

Jim Johnson, President Local 2505
Tulsa, OK

April 29, 1997

Mr. Johnson:

Enclosed is a copy of the Indoor Air Quality report which was conducted in our Moore, OK field office on Jan. 30, 1997. The results show no ventilation of air. The employees are breathing carbon dioxide in extremely unhealthy quantities.

Several of the employees (which include Ann Broughton, OS and Brenda May, T16 CR) have smothering symptoms as a result of this poor air quality. We pray for relief.

Our Health and Safety officer in Moore, OK is Mr. Ken Harris, who was not given a copy of this report until he requested it on April 18, 1997. He stated the staff was told that the indoor air quality was poor due to no ventilation of outside air. Neither Mr. Harris nor I have been told what steps (if any) are underway for a resolution to this problem. Ms. Broughton has been evaluated by her personal physician and there is evidence that this condition is unhealthy.

Moore, OK needs help. HELP!

Respectfully submitted,

Ada Madison

Ada Madison, DVP MOORE, OK

(405) 951-3031

CC: Robert Smith, RVP
Ylita Edd, EVP
Ray Cruz, RR/Health & Safety
Ken Harris, Moore, OK

01/26/1997 12:14

485-799-1784

MM & CO MOORE

INDOOR AIR QUALITY CHECKLIST

Building Name: Social Security Administration
 Building Location (City and State): 717 S. Service Rd. Moore, OK
 Building Number: _____
 Investigation made by: A&L Heat & Air, Inc.
 Date of Investigation: 1-30-97

1. Check the outside air damper position, normally a 10% minimum opening is required.

Comments: no outside air

2. Check the location of outside air intakes for the possibility of pollution air entering the building air distribution system. Possible sources are loading docks and building exhaust devices.

Comments: no outside air

3. Check the condition of the air handling unit filter(s). Does the filter(s) need to be replaced?

Comments: Removed existing filter system and installed new T-BAC Filter Grills and filters

4. Check the condition of cooling/heating coils for excessive scale buildup. Do they need to be cleaned?

Comments: Coils were cleaned and sprayed with evaporator coil cleaner solution

5. Check air handling unit drip pans for standing water and the accumulation of dirt and soil in the unit.

Comments: Vacuumed out drip pans

6. Check supply and return registers and determine if open. Determine if their location provides for best distribution of fresh dilution air and removal of indoor contaminants.

Comments: Supply and Return ducts are set up for
the best air distribution

7. Check for any potential types of indoor air emission sources such as laboratories, copy machines, print shops, etc., discuss any possible solutions.

Comments: _____

8. Check for biocides in HVAC systems to prevent growth of mold and fungi.

Comments: coils were sprayed with coil cleaner solution

9. Check if Environmental Tobacco Smoke (ETS) is properly exhausted from designated smoking areas to the outside of building.

Comments: Smoke Free Building



Regional Office VI
1200 Main Tower Building
Dallas, Texas 75202

INDOOR AIR QUALITY SURVEY

Conducted on January 30, 1997

at

**SOCIAL SECURITY ADMINISTRATION
DISTRICT OFFICE
717 SOUTH SERVICE ROAD
MOORE, OKLAHOMA**

Prepared by

**THE U.S. PUBLIC HEALTH SERVICE
FEDERAL OCCUPATIONAL HEALTH
Dallas Field Office**

February 12, 1997



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EXECUTIVE SUMMARY

On January 30, 1997, an indoor air quality survey was performed by Mr. Henry Delgado, CIH, and Mr. Joe Loflin, CIH, representing the U.S. Public Health Service (USPHS), Federal Occupational Health (FOH) at the Social Security Administration (SSA) District Office facility located at 717 South Service Road in Moore, Oklahoma. This survey was performed in response to complaints of musty odors, respiratory congestion, sneezing and watery eyes.

As part of the survey, indoor levels of carbon dioxide (CO₂), carbon monoxide (CO), temperature and relative humidity were measured. The Heating, Ventilation and Air Conditioning (HVAC) system was evaluated as well as a visual inspection of the office and surrounding area. In-briefing and out-briefing meetings were held with the SSA management and the union representative.

