures Section
- Return of Equipment/Work Area – Job Completeness Section

3.1.2.7 Ensure that work proceeds safely within the terms of the work permit relevant to their assigned responsibilities.

3.1.2.8 Periodically (at least once per shift) visits permitted job site(s) and verifies work being performed in compliance with work permit requirements.

3.1.2.9 Ensure that the permit users fully understand the requirements of the work permit and takes appropriate action, as necessary.

3.1.2.10 Conduct atmospheric testing at the job site area.

3.1.2.11 Extend work permits.

3.1.2.12 Notify their supervisor with any questions or concerns regarding the job or the work permit.

3.1.2.13 Transfer responsibility for the work permit when there is a change in permit writers or shifts.

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3.1.2.14 Cancel the work permit if the conditions of the permit are not being met by the work party or area/equipment conditions require a work stoppage. Notify supervision of all appropriate parties.

3.1.2.15 The owning department will be available for consultation during maintenance work. The owning department shall inform the servicing representative(s) of any changes in conditions which would affect the job, or any operating emergency.

3.1.2.16 Identifies and communicates any remaining hazards associated with the work and the actions required to safely work with, or mitigate the hazards

3.1.2.17 Forwards the completed/canceled Safe Work Permit to the department responsible for records retention of documents.

3.1.3 Permit User Supervisor (MPC Maintenance Supervisor/Contractor Foreman or Designee) - *This person is directly in charge of the work party carrying out the specific tasks.*

3.1.3.7 Ensure that the joint job site visit has been performed, as required.

3.1.3.8 Co-sign confined space entries and work on equipment that cannot be adequately de-pressured or cannot be verified de-pressured for hydrogen, flare gas, corrosives or high temperature hydrocarbon (operating temperature >400°F) services.

3.1.3.9 Ensure that all work carried out by personnel under their control is covered by a valid work permit, when required.

3.1.3.10 Ensure that the work party carries out their specific tasks safely and within the terms of the work permit.

3.1.3.11 Ensure the permit users fully understand the requirements of the work permit.

3.1.3.12 Understand the limitations and restrictions of the work permit in order that the work may proceed safely.

3.1.3.13 Prior to performing work, ensure that all members of the work party adhere to all safe working practices and are fully familiar with the limitations/restrictions described on the work permit.

3.1.3.14 Ensure that all precautions specified on the work permit are complied with.

3.1.3.15 Ensure that the owning department is made aware of any changes in work conditions, work content or work scope.

3.1.3.16 Ensure that the work described in the work permit is completed or left in a safe condition if not completed.

3.1.3.17 Ensures that the job site is cleaned up at the conclusion of each day and at the completion of the job.

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3.1.3.18 Ensure that all permit users complete any required training in a timely fashion.

3.1.4 MPC Contractor Coordinator

3.1.4.7 Ensure participation by the permit writer & permit users in the joint job site visit.

3.1.4.8 Ensure that contractors comply with all MPC's refinery safety rules and have the proper equipment as required by the Safe Work Permit.

3.1.4.9 Provide a constant liaison between contractors and MPC personnel.

3.1.4.10 Ensure that all members of the work party adhere to all safe working practices and are fully familiar with the limitations/restrictions described on the work permit.

3.1.4.11 Issue work permits to groups they are responsible for when there is no clear owning department.

3.1.4.12 Complete any required Safe Work Permit training in a timely fashion.

3.1.4.13 Utilize available resources to update gas checks on jobs located in any outlying areas.

3.1.5 Entry Supervisor: See RSW-SAF-010-DT Confined Space Entry Procedure

3.1.6 Work Permit Work Party (Permit Users)

3.1.6.7 Participate in the joint job site visit, as required.

3.1.6.8 Assist in proper completion of the Safe Work Permit where required:

3.1.6.9 The Permit User shall be responsible for completing these sections of the permit:

- Date
- Time issued
- Time expires
- Work order number
- Authorized company/contractor and crafts
- Process hazards overview
- Additional Personnel Section & corresponding attachments
- Confined Space Sign In/Sign-Out for Authorized Entrants Section
- Fire Watch, Bottle Watch, and Confined Space Attendant Section
- Servicing Representative Debriefing Notes

3.1.6.10 Both the permit user and permit writer shall share responsibility for completing these sections of the permit:

- Required Permits Section
- Exact Location
- Work description
- Potential hazards/chemicals

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- Personal Protective Equipment (PPE) & Related Requirements Section
- Required Signatures Section
- Return of Equipment/Work Area – Job Completeness Section

3.1.6.11 Ensure that work proceeds safely within the terms of the work permit.

3.1.6.12 Notify their supervisors of any changes on the job site or required changes to the work scope.

3.1.6.13 Read and understand the work permit, and log off of the permitted job.

3.1.6.14 Complete all Safe Work Permit required training in a timely fashion.

3.1.7 Safety Department

3.1.7.1 Serve as a subject matter expert on the Safe Work Permit form and procedure. Provide guidance to permit users and writers when needed.

3.1.7.2 Co-sign all initial confined space entry permits. The Safety Department at their discretion, may co-sign daily, other high hazard entries into confined spaces.

3.1.7.3 Periodically audit job sites to determine compliance with the work permit. Correct unacceptable conditions immediately and provide feedback, both positive and negative, to the Owning Department and User Departments/representatives.

3.1.7.4 Perform a monthly Life Critical Safety Audit that determines effectiveness of writing and utilizing the safe work permits. Audit feedback should be provided to the appropriate owning departments and/or servicing groups.

3.1.7.5 Review this program and the attached Safe Work Permit Form (Appendix A) as defined by the document control schedule and ensure any changes are communicated to all affected parties.

3.1.7.6 Obtain assistance from the appropriate owning departments or servicing group's personnel while developing Safe Work Permit writer and user training material.

3.1.7.7 Prepare and deliver permit training material as defined by the health, environmental, safety and security training matrix. Review and update any training material in orientation and computer-based training programs.

3.1.8 Training Department

3.1.8.1 Schedule permit training for required participants and maintain records of the training provided.

3.2 WORK PERMIT PROGRAM

3.2.1 Safe Work Permit Program Objectives

3.2.1.1 Verify, in writing, that proper safeguards and precautions have been taken to minimize the possibility of personnel injury and property damage during maintenance, repair, or construction activities including but not limited to

cold work, hot tap/stopple, vehicle entry, hot work, and confined space entry operations.

3.2.1.2 Inform owning department personnel of every maintenance, repair or construction activity being performed in their area(s) and/or on their equipment, so that proper safeguards can be taken to protect people and facilities from possible hazardous situations and when this work has been properly completed.

3.2.1.3 Inform owning department personnel when maintenance, repair or construction activity in their area(s) and/or on their equipment have been properly completed.

3.2.1.4 Inform maintenance and contractor personnel of the proper safeguards necessary for their activity.

3.2.1.5 Define specific requirements and procedures for each use of the work permit.

3.3 USE OF A WORK PERMIT

3.3.1 Work Permit Requirements

3.3.1.1 A Safe Work Permit is required to perform any work at Michigan Refining Division. This includes but is not limited to any maintenance, repair or construction activities such as

- Cold work
- Hot work: see RSW-SAF-062 Hot Work and RSW-SAF-007-DT In-Service Welding and Hot Tapping Procedure for more information.
- Confined space entry: see RSW-SAF-010-DT Confined Space Entry for more information.

3.3.1.2 Vehicle Entry

3.3.1.2.1 In order for the owning departments to provide authorization for vehicle entry without a specific safe work permit, the owning department must complete a hot work permit for the roadways in complexes (roads not normally open to traffic) and tank farm diked areas.

a. One permit may include all roadways in a complex; however gas checks must be completed on all roadways.

b. The owning department must ensure the gas checks are up to date before authorizing entry.

c. Both copies of the permit may be posted in the control room.

d. The permit writer and permit user representative on the permit may not be the same person.

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3.3.1.3 For ensuring that all work is adequately assessed and that all necessary precautions are in place, all work on MRD property, excluding the exceptions below, will require a Safe Work Permit.

3.3.2 Exceptions to Work Permit Requirements

3.3.2.1 Exceptions to work requiring a Safe Work Permit include, but are not limited to:

a. Products Control, Operations Field Equipment Operator, or Operations Contractor-performed routine cold work
b. routine cold work or hot work jobs or tasks done at MPC maintenance shops by the MPC maintenance personnel
c. routine cold work or hot work jobs or tasks done at the Holly Barn in Melvindale Tank Farm by Holly personnel
d. drivers only requiring permission to drop off/pick up
e. routine powered vehicle use on roadways normally open to traffic
f. routine walk throughs/inspections/audits
g. office housekeeping
work in/on buildings that would not require the use of a ladder, power tools or the penetration of a surface greater than 1” in depth.

NOTE: A safe work permit is still required for work on the actual Maintenance buildings, even if performed by MPC Maintenance Personnel, such as wiring, work on the HVAC system, installing permanent fixtures, etc.

3.3.2.2 Any hot work or confined space entry work performed by the owning department must be properly permitted as described in this procedure by another member of the owning department.

3.3.2.3 Any invasive work, hot work, confined space entry work, or work that requires the use of energy isolation performed by an Operations Contractor must be permitted by the Owning Department of the area that they are working in.

3.3.2.4 See vehicle entry definition for those areas *not* requiring a Safe Work Permit.

3.3.2.5 Any questions on work that may require a work permit should be forwarded to the appropriate owning department and/or safety.

3.3.3 The Detroit Refinery Safe Work Permit

3.3.3.1 A copy of the approved Detroit Refinery Safe Work Permit is located in Appendix A . This permit closely resembles the example permit found in RSP-1128-000 “Work Permit” and is to be used for all covered work.

3.3.3.2 Minor modifications may be made to the permit to account for local vernacular and other requirements, though modifications must be reviewed and approved by the Corporate Manager, Refining Safety and Security.

3.4 GENERAL WORK PERMIT REQUIREMENTS

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These instructions cannot be expected to cover all possible conditions or unanticipated situations. Should there arise any doubt in the mind of anyone authorized to sign or countersign safe work permits, as to whether conditions are safe, he/she should withhold from issuing the permit and consult with the proper owning department supervisor/foreman, safety representative or department manager.

3.4.1 Issuance of Work Permits

3.4.1.1 All work permits must be issued in accordance with instructions contained in this and all applicable procedures before the performance of any type of activity in the applicable areas.

3.4.1.2 Work permits shall not be issued for any work requiring Management of Change until the Management of change has been approved.

3.4.1.3 Work permits may only be issued for work that is intended to begin immediately.

3.4.2 Adherence to Procedures

3.4.2.1 The procedures must be strictly adhered to. A variance must be written and approved by the Division Manager or their designee for any deviation from this procedure.

3.4.3 Work Permit Authorization Period

3.4.3.1 An initial work permit is only valid for a period of up to 12 hours (or lesser time as indicated on the permit) and can only be extended for a period of 12 hours immediately after the initial 12 hours.

3.4.4 Management System

3.4.4.1 A management system shall be in place that ensures the proper work permit display (see section 3.7 Display and Handling of Permits), handling and adherence to the company records retention.

3.4.4.2 A management system shall be in place so that those that issue and those that receive the work permit understand the hazards and the established procedures associated with the permitted work.

3.4.5 Work Permit Retention

3.4.5.1 Issued work permits shall not be discarded. Instead, issued work permits shall be collected by the owning department and submitted to the Safety Department Administrative Professional in an organized and timely fashion not less than once a month for retention.

3.4.5.2 Work Permits must be retained for 84 months (7 years). Work Permits for confined space entry must be retained for 30 years.

3.4.6 The Owning Department

3.4.6.1 Owners of certain equipment, units, buildings, property, etc. will be responsible for issuing and canceling Safe Work Permits.

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3.4.6.2 All owning department personnel who will be writing permits must receive permit writer training prior to being authorized to write permits.

3.4.6.3 All owning department personnel who will be writing permits must also maintain up to date training and receive training any time the Safe Work Permit is revised or changed.

3.4.6.4 Areas that lay outside of process units or tank dikes, termed *outlying areas*, have been assigned ownership. Refer to Appendix B: Detroit Refinery Safe Work Responsibility Map for the assigned outlying area owners.

