



WATER-RIGHT DOCKET

Yosemite National Park

Docket No: 20

EL PORTAL WELL #5

Preliminary Docket Information

06-26-1996: notes to the file: primary water supply for el portal is from wells 2-7; well no. 1 is no longer in use

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

. . . 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 In 95, 42 million gallons were withdrawn.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:

UNITED STATES GOVERNMENT
memorandum

DATE: 8-14-86

REPLY TO
ATTN OF:

SUBJECT: WELL #5 EL PORTAL WATER SYSTEM

TO: JACK LEWIS

June 30, 1986 was the first indication of a problem with well #5. The well kept shutting down every 3 min. on low water cut-off switch. The problem was the well could not provide the 85 gpm that the 20hp pump normally produced on a 24 hour basis. I throttled the flow rate of the pump down to 35 gpm. Over the next few days the flow rate was increased to 63 gpm. The well could then run on a 24 hour cycle without shutting off on the low water cut-off.

Why the well lost its 85 gpm is not known at this time. Speculation is that water table in that area has dropped, however, other wells in El Portal of approx. same depth have not been affected.

We tried to lower the pump at well #5 deeper into the well but, we encountered some sort of obstruction approx. 57 feet down. The well depth was measured and found to be 75 feet, exactly what the original well drillers report indicates. In my opinion if the unknown obstruction in the well can be overcome and the pump moved deeper into the well, water production may increase.

However, it must be stated that all efforts to regain water production at well #5 are very likely to fail. It may be that redrilling the well to a deeper depth or drilling a new well to replace #5 the only guaranteed solution.

Larry Davis
U.S.R.O.

OPTIONAL FORM NO. 10
(REV. 1-80)
GSA FPMR (41 CFR) 101-11.6
5010-114

☆ U.S. G.P.O. 1983-381-526/8309

Water Demand - El Portal

S. Hart
03-20-84

1985	Wet/1/85	Wet/1/85	Wet/1/85	Wet/1/85	Totals	Average Day
Jan		1359000		1197200	2536400	81810
Feb		1279000		1124500	2405500	85910
Mar		1249500		1394800	2644300	85555
Apr	265770	1871200		19119000	4104370	135410
May	1309380	2356300	233000	2355300	6339780	204340
Jun	1534870	2789120	937500	2615500	7812570	260570
Jul	1835020	3241200	1113400	3091300	9249000	298360
Aug	1745870	3046400	1094700	3114500	9001670	290380
Sep	1575350	1637300	540900	1584700	4106950	135370
Oct	763070	1446500	469500	1361600	4044670	130540
Nov	223440	1008600	331200	951000	2514040	80810
Dec	969500	372800	372800	1060300	2348600	77280
Totals	5101770	82233500	5113000	4179200	57727770	158160
Peak Day						
July 11th		116460	40220	113950	337030	
April 9th	2144	14853	1676	4748	146418	
April 4th	461	869	679	791	2341	

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 wells 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

November 21, 1980

National Park Service
Yosemite National Park
P. O. Box 577-W
Yosemite National Park, California 95389

Attn: Andrea Chatin

Laboratory No. 16950
Date Received 10/10/80
Sample 1 Water for General Mineral, Inorganic Chemicals, Gross
Alpha & Beta Radioactivity (P.O. PX 8800-1-0109)
N.P.S. WELL No. 5
Identification: El Portal Well #3

Bicarbonates as CaCO_3 , mg/L	38
Carbonates as CaCO_3 , mg/L	Nil
Hydroxide as CaCO_3 , mg/L	Nil
Alkalinity as CaCO_3 , mg/L	38
Calcium (Ca), mg/L	15
Chloride (Cl), mg/L	7
Copper (Cu), mg/L	< 0.05
MBAS, mg/L	< 0.05
Iron (Fe), mg/L	0.11
Magnesium (Mg), mg/L	3
Manganese (Mn), mg/L	0.01
pH	6.85
Sodium (Na), mg/L	4
Sulfates (SO_4), mg/L	23
Electrical Conductivity, micromhos/cm	143
Total Dissolved Solids, mg/L	90
Hardness as CaCO_3 , mg/L	54
Zinc (Zn), mg/L	0.04
Potassium (K), mg/L	1
Silica (SiO_2), mg/L	24
Nitrate Nitrogen ($\text{NO}_3\text{-N}$), mg/L	0.4
Nitrite Nitrogen ($\text{NO}_2\text{-N}$), mg/L	0.04
Fluoride (F), mg/L	0.2

