



3790 98th Street NW
Edmonton, AB
T6E 6B4 Canada

TEL 780 463 8872
FAX 780 463 3109
TOLL FREE 800 314 2695
civeo.com

Indoor Air Quality Assessment & Corrective Actions

Civeo agreed for the UFCW to have its consultant's complete inspections and assessments of Civeo's facilities for the purpose of evaluating air quality. In August of 2014, UFCW's consultants toured several facilities. In March of 2015 they returned to complete an assessment of Wapasu West. In August of 2015 the UFCW presented the findings from these assessments to Civeo. Below is a summary of the findings of the assessments, what Civeo has done, and continues to do to address these findings:

1. Complaints of Diesel Exhaust were reported by employees:
 - 1.1. The assessment did not find any evidence of diesel exhaust inside the buildings. Evidence of diesel exhaust was found outside the loading dock.
 - 1.2. We will continue to enforce the "no idling" policy, especially near the loading docks and other areas near the buildings.
2. Fungi levels within the building:
 - 2.1. The assessment states there were fungi concerns near housekeeping, the lobby, the furnace room and the crawlspace below the building.
 - 2.2. The assessment also stated that NO fungi was found outside in the spore traps. This is very unusual as the wet conditions at the time should have resulted in collecting some high levels of naturally occurring fungi outside.
 - 2.3. Repairs done in the kitchen area and ongoing maintenance continued in other areas.
 - 2.4. Air testing completed in the summer of 2015 has verified that all areas within the building have fewer fungi than what is naturally found outside.
 - 2.5. Further testing has recently been completed and these results will also be shared with the union and safety committees after the report is received.
3. Dust inside the building:
 - 3.1. The assessment found fine dust levels (a.k.a. particulate concentrations PM2.5) to be low.
 - 3.2. Civeo will continue to enforce the boots off policy to keep dust levels low.
 - 3.3. Some surface dust was found in vents and along fixtures in common areas. Surface areas have been cleaned on an "as needed" basis. Moving forward, dusting will be added to the preventative maintenance program. Dusting will be monitored during the Chef's department monthly inspection to ensure the new cleaning schedules are effective.
4. Questions were raised about the building design, specifically related to ventilation systems:
 - 4.1. The buildings were built over a number of years and through a number of changes to the Alberta Building Code. The building was designed and built to the standards and code requirements at the time of construction.
 - 4.2. Make up air intakes were designed by a professional engineer with expertise in HVAC design to meet building codes at the time of construction.
 - 4.3. The HVAC supplier toured the facility and recommended new filters that are now being used to further reduce dust levels. Those recommended in the assessment are not compatible with Civeo's equipment.



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5. Building maintenance issues were identified:
 - 5.1. Vent covers have been put back in place. Maintenance staff completes a tour of the buildings every winter to reinstall any vent covers that were not put back in place.
 - 5.2. Exposed OSB due to planned work not being completed is being corrected. Installation of replacement tin sheeting is completed and will be finished by the end of May 2016.
 - 5.3. Exposed length of OSB skirting near the kitchen is being fixed and will be finished by the end of May 2016.
 - 5.4. Numerous minor skirting penetrations were found and are being repaired. They will be finished by the end of July 2016.
 - 5.5. Window drains have been cleaned to allow moisture to escape and will be scheduled to be cleaned on a rotational basis.
 - 5.6. Windows are repaired and re-sealed if moisture issues are identified.
 - 5.7. Roofs are inspected from above in the spring every year to identify and repair damage and potential sources of leaks.
 - 5.8. The assessment identified several recent leaks. Below is Civeo's practice for repairing leaks:
 - 5.8.1. The source of a leak is identified and repaired (i.e. leak is found and sealed) as soon as it is reported.
 - 5.8.2. Wet wood that is found when the leak starts is dried out if it is not moldy. Fungicide is then painted on as a preventative measure as per manufacturer's specifications.
 - 5.8.3. Damaged and/or moldy materials are replaced as per Civeo's guidelines.
 - 5.8.4. Wet and/or damaged ceiling tiles are replaced
 - 5.8.5. Drying of wet material and removal of moldy material begins on the day the leak is reported. The remainder of repairs (ie replacing removed materials) is completed on a priority basis.
 - 5.9. Heating ducts in core areas as well as staff wings were cleaned in 2014. Ducts will be inspected to determine the need to clean them again.
 - 5.10. Questions were raised in the assessment about filter changes. Filters are changed on the following basis:
 - 5.10.1. Rooftop MUA's filters are changed on a monthly basis in winter. When the snow has melted, these are changed every 2 months. All filters are changed each time.
 - 5.10.2. Core area furnace filters are checked and changed as required on a monthly basis during the winter and every 2 months for the rest of the year.
 - 5.10.3. Dorm furnaces are checked and changed as required every 2 months throughout the year.
 - 5.11. The assessment claimed that air intakes were blocked by the snow. The vents shown in the assessment are not air intakes for inside the building, but are used to circulate air in the crawlspaces during the summer months. Air intakes had been raised prior to the assessment to be above what code requirements are in order to remain above the snow.



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6. The assessment stated the crawlspace below the kitchen was wet and moldy:
 - 6.1. Drainage has been improved with the addition of pumps as a pilot project since the assessment was completed. The project was very successful in lowering the ground water by as much as 2 feet. One example was installing a pump between the flight center and the first dorm in 2015. The pumps are winterized in the fall then reactivated in the spring. Pumps have been purchased for the remaining areas and are being installed on a priority basis. Areas with water drainage issues will have pumps installed this year. Other areas that have a potential to have water drainage issues, but have not yet been a problem, will also be corrected afterwards.
 - 6.2. Debris was removed from under the kitchens in west and main.
 - 6.3. Unsupported sewer lines identified in the assessment were inspected and verified to be "dead lines" not in use; they are old lines that were replaced with new ones but were not removed.

7. Carbon disulfide was listed in the assessment as exceeding the occupational exposure limit:
 - 7.1. Carbon disulfide is not found in any product used by Civeo.
 - 7.2. A review of all chemicals on site was completed immediately after Civeo was provided the report. No products were found that contain this chemical.
 - 7.3. Another search was conducted by a senior safety advisor, who found that Civeo does not have any products on site containing carbon disulfide. In addition, a review of the Material Safety Data Sheets (MSDS) showed that carbon disulfide is not present in any current products used by Civeo, nor in any products recently used at any site.
 - 7.4. Recent air sampling was completed to test for carbon disulfide and none was found.

8. Noise levels:
 - 8.1. All noise level readings in work areas were well below the legal limits.
 - 8.2. The legal limit for noise before hearing protection is required is 85dBA in an 8 hr workday or 83 dBA in a 12 hour workday. The loudest work area found during the assessment was 70.5 dBA, well below the legal limit.
 - 8.3. There are no recognized standards for noise levels in sleeping areas, however the sleeping areas have been designed to meet sound transmission ratios (i.e. how effective walls are at reducing noise) defined by the building code at the time of construction.
 - 8.4. Sleeping areas were found to be between 32.1 and 46.0 dBA. A reading of 59.5 dBA was found right against the floor vent while the heater fan was running, however this level decreased to 46.0 dBA in the middle of the room.

9. Temperature:
 - 9.1. The outside temperature varied greatly (-10 to +18 degrees) during the assessment but the indoor temperatures remained within 20-24 degrees. We will continue to monitor indoor air temperature and adjust heating systems as required.