3.4.6.4.1 The complex in which an electrical substation is located owns and shall permit work occurring in the substation with the exception of substations located in outlying areas. See also 3.4.9.

3.4.6.5 The owning department shall be available for consultation during work. The owning department shall inform the servicing representative(s) of any changes in conditions, or activities which would affect the job, or any operating emergency.

3.4.7 General Outlying Areas Requirements

3.4.7.1 The Detroit Refinery Permit Responsibility Map (Appendix B) defines the Owning Department for any area not located within the boundaries of Complexes 1 through 6.

3.4.7.1.1 Owning Departments may permit in one another's areas as long as they have a mutual agreement and understanding of the work scope (e.g. If emergency work needs to be performed on the Complex 6 security gate, then Complex 6 may permit the work instead of the MPC Coordinator). The Owning Department that issues the permit shall maintain responsibility of the work taking place.

3.4.7.2 Outlying area owners must maintain control of their own permits.

3.4.7.3 Employees working under a safe work permit may not be self-permitted. Another person not working on the job must act as the permit writer.

3.4.7.4 Outlying areas located adjacently to operating units must notify the owning complex control room of the work to occur.

3.4.7.5 Work must be stopped in outlying areas and permits pulled for refinery upsets or operational issues.

3.4.8 Gas Checks for Outlying Areas

3.4.8.1 Gas checks are not required for work in outlying areas except for the Refinery Laboratory or any other building or location that has the potential to contain a flammable atmosphere due to chemical storage, abnormal operating conditions, or equipment deficiencies.

3.4.8.2 Any confined space entries performed in outlying areas (including buildings in outlying areas) must follow RSW-SAF-010 Confined Space Entry.

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3.4.8.3 Where needed, assistance may be sought for gas checks performed in outlying areas if the means is unavailable to perform these gas checks by the permit writer.

3.4.9 Electrical Substation Permitting

3.4.9.1 Electrical personnel (Marathon Electrical Supervisors, Electrical Engineers, and Electricians) who are trained permit writers will write permits for Unit 23 Electrical Distribution Systems and work that takes place inside an electrical substation, including the Coker crane substation.

3.4.9.2 Operations/Product Control will write permits for isolation of electrical equipment that directly feeds process equipment and cannot be isolated by Operations/Product Control.

3.4.9.3 The electricians being permitted to perform the work will assist with appropriate gas checks when Field Equipment Operators are not permitted to enter a substation.

3.4.10 Work in Adjacent Areas

3.4.10.1 In work locations where there is close proximity to tanks, equipment or lines under the jurisdiction of more than one complex, the person originating the permit shall contact all adjacent areas or complexes involved to determine that the projected work can be done safely without hazards and have the complex or area supervisor sign the permit.

3.4.11 Work in Areas with Unclear Ownership

3.4.11.1 In the event jurisdiction over a line is not clear, such as part way between two areas, the line shall be considered the responsibility of the complex, unit, or area from which the material flows.

3.4.11.2 In cases where an area is involved, such as the Maintenance access between complexes, the responsibility shall rest with the department or unit requesting the work to be performed.

3.4.11.3 Ownership of areas outside of process units and tank dikes is defined per Appendix B: Detroit Refinery Safe Work Responsibility Map.

3.4.11.4 Where work must occur in an Outlying Area with no clear owner, the nearest adjacent owners must make the determination as to who will issue the permits. If a conclusion cannot be determined, the Safety Department shall be consulted to assist in making the determination.

3.4.12 Scope Changes

3.4.12.1 If the scope of the work changes during the covered work permit period, the servicing representative(s) must stop work, and notify the owning department to verify the adequacy of equipment and site preparation for the change in work scope.

3.4.12.2 If the Owning Department approves the change in the scope of work, then the work permit must be updated to reflect the scope change and any new requirements as well as, verify the adequacy of safeguards and job site

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preparations, or a new permit must be written to cover the new scope of work.

3.4.13 Updating the Scope of a Permit

3.4.13.1 All adjustments must be made on both copies of the permit.

3.4.13.2 Boxes or line items that were checked and are no longer applicable shall be crossed out and the updater's initials shall be written adjacent to the line. Add wording to locations, companies/crafts, work descriptions, etc. as needed.

3.4.13.3 If significant updates or changes must be made or if the permit becomes confusing or unclear, the original permit shall be closed out and a new permit shall be obtained before continuing with the job. An example of a significant change includes updating a hot work or confined space work permit to cold work only status.

3.4.14 Crew Changes for Service Representatives

3.4.14.1 If the servicing representative(s) crew changes any time during the permit period, the relief servicing representative(s) Supervisor/Crew Leader must contact the owning department to inform them of the change. The permit must be updated to reflect the change of personnel.

3.4.14.2 The service representative supervisor/crew leader and the owning department must review the work permit with the new personnel and document the personnel change on the permit. If invasive, this discussion shall occur at the job site.

3.4.14.3 If the entire work crew is replaced by a work crew for a new shift (e.g. 24-hour coverage for turnarounds or upsets), the permit shall be closed out and a new permit written and joint job site visit performed for the new shift.

3.4.14.4 If a servicing group member needs to assist two or more different work crews working off of separate permits, then that servicing group member shall do the following:

- Only be signed in on one permit at a time.
- *Same Complex* – Sign in/out only on the hardcopy of the permit in the field.
- *Different Complex* – Sign in/out on the hardcopy and soft copy, notify the owning department, and sign in/out of the process unit log book.
- Receive a JJSV briefing from a servicing group member that participated in the original JJSV.
- Ensure that they are covered by the LOTO for that job by placing a personal lock on the lock box (if applicable).

Exceptions

- *Attendants (e.g. hot work, confined space, bottle watch, etc.) and crane operators may be signed in as a work crew member on multiple permits at the same time if they are working with more than one servicing group and/or work crew.*

- *If any other situation arises where it is infeasible for a servicing group member to only be signed on one permit at a time, then an exception may be made by the owning department. However, the servicing group must discuss and agree upon a process for ensuring the worker(s) is protected for both jobs (i.e. JJSV briefing and LOTO) with the owning department prior to starting work.*

3.4.15 Owning Department Shift Change During an Open Work Permit

3.4.15.1 If there is a shift change of owning department personnel involved with the work, both copies of the work permit must be updated with the name/signature of the oncoming owning department person and the work permit shall be revalidated if necessary.

3.4.15.2 At shift change, the Permit Writer shall inform his or her relief personnel of any active work ongoing in their unit or area and discuss the permit requirements.

3.4.15.3 Communication with the servicing representative(s) must be as thorough as when the original work permit was issued.

3.4.15.4 Relief owning department representatives shall visit the job site of any open permits upon their first available opportunity. A determination as to the need for additional gas testing or a re-validation is required.

3.4.16 Supervision Change of Service Representative(s)

3.4.16.1 In the event there is a change in the supervision of the service representative(s), the work permit must be reviewed by the owning department and the new service representative(s) supervisor/crew leader.

3.4.16.2 The oncoming service representative supervisor/crew leader must accept the conditions on the work permit and sign the field copy as an acknowledgement and acceptance of the permit conditions.

3.4.17 Job Status Notification

3.4.17.1 The servicing representative(s) will verbally inform the owning department of the job status prior to the close out of each permit.

3.4.17.2 The servicing group must also inform the owning department of the schedule for completion when the work will not be completed on the current shift.

3.4.18 Work Completion Notification

3.4.18.1 The servicing representative(s) shall inform the owning department when the work is complete or of the job status when the work will not be completed on the current shift.

3.4.18.2 When requested by the owning department, the owning department and servicing representative(s) shall then visit the work site to review the completed work and work site cleanup. See 3.6.13.1.1 Post Joint Job Site Visit.

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3.4.18.3 Regardless of whether this visit occurs, Section VII, or the Return of Equipment/Work Area- Job Completeness Section, on the Safe Work Permit shall then be completed by both groups.

3.4.18.4 When complete, the Owning Department and servicing representative(s) execute signoffs.

3.4.18.5 If discrepancies exist or the equipment does not appear ready for service, Operations should not sign off on the permit and should consult the servicing group before proceeding.

3.4.19 Revoking and Reinstating Permits

3.4.19.1 *Unexpected Hazards* - If a hazardous situation should develop during the course of work, the servicing representative(s) shall stop work immediately, summon assistance or correct the hazard, as appropriate, shut down any machinery or other source of ignition, as appropriate, and if necessary, leave the area. All work permits in the affected area shall be revoked. Atmospheric monitoring must be conducted, and a new permit written for permits that were revoked due to unexpected hazards occurring.

3.4.19.2 *Interruption by Operations* - When operating personnel find it necessary to open, unhead, or disconnect vessels or lines which are known or suspected of containing flammable or toxic liquids or vapors after a work permit has been issued, it is mandatory that all work permits in the affected area be temporarily recalled.

a. The recall is to assure that no work is being performed in the affected areas until it is determined that it is safe to return to work.

b. Additional gas tests are required prior to reissuing permits.

3.4.19.3 *Interruption by MPC Maintenance or Contractors* - When work is interrupted or delayed for more than two hours, it is the responsibility of the servicing group employee in charge of the work to confirm any atmospheric or other permit conditions have not changed and/or return the permit to the owning department if the work has been discontinued or terminated.

3.4.19.4 *Lack of Permit Hard Copy Display* – The Owning Department has the right to revoke permits and stop jobs if the permit hard copies are not displayed as required in Section 3.5 of this procedure. This enables atmospheric monitoring updates to be recorded on the hard copy of the permit.

3.4.19.5 *Transfer of Equipment Back to Owning Department* – If a job requires the servicing group to transfer the equipment or piping being worked on back to the Owning Department in order for them to complete certain job steps (i.e. steaming, purging, warm-up, etc.); then the Owning Department must perform an additional JJSV with the servicing group before allowing them to return to work on the equipment or piping. The requirement for an additional JJSV shall be listed in the “Notes” section of the servicing group’s safe work permit.

3.4.20 Permitting Multiple Crafts/Companies on a Permit

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3.4.20.1 Group permits are permitted under special circumstances but are not encouraged for most jobs. Group permits may be issued if the work to be performed is coordinated by the same person, all work scopes are recorded on the permit along with all responsible crafts and companies. The intended personal protective equipment (PPE) must be similar as well to avoid causing confusion.

3.4.20.2 A group permit may be issued when the job is known to require more than one craft and the work is under the control of the same MPC Coordinator.

3.4.20.3 Electricians performing lockout/tagout (LOTO) and rack out jobs can be included on group permits so long as the work scope includes that portion of the job.

3.4.21 Work Performed by Owner of Equipment

3.4.21.1 Hot work, confined space entry, flare work or electrical hot work performed by the Owning Department (e.g., Operator Performed Maintenance) must be permitted, no matter who performs the work. The Safe Work Permit shall be fully completed as if the task were being performed by the Servicing Group.

3.4.21.2 Any other work performed by the owner of the equipment, on jobs where energy isolation is required, must be done under lock out/tag out, unless the job is included in the “Minor Servicing Activities Matrix” – Appendix I of RSP-1121-010 or is considered “exclusive control” which only involves plug and cord equipment.

3.4.21.3 The following requirements shall be followed if Owning Department personnel will be conducting hot work:

a. The Operator(s) responsible for completing the hot work task cannot write or issue his/her own permit and shall sign the Safe Work Permit as the “Servicing Group Representative”.

b. The Operator authorizing the Safe Work Permit shall sign as the “Owning Department”.

c. The Shift Leader (person directly responsible for hourly employees) should be notified of the permit.

d. All other hot work requirements (e.g., LEL checks, fire watch, sewer covers, etc.) apply to Owning Department hot work.

e. Hot work associated with lighting a process heater (all fired process equipment including direct fired tank heaters) can be controlled by either a Safe Work Permit or an Operating Procedure.

f. Minimum requirements prior to introducing the ignition source to the process heater:

i. Gas testing must be completed to ensure, the firebox has been properly purged prior to lighting a burner, and the area surrounding the heater is safe to light a torch/flare to be used for lighting the heater.

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ii. For heaters with electronic ignition inside the firebox, the heater firebox requires gas testing prior to lighting the heater.