OUR LETTERS AND REPORTS ARE FOR THE EXCLUSIVE USE OF THE CLIENT TO WHOM THEY ARE ADDRESSED. AND THE USE OF THE NAME OF MORSE LABORATORIES, INC. MUST RECEIVE OUR PRIOR WRITTEN APPROVAL. OUR LETTERS AND REPORTS APPLY ONLY TO THE SAMPLE TESTED AND ARE NOT NECESSARILY INDICATIVE OF THE QUALITIES OF APPARENTLY IDENTICAL OR SIMILAR PRODUCTS. SAMPLES NOT DESTROYED IN TESTING ARE RETAINED A MAXIMUM OF THIRTY DAYS. THE REPORTS AND LETTERS AND THE NAME OF MORSE LABORATORIES, INC. IS NOT TO BE USED UNDER ANY CIRCUMSTANCES IN ADVERTISING TO THE GENERAL PUBLIC.

National Park Service
Laboratory No. 16950
Page 2

Arsenic (As), mg/L	< 0.006
Barium (Ba), mg/L	< 0.05
Cadmium (Cd), mg/L	< 0.005
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	< 2.3 ± 0.9
Gross Beta Radioactivity, pCi/L	3.3 ± 4.3

MORSE LABORATORIES, INC.



Gary L. Westberg
Assistant Director

GLW:db

MORSE LABORATORIES, INC.

CHEMICAL ANALYSIS AND RESEARCH

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SACRAMENTO, CALIFORNIA 95825
481-3141

November 21, 1980

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Iron (Fe), mg/L	0.11
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Total Dissolved Solids, mg/L	50
Hardness as CaCO_3 , mg/L	54
Zinc (Zn), mg/L	0.04
Potassium (K), mg/L	1
Silica (SiO_2), mg/L	1
Nitrate Nitrogen ($\text{NO}_3\text{-N}$), mg/L	0.2
Nitrite Nitrogen ($\text{NO}_2\text{-N}$), mg/L	0.04
Fluoride (F), mg/L	0.1

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National Park Service
Laboratory No. 16950
Page 2

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Cadmium (Cd), mg/L	< 0.005
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	< 2.3 ± 0.9
Gross Beta Radioactivity, pCi/L	3.3 ± 4.3

MORSE LABORATORIES, INC.



Gary L. Westberg
Assistant Director

GLW:db

NPS - YOS - New Well 2

L54
YOSE/CEN
(WR)RW

November 17, 1980

This is all
we could find
on YOS-Well #5
EJA

Memorandum

To: Superintendent, Yosemite
From: Regional Director, Western Region
Subject: NPS #5 Well at El Portal, Yosemite National Park, California

Enclosed for your review and files is a copy of the data and analysis of the aquifer test for the new well (NPS #5) at El Portal. As agreed with the Denver Service Center, this aquifer test was conducted by the Division of Water Resources.

This well is capable of producing about 95 gallons per minute for 24 hours or about 100 gallons per minute for about 15 hours, see Figure 3. This well is one of the best producing wells of the El Portal Site -- the presence of a gravelly aquifer at the bottom of the boring is believed responsible for the strength of the well.

Field specific conductivity measurements were taken during the test to provide an index of water quality. The specific conductance was about 130 micromhos per centimeter at 25° C, indicating about 86 parts per million dissolved solids by use of a conversion factor of 0.65. This is excellent water quality. The water temperature ranged from 16.0° C (60.8° F) to 18.0° C (64.4° F). At the end of the test a water sample was collected for a full chemical analysis by a professional laboratory.

