

30 PARK AVENUE

Dayton, Ohio 45419-3400

TEL. (937) 298-0600 • FAX (937) 297-2940

CITY MANAGER

May 29, 2003

LJB, Inc.
Attn: John Eastman, P.E.
3100 Research Boulevard
Dayton, OH 45420

Re: NCR Environmental Testing

Dear John:

As you are aware, the NCR Corporation has been conducting some environmental testing on their properties in northern Oakwood and in Dayton between the Oakwood corporation line and Stewart Street. This testing is being conducted in response to concerns raised earlier this year in two Dayton Daily News articles.

I have met with NCR's Environmental Engineer, Mr. Roger McCready on two occasions to discuss results of recent soil and water testing. Below is a brief summary of the testing and proposed future actions. Please review this information and let me know what, if any, additional action you recommend that we take at this point. I would appreciate an initial response by Wednesday, June 4. I will be meeting with the Oakwood Board of Health on Monday, June 9 and will be updating them on this issue.

Attached is a map showing the location of monitoring wells and soil sample locations. Also attached is a summary of the first round of testing provided by NCR. As a result of the first round of testing, NCR is proposing the following additional work:

- Lead: In response to the elevated lead reading from A-3, NCR is proposing to take three additional samples around the A-3 location at approximately 15-20 feet from the site of the initial test. These soil tests will be taken just below sod level, as was the case with the original tests. Results are expected by late June. If these results are also above the Residential Direct Contact Standards, NCR will consider conducting additional testing

throughout the area. If these results are below the standard, NCR would consider the first result an anomaly and would likely not conduct any additional testing.

- Arsenic: The levels of arsenic found in soil samples A-1 through A-5 vary from 6.6 ppm to 25.9 ppm and in samples P-1 through P-5 from 5.5 ppm to 17.8 ppm. The Residential Direct Contact Standard for arsenic is 6.8 ppm. Background samples were taken at BKT-1 through 3 and BKA-1 through 3. The results were as follows:
 - BKT-1 18.5
 - BKT-2 7.2
 - BKT-3 6.9
 - BKA-1 46
 - BKA-2 107
 - BKA-3 79.4

Based on the elevated readings in these background locations, NCR believes that the results found in A-1 through A-5 and P-1 through P-5 are likely within the background levels throughout the area. They state that the Commercial/Industrial Standard is 80 ppm and the Construction Worker Standard is 210 ppm. Based on these data, they would not propose to do any additional arsenic testing at this time.

- TCE: MW-1 showed four chemicals above drinking water standards. NCR will be installing three additional monitoring wells as depicted in the red circled areas on the attached map. They will test these three additional wells, and the six original wells again for the USEPA Appendix IX parameters. Through these additional wells and this additional testing, they hope to better determine the extent of TCE contamination.
- BIS Ethyl Phthalate: MW-5 showed a reading above the EPA standard. NCR believes that this elevated reading may be attributed to sampling equipment. During the retest of MW-5, they hope to confirm this belief.

I have informed Roger McCready that you will be looking over this information and that you may contact him with questions. You can reach Roger at 445-0967.

Please call me if you have any questions or need any additional information.

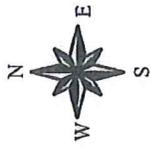
Sincerely,



Norbert S. Klopsch
City Manager

NSK:cb .
enclosures

cc: Kevin Weaver, P.E., P.S.

