

11 November 2011

Mr. James Brough
Wyoming Department of Environmental Quality, Water Quality Division
510 Meadowview Drive
Lander, Wyoming 82520

RE: Lot 87 Sewer Service Lining Results
Melody Ranch Development, Teton County, Wyoming
Project No. 00085.27.25

James:

Here is a short description of the lining that was done on the Melody Ranch Lot 87 sewer service in Teton County. Your letter dated 6 October 2011 approved the lining of the Lot 87 sewer service as a method to provide a double wall protection for the sewer service within 50 ft. of an adjacent wellhead. The existing service line is constructed with 4 inch SDR-35 PVC gasketed sewer service pipe in the road right-of-way and 4" SCH 40 PVC glued pipe with in the lot.

On 2 November 2011 the sewer service line to Lot 87 at Melody Ranch was lined using the Perma-Liner system as installed by Mr. Rooter Plumbing of Bozeman, Montana. The Perma-Liner system uses a scrim reinforced liner tube impregnated with a thermosetting resin. The Lot 87 sewer service was lined to provide additional protection to adjacent wells supplying water to the subdivision. No leaks or problems have been detected in the existing service line to date and this lining was installed to help insure no leaks develop in the service line in the future. The lining system creates a second pipe wall with no joints.

Prior to the lining installation the line was thoroughly cleaned and inspected with a video camera. After excavating to find locations of the sewer service line 50+ ft. away from the north wellhead the lining process could begin. The south well head is over 100 ft. from the north wellhead and greater than 50 ft. from the service line. One excavation was directly adjacent to the building on Lot 87 and the other along Melody Ranch Drive adjacent to the mailbox pullout.

Because the lining process can not run more than about 100 ft. where bends are involved, the lining was done in two sections. A total of about 200 ft. of 4 inch liner was installed. The first section was run from the mailboxes up and the second section from the building down. After lining the first section and allowing it to cure, the line was inspected using an in-pipe video

camera to verify the lining process was successful. The second section was lined and again after curing the line was inspected to verify the lining process was successful. The camera inspection confirmed the lining provided a smooth conduit with no joints. Where the two lining sections met the upstream liner smoothly overlapped the downstream liner.

In order to test the lined section of pipe a pressure test was carried out on the newly lined section. The lined section was isolated and compressed air at 4 psi was held in the section for four minutes with no leakage.

The Lot 87 sewer service has two new cleanouts; one immediately above and one immediately below the lined section. The lower cleanout is a reverse cleanout (the wye fitting directed upstream) to allow for the installation of a testing ball directly into the lined section. These cleanouts will allow for the future testing of the section if needed.

After viewing the lining process, discussing the system with the contractor and his installers, and getting to physically inspect the finished product, I am confident the goal of this lining effort to further protect the domestic supply wells from possible contamination from the Lot 87 sewer service has been achieved. Please contact me with any questions or comments you may have concerning this sewer service lining or the Melody Ranch project in general.

Regards,
JORGENSEN ASSOCIATES, P.C.



Thomas Kirsten, P.E.
Project Manager

cc: David Quinn, MRDN Corp.; Developer
Cynthia Wylie, Grand Teton Property Management; Homeowners Association