MEMO

To:
Paul Owens, District Supervisor
EGLE Warren District Office
27700 Donald Court
Warren, Michigan 48092-2793
owensp@michigan.gov

Copies:
Ms. Beth Vens, EGLE
Mr. Brandon Alger, EGLE
Mr. Todd Walton, Ford

From:
Kris Hinskey

Arcadis of Michigan, LLC
28550 Cabot Drive
Suite 500
Novi
Michigan 48377
Tel 248 994 2240
Fax 248 994 2241

Date:
August 30, 2019

Arcadis Project No.:
30016352 (MI001454.0007)

Subject:
Livonia Transmission Plant
36200 Plymouth Road, Livonia, Wayne County, Michigan
EGLE Site ID No. 82002970
Offsite Interim Preemptive Mitigation Installation Monthly Update

---

On behalf of Ford Motor Company (Ford), Arcadis of Michigan, LLC (Arcadis) has prepared this monthly update to the interim preemptive mitigation system installation for the Livonia Transmission Plant (LTP) site (the site) as requested by Michigan Department of Environment, Great Lakes, and Energy (EGLE) via email on May 26, 2019 and on July 26, 2019. As of August 30, 2019, the following progress has been made at 30 residential properties in the Alden Village subdivision:

- 24 of 30 interim preemptive mitigation systems are installed and operating as designed
- 30 of 30 interim preemptive mitigation system are designed
- 3 of 30 interim preemptive mitigation system are designed and currently being installed or are scheduled
- 3 of 30 current property owners are unwilling to allow the mitigation system to be installed at their properties
- 1 shed has had RetroCoat applied to the floor
- 0 of 11 garages have had RetroCoat applied to the floor

Arcadis continues to work diligently to coordinate and install the interim preemptive mitigation systems. In addition, Arcadis is providing an update to EGLE on the current status of properties that require additional work due to the presence of a basement. Details are provided below for all 30 locations.

Interim Preemptive Mitigation Systems Operating as Designed

- **12088 Brewster** – Interim preemptive mitigation system was installed as designed and has been in operation since March 8, 2019. Post mitigation sampling was completed on April 19, 2019. The analytical data package was provided to all parties consistent with the access agreement on July 10, 2019. In order to meet performance metrics established by EGLE of -0.02 in water column (wc) for

the garage, numerous cracks had to be sealed with caulk. The garage floor was also painted with an epoxy coating at the property owners request. The final condition of the garage is provided below. The system is currently in routine operation and maintenance. The final routine OM&M sampling event will be scheduled with the property owner in the first quarter of 2020.

12088 Brewster garage floor after painting

- **12075 Brewster** – Interim preemptive mitigation system was installed as designed and has been in operation since March 11, 2019. Post mitigation sampling was completed on April 18, 2019. The analytical data package was provided to all parties consistent with the access agreement on July 11, 2019. The system is currently in routine operation and maintenance. The final routine OM&M sampling event will be scheduled with the property owner in the first quarter of 2020.
- **12089 Boston Post** – Interim preemptive mitigation system was installed as designed and has been operational since March 13, 2019. Post mitigation sampling was completed on April 24, 2019. The analytical data package was provided to all parties consistent with the access agreement on July 10, 2019. As indicated in the letter EGLE provided on July 26, 2019, “gurgling” was observed in the piping associated with the sub-slab depressurization system (SSDS) installed at property 12089 Boston Post. It was determined that the “gurgling” was due to the presence of water within the mitigation system piping. This observation occurred during extreme high-water levels that were observed in April, May, and June 2019. During that period, 11.74 inches of rain fell within the Alden Village area. Water has not been observed in the SSDS since the water levels resided in the middle of June 2019; consequently, Arcadis does not expect further impacts from water, but will evaluate in the event more of an inch of rain is observed within Alden Village in a 24-Hr period. On July 8, 2019, all sub-slab monitoring points were measured and were meeting the performance metric established by EGLE of -0.02 in water column (wc). The system is currently in routine operation and maintenance. The final routine OM&M sampling event will be scheduled with the property owner in the first quarter of 2020.
- **34450 Beacon** - Interim preemptive mitigation system was installed as designed and has been in operation since March 14, 2019. An additional sub-membrane suction point was installed on April 15, 2019, to enhance the vacuum coverage. Post mitigation sampling was completed on April 26, 2019. The analytical data package was provided to all parties consistent with the access agreement on July 12, 2019. On June 11, 2019, Arcadis removed all standing water and repaired the liner. On June 14, 2019, all monitoring points were measured and were meeting the performance metric established by

EGLE of -0.02 in wc. The system is currently in routine operation and maintenance. The final routine OM&M sampling event will be scheduled with the property owner in the first quarter of 2020.