3.4.21 Preparation of Equipment

3.4.22.1 Equipment shall be de-energized and isolated as according to standard operating procedures and guidance from RSW-SAF-002-DT Energy Isolation.

3.4.22.2 Equipment to be removed from operating units or tank farms for repairs, normally shall be cleaned and made gas free. The permit writer is responsible to see that the equipment is free of all hydrocarbons, harmful substances, and is so stated on the permit. The permit writer shall inspect any equipment opened before it leaves the site to determine if additional cleaning is required.

3.4.22.3 The Maintenance or Contractor Foreman responsible for the equipment repairs shall inspect the equipment as it is further disassembled. These precautions are necessary to prevent an accident should hot work be performed on the equipment and to prevent work party members from coming into contact with corrosive or toxic chemical materials.

3.4.23 Invasive Work/Risk Assessment (RAM)- refer to SAF-078 Invasive Work

3.4.24 Requirements for Marking Locations for Invasive Work

3.4.24.1 A system shall be in place to positively identify and physically mark any location where a cut or primary process break will be made

3.4.24.1.1 A cut includes line cutting, hot taps, demolition work, drilling, tie-ins or any other activity where mechanical integrity will be compromised.

3.4.24.1.2 A primary process break is the point in an isolated system, adjacent to an energy isolation device, where the pressure containment will be opened at a connector (flange, union, piping nipple, tubing ferrule, etc.). Subsequent breaks in the same system that are not adjacent to another energy isolation device are not considered primary break points and therefore are not subject to the marking requirements laid out in this section.

Notes:

(1) Opening a valve is not considered a primary process break since this occurs in a reversible, controlled manner.

(2) The requirement to mark the location of the cut or primary process break does not apply to Approved Minor Servicing Activities (listed in Appendix I of RSP-1121-010) or systems that fall under the exclusive control exemption for Energy Isolation.

3.4.24.2 The following requirements must be part of the marking system:

3.4.24.2.1 The group responsible for developing the work scope that requires the primary process break or cut (typically Engineering or Maintenance) must attach a tag, or similar identifier (hereafter simply referred to as a tag), at the designated location.

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3.4.24.2.2 The Owning Department will verify the tag is in the proper location and sign and date the original tag or attach another tag with date and signature. This should be done during the Joint Jobsite Visit.

3.4.24.2.3 The Servicing Representative Group must verify that a signed tag is in place before each primary process break or cut is made. The Servicing Representative who will make the primary process break or cut must personally sign and date each tag just prior to work commencing.

Note: The Servicing Representative Foreman cannot sign in lieu of the Servicing Representative.

3.4.24.2.4 A representative of the Owning Department (typically the permit issuer) is required to be present at the first break or cut into a system to ensure that the Servicing Representatives are working on the correct piece of equipment and to facilitate a timely response to any unanticipated condition that may arise as the break is made. The Owning Department representative must be present until the pressure containment barrier is broken, but they do not need to remain at the jobsite through the entire disconnect process, nor are they required to be present for subsequent breaks in the same isolated system unless requested by the Servicing group. The Servicing Representatives are responsible for communicating with and ensuring that the Owning Department is present before proceeding with the first break.

Note: All personnel present at a process break must be out of the line of fire when the pressure barrier is broken.

3.4.24.2.5 If the work is not performed during the shift the tag was signed and dated, the tag(s) must be re-signed and dated by the Owning and Servicing groups. A new tag can be attached if desired.

3.4.24.2.6 During major turnarounds/shutdowns where equipment has been isolated with perimeter blinds, or for major demolition, identification of the primary process break or cut location may be handled differently through a separate procedure.

3.4.24.3 Blanket Work Permit

3.4.24.3.1 A blanket work permit may be issued to servicing representatives to perform work in multiple locations when the following conditions are met:

(a) The work remains under the responsibility of the operator that issued the original permit or a relieving operator.

(b) The work scope is the same at all locations and does not change once the work permit is approved and issued.

(c) The level of required personal protective equipment (PPE) and safeguards are the same for each work location.

(d) A Joint Job Site Visit (JJSV) is conducted at each work location.

Note: Work permits that specifically list or reference a list of multiple pieces of equipment or job locations are not considered blanket work permits. Some examples to clarify this include:

(1) "Repair of LDAR Leaks" would be considered a blanket permit. "Repair of LDAR leaks on valves at the top of Tank 55-5" would not be considered a blanket permit.

(2) "Pull and inspect relief valves" when perimeter blinds installed and unit is de-pressured and decontaminated, would be considered a blanket permit. "Pull and inspect PSV-3 and PSV-3B on the Cold Separator (69C-5)" would not be considered a blanket permit.

(3) A blanket work permit may be used to permit maintenance work that will be executed using an approved Maintenance Procedure (e.g., SIS system testing).

3.4.24.3.2 The following are examples of invasive tasks that may be conducted under a blanket work permit if given permission by owning department supervision:

Invasive Work when Perimeter Blinds Installed and Unit has been De-pressured and Decontaminated	**Invasive Work in an Operating Unit**
Removal/Installation of TI / Thermowells	Steam Trap Repair/Replacement
Removal/Installation of Control Valves	Steam Leak Repair
Removal/Installation of Orifice Plates	PM Flow/ DP Transmitters
Removal/Installation of Pressure Safety Valves (PSV)	PM ESD Testing
TAR Hot Bolting	

3.4.25 Work Permit Audits

3.4.25.1 The Safety Department will audit the Safe Work Permit Program at least annually to ensure that the program is either working as intended or should be modified to correct identified deficiencies.

3.5 PREPARATION FOR PERMITTED WORK & JOINT JOB SITE VISITS

3.5.1 Initiating the Safe Work Permit Process

3.5.1.1 A permit user representative will initiate the permit process by obtaining a permit and filling in any known information of the Job Information Section of the permit. When possible, this shall be done in advance and submitted to the owning department for review and equipment preparation.

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3.5.2 Joint Job Site Visit Responsibilities

3.5.2.1 Prior to beginning work, the permit user representative(s) will visit the permit writer to discuss the job scope and equipment preparation and assist in completion of the safe work permit.

3.5.2.2 The designated servicing representative(s) and owning department will perform a joint job site visit where they visit the job site together to:

- discuss site specific permit requirements,
- to ensure mutual understanding of the job scope and
- to verify proper equipment preparation for planned work.

3.5.2.3 The permit user(s) will be required to review the identified items that reflect the job scope and the job surroundings, and work conditions on the Safe Work Permit.

3.5.3 Mutual Understanding Required

3.5.3.1 The permit user(s) and permit writer must have a mutual understanding of the topics below to fulfill their responsibilities and to facilitate a safe work environment:

3.5.3.1.1 *Scope of Work* – Discussion about the scope of work must communicate information about the specific equipment involved and a description of the tasks to be performed.

3.5.3.1.2 *Preparation and Isolation of Equipment* – The degree of equipment preparation must match the scope of work planned. The permit writer will discuss the equipment to be worked on and the preparation of the equipment to be released with the permit user(s), isolation points for lock out/tag out, including verification of de-energization, and atmospheric testing done for hot work or to establish PPE requirements.. This will be discussed at the joint job site visit unless section 3.5.5 gives an exception. This is the owning department's main contribution.

3.5.3.1.3 *Job Tasks & Execution Requirements* – The permit user(s) must ensure the permit writer has complete understanding of the job's execution requirements during the joint job site visit. This will include discussion on:

- planned job steps for that shift,
- logistical arrangements required for job execution (e.g. crane placement, scaffold requirements),
- and special permit requirements.

3.5.4 Joint Job Site Visit Requirements

3.5.4.1 A permit user representative from each company or craft listed on the permit shall be present at the joint job site visit along with the owning department representative. The joint job site visit shall be performed at the work location prior to the start of work.

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3.5.4.2 The owning department representative and permit user representative(s) must perform a joint job site visit every day of every job unless one of the scenarios listed in section 3.5.5 apply.

3.5.4.3 After the joint job site visit has been performed, both the owning department representative and the servicing group representative that took part in the joint job site visit must sign their names in the space provided in the Required Signatures section. At a minimum, the signatures must be listed on the hard copy of the permit.

3.5.5 Typical Joint Job Site Visit Exceptions

3.5.5.1 If the permit user representative(s), permit writer, or other personnel request a joint job site visit, one shall be performed regardless of the exceptions listed below. Also, if the job is considered to be of an invasive nature or a confined space, a joint job site visit must occur regardless of the exceptions listed below.

3.5.5.2 Scenarios that do not normally require a joint job site visit include:

3.5.5.2.1 *Jobs Lasting Longer than One Day or Turnarounds*

a. Jobs that last longer than one day do not normally require joint job site visits on subsequent days if nothing has changed with the job or job site since the joint job site visit occurred on the first day of the job. However, if personnel or scope change, another Joint Job Site Visit must be conducted.

b. Owning Department shall inform the servicing representative(s) of any changes in conditions or work scope which would affect the job, or any operating emergency.

c. The permit writer shall still inform the permit user(s) of any changes in conditions which would affect the job. The permit user representative(s) shall inform the owing department of any changes to the work scope or work boundary.

d. A verification of equipment de-energization (lockout/tagout) is still required for each shift or if there are any changes in the isolation or isolated equipment. This requirement must be met with a joint job site visit or handled as a specific task at the beginning of the shift.

3.5.5.2.2 *Walk-Throughs or Monitoring Activity*

a. This would potentially include vibration monitoring, Volatile Organic Compound monitoring, cold work Ultrasonic Thickness monitoring and walk through to look a job over where no actual work is being done.

3.5.5.2.3 *Mowing & Weed Control*

a. A gas check must still be obtained in areas where mowing and weed control occur prior to the start of work and a mutual understanding must be obtained of any existing hazards (i.e. piping protruding from the ground, animal holes, etc.).

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3.5.5.2.4 *General site clean-up*

a. If it does not affect the operation of the equipment. At times (e.g. turnarounds) this work may receive a blanket cold work permit.

3.5.5.2.5 *Blanketed Cold Work*

a. Usually during turnarounds/shut downs some cold scaffold work is blanketed as building, modifying and dismantling scaffold throughout a unit.

b. Due to the unpredictability of where scaffold may be worked on during these times a general walk through/site visit may be necessary to alert servicing representatives to potentially hazardous situations in and near the turnaround/shut down area.

3.5.5.3 Consult with appropriate foreman/supervisor and safety if there are questions on work that can or cannot be permitted as blanket cold work.

3.6 COMPLETING THE SAFE WORK PERMIT

3.6.1 Items left blank on the Safe Work Permit shall be assumed to be not applicable to the job or task at hand. All efforts should be made by the Permit Writer and Permit User representative(s) to fill out every applicable line and section of the Safe Work Permit.

3.6.2 Follow the guidance listed below to complete the Safe Work Permit.

3.6.2.1 Regardless of whose responsibility it is to fill out these sections, all parties shall review all sections before signing the permit.

3.6.3 <u>Section I – Work Authorization</u>

3.6.3.1 *Date*: Enter date the work is to be done.

3.6.3.2 *Time Issued*: Enter the time that the work is authorized to begin.

3.6.3.3 *Time Expires:* Enter the time at which the permit expires.

3.6.3.4 *Permit Extension:* Enter permit extensions in the applicable line. Also ensure that all required signatures per the Signature Matrix in the Work Extension Signature column of the Required Signatures section of the permit. A determination as to the need for additional gas testing or a re-validation is required.

3.6.3.5 *Work Order Number*: Enter work order number (if applicable)

3.6.3.6 *Required Permits:* Identify applicable required permits such as hot work, cold work, or confined space entry. A permit cannot be both hot work and cold work. Vehicle entry is always a form of hot work that requires gas testing. Refer to the definition of vehicle entry for more information.

3.6.3.6.1 In open areas with hydrocarbon vapors present, the type of permit required will depend on the procedures, precautions taken and whether the tools and equipment utilized can produce an ignition

source. A judgment will need to be made by the owning department in each case with the following guidelines considered:

a. Cold work rules will apply if the work involved would not ordinarily create an ignition source.

b. Hot work rules will apply if it can be expected (even remotely) that the work could produce a source of ignition.

c. Additional safety precautions to the extent deemed necessary by the owning department, maintenance, or contractor, must be taken, depending on the individual task, hazards present, etc.

d. If there is any doubt as to the safety of the job, the owning department, maintenance foreman, contractor coordinator or safety personnel should be consulted.

