



Yosemite National Park

Docket Number: 18

EL PORTAL WELL #3

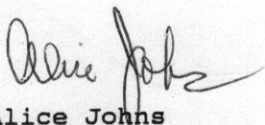
Preliminary Docket Information

NOTES TO THE FILE

YOSE 010: El Portal Well #2
YOSE 012: El Portal Well #1
YOSE 018: El Portal Well #3
YOSE 019: El Portal Well #4
YOSE 020: El Portal Well #5
YOSE 021: El Portal Well #6
YOSE 022: El Portal Well #7

June 26, 1996

The primary water supply for El Portal is from wells 2 through 7. Well 1 is no longer in use. All 7 wells are thought to tap the underflow of the Merced River. For information pertaining to land status and riparian rights common to all the above dockets, please refer to YOSE 012: El Portal Well #1.



Alice Johns
Hydrologist
Water Rights Branch
Water Resources Division

06 DATA

Yosemite National Park

EL PORTAL WELL #3

Supporting Hydrologic Data

. . . R E P O R T O F T E L E P H O N E C O N V E R S A T I O N

DATE: June 26, 1996 TIME: 11:30 a.m.
PROJECT: YOSE - El Portal

NPS PERSON ON CALL: Alice E. Johns

[] I RECEIVED A CALL FROM [x] I CALLED

PERSON: Ed Walls
ORGANIZATION: Chief of Maintenance
ADDRESS: YOSE

TELEPHONE: 209-379-1077

DISCUSSION: I called for clarification on the current water system at El Portal. Ed said that the water system consists of 6 wells--numbers 2-7. Well number 1 is no longer in use. Number 7 has just gone on line.

He also asked about water right issues associated with Tuolumne Meadows. I told him that Steve Stone of DSC had requested a water right analysis, and that it would be next after El Portal and Biledo. If there was a need for it to be placed at a higher priority, I suggested that Ed talk to Mark Butler.

Ed said that he would call back with current information on well production. He called back and said that the current system is capable of producing 307 gpm. In 95, 42 million gallons were withdrawn. Averaged over the year, that is about 80 gpm. Withdrawals are about 100,000 gpd in winter, more 200,000 gpd in summer.

ACTION TO BE TAKEN:

COPIES TO:

Water Demand - El Portal

S. Hart
03-20-86

	1	2	3	4	5	6	7	8	9	10	11	12
1985		Well #2	Well #3	Well #4	Well #5	Totals	Average Day					
Jan		—	1339000	—	1197200	2536200	81810					1
Feb		—	1279000	—	1126500	2405500	85910					2
Mar		—	1249000	—	1396800	2645800	85350					3
Apr		265770	1877600	—	1919000	4062370	135410					4
May		1369380	2356300	253000	2355300	6333980	204320					5
Jun		1534870	2189900	937500	2613300	7875570	262520					6
Jul		1803520	3141000	1113400	3091300	9249220	298360					7
Aug		1745870	3046600	1094700	3114500	9001670	290380					8
Sep		895850	1637500	540900	1586700	4660950	155370					9
Oct		763070	1446500	469500	1367600	4046670	130540					10
Nov		223440	1008600	331200	951000	2514240	83810					11
Dec		—	962500	372800	1060300	2395600	77280					12
Totals		8601770	21233500	5113000	21779500	57727770	158160					13
Peak Day												14
July 11 th		66390	116460	40230	113950	337030						15
gph		2766	4853	1676	4748	14043						16
gpm		46.1	809	279	791	2341						17
												18
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NARRATIVE FOR THE DRILLING PROGRAM AT YOSEMITE NATIONAL PARK -- EL PORTAL, 1980 - 1981

Prior to 1980 two wells existed on El Portal National Park Service lands. These two wells are El Portal #1, 3 S/20 E - 18 K1, a shallow well dug about 1959 and reported to produce 170 gpm at its maximum drawdown, and El Portal #2, 3 S/20 E - 17 E1, a well drilled by the cable tool method in 1973. The results of an aquifer test indicate that a reasonable pumping rate for this well would be about 70 gpm.

In January of 1981 it was reported that El Portal #2 was being pumped at 50 gpm due to complaints by users of too much air in the lines when the well was pumped at a higher rate.

In 1980 the Denver Service Center awarded a contract to develop a supplemental water supply at Yosemite National Park -- El Portal. The contract was for a domestic ground water supply in excess of 220 gpm in order to eliminate the present usage of a surface water supply to better meet the requirements of the Public Health Service. This was to be accomplished by drilling one, two, or three producing wells, as needed.

