



# OFFICE OF INSPECTOR GENERAL

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## UNITED STATES POSTAL SERVICE

### Environmental Conditions at Michigan Metroplex Processing and Distribution Center

### Management Advisory Report

Report Number  
HR-MA-17-001

January 25, 2017





# OFFICE OF INSPECTOR GENERAL UNITED STATES POSTAL SERVICE

## Highlights

***When the Postal Service built the Metroplex in 2008, it installed a series of collection and ventilation pipes, known as a passive ventilation system, to prevent methane from infiltrating the building and sensors to detect methane and alert personnel of any seepage and accumulation of methane gas inside the facility.***

### Background

This report presents the results of our follow-up to the management alert issued February 22, 2016, regarding the malfunction of the methane detection system observed at the U.S. Postal Service Michigan Metroplex (Metroplex) Processing and Distribution Center in Pontiac, MI.

The Metroplex is built on privately owned property that formerly contained a foundry, manufacturing operations, and hazardous materials storage and handling areas, which left residual contamination in the soil and groundwater at the site. The landowner tested the land (i.e., surface soils, subsurface soils, and groundwater) to determine the location and nature of the contaminants, and initiated clean-up in preparation for building the facility. It is the landowner's responsibility to annually test the groundwater on the property.

Studies commissioned by the landowner found decomposition of organic materials underground created methane. When the Postal Service built the Metroplex in 2008, it installed a series of collection and ventilation pipes, known as a passive ventilation system, to prevent methane from infiltrating the building and sensors to detect methane and alert personnel of any seepage and accumulation of methane gas inside the facility.

The American Postal Workers Union and a Postal Service contractor first raised concerns about the safety of the facility in August and December 2015, respectively. Postal Service

management contracted with three independent contractors and requested the U.S. Department of Labor Occupational Safety and Health Administration to test for methane and assess the methane venting and detection systems and their effectiveness.

After we issued our management alert, we contracted and worked with an environmental and technical services company to assess the methane venting and detection systems, environmental concerns and corrective actions management took to address our recommendations.

Our objective was to evaluate the environmental conditions at the Metroplex and the Postal Service's corrective actions.

### What the OIG Found

The Occupational Safety and Health Administration and three contractors found that methane concentrations within the facility did not exceed methane exposure limits, and that other hazardous air pollutants detected within the facility were below permissible levels. Consequently, the facility was considered safe relative to methane exposure.

Management installed stand-alone secondary equipment to test for methane and took corrective actions to adjust sensors on the methane detection system that did not correctly detect known levels of methane by reprogramming, recalibrating, and properly mounting the sensors. Also, to improve performance and monitoring of the methane detection system, management



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***Following completion of our fieldwork (October 2016), the Postal Service commissioned an additional evaluation of the existing methane mitigation system relative to environmental requirements, system data collected from the time installed until the present, and changes in technology since installation.***

installed a more detailed display panel, new wiring in select locations, and a computer to log historical readings from the sensors.

Following completion of our fieldwork (October 2016), the Postal Service commissioned an additional evaluation of the existing methane mitigation system relative to environmental requirements, system data collected from the time installed until the present, and changes in technology since installation.

The results of the additional testing (November 2016) disclosed methane levels of the building subslab sampled from two vent pipe locations (D1 and D2) exceeded the concentrations considered when the building was designed.

In subsequent discussions, Postal Service officials stated they would initiate modifications to the current methane detection system by making the subslab venting “active” on vent stacks D1 and D2, which are located in the quadrants of the building over the existing underground contamination. Management stated that vent stacks D3 and D4 will not be made active as there have been no readings indicating it is warranted in those areas. Their consultant’s November 2016 report indicated additional sampling of subslab vapors analyzed for speciated volatile organic compounds (VOC) did not identify benzene or other VOCs that exceeded the current screening levels.

An active system should include fans or vacuum blowers within the vertical pipes to remove potentially contaminated air through the pipes to vents above the exterior roof line of the building. This should mitigate the risks of vapor intrusion of methane and VOCs due to collection pipe spacing and increased pressure differentials. An active system also eliminates the need to look for potential cracks, openings, and pathways that could be sources of vapor intrusion in the event the pressure differential exceeds a set threshold.

While noting these corrective actions listed above, we identified the following issues:

- Management did not calibrate or check the methane detection system’s sensors with specific levels of methane calibration gas for 8 months, when the manufacturer recommended it do so every 6 months. Management is contracting with a vendor to perform periodic maintenance on the methane detection system.
- Officials were not sufficiently trained to perform their responsibilities with the system. Further, management did not update the methane venting and detection systems operating manual when system components were modified.
- The VOC benzene was found in the soil gas samples adjacent to the building. However, as noted in our report, the most recent testing disclosed that benzene was not



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***However, as noted in our report, the most recent testing disclosed that benzene was not detected in the samples collected and none of the detected VOCs exceeded the current screening levels.***

detected in the samples collected and none of the detected VOCs exceeded the current screening levels. In addition, given the conversion from passive to active at the two vent stack locations noted, no further action is needed at this time. It is important to note though, that if the methane detection system is changed in the future from active to passive, additional testing would be needed to ensure that no methane, benzene or other VOCs are present above screening levels at the time of conversion.