SURVEY METHOD

The temperature, relative humidity, carbon dioxide and carbon monoxide measurements were taken using a TSI Q-Track[®] IAQ Monitor, Model 8551. This instrument was pre-calibrated per guidelines provided by the manufacturer. Measurements were collected at five different locations throughout the office as well as outside the building. These readings were collected at three different times during the day; early morning, mid-day and late afternoon.

Smoke tubes were used to evaluate the air flow patterns of the supply and return ducts of the workspace and rest rooms. A TSI Velocicalc Plus[®], Model 8360 hot wire anemometer was utilized to evaluate the air velocity from the supply and return ducts.

FINDINGS

The SSA District Office is located at 717 South Service Road in Moore, Oklahoma. This building is a one story structure approximately 20 years of age. It was vacant for several years before being occupied by the SSA in September, 1993. Prior to the SSA becoming a tenant in the building, a limited amount of renovation of the interior of the building was performed. The facility is located on the south bound access road of U.S. Interstate 35. As such there is heavy traffic in front of the building. Street level parking for SSA employees is located in the rear of the building while public parking is located in front of the facility. The SSA facility is a free standing building with approximately 6750 square feet of usable space. The office is occupied by a total of 32 SSA employees. Interior finishes within the SSA space include carpet, floor tile, sheetrock walls and suspended 2'X4' ceiling tiles. During the assessment, a total of 25 employees were present as well as numerous public customers. There have been previous employee complaints regarding musty odors within the building. Employees have also complained of respiratory congestion, sneezing and watery eyes while in the office.

The building is equipped with six HVAC units. Four of these units supply the SSA office space, one unit supplies the computer control room while the remaining unit supplies the public waiting and rest room areas. All air handler units (with the exception of the computer control room unit) are located in the space above the suspended ceiling. The area above the suspended ceiling tile does not serve as a return air plenum for the HVAC system. Return air is ducted directly to the air handler units from the office and public areas through ceiling level grills.

Operation of the four air handler units serving the office area is controlled by wall mounted thermostats. The HVAC system is a variable air volume (VAV) system in that, when the setting of the thermostat is satisfied, the air handler unit shuts down and no air is supplied to the area of office space controlled by the thermostat.

Drip pans for the four air handler units were visually observed to be dry. Also, it was noted that no biocides were present in the drip pans of the air handler units. There was visible evidence of previous water leaks from the drip pans. HVAC filters had just been replaced the day prior to this assessment. However, there does not appear to be a routine filter replacement schedule.

It was visually determined that there is no outside air supplied directed to the air handler units. There is also no operating building exhaust present in the building. The office area and public area rest rooms are equipped with exhaust fans which exhausts into the space above the suspended ceiling. However, these exhausts are only activated by turning on the light switch in the rest room and are deactivated by turning off the light. The use of smoke tubes during this survey indicated that the men's rest room was under a negative pressure relative to the office area when the exhaust fan was operating.

Carbon dioxide, carbon monoxide, temperature and relative humidity measurements were collected at six different locations within the SSA office. Also, these same parameters were measured outside the building. Measurements were collected three times during the work day; early morning, mid-day and late afternoon. The sample locations are designated as M1 through M6 within the building and location M7 is outside the building. The range of the monitoring results inside the building are shown below. The units for carbon dioxide and carbon monoxide are in parts per million (ppm). Temperature is in degrees Fahrenheit and relative humidity is in percent. Table I in Appendix A presents specific location, time and measurement results.

<u>Parameter</u>	<u>Morning Range</u>	<u>Mid-Day Range</u>	<u>Afternoon Range</u>
Carbon Dioxide	870-935 ppm	1670-1760 ppm	2271-2390 ppm
Carbon Monoxide	0-0 ppm	0-0 ppm	0-0 ppm
Temperature	63-69 °F	67-73 °F	74-76 °F
Relative Humidity	25-30 %	22-29 %	26-30 %