- **34401 Capitol** – Interim preemptive mitigation system was installed as designed and has been in operation since March 17, 2019. Post mitigation sampling was completed on April 18, 2019. The analytical data package was provided to all parties consistent with the access agreement on May 18, 2019. While installing the liner in the crawl space for the interim preemptive mitigation system, a leak in the sanitary line was identified. The compromised sanitary line was replaced by a licensed plumber, a photo is provided below.

  On June 8, 2019, Arcadis repaired all compromised seams for the liner and observed no water within the crawl space. On July 24, 2019, Arcadis measured strong vacuum influence at the sub-membrane monitoring points, -0,012 in wc at MP-1 and -0.028 in wc at MP-2. However, since the vacuum was found to be lower than the performance metric established by EGLE of -0.02 in wc at MP-1, an additional sub-membrane suction point was installed on August 28, 2019. Sub-membrane monitoring points were then measured at -0.025 at MP-1 and -0.025 at MP-2. The system is currently in routine operation and maintenance. The final routine OM&M sampling event will be scheduled with the property owner in the first quarter of 2020.

34401 Capitol new sanitary line

- **34380 Beacon** - Interim preemptive mitigation system was installed as designed and began operation on April 2, 2019. The preemptive mitigation system stopped operating unexpectedly on April 4, 2019. After resolving access issues with the property owner, the mitigation system was turned on and has been operating continuously since April 19, 2019. Post mitigation sampling was conducted on May 22, 2019. The analytical data package was provided to all parties consistent with the access agreement on July 30, 2019. The system is currently in routine operation and maintenance. The final routine OM&M sampling event will be scheduled with the property owner in the first quarter of 2020.
- **12091 Brewster** – Interim preemptive mitigation system was installed as designed and has been in operation since May 9, 2019. Post mitigation sampling was completed the week of May 9, 2019. The analytical data package was provided to all parties consistent with the access agreement on July 17, 2019.

In order to gain access to the crawlspace, a number of deck boards had to be removed. The property owner did not like the appearance of the new deck lumber next to the existing weathered lumber. Therefore, the entire deck was replaced at the property owner's request. A photo of the new deck is provided below. The system is currently in routine operation and maintenance. The final routine OM&M sampling event will be scheduled with the property owner in the first quarter of 2020.

12091 Brewster new deck

- **34424 Beacon** – Interim preemptive mitigation system was installed as designed and has been in operation since April 12, 2019. Post mitigation sampling was completed on May 15, 2019. The analytical data package was provided to all parties consistent with the access agreement on July 30, 2019. The system is currently in routine operation and maintenance. The final routine OM&M sampling event will be scheduled with the property owner in the first quarter of 2020.
- **34920 Beacon** – Interim preemptive mitigation system was installed as designed and has been in operation since May 15, 2019. Post mitigation sampling was completed on June 21, 2019. The analytical data package was provided to all parties consistent with the access agreement on July 30, 2019. The system is currently in routine operation and maintenance. The final routine OM&M sampling event will be scheduled with the property owner in the first quarter of 2020.
- **34950 Beacon** – Interim preemptive mitigation system was installed as designed and has been in operation since April 19, 2019. Post mitigation sampling was scheduled for the week of June 3, 2019. The property owner contacted Arcadis via telephone on June 3, 2019 and indicated that they would not be home for the post mitigation sampling event. Arcadis attempted to reschedule the post mitigation sampling via phone call on June 11, 2019, but the property owner did not answer. Arcadis coordinated the post mitigation sampling on June 20th, 2019. The analytical data package was provided to all parties consistent with the access agreement on July 30, 2019. The system is currently in routine operation and maintenance. The final routine OM&M sampling event will be scheduled with the property owner in the first quarter of 2020.
- **12017 Brewster** – Interim preemptive mitigation system was installed as designed and has been in operation since April 19, 2019. Post mitigation sampling was completed on May 30, 2019. The analytical data package was provided to all parties consistent with the access agreement on July 11, 2019. The system is currently in routine operation and maintenance. The final routine OM&M sampling event will be scheduled with the property owner in the first quarter of 2020.

