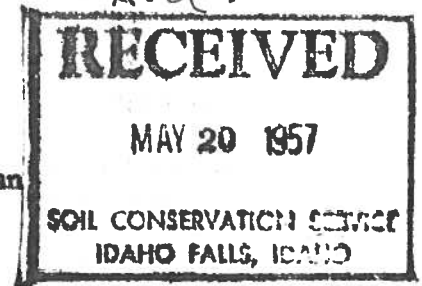


Preliminary Geologic Report
 Kittle Lost River
 Butte County, Idaho
 by Vernon C. Newton
 with review and concurrence by
 J. L. Holland, D. H. Griswold & E. M. Flaxman
 May 7, 1957



In May and July, 1956 Messrs. Flaxman, Holland and Sharp made preliminary investigations in the Little Lost River watershed. Al Sharp's report covered recommendations for hydrologic studies including the drilling of several observation wells. The geologic report made by Flaxman and Holland described conditions at several prospective damsites in the area. The Dry Creek irrigation canal was inspected and found to be constructed on poor material. Recommendations were made in the report to review available literature on geology and groundwater of the area. An analysis and compilation of the review material was to be made to determine needed investigations for an adequate groundwater resource study. The following discussion is a result of this review.

Recommendations:

1. Make a reconnaissance geologic field study of the Little Lost River watershed.
 - a. Study the areal geology using published maps, aerial photographs, elevations and a Brunton compass.
 - b. Map the major geologic structure and study its effect on groundwater movement.
 - c. Use field data to locate a line of observation wells down the valley. Approximate tentative location of a minimum number of well locations is shown on the attached map No. 1. Also shown are existing well locations.
2. Gather information for groundwater studies from existing wells.
 - a. Obtain recent data from USGS studies.
 - b. Obtain information regarding drawdown in wells to determine effects of present well spacing.
 - c. Take elevations on existing wells so that water table contours can be drawn.
 - d. Measure static water levels monthly for a year on several widely spaced wells in the area.
 - e. Measure pumping rates and drawdowns of several wells. Make a pumping test on the Burgess well in Sec. 8, T. 6 N., R. 29 E.

Development:

During the winter of 1929-30 the USGS drilled five 6-inch test wells near the mouth of Spring Creek and Upper Taney Creek in Sections 17, 20 and 21, T. 7 N., R. 28 E. This area was thought to offer the most likely prospects for underground water development in the valley. It was found from this study that large quantities of water could be obtained in this area from gravels underlying about 10 feet of cemented hardpan between 20 and 60 feet. The study also showed free downstream movement of the water in this zone. No production rates were obtained from the test wells as funds for pumping tests were not available. (USGR Water Supply Paper 774, Plate No. 30, Report Map No. 2.)*

