Fields of Opportunities

STATE OF IOWA

TERRY E. BRANSTAD, GOVERNOR
KIM REYNOLDS, LT. GOVERNOR

DEPARTMENT OF NATURAL RESOURCES
CHUCK GIPP, DIRECTOR

January 24, 2017

Shelli Lovell, Policy and Program Manager
Central Iowa Water Association
1351 Iowa Speedway Drive
Newton, Iowa 50208

RE: Harvester Wastewater Treatment Facility
Central Iowa Water Association
DNR Project No. S2014-0361

Subject: Variance Request from 567 IAC Chapter 64 and Design Standards Section 18C7.4.4, 18C7.4.6 and 18C10.6

Dear Ms. Lovell:

After careful and thorough consideration, the Department has ***approved*** your November 28, 2016 request for a variance from Iowa Administrative Code Subrule 64.2(9a) and Chapter 18C (18C7.4.4, 7.4.6 and 10.6) of the Iowa Wastewater Facilities Design Standards, which requires influent line located underneath of lagoon liner, influent discharge into a shallow saucer-shaped depression and use of a calibrated mast, pipe, or inclined concrete section of the dike for pond level gauges.

Based on the documentation presented by your Engineer, it is the determination of this Department that satisfactory justification has been presented to warrant the granting of a variance for the installation influent line on lagoon bottom liner, discharge at the level of pond liner and using riser piping to measure pond level. The requested variance is deemed to be reasonable and necessary pursuant to the Iowa Code section 455B.181.

The facts presented for the project present unique circumstances and the variance is therefore justified to provide the narrowest exception possible to the provisions of the rule in accordance with Rule 561 IAC 10.5. Since the project planning and construction may last more than one year, the variance is considered to be of a permanent nature. The validity of this variance approval shall last for a period of one year from the date of the construction permit in accordance with Rule 561 IAC 10.5.

This decision is based on our review of justification presented to support the request. Our concurrence with the request is based on the Department's finding that the resulting project will provide substantially equivalent effectiveness as would be provided by technical compliance with the design standard on this issue.

Please feel free to contact Emy Liu at 515-725-8421 or email emy.liu@dnr.iowa.gov if you have any questions.

Sincerely,

Jon Tack
Water Quality Bureau Chief

Encl.

cc: Mark Fincel, Garden and Associates, Inc
DNR FO # 5
DNR Sewage File 6-50-00-6-03

VARIANCE REQUEST NOTIFICATION
Iowa Department of Natural Resources

Submit

All Fields are Required

1.	Reviewer/Engr.:	Emy Liu	7. Decision:	Approval
2.	Date Received:	12/1/2016	Date:	1/24/2017
3.	Facility Name:	Harvester Golf Club Development		
4.	Program Area:	CP Wastewater Construction		
5.	Subject Area:	343 Pond Influent Piping		
6.	Rule Reference:	567-64.2 (9)a		

8. Description of Variance Request: Summarize (250 characters)

Influent lines shall be located along the bottom of the pond so that the top of the pipe is just below the average elevation of the pond seal.

9. Department's Justification: Summarize (250 characters)

Ductile iron pipe due to its weight and rigidity, has less rick of floating if not being placed underneath the pond seal.

10. Type name:

Jon Tack — Supervisor/Bureau Chief/DA

1/27/2017 — Date

*The original, approvals, letters, code and other supporting documentation is to be maintained by the program in accordance with the Records Retention Schedule.

VARIANCE REQUEST
Iowa Department of Natural Resources

1.	Date:	January 24, 2017	14a.	Decision:	Approval
2.	Reviewer/Engr.:	(Emy) Wenxin Liu		Date:	Jan 24, 2017
3.	Date Received:	December 1, 2016	14b.	Expiration Date (if any):	
4.	Facility Name:	Harvester Golf Club Development			
5.	Facility Number:	6-50-00-6-03			
6.	County Number:	Marshall County	15.	Appealed:	
7.	Program Area:	CP (Wastewater Construction)		Date:	
8.	Facility Type:	C05			
9.	Subject Area:	343 (Pond Influent Piping)			
10.	Rule Reference:	567-64.2 (9) a			
11.	Design Std. Ref.:	18C7.4.4			
12.	Consulting Engr.:	Garden & Associates, Ltd			
13.	Variance Rule:	567-64.2(9)c			

16. Description of Variance Request:
The Harvester Golf Club wastewater treatment facility serves residential housing, a golf course with clubhouse and overnight lodging, and other retail businesses. The current wastewater facility is a 4-cell aerated lagoon. Proposed wastewater construction is to construct a new 3-cell controlled discharge lagoon. Iowa Wastewater Design Standards Section 18C.7.4.4 states that influent lines shall be located along the bottom of the pond so that the top of the pipe is just below the average elevation of the pond seal. An adequate soil seal shall be provided around the pipe.

