

May 24, 1948

MEMORANDUM TO: MR. S. E. HORNER, CHIEF GEOLOGIST

FROM: John D. McNeal, Geologist

SUBJECT: Plugged subdrain outlets
Project 99-75 F-432 (11)
Pottawatomie County
Wamego to Westmoreland

In a recent conversation Mr. Stingley, Office Engineer of the First Division, informed me that certain of the drains on this project were clogged at the outlet. Together with the Soils Engineer, Mr. Lacey, he had dug out one of the outlets. The resulting flow of water had shot almost across the ditch.

An investigation of all subdrain outlets on this project has been made. The condition described by Mr. Stingley exists for several of the outlets. The photographs included with this memorandum show the situation for the right outlet of the blanket underdrain installation, Sta. 711/50 to 713/50. The small white parallelogram in the center of Figure 1 was the only part of the standard concrete flume which had not been buried. Figure 2 was taken ten minutes after the outlet had been partially cleaned. Note the strong flow from the outlet. The pipe was still running full after fifteen minutes.

The plugging of this drain was the result of setting the outlet at or below ditch-level. (Note the position of undisturbed shale at left-center in the photographs). The material plugging outlets at other locations is generally unsorted and is believed to have been introduced during grading operations in dressing up the shoulders.

A description of the condition of the outlets at each drainage installation follows:

- Sta. 285--262: Outlet less than one-fourth plugged.
- Sta. 284--286: Outlets in good condition. Right ditch ponds some water.
- Sta. 295--297: Both outlets two-thirds plugged.
- Sta. 307--309: Outlets appear clean. No water was flowing from outlets but there was evidence of seepage from the shoulder into the ditch just above the drain. It is possible that the outlet pipe is leaking.
- Sta. 314--315: Outlet is open but is set too low. Strong flow of water.
- Sta. 333--337: Outlets appear clean.
- Sta. 353/50: Outlets in good condition.
- Sta. 561/10: Outlets are high enough above ditch but right outlet is one-half full at the elbow.
- Sta. 565±: Right outlet is completely plugged. Plug is moist.
- Sta. 570/60--571/00: Outlet is one-fourth plugged.

- Sta. 575--575/50: Outlets partially blocked.
- Sta. 581--584: Outlets are in fair condition.
- Sta. 617--618: Outlet on right is one-half full of dirt.
- Sta. 626--628/50: Left outlet is open, right outlet is two-thirds plugged and is at or lower than ditch level.
- Sta. 673/50--675/00: Left outlet is in good condition. Right outlet is running water but is at ditch level or below.
- Sta. 685/25--691/00: Outlets are open.
- Sta. 708/50: Left outlet is almost completely plugged. Right outlet is open.
- Sta. 711/50--713/50: Left outlet appears open. Right outlet was almost completely plugged. (See figures 1 and 2)
- Sta. 718/60--719/00: Outlet is dry but appears open. Strong seepage can be seen in the ditch just below the outlet. The drain may not have cut the aquifer or the outlet pipe may be leaking.

Figures mentioned above are in Geology File in Geology Office.

May 25, 1948

MEMORANDUM TO: Mr. Robert Willis
Engineer of Design

FROM: S.E. Horner
Chief Geologist

SUBJECT: ~~Subdrains~~
Project 95-75-F 432 (11)
Wenago to Westmoreland
Pottawatomie County

As time permits, we try to make a check on subdrains that have been installed.

On these inspections the performance and condition of the subdrains are checked. This enables us to study them for possible weaknesses and make corrections for same on future installations. These inspections often reveal conditions at the outlets that are not conducive to the desired performance of the subdrain.

The attached memorandum would indicate that a little care of some of these outlets would be highly desirable. The eventual effect of a plugged outlet hardly needs further comment.

We do not wish to say that there has been poor maintenance in connection with the outlets. Since we feel that the statement might be an unjust one in as much as the section man and supervisor may not be properly informed and are unfamiliar with these subdrain outlets and the importance of an occasional check on them to see that they have not become plugged.

S.E.H.
S.E. HORNER

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