- Four sensors in the ventilation pipes that monitor and detect pressure differences between the subslab and indoor air did not have alert notifications for increases in relative pressure differences due to weather changes and events that may cause vapor intrusion into the facility. We observed excessive differential pressure levels during our site visits and no alarms or alerts were triggered. In their response to this report, management provided documentation to show the system was set for notification if the building experiences negative pressure for 5 consecutive minutes. Further, no action is needed once the system is converted from passive to active, as an active system will mitigate the pressure in the pipes.

- Spacing between the collection pipes is greater than 50 feet and may not effectively collect and passively vent accumulated gases from beneath the building. However, given the Postal Service's plans to convert the methane detection system from passive to active at the two vent stack locations, no further action is needed regarding this issue.

Periodic maintenance, adequate training, and an updated operating manual would allow officials to verify the methane venting and detection systems are operating as designed and prepare them to identify and resolve potential issues. These actions could also enhance employee confidence in the Postal Service, increase productivity, and boost morale.

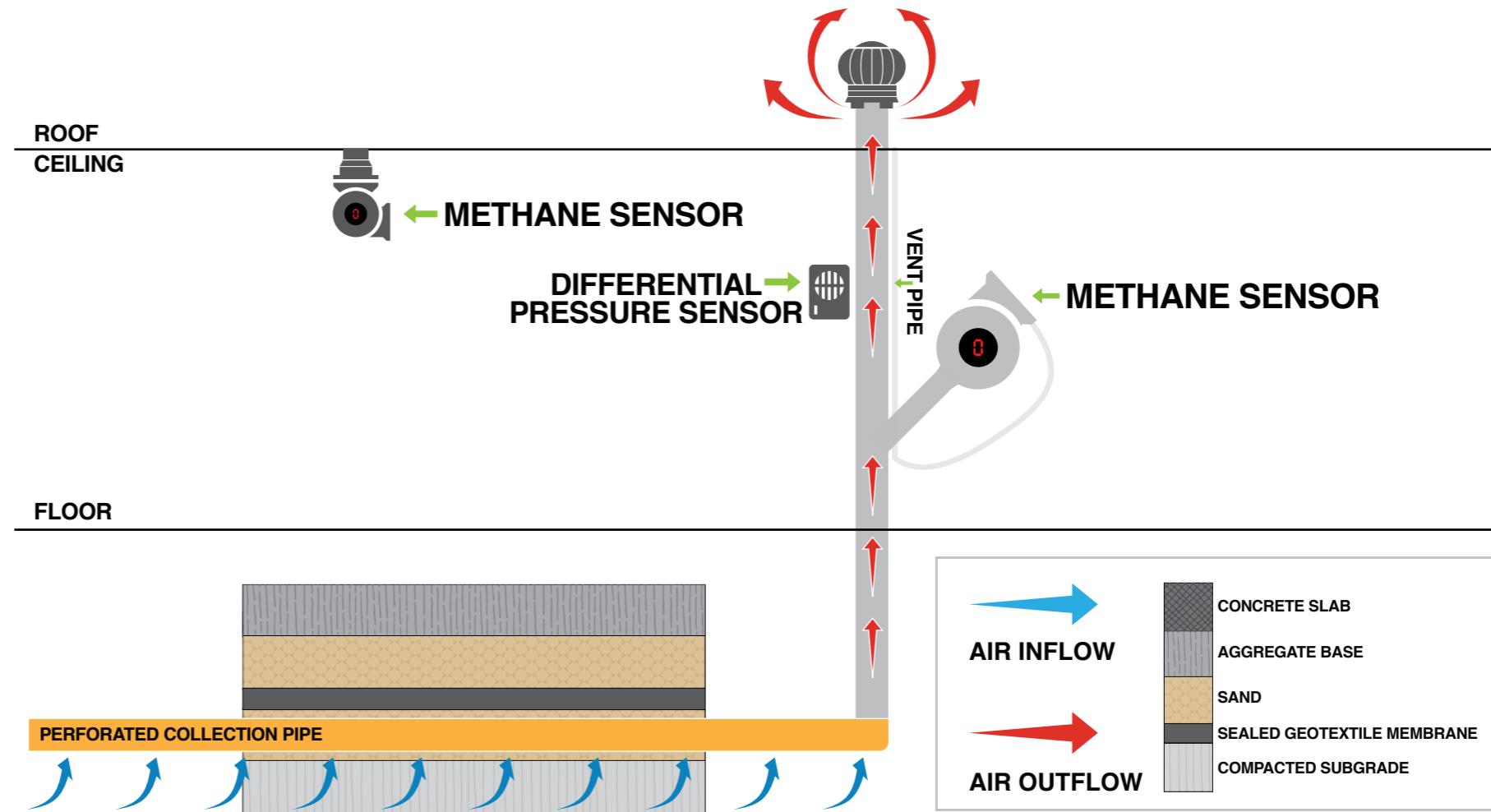
## What the OIG Recommended

We recommended management finalize conversion of the methane venting system from passive to active, develop a process to check the sensor calibration, provide training on the methane detection system to responsible personnel, and update the operating manual.