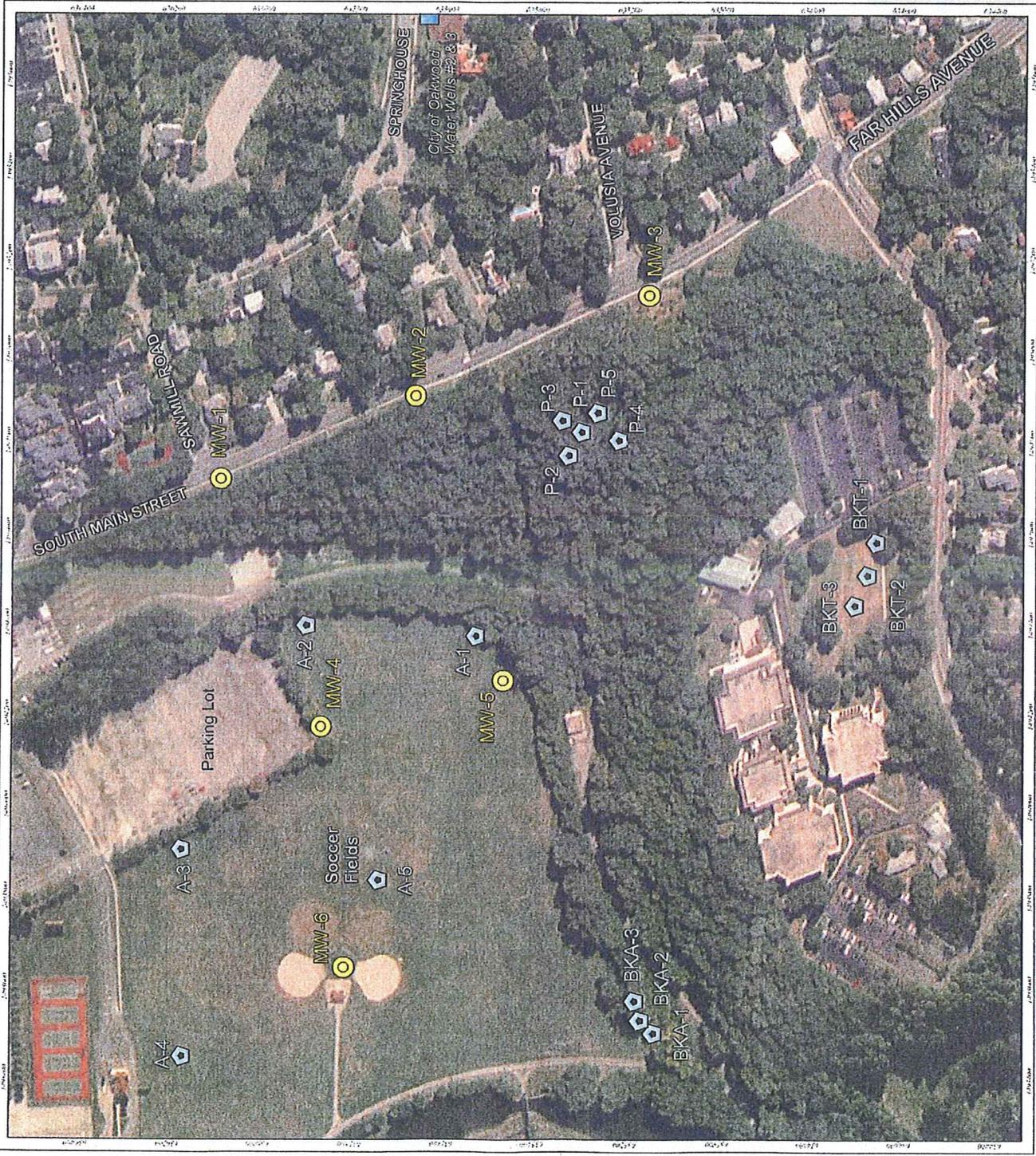


LEGEND	
	Surface Soil Sample Locations
	Proposed Monitor Well Locations

Coordinate System based on Ohio State Plane H.A.D. 83 US Feet

PROJECT:	DAYTON OHIO SITE Dayton, Ohio
SHEET TITLE:	AERIAL SITE LOCATION MAP
DRAWN BY:	J. S. DUNN
CHECKED BY:	J. S. DUNN
DATE:	03/20/09
PROJECT NO.:	0101000000
SHEET NO.:	1 OF 1

724 Woodland Trail
P.O. Box 6022 Dayton, OH 45423
Phone: 937.233.1444



Soils - Recreational Fields

- Five surface soil samples collected 0-1 foot depth - See attached map (A-1,2,3,4)
- Soil samples analyzed for USEPA Appendix IX parameters excluding pesticides and herbicides. Appendix IX includes 48 volatile organics chemicals, over 100 semi-volatile organics, 17 metals, 7 types of PCBs, and cyanide.
- Results Compared to OEPA VAP Generic Residential Direct Contact Standards
- Results Do Not Exceed OEPA VAP Generic Residential Direct Contact Standards except for sample location A-3 which exceeds for lead and seems to be an anomaly based on other results and will be resampled to confirm. All samples are above the standard for arsenic, including the background samples that were collected. While arsenic is naturally occurring in soils in the Miami Valley, additional sampling may have to be completed to statistically determine the natural levels for arsenic in the immediate area.