17. Applicant's/Consulting Engineer's Justification:
Design engineer has requested constructing the influent line to be on top of the pond liner with ductile iron pipe suitably anchored. The variance was requested based on the facts that piping installed on top of the lagoon liner can reduce construciton costs and is effective in areas where groundwater and soil condition is challenging. Elimination of the buried piping will allow the lagoon liner to be constructed at a higher elevation and protect integrity of liner. It is believed that initial construciton cost and potential construciton challenges maintaining separation with groundwater and challenges associated with potential additional overexcavation will cause undue and unnecessary hardship.

18. Department's Justification:
The recommendation is approval. Ductile iron pipe, due to its weight and rigidity, has less risk of floating if not being placed underneath the pond seal. Adequate measure shall be taken to ensure that influent line is securely anchored. The influent discharge line shall rest on a suitably sized concrete apron which is large enough such that the terminal influent velocity at the end of apron does not cause soil erosion. This decision is based on the Department's review of justification presented to support the request. This concurrence with the request is based on the Department's finding that the resulting project will provide substantially equivalent effectiveness (567 IAC 64.2 (9) e) as would be provided by technical compliance with the design standard on this issue.

19. Precedents Used:
Conroy, July 25, 2007; Promise City, October 30, 2008; Pleasant Plain and East Pleasant Plain, February 8, 2010; Ollie, October 23, 2009; Southwest Ringgold County, Feburary 21, 2011

20. Staff Reviewer:	Emy Wenxin Liu	Date:	Jan 24, 2017
21. Supervisor:	Satya Champati	Date:	Jan 26, 2017
22. Authorized by:		Date:	1/27/17

VARIANCE REQUEST NOTIFICATION
Iowa Department of Natural Resources

Submit

All Fields are Required

1.	Reviewer/Engr.:	Emy Liu	7.	Decision:	Approval
2.	Date Received:	12/1/2016		Date:	1/24/2017
3.	Facility Name:	Harvester Golf Club Development			
4.	Program Area:	CP Wastewater Construction			
5.	Subject Area:	379 Influent Line Termination			
6.	Rule Reference:	567-64.2 (9)a			

8. Description of Variance Request: Summarize (250 characters)

A shallow saucer shaped depression and the depression shall have a minimum depth of one foot.

9. Department's Justification: Summarize (250 characters)

Determined that the design of the lagoon influent discharge line at liner level provides design euqivalency and effectiveness

10. Type name:

Jon Tack — Supervisor/Bureau Chief/DA

1/27/2017 — Date

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VARIANCE REQUEST
Iowa Department of Natural Resources

1.	Date:	January 24, 2017	14a.	Decision:	Approval
2.	Reviewer/Engr.:	(Emy) Wenxin Liu		Date:	Jan 24, 2017
				Expiration Date	
3.	Date Received:	December 1, 2016	14b.	(if any):	
4.	Facility Name:	Harvester Golf Club Development			
5.	Facility Number:	6-50-00-6-03			
6.	County Number:	Marshall County	15.	Appealed:	
7.	Program Area:	CP (Wastewater Construction)		Date:	
8.	Facility Type:	C05			
9.	Subject Area:	379 (Influent Line Termination)			
10.	Rule Reference:	567-64.2 (9) a			
11.	Design Std. Ref.:	18C7.4.6			
12.	Consulting Engr.:	Garden & Associates, Ltd			
13.	Variance Rule:	567-64.2(9)c			

16. Description of Variance Request:
The Harvester Golf Club wastewater treatment facility serves residential housing, a golf course with clubhouse and overnight lodging, and other retail businesses. The current wastewater facility is a 4-cell aerated lagoon. Proposed wastewater construction is to construct a new 3-cell controlled discharge lagoon. Iowa Wastewater Design Standards Section 18C.7.4.6 requires a shallow saucer-shaped depression and the depression shall have a minimum depth of one foot. Proper sealing of the depression shall be provided. The end of the discharge line shall rest on a concrete apron located at the center of the inlet depression which is large enough such that the terminal influent velocity at the end of the apron does not cause soil erosion. Harvester wastewater controlled discharge lagoon influent lines are installed on top of the lagoon liner with proper anchoring. Pipe material is ductile iron pipe.

