9-11-06

VARIANCE REQUEST 14.2.3c

Iowa Department of Natural Resources

1. Date	: 6/30/94	13. Decision:	Approved
2. Review Engineer	: Fred Evans	Date:	7/11/94
3. Date Received	: 11/12/92		
4. Facility Name	: Cocklin's RV Campsite	14. Appeal:	
5. County Number	: 58	Date:	
6. Program Area	: CP		
7. Facility Type	: C05		
8. Subject Area	: 308		
9. Rule Reference	: ~~64.2(3)c~~		
10. Design Std. Ref.	: 14.2.3c		
11. Consulting Engr.	: ~~MMS Consultants~~		
12. Variance Rule	: 64.2(9)		

15. Description of Variance Request

Jerry Cocklin of rural Columbus Junction proposes to develope an RV campsite of 23 lots on his property and use his existing private deep well to supply water to the campsite. Inasmuch as the available property for development and ground topography will only allow for 300 feet of separation between the well and proposed subsurface sand filter whereas IAC Rule 64.2(3)c requires a minimum separation of 400 feet, a Variance has been requested for location of the sand filter at the lesser distance of 300 feet.

16. Consulting Engineer's Justification

1. Mr. Cocklin is in the process of upgrading his existing private well to public deep well standards in accordance with Dennis Alt's June 18, 1992 letter concerning the conditions for acceptance of the water supply for the RV Campsite. We will notify you as soon as Gingerich Well Drilling, Kalona, Iowa has completed this work.

2. Since Mr. Cocklin's well is over 100 feet deep, and in accordance with D.L. Gordon's December 11, 1991 letter from Iowa Geological Survey which indicates that groundwater degradation will not occur with the proposed sand filter, we ask for approval of the sand filter and well site locations which are approximately 300 feet apart.

16. Consulting Engineer's Justification (cont.)

3. The maximum pumping rate of 15 gpm in the well only produces a 15-foot drawdown and a maximum daily water usage is forecasted to be 4,000 gpd. The maximum daily wastewater flow is forecasted to be 2,300 gpd which is equivalent to approximately six (6) doses per day in the proposed sand filter. The general topography of the sand filter site is sloping away from the well site and the ground elevation at the sand filter site is approximately 20-30 feet lower than the well site. Any surface or subsurface sand filter effluent will flow towards Turkey Run Creek and away from the well.

17. Department's Justification

Approval is recommended based upon the engineers' justification and the following additional considerations:

1. The required modifications to the existing private well to comply with our design standards for public wells have been completed - see 3/30/94 letter from MMS Consultants.
2. Donivan Gordon of the Geological Survey Bureau advises that the thick till in the area should protect water supply sources from potential percolating wastewater - see letter of 12/11/91
3. The separation distances from wells in Table "A" from IAC Chapter 43 requires only a minimum separation distance of 200 feet between public deep wells and soil absorption fields (also subsurface sand filters - copy of Table A is attached. IAC Chapter 69 also requires a minimum distance of 200 feet between public wells and subsurface disposal systems.

18. Precedents Used

City of West Chester - Approved 12/17/91

19. Staff Reviewer : Fred Evans Date: 6/30/94

20. Supervisor : [signature] Date: 7/6/94

21. Authorized by : [signature] Date: 7/11/94

14.4.9.3

STATE OF IOWA

TERRY E. BRANSTAD, GOVERNOR

DEPARTMENT OF NATURAL RESOURCES
LARRY J. WILSON, DIRECTOR

August 27, 1997

Mr. Michael Hefferman
Finance Officer
105 East Third Street
Ottumwa, Iowa 52501-2904

RE: Water Pollution Control Facility Improvements - Phase III
Ottumwa, Iowa
CS192055-03

Dear Mr. Hefferman:

