

Nitrates Above 10 ppm is Considered Unsafe to Drink

Monitoring Wells at These Confinements Greatly Exceed These Standards.

At Times by 1,576 Percent

GROUNDWATER MONITORING SAMPLE RESULTS REVIEW
Groundwater Section
Nebraska Department of Environment and Energy
(Fall 2019)

Facility: GJW Inc.
City: Ainsworth
IIS#: 75512
Received: 1/17/2020

Legal: NE Sec 35 T29N R22W
County: Brown

- Groundwater flow direction remains northeast.
- The sample from well 2 continues to show ammonia.
- Well 4 is now the upgradient well and well 1 is the downgradient well for the newer holding pond.

Well	Date	GW elev	Nitrate	Ammonia	Chloride	Conductivity
1	5/24/2017	198.02	8.6	0.2	3	184
1	11/14/2017	198.12	11.4	<0.1	2	169
1	5/2/2018	199.47	11.9	<0.1	3	231
1	10/31/2018	200.75	19.4	<0.1	2	254
1	5/13/2019	203.13	18.9	<0.1	3	261
1	10/16/2020	205.94	20.9	0.2	3	262

Well	Date	GW elev	Nitrate	Ammonia	Chloride	Conductivity
2	5/24/2017	194.93	32.9	0.5	60	1028
2	11/14/2017	195.14	73.2	<0.1	59	799
2	5/2/2018	196.62	72.4	3.4	73	1213
2	10/31/2018	197.53	68.9	3.8	46	1088
2	5/13/2019	199.97	25.4	6.2	46	801
2	10/16/2020	201.83	24.5	5.1	51	734

Well	Date	GW elev	Nitrate	Ammonia	Chloride	Conductivity
3	5/24/2017	195.75	21.8	<0.1	25	482
3	11/14/2017	195.84	21.0	<0.1	23	398
3	5/2/2018	197.21	19.5	<0.1	24	514
3	10/31/2018	198.33	41.3	<0.1	75	836
3	5/13/2019	200.77	22.5	<0.1	96	749
3	10/16/2020	203.03	39.7	<0.1	59	666

Well	Date	GW elev	Nitrate	Ammonia	Chloride	Conductivity
4	5/24/2017	199.66	3.5	<0.1	2	114
4	11/14/2017	199.60	3.3	<0.1	2	90
4	5/2/2018	201.21	3.8	0.2	3	116
4	10/31/2018	202.36	3.1	<0.1	2	112
4	5/13/2019	205.01	4.3	<0.1	3	141
4	10/16/2020	207.86	6.3	<0.1	2	149

REVIEWER: *David Smith* DATE: 1/29/2020

DS



GROUNDWATER MONITORING SAMPLE RESULTS REVIEW
Groundwater Section
Nebraska Department of Environment and Energy
(Fall 2019)

Facility: Georgetown

Legal: SW Sec 27, NE Sec 33 T14N R20W

IIS#: 81789

County: Custer

Received: 12/31/2019

- They could not install a well directly southeast of the lagoon due to a nearby production well and truck wash but well 3 should be providing some indication of downgradient conditions.
- The nitrate concentration in well 3 went back up and ammonia was detected.

Well	Date	GW elev	Nitrate	Ammonia	Chloride	Conductivity
1	5/28/2017	1980.62	39.4	0.1	19	1110
1	11/27/2017	1978.72	57.6	<0.1	21	1230
1	5/30/2018	1980.29	43.9	0.5	20	1250
1	11/29/2018	1980.39	46.4	<0.1	20	1300
1	5/28/2019	1981.56	38.6	<0.1	22	1250
1	11/25/2019	2353.10	32.7	<0.1	19	1200

Well	Date	GW elev	Nitrate	Ammonia	Chloride	Conductivity
2	5/28/2017	1982.71	11.5	0.3	110	2130
2	11/27/2017	1981.57	39.4	<0.1	38	1220
2	5/30/2018	1982.62	15.8	<0.1	74	1770
2	11/29/2018	1982.55	20.0	<0.1	61	1570
2	5/28/2019	1983.50	24.5	<0.1	66	1620
2	11/25/2019	2349.65	22.5	<0.1	86	1830