After drilling wells, El Portal #3 - 5, a supply of 225 gpm had been obtained: El Portal #3 capable of producing about 100 gpm for 24 hours, El Portal #4 capable of producing about 30 gpm for 24 hours, and El Portal #5 capable of producing about 95 gpm for 24 hours. The corresponding site numbers for these wells are:

El Portal #3 -- 3 S/20 E - 17 L1
El Portal #4 -- 3 S/20 E - 18 J1
El Portal #5 -- 3 S/20 E - 18 Q1

At this point it was decided since two (El Portal #4 and #5) of the above three wells were across the Merced River (south) from the existing water supply lines (the supply lines of El Portal #1 and #2) it would be to the advantage of the Service to have a fourth well on the same side of the Merced River as El Portal #1, #2, and #3. It was also agreed that a member of the Region's Division of Water Resources would choose the site for this well (El Portal #6) under the above constraint, i.e., ruling out a possible site near El Portal #5. A site was chosen approximately 500 feet southeast of El Portal #2 and 550 feet west-southwest of El Portal #3. This site was chosen for two reasons: 1) it was hoped that a well drilled at this site would encounter a buried incised channel before bedrock, and 2) to allow for the maximum possible distances from El Portal #2 and #3 (to avoid these wells influencing the capacity of the new well when all wells are pumping simultaneously).

El Portal #6, 3 S/20 E - 17 M1, was drilled at the above site but no buried incised channel was encountered before bedrock. The well is capable of producing about 45 gallons per minute for 24 hours.

To aid in any future selection of well sites, the following parameters were compared between the present existing wells (El Portal #1 - #6) to see if a correlation between parameters and pumping capacity could be established: upstream area as opposed to downstream area, distance from Merced River, artesian head, average slot size of screen, and local thickness of aquifer. No correlations were determined.

El Portal #3 and #5 are the best producing wells of those drilled in 1980-1981. The fact that these wells encountered a basal gravel above the bedrock is believed to be the major factor in contributing to their high yield.

The strongest well in the area, El Portal #1, is constructed such that water from this well is essentially pumped directly from the Merced River. This construction is not in accordance with present State Public Health requirements.

El Portal #3, #4, and #6 experience turbulent flow conditions when pumped at capacity. These well exhibit a large well loss component of drawdown under turbulent flow conditions and the magnitude of this influence increases rapidly with the pumping rate as the flow velocities in the immediate vicinity of the wells become sufficiently large. Therefore, if future wells are drilled with sufficiently large well diameters to reduce the flow velocities in the immediate vicinity of the wells, the production capacity of the future wells can be expected to surpass the capacity of present wells.

W. Reed
W. Werrell
3/6/81

MORSE LABORATORIES, INC.

CHEMICAL ANALYSIS AND RESEARCH

1525 FULTON AVENUE
SACRAMENTO, CALIFORNIA 95825
481-3141

July 31, 1980

National Park Service
Yosemite National Park
c/o Dan Schrantz
P. O. Box 185
El Portal, California 95318

Laboratory No. 15599
Date Received 6/20/80
Sample 1 Water for General Mineral, Inorganic Chemical Analysis and
Gross Alpha and Beta Radioactivity (P.O. PX 8800 0 1144)
NPS WELL NO. 3.
Identification: Well #1 6/19/80 9:30 a.m.
El Portal, CA

Bicarbonates as CaCO_3 , mg/L	101
Carbonates as CaCO_3 , mg/L	Nil
Hydroxide as CaCO_3 , mg/L	Nil
Alkalinity as CaCO_3 , mg/L	101
Calcium (Ca), mg/L	32
Chloride (Cl), mg/L	7
Copper (Cu), mg/L	< 0.05
MBAS, mg/L	< 0.05
Iron (Fe), mg/L	0.16
Manganese (Mn), mg/L	0.04
Magnesium (Mg), mg/L	4
pH	7.7
Sodium (Na), mg/L	8
Sulfates (SO_4), mg/L	15
Electrical Conductivity, micromhos/cm	242
Total Dissolved Solids, mg/L	160
Hardness as CaCO_3 , mg/L	97
Zinc (Zn), mg/L	0.051
Potassium (K), mg/L	1
Silica (SiO_2), mg/L	21
Nitrate-Nitrogen ($\text{NO}_3\text{-N}$), mg/L	0.53
Fluoride (F), mg/L	0.1
Arsenic (As), mg/L	< 0.006
Barium (Ba), mg/L	< 0.05
Cadmium (Cd), mg/L	< 0.005

National Park Service
Yosemite National Park
Laboratory No. 15599
Page 2

Chromium (Cr), mg/L	< 0.02
Lead (Pb), mg/L	< 0.01
Mercury (Hg), mg/L	< 0.001
Selenium (Se), mg/L	< 0.002
Silver (Ag), mg/L	< 0.01
Gross Alpha Radioactivity, pCi/L	< 2.6 ± 1.4
Gross Beta Radioactivity, pCi/L	3.0 ± 5.3

MORSE LABORATORIES, INC.

Marjorie L. Dewey
Marjorie L. Dewey
Director

MLD:db

L54
(WR)RW

July 16, 1980

~~Werrell~~ JR 7/16
~~Witucki~~ JS 7/16
~~Kilgore~~ BK 7/16
Davis
Reg. Dir. 7/17

Memorandum

To: Superintendent, Yosemite
From: ~~ACTING~~
Regional Director, Western Region
Subject: NPS #3 Well at El Portal, Yosemite National Park, CA

Enclosed for your review and files is a copy of the data and analysis of the aquifer test for the new well (NPS #3) at El Portal. As agreed with the Denver Service Center, this aquifer test was conducted by the Division of Water Resources.