The Iowa Department of Natural Resources in accordance with Subrule 567-64.2(9)c of the Iowa Administrative Code has denied your engineer's August 14, 1997, request for a variance to retain a submerged type flow splitter structure for the final clarifiers as shown in the attachment. Design Standard 14.4.9.3 requires a design with a positive adjustable flow split of hydaulic and organic loadings to the individual process units and easy operator access for change, observation, and maintenance. Standard 14.4.9.3 also requires flow division control to properly proportion flow to each unit operation so that proportioned flow may be measured. The proposed submerged type flow splitting approach, for which Standard 14.4.9.3 was specifically intended to prevent, does not offer equivalent operator flexibility and control. Reliable flow splitting is important at this facility as the flow splitter structure precedes the activated sludge final clarifiers and disinfection units for protection of a Class A primary contact recreation stream. Also, since the AWW flow of the collection system exceeds the hydraulic capacity of the plant, sustained peak flows could occur. With the current design unequal splits for flow and solids are more likely. There are many unknowns for optimum control with submerged splitting as more clarifiers may be connected to the splitter structure in the future. Positive flow splitting would have been necessary for optimum operations of the activated sludge process even if modifications to the splitter structure had not been a part of this upgrade.

Our comments on flow splitting were initially offered in a telephone conversation with your engineer prior to the City advertising for bids. Your consultant's August 20, 1997, request to issue the construction permit conditioned on the submittal of a change order is noted. However, the City's engineer will need to provide assurance prior to our issuance of a construction permit that there is sufficient hydraulic head to accommodate the required positive flow splitting approach when the change order is issued.

Should you have any questions regarding this decision, please contact Terry L. Kirschenman at 515-281-8885.

Sincerely,

for Darrell McAllister
Bureau Chief
Water Quality Bureau

cc: McClure Engineering Co., Fort Dodge
Field Office 6

MMS CONSULTANTS, INC.

1917 S. GILBERT ST. • IOWA CITY • IOWA 52240-4363
OFFICE: 319-351-8282 FAX: (319) 351-8476

Robert D. Mickelson L.S.
Larry R. Schnittjer L.A.
Christopher M. Stephan P.E.
Glenn D. Meisner L.S. & P.E.
Dennis J. Keitel P.E.
Paul V. Anderson P.E.
Dean E. Beranek L.S.

November 10, 1992

Mr. Fred Evans
Wastewater Permits Section
Iowa Department of Natural Resources
Wallace State Office Building
900 E. Grand Avenue
Des Moines, IA 50319-0034

Re: Subsurface Sand Filter
Cocklin's RV Campsite, Columbus Junction, Iowa

Dear Mr. Evans:

In accordance with our previous telephone conversations concerning the above referenced project, we are hereby requesting a variance from I.A.C., Chapter 64.2.3 which requires a 400 foot separation distance from the proposed sand filter to Mr. Jerry Cocklin's existing deep well.

Mr. Cocklin is in the process of upgrading his existing private well to public deep well standards in accordance with Dennis Alt's June 18, 1992 letter concerning the conditions for acceptance of the water supply for the RV Campsite. We will notify you as soon as Gingerich Well Drilling, Kalona, Iowa has completed this work.

Since Mr. Cocklin's well is over 100 feet deep, and in accordance with D.L. Gordon's December 11, 1991 letter from Iowa Geological Survey which indicates that groundwater degradation will not occur with the proposed sand filter, we ask for approval of the sand filter and well site locations which are approximately 300 feet apart.

The maximum pumping rate of 15 gpm in the well only produces a 15-foot drawdown and a maximum daily water usage is forecasted to be 4,000 gpd. The maximum daily wastewater flow is forecasted to be 2,300 gpd which is equivalent to approximately six (6) doses per day in the proposed sand filter. The general topography of the sand filter site is sloping away from the well site and the ground elevation at the sand filter site is approximately 20-30 feet lower than the well site. Any surface or subsurface sand filter effluent will flow towards Turkey Run Creek and away from the well.

We hope the above information is sufficient justification for our variance request. If you need any additional information, please contact us accordingly. We look forward to your reply and subsequent approval of this sand filter system.