Enclosures

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

NPS - YOS - Well No. 5

NATIONAL PARK SERVICE
 YOSEMITE NATIONAL PARK, EL PORTAL #5
 WELL # 3 S / 20 E - 18 Q

WELL LOG*

<u>Feet Below Land Surface Datum</u>	<u>Rock Type</u>	<u>Driller's Comments</u>
0 - 10	Boulders (some large gravel)	No Water
10 - 18	Gravel and Coble Rocks	No Water
18 - 21	Black Shale	No Water
21 - 27	Gravel and Brown Clayish	No Water
27 - 32	Coarse Sandy White Gravel	(13' Water Table)
32 - 37	Smaller Gravel (some 4" rocks)	(13' Water Table)
37 - 47	Coarse Sand - some Pea Gravel	(13' Water Table)
47 - 50	Brown Rock (Hard)	(30' Water Table)**
50 - 54	Rock and Sand Mix	(13' Water Table)
54 - 58	4" Gravel	
58 - 63	Fractured Rock	(Making Water)
63 - 75	Dark Blue Granite	(Bedrock)

* This well log was prepared from data provided to us by the Well Driller the date of the aquifer test.

** Drilling method was that of "carrying casing" as drilling proceeded. This water level probably reflects the water table within the casing after bailer had removed some water with drill cuttings.

NATIONAL PARK SERVICE

YOSEMITE NATION PARK, EL PORTAL #5

WELL # 3 S / 20 E - 18 Q

AQUIFER TEST

This well was drilled by the cable tool method (with driller "carrying casing") and the driller's log reports that water was first encountered at a depth of 27 feet below land surface datum, at which time, water rose in the boring. Preceding the aquifer test, the static water level was 8.91 feet below land surface datum, determined by steel tape.

The aquifer test consisted of one pumpage period which began at 1000 on October 7, 1980. The pumpage period consisted of pumping the well a total of 1396 minutes during which the pumpage rate was increased (stepped up) six times -- see Figure 1. Discharge of each step was measured by a constant head tank (orifice bucket, described on pages 87 and 88, Ground Water and Wells*). During the last four steps difficulty was encountered in maintaining a constant pumpage rate. The cause of difficulty appeared to be the generator which was being used as the power supply for the pump. The variation in pumpage rates accounts for the fluctuation in water level readings during these steps. After the end of the last step, the pump was shut off and recovery data was collected for 77 minutes; the well had recovered to within 0.55 feet of static water level -- see Figure 2.

During the aquifer test, field water quality data was collected. Throughout the test, field specific conductance remained within 25 units of 133 micromhos per centimeter at 25° 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 86 parts per million using a conversion factor of 0.65). The temperature of the water ranged from 16.0° C (60.8° F) to 18.0° C (64.4° F). No hydrologic significance is attributed to the slight variation in water temperature during the test. Specific conductance and temperature data was collected at the end of the plastic discharge hose which was 110 feet northwest of the well. The variation in temperature is believed due to changes in temperature of the plastic hose due to changes in air temperature from day to night, to early morning. A water sample was collected during the last half hour 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 after contact with bedrock. The closest distance to the Merced River is approximately 270 feet to the southwest. Considering the geology of the local area, it is believed that the Merced River will act as a positive boundary to the aquifer(s) as the cone of depression extends to the southwest, west or northwest. However, the boundary effect and time at which it would become significant cannot be determined from this

* (---, 1966, Ground Water and Wells: Edward E. Johnson Inc.)

aquifer test due to the lack of an observation well(s) which would allow for the determination of the storage coefficient of the aquifer(s).

Some minor positive boundary effect may have occurred during this test due to the ponding of the discharge water in the dredged sand trap located approximately 125 feet to the northwest of the well. Because this would be an artificial boundary that would cause the well to appear "stronger" than it would without this possible source of recharge, visual observations were made periodically to determine if infiltration was occurring. From these observations it is believed that these waters did not become hydrologically connected with the aquifers being tested.

The presence of consolidated igneous rocks to the east of the highway indicates that a negative boundary is present in that direction. This boundary cannot be positively identified in the field, but is believed to be about 75 feet from the well at the elevation of the top of the well screen.

The pump used during the aquifer test was the drilling contractor's property and was removed on October 8, 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 0.75 feet above the screen to the surface.