DISCUSSION AND RECOMMENDATION

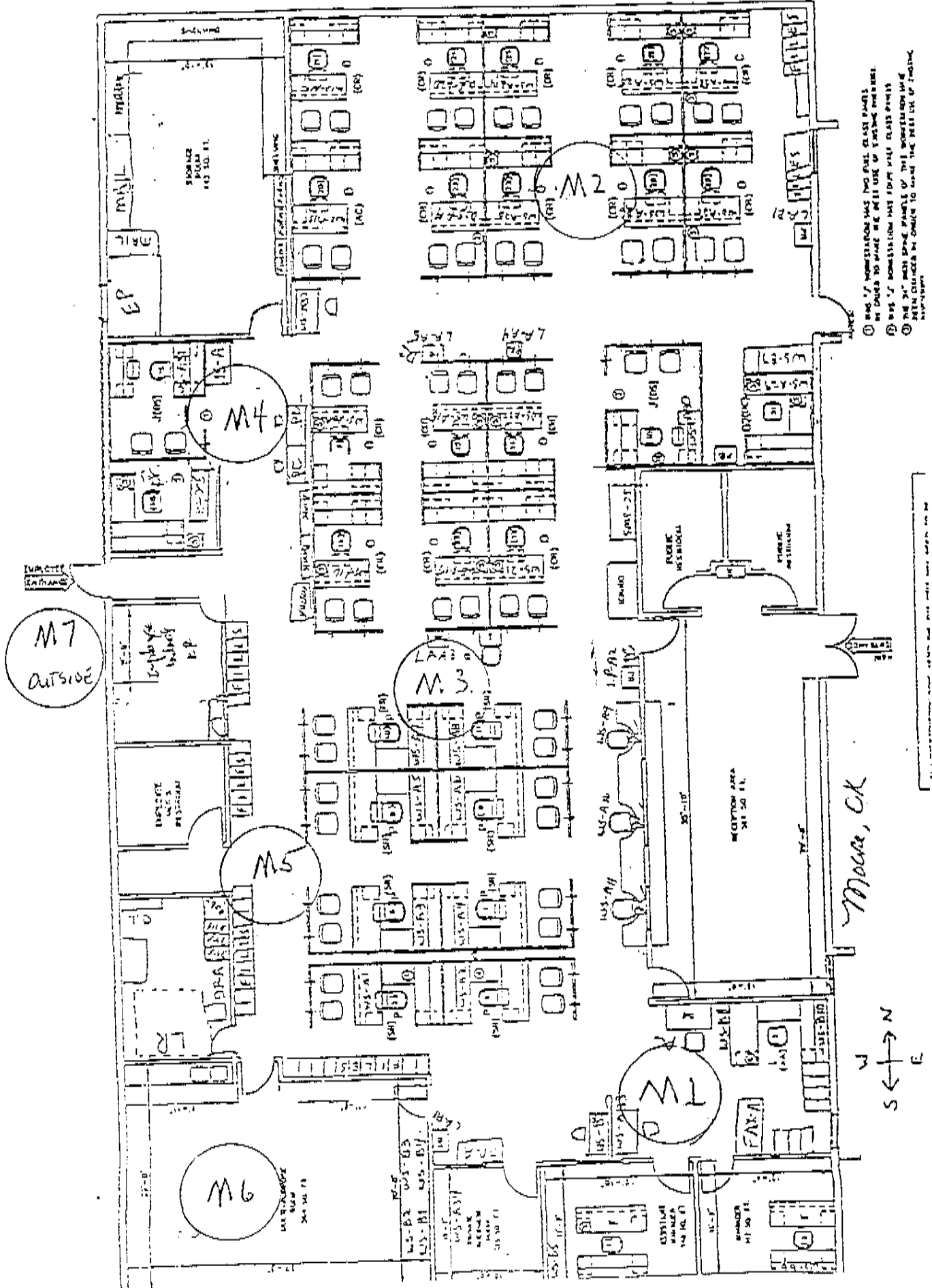
The American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc. (ASHRAE) states in section 6.1.3 of the ANSI/ASHRAE 62-1989 ASHRAE STANDARD Ventilation for Acceptable Indoor Air Quality that "Human occupants produce carbon dioxide, water vapor, particulates, biological aerosols, and other contaminants. Carbon dioxide concentration has been widely used as an indicator of indoor air quality. Comfort (odor) criteria are likely to be satisfied if the ventilation rate is set so that 1000 ppm CO₂ is not exceeded."

The concentration of carbon dioxide in indoor air is dependent upon the occupancy rate of the area monitored and is inversely related to the supply of outside air. Therefore, indoor levels of carbon dioxide are readily controlled by increasing ventilation. ASHRAE recommends a ventilation rate of 20 cfm (fresh air supply) per occupant to control concentrations of carbon dioxide.