3.6.3.7 *Operator Relief Change:* Identify the initials of the reliever and time of relief change as appropriate. Both copies of the permit must be signed with this information.

3.6.3.8 *Additional Permits:* Check the appropriate box(es) to identify additional permits that must be kept with the hard copy of the permit or check the sections N/A box to indicate that this section is not applicable.

3.6.3.9 *Emergency Contacts & Confined Space Rescue Personnel:*

3.6.3.9.1 Enter emergency contact information.

3.6.3.9.2 For jobs that are being supervised by an MPC Coordinator, enter the Marathon Coordinator's contact information.

3.6.3.9.3 List Confined Space Rescue team (if applicable) and each person's respective radio channel. Indicate the N/A box if a Confined Space Rescue Team is not applicable. Indicate that each member of the team has been verbally notified of their responsibility as part of the Confined Space Rescue Team.

3.6.4 Job Information Section

3.6.4.1 *Exact Location:* Identify precisely where the permitted work is to be performed (i.e. unit area, equipment number, etc.)

3.6.4.2 *Authorized Company/Contractor and Crafts*: Enter the name and craft of the company/contractor being given the authorization to perform the work. Indicate all applicable authorized crafts and companies in this section.

3.6.4.3 *Work Description*: List the specific work description of the work being authorized by the permit. Include multiple crafts' and/or companies' work scopes as necessary. Ensure that the work scope details what work will be completed as well as how the work will be completed, such as any tools or equipment necessary to complete the task.

3.6.4.4 *Potential Chemicals*: Identify all potential chemical hazards that may be encountered as per the joint job site visit.

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3.6.4.5 *Potential Hazards*: Identify all potential hazards that may be encountered by circling those that apply to the work being performed.

3.6.4.6 *Process Hazards Overview:* Identify if the process hazard overview pamphlets have been reviewed, where available.

3.6.5 Job Site Preparation

3.6.5.1 Check the appropriate boxes to indicate which preparatory actions have been taken to ensure that the equipment is ready for the work to be performed.

3.6.5.2 Write in what element(s) were used to purge equipment adjacent to the listing. List any neutralizing chemicals used to neutralize acids or bases above in the Potential /Chemicals section.

3.6.5.3 Indicate which lockout/tagout measures have taken place in preparation of the equipment. If no lockout/tagout measures were necessary for the job, indicate the N/A box under this column header to show this. Also indicate if the equipment being directly worked on is not isolated and ensure one of the reasons available (Troubleshooting, Visual Inspection, and/or Testing) for not isolated is marked. For work within process units or tank farms, indicate the location of the nearest emergency eyewash and shower equipment. For work outside of process units or tank farms, consider supplying temporary emergency eyewash and safety shower equipment.

3.6.5.4 The Isolation and Blind Lists for the equipment must always indicate the status of equipment isolation. Lists should be referenced by the permit writer and permit user representative(s) to ensure proper isolation has been completed prior to issuing a permit. Refer to RSW-SAF-002-DT Energy Isolation Procedure for more information.

3.6.5.5 Any additional potential sources of energy surrounding the equipment such as steam lines, electric or other tracing still in service must also be marked in this section.

3.6.5.6 *Radio Required (only intrinsically safe*)* references the definition of an intrinsically safe device as defined in RSW-SAF-053-DT Cell Phone, Pager and PDA Use and Restrictions Policy.

3.6.5.7 If the work taking place is invasive in nature, then Risk Assessment Matrix (RAM) check box must be marked and the section filled out. The RAM process does not need to be used if there is a procedure or fresh air list that applies to the invasive work being performed. Refer to RSW-SAF-078-DT Invasive Work for more information on the RAM process.

3.6.5.8 If a precaution is not listed on the permit, utilize the permit's "Other" lines to write in additional precautions or notes.

3.6.6 Personal Protective Equipment (PPE) & Related Requirements

3.6.6.1 The basic PPE required to enter a process unit, tank dike, or dock loading area is listed under the PPE & Related Requirements header. Check the appropriate boxes in this section to indicate which types of additional PPE must be worn in order for the job to be performed safely.

3.6.6.2 Circle the type of glove required based on the primary hazards of the work scope.

3.6.6.3 Electricians and permit writers shall determine the proper category/class of electrical PPE as required by the electrical equipment's flash hazard analysis label. Refer to RSW-SAF-064-DT Electrical Safety Program for more information on the flash hazard analysis.

3.6.6.4 For hazardous materials cleanup or other work, list the type of chemical clothing required to be able to safely complete the tasks. Consult with the Safety Department if there are any questions about the proper requirements.

3.6.6.5 All servicing representative(s) must comply with respiratory requirements under MIOSHA Part 451 Respiratory Protection, and must provide their own respiratory equipment and have their personnel properly trained in its use. More information on respiratory protection can be found by accessing the MRD's RSW-SAF-070-DT Respiratory Protection Plan.

3.6.6.6 Identify whether a bottle watch is needed for air-supplied respirator work. The bottle watch sign on/sign off shall be logged in the Fire Watch, Bottle Watch, and Confined Space Attendant Section on the back of the permit.

3.6.6.7 Utilize atmospheric monitoring results to determine the levels of respiratory protection required for any job. Indicate multiple cartridge respirators if required (i.e. Multi-gas AND particulate to protect user from both a hydrocarbon and dust or weld fume hazard). Direct any questions about respiratory requirements to the Safety Department.

3.6.7 Section II – Hot Work Section

3.6.7.1 This section is required for hot work jobs only. If the work scope entails no hot work, mark the N/A box to indicate this.

3.6.7.2 Check the appropriate box(es) to indicate type of hot work to be performed and the fire prevention requirements.

3.6.7.3 Each hot work permit must require adequate precautions that are specific for the job. Minimum requirements for any hot work permit include the identification of:

- the ignition source, or the source of the hot work,
- whether or not a hot work attendant (or fire watch) is required for the tasks, and
- a nearby means to extinguish a fire should one occur.

3.6.7.4 Precautions enlisted must be specific for the job, especially if the job is attended hot work. If the job is attended hot work, indicate the number of attendants (or fire watches) that are required for the job.

3.6.7.5 See definition of hot work for examples of attended and non-attended hot work.

3.6.7.6 When hot work is performed in a confined space utilizing cutting torches or inert gases, and the work is stopped, and the space vacated for more than

15 minutes, the torches and hoses (oxygen, acetylene, propane, argon, etc.) must be removed or the hoses disconnected from the regulators.

3.6.7.7 Hot tapping and welding on lines or equipment under pressure or not gas-freed requires special approval per the requirements of MRD's In-Service Welding and Hot Tapping Procedure (RSW-SAF-007-DT).

3.6.7.8 Access MRD's RSW-SAF-062-DT Hot Work Permit Procedure for more information on hot work and associated requirements, definitions and responsibilities.

3.6.8 Section III – Confined Space Precautions

3.6.8.1 This section is required for jobs that include some sort of confined space entry. If this section is not applicable, check the N/A box in the header to indicate this.

3.6.8.2 Check the appropriate boxes to indicate precautions that must be taken to ensure that confined space entry may be performed safely as per MRD's RSW-SAF-010-DT Confined Space Entry procedure.

3.6.8.3 Each confined space job is unique and should require adequate precautions to be able to safely enter and perform the work at hand. The minimum requirements for confined space entries include:

- Rescue Team Available
- Air Siren/Radio
- Confined space attendant(s) with vest
- Continuous air monitoring device
- Confined space entry status signs
- Safety harness & lifeline (unless waived by the Safety Department for inhibiting personal safety during entry)

3.6.8.4 The above precautions must be indicated in the Confined Space Precautions section along with any additional precautions that are specific for that space. List the number of confined space attendants required to safely monitor the entrants in the confined space.

3.6.8.5 Identify names and radio channels of available rescue team members on the front of the permit under the Emergency Contacts section.

3.6.9 The Confined Space Tracking Log

3.6.9.1 The intent of the Confined Space Tracking Log, , is to track the date, conditions, and required precautions for each confined space initial entry anticipated to last longer than one shift in order to ensure these same requirements can be transferred to subsequent permits.

3.6.9.2 The Confined Space Tracking Log shall be filled out and signed by a member of the Safety Department for every confined space anticipated to last longer than one shift during the initial confined space entry approval process. The initial confined space entry permit number must be associated with the Tracking Log.

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3.6.9.3 Once completed, the log shall be referenced by permit writers and all precautions listed on the Log shall be transferred over to the work permits for subsequent days of entry.

3.6.9.4 Precautions listed on the original log may be waived or updated by Safety Department personnel as the conditions of the confined space change. Any reduction of restrictions must be authorized and signed by the Safety Department.

3.6.9.5 Each log will be maintained by the owning department by logbook or other means of retention and will remain in the area from which permits are issued.

3.6.9.6 Once the confined space has been closed, the associated confined space tracking log shall be attached to the permit and turned in to Safety for proper document control and retention.

3.6.9.7 At the end of the year, any remaining confined space tracking logs shall be collected in December to be sent to the Safety Department for retention with December confined space permits.

3.6.10 Section IV – Atmospheric Monitoring

3.6.10.1 If this section is not applicable for the work at hand, the N/A box in the header of the section should be marked to indicate this.

3.6.10.2 Prior to the use of any detection equipment, the users must ensure that the gas detection device is properly calibrated, bump tested for use that shift, and in good working condition. See MRD's RSW-SAF-034-DT Portable Gas Detection Equipment Calibration procedure for more information on this matter.

3.6.10.3 Workers have the right to be present for initial testing as required by MIOSHA Part 90 Permit Required Confined Spaces if entry is being performed.

3.6.10.4 The information in RSW-SAF-025-DT Contaminant Thresholds and Conditions may be useful in completing the atmospheric testing for the job.

3.6.10.5 In all cases where there is a possibility of oxygen deficiency or of any vapors, gases, mists, fumes, pH or other hazardous substances being present, an appropriate atmospheric test must be made to determine if any harmful concentration levels exist in the work area.

3.6.10.6 The testing must be completed prior to issuing the applicable work permit and the results communicated to all personnel involved via documentation on the work permit.

3.6.10.7 The gas test must be taken within two hours prior to the start of work but should be taken in as short of time as practical prior to the start of work.

3.6.10.8 When work is not started within two hours of the time the gas tests were taken, another test must be made with results shown and signed by the person making the second test.

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3.6.10.9 Testing must be made in an area that provides a representative sample of employee exposure and/or reflects the condition of the equipment being worked on.

3.6.10.10 Initial test results and the time taken shall be recorded in the appropriate column on both the soft copy and the field copy and initialed by the person making the test. Record the identification number and indicate that the monitor has been bumped within the last 12 hours for the atmospheric monitoring device used for the test.

3.6.10.11 Any additional atmospheric monitoring need only be recorded on the field copy. Before submitting the permit to the Safety Department for retention, the soft copy of the permit should be updated with all the additional atmospheric monitoring tests listed on the field copy.

3.6.10.12 Additional atmospheric monitoring must be made at 5-hour intervals, never to exceed 6 hours between checks. If a change in conditions occurs that could impact the work or if requested by the Servicing Group, an additional gas check is required.

3.6.10.13 Gas checks are a shared responsibility among the Owning Dept, and the Servicing Group however the owning department is accountable to conduct the gas check. They must be aware of how many hot work or confined space permits are in their area of responsibility and must identify if a permit is not available for subsequent gas checks.

3.6.10.14 If a permit is not available for a gas check the owning dept must document the gas check on the soft copy of the permit and note that the permit was not located. They must then contact the servicing group to shut down the work until a gas check is obtained.

3.6.10.15 The safe work permit must always be accessible by the Owning Department. The Servicing Group is accountable to ensure that the permit is posted at the job site and left onsite, including during lunches and breaks.

3.6.10.16 If the Servicing group has not received a subsequent gas check, the servicing group must stop work and obtain a gas check from the Owning Dept.

3.6.10.17 Always consider continuous atmospheric monitoring if it is suspected that conditions may change.

3.6.11 Atmospheric Monitoring and Hot Work Restrictions

*3.6.11.1 No hot work will be allowed if the LEL is greate*r than 10% LEL.