17. Applicant's/Consulting Engineer's Justification:
Design engineer requested the variance based on the fact that construction without inlet depression can reduce cost. In addition, elimination of the inlet depressions and buried piping can allow the lagoon liner to be constructed at a higher elevation where groundwater is high. Liner has a better integrity without piping installed below liner. They are not aware of any problems that have developed as a result of construction without inlet depression.

18. Department's Justification:
The variance request is recommended to be approved. The saucer shaped depression is not compatible with lagoon influent pipe installed above lagoon liner. Ductile iron piping is used and it is securely anchored. Splash block is designed to prevent terminal influent velocity causing soil erosion. As proposed, it is determined that the design of lagoon influent discharge line at liner level provides design euqivalency and effectiveness.

19. Precedents Used:
Conroy, July 25, 2007; Promise City, October 30, 2008; Pleasant Plain and East Pleasant Plain, February 8, 2010; Ollie, October 23, 2009.

20. Staff Reviewer:	Emy Wenxin Liu	Date:	Jan 24, 2017
21. Supervisor:	Satya Champati	Date:	Jan 26, 2017
22. Authorized by:	[signature]	Date:	1/27/2017

VARIANCE REQUEST NOTIFICATION
Iowa Department of Natural Resources

Submit

All Fields are Required

1.	Reviewer/Engr.:	Emy Liu	7.	Decision:	Approval
2.	Date Received:	12/1/2016		Date:	1/24/2017
3.	Facility Name:	Harvester Golf Club Development			
4.	Program Area:	CP Wastewater Construction			
5.	Subject Area:	381 Pond Level Gauges			
6.	Rule Reference:	567-64.2 (9)a			

8. Description of Variance Request: Summarize (250 characters)

Harvester design will utilize riser piping buried adjacent to control structures to measure pond level in lieu of calibrated mast or other level measuring device.

9. Department's Justification: Summarize (250 characters)

The rising pipe shall be arranged in such a way that independent level measurement for all lagoon cells is possible.

10. Type name:

Jon Tack — Supervisor/Bureau Chief/DA

1/27/2017 — Date

*The original, approvals, letters, code and other supporting documentation is to be maintained by the program in accordance with the Records Retention Schedule.

VARIANCE REQUEST
Iowa Department of Natural Resources

1.	Date:	January 24, 2017	14a.	Decision:	Approval
2.	Reviewer/Engr.:	(Emy) Wenxin Liu		Date:	Jan 24, 2017
				Expiration Date	
3.	Date Received:	December 1, 2016	14b.	(if any):	
4.	Facility Name:	Harvester Golf Club Development			
5.	Facility Number:	6-50-00-6-03			
6.	County Number:	Marshall County	15.	Appealed:	
7.	Program Area:	CP (Wastewater Construction)		Date:	
8.	Facility Type:	C05			
9.	Subject Area:	381 (Pond Level Gauges)			
10.	Rule Reference:	567-64.2 (9) a			
11.	Design Std. Ref.:	18C10.6			
12.	Consulting Engr.:	Garden & Associates, Ltd			
13.	Variance Rule:	567-64.2(9)c			

16. Description of Variance Request:
The Harvester Golf Club wastewater treatment facility serves residential housing, a golf course with clubhouse and overnight lodging, and other retail businesses. The current wastewater facility is a 4-cell aerated lagoon. Proposed wastewater construction is to construct a new 3-cell controlled discharge lagoon. Iowa Wastewater Design Standards Section 18C.10.6 requires pond level gauges be provided for all cells of controlled discharge ponds. The use of a calbrated mast, pipe, or inclined concrete section of the dike may be used. Harvester design will utilize riser piping buried adjacent to control structures to measure pond level in lieu of calibrated mast or other level measuring device.

17. Applicant's/Consulting Engineer's Justification:
Harvester designs an alternative method of accomplishing pond level measurements which will not be susceptible to ice damage or lagoon level gauge movement. Buried riser piping located adjacent to control structures is the lagoon level measuring technique utilized in many lagoons throughout the state. They are not aware of any problems related to this practice and believe the pond level measurement is more accurately and reliably accomplished with use of buried piping and staff gauge. It is engineer's opinion that initial construction cost and ongoing maintenance costs associated with lagoon level measuring devices located within the pond will cause undue and unnecessary hardship; measuing the lagoon level in piping provides equivalent effectiveness,

18. Department's Justification:
The recommendation to variance is approved with conditions. The requested measuring method of pond level has been approved with no negative performance so far.
The variance is approved with the following conditions:
1. The rising pipe shall be arranged in such a way that independent level measurement for all lagoon cells is possible.
2. If freezing proves to be a problem, an alternative method of pond level measurement shall be installed.