Analysis of Aquifer Test Data:

By utilizing the recovery data and solving for the aquifer transmissivity using the Theis Recovery Method: $T = 420 \text{ feet}^2/\text{day}$. This value is not unique to any one hydrological unit encountered by the screen but is representative of an average of the individual transmissivity of those aquifers that contribute to the partial recovery of the well's artesian head over the first five minutes since pumping had ceased. It is likely that most of the hydrologic units next to the screen have lower transmissivities ($T = 100 - 200 \text{ feet}^2/\text{day}$) and that one zone, 54 to 58 foot depth below land surface datum, noted as 4" gravel by driller, has a higher transmissivity ($T = 750 - 850 \text{ feet}^2/\text{day}$). The transmissivity of each zone cannot be individually determined from this aquifer test due to the lack of recovery data for each separate zone.

The screened portion of the well starts at the 41.75 foot depth below land surface datum (the 32.84 foot depth below static water level). This depth is 14.75 feet below the top of the upper hydrologic unit. Therefore, the screen is next to only the bottom 5.25 feet of the upper hydrologic unit which extends from the 27 foot depth to the 47 foot depth below land surface datum (the 18.08 foot depth to the 38.09 foot depth below static water level). This physical aspect of the well construction was designed to allow for proper length of the sanitary seal. This physical aspect will thus allow for a partial dewatering of the upper hydrologic unit with the water level in the well still above the well screen -- such a condition must have existed during the latter steps of the aquifer test. This condition is somewhat similar to a partial penetrating well in an aquifer, but differs in that the well openings are at the bottom of the aquifer rather than at the top of the aquifer. Hydrologically, this condition violates the assumption of the Theis

equation which calls for a fully penetrating well in order that the formation allow horizontal flow to the well.

Thus, sometime during this aquifer test, we believe that the upper aquifer changed from artesian conditions to a free ground water condition. This condition reversed itself during recovery. Additionally, during recovery, the transition from free ground water condition back to artesian may not have occurred until the water level in the well was above the top of the upper hydrologic unit. These factors are believed to relate in some manner to the "steps" (non-smooth curve) of the recovery data. Another important consideration is presented on Figure 2.

Figure 3 was constructed to provide evaluation of the well drawdown versus time for various pumpage rates. This figure indicates that a pumpage rate of 60 gpm results in a drawdown of approximately 18 feet in 120 minutes, a pumpage rate of 90 gpm results in a drawdown of approximately 27 feet in 120 minutes, and a pumpage rate of 110 gpm results in a drawdown to the top of the well screen (essentially, 14.75 feet below the top of the upper most aquifer) in 120 minutes. By utilization of the procedure for analysis of step-drawdown test outlined by Donald H. Lennox*, it was determined that laminar-flow conditions existed for pumpage rates less than or equal to 103 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 $Q_n = 28, 48, 64, \text{ and } 77$ gpm at $t = 30$ and $t = 70$ minutes and the data for $Q_n = 91$ and 100.5 gpm at $t = 30, t = 70, \text{ and } t = 120$ minutes. It was assumed for the purpose of this analysis that the accuracy of the average pumpage rate for each step (Q_n) was ± 5 gpm. Also it was assumed for the purpose of the construction of Figure 3 that laminar-flow conditions would continue to exist for the pumpage rate of 110 gpm. This last assumption may be misleading in that if flow conditions into the well change from laminar to turbulent as the pumpage rate is increased from 103 gpm (known to be within laminar range) to 110 gpm (only estimated as within laminar range), drawdown versus time for the pumpage rate of 110 gpm will be greater than that plotted on Figure 3 and it is possible that under these conditions the well would only be capable of pumping 60 minutes or less until the water level is drawn down to the top of the well screen.

W. Werrell
W. Reed

* Lennox, D.H., 1966, Analysis and application of step-drawdown test:
American Society of Civil Engineers Proceedings, v. 92, Separate 4967,
19 p.

November 13, 1980

CED CONSOLIDATED ELECTRICAL DISTRIBUTORS, INC.

