

From: Schultz, Josie M - DNR
Sent: Wednesday, April 20, 2022 1:55 PM
To: Rob Hoverman
Cc: Beggs, Tauren R - DNR
Subject: VMS OM&M plan comments for Jagemann Plating, BRRTS # 02-36-555544

Hi Rob,

IIRC recently updated their Vapor Intrusion Mitigation (VIM) fact sheets within the last two years, and the ones that pertain to active sub-slab depressurization can be found here:

Active Mitigation Fact Sheet: <https://vim-1.itrcweb.org/active-mitigation-fact-sheet/>

SSD Tech Sheet: <https://vim-1.itrcweb.org/sub-slab-depressurization-ssd-tech-sheet/>

OM&M Checklist: <https://vim-1.itrcweb.org/operations-maintenance-monitoring-checklist/>

System Design and Documentation Checklist: <https://vim-1.itrcweb.org/system-design-and-documentation-checklists/>

Post-Installation Verification Checklist: <https://vim-1.itrcweb.org/post-installation-system-verification-checklist/>

Below is the general format and items that need to be included in the OM&M plan for a VMS.

General OM&M plan comments (items I noticed are missing within the Jagemann report are in red):

- A separate Long-Term Operation, Monitoring and Maintenance (OM&M) Plan needs to be submitted. This can be submitted as an appendix to the construction documentation report or a separate submittal but will need to be able to be attached to a continuing obligation letter without the more technical construction documentation report. The OM&M Plan should follow Attachment D requirements outlined on Closure Form 4400-202 (reference RR-981 for additional information) but does not need to be labeled as D.1, D.2, etc when not part of the closure documentation. OM&M Plan includes the following:
 - **Part D.1 – Description of maintenance action(s) required for maximizing effectiveness of the VMS**
 - i. System description, purpose, and location
 - 1. Property description (address, lot, parcel number); date of maintenance plan; system design; location of barriers, piping system, discharge point, fan(s), manometer(s), etc
 - ii. System design and construction documentation
 - 1. Includes system diagram with location of electrical connections, fan(s), suction point(s), piping runs, discharge point, alarm, PFE points, etc.
 - iii. System Maintenance
 - 1. Explanation of the required maintenance of the fan/blower(s) (e.g. listen for if fan becomes louder, ensure manometer reading doesn't drop below a certain level, ensure blower is plugged in and operating, system alarm is operational, etc.)
 - 2. Maintenance of the floor as a barrier (e.g. note that floor cracks should be sealed; photos of current floor condition should be included and referenced)

a. Schultz comment for Jagemann: small photo is included in the inspection log under foundation floor and states to seal cracks

3. Need to reassess the potential for vapor intrusion if the use of the space changes, or if the air exchange changes
 4. Required actions/specifications in case of system removal or replacement
 - a. If system is wished to be removed after case closure, DNR must be notified 45 days prior with a decommissioning plan (Consultant can reference **Appendix F of RR-800** for decommissioning guidelines).
 - b. If system is wished to be removed while the case is still open, consultant needs to submit a workplan that includes decommissioning plan and sampling to meet requirements of the ch. NR 700 Rule Series.
 5. Repair or replace system components immediately upon discovery of a malfunction. Document actions taken in inspection log/reports
- iv. Inspections
1. Provides clear description of how to verify the VMS is operating properly, when repairs need to be made or parts replaced, and identifies the frequency of monitoring and record keeping needed to document proper operation.
 - a. For CVOC sites, particularly ones containing TCE, it should state that the inspection needs to be performed annually by September 30th and inspection log (Form 4400-321 for standard sub-slab depressurization systems / active vapor mitigation systems) needs to be submitted annually by October 15th.
 - b. Include provision that inspection log will be maintained on site (and submitted to DNR as appropriate), and where it will be maintained (recommend it is zip-tied along with OM&M plan to the system, near the manometer and alarm)
 - c. Include provision for notifying DNR if any problem occurs for two or more successive inspections
- v. Notifications
1. System changes (and potentially changes to land use or property use if 7E or 7D COs are applied) are required to be reported and should be included as a reminder in the maintenance plan.
 - a. Must notify DNR 45 days prior to any changes after the case is closed.
 - b. Consultant must submit a workplan for system changes if the case is open.
- vi. Contacts
1. List the name, address, telephone number and e-mail address of the responsible party if performing OM&M, property owner where system is installed, consultant and DNR project manager.
 2. Provide a contact at the company that installed the vapor mitigation system, for reporting problems.

3. Provide a contact at a company under contract for system maintenance, if applicable.
- **Part D.2 – Location Maps**
 - i. Location map should be included, which labels:
 1. Features that require maintenance (e.g. fan/blower(s), suction point(s), sub-slab vapor ports/PFE points, **manometer, alarm**)
 2. Location of feature(s) that require maintenance: on and off source property (e.g. location of blower, suction point, sub-slab vapor ports/PFE points, **circuit breaker box**)
 3. **The extent of the structure or features to be maintained in relation to other structure or features on the site**
 4. **The extent and type of residual contamination with respect to the mitigated building.**
 5. **All property boundaries with respect to the mitigated building.**
Schultz Comment for Jagemann: Recommend including a zoomed out map to show where on the property the system is located – Figure 2, Vapor Mitigation Configuration, shows most components but it is hard to tell where on the property this is located.
 - **Part D.3 - Photographs of VMS/Floor/Barrier/Dewatering System**
 - i. Include one or more photographs documenting the condition of the visible parts of the VMS/barrier/dewatering system at time of interim action. Pertinent features must be visible and discernible. Include a title on each photograph, which identifies the site name and location of the feature, and the date on which the photograph was taken.
 - ii. May Include the following:
 1. **Pick up point excavation**
 2. Seal and piping at pick up point
 3. Manometer(s) and system alarm(s)
 4. **Piping runs**
 5. **Sealed sump**
 6. **Vacuum observation points and/or vapor pins**
 7. Manometer readings from vacuum points
 8. Fan(s) and exhaust(s)
 9. Telemetry Box/System
 - **Part D.4 - Continuing Obligations Inspection and Maintenance Log**
 - i. Use DNR Fillable Form [4400-321 for sub-slab depressurization systems / active vapor mitigation systems](#). For other types of mitigation, site-specific inspection forms may need to be developed.
 - ii. Include site-specific photos of the manometer/differential pressure gauge, fan, suction drop point(s) w/ vent pipe, sealed sump w/ vent pipe, outdoor vent pipe, foundation floor, sub-slab vapor port(s) within the inspection log(s)

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