

Moscow Idaho, Feb 23, 1933

Mayor and City Council,
Moscow Idaho,

Gentlemen:-

Herewith find statement relative to construction of Sanitary Sewers in the Southwestern Part of the City and more particularly in that part located South of Sixth Street and West of Paradise Creek.

Mr. Ben E. Bush tells me that an old makeshift sewer taking care of part of the City was in use previous to 1903. This line was located on the North side of the present Sixth Street Bridge and emptied into Paradise Creek below said bridge. I find no record of this sewer.

In 1903 a sewer line was constructed from the University Buildings to connect with this old sewer line at a point North of the Sixth Street Bridge. This line started at the Administration Building, ran South-easterly along the front of the Engineering and Ridenbaugh Hall buildings, crossed Blake Avenue opposite the old Sigma Nu building, thence Northeasterly across private property and along draw West of Benedicts house to Sweet Ave., thence Northeasterly across private property to a point on Deskin Avenue West of the Southwest Corner of the building of the Latter Day Saints, being a six inch line to this point with a good fall. From this point an 8 inch sewer was constructed down the centre line of Deskin Avenue to Sixth Street, thence crossing under Paradise Creek with an 8 inch inverted siphon and connecting with the old sewer line above mentioned. The sewer flattened out in grade as it approached the siphon at Sixth Street, the last 250 feet of the sewer directly South of the siphon having a fall of about 5 inches to the hundred feet. At the time of construction of Hayes Hall a 6 inch sewer line was laid from a point East of said Hayes Hall, thence Northeasterly and to Deskin Avenue and thence North along Deskin Avenue to connect with the this line laid from the University Buildings to Sixth Street at a point just West of the S.A.E. Fraternity House.

This sewer line constructed from the University Buildings to connect with the old sewer line at a point North of the Sixth Street Bridge is known as the "University Sewer". The history of this sewer line as shown by the City Records is as follows, to-wit-

Book 3, Minutes of City Council

Page 230, Aug 4, 1902, "Committee on Health and Police to whom matter of Sewerage from University of Idaho was referred, report in favor of notifying regents of University that they must take care of sewerage as it is becoming a nuisance to some of the residents in the vicinity of said University and on motion report was accepted and clerk instructed to notify the said regents to take care of said sewerage".

Page 239, Aug 6, 1902, "Discussion by President McLean and Dr Little with followig resolution passed by unanimous vote of the council- Resolved that the proposition on behalf of the University of Idaho to construct a sewer from the University Grounds to connect with the sewer used as a City Sewer near Sixth Street be approved and that this council desires to record its intention of accepting said sewer and maintaining it as a City Sewer when completed and tendered by the Regents of the University, said sewer to be completed and constructed according to plans and specifications approved by a committee of this council- The following special committee was now appointed by the mayor to act in conjunction with the University authorities in construction of above mentioned sewer; Wm. Hunter, Wm Carter, and Henry Erickson. (I find no record of the details of this proposition).

Page 245, Nov 5, 1902, " Report of Sewer Committee on University Sewer was read and on motion the report was accepted and ordered placed on file. (I cannot find copy of this report).

Page 327, April 4, 1904, " Communication from President McLean of the University in regard to Sewer was read and referred to the City Attorney

Page 336, May 2, 1904. Communication from President McLean in regard to sewer, which communication was referred to the City Attorney at last regular meeting, and who recommended that the said sewer be accepted by the City, and on motion the said sewer was accepted by a unanimous vote of the council.

the University Engineering Department, that the University authorized the contract for the construction and supervised the work, that in 1904 the entire line was turned over to the City by President McLean of the University, that the City accepted said sewer line and in accordance with the minutes on page 239 of Book 3 of the minutes intended to maintain it for all future time. Wyes were placed along the line for the benefit of abutting property owners along the line of flow. Apparently no part of the cost of construction of this line was assessed to or paid by the abutting property owners or paid by the City as a whole. The City Trunk Line Sewer constructed on Seventh Street West of Deakin Avenue in 1904 flowed into the University Sewer (Ordinance 261, page 236). The University construction included the placing of the inverted siphon under Paradise Creek.

The General Trunk Sewer Lines of the City and the Old Septic Tank were constructed in 1904, the contract for said construction being let by a special committee of citizens appointed by the mayor. I cannot find the reports of this committee to the council so cannot give exact dates. Included in this trunk line system was the 18 inch sewer line flowing West down Sixth Street and thence Northwesterly through the Fair Grounds to connect with a trunk line flowing West on Third Street, also a line on S Seventh Street beginning at the first alley West of Elm Street and flowing East to Deakin Avenue to connect with the "University Sewer". All property within the then City Limits was assessed for this general improvement, including all property in the University District South of Sixth Street and West of Paradise Creek. Ordinances covering construction General Trunk Line sewers were passed in 1903.