Groundwater

- Installed 6 monitoring wells to assess the groundwater. See attached map (MW-1,2,3,4,5 and 6).
- Analyzed groundwater samples for USEPA Appendix IX parameters excluding pesticides and herbicides. Appendix IX includes 48 volatile organics chemicals, over 100 semi-volatile organics, 17 metals, 7 types of PCBs, and cyanide.
- Results were compared to OEPA Drinking Water Standards. Monitoring wells MW-2, 3, 4, 5, and 6 produced groundwater that is suitable for drinking. The only exception is for one chemical in MW-5 which is bis ethyl phthalate which may be attributed to sampling equipment. One well, MW-1 has four chemicals above drinking water standards. They are methylene chloride, trichloroethene (TCE), and two degradation products of TCE -- cis 1,2-dichloroethene (DCE) and vinyl chloride. A degradation product is a chemical created by the natural breakdown of another. The groundwater below our property is not being used for drinking water, and we will conduct additional testing to confirm our belief that the materials identified in MW-1 are not reaching any drinking water supplies.



June 9, 2003

Mail and Fax: (937) 297-2940

Norbert Klopsch
City of Oakwood
30 Park Avenue
Dayton, OH 45419

Re: NCR Environmental Testing.

Dear Norb Klopsch:

Per your request I have reviewed the information you forwarded from NCR on their testing program. In general it appears they are proceeding appropriately given the level of data we have been provided. I do have several comments and suggestions as follows:

1. I have identified three specific areas of concern to the City of Oakwood and have looked at the NCR information from how they address these areas of concern. These areas of concern are:
 - a. Protection of the Oakwood wellfield, most particularly the Springhouse wellfield;
 - b. Protection of the Oakwood residents who use the athletic fields; and
 - c. Interest in possible contamination that might lie within the Oakwood Corporation Limits.
2. Lead - Only the soil sample at A-3 near the parking area was reported to have elevated lead. I talked to Roger McCreedy who reported the lead level in Sample A-3 was 770 mg/kg, which is less than twice the Residential Direct Contact Standard of 400 mg/kg. This level of lead at this location does not appear to be a risk to the Oakwood wellfield because a) it is a soil sample, b) elevated lead was not found in the monitoring wells, and c) the location is substantially down gradient from the wellfield. In judging the actual risk to Oakwood residents using the athletic fields, it is useful to know that the standard of 400 mg/kg was developed from assuming ingestion exposure for 350 days per year every year for 6 years as a child plus 24 years as an adult giving an increased risk of 1E-5 (i.e. one additional cancer out of 100,000 population). Note that elevated lead levels are often associated with areas receiving runoff from streets and parking lots due to past use of leaded gasoline. NCR's approach of additional sampling appears to be a reasonable way to determine the actual extent of the affected area.
3. Arsenic - Arsenic levels above the Residential Direct Contact Standard of 6.8 ppm appear to be common throughout the area, even the samples NCR took to determine background levels. Although elevated arsenic levels are found throughout the area, elevated arsenic was not reported for any of the water samples, which means there is little risk to the wellfield. As with lead, the exposure route for Oakwood residents using the athletic fields would be long term daily ingestion. Also note that many native Ohio soils contain natural levels of arsenic which exceed the 6.8 ppm standard.
4. I discussed with Roger McCreedy the cluster of samples (P-1 through P-5) that lie within the Oakwood Corporation Limits. Roger reported that this area was a disposal area for foundry sand that NCR sampled for constituents of concern. Only arsenic was reported as being elevated above the