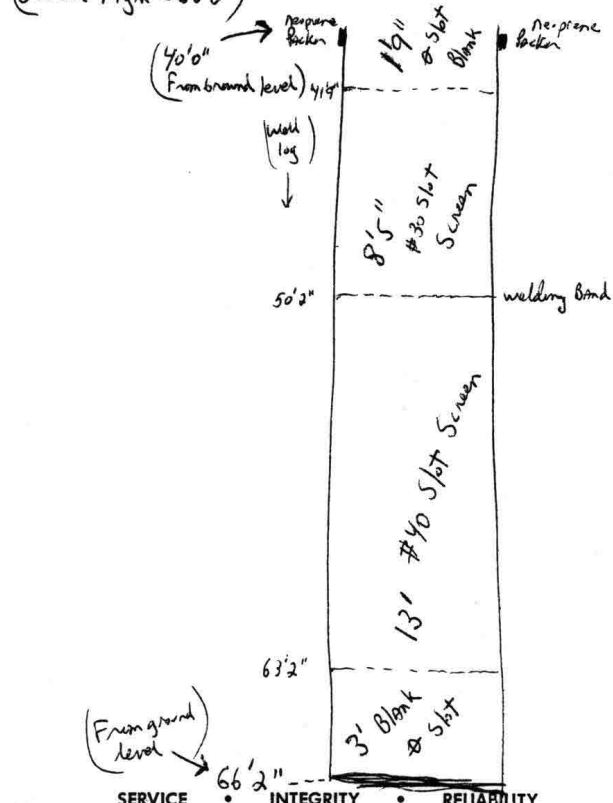
El Portal #5

Well #3 site #3

Johnson

Screen

(Overall length = 26'2")



FORM 1060B

SERVICE

• INTEGRITY

• RELIABILITY



CONSOLIDATED ELECTRICAL DISTRIBUTORS, INC.

el Portal #5

(Well # 3 Site #3)

Well log

0-10	Boulders (some large gravel)	} <u>no</u> <u>H₂O</u>
10-18	gravel & Cobble Rocks	
18-21	Black Shale	
21-27	gravel & Brown clayish	
27-32	Coarse Sandy White gravel (13' water Table)	
32-37	Smaller gravel (some 4" Rocks) (13' water Table)	
37-47	Coarse Sand - some fine gravel (13' water Table)	
47-50	Brown Rock (HARD) (30' water Table)	
50-54	Rock & sand mix (13' water Table)	
54-58	4" gravel	
58-63	Fractured Rock (making water)	
63-75	DARK Blue granite (Bedrock)	



IN REPLY REFER TO:

United States Department of the Interior

NATIONAL PARK SERVICE

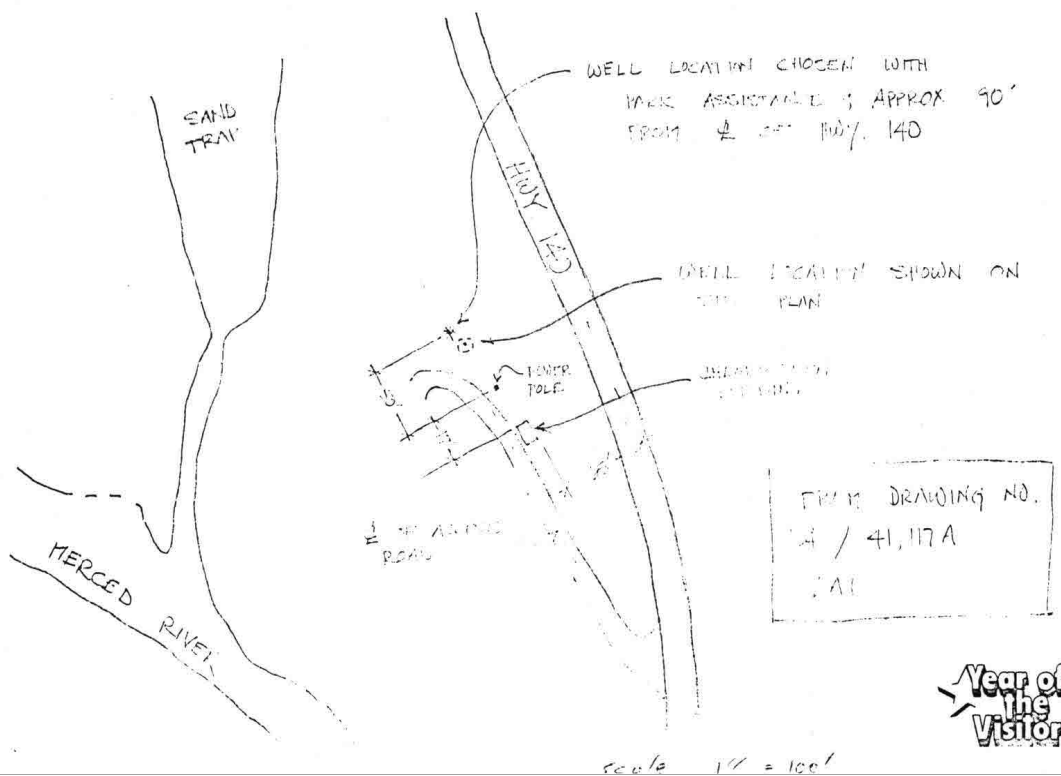
P.O. BOX 577

YOSEMITE NATIONAL PARK, CALIFORNIA 95389

MEMORANDUM

SUBJECT: LOCATION OF WELL #3, SITE #3

Upon inspection of Site #3, the location of Well #3 was selected as depicted below with the recommendation of Bill Matteson on August 21, 1980.



Year of
the
Visitor

PUCATE
Driller's Copy

STATE OF CALIFORNIA
E RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

Do not fill in
No. 075889

Notice of Intent No. 125662
Local Permit No. or Date 125662

State Well No. _____
Other Well No. _____

1) **OWNER:** Name Yosemite National Park
Address 255 Portal St
City Deer State California Zip 95225

2) **LOCATION OF WELL** (See instructions):
County Mariposa Owner's Well Number #31022
Well address if different from above EL Portal
Township _____ Range _____ Section _____

Distance from cities, roads, railroads, fences, etc.
10' well at BAR Pit (10' x 10')
Between Highway 140 & Portal Tunnel
1/2 mile west of EL Portal Tunnel

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 ☐

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:**
Type of perforation or size of screen (Johns & Son) _____
From ft. To ft. Dia. in. Gauge or Wall From ft. To ft. Slot size
0 42 10 3/4 .265 40 0 66 2 (4 1/2" long)
(10 3/4" casing hole)

9) **WELL SEAL:**
Was surface sanitary seal provided? Yes ☒ No ☐ If yes, to depth _____ ft.
Were strata sealed against pollution? Yes ☐ No ☒ (Interval _____ ft.)
Method of sealing _____

10) **WATER LEVELS:**
Depth of first water, if known _____ ft.
Standing level after well completion 9'

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 9' ft. At end of test 9' ft.
Discharge 105 gal. min. after _____ hours Water temperature _____
Chemical analysis made? Yes ☒ No ☐ If yes, by whom? Dr. J. L. A.
Was electric log made? Yes ☐ No ☒ If yes, attach copy to this report

12) **WELL LOG:** Total depth 25 ft. Depth of completed well 662" ft.
from ft. to ft. Formation (Describe by color, character, size or material)
0 - 10 Gravel (some gravel)
10 - 18 Gravel (some gravel) & Rocks } 10'
18 - 21 Black Shale } 11'
21 - 27 Gravel - Brown clay
27 - 32 White coarse sand & gravel
(water level = 18')
32 - 37 Gravel (some gravel) & Sand - some
4" Rocks (water level 12')
37 - 49 Coarse sand - some fine gravel
(13' water table)
49 - 50 Brown Rock (10' water table)
50 - 54 Rock - Sand mix (13' water table)
54 - 58 4" gravel (13' water table)
58 - 63 Fractured Rock (makes water)
63 - 75 Dark Blue granite (bedrock)

Work started 9/5 1980 Completed 10/7 1980

WELL DRILLER'S STATEMENT:
This well was drilled under my supervision and this report is true to the best of my knowledge and belief.
SIGNED M. E. Seelack Jr. (Well Driller)
NAME M. E. Seelack & Sons
Address 255 Portal St
City Deer State California Zip 95225
License No. 22291 Date of this report 10/31/80

DWR 188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

El Portal #5
35/20E-18 Q

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	
Education	
Facilities Eval.	
Affairs	
BUDGET	
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 Banias, 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. Banias 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.