Lateral Sewer District Number Two was also formed in 1903 and the ordinances covering the forming of the district and the construction were passed in said year.

The City Records give the following information relative to formation of Trunk Line District and Lateral District Number Two-

Book 3, Minutes of the City Council

Page 260, Dec 12, 1902. " City Council concludes to make general sewerage improvement and appoints a sewer committee to proceed with sewerage improvement. Byrnes, Grice and Hunter appointed" (This committee called for bids, awarded the contract and supervised construction).

Page 293, Aug 1903- " Ordinance providing for general sewerage line system and sewage disposal works was passed (Trunk lines). Ordinance No 261.

Page 301, Sept 1 1903 Lateral Sewerage District No Two Ordinance passed. Ordinance 264.

Page 388, Nov 29, 1904. Sewer Committee at this time turned over the sewer system to the City and on motion of Lyons the said sewer system was accepted by the unanimous vote of the Council.

In Lateral Sewer District Number Two lateral sewer lines were constructed in various parts of the City, including the following sewer lines in the southwestern (University) part of the City, namely- A six inch sewer line beginning in the alley between Deakin Avenue and Elm Street and on the South Line of University Avenue and running thence North through the alley with a 6 inch sewer and crossing Idaho Avenue to an intersection with the Trunk Line Sewer on seventh Street, a 6 inch line beginning on the South Line of University Avenue at a point about 40 feet East of the alley between Elm and Ash Streets and running thence North and Northwesterly to Idaho Avenue, thence North along the alley between Elm and Ash Streets to to Seventh Street to connect with the trunk line on Seventh Street, a 6 inch line beginning at the Science Building, thence North back of Lindley Hall to Idaho Avenue, thence East to connect with the 6 inch line above described and flowing North through the alley between Elm and Ash Streets, a 6 inch line beginning on the North side of Eighth Street in the alley East of Deakin Avenue and running thence North to Narrow Street, thence West on Narrow Street to connect with the "University Sewer" on Deakin Avenue.

No mention is made in the ordinance covering construction of Lateral Sewer District Number Two of any sewer construction on Deakin Avenue

the outside boundary lines of the district include within the district following described property fronting and abutting on Deakin Avenue, the street on which the University Sewer was constructed, namely-

Taylor and Lauders Addition

Lots 1 to 8, Block 1 (Block on West side Deakin Avenue between Sixth and Seventh Streets)

All of Block 2 (Block on West side Deakin Avenue between Seventh Street and Idaho Avenue).

Cochran's Addition

All of Block 3. (Block on West side of Deakin Avenue between Idaho and University Avenues).

Leskin's First Addition

All of Block 1 (Block on South side of University Avenue between Deakin Avenue and Blake Avenue).

Urquhart's Addition

All of Block 1. (Block on East side of Deakin Avenue between Eighth and Narrow Streets).

Olsen's Addition

All of Block. (Block on East side of Deakin Avenue between Sixth Street and South side of Fred Skog property).

All of the property on East side of Deakin Avenue between South side of Fred Skog's property and Narrow Street.

All of property on East side of Deakin Avenue between Eighth Street and Sweet Avenue.

The average cost per front foot on property frontage in above described blocks and tracts was about \$.37 .

Ordinance No 528 covered construction of sewers in Lateral Sewer District Number Five. This included the construction of 6 inch lateral sewer in the alley between Deakin Avenue and Elm Street beginning at a point about 100 feet North of the centre line of Seventh Street and running thence North along the alley to connect with an 8 inch sewer line flowing East on Sixth Street, also a 8 inch line on Sixth Street beginning at Urquhart Avenue and flowing East to connect with the University Sewer on Deakin Avenue. Other lateral lines were constructed in this district west of Urquhart Avenue, but they all flowed West and North to connect with the trunk line at Hagan Cushing Packing Plant.

Lots 9, 10, 11 and 12 of Block 1 of Taylor and Lauders Addition to Moscow were assessed for the improvement. (These are the lots in Block 1 not previously assessed in Lateral Sewer District Number Two). No lots assessed in Lateral District Two were assessed in Lateral District Five.