3.6.11.2 If the concentration exceeds 0% LEL the permit writer must describe the source of the flammable vapors and the control strategy in the “Other Permit Requirements, Precautions, or Notes” section.

3.6.11.3 The use of steam, nitrogen, CO_2 or other means of keeping the immediate work area out of the flammable range must be approved by the owning department.

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3.6.12 *Atmospheric Monitoring and Confined Space Hot Work Restrictions*

3.6.12.1 In confined spaces, hot work can only be performed if the LEL in and immediately around the confined space is 0%.

3.6.12.2 Cold work confined space entry can still take place between 0-10% LEL, with additional precautions. see RSW-SAF-025-DT Contaminant Thresholds and Conditions and SAF-010 Confined Space Entry

3.6.13 *Continuous Atmospheric Monitoring Requirements*

3.6.13.1 Check the box indicating whether or not atmospheric testing must be continuous. Conditions that may require continuous monitoring include but are not limited to confined space entry, camera use, and instrument analyzer buildings that are backed up by nitrogen (plant air) at the Detroit Refinery.

3.6.13.2 The sampling point of the continuous atmospheric monitoring device must be representative of the entrant(s) breathing zone(s). The location of the continuous atmospheric monitoring device must be listed on the Safe Work Permit.

3.6.14 Section V – Required Signatures and Joint Job Site Visit Sign-off

3.6.14.1 Signatures and pic codes (MPC employees) or badge numbers (contractors) from all applicable Responsible Persons indicated in the Signature Matrix must be obtained to validate the conditions specified on the permit. Refer to definitions in section 4.0 for descriptions of these Responsible Persons. These signatures must be visible on both the soft and hard copies of the permit. See section 3.1.1 for Owning Department Supervisor required signature.

3.6.14.2 *Joint Job Site Visit*: The owning department representative and Servicing Group representative that take part in the joint jobsite visit must sign off in the space provided after the joint jobsite visit has been completed. At a minimum, the signatures must be listed on the hard copy of the permit.

3.6.14.3 If a Joint Job Site Visit is not required, the reason for the exception must be listed in this section. See section 3.5.5 for the work scenarios that may not require a joint job site visit.

3.6.14.4 The permit writer must also indicate whether or not the permit users must participate in a post joint job site visit prior to closing out their permit.

3.6.14.5 Once all of the signature requirements referenced above have been met; the owning department will give the hard copy of the permit to the permit user and work may begin.

3.6.14.6 The authorization signatures ensure coordination and control of the work and are a form of agreement between the Safe Work Permit issuer and all personnel involved with the work.

3.6.15 Section VI – Additional Personnel

3.6.15.1 *Accounting for Personnel Working from the Permit*

3.6.15.1.1 Legibly print each work party representative's name to work under this permit for personnel accounting purposed during an emergency.

3.6.15.1.2 Persons signing in the Required Signatures section who intend to work on the job site under the permit must be listed in this area as well.

3.6.15.1.3 Both copies of the permit must reflect all personnel working on the job site under the permit.

3.6.15.1.4 A crew leader or other designated member of a work crew who is joining a job in progress must place his or her name in this section on both copies to verify that the permit conditions are understood and accepted. See 3.4.14

3.6.15.2 Larger Work Party Accountability

3.6.15.2.1 In the case that more workers are present than there are spaces for workers to be listed on the permit, Additional Personnel Form must be used to effectively document workers' presence.

3.6.15.2.2 Only this form may be used for this purpose. Always use the spaces provided on the permit first before resorting to using the Additional Personnel Form.

3.6.15.2.3 One copy of this document must be attached to the soft copy of the permit and must remain with the permit writer the other copy must remain with the permit hard copy.

3.6.15.3 Work Party Members Joining the Job in Progress

3.6.15.3.1 Obtain applicable names/signatures from each work party crew/craft leader or representative who joined a job in progress to certify that the requirements specified on the permit have been effectively communicated to members of the work crew who joined the job in progress. See 3.6.12.1.4 and 3.4.14

3.6.16 Section VII – Return of Equipment/Work Area Job Completeness

3.6.16.1 Communication Requirements for Job Close-Out

3.6.16.1.1 At the conclusion of the job or before the permitted time expires, the work party must contact the owning department and inform them of the status of the permitted work.

3.6.16.1.2 A post joint job site visit must be performed with the owning department at the job site prior to the close-out of the permit if this requirement is indicated in the Job Information section of the permit. Refer to RSW-SAF-066-DT Fall Protection's grating, decking, and floor removal for mandatory post joint job site visit requirements when creating a hole or penetration in a working surface.

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3.6.16.2 Completing the Return of Equipment/Work Area Job Completeness Section

3.6.16.2.1 The field copy of the permit must be returned to the owning department and realigned with the soft copy of the permit to initiate the Return of Equipment/Work Area process.

3.6.16.2.2 The Job Status shall only be marked incomplete if the work performed does not fulfill the work scope described in the Work Description. See section 3.6.4.3.

3.6.16.2.3 The permit user representative(s) must indicate the status of the job, the removal of personal lockout/tagout devices, and whether site cleanup has been completed on the permit.

3.6.16.2.4 The permit user representative(s) must also indicate whether there are any comments associated with work and note these comments in the Debriefing Section on the bottom of the back side of the permit. Comments in the Debriefing Section are mandatory for every Confined Space Entry.

3.6.16.2.5 Obtain signatures from a permit user representative.

3.6.16.2.6 The owning department must sign off the permit within 24 hours to certify that the permit has been fully terminated. Record the time of both signatures.

3.6.16.2.7 The owning department sign off signifies the permit has been returned and the owning department has been made aware of the status of the work via the Return of Equipment/Work Area Job Completeness section filled out by the permit user.

3.6.16.3 Right to Deny Acceptance

3.6.16.3.1 The owning department may deny the returned area or equipment for reasons including but not limited to:

- if the permit's hard copy was not returned,
- if proper housekeeping did not occur,
- the post joint job site visit did not occur as requested,
- the equipment was unsafely returned after maintenance,
- or for other significant problems with the permit.

3.6.16.3.2 If a permit's acceptance back is denied, this should be indicated by the owning department on the top copy or front of the permit.

3.6.16.3.3 The reason for denial must be listed on the back of the permit in the Return of Equipment/Work Area- Denial of Acceptance section. Any mitigation or corrective actions must also be documented in this section,

3.6.16.3.4 To complete the denial of acceptance the Owning Department supervision must acknowledge the denial by signing off in the "Return of Equipment/Work Area- Denial of Acceptance" section.

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3.6.16.3.5 Denied permits cannot be sent to the Safety Department for retention until the deficiencies causing the permit's denial of acceptance back have been addressed by the owning department's supervisory personnel or their designee.

3.6.16.3.6 The permit may be sent to Safety for retention once any deficiencies have been addressed and noted as such on the permit.

3.6.17 Instructions to Complete the Work Permit (Top, Back of Permit)

3.6.17.1 Work permits include instructions for permit completion. If there are variations between the instructions on the back of the permit or variations on the permit itself and the information in this procedure, this procedure's language shall be followed.

3.6.17.2 The permit's instructions list responsible parties for filling out the sections of the permit. These responsible parties are also listed in this document in the definitions section of this procedure.

3.6.18 Entrants Log

3.6.18.1 Authorized entrants must be logged in and out each time the confined space is entered or exited.

3.6.18.2 All confined space entrants must be trained as defined in MRD's RSW-SAF-010-DT Confined Space Entry Procedure to meet entrant requirements.

3.6.18.3 Entrants are responsible for reviewing the job site conditions and permit requirements prior to entry into a confined space.

3.6.19 Entry Supervisor Sign On/Off

3.6.19.1 Each permit must identify by name the Entry Supervisor for the confined space entry.

3.6.19.2 In the event there is a change in the Entry Supervisor, the original Entry Supervisor must inform the new Entry Supervisor of the requirements of the permit. The change in Entry Supervisors must be noted on the permit.

3.6.20 Attendant Sign On/Off

3.6.20.1 Each permit must identify by name all hot work attendants (or fire watches), bottle attendants (or bottle watches), and confined space attendants (or hole watches).

3.6.20.2 These personnel must list the date and each time period they serve as an attendant in this role.

3.6.20.3 Fire watch attendants must initial next to the check box to acknowledge understanding that they shall remain on-site or be replaced by another fire watch for 30 minutes after the last spark was thrown, at any breaks, lunch, and at job's end.

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3.6.21 Debriefing Section

3.6.21.1 Each servicing representative craft or company shall comment during debriefing on conditions confronted or created during the permitted work if applicable.

3.6.21.2 This section's completion is mandatory for all confined space entries, but is recommended for any work requiring attendants.

3.7 DISPLAY AND HANDLING OF SAFE WORK PERMITS

3.7.1 Once issued, the soft copy of each Safe Work Permit must be kept with the permit writer in a designated area for permit writing.

3.7.2 The field copy of each work permit must be securely fastened to the piece of equipment being maintained. If this is impractical, it shall be posted at a point immediately adjacent thereto and shall always be clearly visible while the work is in progress.

3.7.3 For mobile work sites (e.g. mowing grass, grading roadways, vehicle entry only, etc.), the field copy of the Safe Work Permit must be with the individual who requested the permit.

3.7.4 For vehicle entry, see 3.3.1.2.

3.7.5 Following permit Return of Equipment/Work Area Job completions, the field copy and soft copy must be returned to the appropriate Owning Department and realigned together.

3.7.6 Permits shall be reviewed for accuracy by an owning department supervisor, and then forwarded to the Safety Department and filed per the records retention policy (see section 3.4.5).

3.7.7 If the field copy is damaged, lost, or missing the soft copy must be immediately closed out and a new Safe Work Permit must be obtained.

4.0 DEFINITIONS

4.1 Blanket Work Permit - Blanket Work Permit is a work permit that allows a servicing group to perform work in multiple locations within a unit. Permits that list all of the individual pieces of equipment to be worked on are not considered blanket permits.

4.2 Blinding - Blinding is the absolute closure of a pipe, line, or duct, by fastening across its bore a solid plate, plug, or cap which: a) completely covers the bore, (b) extends at least to the outer edge of a flange's mating surfaces, and (c) is capable of withstanding the maximum upstream system pressure. Examples of Blinds: A blank, slip plate, blind flange, cap, and/or physical disconnect.

4.3 Cold Work - Maintenance, repair, cleaning, or construction activity, not requiring the use of fire, hot surfaces, spark producing equipment, or electrical equipment that's not classified for use in the area. Also, see the definition of hot work.

4.4 Competent Person (for an excavation) - Marathon or contractor person who can identify existing and predictable hazards in and around the excavation and who has the authority to take prompt and corrective measures to eliminate them. This person has

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also received specialized training to identify hazards associated with excavations, shoring, and trenching amongst other excavation hazards.

4.5 Contractor Coordinator - Normally the Marathon Petroleum Company LP (MPC) employee in charge of coordinating contract companies on jobs. However, on new construction projects, the construction management coordinator hired by MPC shall be designated as the Marathon Contractor Coordinator.

4.6 Confined Space - Is large enough and so configured that an employee can bodily enter and perform assigned work. It is not designed for continuous employee occupancy and has limited or restricted means for entry or exit (for example, tanks, vessels, towers, sewers, excavations 4 feet deep, vessel skirts unless identified as otherwise, vaults, and pits are spaces that may have limited means of entry). See RSW-SAF-010-DT Confined Space Entry for further information. Energized Electrical Work - Work performed on exposed energized parts involves either direct contact or contact by means of tools or materials and to work that is performed near enough (as defined by NFPA 70E) to energized parts for employees to be exposed to any hazard the parts present. Exceptions to the energized work permit include any work being performed near live parts related to testing, troubleshooting, taking voltage or amperage measurements, and visual inspection (note the Restricted Approach Boundary cannot be crossed). For more information please see RSW-SAF-064-DT Electrical Safety Program.

4.7 Energy Isolation – See RSW-SAF-002-DT Energy Isolation Procedure.

4.8 Entry supervisor - the properly trained Marathon Servicing Group Foreman, Contractor Coordinator, Contractor Foreman, or any equivalent acting supervisor responsible for determining if acceptable entry conditions are present at the permit space where entry is planned, for authorizing entry and overseeing entry operations, and for terminating entry as required.