Levels of carbon dioxide during the morning monitoring period were just below the 1000 ppm level and greatly exceeded it in the mid-day and late afternoon monitoring periods. Based upon the levels of carbon dioxide measured in the building and the visual determination that no outside air is supplied to the building, FOH recommends that a source of outside air be supplied to all air handler units for this building.

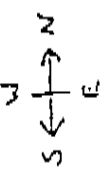
Maintenance of the HVAC equipment, while recently undertaken, does not appear to be a routinely scheduled and performed event. FOH recommends that all HVAC equipment receive regularly scheduled preventative maintenance, to include cleaning of coils, filter replacement and application of biocides into the drip pans. Further, FOH recommends that maintenance be performed on all drip pans to assure that future leaks do not occur.

APPENDIX A

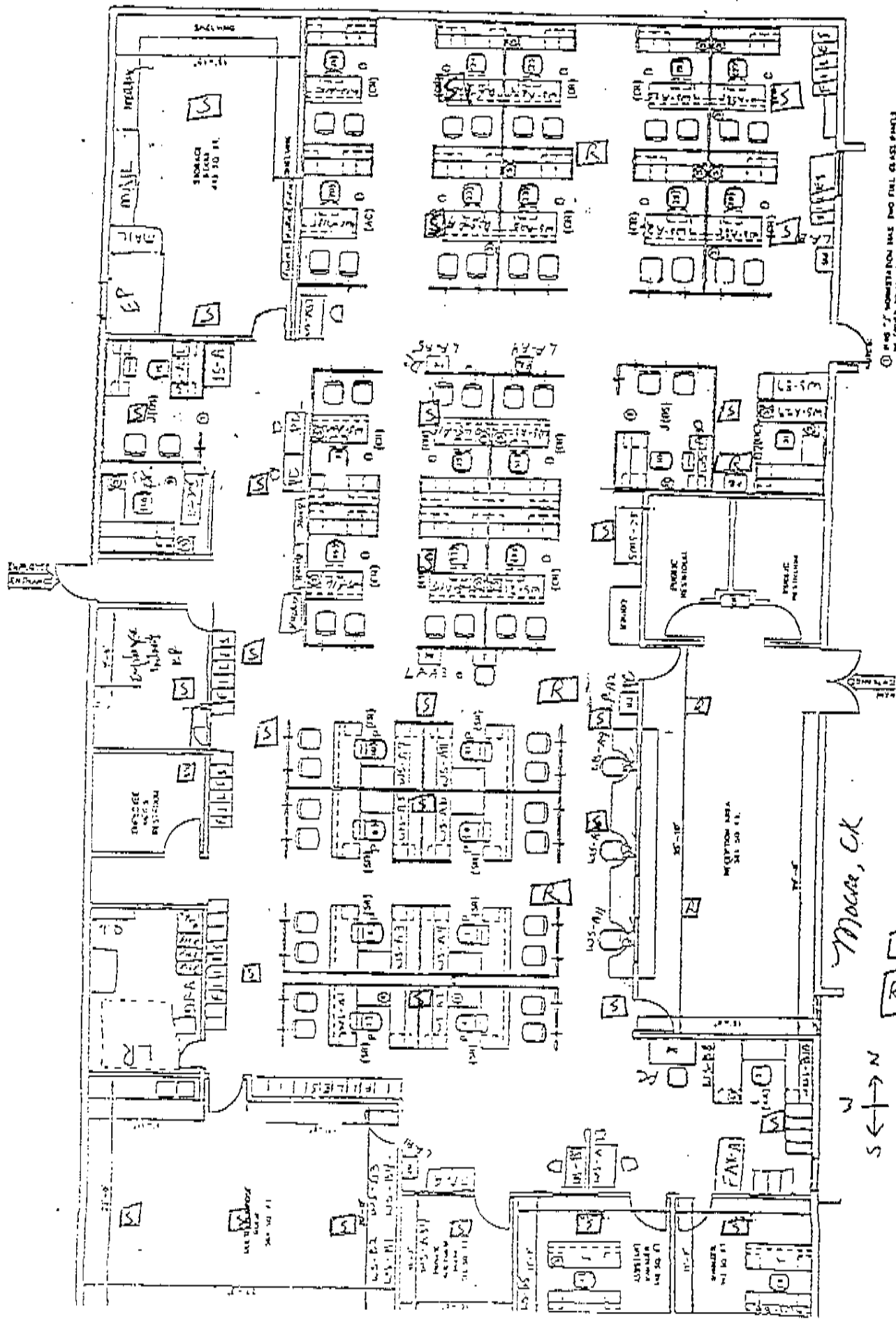


- ① Room 17, north-south has two full glass panels in doors to make it well lit in evening hours.
- ② Room 17, north-south has four half glass panels.
- ③ The 31' north-south panels of the north-south wing are made by chance to have the best light of existing windows.

Moore, OK

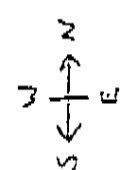


APPENDIX B



- ① SEE IF MONITORING HAS TWO FULL GLASS PANES IN ORDER TO CHECK THE REST OF THE BUILDING
- ② SEE IF MONITORING HAS ROOM WITH GLASS PANES
- ③ SEE IF MONITORING HAS ROOM WITH GLASS PANES
- ④ SEE IF MONITORING HAS ROOM WITH GLASS PANES

S SUPPLY
R RETURN



APPENDIX C

BUILDING CHARACTERIZATION
and
OPERATIONS AND MAINTENANCE CHECKLIST

Building: SOCIAL SECURITY DISTRICT OFFICE

Address: 717 S. SERVICE ROAD
MOORE, OK 73160-5426

SSA Facility Contact Person(s):
LOUIS RODRIGUEZ

Surveyor(s): HENRY DELGADO, JOELOFUND

Date: 11/30/97

Building Description

1. Year Built: MID 1970'S
2. Date occupied by SSA: 9/93
