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Fields of Opportunities

STATE OF IOWA

THOMAS J. VILSACK, GOVERNOR
SALLY J. PEDERSON, LT. GOVERNOR

DEPARTMENT OF NATURAL RESOURCES
JEFFREY R. VONK, DIRECTOR

2002 MAY 10 P 2:25

DEPT. OF NATURAL RESOURCES

May 8, 2002

City of Albion
City Hall
107 S. Main Street
Albion, IA 50005

ATTN: Honorable Mayor & Council

RE: Water Supply Sanitary Survey
PWSID #: 6403011

Dear Council Members:

Enclosed is the report of the recent survey of the above facility conducted by Janet Gastineau of the field office staff.

We believe you will find the report self-explanatory and strongly encourage you to take action on the requirements and recommendations listed near the end.

You may contact Ms. Gastineau (515-281-9059) or this office with any questions or comments.

Sincerely.

Jim Stricker
Supervisor, Field Office #5

cc: Jeff Naumann, IDNR Water Supply Sec. (w/encl.)
John Vedder, IDNR Water Supply Sec. (w/encl.)
Matt Culp, IDNR Contaminated Sites Sec., (w/encl.)
Rhonda Guy (w/encl.)
Paul Van Dorpe, IDNR-GSB, via e-mail (w/encl.)

IOWA DEPARTMENT OF NATURAL RESOURCES
WATER SUPPLY SANITARY SURVEY

PWSID #: 6403011

FACILITY INFORMATION

FACILITY	NAME: Albion		PLANT GRADE: WT1		
	RESPONSIBLE AUTHORITY/OWNER: City of Albion				
	ADDRESS: Box 219, 107 South Main Street	CITY: Albion	STATE: Iowa	ZIP: 50005	PHONE: 515-488-2244
	TREATMENT GRADE: WT1	DISTRIBUTION GRADE: WD1		WATER USE PERMIT #: 6401-R1	
SOURCE/ ENTRY POINT	NAME: 02: Well #3 after treatment.		Change from Previous: ☐ Yes* ☒ No		
RESPONSIBLE OPERATOR	NAME: Rhonda Guy	GRADE: WT2		CERTIFICATION #: 12512	

*see comments under Facility Evaluation

SURVEY INFORMATION

SURVEY	DATE THIS SURVEY: 5/1/2002	DATE LAST SURVEY: 5/9/2000	PURPOSE: Sanitary Survey	
PERSONS INTERVIEWED	NAME: Rhonda Guy	TITLE: Certified Operator		
CONSUMPTION	PERIOD REVIEWED: April 2000-Mar. 2002	Average GPD: 66,458	Maximum GPD: 218,000 (Feb 2002-water main break)	PE @ 100 GPCD: 665
POPULATION SERVED	Total No. of Service Connections: 300	No. of Service Connections or Actual Pop. Outside Corp. Limits: 2		
	CENSUS POPULATION: 550	*TOTAL POPULATION SERVED: 555		

*equals census pop. + (# of connections outside corp. limits x 2.5 or actual pop. outside corp. limits)

ASSESSMENTS	Organic Chemical Physical Vulnerability: ☒ Yes ☐ No	Change from Previous: ☐ Yes* ☒ No
	Surface or Influenced Groundwater: ☐ Yes ☒ No	Change from Previous: ☐ Yes* ☒ No
	Asbestos Materials in Distribution System: ☐ Yes ☒ No	Change from Previous: ☐ Yes* ☒ No

GENERAL DESCRIPTION

SOURCE: Water is derived from three shallow wells. Well #1 was constructed in 1951 to a depth of 24 feet; Well #2 was constructed in 1973 to depth of 26 feet; and Well #3 was constructed in 1977 to a depth of 25 feet. All three wells pump water from the Holocene Alluvium Aquifer along the Iowa River.

TREATMENT: Sodium hypochlorite is added for disinfection in the pump house where Well #1 is located.

STORAGE: Pressure and storage for distribution is provided by a 100,000 gallon elevated storage tank (EST).

There is an emergency connection to rural water on the east side of town.