4.9 Group Permit – a safe work permit where one or more craft or company is listed jointly as the authorized company or craft on the permit.

4.10 Hazardous Atmosphere - An atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to self-rescue (that is, escape unaided from a permit space), injury, or acute illness. See RSW-SAF-025-DT Contaminant Thresholds and Conditions for a compilation of normally encountered vapor and gas hazards at a refinery.

4.11 Hot Tapping - The practice of installing a valve connection and then drilling or cutting into the pipe or equipment, through the valve connection, while the pipe or equipment is in service or has not been purged (hydrocarbon gas freed). RSW-SAF-007-DT In-Service Welding and Hot Tapping Procedure covers detailed permit requirements for hot taps.

4.12 Hot Work – Repair, maintenance or construction activity, which requires the use of spark-producing equipment or may create an ignition source. Detroit Refinery has designated the areas that require hot work permits and whether the hot work requires a designated hot work attendant (or fire watch) during the hot work.

4.12.1 *Attended hot work*, or work that requires a fire watch, for examples please see RSW-SAF-062 Hot Work

4.12.2 *Non-Attended hot work*, or work that does not require a fire watch for examples please see RSW-SAF-062 Hot Work

4.12.3 Hot tapping and welding on lines or equipment under pressure or not gas-freed requires special permit following the requirements of RSW-SAF-007-DT In-Service Welding and Hot Tapping Procedure.

4.13 Inert Confined Space – RSW-SAF-054-DT Inert Confined Space Entry Procedure

4.14 In-Service Welding - The practice of welding on pipe or equipment (e.g., tank, vessels, exchangers, etc.) which is in-service or has not been purged (gas freed) through conventional methods. This includes grinding, burning, and welding for any purpose, such as adding brackets, shoes, boxing in leaks, adding weld-o-lets and back welding fittings. RSW-SAF-007-DT In-Service Welding and Hot Tapping Procedure covers detailed permit requirements for in-service welds for this activity.

4.15 Invasive Work – Any work that expects to require exposure to the internals of a vessel, pump, exchanger or any other piece of refinery equipment.

4.16 Issued Work Permit- A completed permit that has been signed by all required parties indicating work can begin.

4.17 Joint Job Site Visit - A meeting between an owning department representative and at least one servicing representative of all parties working off of the permit at the specific location where the job will be conducted. The meeting discussion will address the work scope and all safety aspects of the permit. The servicing representative that attends the joint job site visit must convey the information covered in the joint job site visit to all members of their work party.

4.18 Operations Contractor – A company that is contracted by MRD to operate part(s) of MRD's refining process (e.g. Veolia operating the centrifuge or Savage operating the Coker).

4.19 Outlying Area: An area that is not owned by Operations or Product Control personnel. Owning Departments for outlying areas have been assigned per the Permit Responsibilities for Outlying Areas Map shown in Appendix B of this procedure.

4.20 Owning Department - The term "owning department" refers to the department that owns and operates process, process-related, and/or utility equipment, machinery, building, and/or systems. This term is also applied for individuals that are assigned ownership of outlying areas per Appendix B: Permit Responsibilities for Outlying Areas Map.

4.21 Owner Supervisor/Designee: The Marathon owning department's supervisor. This may be the day foreman, shift foreman, step up, operations/maintenance coordinator, or another owning department employee that is designated by their Supervisor. For confined space work outside of process units and tank farms this person can be the Supervisor/Designee of the department responsible for permitting in that area. This may not be the same person as the Permit Writer.

4.22 Oxygen Deficient Atmosphere – Any atmosphere containing less than 19.5% oxygen by volume.

4.23 Permit User Representative- The member(s) of the servicing group who will be working from the permit or who represents the personnel working on the permit.

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4.24 Permit User Supervisor- the person who directs personnel in carrying out specific tasks and to whom the permit user directly reports

4.25 Permit Writer- The member of the Marathon owning department who writes the permit. This person can also be a non-Marathon writer only if pre-approved by Marathon Safety and is properly trained in Marathon's permit writing system.

4.26 Process Break - Process Break is the opening of a process system to the atmosphere for the purposes of maintenance or new construction. Examples: Separating flanges and opening exchangers. Non Examples: Operational venting, draining, purging, etc., of equipment.

4.27 Responsible Persons – These include the Permit Writer, Owner Supervisor, Permit User Representative, Permit User Supervisor, MPC Contractor Coordinator, Competent Person, and Safety Representative for the job-specific task, area, or contractor.

4.28 Routine – As in an employee's routine tasks or jobs; these are those work activities the employee regularly performs (i.e. daily, weekly, several times a month). Tasks or jobs that are infrequently performed or not routine may require a safe work permit (i.e. infrequent jobs that may require respiratory protection or that introduce additional hazards).

4.29 Safe Work Permit - The Safe Work Permit is a work-authorizing process and record that is managed, prepared and issued by the Refining department that "owns" the equipment or is responsible for the area before certain work is conducted. Notes: (1) It authorizes a specific scope of work for a specific time frame and is a prerequisite for performing work. (2) It is used to assess hazards and to document requirements and conditions such as atmospheric monitoring results, personal protective equipment, confined space details, work requirements (e.g., hot tap, excavation, critical lift), emergency communications, and other potential hazard mitigation means and methods.(3) The authorization coordinates and controls the work and is a form of agreement between the Safe Work Permit issuer and all personnel involved with the work.

4.30 Safety Representative –Marathon (or Marathon directly supervised contractor) Safety Professional.

4.31 Servicing Representative(s) - The people who are working on the equipment/process. This may include operations, blending shipping, maintenance, contractors and salaried employees.

4.32 Stoppling - The practice of using a device (stopple) through a hot tap connection to isolate a section of pipe for repair and/or revision without depressurizing or purging. SAF-007 In-Service Welding and Hot Tapping Procedure covers detailed permit requirements for stoppling, as appropriate.

4.33 Vehicle Entry – Defined as any passage of a motorized vehicle across the battery limits of an operations complex, into a tank farm diked area, or into any area where classified electrical equipment is required. Vehicle entry is a form of non-attended hot work.

4.34 Work Party – Includes all personnel whose tasks are covered by the work permit.

4.35 Work Permit Extensions - The extension of the work permit by the owning department at the end of the maintenance shift or at the end of 12 hours. As conditions warrant, a work permit may be extended one time, for a period of 12 hours but not exceeding 24 hours in total.

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4.36 Work Scope – The type and detailed description of the work to be performed including the equipment to be worked on and the personnel performing the work.

5.0 REFERENCES

5.2 MIOSHA Part 451 Respiratory Protection Program

5.3 MIOSHA Part 90. Confined Space Entry

5.4 Refining Standard Practice. RSP-1128-000 Safe Work Permit

5.5 SAF-002 Energy Isolation Procedure

5.6 SAF-007 In-Service Welding and Hot Tapping Procedure

5.7 SAF-008 Blinding/Line Breaking Requirements

5.8 SAF-010 Confined Space Entry

5.9 SAF-034 Portable Gas Detection Equipment Calibration Procedure

5.10 SAF-053 - Cell Phone, Pager and PDA Use and Restrictions Policy

5.11 SAF-054 Inert Confined Space Entry Procedure

5.12 SAF-062 Hot Work Permit Procedure

5.13 SAF-066 Fall Protection

5.14 SAF-070 Respiratory Protection Plan

5.15 RSW-SAF-025-DT Contaminant Thresholds and Conditions

5.16 RSW-SAF-078-DT Invasive Work

6.0 ATTACHMENTS

6.1 RSW-SAF-006-Form01-DT Additional Signatures Form

6.2 RSW-SAF-006-Form02-DT Confined Space Tracking Log

6.3 RSW-SAF-006-Form03-DT Required Signatures Bulletin

6.4 Appendix A - Safe Work Permit (front & back)

6.5 Appendix B – Safe Work Permit Responsibility Map

7.0 BULLETINS AND POSTERS

7.1 RSW-SAF-006-P001-DT Joint Jobsite Visit Poster

7.2 RSW-SAF-066-P002-DT Joint Jobsite Visit Refresher

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7.3 RSW-SAF-006-P003-DT Permit Hazards

7.4 RSW-SAF-006-P004-DT Gas Check Update

8.0 REVISION HISTORY

Revision #	Description of change	Written by	Checked by	Effective date
36	Update Procedure to reflect RSP-1128-000 added sections: 3.4.21 Work Performed by Owner of Equipment; 3.4.24 Requirements for Marking Locations for Invasive Work, 3.4.25 Blanket Work and added corresponding definitions.	A. Hetu	J. Rabideau	7/10/18
37	Lift gas check requirement for outlying areas Added mid-shift gas check language to accommodate 4-10's and 12-hour shifts.	S. Kumpar	Steering Committee June 2019	7/1/2019
38	Clarification to subsequent gas check frequency. 5-hour gas checks, not to exceed 6 hours.	S. Kumpar	Al Morales	7/2/2019
39	Added guidance for Electricians to write safe work permits in electrical substations Confined Space Tracking log updated with additional gas tests, RAM score and qualified entry during lightning	T. Brown	Al Morales	2/1/2020
40	Clarification for Owning Department Supervisor signature and Permit User Supervisor signature requirement	T. Brown	Al Morales	4/9/2020

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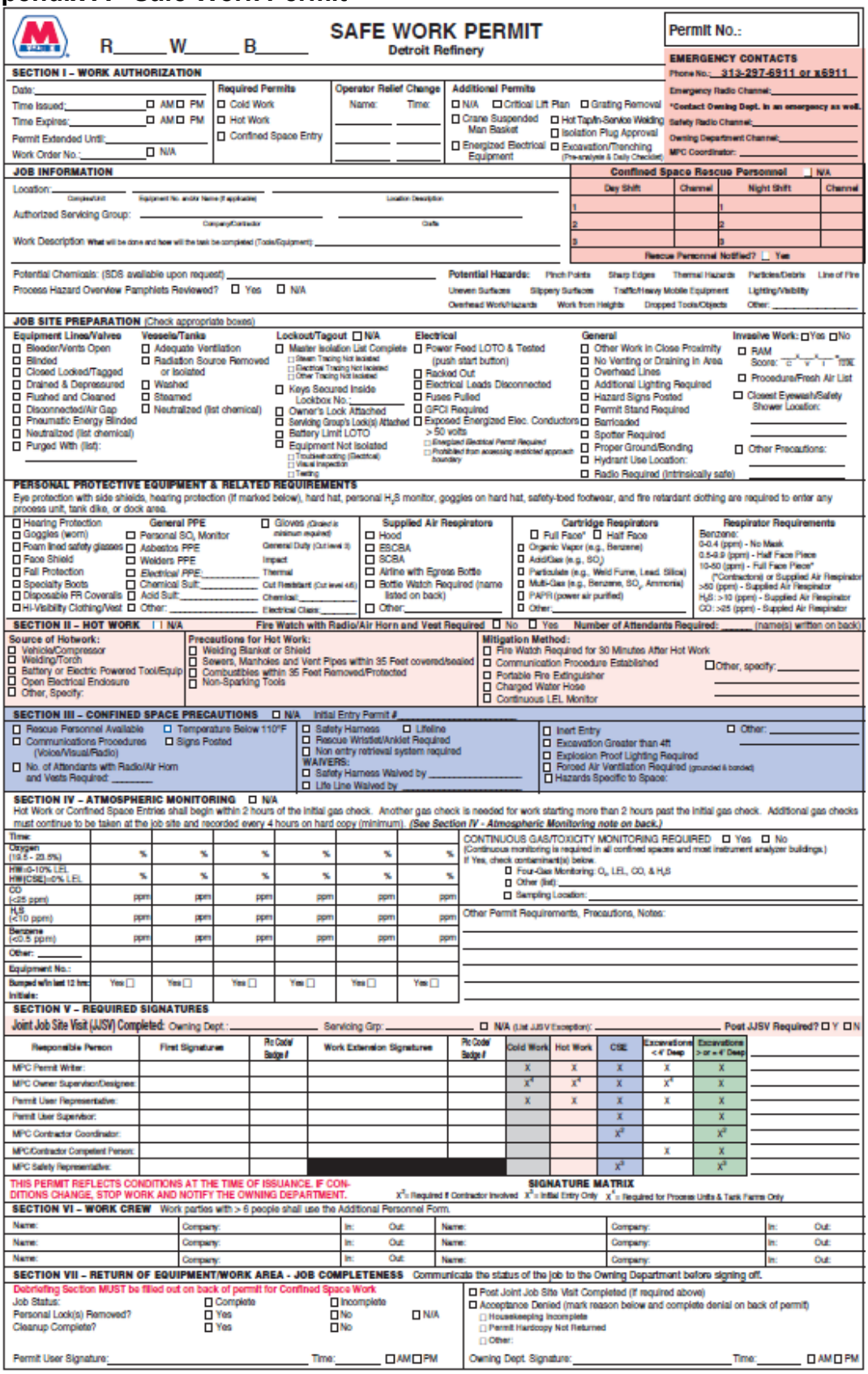
Appendix A –Safe Work Permit