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## PASSIVE VENTILATION SYSTEM WITH SENSORS TO DETECT METHANE



# Transmittal Letter



OFFICE OF INSPECTOR GENERAL  
UNITED STATES POSTAL SERVICE

January 25, 2017

**MEMORANDUM FOR:** JACQUELINE (JAKKI) K. STRAKO  
VICE PRESIDENT AREA OPERATIONS,  
GREAT LAKES AREA

TOM A. SAMRA  
VICE PRESIDENT, FACILITIES

E-Signed by Janet Sorensen  
VERIFY authenticity with eSign Desktop

**FROM:** Janet M. Sorensen  
Deputy Assistant Inspector General  
for Retail, Delivery and Marketing

**SUBJECT:** Management Advisory – Environmental Conditions at  
Michigan Metroplex Processing and Distribution Center  
(Report Number HR-MA-17-001)

This report presents the results of our follow-up to the Safety Concern at a U.S. Postal Service Facility Management Alert (Report Number HR-MT-16-001) we issued February 22, 2016, regarding the malfunction of the methane detection system observed at the U.S. Postal Service Michigan Metroplex Processing and Distribution Center in Pontiac, MI (Project Number 16RG002HR000).

We appreciate the cooperation and courtesies provided by your staff. If you have any questions or need additional information, please contact Monique P. Colter, director, Human Resources and Support, or me at 703-248-2100.

Attachment

cc: Corporate Audit and Response Management

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# Findings

**Studies commissioned by the landowner found decomposing organic material beneath the building footprint created methane.**

## Introduction

This report presents the results of our follow-up to the February 2016, U.S. Postal Service Office of Inspector General (OIG) management alert<sup>1</sup> regarding the malfunction of the methane detection system observed at the U.S. Postal Service Michigan Metroplex (Metroplex) Processing and Distribution Center, in Pontiac, MI. Our objective was to evaluate the environmental conditions at the Metroplex and the Postal Service's corrective actions.

The Metroplex was built in 2008 on privately owned property that formerly contained a foundry, manufacturing operations, and hazardous materials storage and handling areas, which left residual contamination in the soil and groundwater at the site. The landowner tested the land (i.e., surface soils, subsurface soils and groundwater) to determine the location and nature of the contaminants, and initiated clean-up in preparation for building the facility. It is the landowner's responsibility to test the groundwater on the property annually.

Studies commissioned by the landowner found decomposing organic material beneath the building footprint created methane. When the Postal Service built the Metroplex, it installed a vapor barrier under the slab and a passive venting system to vent the methane in the subslab thus preventing methane from infiltrating the building. A methane detection system was also installed to detect methane and alert personnel of any seepage and accumulation of methane gas inside the facility.

In August and December 2015, respectively, the American Postal Workers Union (APWU) and a Postal Service contractor raised concerns about the safety of the facility. Postal Service management contracted with three independent contractors and requested the U.S. Department of Labor Occupational Safety and Health Administration (OSHA) to test for methane and evaluate whether the methane venting and detection systems were effective.

After issuing our management alert, we contracted and worked with an environmental and technical services company,<sup>2</sup> to assess the methane venting and detection systems, environmental concerns and management's corrective actions.

See [Appendix A](#) for additional information about this audit.

## Summary

OSHA and the three independent contractors found methane concentrations within the facility did not exceed methane exposure limits for worker safety and health and other hazardous air pollutants detected within the facility were below permissible levels. Consequently, the facility was considered safe relative to methane exposure.

Postal Service management has taken corrective actions to address the recommendations in our initial management alert by reviewing the methane detection system and contracting with experts to validate results of the system. Following the completion of our fieldwork (October 2016), the Postal Service commissioned an additional evaluation of the existing methane mitigation system relative to environmental requirements, system data collected from the time installed until the present, and changes in technology since installation.

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<sup>1</sup> *Safety Concern at a U.S. Postal Service Facility* management alert (Report Number HR-MT-16-001, dated February 22, 2016).

<sup>2</sup> Los Alamos Technical Associates Inc.

**The results of the additional testing (November 2016) disclosed methane levels of the building subslab sampled from two vent pipe locations (D1 and D2) exceeded the concentrations considered when the building was designed.**

The results of the additional testing (November 2016) disclosed methane levels of the building subslab sampled from two vent pipe locations (D1 and D2) exceeded the concentrations considered when the building was designed. In subsequent discussions, Postal Service officials stated they would initiate modifications to the current methane detection system by making the subslab venting “active” on vent stacks D1 and D2, which are located in the quadrants of the building over the underground contamination. Management stated that vent stacks D3 and D4 will not be made active as there have been no readings indicating it is warranted in those areas. Their consultant’s November 2016 report indicated additional sampling of subslab vapors analyzed for speciated volatile organic compounds (VOC) did not identify benzene or other VOCs that exceeded the current screening levels.