AUTHENTICATION

INSPECTOR:	NAME: Janet Gastineau, Environmental Specialist	DATE: 5/8/02
REVIEWER:	NAME: Randall P. Lane, Environmental Specialist Senior	DATE:

FACILITY EVALUATION:

1. **Source:**

   a. **Location, Vulnerability Assessment, & Wellhead Protection** — An assessment must be done on each water supply to determine vulnerability to contamination by synthetic and volatile organic compounds (SOCs & VOCs). The criteria to determine vulnerability are if any contaminants have been detected in the water supply and by the separation distances of the raw water sources from possible sources of contaminants listed in 567 IAC 41.5(1)*"c"*(5) 8. No SOCs or VOCs have been detected in the finished water. The three wells are all located on the south edge of the City; wells #1 and #2 are bordered by agricultural crop land and Highway 330 and Well #3 is bordered entirely by pasture. The City has historically leased and maintained 200 feet around Wells #1 and #2 where it is otherwise adjacent to crop land and susceptible to chemical application. Well #3 has a perimeter fence 50 feet from the well itself to prevent livestock that previously grazed in the area. Livestock are not currently pastured in the area. The facility will continue to be considered not vulnerable. A partial wellhead protection plan was development with the assistance of the Iowa Rural Water Association. The IDNR Geological Survey Bureau completed the source water delineation for these wells.

   b. **Sanitation & Construction and Operation & Maintenance** — Wells #1 and #2 are for emergency/ standby use only. Well #3 is the primary source and was pumping during the sanitary survey. Road improvements/realignment to Highway 330 began April 2002, which made accessing Well #3 difficult. The other two wells were observed. The vent is not obvious on Well #1, so it is recommended this be investigated to ensure the well is properly vented (standards enclosed). Well #2 had a broken well cap which eliminated one of the bolts to hold the cap in place. The well cap needs to be replaced to provide a proper sanitary seal. The drawdown gauges on each well are operational and the on-site city staff is reportedly performing static and pumping levels monthly; no record was available during the sanitary survey. Static and pumping levels should then be taken and recorded monthly [567 IAC 43.7(1)*"b"*(6)] Well #1, piping, and other appurtenances in the pump house are corroded and in need of painting.

      The two emergency use wells were used for approximately two weeks while the raw line from Well #3 was being relocated as part of the road project. The wells were tested and pumped to waste prior to use and although there was no documentation as such, the field office was reportedly contacted. No one in Field Office #5 or the permit writer for the Water Supply Section recalls or documented such contact. Field Office #5 must be contacted prior to any planned use and within 24 hours of any emergency. Since this was a planned use, the field office should have been notified well in advance and documentation made of this notification. Nitrate levels in Well #1 were less than 2 mg/L and in Well #2 approximately 6 mg/L.

      The telemetry used between the elevated storage tower and the treatment building failed approximately one week prior to the sanitary survey. It was expected to be restored by the end of this week. In the meantime, the well is pumped in the morning and later in the evening to keep the EST filled.

   c. **Surface Water/Influenced Groundwater Assessment** — Based on observations made in the past and at the time of this survey, this system will continue to not be considered to be under the direct influence of surface water.

2. **Treatment:**

   Sanitation & Construction; b. Operation & Maintenance — The treatment plant was in need of general cleaning and painting at the time of this inspection. The water treatment facility should be kept in a clean, sanitary manner at all times as it reflects a general attitude of care and attention to the water supply to both inspectors and the general public. A new concrete floor and entrance ramp was laid in

the well house/treatment building since the previous survey. This summer the city staff will be replacing wall board and painting the interior walls.

The chlorine pump and injector were replaced since the previous survey. Chlorine is fed directly from the 15 gallon plastic carboy tote, which contains approximately 2½ weeks supply. The amount of chlorine solution used daily is now weighed and recorded five days a week. The quantity of chlorine solution used must be measured and recorded daily.

3. Distribution Storage:
   Sanitation & Construction and Operation & Maintenance — The elevated storage tower (EST) is inspected once every two years through an agreement with Water Tower Paint and Repair. Necessary repairs and maintenance of the water tower are also performed. As directed in the previous survey, the EST needs the screen replaced on the overflow.

4. Distribution System:
   Sanitation & Construction and Operation & Maintenance — Flushing occurs twice a year. Bulk water sales from a hydrant at the Fire Station have been discontinued. No water loss monitoring or leak detection is performed. Water main breaks are performed by contractors.