SAFE WORK PERMIT
Detroit Refinery

R_____ W_____ B_____

Permit No.:

EMERGENCY CONTACTS
Phone No.: 313-297-6911 or x6911
Emergency Radio Channel:
*Contact Owning Dept. in an emergency as well.
Safety Radio Channel:
Owning Department Channel:
MPC Coordinator:

SECTION I – WORK AUTHORIZATION

Date:
Time Issued: ☐ AM ☐ PM
Time Expires: ☐ AM ☐ PM
Permit Extended Until:
Work Order No.: ☐ N/A

Required Permits: ☐ Cold Work ☐ Hot Work ☐ Confined Space Entry

Operator Relief Change — Name: Time:

Additional Permits: ☐ N/A ☐ Critical Lift Plan ☐ Grating Removal ☐ Crane Suspended Man Basket ☐ Hot Tap/In-Service Welding ☐ Isolation Plug Approval ☐ Energized Electrical Equipment ☐ Excavation/Trenching (Pre-analysis & Daily Checklist)

JOB INFORMATION

Location: (Complex/Unit) (Equipment No. and/or Name (if applicable)) (Location Description)
Authorized Servicing Group: (Company/Contractor) (Clock)
Work Description: What will be done and how will the task be completed (Tools/Equipment):

Confined Space Rescue Personnel ☐ N/A

Day Shift	Channel	Night Shift	Channel
1		1	
2		2	
3		3	

Rescue Personnel Notified? ☐ Yes

Potential Chemicals: (SDS available upon request)
Process Hazard Overview Pamphlets Reviewed? ☐ Yes ☐ N/A

Potential Hazards: Pinch Points, Sharp Edges, Thermal Hazards, Particles/Debris, Line of Fire, Uneven Surfaces, Slippery Surfaces, Traffic/Heavy Mobile Equipment, Lighting/Visibility, Overhead Work/Hazards, Work from Heights, Dropped Tools/Objects, Other:

JOB SITE PREPARATION (Check appropriate boxes)

Equipment Lines/Valves
☐ Bleeder/Vents Open
☐ Blinded
☐ Closed Locked/Tagged
☐ Drained & Depressured
☐ Flushed and Cleaned
☐ Disconnected/Air Gap
☐ Pneumatic Energy Blinded
☐ Neutralized (list chemical)
☐ Purged With (list):

Vessels/Tanks
☐ Adequate Ventilation
☐ Radiation Source Removed or Isolated
☐ Washed
☐ Steamed
☐ Neutralized (list chemical)

Lockout/Tagout ☐ N/A
☐ Master Isolation List Complete
☐ Steam Tracing Not Isolated
☐ Electrical Tracing Not Isolated
☐ Other Tracing Not Isolated
☐ Keys Secured Inside Lockbox No.:
☐ Owner's Lock Attached
☐ Servicing Group's Lock(s) Attached
☐ Battery Limit LOTO
☐ Equipment Not Isolated
☐ Troubleshooting (Electrical)
☐ Visual Inspection
☐ Testing

Electrical
☐ Power Feed LOTO & Tested (push start button)
☐ Racked Out
☐ Electrical Leads Disconnected
☐ Fuses Pulled
☐ GFCI Required
☐ Exposed Energized Elec. Conductors > 50 volts
☐ Energized Electrical Permit Required
☐ Prohibited from accessing restricted approach boundary

General
☐ Other Work in Close Proximity
☐ No Venting or Draining in Area
☐ Overhead Lines
☐ Additional Lighting Required
☐ Hazard Signs Posted
☐ Permit Stand Required
☐ Barricaded
☐ Spotter Required
☐ Proper Ground/Bonding
☐ Hydrant Use Location:
☐ Radio Required (Intrinsically safe)

Invasive Work: ☐ Yes ☐ No
☐ RAM Score: C ___ V ___ I ___ TRIR
☐ Procedure/Fresh Air List
☐ Closest Eyewash/Safety Shower Location:
☐ Other Precautions:

PERSONAL PROTECTIVE EQUIPMENT & RELATED REQUIREMENTS
Eye protection with side shields, hearing protection (if marked below), hard hat, personal H_2S monitor, goggles on hard hat, safety-toed footwear, and fire retardant clothing are required to enter any process unit, tank dike, or dock area.

☐ Hearing Protection
☐ Goggles (worn)
☐ Foam lined safety glasses
☐ Face Shield
☐ Fall Protection
☐ Specialty Boots
☐ Disposable FR Coveralls
☐ Hi-Visibility Clothing/Vest

General PPE
☐ Personal SO_2 Monitor
☐ Asbestos PPE
☐ Welders PPE
☐ Electrical PPE:
☐ Chemical Suit:
☐ Acid Suit:
☐ Other:

☐ Gloves (Chosen to minimum required)
General Duty (Cut level 1)
Impact
Thermal
Cut Resistant (Cut level 4/5)
Chemical:
Electrical Class:

Supplied Air Respirators
☐ Hood
☐ ESCBA
☐ SCBA
☐ Airline with Egress Bottle
☐ Bottle Watch Required (name listed on back)
☐ Other:

Cartridge Respirators
☐ Full Face* ☐ Half Face
☐ Organic Vapor (e.g., Benzene)
☐ Acid/Gas (e.g., SO_2)
☐ Particulate (e.g., Weld Fume, Lead, Silica)
☐ Multi-Gas (e.g., Benzene, SO_2, Ammonia)
☐ PAPR (power air purified)
☐ Other:

Respirator Requirements
Benzene:
0-0.4 (ppm) - No Mask
0.5-9.9 (ppm) - Half Face Piece
10-50 (ppm) - Full Face Piece*
(*Contractors) or Supplied Air Respirator
>50 (ppm) - Supplied Air Respirator
H_2S: >10 (ppm) - Supplied Air Respirator
CO: >25 (ppm) - Supplied Air Respirator

SECTION II – HOT WORK ☐ N/A — Fire Watch with Radio/Air Horn and Vest Required ☐ No ☐ Yes — Number of Attendants Required: _____ (name(s) written on back)

Source of Hotwork:
☐ Vehicle/Compressor
☐ Welding/Torch
☐ Battery or Electric Powered Tool/Equip
☐ Open Electrical Enclosure
☐ Other, Specify:

Precautions for Hot Work:
☐ Welding Blanket or Shield
☐ Sewers, Manholes and Vent Pipes within 35 Feet covered/sealed
☐ Combustibles within 35 Feet Removed/Protected
☐ Non-Sparking Tools

Mitigation Method:
☐ Fire Watch Required for 30 Minutes After Hot Work
☐ Communication Procedure Established
☐ Portable Fire Extinguisher
☐ Charged Water Hose
☐ Continuous LEL Monitor
☐ Other, specify:

SECTION III – CONFINED SPACE PRECAUTIONS ☐ N/A Initial Entry Permit #

☐ Rescue Personnel Available
☐ Communications Procedures (Voice/Visual/Radio)
☐ No. of Attendants with Radio/Air Horn and Vests Required:
☐ Temperature Below 110°F
☐ Signs Posted

☐ Safety Harness ☐ Lifeline
☐ Rescue Wristlet/Anklet Required
☐ Non entry retrieval system required
WAIVERS:
☐ Safety Harness Waived by
☐ Life Line Waived by

☐ Inert Entry
☐ Excavation Greater than 4ft
☐ Explosion Proof Lighting Required
☐ Forced Air Ventilation Required (grounded & bonded)
☐ Hazards Specific to Space:
☐ Other:

SECTION IV – ATMOSPHERIC MONITORING ☐ N/A

Hot Work or Confined Space Entries shall begin within 2 hours of the initial gas check. Another gas check is needed for work starting more than 2 hours past the initial gas check. Additional gas checks must continue to be taken at the job site and recorded every 4 hours on hard copy (minimum). *(See Section IV - Atmospheric Monitoring note on back.)*

Time:						
Oxygen (19.5 - 23.5%)	%	%	%	%	%	%
HW=0-10% LEL HW[CSE]=0% LEL	%	%	%	%	%	%
CO (<25 ppm)	ppm	ppm	ppm	ppm	ppm	ppm
H_2S (<10 ppm)	ppm	ppm	ppm	ppm	ppm	ppm
Benzene (<0.5 ppm)	ppm	ppm	ppm	ppm	ppm	ppm
Other:						
Equipment No.:						
Bumped w/in last 12 hrs: Initials:	Yes ☐	Yes ☐	Yes ☐	Yes ☐	Yes ☐	Yes ☐

CONTINUOUS GAS/TOXICITY MONITORING REQUIRED ☐ Yes ☐ No
(Continuous monitoring is required in all confined spaces and most instrument analyzer buildings.)
If Yes, check contaminant(s) below.
☐ Four-Gas Monitoring: O_2, LEL, CO, & H_2S
☐ Other (list):
☐ Sampling Location:

Other Permit Requirements, Precautions, Notes:

SECTION V – REQUIRED SIGNATURES

Joint Job Site Visit (JJSV) Completed: Owning Dept.: Servicing Grp: ☐ N/A (List JJSV Exception): Post JJSV Required? ☐ Y ☐ N

Responsible Person	First Signature	Pic Code/ Badge #	Work Extension Signature	Pic Code/ Badge #	Cold Work	Hot Work	CSE	Excavations < 4' Deep	Excavations > or = 4' Deep	
MPC Permit Writer:					X	X	X	X	X	
MPC Owner Supervisor/Designee:					X[4]	X[4]	X	X[4]	X	
Permit User Representative:					X	X	X	X	X	
Permit User Supervisor:							X		X	
MPC Contractor Coordinator:							X[2]		X[2]	
MPC/Contractor Competent Person:								X	X	
MPC Safety Representative:							X[2]		X[2]	

THIS PERMIT REFLECTS CONDITIONS AT THE TIME OF ISSUANCE. IF CONDITIONS CHANGE, STOP WORK AND NOTIFY THE OWNING DEPARTMENT.

SIGNATURE MATRIX
X[2] = Required if Contractor Involved X[4] = Initial Entry Only X[5] = Required for Process Units & Tank Farms Only

SECTION VI – WORK CREW Work parties with > 6 people shall use the Additional Personnel Form.

Name:	Company:	In:	Out:	Name:	Company:	In:	Out:
Name:	Company:	In:	Out:	Name:	Company:	In:	Out:
Name:	Company:	In:	Out:	Name:	Company:	In:	Out:

SECTION VII – RETURN OF EQUIPMENT/WORK AREA - JOB COMPLETENESS Communicate the status of the job to the Owning Department before signing off.

Debriefing Section MUST be filled out on back of permit for Confined Space Work
Job Status: ☐ Complete ☐ Incomplete
Personal Lock(s) Removed? ☐ Yes ☐ No ☐ N/A
Cleanup Complete? ☐ Yes ☐ No

Permit User Signature: Time: ☐ AM ☐ PM

☐ Post Joint Job Site Visit Completed (if required above)
☐ Acceptance Denied (mark reason below and complete denial on back of permit)
☐ Housekeeping Incomplete
☐ Permit Hardcopy Not Returned
☐ Other:

Owning Dept. Signature: Time: ☐ AM ☐ PM

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WORK PERMIT TIPS AND DEFINITIONS

DEFINITIONS:

Blinding: Absolute closure of a pipe, line, or duct, by fastening across its bore a solid plate, plug, or cap which completely covers the bore, extends at least to the outer edge of a flange's mating surfaces, and is capable of withstanding the maximum upstream system pressure. Examples of Blinds include: A blank, slip plate, blind flange, cap, and/or physical disconnect.