Well	Date	GW elev	Nitrate	Ammonia	Chloride	Conductivity
3	5/28/2017	1985.67	33.5	0.1	20	1640
3	11/27/2017	1984.76	22.1	<0.1	17	1560
3	5/30/2018	1985.64	41.5	<0.1	21	1680
3	11/29/2018	1985.69	70.4	<0.1	45	2330
3	5/28/2019	1986.61	29.3	<0.1	20	1740
3	11/25/2019	2349.01	68.8	0.4	43	2570

REVIEWER: *Brian Smith* DATE: 11/6/2020

SM



GROUNDWATER MONITORING SAMPLE RESULTS REVIEW
Groundwater Unit
Nebraska Department of Environmental Quality
(Spring 2016)

Facility: Thomas Livestock

Legal: SW Sec 27, NE Sec 33 T14N R20W

IIS#: 81789

County: Custer

Received: 6/20/2016

- The calculated flow direction is southwest when southeast flow is expected based on the topography, the C&SD water level map and the flow direction of the nearby South Loup River.
- They could not install a well directly southeast of the lagoon due to a nearby production well and truck wash but well 3 should be providing some indication of downgradient conditions.
- Nitrate decreased at well 3 by a significant amount.

Well	Date	GW elev	Nitrate	Ammonia	Chloride	Conductivity
1	11/20/2014	1978.66	21.9	<0.1	11	672
1	5/12/2015	1979.76	24.6	<0.1	14	810
1	11/14/2015	1978.89	38.8	<0.1	15	970
1	5/26/2016	1980.78	43.0	<0.1	18	1170

Well	Date	GW elev	Nitrate	Ammonia	Chloride	Conductivity
2	11/20/2014	1981.49	40.0	<0.1	30	985
2	5/12/2015	1982.21	39.6	<0.1	27	981
2	11/14/2015	1981.61	40.1	<0.1	27	1069
2	5/26/2016	1982.83	34.6	<0.1	29	1170

Well	Date	GW elev	Nitrate	Ammonia	Chloride	Conductivity
3	11/20/2014	1984.67	123.6	0.1	82	2708
3	5/12/2015	1985.09	157.6	0.2	76	2790
3	11/14/2015	1984.74	117.3	0.1	58	2335
3	5/26/2016	1985.86	47.3	<0.1	24	1590

REVIEWER: *Brenda [Signature]* DATE: 7/27/2016

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GROUNDWATER MONITORING SAMPLE RESULTS REVIEW
Groundwater Unit
Nebraska Department of Environmental Quality
(Spring 2019)

Facility: Georgetown

Legal: SW Sec 27, NE Sec 33 T14N R20W

IIS#: 81789

County: Custer

Received: 7/8/2019

- They could not install a well directly southeast of the lagoon due to a nearby production well and truck wash but well 3 should be providing some indication of downgradient conditions
- The nitrate concentration in well 3 went back down to a more typical level.

Well	Date	GW elev	Nitrate	Ammonia	Chloride	Conductivity
1	11/25/2016	1979.70	41.7	0.1	18	1320
1	5/28/2017	1980.62	39.4	0.1	19	1110
1	11/27/2017	1978.72	57.6	<0.1	21	1230
1	5/30/2018	1980.29	43.9	0.5	20	1250
1	11/29/2018	1980.39	46.4	<0.1	20	1300
1	5/28/2019	1981.56	38.6	<0.1	22	1250

Well	Date	GW elev	Nitrate	Ammonia	Chloride	Conductivity
2	11/25/2016	1981.83	35.8	<0.1	29	1180
2	5/28/2017	1982.71	11.5	0.3	110	2130
2	11/27/2017	1981.57	39.4	<0.1	38	1220
2	5/30/2018	1982.62	15.8	<0.1	74	1770
2	11/29/2018	1982.55	20.0	<0.1	61	1570
2	5/28/2019	1983.50	24.5	<0.1	66	1620

Well	Date	GW elev	Nitrate	Ammonia	Chloride	Conductivity
3	11/25/2016	1984.88	28.4	0.1	18	1640
3	5/28/2017	1985.67	33.5	0.1	20	1640
3	11/27/2017	1984.76	22.1	<0.1	17	1560
3	5/30/2018	1985.64	41.5	<0.1	21	1680
3	11/29/2018	1985.69	70.4	<0.1	45	2330
3	5/28/2019	1986.61	29.3	<0.1	20	1740

