HAFFERMAN ENGINEERING, INC.

MEMORAMDUM

Date: January 25, 2018
To; Jim Cole, President, THOAB
THOA Board
From: Kurt Hafferman, P.E.
Re: Discussion with DEQ

Over the last few days I've had a discussion with Emily Gillespie of the Montana Department of Environmental Quality (MDEQ) here in Kalispell regarding Emily's memorandum of January 9. After review of the memorandum and following my discussion it is apparent that the memorandum is not just from Emily but is from Emily's supervisor and legal staff at MDEQ. Emily let me know that they have had numerous discussion about our water system inquires and have determined that the plan laid out in the January 9th memorandum is the only path they see that would not require some form of litigation against the State or County.

Clearly, we all have consensus that there are 17 units, accurately described in the memorandum and further described in the 1977 WWTS COSA, that were built prior to 1977 and are exempt from MDEQ sanitation review and any further discussion. In addition, HEI has determined that these 17 units have in their name or are otherwise associated to a water right. Therefore, we can dismiss those in any firther discussion.

I have started a spreadsheet that lists all 47 current units, shows the 17 exempt units and lists the remaining 30 units and designates them as either developed or non-developed. Of the remaining 30 units, 13 are developed and 17 are undeveloped. All the remaining 30 units are what the MDEQ considers as non-COSA compliant.

The MDEQ has offered two solutions for these units to become COSA complaint or be COSA rewrite compliant,

1. Construct the original surface water diversion, treatment storage and distribution system from the approved plans of Douglas E. Daniel from June of 1977 or,
2. Design a system of two or more wells and rewrite the community water supply COSA of 1997 to reflect the change.

In my discussion with Emily she stated that they have discussed one other solution that would be available for the existing 13 units constructed between 1977 and today. They could consider allowing them to install a single user or multi user storage tank or buried cistern. The assumption is that the storage tank, or buried cistern would provide a lower cost alternative to achieve compliance. It would require a variance from MDEQ rules, so it comes with some risk, but Emily felt it could be approved by MDEQ for the existing, non-compliant units only. Water would need to be provided from a local water supplier.

The second method of compliance is to drill wells. Emily stated that the 13 units that exist today that are using surface water were not exempt from the 1977 COSA and will eventually be required to switch to a

COSA complaint surface water treatment and storage system or to either storage tank/cistern or drill a well. Individual filtration and chlorination would not be approved nor have any variances been granted and this is an issue Emily felt would require litigation. She agreed that that there well may be individual system that could be made MDEQ complaint and might be allowed through litigation but felt the cost and time frame would be preclusive if not unreasonably expensive. Based on this discussion it is apparent that all the future units would then need to decide if they want to construct the Douglas water system or develop a Public Water Supply well system of at least 2 wells and the existing 17 units can construct a Douglas water system, drill a well or install a storage tank/cistern.

My research with the state of Montana shows that there are only 4 surface water intake's approved by MDEQ for subdivisions. Of the surface water intake's that are permitted by the state, Emily indicated the cost to construct the two she was aware were $200,000 and $500,000 and currently requires between $20,000 and $40,000 a year to operate and maintain.

Current cost estimates to drill one well, 400 feet deep are near to $65/ft. for the drill hole, casing pump, wire and pipe to the surface. Wells in your area can be expected to be between 300 ft. and 400 ft. below the ground so costs for the wells are likely to be $20,000 to $26,000 each. There also needs to be a building or buried vault to hold pressure tanks, pressure switches and electrical connections and that cost can be anticipated to be near $20,000. One well and vault would get you a system that had a minimum of five and could, with proper planning and engineering, have up to 10 connections. Connections to the water system would be made available at the outside of the vault and individual units would be provided with an engineered path and pipe construction plan. The engineering cost are estimated to be $4,500 per well.

MDEQ will require a minimum of two wells and there could be three if the existing units switch to wells and when considering the required separation distance from drainfields, sewage lines, septic tanks and the remote locations of the units.

A reasonable budget for engineering for the total system, considering design, approval, variances for the existing units choosing cisterns and the final COSA rewrite would near to $20,000. A total three well system could be anticipated to cost $158,000 or $5,266 for each of the non-complaint units.