3. Have there been any major renovations? Yes ___ No
4. Approximate date and type NOT SINCE SSA MOVED IN
5. Number of Floors: In SSA space 1 In Building 1
6. Approximate Number of Square Feet per Floor: In SSA space 6750 In Building 6750
7. Approximate Number of Employees per Floor: In SSA space 32 In Building 32
8. Location Setting: Urban ___ Suburban Rural ___ Industrial ___
9. Are There Any Potential Sources of Air Pollution Noted Outside of Building?
Yes ___ (explain) No
10. Automobile Traffic: Light ___ Medium ___ Heavy INTERSTATE
HIGHWAY 4 IN FRONT.
11. Location of Parking: Below Building ___ Street Level Lot Attached Garage ___
12. Type of Construction, Exterior: Masonry Frame ___ Other ___
13. Type of Windows: Fixed Operable ___
14. Type of Construction, Interior:
 - A. Partitions: Masonry ___ Drywall Modular Paneling ___ Painted ___
 - B. Ceiling: Composite Fiberglass ___ Drywall ___ Metal ___ Plaster ___
Suspended Attached ___

C. Floor: Vinyl ___ Asphalt ___ Carpet Tiles Roll ___

15. Dates of installation of the following:

	< One Year	One to Two Years	Three to Five Years
Carpet			✓
Paneling			✓
Ceiling Tile			✓
Paint			✓
Furniture			✓
Copiers			✓
Printers			✓
Partitions			✓

16. Any reported water damage? Yes No ___

17. If yes, when? LAST YEAR - WATER LEAKS FROM HVAC DRIP PANS

18. From: Roof leaks Plumbing leaks ___ Air conditioner condensate
Ground water seepage ___ Surface water run in ___ Other ___

19. Has problem been corrected? Yes No ___

20. A. How often is the following done? B. When is the following done?

	Daily		Weekly		Monthly		Quarterly		Annually	
	D	A	D	A	D	A	D	A	D	A
D=during hours A=after hours										
Vacuuming Carpet	✓	✓								
Shampooing Carpet	NOT SINCE SSA MOVED IN									
Dusting	NOT REGULARLY SCHEDULED - AS NEEDED									
Strip & Wax Floor	NOT SINCE SSA MOVED IN									
Pesticide Application	AS NEEDED - NOT REGULARLY SCHEDULED - AFTER HOURS									