While noting these corrective actions listed above, we identified the following issues:

- Management did not calibrate or check the methane detection system’s sensors with specific levels of methane calibration gas for 8 months, when the manufacturer recommended it do so every 6 months. Management is contracting with a vendor to perform periodic maintenance on the methane detection system.
- Officials were not sufficiently trained to perform their responsibilities with the system. Further, management did not update the methane venting and detection systems operating manual when system components were modified.
- The VOC benzene was found in the soil gas samples adjacent to the building, but was not identified inside the building during testing. In addition, given the conversion from passive to active at the two vent stack locations noted, no further action is needed at this time. It is important to note though, that if the methane detection system is changed in the future from active to passive, additional testing would be needed to ensure that no methane, benzene or other VOCs are present above screening levels at the time of conversion.
- Four sensors in the ventilation pipes that monitor and detect pressure differences between the subslab and indoor air did not have alert notifications for increases in relative pressure differences due to weather changes and events that may cause vapor intrusion into the facility. We observed excessive differential pressure levels during our site visits and no alarms or alerts were triggered. In their response to this report, management provided documentation to show the system was set for notification if the building experiences negative pressure for 5 consecutive minutes. Further, no action is needed once the system is converted from passive to active, as an active system will mitigate the pressure in the pipes.
- Spacing between the collection pipes is greater than 50 feet and may not effectively collect and passively vent accumulated gases from beneath the building. Given the Postal Service’s plans to convert the methane detection system from passive to active as noted, no further action is needed regarding this issue.

#### **Subsequent Environmental Evaluation and Postal Service Actions**

The results of the Postal Service’s most recent testing (November 2016) disclosed methane levels at two locations in the building subslab (D1 and D2) that exceeded the concentrations considered when the building was designed. The testing also determined that none of the detected VOCs exceeded current screening levels.

In subsequent discussions, the Postal Service has indicated that they will initiate modifications to the current methane detection system by making the subslab venting “active” on vent stacks D1 and D2, which are located in the quadrants of the building over the existing underground contamination. Management stated that vent stacks D3 and D4 will not be made active as there have

**In subsequent discussions, the Postal Service has indicated that they will initiate modifications to the current methane detection system by making the subslab venting “active” on vent stacks D1 and D2, which are located in the quadrants of the building over the existing underground contamination.**

**Management did not regularly calibrate or check the methane detection system’s sensors with specific levels of methane calibration gas.**

been no readings indicating it is warranted in those areas. Their consultant's November 2016 report indicated additional sampling of subslab vapors analyzed for speciated VOCs did not identify benzene or other VOCs that exceeded the current screening levels.

Active remediation systems include fans or vacuum blowers within the vertical pipes that remove potentially contaminated subslab air through the pipes to vents above the exterior roof line of the building. Conversion to an active methane venting system would mitigate the risks of vapor intrusion of VOCs due to collection pipe spacing and increased pressure differentials that might arise due to seasonal weather changes and specific weather events. An active system provides better control of the subslab vapors and can generate a negative pressure differential; as a result, if there were a leak, air would travel from inside the building into the subslab and thus eliminate the need to look for potential cracks, openings, and pathways that could be sources of vapor intrusion in the event the pressure differential exceeds a set threshold. However, according to the landowner's soil gas testing report and BioVapor modelling they believe that no unacceptable indoor air concentration would result from the benzene found in soil gas samples.

## **Additional Conditions Impacting the Metroplex**

While noting these corrective actions listed above, we identified the following issues:

### **Methane Sensor Calibration**

Management did not regularly calibrate or check the methane detection system's sensors with specific levels of methane calibration gas. The sensors were not calibrated for about 8 months – between September 14, 2015 and May 5, 2016.

According to the manufacturer, the sensors do not need to be calibrated on an ongoing schedule. However, the manufacturer recommends, as a precaution and to ensure the sensor is functioning correctly, that the sensors be checked for a response to specific levels of calibrated methane gas every 6 months. Management stated that they are actively pursuing a vendor to perform maintenance on the methane detection system, which would include periodic sensor calibration.

Had adequate maintenance and monitoring been performed on a periodic basis the issues identified with the methane detection system may have been found and remedied sooner.

### **Employee Training and Operations, Maintenance and Monitoring Manual**

The Postal Service did not adequately train supervisors and personnel performing maintenance on the methane detection system. According to a review of training records, no employees were trained to operate and maintain the methane detection system. Management stated maintenance personnel received training in October 2014 from a contractor when they took over the responsibility of maintaining the methane detection system, but did not have supporting documentation showing this training occurred.

From June 2 through 3, 2016, management provided training to select managers and supervisors on the methane detection system's new display panel to make them aware of the features of the system and how it operates. However, the training occurred before the *Operations, Maintenance and Monitoring Manual* was completed. Management stated the *Operations, Maintenance and Monitoring Manual* was being updated and would be completed mid-September, and key personnel would receive additional training on the methane detection system.

**A recent study issued by the landowner modeled the potential for benzene exposure in the building, and concluded that the risk for benzene gas in the building was low.**

**Converting to an active system would first address the pressure differential issue and also eliminate concern about the spacing of the collection pipes since an active system is still effective when there is more space between pipes.**

Since management did not adequately train managers, supervisors, or maintenance personnel responsible for oversight, operation, and maintenance of the methane detection system, they were unable to verify the system was operating as designed.