We are pleased to report that the well is capable of a sustained yield of 100 gallons per minute (gpm) for at least 24 hours of constant pumping. However, at a pumpage rate of 110 gpm the well will produce for only five hours until it must be shut off and allowed to recover.

Field specific conductivity measurements were taken during the test to provide an index of water quality. The specific conductance was 220 micromhos, indicating about 145 parts per million dissolved solids by use of a conversion factor of 0.65. This is excellent water quality. The water temperature was 15°C or 59°F. At the end of the test a water sample was collected for a full chemical analysis by a professional laboratory.

(SGD) JOHN H. DAVIS

Enclosure

cc: DSC, Pacific Northwest/Western Team
Attn: John Ballard w/encl.

(WR)RW:Witucki:ms 7/16/80

See docket for well # 3 S/20 E 17 L (El Portal #3)
for enclosure
W. Werrell
July 1980

NATIONAL PARK SERVICE

YOSEMITE NATIONAL PARK, EL PORTAL #3

AQUIFER TEST

WELL # 3S/20E - 17L

This well was drilled by the cable tool method and the driller's log reports that water was first encountered during drilling at a depth of 52 feet, at which time water rose in the boring. Preceding the aquifer test, the static water level was 12.89 feet below land surface datum, determined by steel tape -- no development or pumping of the well had taken place for several days.

The aquifer test consisted of two pumpage periods, each pumpage period consisted of (two steps) two pumping rates without recovery between. Discharge of each step of each pumpage period was measured by a constant head tank (orifice bucket, described on pages 87 and 88, Ground Water and Wells *). The accuracy of the orifice bucket measurements as reflected by water level readings to the nearest one-half inch is: with three plugs open and the readings indicating 40 gpm, the variation is 39 gpm to 40.5 gpm; with six plugs open and the readings indicating 80 gpm, the variation is 78 gpm to 81 gpm. Discharge of each pumpage period was also spot-checked by a three inch Parshall flume. The accuracy of the Parshall flume measurements is reflected by 0.01 foot increments in stage which are: at 40 gpm the next increment is an additional 2.5 gpm, at 80 gpm the next increment is an additional 4 gpm. Water levels were determined by steel tape.

The first pumpage period began at 1122 on June 18. The initial discharge was considerably above that desired and the discharge valve was slowly closed during the first minute, until the discharge was down to 46.2 gpm. This pumpage was further decreased during the next four minutes until the discharge was stabilized at 43.2 gpm. Pumping at this continued rate, drawdown was 12.92 feet at 1310. At 1315 (113 minutes into the first pumpage period) the pumping rate was increased to "step" the discharge. The discharge continued to increase for the next five minutes until the discharge "stabilized" at 85.2 gpm. This discharge increased slightly six minutes later and then started to steadily drop off. At 1402 (160 minutes into the first pumpage period; 47 minutes into the second step) the valve controlling the pumpage rate was fully opened in an attempt to return the discharge rate to 85.2 gpm. Something was wrong, the discharge continued to decrease -- the water level in the well was rising. At 1410 the contractor was notified of the unacceptable variation of the pumpage rate and the pump was turned off. Because of this wide variation in pumping rate no analysis of the data can be made because all analysis equations are based upon the premise of constant discharge, thus, no attempt was made to analyze data of this step and they were not plotted on Figure 1. The aquifer was allowed to recover for 334 minute; residual drawdown was 0.06 feet at 1944.

The second pumpage period began at 1944 on June 18. The pumpage rate was quickly established at 73.8 gpm. Pumping at this rate, drawdown was 21.71 feet at 2245. At 2246 (182 minutes into the second pumpage period) the pumping rate was increased

*(---, 1966, Ground water and wells: Edward E. Johnson Inc., 432 p.)

to "step" the discharge. The pumpage rate was quickly established at an average discharge of 97.2 gpm (discharge varied over the second step of the second pumpage period from 94.2 to 99.6 gpm). At 0525 the discharge began to decrease slightly for an unknown reason. By 0542 the discharge had decreased to 70 gpm. At this time we elected to shut the pump off to allow backflushing of the pump screen in an attempt to rectify the problem. At 0543 the pump was shut off for 10 seconds. Upon resuming pumping, the original discharge rate was regained. This was permitted in view of the long length of time which had already elapsed on this step of the test, and the desire to continue pumpage at this rate (about the maximum rate at which the well can be pumped) for several more hours. Drawdown was 34.04 feet at 0942 on June 19; the pump was turned off at 0943 (see Figure 2). The aquifer was allowed to recover for 102 minutes, at which time data collection stopped (end of test); residual drawdown was 0.59 feet at 1125 (see Figure 3).

During the aquifer test, field water quality data was collected on the pumped water in order to provide some quick evaluation. Throughout the test, field specific conductance readings remained within 10 units of 220 micromhos per centimeter at 25°C. The temperature of the water remained at 15°C. These data indicate that the water produced from the well is of the same source regardless of the pumpage rate and that the water is of excellent chemical quality (considering the total amount of dissolved solids -- calculated from the data to be 143 parts per million using a conversion factor of 0.65). By use of the contractor's Hach chemical kit at 1207, the total hardness was 87 ppm (parts per million) and the iron concentration was 2 ppm. Usage of the Hach kit at 0745 indicated the total hardness was 96 ppm and the iron concentration had decreased to 0.5 ppm. The reduction of the iron concentration is believed due to the removal of small particles of iron from the well and pipe which were present due to the drilling process. The actual amount of iron present in the water can best be determined by a chemical analysis made after the well has been in service for several weeks. A water sample was collected during the last minutes of pumpage -- this sample will be fully analyzed by a professional laboratory.