- **34600 Beacon** – Interim preemptive mitigation system, consisting of RetroCoat and sump venting, was installed as designed and has been in operation since June 28, 2019, when Arcadis completed the application of RetroCoat on the basement walls and floor and on the garage floor. In order to apply the RetroCoat the two hot water heaters in the basement had to be removed. The homeowner requested the hot water heaters be disposed of and new hot water heaters be installed. The new hot water heaters were installed at no cost to the property owner. Below are photos of the finished basement and garage post RetroCoat application. Arcadis coordinated temporary lodging for the property owner including a daily per diem for 3 days when the hot water heaters were disconnected. Additionally, the sub-slab depressurization system continues to extract from beneath the garage floor. Post mitigation sampling occurred on July 24, 2019. Once the results have been received, reviewed and validated, the data package will be submitted to all parties as outlined in the access agreement. The system is currently in routine operation and maintenance. The final routine OM&M sampling event will be scheduled with the property owner in the first quarter of 2020.

34600 Beacon Garage after RetroCoat application

34600 Beacon replacement water heater

- **12131 Boston Post** – The interim preemptive mitigation system was installed as designed and is in operation since March 13, 2019. An interim air purifier unit was provided for temporary mitigation of the basement area until July 3, 2019, when Arcadis completed the application of RetroCoat on the basement walls, and installation and depressurization of a Cupolex sub-flooring plenum. Photos of the completed Cupolex flooring, walls with RetroCoat, and the drywall that was replaced are provided below. In order to install the barrier and flooring in the basement, the hot water heater and the furnace were temporarily disconnected. and removed from the furnace room. Arcadis coordinated temporary lodging for the property owners including a daily per diem for 5 days when the hot water tank and furnace were not in operation. On July 25, all monitoring points, including the new Cupolex monitoring point, were measured and were meeting the performance metric established by EGLE of -0.02 in wc. Post mitigation sampling was completed on August 1, 2019. Once the results have been received, reviewed and validated, the data package will be submitted to all parties as outlined in the access agreement. The system is currently in routine operation and maintenance. The final routine OM&M sampling event will be scheduled with the property owner in the first quarter of 2020.

12131 Boston Post basement after RetroCoat

12131 Boston Post basement after RetroCoat

- **12101 Brewster** – Interim preemptive system was installed as designed and has been in operation since June 7, 2019. On June 10, 2019, MP-2 was measured at -0.003 in wc. However, the other eleven monitoring points installed at this property meet the performance metric established by EGLE of -0.02 in wc. Post mitigation sampling was completed on August 14, 2019. Once the results have been received, reviewed and validated, the data package will be submitted to all parties as outlined in the access agreement.

  Additionally, numerous improvements were made at the property owners request during the installation of the interim preemptive mitigation system. Arcadis also identified multiple repairs that were needed in order to install the interim preemptive mitigation system. Below is a summary of the additions and repairs.

  - The fan for the mitigation system was installed in the garage attic space at the request of the property owner. A pull-down attic ladder was installed to provide easy access to the garage attic space. A photo is provided below.
  - The existing electrical overhead service line was in poor condition and did not meet code, therefore the electrical line was replaced. The property owner also requested that the current overhead service line be replaced with an underground service line. This work was completed by DTE. A photo is provided below.
  - The existing ductwork within the crawl space were degraded and in poor condition and was replaced.

  To increase performance the garage floor will be sealed with caulk and a vacuum transmitter installed as necessary. The work has been scheduled for the week of September 9, 2019. The final routine OM&M sampling event will be scheduled with the property owner in the first quarter of 2020.