#### **Volatile Organic Compounds**

During testing conducted this year by the landowner, volatile organic compounds, including benzene, were found in soil gas samples taken from locations adjacent to the Metroplex facility 5 feet underground. The benzene in the soil gases exceeded acceptable levels set by the Michigan Department of Environmental Quality (MDEQ).<sup>3</sup> A recent study issued by the landowner modeled the potential for benzene exposure in the building, and concluded that the risk for benzene gas in the building was low. As noted in our report, the most recent testing disclosed that benzene was not detected in the samples collected and none of the detected VOCs exceeded the current screening levels. In addition, given the conversion of the methane detection system from passive to active, no further action is needed at this time. It is important to note though, that if the methane detection system is changed in the future from active to passive, additional testing would be needed to ensure that no methane, benzene or other VOCs are present above screening levels at the time of conversion.

#### **Pressure Differentials**

Four sensors in the ventilation pipes that monitor and detect pressure differences between the subslab and indoor air did not have alert notifications for increases in relative pressure differences due to weather changes and events that may cause vapor intrusion into the facility. The Metroplex pressure differential sensors send readings (not notifications) to the methane monitoring system every 30 seconds and that data is compiled daily and stored on a computer attached to the monitoring system. However, management noted at the time of our audit that they did not plan to review the historical readings. We observed excessive differential pressure levels during our site visits and no alarms or alerts were triggered. In their response to this report, management provided documentation to show the system was set for notification if the building experiences negative pressure for 5 consecutive minutes. Further, no action is needed once the system is converted from passive to active, as an active system will mitigate the pressure in the pipes.

The current collection pipe layout exceeds the maximum spacing recommended by the MDEQ for a passive system. The MDEQ's Vapor Intrusion Guidance<sup>4</sup> recommends pipes be spaced no more than 50 feet apart for a passive system. The pipes are spaced 68 to 100 feet apart and the system is passive, with the flexibility to become active. An active system reverses the pressure differential between subslab and building pressure, and thus eliminates the need to look for potential cracks, openings, and pathways that could be sources of vapor intrusion in the event the pressure differential exceeds a set threshold. Converting to an active system would first address the pressure differential issue and also eliminate concern about the spacing of the collection pipes since an active system is still effective when there is more space between pipes. Given the Postal Service's plans to convert the methane detection system from passive to active at the two vent stack locations as noted, no further action is needed regarding this issue.

<sup>3</sup> Non-residential Vapor Intrusion Shallow Soil Gas Screening Values from Appendix D.2 of the MDEQ May 2013 Guidance Document for the Vapor Intrusion Pathway were used to evaluate the VOC results. Results were also compared to the draft Vapor Intrusion Tier I Groundwater, Soil, and Vapor Screening Levels in Table 4 of the MDEQ 2016 Proposed Clean Up Criteria Requirements.

<sup>4</sup> MDEQ Guidance, dated 2012.

# Recommendations

**We recommend management finalize conversion of the methane venting system from passive to active, develop a process to check the sensor calibration, provide training on the methane detection system to responsible personnel, and update the operating manual.**

We recommend the vice president, Area Operations, Great Lakes Area, in conjunction with the vice president, Facilities:

1. Finalize conversion of the methane venting system from passive to active with the addition of in-line blowers.

We recommend the vice president, Area Operations, Great Lakes Area:

2. Develop a process to check for a response to specific levels of calibrated methane gas at least every 6 months for all methane sensors.
3. Conduct additional training on the methane detection system for managers and supervisors responsible for the system using the updated *Operations, Maintenance and Monitoring Manual*.
4. Update the *Operations, Maintenance and Monitoring Manual* to identify and describe all operations and maintenance procedures for the methane venting and detection systems. The manual should also include the author of the document and date completed.

## Management's Comments

Management partially agreed with our findings, partially agreed with recommendation 1 and agreed with recommendations 2, 3, and 4.

Management suggested clarifying language to our statement “that if the methane detection system is changed in the future from active to passive, additional testing would be needed to ensure that no methane, benzene or other VOCs are present at the time of conversion” to show that the presence of these contaminants are not above screening levels at the time of conversion.

Management partially agreed with our statement that “we observed excessive differential pressure levels during our site visits and no alarms or alerts were triggered” because they believe the system was set for notification when interior negative pressure was recorded in excess of 5 minutes.

Management disagreed with our statement that “spacing between the collection pipes is greater than 50 feet and may not effectively collect and passively vent accumulated gases from beneath the building” because they believe the testing done by OSHA and three contractors indicates that the current passive system, regardless of pipe spacing has not allowed contaminants above permissible levels into the building.

Management partially disagreed with our statement that “their consultant’s November 2016 report indicated additional sampling of sub slab vapors analyzed for speciated VOC did not identify benzene or other VOCs that exceeded the current screening levels. However, one VOC, ethylene dibromide, was flagged as a possible laboratory contamination” because they believe the second sentence is not fully explanatory of the situation with respect to ethylene dibromide given the estimated value was more than 10 times lower than the current screening level.

