

SUBSURFACE FLOW AND GROUNDWATER

1. Subsurface Flow presents a significant problem as it is most difficult to determine and therefore most difficult to regulate. Metropolitan has been continuously monitoring numerous wells in the Tocalota Creek area since 1965 and has established their fluctuations and the water table in general. Metropolitan's Report No. 863 deals with this work in great detail. The report establishes the maximum possible Subsurface Flow where the Dam was constructed, as 0.5 acre-feet per day (113 gal/min. or .25 cfs). Metropolitan believes that seepage through the Dam will more than offset any Subsurface Flow attributable to infiltration which would have taken place above the Dam and subsequently would have been realized downstream of the Dam. However, to insure that the natural Groundwater table integrity below the Dam is continued whole, Metropolitan is prepared to recharge that basin as required to maintain the Groundwater at levels that would have existed in the absence of the Dam (see Procedure 3).

2. The operating criteria for Groundwater will be based on key well MWD No. AV-28, State No. 7S/2W-3-11, which is representative of the Groundwater table immediately downstream of the Reservoir. A record of this well's fluctuations since early 1965 is shown on attached Metropolitan Drawing No. B-59073. As can be seen from the drawing, the level of this well has been abnormally varied since about mid-1968 until early 1974 by construction projects and the floods of January and February 1969. Therefore, there exists only approximately three years of undisturbed record (1965 through 1967) to be used as a base for the Groundwater table elevation.

3. In the area east of the bedrock constriction shown on MWD Drawing No. 20294-1, located approximately 1.4 miles downstream of the Dam on Tocalota Creek, the Groundwater level will be maintained. So long as pumping from that area by others is not increased,

Attachment G

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Metropolitan will recharge that basin whenever the Groundwater table falls below the minimum of the 1965-1967 years of record. That recharge will continue until resurfacing flow becomes visible at the bedrock constriction. Such a recharge program should not only maintain the Groundwater table at levels that naturally occur in this area, but should also maintain Groundwater levels in areas downstream thereof by precluding excessive infiltration of runoff upstream of the constriction.

4. If seepage through the Dam results in Groundwater levels in excess of those that would have existed in the absence of the Dam, as indicated by Groundwater levels in the key well, Metropolitan may pump such excessive seepage back into the Reservoir.

PROCEDURE 3

Procedure for maintaining the Groundwater level downstream of the Reservoir equal to that which would exist in the absence of the Project.

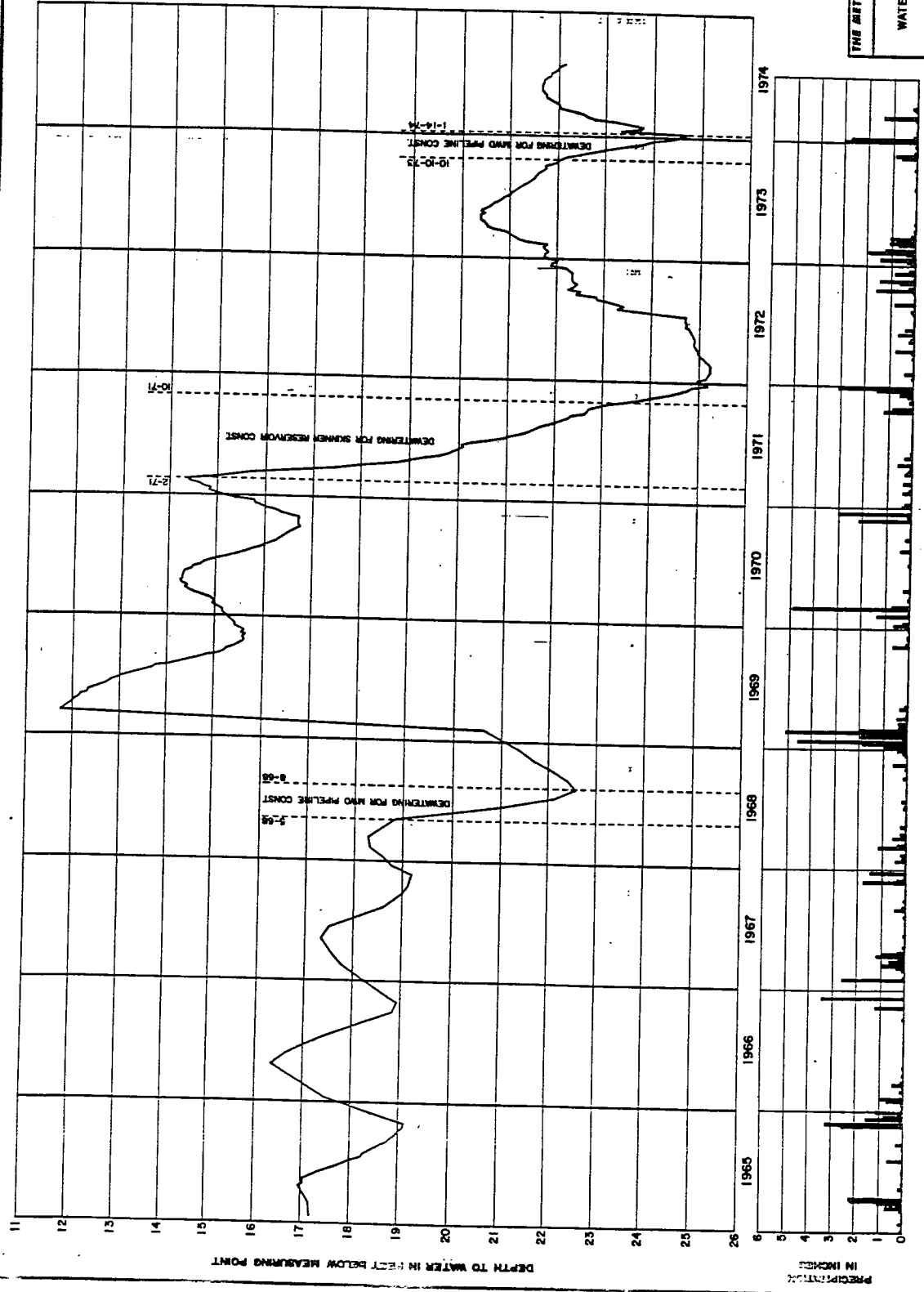
L MIN = low water level of well AV-28 during the undisturbed period of record (19.18 feet from surface)

Whenever the level in Well AV-28 reaches a depth of L MIN, Release from Lake Skinner will be made at a rate less than that which would cause continuous surface flow from the discharge point to the bedrock constriction. Such Release will continue until such time as surface flow is realized at the bedrock constriction by natural resurfacing of waters from the Groundwater table.

Notes:

- (1) Well AV-28 is located approximately 2,000 feet downstream of the Dam and will be constantly monitored by a recording device.
- (2) L MIN is a variable which could be adjusted downward in the future. Such downward variation would only occur in events such as if pumping from the Groundwater is increased by others in the basin above the bedrock constriction and below the face of the Dam.

THE METROPOLITAN WATER DISTRICT
 OF BIRMINGHAM, ALABAMA
 TUCALOTA CREEK
 WATER TABLE FLUCTUATIONS
 AND RAINFALL RECORD
 MWD WELL NO. M-28
 1965-1974



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 INTERSECTION COORDINATION CHECK