12101 Brewster garage attic ladder

12101 Brewster new electric service

- **12067 Boston Post** – Interim preemptive mitigation system was installed as designed and has been in operation since July 3, 2019. On July 29, 2019, MP-1 was measured at -0.013 in wc. However, the other three monitoring points installed at this property meet the performance metric established by EGLE of -0.02 in wc. A vacuum transmitter was installed at MP-1 on August 28, 2019. Additionally, during the installation of the interim preemptive mitigation system, several water leaks were observed and determined to be originating from the living space of the home. A licensed plumber made multiple repairs to prevent water from accumulating on the liner. Post mitigation sampling was scheduled for completion in August and then canceled upon arrival by the homeowner. The sampling event has been rescheduled to be completed the week of September 3, 2019. Once the results have been received, reviewed and validated, the data package will be submitted to all parties as outlined in the access agreement. The system is currently in routine operation and maintenance. The final routine OM&M sampling event will be scheduled with the property owner in the first quarter of 2020.
- **34550 Beacon** – Interim preemptive mitigation system was installed as designed and has been in operation since July 3, 2019. Post mitigation sampling was rescheduled for the week of September 3, 2019 as the resident declined to keep the windows closed during the sampling event. Once the results have been received, reviewed and validated; the data package will be submitted to all parties as outlined in the access agreement. The system is currently in routine operation and maintenance. The final routine OM&M sampling event will be scheduled with the property owner in the first quarter of 2020.
- **34940 Beacon** – The interim preemptive mitigation system has been in operation since March 27, 2019. An interim air purifier unit was provided for temporary mitigation of the basement area until July 24, 2019, when Arcadis completed the application of RetroCoat on the basement walls and floor. Arcadis coordinated temporary lodging for property owners including a daily per diem for seven days when the HVAC system was disconnected for RetroCoat application. Additionally, prior to the removal of the furnace a certified HVAC contractor inspected the furnace and identified that the heat exchanger was cracked and would not be able to be reinstalled. The HVAC contractor also indicated that the air conditioning unit was not operational, which the property owner confirmed. A new furnace and air conditioner were purchased for the property owners and reinstalled, below are photos of the new units and RetroCoat.

Post mitigation sampling was completed the week of August 26, 2019. Once the results have been received, reviewed and validated, the data package will be submitted to all parties as outlined in the access agreement. The system is currently in routine operation and maintenance. The final routine OM&M sampling event will be scheduled with the property owner in the first quarter of 2020.

34940 Beacon new air conditioner, furnace and basement after RetroCoat application

- **12141 Boston Post** – Interim preemptive mitigation system was installed as designed and has been in operation since April 9, 2019 for both the home and the attached garage. Post mitigation sampling was conducted in the garage and the home during the week of May 20, 2019. The analytical data package was provided to all parties consistent with the access agreement on August 9, 2019.

  On May 20, 2019, sub-membrane monitoring point MP-1 was measured at -0.012 in wc and sub-slab monitoring point SSMP-01 (located in the attached garage) was measured at -0.005 in wc. However, the other three monitoring points installed at this property meet the performance metric established by EGLE of -0.02 in wc. Arcadis has coordinated with the property owner and is preparing to seal the cracks in the garage. Epoxy paint will be applied to the of attached garage floor and the installation of a transmitter will be installed the week of September 2, 2019.

  Thus far, performance metrics have not been collected for the interim preemptive mitigation system within the slab on grade portion of the home. Monitoring points have not been installed in the finished spaces (e.g., through carpeted and/or finished floors) per the property owner's request, as documented in the March 29, 2019 field notes. Indoor air samples will be collected and analyzed within 90 days after the initial post mitigation sampling event to verify performance in areas that do not currently have a monitoring points installed. Indoor air sampling is currently being scheduled with the homeowner and will be completed pending access. The final routine OM&M sampling event will be scheduled with the property owner in the first quarter of 2020.

- **12066 Boston Post** - Interim preemptive mitigation system was installed as designed and has been in operation since March 17, 2019. Post mitigation sampling was performed on May 31, 2019. The analytical data package was provided to all parties consistent with the access agreement on July 11, 2019.

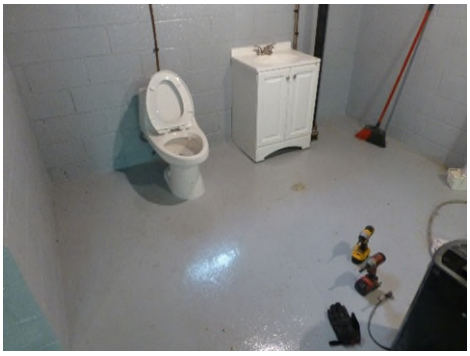
  Flooding response was conducted on June 14, 2019, during which time Arcadis inspected the liner for water and evaluated system performance. Performance metrics were not being met within the crawl space; therefore, a stronger fan was procured. Performance metrics were not being met within the crawl space; therefore, a stronger fan was procured. On July 11, 2019, the fan was replaced with a stronger fan (AMG Legend). Initial readings on the U-tube increased from -0.6 to -1.2 in wc. However, the three monitoring points remained under EGLE's recommend vacuum of -0.02 in wc.