Management agreed with, but wanted clarifying language on, our statement that “as noted in our report, the most recent testing disclosed that no benzene or other VOCs that exceeded the current screening levels were identified” because they wanted clarification to show that no benzene was present.

Management disagreed with our statement that “management noted at the time of our audit that they did not plan to review the historical readings” because they stated the October 2016 *Operations, Maintenance and Monitoring Manual* includes the requirement that historical readings from the newly installed logging computer will be reviewed quarterly.

Management agreed with recommendation 1, with respect to vents D1 and D2 and is securing a proposal to modify the system and make it active for vents D1 and D2 only since they vent the area of the contamination plume. They stated there is no need to modify the system to make vents D3 and D4 active because they do not vent areas where the plume is located and all of the testing of these two vents showed no methane readings. Management’s target implementation date of June 30, 2017 is subject to an extension if MDEQ requires an air permit for the installation.

Regarding recommendation 2, management stated they established a contract in November 2016 with a vendor to perform quarterly maintenance.

Regarding recommendation 3, management stated further training for maintenance management will be scheduled by January 31, 2017.

Regarding recommendation 4, management stated the *Operations, Maintenance and Monitoring Manual* was updated in October 2016, and included the author and date completed.

See [Appendix B](#) for management’s comments in their entirety.

## Evaluation of Management’s Comments

The OIG considers management’s comments responsive to the recommendations and the corrective actions should resolve the issues identified in the report.

We reflected management’s clarifications in our final report regarding the additional testing that would be necessary if they decide to convert from an active to a passive ventilation system in the future, to ensure that no methane, benzene or other VOCs are “above screening levels” at the time of the conversion.

We disagree with management’s position that during our site visits the system provided a notification when negative pressure was detected for more than 5 minutes. Prior to the system upgrade, during our October 2015 and April 2016 site visits, we witnessed excessive pressure differential readings on the sensors and did not observe any visual or auditory alarms on the system. However, subsequent to our site visit we agree that after the correction of the programming error and update to the system, the system was set for notification if the building experienced negative pressure for 5 consecutive minutes. We reflected management’s clarification in our report.

We disagree with management's position that the finding regarding the collection pipe spacing is misleading as written. Management's position focuses solely on contaminants found inside the building. Specifically, management stated that results of their testing showed no methane was found within the building, and that the current system has not allowed contaminants above permissible levels into the building. However, the finding focuses on the ventilation and accumulation of gases beneath the building. The November 2016 testing found high concentrations of methane in the ventilation pipes. We agree that the testing indicated that the passive system and other measures in place (including the vapor barrier) are effective at preventing vapor intrusion of methane and VOCs into the facility. However, according to their November 2016 testing, the passive system is not effectively extracting and releasing methane concentrations that are accumulating within the methane ventilation pipes.

Regarding management's statements on the possible lab contamination of ethylene dibromide, we have clarified the report to reflect that no contaminants were above current screening levels.

Regarding management's comments on the historical readings, management, facilities personnel, and a Postal Service contractor stated that there were no plans to review historical readings of pressure differentials from the newly installed 'logging computer' during our site visit in August 2016. However, we verified that the quarterly review of historical readings is included in the revised *Operations, Maintenance and Monitoring Manual*.

We consider recommendation 4 closed with the issuance of this report. All recommendations require OIG concurrence before closure. Consequently, the OIG requests written confirmation when corrective actions for recommendations 1, 2 and 3 are completed. These recommendations should not be closed in the Postal Service's follow-up tracking system until the OIG provides written confirmation that the recommendations can be closed.

# Appendices

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## **Appendix A: Additional Information**

### **Background**

The OIG received a complaint from the APWU expressing concerns for the safety and health of employees at the Metroplex. The complaint mentioned the facility is located at an old General Motors site, may be contaminated and, therefore, needs further investigation.

The Metroplex, established in 2008, is built on privately owned property that formerly contained a foundry, manufacturing operations, and hazardous materials storage and handling areas, which left residual contamination in the soil and groundwater at the site. The landowner tested the land (i.e., surface soils, subsurface soils, and groundwater) to determine the location and nature of the contaminants and initiated clean-up in preparation for building the facility. It is the landowner's responsibility to continue annual groundwater testing of the land.

Studies commissioned by the landowner found methane generated through the decomposition of organic materials underground. When the Postal Service built the Metroplex, management installed a vapor extraction system to prevent methane from infiltrating the building and a methane detection system to detect methane and alert personnel of any seepage and accumulation of the gas inside the facility.

Concerns about the safety conditions at the facility arose in August 2015, with an initial APWU complaint. The concerns were bolstered in December 2015, by claims from a Postal Service contractor concerned about the safety and health of employees at the facility. Postal Service management requested that OSHA and three contractors test the methane levels and assess the methane venting and detection systems and their effectiveness.