In addition, it is assumed that each unit would need to construct the water line from the vault to the unit. Water line trench and bury, with rock excavation, would be near to $18 per foot. All attempts would be made to keep units a maximum of 200 feet from the well, so it could add an addition $3,600 to the units furthest from the wells.

Further discussions with the state of Montana were that with an approved set of plans that two things could happen, new units could go forward with drilling wells and connecting units and the existing units would have to either drill a well or put in a storage tank/cistern. When pressed for how long would MDEQ allow the existing units to come into compliance, she stated that if there was an approved COSA rewrite with accompanying engineer drawings submitted by a Professional engineer, they would easily consider 5 years and would not consider an extension to 10 years unreasonable. In addition, as discussed in Emily's memorandum, I concur that the wells would be simple water rights to obtain, even on the reservation, and would satisfy both MDEQ and DNRC.

HAFFERMAN ENGINEERING, INC.

Project: Timbrshor Revision Date
Project #: T.58.1
File: S:/.../Water Rights/DEQ 2018
Assignment Hafferman

Title: Water System Complaince

Area	Unit#	Owner	Status D=developed- #bdrms ND = not developed	COM- COSA Compliant NCOM-Non COSA Complaint
A	Lodge	Rose	DEVELOPED	COM
A	203	Acher	DEVELOPED	COM
A	204	Swindlehurst	DEVELOPED	COM
A	205	Rotondi, D	DEVELOPED	COM
A	210	Schwank	DEVELOPED	COM
A	211	Fordahl	DEVELOPED	COM
A	306	Selvig (4-plex)	DEVELOPED	COM
A	307	Payson (4-plex)	DEVELOPED	COM
A	308	Cole (4-plex)	DEVELOPED	COM
A	311	Tillinghast	DEVELOPED	COM
B	312	Novinski	DEVELOPED	COM
B	314	Brooke-Lewis	DEVELOPED	COM
B	315	Freireaband	DEVELOPED	COM
B	316	Ammonns-Isbell	DEVELOPED	COM
E	401	Johnson **	DEVELOPED	COM
E	402	Manning**	DEVELOPED	COM
A	309	Cole (4-plex)	DEVELOPED	COM
A	201	Rose	DEVELOPED	NCOM
A	206	Walters	DEVELOPED	NCOM
A	209	Peterson	DEVELOPED	NCOM
A	216	Rotondi, M	NOT DEVELOPED	NCOM
A	219	Borchers-Michione	NOT DEVELOPED	NCOM
A	301	Karpstein	DEVELOPED	NCOM
A	302	Rountree	DEVELOPED	NCOM
A	305	Estvold	DEVELOPED	NCOM
F	317	McCarthy	DEVELOPED	NCOM
F	318	McCarthy	NOT DEVELOPED	NCOM
F	320	McCarthy	NOT DEVELOPED	NCOM
C	406	Armstrong	DEVELOPED	NCOM
C	408	Carraway	NOT DEVELOPED	NCOM
C	409	Roy	DEVELOPED	NCOM
C	410	Sand	NOT DEVELOPED	NCOM
C	411	Mead	DEVELOPED	NCOM
C	412	Cox	DEVELOPED	NCOM
C	414	McCarthy	NOT DEVELOPED	NCOM
E	416	Manning	NOT DEVELOPED	NCOM
E	417	Manning	NOT DEVELOPED	NCOM
E	421	Johnson	NOT DEVELOPED	NCOM
E	422	Johnson	NOT DEVELOPED	NCOM
E	424	Johnson	NOT DEVELOPED	NCOM
D	426	Borchers-Bill	NOT DEVELOPED	NCOM
D	427	Maxwell	NOT DEVELOPED	NCOM
D	428	Rys-Sikora	DEVELOPED	NCOM
E	429	Manning	NOT DEVELOPED	NCOM
D	430	Rys-Sikora	NOT DEVELOPED	NCOM
C	403/404	Cobb	NOT DEVELOPED	NCOM
D	418/419	Cobb	DEVELOPED	NCOM