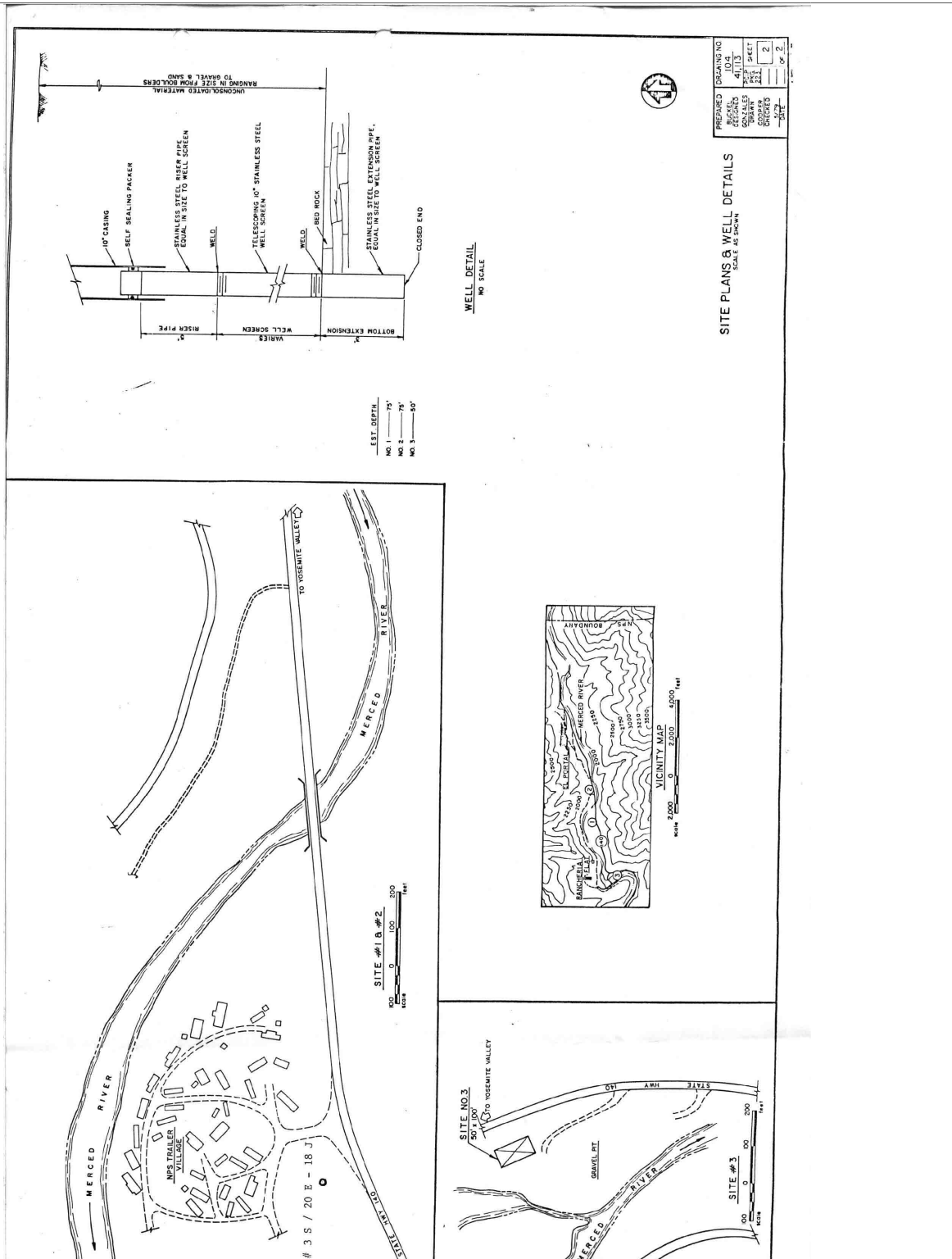
Currently, summer and fall water demand at El Portal exceeds 200,000 gallons per day (GPD). This year, 1984, demand ranged from an average low of 78,821 GPD or 2,443,460 gallons per month in March to an average high of 298,000 GPD or 9,255,350 gallons per month in July. Please see attached table for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



Enclosures





Docket Information

Number of Documents in Docket 24

Documents Dated from 6/15/1947 to 6/26/1996

Docket Compiled: 7/29/2011