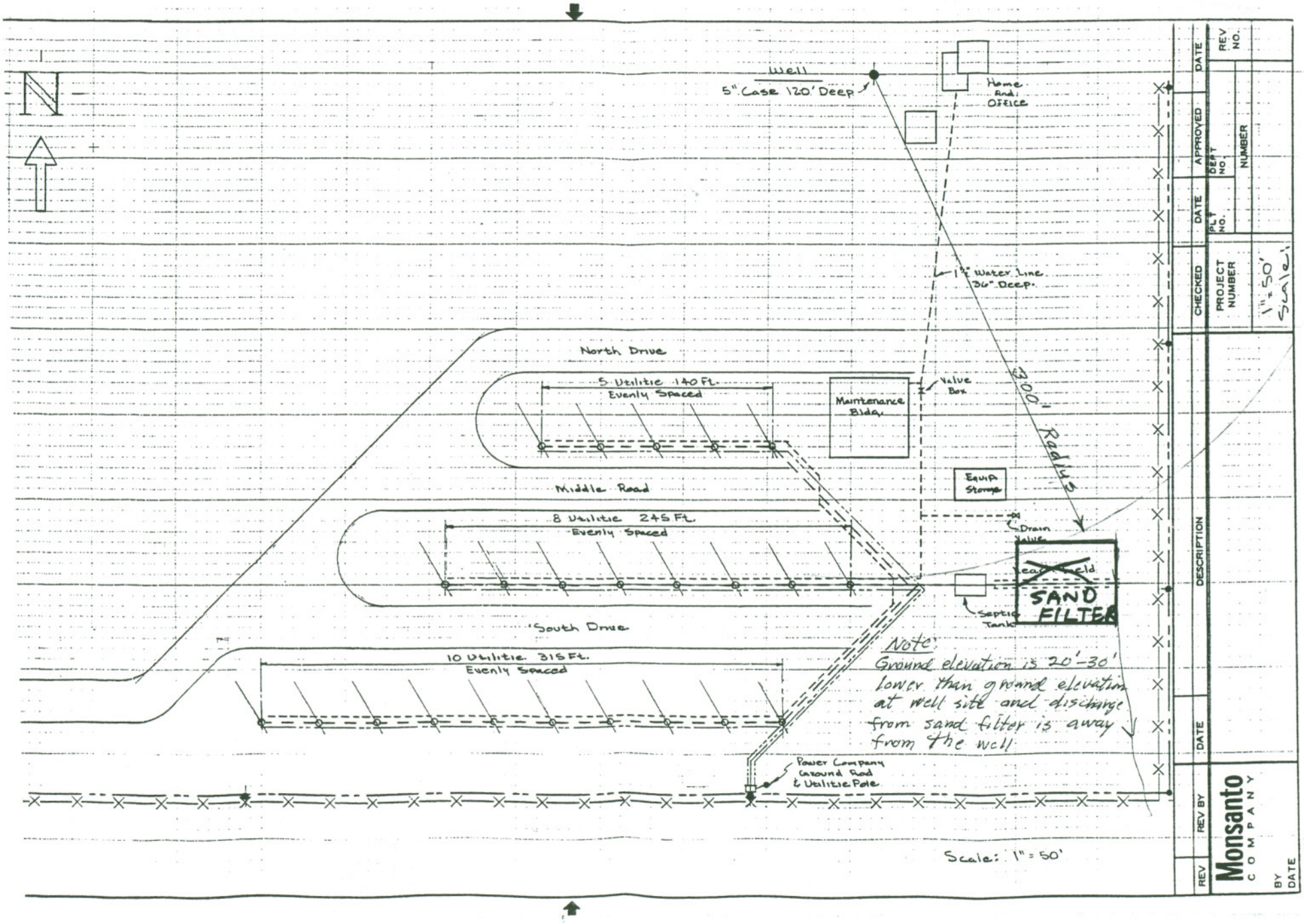
Respectfully submitted:

MMS CONSULTANTS, INC.