In our management alert, we recommended management complete a review of the methane detection system to resolve any issues and establish an ongoing process to independently validate the results of the system on a periodic basis. Subsequently, the OIG contracted and worked with an environmental and technical services company, to assess the methane venting and detection systems, environmental concerns and management's corrective actions.

### **Objective, Scope, and Methodology**

Our objective was to evaluate the environmental conditions at the Metroplex and the Postal Service's corrective actions. To accomplish our objective, we:

- Reviewed the Postal Service policies and procedures concerning safety and health conditions and applicable union agreements.
- Conducted site visits at the Metroplex to observe and assess conditions at the facility.
- Interviewed Postal Service management, personnel, and union representatives.
- Reviewed documentation on the environmental studies and remediation performed at the facility.
- Reviewed employees' training records obtained from the Learning Management System.

- Contracted with an environmental consulting firm to:
  - Review prior air testing sampling, methodology used, and results of the findings.
  - Examine and assess the design and operations of the existing methane venting and detection systems.
  - Review the contractors' reports showing their analyses and assessments of the systems.

We conducted this review from October 2015 through January 2017 in accordance with the Council of the Inspectors General on Integrity and Efficiency, Quality Standards for Inspection and Evaluation. We discussed our observations and conclusions with management on December 21, 2016, and included their comments where appropriate.

We assessed the reliability of the Learning Management System data by verifying information with management. We determined that the data were sufficiently reliable for the purposes of this report.

## Prior Audit Coverage

The *Safety Concern at a U.S. Postal Service Facility* report (HR-MT-16-001, dated February 22, 2016), revealed that the methane detection system at the Metroplex has not functioned properly since March 2015. Maintenance personnel repeatedly replaced the sensors and stated the continuous flashing amber warning light was due to sensor malfunction and not the buildup of methane gas. Management agreed with our recommendations to complete a review of the methane detection system to resolve any issues and establish an ongoing process to independently validate the results of the methane detection system on a periodic basis.

## Appendix B: Management's Comments



January 10, 2017

LORI DILLARD  
ACTING DIRECTOR, AUDIT OPERATIONS

SUBJECT: Draft Management Advisory Report – Environmental Conditions at Michigan Metroplex Processing and Distribution Center (Report Number HR-MA-17-DRAFT)

Thank you for investigating the environmental conditions at the Michigan Metroplex Processing Distribution Center and for giving management the opportunity to review and comment on the above referenced Draft Report.

Postal management generally agrees with the findings and conclusions. That being said, in the interest of accuracy, management agrees in part and disagrees in part with several of the additional findings and the final recommendations, as will be further discussed below. Some of the findings are found in multiple locations within the Draft Report, and we ask that the OIG consider the comments below to apply to all such appearances of the findings within the Draft Report.

As the OIG has recognized, OSHA and three independent contractors found the methane concentrations within the Metroplex facility did not exceed methane exposure limits for worker safety and health and that other hazardous air pollutants detected within the facility were below permitted levels (i.e. are below levels requiring any action by the Postal Service). Further, we are aware that no benzene was detected under the building.

As is stated in the OIG reports, the Postal Service has already taken actions to address concerns identified by the OIG in the initial management alert. In response to the alert, the Postal Service contracted with several independent, environmental contractors, as well as Occupational Safety and Health Administration (OSHA), to conduct comprehensive testing for methane and other air contaminants and to assess the methane detection and venting systems' effectiveness. Postal management also implemented a series of corrective actions including the reprogramming, recalibration and re-mounting of sensors, as necessary. It also installed upgrades including a more detailed display panel, new wiring and a computer to log historical readings from the sensors to improve system performance and continuous air quality monitoring. The testing and

modifications were completed to date from January through November, 2016. Postal management shared the test and corrective action reports from its consultants and OSHA with the OIG and its commissioned environmental consultant for their independent review and evaluation.

The safety of the facility's air quality was confirmed by the additional evaluations made by the OIG and its environmental consultant. Their findings supported the determinations by OSHA and various independent, environmental contractors that there has been no intrusion of methane gas into the facility and that other air pollutants detected within the facility were below permissible levels. It is noteworthy that the Draft Report found the facility "safe relative to methane exposure." Significantly, while the report found the volatile organic compound (VOC) benzene present in some soil gas samples adjacent to the building, no trace of benzene was identified inside the building during testing. Furthermore, the report found no evidence of any other detected VOCs inside the building that exceeded permitted levels (i.e., they were below levels requiring any action by the Postal Service). Sub slab vapor samplings extracted from the soil beneath the EPA approved vapor barrier underneath the building, indicated levels of VOCs that were, with one exception, more than ten times below the actionable, non-residential standards promulgated by the Michigan Department of Environmental Quality. The report also found no evidence that the passive venting system is not effectively functioning based upon all the testing completed at the facility. Based upon the work of both the OIG and the USPS consultants, Management believes that the air quality inside the facility does not contain methane or other hazardous air pollutants above permitted levels (i.e. all levels are below levels requiring any action by the Postal Service), and therefore, employees have NOT been exposed to such contaminants at a limit above that allowed for worker safety and health. Nevertheless, as discussed in the recommendation section below, the Postal Service will make additional enhancements to the venting system to further safeguard our employees from any future risk.