5. Bacteriological Monitoring:
   a. **Sampling Plan** — Public water supply systems must collect total coliform samples at sites which are representative of water throughout the distribution system according to a written sample siting plan. Major elements of the plan shall include, but are not limited to, a map of the distribution system, notation or a list of routine sample location(s) for each sample period, resample locations for each routine sample, and a log of samples taken. The plan must be made available to the department upon request and during sanitary surveys and must be revised by the system as directed by the department. The current plan does not include a map of the distribution system or acknowledge the date it was prepared and/or reviewed. The plan must be updated to include a map and dated to ensure updates to the plan are current. The plan shall be reviewed or updated by the public water supply system every two years and shall be retained on file at the facility.

   b. **Bacterial Quality** — Records indicate that the water supply has not experienced an unsatisfactory coliform sample result from the distribution system since the last sanitary survey. During this survey, a sample was collected at the library and submitted to the University Hygienic Lab (UHL) in Iowa City for coliform bacteria analysis. The result of the analysis is attached and indicates that the water supply was bacterially safe at the time of this survey.

   c. **Chlorine Residuals** — During this survey, a chlorine test was conducted on the water in the distribution system. The free residual was found to be 1.0 mg/L and the total residual was found to be 1.3 mg/L. According to the monthly reports, chlorine residuals at the plant and in the system are not being recorded daily. Ms. Guy has told the city staff that five times per week is acceptable. Furthermore, due to the inconsistency in chlorine residual results at the plant due to the location of the chlorine injection, chlorine residuals are not being measured or recorded at the plant. Chlorine residuals, regardless of the results, must be measured and recorded daily at the plant and in the distribution system.

6. SDWA and Self Monitoring:
   a. **Source/Entry Point Determination** — A source/entry point to the distribution system must be identified for all water supplies. The S/EP must be representative of all sources. The source for this water supply is Wells #1, #2, and #3. However, only Well #3 is in use because of the nitrate levels in

the other two wells. The current S/EP is #02: Well #3 After Treatment and is specifically a tap at the pump house after treatment.

b. **Operation Reports & Record Keeping** — The public water supply and operator are required to conduct the monitoring and reporting necessary to properly and efficiently operate this supply. The monitoring reports were reviewed were not up-to-date with the average, maximum, and minimum daily flows calculated. The Iowa Administrative Code [567 IAC 42.4(3)] requires the following monitoring:

Parameter	Frequency	Location
Flow	daily	raw & final
Chlorine Residual	daily	final & distribution
Qty. of Chlorine used	daily	day tank
Well static level	1/month	each well
Well drawdown level	1/month	each well
Coliform bacteria	1/month	according to plan

As a reminder, the following records must be maintained; bacteriological analyses records for a minimum of five years and all records of chemical analyses for not less than ten years and lead & copper records for a period of 10 years [567 IAC 42.5(1)]. Monthly records of operation completed as described in 567 IAC 42.4(3) shall be maintained at the facility for inspection by the department for a period of five years.

c. **Lead & Copper** — Your next lead and copper monitoring requirement is to collect 10 samples between June 1st and September 30, 2002. Polling of the sample location home owners is anticipated two weeks to 10 days prior to sample collection to determine whether any plumbing changes or point of entry or use devices have been added.

d. **Raw/Finished Water Quality** — Water samples collected from the Source Entry Point and distribution system have had nitrate concentrations greater than one-half the maximum contaminant level, which is 10 mg/L. Therefore, the facility continues to be required to monitor for nitrates on a monthly basis. The IDNR Contaminated Sites Section has expressed interest in providing no-cost assistance to the City to investigate the potential source(s) of the elevated nitrate levels in the wells. Matt Culp, of the Contaminated Sites Section, was present during the sanitary survey and performed a tour of the town to look for potential nitrogen samples. He spoke extensively with the operator about some next steps to take in this regard. Identification and elimination of the nitrogen source would allow wells #1 and #2 to be brought back as primary wells. This is especially important now that just one well is being used as a source well for the water supply. A thorough desk top review of the facility was also complete by the Contaminated Sites Section. A finished water sample was collected from the sample tap in the pump house for nitrate and nitrite analysis. The result from the test strip screening were greater than 2 mg/L and less than 5 mg/L. The result of analyses of the sample submitted to the University of Iowa Hygienic Laboratory was 4.1 mg/L and <0.02 mg/L for nitrate and nitrite, respectively. The average nitrate level for the first quarter of 2002 was 5.3 mg/L.

7. **Staffing & Operator Certification:**

Operator, Direct Responsibility and General Staffing — Rhonda Guy is the responsible contract operator. Larry Smith no longer works for the City and Bob Earney has taken over the day-to-day operations and testing requirements or the facility. If Mr. Earney is to continue in this capacity, it is recommended that he become certified as a Grade I water treatment and distribution operator.

