

**CUYAMA COMMUNITY SERVICES DISTRICT
WELL No. 4 DRILLING AND EQUIPPING
PROJECT
ENGINEERING REPORT**



**REVISED
FEBRUARY 13, 2018**

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**CUYAMA COMMUNITY SERVICES DISTRICT
WELL No. 4 DRILLING AND EQUIPPING
PROJECT
ENGINEERING REPORT**



**Revised
February 13, 2018**

Prepared for:

Cuyama Community Service District
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ENGINEERING REPORT

FEBRUARY 13, 2018

A. WATER SYSTEM INFORMATION

1. Project Location

The Cuyama Community Services District (CCSD) is a community water system No. 4210009 serving the community of New Cuyama in Santa Barbara County (see Figure 1). CCSD operates two wells, an arsenic removal treatment plant, and distribution system that provides drinking water to 225 year-round connections, with an approximate population of 800 persons. Well No. 2 and replacement well No. 4 site is located approximately 5,000 ft south of and uphill from the community (see figure 2).

2. Description of the Water System

The CCSD Water System has been supplied by two active wells (see figure 3 for the locations). The Rehoboth No. 1 well which has a vertical turbine pump and a 150 hp motor can produce approximately 800 gpm. The Rehoboth No. 2 well is approximately 2,600 ft away at a higher elevation. It was equipped with a 30 hp submersible pump and produced approximately 270 gpm. Approximately a mile of 8-inch and 10-inch transmission pipeline conveys the well water to an arsenic removal plant. The treatment plant was remodeled in 2015 and a 320,000 gallon treated water storage tank was constructed. The treatment plant had four 80,000 gallon welded steel tanks which are used for raw water supply. It is desirable to pump the wells with off-peak power to reduce the electricity cost. The CCSD Water System is shown on Figure 4.

3. Agency Jurisdiction

The Water System is regulated by the State Water Resources Control Board (SWRCB) Division of Drinking Water (DDW) in Carpinteria, California

B. PROBLEM DESCRIPTION

Well No. 2 failed electrically and in the process the well pump, pump control panel, and generator were electrically burned up. When a contractor tried to remove the submersible pump from the well it became stuck and when applying additional force, the well casing was destroyed.

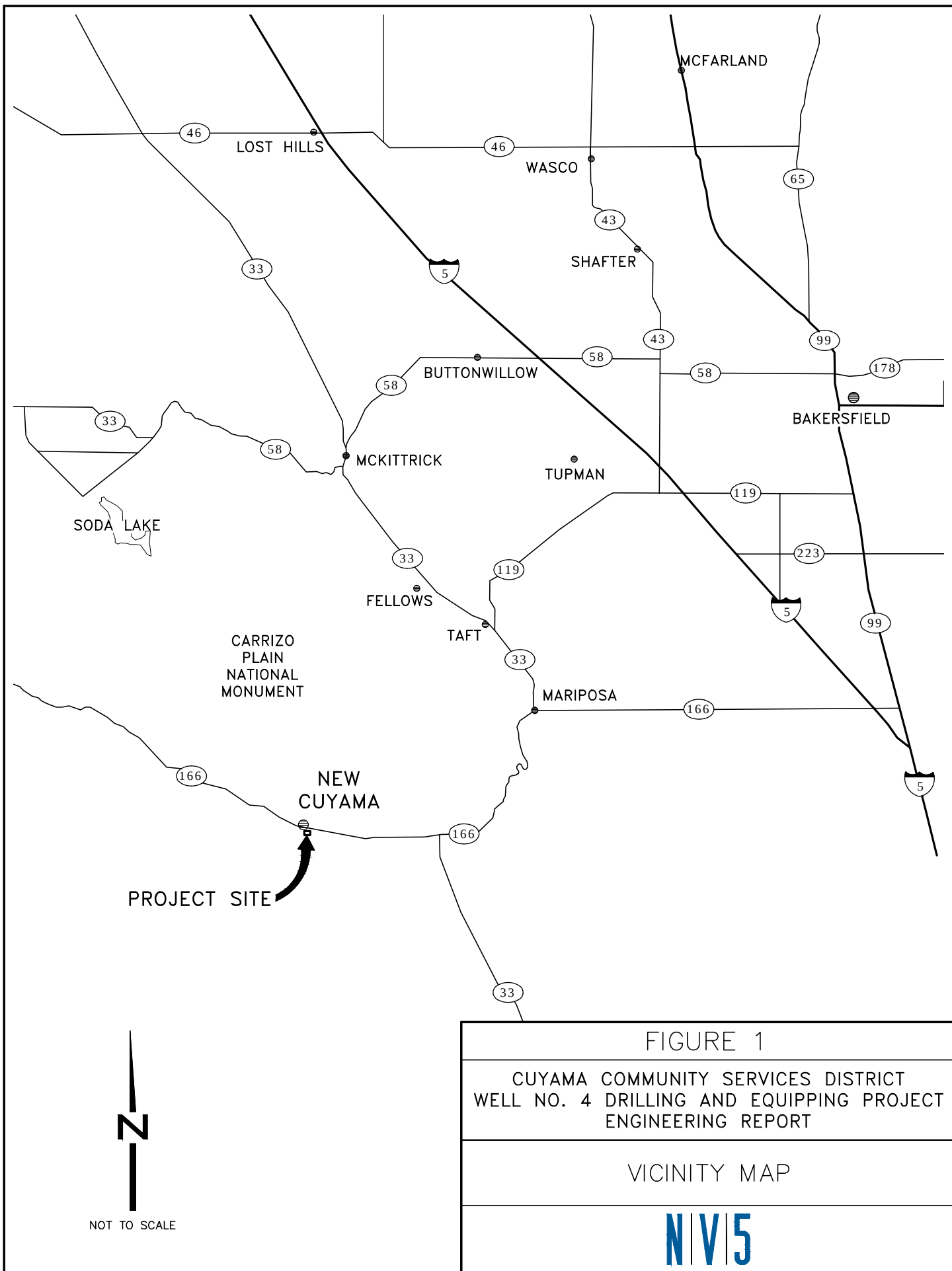
The motor on Well No. 1 was recently damaged by power problems which demonstrated the need for a redundant operating well.