This well was drilled in an alluvial valley and drilling is believed to have ceased upon contact with bedrock. The closest distance to the Merced River is due south 343 feet, by steel tape, to water's edge. The last 32 feet of this distance is barely above the flow and may be considered river channel. Considering the geology of the local area, it is believed that the Merced River will act as a positive boundary to the aquifer as the cone of depression extends southward or southeast. However, the amount of the effect and time at which it would become significant cannot be determined from this aquifer test due to the lack of an observation well which would allow for the determination of the storage coefficient of the aquifer. A negative boundary due to consolidated rocks must exist to the north. This boundary was not found in the field, but is believed to be north of the dirt road which trends east-west and is located on the side of the hill about 150 feet north of the well.

The well is located 62 feet north of the edge of highway pavement and 49 feet east of the eastern edge of the dirt road, measured by steel tape. The pump used during the aquifer test is the drilling contractor's property and was removed on June 20, 1980. At the time of conducting this aquifer test, the well was fully completed in construction except for placement of the concrete for the sanitary seal. This concrete will be poured from two or three feet above the screen to the surface.

Analysis of Aquifer Test Data

By utilizing the recovery data of the aquifer for the recovery period following the second pumpage period and solving for aquifer transmissivity using the Theis Recovery Method: $T = 193 \text{ feet}^2/\text{day}$. Since the pumping column was not equipped with a foot valve, the aquifer was recharged by the draining of the 4 inch diameter pumping column after the pump was shut off. This volume of water was 4.3 feet^3 . This instantaneous "slug" recharge results in a modification of the recovery data -- measured residual drawdowns will be less than those which would have been measured had the slug not occurred. Thus, analysis of the field data results in a value for transmissivity which is greater than the actual value. Therefore, our computed T represents an upper limit for the actual value. The amount of error in the T calculation cannot be computed but it appears reasonable that the actual figure may be about $170 - 180 \text{ feet}^2/\text{day}$.

Figure 4 was constructed to provide evaluation of the well drawdown vs time for various pumpage rates. This figure indicates that at 20 gpm the well maintains a near constant water level with approximately six to seven feet drawdown. A pumpage rate of 73.8 gpm results in a drawdown of approximately 22 feet in 100 minutes. At the pumpage rate of 110 gpm the well is capable of pumping about 270 minutes until the water level is drawn down to the top of the well screen, essentially, the top of the aquifer. By utilization of the procedure for analysis of step-drawdown test data outlined by Donald H. Lennox*, it was determined that laminar-flow conditions existed for pumping rates less than or equal to 73.8 gpm and therefore drawdown in the well was determined for this range of pumpage by utilizing the equation:

$$dd = (B_t + C')Q_n$$

and the data for $Q_n = 43.9, 73.8 \text{ gpm}$ at $t = 20, t = 50$, and $t = 100$ minutes. It was also determined that flow conditions were turbulent at 97.2 gpm. Since not enough data was available to utilize the equation for turbulent flow conditions:

$$dd = (B_t + C')Q_n + CQ_n^p,$$

the plot for 97.2 was obtained by plotting the data points:

$$\begin{aligned} t &= 20 \text{ minutes, } dd = 29.2 \text{ feet} \\ t &= 660 \text{ minutes, } dd = 34.50 \text{ feet} \end{aligned}$$

and assuming a logarithmic relationship exists between these points. The extrapolation of pumpage rates at 80 and 90 gpm was accomplished by graphic, logarithmic, interpolation between the data lines of 73.8 and 97.2 gpm; 110 gpm was derived by extension of above gradual change from laminar to turbulent conditions.

In construction of Figures 2 and 4, no adjustment of the field data was made regarding the residual drawdown present at the beginning of the second pumpage period. This value was only 0.06 and thus insignificant from a practical standpoint.

W. Werrell
W. Reed

*(Lennox, Donald H., 1966, Analysis and application of step-drawdown test, ASCE. Proc. Sep. n. 4967 v. 92, November)

DUPLICATE
Driller's Copy

STATE OF CALIFORNIA
THE RESOURCES AGENCY

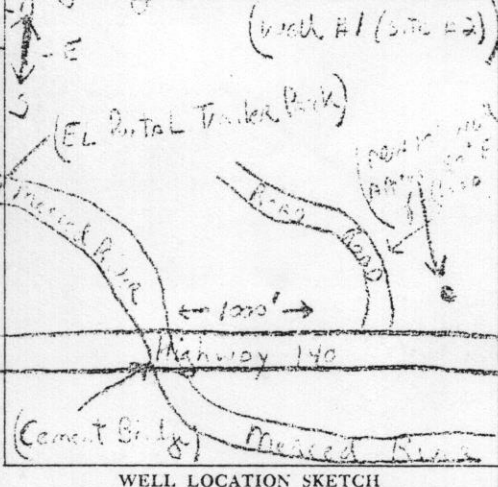
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

5/1/80 - 2/5/81
Do not fill in
No. 075898

Notice of Intent No. #175662
Local Permit No. or Date

State Well No.
Other Well No.