19. Precedents Used:
Conroy, July 25, 2007; Promise City, October 30, 2008; Pleasant Plain and East Pleasant Plain, February 8, 2010; Ollie, October 23, 2009; Southwest Ringgold County, Feburary 21, 2011

20. Staff Reviewer:	Emy Wenxin Liu	Date:	Jan 24, 2017
21. Supervisor:	Satya Champati	Date:	Jan 24, 2017
22. Authorized by:	Jon Ehlke	Date:	1/27/17

2014-0561A

GARDEN & ASSOCIATES, LTD.

1701 3rd Avenue East, Suite 1 • P.O. Box 451 • Oskaloosa, IA 52577
Phone: 641.672.2526 • Fax: 641.672.2091

November 28, 2016

IDNR Wastewater Engineering Section
Attn: Emy Liu, PhD, P.E.
502 East 9th Street
Des Moines, IA 50319

Re: Petition Requesting Variance from Design Standards
Wastewater Treatment Facility Improvements
Harvester Golf Club Development
Central Iowa Water Association
G&A 3013373
NPDES #5000603

Dear Emy:

The Central Iowa Water Association (CIWA) is proceeding with wastewater treatment facility (WWTF) improvements for the Harvester Golf Club Development (Harvester), which will replace their existing aerated lagoons with a controlled discharge lagoon. CIWA is petitioning for a variance from Design Standards in order to reduce the cost of construction while maintaining equivalent effectiveness and protection of the public health, safety, and welfare. Please find the following variance request pursuant to 561 Iowa Administrative Code (IAC) Chapter 10.

10.9(1)**Name, address and telephone number of the entity for whom the variance is requested:**

Central Iowa Water Association
1351 Iowa Speedway Drive
Newton, IA 50208
641-792-7011

10.9(2) **Description and citation of specific rule from which a variance is requested:**

Iowa Department of Natural Resources Wastewater Facilities Design Standards:

1. Chapter 18C.7.4.4 – "Influent lines for controlled discharge ponds shall be located along the bottom of the pond so that the top of the pipe is just below the average elevation of the pond seal."
2. Chapter 18C.7.4.6 – "The influent line(s) shall discharge horizontally into a shallow saucer-shaped depression"…
3. Chapter 18C.10.6 – "Pond level gauges shall be provided for all cells of controlled discharge ponds."… "a calibrated mast, pipe, or inclined concrete"…

10.9(3) **The specific variance requested and the precise scope, (see section a) and operative period the variance will extend (see section b).**

a. Variance scope:

1. Chapter 18C.7.4.4 – Allow the influent line for the Harvester controlled discharge ponds to be located on top of the pond liner; constructed of ductile iron pipe; suitably anchored.
2. Chapter 18C.7.4.6 – Allow the influent lines to discharge horizontally at the level of the pond liner for the Harvester ponds.
3. Chapter 18C.10.6 – Allow CIWA to utilize riser piping buried adjacent to control structures to measure pond level in lieu of calibrated mast or other level measuring device installed in the pond.

b. Operative period:

1. Chapter 18C.7.4.4 – during the life of the Harvester WWTF.
2. Chapter 18C.7.4.6 – during the life of the Harvester WWTF.
3. Chapter 18C.10.6 – during the life of the Harvester WWTF.

10.9(4) **Relevant facts that would justify a variance.**

Below are the relevant facts that Garden & Associates, Ltd., believes justify the requested variance. Garden & Associates, Ltd. is hereby attesting to the accuracy of the facts provided herein (signed below).

Variance Items 1 and 2 are requested based on the facts that piping installed on top of the lagoon liner and without inlet depressions can be constructed at lower costs and in areas where groundwater and soil conditions could prove to be challenging. Elimination of the inlet depressions and buried piping will allow the lagoon liner to be constructed at a higher elevation. We believe that the liner has better integrity without piping installed below the floor. We do not know of any problems that have developed as a result of installing ductile iron pipe, properly anchored, without an inlet depression; and the lagoons can be maintained during the long term. It is our opinion that the initial construction cost and potential construction challenges maintaining separation with groundwater and challenges associated with potential additional overexcavation, will cause undue and unnecessary hardship.

Variance Item 3 is an alternative method of accomplishing pond level measurements which will not be susceptible to ice damage or lagoon level gauge movement. Buried riser piping located adjacent to control structures is the lagoon level measuring technique utilized in many lagoons throughout the state; we are aware of no problems related to this practice and believe that pond level measurement is more accurately and reliably accomplished with use of buried piping and staff gauge. It is our opinion that the initial construction cost and ongoing maintenance costs associated with lagoon level measuring devices located within the pond will cause undue and unnecessary hardship; measuring the lagoon level in piping provides equivalent effectiveness.