Dennis J. Keitel, P.E.

cc: Jerry Cocklin

2967001m.03


Well
5" Case 120' Deep
Home and Office
1½" Water Line 36" Deep.
North Drive
5 Utilitie 140 Ft. Evenly Spaced
Maintenance Bldg.
Valve Box
300' Radius
Middle Road
8 Utilitie 245 Ft. Evenly Spaced
Equip Storage
Drain Valve
Leach Field
SAND FILTER
Septic Tank
South Drive
10 Utilitie 315 Ft. Evenly Spaced
Note: Ground elevation is 20'-30' lower than ground elevation at well site and discharge from sand filter is away from the well
Power Company Ground Rod & Utilitie Pole
Scale: 1" = 50'
REV
REV BY
DATE
DESCRIPTION
DATE
CHECKED
DATE
APPROVED
REV NO.
DEPT NO.
NUMBER
PLT NO.
PROJECT NUMBER
1" = 50' Scale
Monsanto COMPANY
BY
DATE

MMS CONSULTANTS, INC.

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ENGINEERING LAND SURVEYING PLANNING LANDSCAPE ARCHITECTURE

March 30, 1994

Mr. Jacob Mathew
Water Permits Section
Iowa Department of Natural Resources
Wallace State Office Building
Des Moines, IA 50319-0034

RE: Cocklin's RV Camp Water Supply
IDNR Project W92-135

Dear Mr. Mathew:

In response to your June 18, 1992 correspondence concerning Jerry Cocklin's request to approve his existing well to be used as a public water supply source, we offer the following information:

1. The well casing was grouted on March 16, 1994, with a minimum of two inch thick cement grout to a depth at least five feet into the blue clay formation by Gingerich Well & Pump Service, Kalona, Iowa.

2. The well discharge piping has been provided with a flow meter and sampling tap.

3. The well has been disinfected and a raw water mineral analysis completed (see attached copies).

4. The leach field and propane tank for Mr. Cocklin's residence have been relocated to be no closer than 200 feet and 100 feet, respectively, from the well.

5. Chemical application to the ground surface within a 100 foot radius of the well has been restricted.

I hereby certify the above work has been completed, and to the best of my knowledge, such information is complete and accurate. If you have any additional questions or require additional information concerning this well, please contact us accordingly.

Respectfully submitted,

MMS Consultants, Inc.

Dennis Keitel

Dennis J. Keitel, P.E.

cc: Fred Evans - IDNR Wastewater Permits Section
Jerry Cocklin

STATE OF IOWA

TERRY E. BRANSTAD, GOVERNOR

DEPARTMENT OF NATURAL RESOURCES
LARRY J. WILSON, DIRECTOR

11 December 1991

Mr. Wayne Farrand
Surface & Groundwater Protection Bureau
Henry A. Wallace Building
900 East Grand
Des Moines, IA 50319

Re: Wastewater site -- Conklin RV Park, Louisa County

Dear Mr. Farrand:

I have gone over the materials submitted for the site in question. It does not appear that significant groundwater degradation will accrue if the site is developed as intended.

The dominant soil at the site is Fayette silt loam which has formed in loess. It rests on a glacial till substrate that probably exceeds 100 feet in thickness. Fayette soils are low permeability (0.6 to 2.0 inches/hour), have low shrink/swell potentials, and seasonal water tables that exceed 6 feet. The first bedrock is anticipated to be siltstones and shales of the Devonian aquiclude. Area residents most likely obtain their water supplies from a buried channel that underlies a large part of the area. The thick till should protect this source from potential percolating wastewater.

I hope this information is consistent with your request. If I can be of further assistance, please let me know.