(1) OWNER: Name United States Dist. of Interior
Address 755 Parfet Street
City Denver Colorado Zip 80225
(2) LOCATION OF WELL (See instructions):
County ADAMS Owner's Well Number #1 (175-62)
Well address if different from above EL Portal Calif
Township _____ Range _____ Section _____
Distance from cities, roads, railroads, fences, etc. 1/2 mi. North Adams 1700'
East of Cement Bridge near El Portal
1700' on EL Portal - with slope 80' to the 1700'
Highway 170 Perimeter



(3) TYPE OF WORK:
New Well ☒ Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☐
Destruction ☐ (Describe destruction materials and procedures in Item 12)
(4) PROPOSED USE:
Domestic ☒
Irrigation ☐
Industrial ☐
Test Well ☐
Stock ☐
Municipal ☐
Other ☐

(12) WELL LOG: Total depth 88' ft. Depth of completed well 66' ft.
from ft. to ft. Formation (Describe by color, character, size or material)
0-3 Spring loam
3-8 Gravel
8-9 loose sand & gravel
9-14 Gravel
14-34 loose gravel to 6" (2' below 14')
34-44 loose sand & gravel (Gravel to 1")
44-52 loose sand & gravel (Gravel to 1")
52-56 loose sand & gravel (to 3/4")
56-61 Gravel with sand & brown clay
61-63 loose gravel to 2"
63-83 HARD Brown Clay - Rock
83-88 Solid Rock

(5) EQUIPMENT:
Rotary ☐ Reverse ☐
Cable ☒ Air ☐
Other ☐ Bucket ☐

(6) GRAVEL PACK:
Yes ☐ No ☒ Size _____
Diameter of bore _____
Packed from _____ to _____ ft.

(7) CASING INSTALLED:
Steel ☒ Plastic ☐ Concrete ☐

(8) PERFORATIONS: Johnson Screen
Type of perforation or size of screen _____

From ft.	To ft.	Dia. in.	Cage or Wall	From ft.	To ft.	Slot size
0	50'6"	10 3/4"	.365	48'	66'	1/8" (18' to 170')
10 3/4"	10 3/4"					1/8" (170' to 180')
10 3/4"	10 3/4"					1/8" (180' to 190')

(12) WELL LOG (continued):
180-190' Gravel to 1"
190-200' Gravel to 1"
200-210' Gravel to 1"
210-220' Gravel to 1"
220-230' Gravel to 1"
230-240' Gravel to 1"
240-250' Gravel to 1"
250-260' Gravel to 1"
260-270' Gravel to 1"
270-280' Gravel to 1"
280-290' Gravel to 1"
290-300' Gravel to 1"
300-310' Gravel to 1"
310-320' Gravel to 1"
320-330' Gravel to 1"
330-340' Gravel to 1"
340-350' Gravel to 1"
350-360' Gravel to 1"
360-370' Gravel to 1"
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380-390' Gravel to 1"
390-400' Gravel to 1"
400-410' Gravel to 1"
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880-890' Gravel to 1"
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970-980' Gravel to 1"
980-990' Gravel to 1"
990-1000' Gravel to 1"

(9) WELL SEAL: 0-50' 4" 14' 4.395" all
Was surface sanitary seal provided? Yes ☒ No ☐ If yes, to depth 50'4" ft.
Were strata sealed against pollution? Yes ☐ No ☐ If yes, to depth _____ ft.
Method of sealing _____

(10) WATER LEVELS:
Depth of first water, if known _____ ft.
Standing level after well completion 13' ft.

(11) WELL TESTS:
Was well test made? Yes ☒ No ☐ If yes, by whom? _____
Type of test Pump ☒ Bailor ☐ Air lift ☐
Depth to water at start of test 13' ft. At end of test 13' ft.
Discharge 100 gal/min after 8 hours Water temperature _____
Chemical analysis made? Yes ☐ No ☐ If yes, by whom? _____
Was electric log made? Yes ☐ No ☒ If yes, attach copy to this report

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
SIGNED M.S. DeBeek Jr.
(Well Driller)
NAME M.S. DEBECK & Sons
(Person, firm or corporation) (Typed or printed)
Address 1000 1st St
City El Portal Calif Zip 95110
License No. 2770715 Date of this report 8/13/80

07 OTHER

Yosemite National Park

EL PORTAL WELL #3

Other Supporting Information

. . . R E P O R T O F T E L E P H O N E C O N V E R S A T I O N

DATE: June 26, 1996 TIME: 11:10 a.m.
PROJECT: YOSE - El Portal

NPS PERSON ON CALL: Alice E. Johns

[] I RECEIVED A CALL FROM [x] I CALLED

PERSON: William Werrell
ORGANIZATION: DEVA
ADDRESS:

TELEPHONE: 619-786-3255

DISCUSSION: Bill's previous position was hydrologist with the Water Operations Branch of the Water Resources Division. In that capacity, Bill had provided technical assistance to Yosemite National Park, to find well locations, develop specs for drilling, conducting aquifer tests, and organizing information for wells. I asked Bill if he concurred with the conclusion that all the wells numbered 1-7 at El Portal tapped the underflow of the river. He said yes he did and that I could reference this telephone conversation in the water rights report. He said there is the possibility of a pretty good sized crevice that would bring in something in from the side. Its pretty subjective as to what it would produce relative to the Merced, but it is probably small relative to the Merced. The Merced is so large with a large supply of water, it is the dominant supply. Glacial four has been sealing up the permeabilities, and there are problems drilling wells. Bill has recommended to DSC that the dig a deep ditch, fill it with sand, breach it, put well screen in and some casing, then get filtration from the river, and its permeable enough to let water in.