21. Are there any maintenance shops or chemical processes in the building? Yes ___ (describe) No

HVAC System

22. Who operates HVAC system? SSA ___ GSA ___ Private contractor

23. What type of cooling system is used? Refrigeration Cooling tower ___ Swamp cooler ___ Other ___

24. What type of heating system is used? Gas fired Oil fired ___ Electric ___ Other ___

25. Does the building have exhaust vents for:

Restrooms	Yes <input checked="" type="checkbox"/>	No ___
Kitchens	Yes <input checked="" type="checkbox"/>	No ___
Shops <i>N/A</i>	Yes ___	No ___

NOT CONTINUOUSLY ACTIVE

26. Are exhausts located near air intakes? Yes ___ No

26. Are fresh air intakes located near: *N/A*

Ground level	Yes ___	No ___
Roof top	Yes ___	No ___
Loading dock	Yes ___	No ___
Exhaust discharges	Yes ___	No ___

28. Is there standing water near air intakes? Yes *N/A* No *No*

29. Are biocides used in condensate pans? Yes ___ No

30. On floor plan, show where air outlet diffusers are located.

31. On floor plan, show where air returns are located.

32. Does space above ceiling serve as a return air plenum? Yes ___ No

33. Is there any sprayed on insulation in the return air plenum? Yes ___ No

34. What are the ducts made of? Metal Fiberglass Lined ___ Unlined ___

35. Are there perimeter units? Yes ___ No

Is there humidification? Yes ___ No

Has HVAC system been modified from original design? Yes ___ No

Is an indoor air quality complaint log kept? Yes ___ (obtain copy) No

Have any health or environmental studies been conducted? Yes ___ (obtain copies) No

Give visual assessment of HVAC system including all accessible components.

e: If any source of information was used other than the SSA Facility Contact Person(s), please identify in the comment section.

COMMENTS:

UDV APPROVED STAFF TO INSPECTORS W/IN ENTRANCE. SET UP IN OFFICE
SEPARATE ROOM OF MONITORING. BLDG-12 ONE STORY W/ PARKED
OFF. OFFICE AREA IN CENTER IS OPEN

HVAC UNITS LOCATED IN SPACE ABOVE SUSPENDED CEILING
UNIT SERVES PUBLIC AREA / SERVES COMPUTER RM.
OTHER 4 SERVE OFFICE AREA. RETURN AIR IS DUCTED.

HVAC UNITS HAVE NO O/A SUPPLIED TO THEM. HEAT
BY NAT. GAS. EXHAUST FOR GAS FIRE THROUGH ROOF
NO CO DETERMINED TO BE PRESENT

NO RENO SINCE SSA MOVED IN 9/93

NO AIRWAY STRIPPING DONE

NO SCHEDULING FOR SILICOCA CANCEL

NO LEAKS IMMEDIATELY ELEVATED

IS NOT PRESENT

NO IREQ COMPLAINT LOG

APPENDIX D

IAQ HVAC

BUILDING Moore SSA 100 DATE 1/20/97 MECHANICAL ROOM SPACE ABOVE CEILING
OK

AHU# 1 AREA SERVED NORTH 1/3 Front

CLEAN DRY	CHEMICALS	REFUSE	DAMPER	COILS	DRAIN PAN	BIOCIDES	FILTER
YES	NO	NO	—	OK	YES	NO	YES/ clean

COMMENTS: NO Fresh Air Make up.