REVIEWER: *Brian Routh* DATE: *8/12/2019*

BR



GROUNDWATER MONITORING SAMPLE RESULTS REVIEW
Groundwater Unit
Nebraska Department of Environmental Quality
(Spring, 2015)

Facility: Thomas Livestock

Legal: SW Sec 27, NE Sec 33 T14N R20W

IIS#: 81789

County: Custer

Received: 6/11/2015

- The calculated flow direction is southwest when southeast flow is expected based on the topography, the C&SD water level map and the flow direction of the nearby South Loup River.
- They could not install a well directly southeast of the lagoon due to a nearby production well and truck wash but well 3 should be providing some indication of downgradient conditions.
- The sample from well 3 showed an increase in nitrate..

Well	Date	GW elev	Nitrate	Ammonia	Chloride	Conductivity
1	11/20/2014	1978.66	21.9	<0.1	11	672
1	5/12/2015	1979.76	24.6	<0.1	14	810

Well	Date	GW elev	Nitrate	Ammonia	Chloride	Conductivity
2	11/20/2014	1981.49	40.0	<0.1	30	985
2	5/12/2015	1982.21	39.6	<0.1	27	981

Well	Date	GW elev	Nitrate	Ammonia	Chloride	Conductivity
3	11/20/2014	1984.67	123.6	0.1	82	2708
3	5/12/2015	1985.09	157.6	0.2	76	2790

REVIEWER: *David Smith*

DATE: *7/12/2015*

DM



GROUNDWATER MONITORING SAMPLE RESULTS REVIEW
Groundwater Unit
Nebraska Department of Environmental Quality
(Fall 2014, first sampling)

Facility: Thomas Livestock

Legal: SW Sec 27, NE Sec 33 T14N R20W

IIS#: 81789

County: Custer

Received: 12/29/2014

- The calculated flow direction is southwest when southeast flow is expected based on the topography, the C&SD water level map and the flow direction of the nearby South Loup River.
- They could not install a well directly southeast of the lagoon due to a nearby production well and truck wash but well 3 should be providing some indication of downgradient conditions.
- Well 3 shows the highest nitrate level.

Well	Date	GW elev	Nitrate	Ammonia	Chloride	Conductivity
1	11/20/2014	1978.66	21.9	<0.1	11	672

Well	Date	GW elev	Nitrate	Ammonia	Chloride	Conductivity
2	11/20/2014	1981.49	40.0	<0.1	30	985

Well	Date	GW elev	Nitrate	Ammonia	Chloride	Conductivity
3	11/20/2014	1984.67	123.6	0.1	82	2708

REVIEWER: *Brent Bennett* DATE: 1/16/2014

DM



GROUNDWATER MONITORING SAMPLE RESULTS REVIEW
Groundwater Unit
Nebraska Department of Environmental Quality
(Fall 2015)

Facility: Thomas Livestock

Legal: SW Sec 27, NE Sec 33 T14N R20W

IIS#: 81789

County: Custer

Received: 12/23/2015

- The calculated flow direction is southwest when southeast flow is expected based on the topography, the C&SD water level map and the flow direction of the nearby South Loup River.
- They could not install a well directly southeast of the lagoon due to a nearby production well and truck wash but well 3 should be providing some indication of downgradient conditions.
- Nitrate decreased at well 3 while increasing at wells 1 and 2.

Well	Date	GW elev	Nitrate	Ammonia	Chloride	Conductivity
1	11/20/2014	1978.66	21.9	<0.1	11	672
1	5/12/2015	1979.76	24.6	<0.1	14	810
1	11/14/2015	1978.89	38.8	<0.1	15	970

Well	Date	GW elev	Nitrate	Ammonia	Chloride	Conductivity
2	11/20/2014	1981.49	40.0	<0.1	30	985
2	5/12/2015	1982.21	39.6	<0.1	27	981
2	11/14/2015	1981.61	40.1	<0.1	27	1069

Well	Date	GW elev	Nitrate	Ammonia	Chloride	Conductivity
3	11/20/2014	1984.67	123.6	0.1	82	2708
3	5/12/2015	1985.09	157.6	0.2	76	2790
3	11/14/2015	1984.74	117.3	0.1	58	2335

REVIEWER: *Bruce Smith* DATE: 11/21/2016

SM