On August 2, 2019, an additional crawlspace suction point was added and connected to the existing mitigation system, resulting in all monitoring points meeting the EGLE's recommend vacuum of -0.02 IWC. The system is currently in routine operation and maintenance. The final routine OM&M sampling event will be scheduled with the property owner in the first quarter of 2020.

- **12036 Brewster** - Interim preemptive mitigation system was installed and began operation on April 2, 2019. An interim air purifier unit was provided on March 17, 2019 for temporary mitigation of the basement area until August 12, 2019, when Arcadis completed the application of RetroCoat on the basement walls and floor. In order to apply the RetroCoat the furnace and hot water heater were removed on August 1, and Arcadis coordinated temporary lodging for the property owners from August 1 thru August 7th including a daily per diem. In order to apply the RetroCoat the basement was completely emptied and the existing walls, and bathroom were demolished. Arcadis provided three PODs for the storage of the items from the basement. At the homeowner's request, unwanted items were placed in the dumpster with the demolition materials. Additionally, the porch area of the home was painted with an epoxy coating per the homeowner's request and an enclosure was built around the fan to enable operation within the garage attic. Photos of the painted porch floor and basement RetroCoat application are provided below.

  Modifications to the sub-slab depressurization system were completed on July 3, 2019, and a vacuum transmitter was installed at sub-slab monitoring point SSMP-2, located in the attached garage, on August 7, 2019. Post mitigation sampling is scheduled to be completed the week of September 3, 2019. Once the results have been received, reviewed and validated, the data package will be submitted to all parties as outlined in the access agreement. The system is currently in routine operation and maintenance. The final routine OM&M sampling event will be scheduled with the property owner in the first quarter of 2020.

12036 Brewster Pods epoxy coating



12036 Brewster basement after RetroCoat and toilet replacement

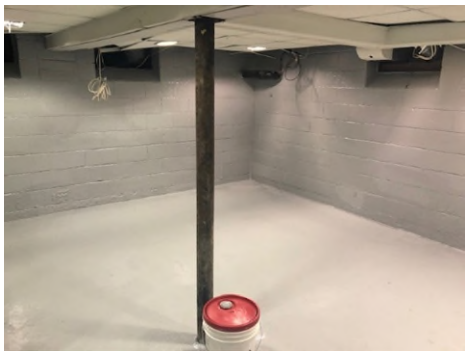
- **34990 Beacon** – The interim preemptive mitigation system was installed as designed and has been in operation since May 9, 2019. An interim air purifier unit was provided for temporary mitigation of the basement area until August 30, 2019, when Arcadis completed the application of RetroCoat on the basement walls and floor. In order to apply the RetroCoat, the furnace and hot water heater were disconnected and temporarily moved in the basement for storage. During the installation, Arcadis communicated with the homeowners twice each day once in the morning and once in the evening in

an effort to make sure that the property owners were fully updated during the completion of the application of the RetroCoat. Due to homeowners concerns regarding the operation of the HVAC system after reinstallation, a new furnace and air conditioning (AC) unit was provided at no cost to the property owner. A City of Livonia permit was secured prior to the reinstallation of the HVAC and AC unit. The property owners were provided with a hotel room and daily per diem for the full three weeks as work was conducted in the basement. Estimated completion date for refinishing work in the basement will be discussed with the property owner.

On July 31, 2019, sub-membrane monitoring point MP-1 was measured at -0.019 in wc and sub membrane monitoring point MP-7 was measured at -0.015 in wc. However, the other five sub-membrane monitoring points installed at this property all meet the performance metric established by EGLE of -0.02 in wc. On August 21, 2019 sub-membrane monitoring point MP-1 was measured at -0.027 in wc and sub membrane monitoring point MP-7 was measured at -0.017 in wc. Additionally, the other five sub-membrane monitoring points installed at this property all meet the performance metric established by EGLE of -0.02 in wc. Subsequently additional valve adjustments were completed resulting in either MP-1 or MP-7 operating at less than 0.02 in wc of vacuum influence. Therefore, on August 28, 2019 a vacuum transmitter was installed at Monitoring Point MP-7, where the current valve setting for the vacuum influence was set to -0.016 in wc., Therefore, on August 28, 2019 a vacuum transmitter was installed at Monitoring Point MP-7, where with the current valve setting the vacuum influence was -0.016 in wc., and The other six sub-membrane monitoring points installed at this property all meet the performance metric established by EGLE of -0.02 in wc.