ACTION TO BE TAKEN:

COPIES TO:



United States Department of the Interior

NATIONAL PARK SERVICE
P.O. BOX 577
YOSEMITE NATIONAL PARK, CALIFORNIA 95389

IN REPLY REFER TO:

L54(WR-RNW)

OCT 31 1984

RECEIVED Western Regional Office	
NOV 01 '84	
Regional Director	
Operations	
Res. Mgmt. Plan	
_____ion	
_____ns Eval.	
Affairs	
BGET	

Action taken	

Memorandum

To: Regional Director, Western Region

From: Superintendent, Yosemite

Subject: Information and Recommendations on El Portal Water Systems

The El Portal Administrative Site (Site) was purchased by the Government in 1958. Today 650 people live there and 40 employees work there as well. The GMP calls for El Portal to become the administrative headquarters of the park and the primary residence area for park and concession employees working in Yosemite Valley. Accordingly, the area is now being developed, and by the year 1990 should house between 1200 to 1500 people. In addition, approximately 150 permanent employees are expected to work there at that time. Projections indicate that water demand for domestic irrigation, fire and maintenance uses might be increased from 46 to 57 percent by that time.

Prior to 1958 Mr. William Brantley, who owned the El Portal store, hotel and motel had a well immediately adjacent to the Merced River. That well became contaminated and thereafter he pumped water directly out of the river to meet his needs. Mr. Brantley had two 10,000 gallon water storage tanks and his holdings were bought by the Government in or around 1958.

The National Lead Mining Company is believed to have had water rights on Crane Creek within what is today the El Portal Administrative Site. Crane Creek's flows invariably got so low in summer and fall that the company was forced to draw the water it needed directly from the Merced River. National Lead sold out and the El Portal Water Company appears to have bought National Lead's rights to Crane Creek. When the Government bought the Site in 1958 it apparently acquired these rights.

Due to its low flow and upstream contamination, Crane Creek has not been used since the park purchased the property in 1958. In 1962, shortly after the Government acquisition, Moss Creek was developed and connected to the El Portal system. It then became the primary water source until wells were developed in 1980 and 1981. Since that time, the park has tried to retire Moss Creek, a surface source subject to contamination. However, the well system is barely able to keep up with current demand when Wells No. 2, 3, 4 and 5 are functioning properly. Several times in the past three years mechanical or other problems in that system have required the park to reactivate the Moss Creek source. In the future, should Moss Creek be dry at such times--a common occurrence in

late summer and fall--the only practical recourse would be to turn again to the Merced River source.

In all, six wells have been developed by the Park in the Site. Well No. 1, a very shallow, hand-dug well was developed in the 1960's or before. In 1974 this well was contaminated during construction of the El Portal Wastewater Treatment Plant. Following decontamination it was again put into service where it remained until the present well system was developed. At that time it was taken out of service because it was too shallow--22 feet deep--to meet public health standards. Well No. 2 was developed in 1972 and Wells 3, 4 and 5 were developed in 1980 and 1981 and collectively comprise the main water source for the El Portal system today. Well No. 6 was drilled during the latter period but because of its very low yield has not been connected to the system.

Mr. John Baniias, Park plumbing foreman, has worked in the El Portal area since 1953. He recalls one or two occasions in the 1960's when water sources in El Portal got so depleted that the Park was forced to draw water directly from the Merced River. On these occasions water was pumped 24 hours per day for several months to meet demands.

In 1974 during construction of the El Portal Wastewater Treatment Plant, Well No. 1, one of two operational wells in the Site, was contaminated and temporarily taken out of use. Demand soon exceeded the supply from Moss Creek, then the Site's main water source, and the park was forced to pump from the Merced River for approximately four months. Again, during the two year drought of 1976 and 1977 the park found it necessary to pump out of the river for four full months. Mr. Baniias remembers that the Park plumbing branch pumped water out of the Merced River and into the water system at a rate of 70 GPM for 24 hours each day from July 1 through October 31 on both years. Demand still exceeded supply and the Park had to ration water to residents during this period. Please see enclosed record of such use in 1977 labeled Exhibit No. 1.

Currently, summer and fall water demand at El Portal exceeds 200,000 gallons per day (GPD). This year, 1984, demand ranged from an average low of 78,821 GPD or 2,443,460 gallons per month in March to an average high of 298,000 GPD or 9,255,350 gallons per month in July. Please see attached table for monthly use during 1984.