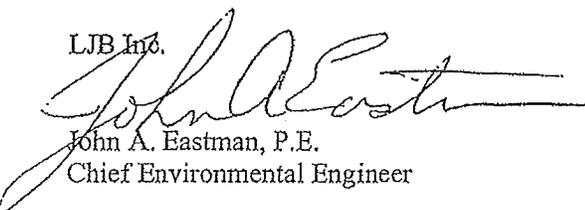
standards. It appears that MW-5 might be down gradient from this area, in which case the lack of elevated levels of contaminants (except for bis ethyl phthalate) reduces concerns about this disposal area. However, re-sampling of MW-5 is recommended. Also, it is recommended that the groundwater flow pattern in the area of the disposal area be carefully reviewed to determine if MW-5 would be expected to pick up contaminants that might have leached from the disposal area in the past.

5. I recommend that Oakwood request additional hydrogeologic information on the monitoring wells. This information would improve Oakwood's understanding of groundwater movement in the area of the Springhouse Wellfield, which is useful for wellhead protection and understanding recharge issues in addition to verifying that contamination at NCR will not affect the Oakwood wells. Specifically, I recommend that Oakwood request the following data:
 - a. Drilling logs for all monitoring wells,
 - b. Well construction logs for all monitoring wells with screen information, casing elevations, etc.,
 - c. All water level elevation data for all the monitoring wells, and
 - d. The benchmark location and elevation used for surveying the monitoring wells so the relation with the elevation of the Oakwood wells can be determined.

If you have questions, or need additional information, please feel free to call me at 259-5051.

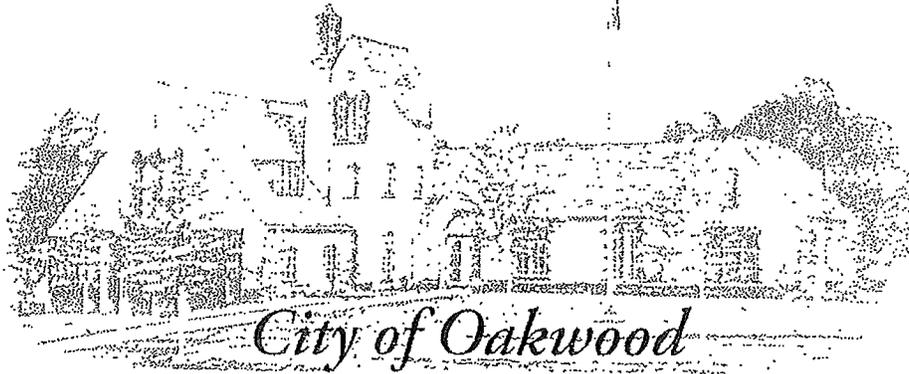
Sincerely,

LJB Inc.



John A. Eastman, P.E.
Chief Environmental Engineer

cc: File Job No. EN-16315E.00



30 PARK AVENUE

Dayton, Ohio 45419-3400

TEL. (937) 298-0600 • FAX (937) 297-2940

CITY MANAGER

September 8, 2003

LJB, Inc.
Attn: John A. Eastman, Ph.D., P.E.
3100 Research Boulevard
Dayton, OH 45420

RE: NCR Environmental Testing

Dear John:

Attached is correspondence from NCR regarding the second round of soil and groundwater testing on their property around our northern corporation line. Please review the information and let me know if you think any additional testing is warranted at this time – testing for the sake of ensuring that there exist no health hazards to residents of Oakwood.

Sincerely,

Norbert S. Klopsch
City Manager

NSK:cb
enclosure
cc w/enc: Kevin Weaver, P.E., P.S.



August 22, 2003

Mr. Norbert S. Klopsch
City Manager
City of Oakwood
30 Park Ave.
Dayton, Ohio 45419

Dear Norbert:

Further to our meeting on August 4, 2003, I am sending along the information you requested. The enclosed document was prepared by NCR's environmental engineer, Roger McCready.

As always, please feel free to contact us with any additional questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Jeffrey R. Dafler". The signature is fluid and cursive.