The application of RetroCoat to the concrete floor of the shed that is present on the property was completed on August 28, 2019. The property owner denied the application of RetroCoat in the detached garage, since the floor has an existing epoxy coating. Photos of the RetroCoat application in the basement and shed are provided below.

Vapor Intrusion sampling was completed on July 31st. Once the results have been received, reviewed and validated, the data package will be submitted to all parties as outlined in the access agreement. Post mitigation sampling will be scheduled for approximately 30 days after system completion.



34990 Beacon RetroCoat of basement

34990 Beacon RetroCoat of shed floor

- **34591 Beacon** – Interim preemptive mitigation system was installed as designed and has been in operation since April 19, 2019. Post mitigation sampling was completed the week of May 22, 2019. The analytical data package was provided to all parties consistent with the access agreement on August 30, 2019. On August 6, 2019, Arcadis installed an additional suction point under the slab area which was connected to the current mitigation system. The sub-slab monitoring point SSMP-1 (located in the slab addition) was measured at -0.009 in wc. However, the three sub-membrane monitoring points all meet the performance metric established by EGLE of -0.02 in wc. Arcadis contacted the homeowner via telephone on August 20, 22 and 26, 2019 to schedule the transmitter installation. With homeowner consent, the installation of a vacuum transmitter will be completed by September 30, 2019. The system is currently in routine operation and maintenance. The final routine OM&M sampling event will be scheduled with the property owner in the first quarter of 2020.
- **34367 Capitol** – The installation of the preemptive mitigation system began on May 13, 2019 but was delayed obtaining concurrence with the City of Livonia on structural repairs. On August 19 and 20, 2019, a licensed residential builder installed two metal basement jack supports and twelve 4-inch by 4-inch treated wood supported on concrete bases. The structural repair was completed at no cost to the property owners and the installation of the structural repair was approved on August 20, 2019 by Jerome Hanna, Director of Inspection for the City of Livonia. A photo of the structural repair is presented below. The interim preemptive mitigation system was installed as designed and has been in operation since August 30, 2019. Vapor intrusion sampling was completed the week of August 8th, 2019. The laboratory reports have been received, the results are currently being validated and the data package will be provided to all parties consistent with the access agreement. Post mitigation sampling will be scheduled for approximately 30 days after system completion.

34367 Capitol structural repair

- **34480 Capitol** – Interim preemptive mitigation system was installed as designed and has been in interim operation since June 11, 2019. On August 15, 2019, the interior of the ductwork located under the slab-on-grade portion of the home was sealed with a spray on coating by a licensed HVAC contractor, and the sub-slab monitoring point SSMP-02 (located in the slab area) was measured at -0.003 in wc. However, the three of the sub-membrane monitoring points all meet the performance metric established by EGLE of -0.02 in wc. A photo of the coated duct work is provided below. Post mitigation sampling was completed on August 13, 2019. Once the results have been received, reviewed and validated, the data package will be submitted to all parties as outlined in the access agreement. Arcadis scheduled the installation of a vacuum transmitter and the homeowner cancelled. Arcadis has rescheduled and will attempt to be completed by September 30, 2019 depending on homeowner availability. The system is currently in routine operation and maintenance.

The final routine OM&M sampling event will be scheduled with the property owner in the first quarter of 2020

34480 Capitol coated duct work

Interim Preemptive Mitigation System Currently Being Designed

Initial designs for the interim preemptive mitigations systems have been completed for the 30 properties. Modifications to the design and construction of the systems installed at a few residential properties are ongoing to accommodate property owner requests, and as deviations from target performance metrics are identified in the field.

Interim Preemptive Mitigation System is Designed and Currently Being Installed or is Scheduled

Mitigation systems at 9 of the 30 properties are either in the process of being installed, are currently scheduled, or require additional mitigation activities. The properties with basements have an active air purifier within the basement or in the home that runs 24 hours per day. Per the Vapor Intrusion (VI) Response Activity Plan (RespAp), and EGLE VI Guidance Section 5.5 dated May 2013, indoor air sampling will continue a monthly basis for the homes with a basement until the mitigation systems are fully operational. The request for monthly indoor air sampling was received by Ford on May 8, 2019 from EGLE. Details are provided below regarding the status of the work at the individual properties.