Summing up above facts I find that no part of the cost of construction of the University Sewer was paid for by the abutting or contiguous frontage; that all property within the then City Limits participated in the payment for construction of the Trunk Lines of the City; that all the property abutting on Deakin Avenue, along which the University sewer was constructed was assessed for the cost of construction of sewer lines in Lateral Sewer District Number Two; that although no sewer lines were constructed in the area of land fronting and abutting Deakin Avenue on the East between Sixth and Narrow Streets and in the area fronting and abutting Deakin Avenue on the East between Eight Street and Sweet Avenue, yet these particular areas were assessed practically the same amount per front foot of frontage as the blocks across the Street in which lateral sewer lines were constructed as a part of District Two. I would conclude that the sewer committee placed these areas on the East side of Deakin Avenue within the boundary lines of District Two and assessed them for general benefits derived.

As stated above the "University Sewer" is an 8 inch line between a point West of the Southwest corner of the Latter Day Saints building and its point of connection with the City Trunk Line, that the sewer crosses under Paradise Creek by means of an 8 inch inverted siphon, at the 200 feet of this line immediately South of the siphon is laid with a fall of about 5 inches to the 100 feet .

Standard Tabulations of Sewer Flow show that if this 8 inch sewer line is laid fairly true to grade and line, has no unusual joint obstructions or other obstructions retarding the flow of sewage and emptied directly into the creek or another sewer it should discharge flowing full 450000 gallons per 24 hours 314 gallons per minute.

The inverted siphon in place retards the flow of sewage in three ways- First by loss of head due to curvature within the siphon (there are right angle turns and 2 45 degree turns), second, by a lack of difference in elevation in the two ends of the siphon, third by obstruction within the siphon. The loss in curvature is not large owing to the size of the pipe and the rate of flow of the sewage (about 2.0 feet per second); indications are that there is sufficient difference in elevation in the two ends of the siphon to eliminate this factor; the amount of obstruction in the siphon such as bricks or other solids is unknown. Computation and examination would indicate that the ^{FIRST TWO} above factors do not reduce flow of sewage more than 5 per cent. To be safe allow 10 per cent loss through the siphon and you reduce the flow 450000 gallons per day. This leaves a net flow of 405000 gallons per day of 24 hours.

Statistics give the yearly average flow per capita per day of 100 gallons, the maximum of 175 gallons. Assume a flow of 140 gallons. I do not believe that more than 2000 people contribute to the flow of this line when you consider that the Administration building, the Gymnasium (Girls and boys), the dairy husbandry building and other minor buildings are not contributing to this line. This would give a daily flow of 280000 gallons per day, assuming of course that the surface water does not enter the line. This conclusion is borne out by the fact that in normal times when there is no storm water entering the line the pipe runs from 1/2 to 2/3 full.

This sewer is respectfully submitted- University Buildings to connect with the old sewer line at a point North of the Dixie Street Bridge is known as the "University Sewer". The history of this sewer line is shown by the City Records, is as follows:
H. J. Smith,
City Engineer.

Page 250, Page 1908, Committee on Health and Sanitation report in favor of notifying residents of University that they must take care of sewage as it is polluting a main road to homes of the residents in the vicinity of said University and on motion report was adopted and clerk instructed to notify the said residents of said care of said sewage.
Page 254, Page 1908, This action by President Nelson and the City with favorable reception passed by unanimous vote of the Council. Received that the proposition should be of the University of Idaho to connect with the sewer line at a point North of the Dixie Street Bridge is shown by the City Records, is as follows:
The inverted siphon in place retards the flow of sewage in three ways- First by loss of head due to curvature within the siphon (there are right angle turns and 2 45 degree turns), second, by a lack of difference in elevation in the two ends of the siphon, third by obstruction within the siphon. The loss in curvature is not large owing to the size of the pipe and the rate of flow of the sewage (about 2.0 feet per second); indications are that there is sufficient difference in elevation in the two ends of the siphon to eliminate this factor; the amount of obstruction in the siphon such as bricks or other solids is unknown. Computation and examination would indicate that the above factors do not reduce flow of sewage more than 5 per cent. To be safe allow 10 per cent loss through the siphon and you reduce the flow 450000 gallons per day. This leaves a net flow of 405000 gallons per day of 24 hours.
Statistics give the yearly average flow per capita per day of 100 gallons, the maximum of 175 gallons. Assume a flow of 140 gallons. I do not believe that more than 2000 people contribute to the flow of this line when you consider that the Administration building, the Gymnasium (Girls and boys), the dairy husbandry building and other minor buildings are not contributing to this line. This would give a daily flow of 280000 gallons per day, assuming of course that the surface water does not enter the line. This conclusion is borne out by the fact that in normal times when there is no storm water entering the line the pipe runs from 1/2 to 2/3 full.