Jeffrey R. Dafler
Public Relations Manager
Corporate Media Relations

Enclosure

ATTACHMENT: TESTING SUMMARY (AUGUST 2003)

NCR CORPORATION

Soils - Recreational Fields

- Confirming our previous communications to you, most soil samples at this property are within the Ohio Environmental Protection Agency (OEPA) Voluntary Action Program (VAP) Generic Residential Direct-Contact Standards. As noted, there are some exceptions, set out below.
- As previously reported, one soil sample collected in February exceeded the VAP residential standards for lead (sample location A-3).
- All soil samples, including the background samples that were collected, were above the VAP residential standard for arsenic. Arsenic occurs naturally in soils in the Miami Valley, and has been reported in other non-NCR locations at levels above most of our samples. Our highest samples are from a location behind a pre-existing fence outside the recreational area, and their locations are not accessible to visitors, but they do exceed the residential standard as well as reported regional highs.

Soil Follow-ups

- We resampled location A3 for lead in March, and collected three additional samples within 15 feet of that location in May. Two of the three samples were below or just above the VAP residential standard. While location A-3 is high, however, the average level for the soccer fields is below the VAP residential standard, as explained in the following paragraph.
- Based on U.S. EPA guidance for assessing health risks related to lead in non-residential settings, including recreational areas, it is appropriate to calculate the average lead level from soil samples taken across the property to approximate likely exposure during recreational activities. This EPA guidance rests on the principle that recreational participants such as soccer players are not stationary but move about a larger area. The average soil lead level for the soccer fields, based on eight sampling locations across the property, is 350 ppm, which is below the OEPA VAP residential standard of 400 ppm.
- Additionally, it is important to note that the residential standard is based on constant exposure to a lead source, and assumes exposures for 24 hours a day, seven days a week, for a child between birth and 7 years of age (as you know, young children are selected because they are the most sensitive population). U.S. EPA guidance provides an approved formula for calculating allowable concentrations of lead in non-residential areas to reflect the portion of waking hours such a child is likely to spend in such locations throughout the day. Using the extremely conservative assumption

that a child 0-7 years old would spend four hours a day, five days a week playing on the soccer fields, the allowable lead concentration under this formula is 1,040 ppm. This is about three times the average concentration for the soccer fields and well above the highest individual lead reading (770 ppm at A3). Based on these analyses, and applying this US EPA guidance, NCR believes the soccer fields pose no appreciable human health risk. *

Groundwater

- As previously reported, NCR originally installed 6 monitoring wells to assess groundwater. Five produced groundwater that is suitable for drinking (one showed traces of a chemical that were likely residue from sampling equipment, as further discussed below).

Groundwater Follow-ups

- In May 2003 NCR installed 3 additional wells to further assess groundwater conditions. Two were installed off NCR property east of Main Street along Rubicon Road, at the intersections of Springhouse (MW-607) and Sawmill Roads (MW-608) in the Rubicon Mill neighborhood. One monitoring well was installed on NCR property south of the 1201 South Main Street building (MW-609).
- Similar hydrogeology conditions occur both east of Main Street and west of Main Street. Each area has a layer of silt/sand/clay that is above a thin unit of sand and gravel, which itself is partially saturated above the limestone/shale bedrock. There is one notable difference, which is that the bedrock rises at the location of MW-608 (Rubicon and Sawmill), to a level approximately 4 to 6 feet higher than along Main Street. That caused, as of early June, the thin sand and gravel unit to be above the then-current elevation of the water table (groundwater). As a result of these conditions, monitoring well MW-608 was dry when the work was performed, and a groundwater sample could not be collected at that location. Groundwater samples were collected from all other wells installed in February and May and analyzed for volatile organics chemicals and metals.
- Results were compared to OEPA Drinking Water Standards. Monitoring wells MW-602, 603, 604, 606 and 607 contained no volatile organic chemicals, and the metals detected were within drinking water standards.
- Monitoring well MW-5 (now labeled number MW-605) had an estimated value of bis ethyl phthlate of 7 ppb in February. As noted earlier, this is a plasticizer and may have been residue from the tubing or even a technician's gloves. At the City of

* Twenty hours per week of soccer play is, as noted, exceedingly conservative in assessing the risk. If a more realistic but still conservative assumption of nine hours per week (3 hours per day, 3 days per week) is employed, the allowable concentration is 2,067 ppm. A child who plays even less soccer (2 hours per day, twice a week) would be subject to a much higher allowable concentration of 4,400 ppm. A child playing one hour per week would be subject to an allowable concentration of 17,000 ppm.