- **12100 Boston Post** – Interim preemptive mitigation system was installed as designed and has been in operation since March 25, 2019. Post mitigation sampling was completed on May 3, 2019. The analytical data package was provided to all parties consistent with the access agreement on July 13, 2019.

  A vacuum transmitter was installed on the monitoring point located in the attached garage addition on May 4, 2019, to continuously monitor vacuum levels at SSMP-04 and confirm that vacuum is being maintained, since the vacuum level is less than the performance metric established by EGLE of -0.02 in wc.

  On June 11, 2019, sub-slab monitoring point SSMP-01 (located in the slab addition) was measured at -0.002 in wc. However, both of the sub-membrane monitoring point (MP-1 and MP-2) and the sub-slab monitoring points in the attached garage (SSMP-01 and SSMP-03) meet the performance metric established by EGLE of -0.02 in wc. Arcadis is currently evaluating if duct work is located beneath the slab and affecting the vacuum influence. Arcadis spoke to the property owner on July 26, 2019 and addressed the questions provided to Arcadis in an email on July 15, 2019. The property owner has agreed to have a qualified HVAC professional inspect the ducts servicing the slab addition to determine if lining of the ducts is warranted. Arcadis is currently scheduling that inspection. The homeowner has been contacted via email on July 29, 2019, August 6, 2019, August 22, 2019 and

August 26, 2019 to schedule the inspection. Anticipated completion date is September 30, 2019 but is dependent on the property owner's availability.

- **12070 Boston Post** – Interim preemptive mitigation system was installed as designed with an interim air purifier unit for the basement and has been in operation since March 13, 2019. A photo of the liner installed in the crawl space is provided below. The property owner reviewed the alternate system design that addressed their concerns. The property owner requested on June 28, 2019 that EGLE provide third party to evaluate the interim preemptive mitigation system. EGLE denied this request on July 5, 2019 indicating that the interim preemptive mitigation system will be reviewed in its entirety once Ford/Arcadis submit the Vapor Intrusion Assessment and Mitigation Plan.

  Arcadis and a certified HVAC contractor met with the property owner on July 10, 2019 to evaluate the current furnace and potential positioning of a new tankless water heater, which the property owner would like placed in the area that will be converted from a basement to a crawl space. On July 25, 2019, Arcadis selected a residential licensed builder to complete the additional work as required by the City of Livonia. The contractor has applied for the building permit through the City of Livonia. Once the permit has been received, Arcadis will provide the final design to the property owners along with the permit for approval. Arcadis has scheduled this work to begin on September 9th and anticipates this work to be completed by September 30, 2019 but is dependent on access and approval from the property owner.

  12070 Boston Post liner installed in crawl space

- **34682 Beacon** - Interim preemptive mitigation system was installed as designed with an interim air purifier and has been in operation since May 3, 2019. Arcadis contacted the homeowner via telephone on July 25 and 30, 2019, and via email/telephone and/or in person on August 8, 9, 22, 23, and 26, 2019 to schedule the vapor intrusion sampling event. Multiple attempts have been made to schedule the post mitigation sampling event. The homeowner has not scheduled saying his work schedule does not accommodate the sampling events. Arcadis will continue to work with the homeowner to schedule a sampling event. The sub-slab monitoring points (located in the slab/former attached garage area) SSMP-01 and SSMP-04 were measured at -0.007 in wc and 0.000 in wc respectively. However, both of the sub-membrane monitoring point (MP-4 and MP-5) and the sub-slab monitoring points in the attached garage (SSMP-02 and SSMP-03) meet the performance metric established by EGLE of -0.02 in wc. The slab in the former garage area currently cannot be accessed for crack sealing. However, the property owner indicated on April 17, 2019, that the former garage living space is potentially going to be remodeled in 2019. Arcadis contacted the resident on June 18, 2019 to inquire about when a potential remodel would occur. The property owner indicated that there

is no set date for when, or if, the remodeling will occur, therefore Arcadis anticipates moving forward with additional measures.

Arcadis discussed modifications to the current mitigation system with EGLE vapor intrusion expert (Matt Williams) on July 22, 2019. Based on that discussion, Arcadis has revised the design to include a second mitigation system to provide additional vacuum influence under the slab area. The new design was presented to the property owner, and on August 2[2,] 2019, the homeowner told Arcadis he does not want a second system installed on his house. Arcadis has scheduled a day to evaluate the system operation to increase vacuum influence in the slab area and potentially install a transmitter. This work will be completed by September 30th if access can be coordinated with the homeowner.