#### OIG FINDINGS

##### Finding No. 1:

"It is important to note though, that if the methane detection system is changed in the future from active to passive, additional testing would be needed to ensure that no methane, benzene or other VOC's are present at the time of conversion."

##### Management Response:

Management agrees but believes clarifying language is needed here at the end of the sentence to add the words: "above screening levels" before the words "at

the time of conversion." The presence of VOC's below those levels would not pose any safety concerns for employees.

**Finding No. 2:**

"We observed excessive differential pressure levels during our site visits and no alarms or alerts were triggered."

Management Response:

Management agrees in part and disagrees in part with this finding. While excessive levels were observed during the April site visit, this was prior to the Postal Service correcting the programming error. This was discussed and verified during the August 8<sup>th</sup> site visit. It was determined after the OIG site visit that the system was set for notifying (blue light) when interior negative pressure was recorded in excess of 5 minutes. These notifications are recorded in the system. Our consultant has confirmed this in a letter to management, attached hereto.

**Finding No. 3:**

"Spacing between the collection pipes is greater than 50 feet and may not effectively collect and passively vent accumulated gases from beneath the building."

Management Response:

Management disagrees because Management believes that this finding may be misleading as written, particularly since the OIG has stated elsewhere in its findings that testing by OSHA and three contractors "found that methane within the facility did not exceed methane exposure limits and that other hazardous air pollutants detected were below permissible levels" and that "Consequently, the facility was considered safe relative to methane exposure." This would indicate that the current system, regardless of pipe spacing, has not allowed contaminants above permissible levels into the building.

**Finding No. 4:**

"Their consultant's November, 2016 report indicated additional sampling of sub slab vapors analyzed for speciated volatile organic compounds (VOC) did not identify benzene or other VOCs that exceeded the current screening levels. However, one VOC, ethylene dibromide, was flagged as a possible laboratory contamination."

Management Response:

Management disagrees in part with this finding because the second sentence is not fully explanatory of the situation with respect to the ethylene dibromide given that the estimated value was more than ten times lower than the current screening level.

**Finding No. 5:**

"As noted in our report, the most recent testing disclosed that no benzene or other VOCs that exceeded the current screening levels were identified."

Management Response:

Management agrees with this finding but would like the OIG to clarify that the testing showed that NO benzene was present, not merely that there were no exceedances.

**Finding No. 6:**

"However, management noted at the time of our audit that they did not plan to review the historical readings."

Management Response:

Management disagrees with this finding. The October 2016 OM & MM includes the requirement that historical reading from the newly installed logging computer will be reviewed quarterly. Only historical readings prior to the modifications to the system would not be reviewed, as they are not available for review.

**OIG RECOMMENDATIONS**

Postal management agrees with the findings and recommendations of the Draft Management Advisory Report, to the extent discussed below.

**Recommendation No. 1:**

We recommend the vice president, Area Operations, Great Lakes Area, in conjunction with the vice president, Facilities, finalize conversion of the methane venting system from passive to active with the addition of in-line blowers.

Management Response:

Management agrees with the recommendation with respect to vents D1 and D2 and is securing a proposal to modify the system and make it "active" for vents D1 and D2 only. Vents D1 and D2 vent the area of the plume. There is no need to modify the system to make it "active" for vents D3 and D4 because they do not vent the area of the plume and all of the testing of these particular vents showed no methane readings.

Target Implementation Date: June 30, 2017

However, this target implementation date is subject to extension if MDEQ requires an Air Permit for the installation after the Postal Service submits its design to MDEQ for approval. If such a permit is required, then the target implementation date would change accordingly.

Responsible Manager:

District Manager, Detroit District  
Manager, Repair and Alterations (West), Facilities

**Recommendation No. 2:**

We recommend the vice president, Area Operations, Great Lakes Area; develop a process to check for a response to specific levels of calibrated methane gas at least every 6 months for all methane sensors.

Management Response:

Management agrees with the recommendation and has a contract in place to complete quarterly maintenance.

Implementation Date: Completed in November, 2016.

Responsible Manager:

District Manager, Detroit District

**Recommendation No. 3:**

We recommend the vice president, Area Operations, Great Lakes Area; conduct additional training on the methane detection system for managers and supervisors responsible for the system using the updated *Operations, Maintenance and Monitoring Manual*.

Management Response:

Management agrees with the recommendation. Further training for Maintenance management is scheduled for January 2017.

Target Implementation Date: January 2017

Responsible Manager(s):

District Manager, Detroit District

Recommendation No. 4:

We recommend the vice president, Area Operations, Great Lakes Area, update the *Operations, Maintenance and Monitoring Manual* to identify and describe all operations and maintenance procedures for the methane venting and detection systems. The manual should also include the author of the document and date completed.

Management Response/Action Plan:

Management agrees with the recommendation and has updated the manual including the author and date completed.

Implementation Date: Completed October, 2016.

Responsible Manager:

District Manager, Detroit District



Jacqueline Krage Strako  
Vice President, Great Lakes Area Operations



Tom A. Samra  
Vice President, Facilities

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