Oakwood's request, it was resampled, and the resample yielded a concentration of 1 ppb. This is within the drinking water standard.

- MW-609 had four volatile organics detected, but only trichloroethene (TCE) was above drinking water standards at 35 ppb versus the standard of 5 ppb.
- Water from well MW-601 (formerly MW-1) had three volatile organics above drinking water standards: trichloroethene (290 ppb), cis-1,2-dichloroethene (270 ppb) and vinyl chloride (11 ppb).
- The analysis of the groundwater samples and the hydrogeologic data both indicate that exposure pathways are not present (i.e., people are not coming in contact with the materials). Analysis of water level elevations, which allows determination of groundwater flow direction, further confirms that the groundwater below NCR property has a westerly flow direction and is not migrating east, and thus is not reaching the City of Oakwood Springhouse well field or any other drinking water supply. The chemical concentrations noted above are also well below levels necessary to cause an indoor air risk (which would require migration of vapors through the overlying soil and into buildings).



September 8, 2003

Mail and Fax: (937) 297-2940

Norbert Klopsch
City of Oakwood
30 Park Avenue
Dayton, OH 45419

Re: NCR Environmental Testing.

Dear Norb Klopsch:

Per your request I have reviewed the information, dated August 22, 2003, that you forwarded from NCR regarding additional sampling they conducted in the vicinity of the Oakwood athletic fields, and four additional monitoring wells. In general it appears that they have provided appropriate information and reached appropriate conclusions from the data supplied. I have several comments and suggestions as follows:

1. As previously discussed in my June 9, 2003 letter to you, I have identified three specific areas of concern to the City of Oakwood and have looked at the NCR information from how they address these areas of concern. These areas of concern are:
 - a. Protection of the Oakwood wellfield, most particularly the Springhouse wellfield;
 - b. Protection of the Oakwood residents who use the athletic fields; and
 - c. Interest in possible contamination that might lie within the Oakwood Corporation Limits.
2. Lead - NCR has re-sampled location A3 for lead and collected three additional samples within 15 feet. While the actual data were not provided, the summary description states that lead levels in the nearby samples are much lower than at A3 so that area affected by lead appears to be small. Although I have not done my own risk assessment using the raw data (which I don't have), it appears that NCR's analysis of risk was appropriately done. Therefore, NCR's conclusion of no significant health risk for small children exposed while attending soccer games and/or practices appears to be solid. It is always possible for there to be other localized hot spots for lead that haven't been found. However, any such localized hot spots would need to have substantially higher lead levels than have been found so far to alter the conclusions.
3. Arsenic - NCR's explanation regarding naturally occurring arsenic levels in the general area is reasonable. However, Oakwood might be interested in a risk analysis for arsenic similar to the one done for lead wherein a more limited exposure period is used for children 0-7 years of age.
4. Volatile Organics - Based on the limited data supplied, I concur with NCR's conclusions that the volatile organics found in the groundwater are not a health risk to people using the athletic fields, or to the Oakwood well field. However, the significantly higher levels of volatile organics found in MW-601 compared to the other wells in the study indicates a contamination source that has not yet been identified. We recommend that Oakwood request NCR make available any future information obtained regarding the distribution and/or source of contamination in the vicinity of MW-601.