Interim Preemptive Mitigation Systems Declined – Extension Requested

- **12121 Boston Post** –The homeowner was presented with an air purifier on March 21, 2019 as part of the initial preemptive mitigation approach. The air purifier remained on the front porch until March 24, 2019, when an Arcadis employee retrieved the unit. The air purifier was retrieved from the location, so damage did not occur to the unit from being outside and exposed to the weather. The draft design for the preemptive mitigation system was provided on March 29, 2019. On April 16, 2019, the property owners sent an email indicating that Ford nor Arcadis had access to the property any longer. A complaint was filed on July 10, 2019 in the Michigan state court to gain access to this home to complete the installation of the interim preemptive mitigation system.
- **12124 Boston Post** – This property was scheduled for installation of the preemptive mitigation system on March 23, 2019. On March 19, 2019, Arcadis received an email from the property owner declining the installation of the preemptive mitigation system. The property owner indicated that he wanted to discuss in further detail with his attorney. The property owner also declined the air purifier on March 18, 2019, citing the purifier would make too much noise and take up too much space. As of April 16, 2019, Arcadis has been unable to schedule further the installation of the interim preemptive mitigation system. However, the homeowner is allowing Arcadis to perform vapor intrusion sampling which was completed on August 7, 2019. Once the results have been received, reviewed and validated, the data package will be submitted to all parties as outlined in the access agreement. A complaint was filed on July 10, 2019 in the Michigan state court to gain access to this home to complete the installation of the interim preemptive mitigation system.
- **34644 Beacon** - The interim preemptive mitigation system was tentatively scheduled to begin on May 15, 2019. However, the property owner has refused the installation of the interim preemptive mitigation system until the noise of the fans at the adjacent neighbor's property is reduced. In addition, the property owner is only allowing construction activities to occur when they are home, which is after 4:00 PM. The property owner has requested a white liner instead of the black liner in the past.

  Arcadis has been working with the property owner to address their concerns, but on June 1, 2019 the property owner contacted Arcadis via telephone indicating that he is not ready to have the system installed and needs to think it over. On July 10, 2019, Arcadis contacted the property owner and again indicated he is not ready for the installation of the interim preemptive mitigation system and asked Arcadis send him the design again so his friend who owns a radon business can review. On July 10, 2019, Arcadis sent the property owner the design, as requested. On July 25, 2019, Arcadis's community liaison met with the property owner to determine if he had any further questions or

concerns regarding the design. The property owner indicated that he sent our design to his friend who was a radon installer. Based on the radon installers evaluation of the Arcadis design, the property owner indicated that the interim mitigation system will not do anything to remove vapors and he feels it is unnecessary. The property owner indicated that he does not want his home to be tore up for a system that is not needed, does not work, and indicated that Arcadis will not be installing one in his home. Arcadis contacted the homeowner via telephone on July 29 and 31, 2019 to schedule the sampling event. The homeowner has not allowed access to Arcadis to conduct any additional rounds of indoor air sampling.

Because the property owner has now rejected the installation of an interim preemptive mitigation system, Ford's outside counsel plans to amend the complaint seeking access to the properties at 12121 Boston Post and 12124 Boston Post to also seek access to 34644 Beacon to complete the installation of an interim preemptive mitigation system. The suit seeking access to the properties at 12121 Boston Post and 12124 Boston Post has been removed by those property owners to federal court. Ford will seek to amend the complaint to include access to 34644 Beacon as soon as practicable.

In the July 26, 2019 letter EGLE requested an update for the property located at 12034 Brewster. On April 19, 2019, Arcadis provided EGLE documentation based on groundwater data that had been collected from a newly installed shallow monitoring well MW-192S. Monitoring well MW-192S analytical results showed no presence of vinyl chloride or any other constituent of concern. Based upon that data the 100-foot buffer was moved to the north. Subsequently,12034 Brewster no longer resided in the 100-foot buffer; therefore, the installation of the interim preemptive mitigation system was put on hold. Although the interim preemptive mitigation system installation was put on hold vapor intrusion sampling continues.

Arcadis continues to work diligently to install the interim preemptive mitigation systems and anticipates the installations/modifications of the remaining systems to be completed by the end of September 2019. Arcadis will continue to coordinate and complete OM&M activities as necessary to evaluate the performance of the operating preemptive mitigation systems.