In view of the historic difficulty of meeting water demands at El Portal and the greatly increased demand that will accompany planned development of the Administrative Site, we feel that the Service should attempt to perfect a water right on the Merced River without delay. Ideally, this action should be completed before FERC can come to a decision on Mr. Joseph M. Keating's Application 27981, which involves the affected reach of the river.

A handwritten signature in dark ink, appearing to be "J. M. Keating", written in a cursive style.

Enclosures

08 MAPMISC

Yosemite National Park

EL PORTAL WELL #3

Maps and Miscellaneous Information

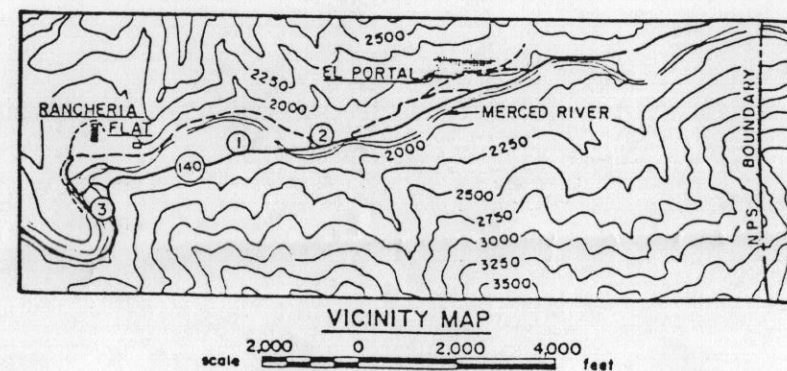
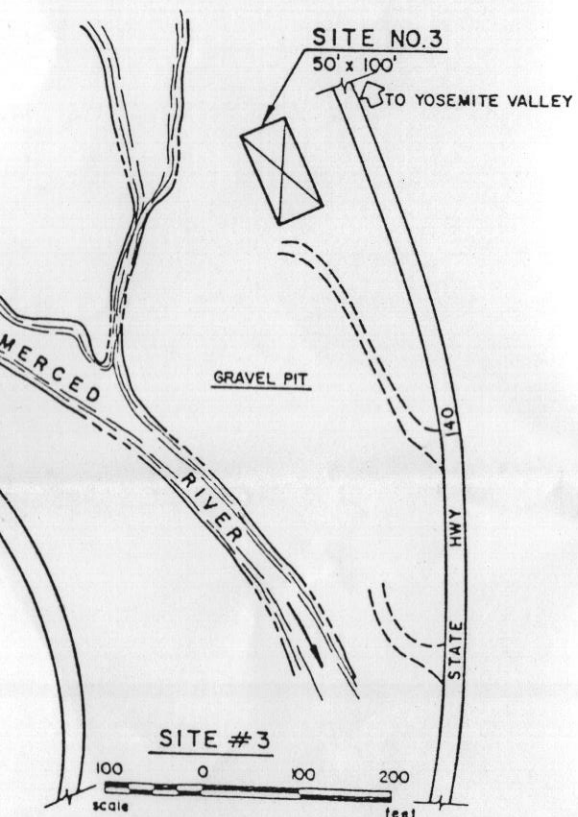
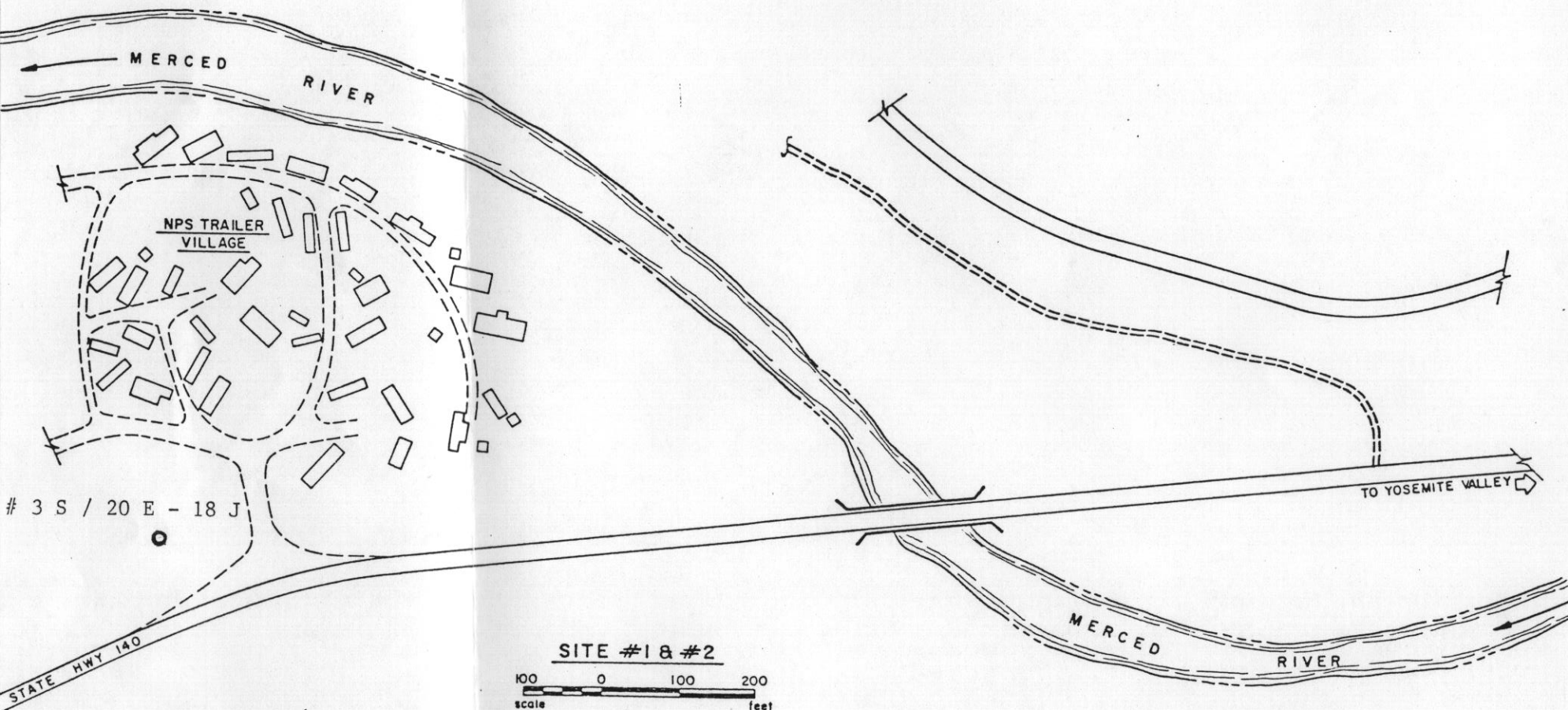