NCR Environmental Testing

September 8, 2003

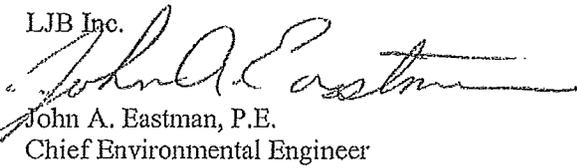
Page 2

5. The NCR summary contained the general statement, "the groundwater below NCR property has a westerly flow direction and is not migrating east, and thus is not reaching the City of Oakwood Springhouse well field or any other drinking water supply." While it is expected that this is an appropriate conclusion, we have not seen the actual data and can not reach our own conclusion. It is recommended that Oakwood obtain the actual groundwater data obtained by NCR so that we can fully evaluate the relationship of groundwater elevation information with data from the Oakwood well field.
6. In summary, We recommend that Oakwood request additional hydrogeologic information, which NCR already has, on the existing monitoring wells. This information would improve Oakwood's understanding of groundwater movement in the area of the Springhouse Wellfield, which is useful for wellhead protection and understanding recharge issues in addition to verifying that contamination at NCR will not affect the Oakwood wells. Specifically, we recommend that Oakwood request the following data for evaluating groundwater conditions.
 - a. Drilling logs for all existing monitoring wells (MW-601 through MW-609) and any future monitoring wells in this area,
 - b. Well construction logs for all monitoring wells with screen information, casing elevations, etc.,
 - c. All water level elevation data for all the monitoring wells, and
 - d. The benchmark location and elevation used for surveying the monitoring wells so the relation with the elevation of the Oakwood wells can be determined.

If you have questions, or need additional information, please feel free to call me at 259-5051.

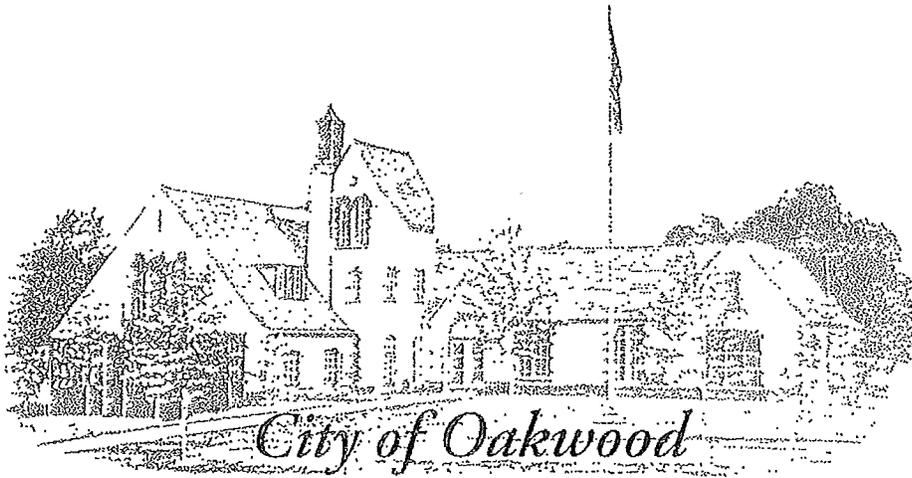
Sincerely,

LJB Inc.


John A. Eastman, P.E.

Chief Environmental Engineer

cc: File Job No. EN-16315E.00



30 PARK AVENUE

Dayton, Ohio 45419-3400

TEL. (937) 298-0600 • FAX (937) 297-2940

September 12, 2003

CITY MANAGER

NCR Corporation
Attn: Jeff Dafler
1700 S. Patterson Boulevard
Dayton, OH 45479-0001

Re: NCR Environmental Testing

Dear Jeff:

Thank you for your letter dated August 22, 2003 summarizing the results of environmental testing done in August. As I did with the first set of test results, I sent this information to our Environmental Consultant, Dr. John Eastman at LJB, Inc. Attached is a copy of John's response. In John's letter, he mentions several pieces of information that will help us to better evaluate the results of this testing. With this letter, I am requesting that information. Please contact me if you have any questions or concerns about this request.

Sincerely,

Norbert S. Klopsch
City Manager

NSK:cb
enclosure
cc w/enc:

Kevin Weaver, P.E., P.S., Director of Engineering & Public Works
John Eastman, Ph.D., P.E., Chief Environmental Engineer, LJB, Inc.