10.9(5) **Relevant History of prior contacts for the past five years: notices of violation, administrative orders, contested case proceedings, and lawsuits involving the Department or the petitioner.**

Garden & Associates, Ltd. is not aware of any Notices of Violation, administrative orders, case proceedings, or lawsuits, involving the petitioner and the department.

10.9(6) **Any information known to the petitioner regarding the Department's treatment of similar cases.**

Conroy, Iowa (IDNR Response to Variance Requests dated July 25, 2007):
1. (18C.7.4.4) – approved
2. (18C.7.4.6) – approved
3. (18C.10.6) – approved

Promise City, Iowa (IDNR Response to Variance Requests dated October 30, 2008):
1. (18C.7.4.4) – approved
2. (18C.7.4.6) – approved
3. (18C.10.6) – approved

Pleasant Plain and East Pleasant Plain, Iowa (IDNR Response to Variance Requests dated February 8, 2010):
1. (18C.7.4.4) – approved
2. (18C.7.4.6) – approved
3. (18C.10.6) – variance not required

Ollie, Iowa (IDNR Response to Variance Requests dated October 23, 2009):
1. (18C.7.4.4) – approved
2. (18C.7.4.6) – approved
3. (18C.10.6) – approved

Southwest Ringgold County, Iowa (IDNR Response to Variance Requests dated February 21, 2011):
1. (18C.7.4.4) – approved
2. (18C.7.4.6) – approved
3. (18C.10.6) – approved

10.9(7) **Name, address, and telephone number of any public agency or political subdivision of the state or federal government which also regulates the activity in question, or might be affected by the granting of the petition.**

Garden & Associates, Ltd. is not aware of any public agency or political subdivision of the state or federal government which also regulates the activity in question, or might be affected by the granting of the petition.

10.9(8) **Name, address, and telephone number of any person or entity that would be adversely affected by the granting of the petition.**

Garden & Associates, Ltd. is not aware of any person or entity that would be adversely affected by the granting of the petition.

10.9(9) **Name, address, and telephone number of any person or entity of knowledge of relevant facts relating to the proposed variance.**

Garden & Associates, Ltd.
Mark J. Fincel, P.E.
P.O. Box 451
Oskaloosa, Iowa 52577
641-672-2526

10.9(10) **Signed releases authorizing persons with factual knowledge concerning the request to furnish the Department with information relevant to the variance.**

By signature below, the Department is authorized to contact persons listed in item 10.9(9) above, and any other person with factual knowledge of the request.

Criteria for variance approval:

Chapter 561-10.4(1) – The application of the specific listed existing design standards above would pose an unnecessary (and therefore undue) financial hardship on CIWA, in our opinion. The requested variance has been proven to provide equivalent effectiveness and protection of the public health, safety, and welfare, in our opinion.

Chapter 561-10.4(2) – The application of the variance from specific listed existing design standards above would not prejudice the substantial legal rights of any person in our opinion. We are not aware of any person to be negatively impacted if the variance were implemented.

Chapter 561-10.4(3) – The specific listed existing design standards above are not specifically mandated by statute or another provision of law, to the best of our knowledge.

Chapter 561-10.4(4) – The application of the variance from specific listed existing design standards above would provide substantially equal protection of public health, safety, and welfare as is provided by the design standards listed, in our opinion.

We are not aware of any persons who are to be served notice of the above petitioned variance requests. Therefore, by signature below, we are attesting to the Department that required notice has been provided.

If you are in need of additional information or documentation in order to process this request, please contact me at 641-672-2526.

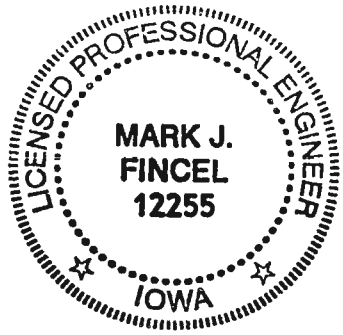
Sincerely,

GARDEN & ASSOCIATES, LTD.

Mark J. Fincel, P.E.

CENTRAL IOWA WATER ASSOCIATION

Shelli Lovell, Chief Operating Officer



I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Iowa.

Mark J. Fincel, P.E. — Date: 11-29-16

License Number: 12255
My license renewal date is December 31, 2017

Pages or sheets covered by this seal:
Variance Request

G&A 3013373