ROAD CLASSIFICATION

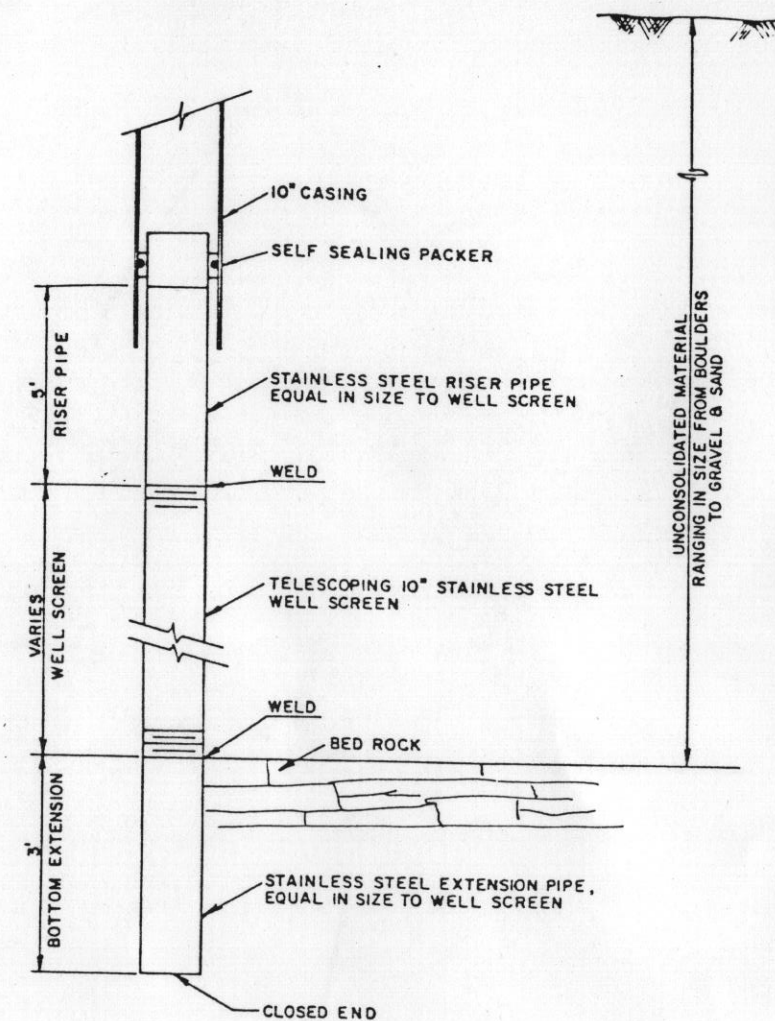
HARD-SURFACE ALL WEATHER ROADS		DRY WEATHER ROADS	
Heavy-duty	4 LANE 16 LANE	Improved dirt	
Medium-duty	4 LANE 16 LANE	Unimproved dirt	
Loose surface, graded, or narrow hard-surface			
U. S. Route		State Route	

EL PORTAL, CALIF.
N3737.5-W11945/7.5

1947



EST. DEPTH	
NO. 1	75'
NO. 2	75'
NO. 3	50'



WELL DETAIL
NO SCALE

SITE PLANS & WELL DETAILS
SCALE AS SHOWN

PREPARED	BUCKEL	DESIGNED	GONZALES	DRAWN	COOPER	CHECKED	5/79	DATE
DRAWING NO.	104	41,113	PCP	PKG	223			
SHEET	2	OF 2						

Docket Information

Number of Documents in Docket : 18

Documents Dated from : 05-00-1979 to 08-28-2025

Docket Compiled: 1/29/2026