8. **Miscellaneous:**

Emergency Operation — A connection has been made to rural water; the meter pit is on the east edge of town. There is also a 10 kWh diesel generator available at the water treatment plant for manual switching. The new telemetry will have alarm capabilities.

SUMARY OF REQUIRMENTS

1. Record the daily chlorine residuals in the system and at the plant.
2. Replace the screen on the overflow of the EST.
3. Ensure Well #1 is properly vented.
4. Replace the well cap on Well #2.
5. Revise the written bacterial sampling plan to include a map of the distribution system and the date of revisions.
6. Contact the field office prior to a planned use of wells #1 and/or #2 and within 24 hours of any emergency use.
7. Continue to do all monitoring as outlined in Item 6b. above.

SUMMARY OF RECOMMENDATIONS

1. Paint Well #1, piping, and other appurtenances in the treatment building.
2. Have Mr. Earney become a properly certified water treatment operator.
3. Work with the department's Contaminated Sites Section to investigate the potential nitrogen source(s).

Hygienic Laboratory

The University of Iowa

Date of report: 05-06-2002

JANET GASTINEAU
EPD 5
401 SOUTHWEST 7TH STREET
SUITE I
DES MOINES IA 50309-4611

Sample Number	**200255541**
Date Received	05-01-2002
Project	SDWA
Date Collected	05-01-2002 10:00
Collection Site	s/ep 02
Collection Town	Albion
Description	water
Reference	
Collector	GASTINEAU JANET
Phone	(515) 725-0334
Purchase Order	

Comments *Upon receipt at the UHL sample meets standard acceptance criteria.*

SDWIS Information

PWS Id: IA6403011 Facility Id: 02 Sample Point Id: 02
Sample Category: Chemical Sample Type: Special (SP)

Results of Analyses

SDWA Nitrite as N

Analyte	Concentration mg/L	Quantitation Limit
Nitrite Nitrogen as N	<0.02	0.02

Date Analyzed: 05-01-2002 Analyst: BR
Method: EPA 353.2 Verified: LF

SDWA NITRATE as N

Analyte	Concentration mg/L	Quantitation Limit
Nitrate Nitrogen as N	4.1	0.1

Date Analyzed: 05-01-2002 Analyst: BR
Method: EPA 353.2 Verified: LF

Description of units used within this report

mg/L - Milligrams per Liter Quant Limit - Lowest concentration reliably measured

Iowa Laboratory Certification No. 027. AIHA, NELAP, NVLAP, USEPA, and other credentials available upon request.

If you have any questions please call Sherri Marine at 800/421-IOWA (4692) or 319/335-4500. Thank you.

Mary J. R. Gilchrist, Ph.D.
Director

102 Oakdale Campus, #101 OH
Iowa City, Iowa 52242-5002
319/335-4500 Fax: 319/335-4555

http://www.uhl.uiowa.edu

H.A. Wallace Building
East Grand, Des Moines, Iowa 50319-0034
515/281-5371 Fax: 515/243-1349

Hygienic Laboratory

The University of Iowa

Date of report: 05-06-2002

JANET GASTINEAU
EPD 5
401 SOUTHWEST 7TH STREET
SUITE I
DES MOINES IA 50309-4611

Sample Number	**200255542**
Date Received	05-01-2002
Project	SDWA
Date Collected	05-01-2002 09:35
Collection Site	library
Collection Town	Albion
Description	water
Reference	
Collector	GASTINEAU JANET
Phone	(515) 725-0334
Purchase Order	

Comments: *Upon receipt at the UHL sample meets standard acceptance criteria.*

SDWIS Information

PWS Id: IA6403011 | Facility Id: 950 | Sample Point Id: 950
Sample Category: Total Coliform | Sample Type: Special (SP)

Results of Analyses

Total Coliform & E.coli by Colilert P/A

Total coliform bacteria absent.
Sample analyzed less than 30 hours after collection.

Date Analyzed: 05-01-2002
Method: SM18 9223

Analyst: DE
Verified: PB

Description of units used within this report

No Units - No Units

Iowa Laboratory Certification No. 027. AIHA, NELAP, NVLAP, USEPA, and other credentials available upon request.

If you have any questions please call Sherri Marine at 800/421-IOWA (4692) or 319/335-4500. Thank you.

Mary J. R. Gilchrist, Ph.D.
Director

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