Sincerely,

Donivan L. Gordon
Supervisor, Water Resources Section

DLG:mph
Enclosure

TABLE A
SEPARATION DISTANCES FROM WELLS

[Prior to 12/12/90, appeared in 567—Ch 41, Table C]

	SOURCE OF CONTAMINATION		DISTANCES (FT.)								
			5	10	25	50	75	100	200	400	1000
WASTEWATER STRUCTURES	POINT DISCHARGE TO GROUND SURFACE	Well house floor drains	A								
		Water treatment plant wastes				A					
		Sanitary & industrial discharges								A	
	SEWERS AND DRAINS	Well house floor drains to surface	A	A	A	WM	A	unknown			
		Well house floor drains to sewers			A	WM	A	SP	A	unknown	
		Water plant wastes			A	WM	A	SP	A	unknown	
		Sanitary & storm sewers, drains			A	WM	A	SP	A	unknown	
		Sewer force mains					A	WM	A	SP	
	LAND DISPOSAL OF WASTES	Land application of solid wastes						D	S		
		Irrigation of wastewater						D	S		
	Concrete vaults & septic tanks							D	S		
	Mechanical wastewater treatment plants								D	S	
	Cesspools & earth pit privies								D	S	
	Soil absorption fields								D	S	
	Lagoons									D	S
CHEM.	Chemical application to ground surface							D	S		
	CHEMICAL AND MINERAL STORAGE	Above ground						D	S		
		On or under ground							D	S	
ANIMALS	Animal pasturage					A					
	Animal enclosure							D	S		
	ANIMAL WASTES	Land application of solids						D	S		
		Land appl. of liquid or slurry						D	S		
		Storage tank						D	S		
		Solids stockpile							D	S	
		Storage basin or lagoon								D	S
	Earthen silage storage trench or pit							D	S		
MISC.	Basements, pits, sumps			A							
	Flowing streams or other surface water bodies					A					
	Cisterns					D		S			
	Cemeteries								A		
	Private wells								D	S	
	Solid waste disposal sites										A

KEY

D - Deep well
S - Shallow well
A - All wells

WM - Pipe of water main specifications
SP - Pipe of sewer pipe specifications
ENC.WM - Encased in 4" of concrete

69.3(2) *Minimum distances.* All on-site wastewater treatment and disposal systems shall be located in accordance with the distances shown in Table I.

TABLE I

Minimum Distance in Feet from	Closed Portion of Treatment System (1)	Open Portion of Treatment System (2)
Private water supply well	50	100
Public water supply well	200	200
Groundwater heat pump bore hole	100	100
Lake or reservoir	50	100
Stream on open ditch	25	25
Dwelling or other structure	10	10
Property lines	10	10
Other type subsurface treatment system	5	10
Water lines continually under pressure	10	10
Suction water lines	50	100
Foundation drains or subsurface tiles	10	10

(1) Includes septic tanks, mechanical aeration tanks and impervious vault toilets.

(2) Includes subsurface absorption systems, mound systems and intermittent sand filters.

69.3(3) *General regulations.*

a. Connections to public sewer.

(1) No on-site wastewater treatment and disposal system shall be installed where a public sanitary sewer is reasonably accessible as determined by the local administrative authority unless an exception is granted in writing.

(2) When a public sanitary sewer becomes reasonably accessible, any building then served by an on-site wastewater treatment and disposal system shall connect to said public sanitary sewer within a time frame set by the administrative authority.

(3) When a public sanitary sewer is not reasonably accessible, every building wherein persons reside, congregate or are employed, shall be provided with an approved on-site wastewater treatment and disposal system.

b. Construction, alteration or repair. All on-site wastewater treatment and disposal systems constructed, altered, or repaired after the effective date of these rules shall comply with these requirements.

c. Discharge restrictions. It is prohibited to discharge any wastewater from on-site wastewater treatment and disposal systems (except intermittent sand filters or other systems approved by the administrative authority) to any ditch, stream, pond, lake, natural or artificial waterway, county drain tile, surface water drain tile, land drain tile or to the surface of the ground. Under no conditions shall effluent from on-site wastewater treatment and disposal systems be discharged to any abandoned well or sinkhole.

69.3(4) *Site evaluation.* A site evaluation shall be conducted prior to issuance of a construction permit. Consideration shall be given, but not be limited, to the impact of the following: topography; drainageways; terraces; floodplain; percent of land slope; location of property lines; location of easements; buried utilities; existing and proposed tile lines; existing, proposed and abandoned water wells; amount of available area for the installation of the system; evidence of unstable ground; and soil factors including percolation tests and soil survey maps if available.