Competent Person: Marathon employee or Contractor who can identify existing and predictable hazards in and around the excavation, and who has the authority to take prompt and corrective measures to eliminate them. This person has also received specialized training to identify hazards associated with excavations, shoring and trenching.

Confined Space: Space that is large enough and so configured that an employee can bodily enter and perform assigned work. It is not designed for continuous employee occupancy and has limited or restricted means for entry or exit (for example, tanks, vessels, towers, sewers, excavations 4 feet deep, vessel skirts unless identified as otherwise, vaults, and pits are spaces that may have limited means of entry). See RSW-SAF-010-DT Confined Space Entry for further information.

Electrically Energized Work: An energized electrical work permit is required if work is performed within the restricted approach boundary, or when an employee interacts with the equipment when conductors or circuit parts are not exposed but an increased likelihood of injury from an exposure to an arc flash exists. Exceptions to the energized work permit include any work being performed near live parts related to testing, troubleshooting, taking voltage or amperage measurements, and visual inspection (note the Restricted Approach Boundary cannot be crossed). For more information, please see RSP-1162-000 Electrical Safe Work Practices.

Intrinsically Safe Device: Electronic devices that are clearly identified as "intrinsically-safe device" with U.S. approved for use in hazardous locations rated as Class I, Div. I or II. Devices not identified as such will be treated as non-intrinsically safe. Intrinsic safety is a protection method for electrical equipment used in hazardous locations where the energy allowed into and stored within an area is limited to a level that is incapable of causing ignition.

Joint Job Site Visit (JJSV) Requirements: A permit user representative from each company or craft listed on the permit shall be present at the joint job site visit along with the permit writer. The permit writer and permit user representative(s) must perform a joint job site visit every day of every job unless one of the scenarios below apply. ***If the permit user representative(s), permit writer, or other personnel request a joint job site visit OR if the job is considered to be of an invasive nature, one shall be performed regardless of the exceptions listed below.***

- Jobs lasting longer than one day or turnarounds: JJSV is not required on subsequent days if nothing has changed with the job or job site since the JJSV occurred on the first day of the job. A verification of equipment de-energization (lockout/tagout) is still required for each shift (must be met with a joint job site visit or handled as a specific task at the beginning of the shift)
- Walk-throughs or monitoring activity
- Mowing and weed control: a gas check must still be obtained in areas where mowing and weed control occur prior to the start of the work and a mutual understanding must be obtained of any existing hazards.
- General site clean-up: As long as it does not affect the operation of the equipment.

MPC Contractor Coordinator: Normally the Marathon Petroleum Company LP (MPC) employee in charge of coordinating contract companies on jobs. However, on new construction projects, the construction management coordinator hired by MPC shall be designated as the Marathon Contractor Coordinator.

Owner Foreman/Supervisor: Marathon Owning Department's Supervision; typically a Shift or Unit Supervisor/Foreman.

Permit Writer: A member of the Marathon Owning Department who writes the permit; can also be a non-Marathon writer if approved by Marathon Safety and properly trained.

Permit User Representative: member of the servicing group who will be working from the permit or supervising the personnel working on the permit.

Permit User Supervisor: the person to whom the permit user directly reports or who will be acting as the confined space entry supervisor.

SECTION I - JOB PREPARATION

Closest Safety Shower Location: For work within process units or tank farms, indicate the location of the nearest emergency eyewash and shower equipment. For work outside of process units or tank farms, consider supplying temporary emergency eyewash and safety shower equipment.

SECTION II - HOT WORK

When hot work is performed in a confined space utilizing cutting torches or inert gases, and the work is stopped and the space vacated for more than 15 minutes, the torches and hoses (oxygen, acetylene, propane, argon, etc.) must be removed or the hoses disconnected from the regulators.

Attended Hot Work vs. Non-Attended Hot Work

Attended Hot Work Examples: Acetylene burning, welding and brazing, electric arc welding, annealing / stress relieving (gas or electric), use of open flames, use of propane or gas fired heaters or boilers, chipping, ripping, breaking, or sawing concrete or refractory, cutting and grinding using a Metabo or similar tool, electric soldering. Attendants must wear a red or orange vest while acting as fire watch.

Non-Attended Hot Work Examples: Vehicle entry, use of non-explosion-proof electric equipment/ non-intrinsically safe electric and battery powered tools, use of air-powered impact wrenches, use of powder actuated tools, use of gasoline- or diesel-powered engines (compressors, pumps, generators, etc.), opening of in-service explosion-proof enclosures, abrasive blasting using sand and other media, grass cutting inside dike areas

SECTION III - CONFINED SPACE

Minimum requirements for all confined space entries: Rescue personnel, radio/air horn, attendant(s) with red or orange vest, safety harnesses and life lines (unless waived by MPC Safety Dept.), signs posted at entry points and continuous air monitoring.

Temperature: Temperature inside a confined space may not exceed 110°F. If there is reason to believe the temperature may be near 110°F temperature must be monitored with a temperature gauge that monitors ambient air temperature.

SECTION IV - ATMOSPHERIC MONITORING

Test results and the time taken shall be recorded in the appropriate sections and initialed by the person making the test. Record Instrumentation identification number. Check the box indicating whether or not atmospheric testing must be continuous. Examples of conditions that require continuous monitoring include but are not limited to: confined space monitoring, work in/on analyzer buildings, work where hot work will be mobile such as taking pictures with a non-intrinsically safe camera through a process unit.

Atmospheric Monitoring in Outlaying Areas:

Gas checks are not required for hot work in buildings located in outlying areas with the exception of the Refinery Laboratory or any other building that may contain a flammable atmosphere due to chemical storage, etc.

Hot work performed in outlying areas requires a gas check prior to performing the work. Under normal refinery operating conditions, gas check updates in outlying areas are not required. If refinery operating conditions are abnormal, gas checks must be updated.

For More Information on Atmospheric Monitoring please refer to SAF-025 Containment Thresholds and Conditions.

SECTION V - RETURN OF EQUIPMENT/WORK AREA - JOB COMPLETENESS

Check the appropriate boxes to indicate the status of the job at the conclusion of the work permit.

- Permit copies must be aligned and signed off.
- Debriefing Section MUST be completed for any confined space work.

RETURN OF EQUIPMENT/WORK AREA - DENIAL OF ACCEPTANCE

State reason for denial of acceptance: _____

State mitigation/corrective actions: _____

Owning Department Supervision Acknowledgement Signature: _____ **Date:** _____ **Time:** _____

CONFINED SPACE SIGN-IN/SIGN-OUT FOR AUTHORIZED ENTRANTS (Any supplemental sign-in/sign-out logs must be turned in with permit.)

NAME	COMPANY	Date	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT

CONFINED SPACE ENTRY SUPERVISOR (Transfer of entry supervisor duties must be logged below.)

NAME	COMPANY	Date	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF

ATTENDANT* **Attendants must check the box indicating the duty/role they will be fulfilling for this permit.** **Confined Space Attendant to place signage over manways when no attendant is on duty.**

NAME	COMPANY	FIRE WATCH**	CONF. SPACE ATTENDANT	BOTTLE WATCH	STANDBY	DATE	ON	OFF	ON	OFF	ON	OFF
		☐_____	☐	☐	☐							
		☐_____	☐	☐	☐							
		☐_____	☐	☐	☐							
		☐_____	☐	☐	☐							
		☐_____	☐	☐	☐							
		☐_____	☐	☐	☐							
		☐_____	☐	☐	☐							
		☐_____	☐	☐	☐							
		☐_____	☐	☐	☐							

Fire watch shall remain on-site or be replaced by another fire watch for 30 minutes after the last spark was thrown at any breaks, lunch, and at job's end.
Fire watch must initial to verify they understand this responsibility.

SERVICING REPRESENTATIVE DEBRIEFING NOTES (If applicable, required for Confined Space Entries.)

☐ **Attended hot work, fresh air work, or confined space entry never occurred during the permitted work scope.** (List reasoning below.)
☐ Other problem encountered (Explain below.)

COMPANY	COMMENTS
	☐ No problems encountered during entry

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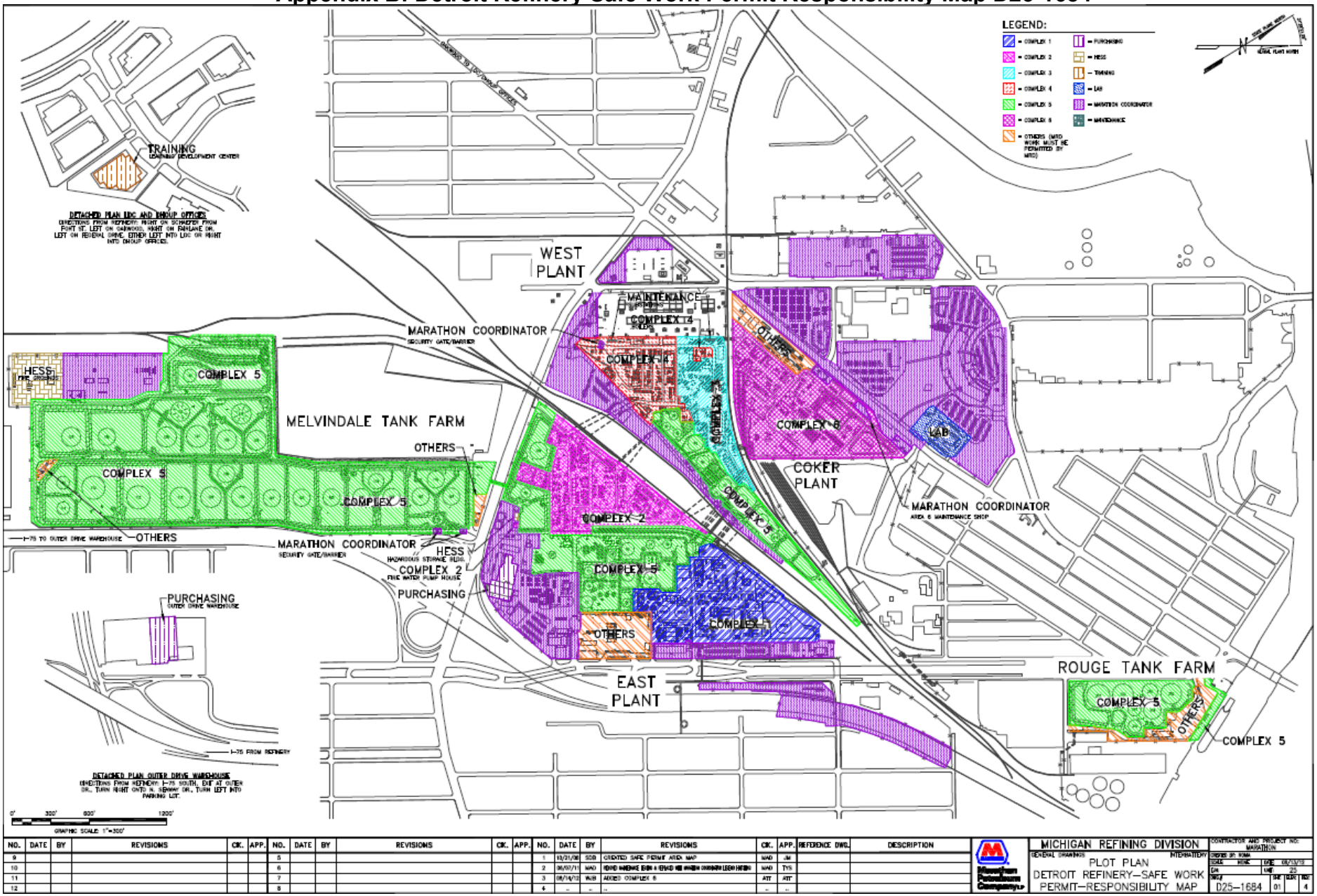
Appendix B: Detroit Refinery Safe Work Permit Responsibility Map D25-1684



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