AIR FLOW MEASUREMENTS FRESH AIR INTAKE: AVG. _____

AHU# 2 AREA SERVED Middle

CLEAN DRY	CHEMICALS	REFUSE	DAMPER	COILS	DRAIN PAN	BIOCIDES	FILTER
YES	NO	NO	—	OK	YES DIRTY	NO	YES clean

COMMENTS: NO Fresh Air Available

AIR FLOW MEASUREMENTS FRESH AIR INTAKE: AVG. _____

AHU# 3 AREA SERVED South 1/3

CLEAN DRY	CHEMICALS	REFUSE	DAMPER	COILS	DRAIN PAN	BIOCIDES	FILTER
YES	NO	NO	—	OK	YES DIRTY	NO	YES/clean

COMMENTS: NO Fresh Air Available

AIR FLOW MEASUREMENTS FRESH AIR INTAKE: AVG. _____

IAQ HVAC

BUILDING MOORE SSA DD DATE 1/30/97 MECHANICAL ROOM SPACE ABOVE CEILING
OK

AHU# 4 AREA SERVED NORTH YR REAR

CLEAN DRY	CHEMICALS	REFUSE	DAMPER	COILS	DRAIN PAN	BIOCIDES	FILTER
YES	NO	NO	—	OK	YES DRY	NO	YES CLEAN

COMMENTS: NO FRESH AIR

AIR FLOW MEASUREMENTS FRESH AIR INTAKE: AVG. _____

AHU# 5 AREA SERVED COMPUTER ROOM

CLEAN DRY	CHEMICALS	REFUSE	DAMPER	COILS	DRAIN PAN	BIOCIDES	FILTER
YES	NO	NO	—	OK	YES DRY	NO	YES CLEAN

COMMENTS: NO FRESH AIR

AIR FLOW MEASUREMENTS FRESH AIR INTAKE: AVG. _____

AHU# _____ AREA SERVED _____

CLEAN DRY	CHEMICALS	REFUSE	DAMPER	COILS	DRAIN PAN	BIOCIDES	FILTER

COMMENTS:

AIR FLOW MEASUREMENTS FRESH AIR INTAKE: AVG. _____

LOFLIN ENVIRONMENTAL SERVICES INC.
INDOOR AIR QUALITY LOG
SOCIAL SECURITY ADMINISTRATION
DISTRICT OFFICE
MOORE, OKLAHOMA

JOB NUMBER: 2699702

DATE: 01/30/97

BLDG APPEARS STUFFY UPON ENTRANCE. INITIAL
CO₂ LEAK ↑ 900ppm. MR. RODRIGUEZ NOT
IN UNTIL NOON. OFFICE OPENS TO PUBLIC
@ 9AM - CLOSES AT 4PM.

RR LENS IN REAR OF BLDG. EXHAUST FANS IN
RR ARE ACTIVATED ONLY BY TURNING ON LIGHT
SWITCH. DO NOT RUN CONTINUOUSLY. EXHAUST FAN
IN KITCHEN AREA - NOT RUNNING. RR EXHAUST FANS
BLow ONLY INTO SPACE ABOVE CEILING - NOT OUT
OF BLDG.

6 AIR HANDLER UNITS IN BLDG. 1 FOR PUBLIC AREA
1 FOR COMPUTER ROOM 4 FOR REMAINDER OF OFFICE. ALL
UNITS IN CEILING ABOVE CT LEVEL. GAS FOR HEAT
RETURN FOR COOL. ALL UNITS FRAMED USUALLY -
NO BLEEDS OR CONDENSATE DRIP PANS - EVIDENCE
OF WATER LEAKS FROM DRIP PANS AND FROM ONE
EXHAUST FAN FOR GAS HEAT. ALL LEAKS STOPPED
NO ACTIVE LEAKS NOTED.

NO O/A SUPPLIED TO AHUS. NO DIRECT SUPPLY
OF O/A FOUND.

LOFLIN ENVIRONMENTAL SERVICES INC.
INDOOR AIR QUALITY LOG
SOCIAL SECURITY ADMINISTRATION
DISTRICT OFFICE
MOORE, OKLAHOMA

JOB NUMBER: 2699702

DATE: 01/30/97

32 CO₂ IN BLDG - 25 ON SITE TODAY. PLUS
MANY PUBLIC FROM 9-4. CO₂ LEVELS CONTINUE
TO RISE DRAMATICALLY. CLEANING CREW ARRIVES IN
LATE PM TO EMPTY TRASH & VACUUM. SSA
CO₂ STILL PRESENT. NO SIGNIFICANT DUSTING,
WAX STRIP, PESTICIDE APPLICATION. CO₂ LEVELS AT
END OF WORKDAY NEAR 2400PPM (OBTAIN
PER 8H - 2000PPM). DAY WAS TYPICAL OF MOST
DAYS PER PUBLIC IN BLDG. SOME DAYS WOULD
USUALLY 1ST OF MONTH

PROBLEMS

- NO DIA THEREFORE HIGH CO₂ PLUS STAFF
- NO BLDG EXHAUST