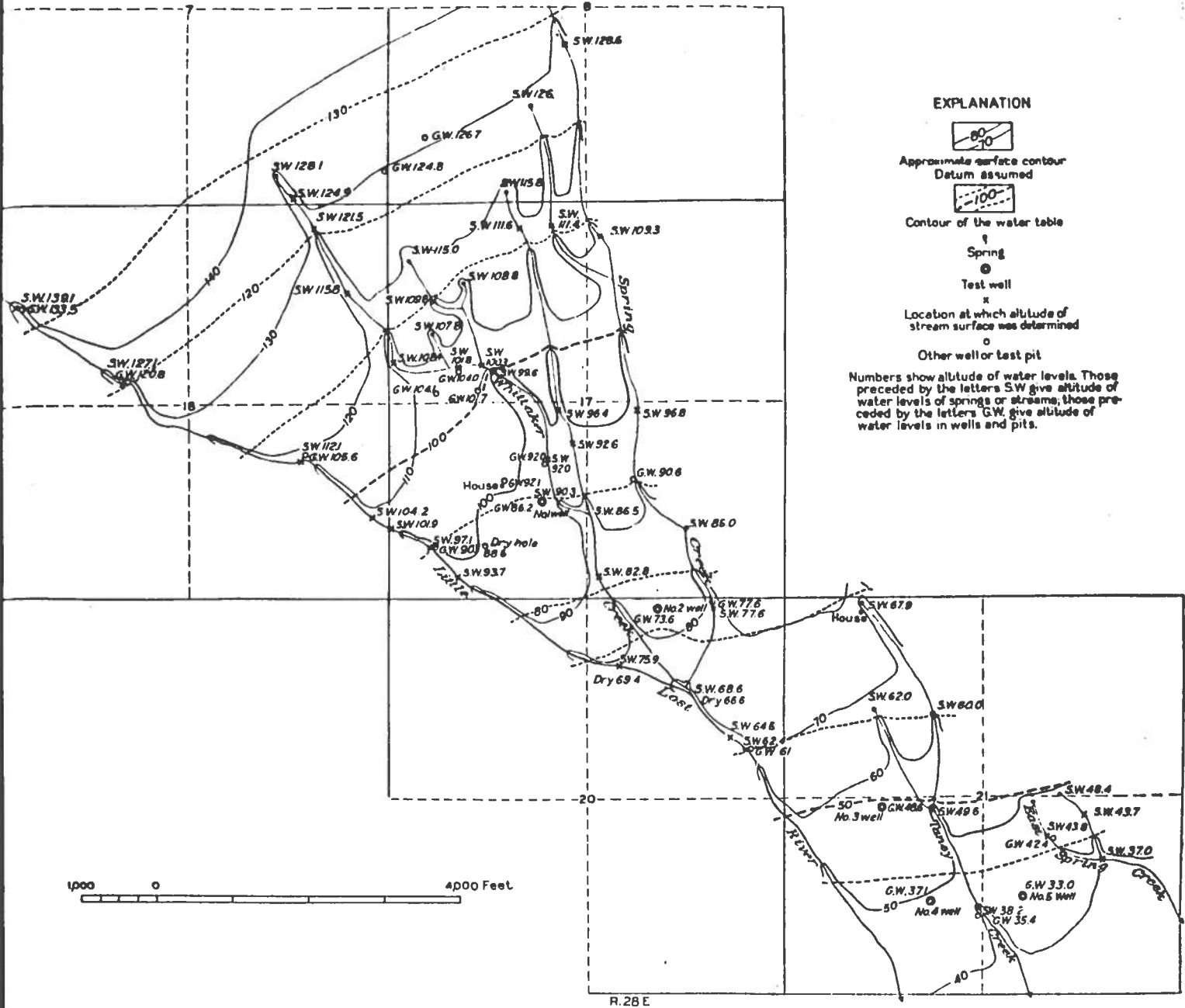
There are many irrigation wells in the Bernice-Howe region now producing water from shallow gravels. The saturated zone from which water is obtained in these wells has an average thickness of about 80 feet. An irregularity in the water table occurs in the Burgess well in Section 8, T. 6 N., R. 29 E., where the static water level stands at 95 feet, some 45 feet lower than normal. This may indicate a point in the valley where water is being lost through fractures in the basalt or it may be an old high of the basalt surface causing the overlying aquifer to pinch out. If the latter is the case then water in this well is produced from sands below the basalt.

Exploration and Study:

North of Bernice the valley seems to be relatively undeveloped. Few wells have been drilled in the area; as a result little is known about underground conditions. A line of test wells is needed north of Bernice extending to Spring Creek fork. From these wells a down-valley gradient could be developed. A cross section of observation wells should be established somewhere in the valley to determine anomalies that occur laterally in the water table. Data from these wells should show if underground water is escaping from the watershed before reaching the Snake River Plain.

Deeper drilling in this area will determine if water can be produced from lower horizons. Productivity increases for every foot of gravel or sand penetrated. In nearly all the wells drilled in the Bernice-Howe area alternate strata of clay and gravel have been logged. In many cases where clay layers have been penetrated water was found in the underlying gravels or sands. Because of the intermixing of fanglomerates and flood plain deposits there would seem to be possibilities of gravels below those presently developed for irrigation. Present economy allows pumping from depths up to 600 feet in some localities. Pumping lifts of 200 feet are common. (Pump, Pipe and Power Co., Portland, Oregon).

* A more detailed report was released to the public in mimeograph form on May 24, 1930.



MAP SHOWING GROUND-WATER CONDITIONS IN THE SPRING CREEK AREA OF LITTLE LOST RIVER VALLEY, IDAHO.