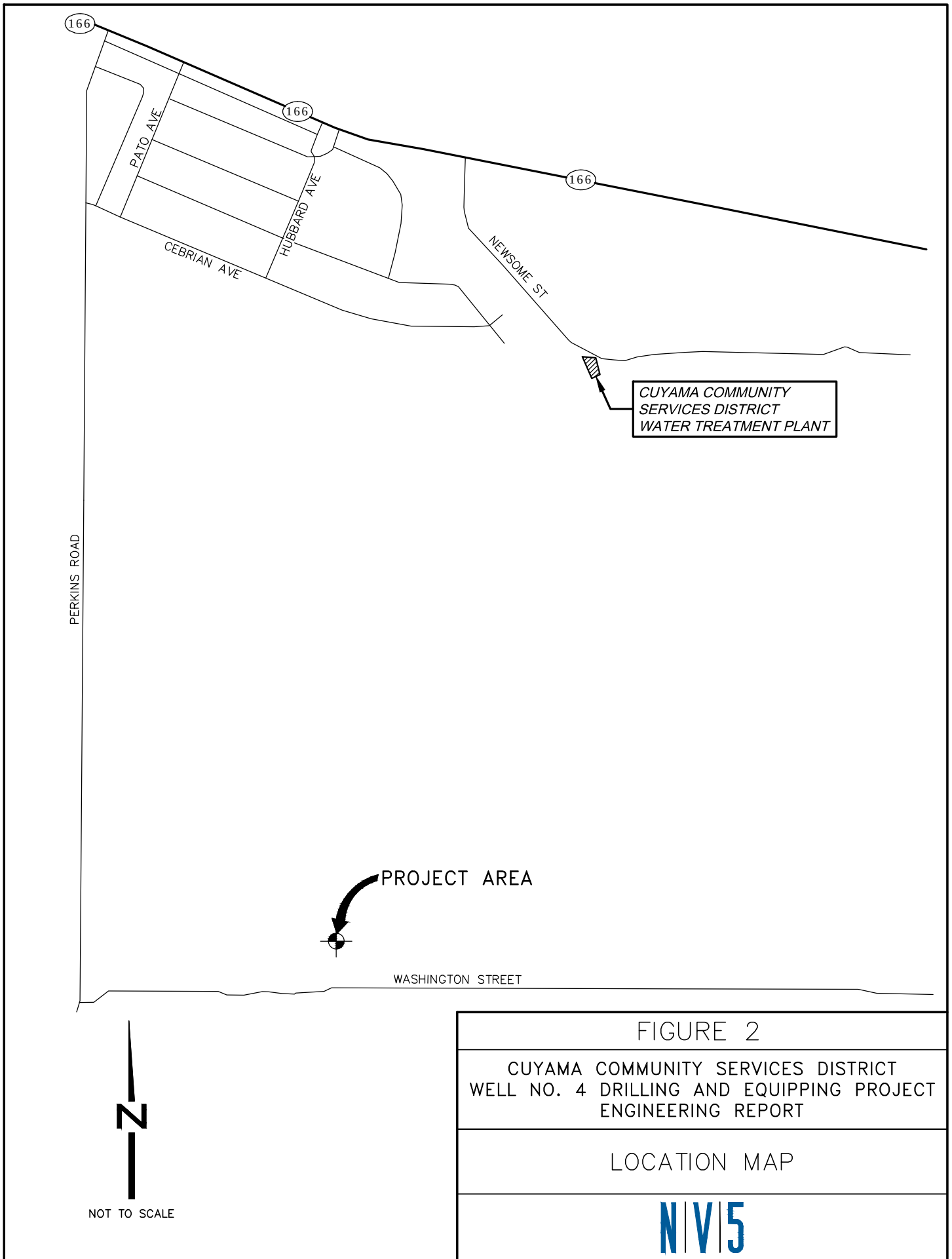
Because Well No. 2 was damaged and unusable, a replacement well is needed. In an attempt to solve the water supply problem CCSD hired a driller to drill a replacement for Well No. 2. A

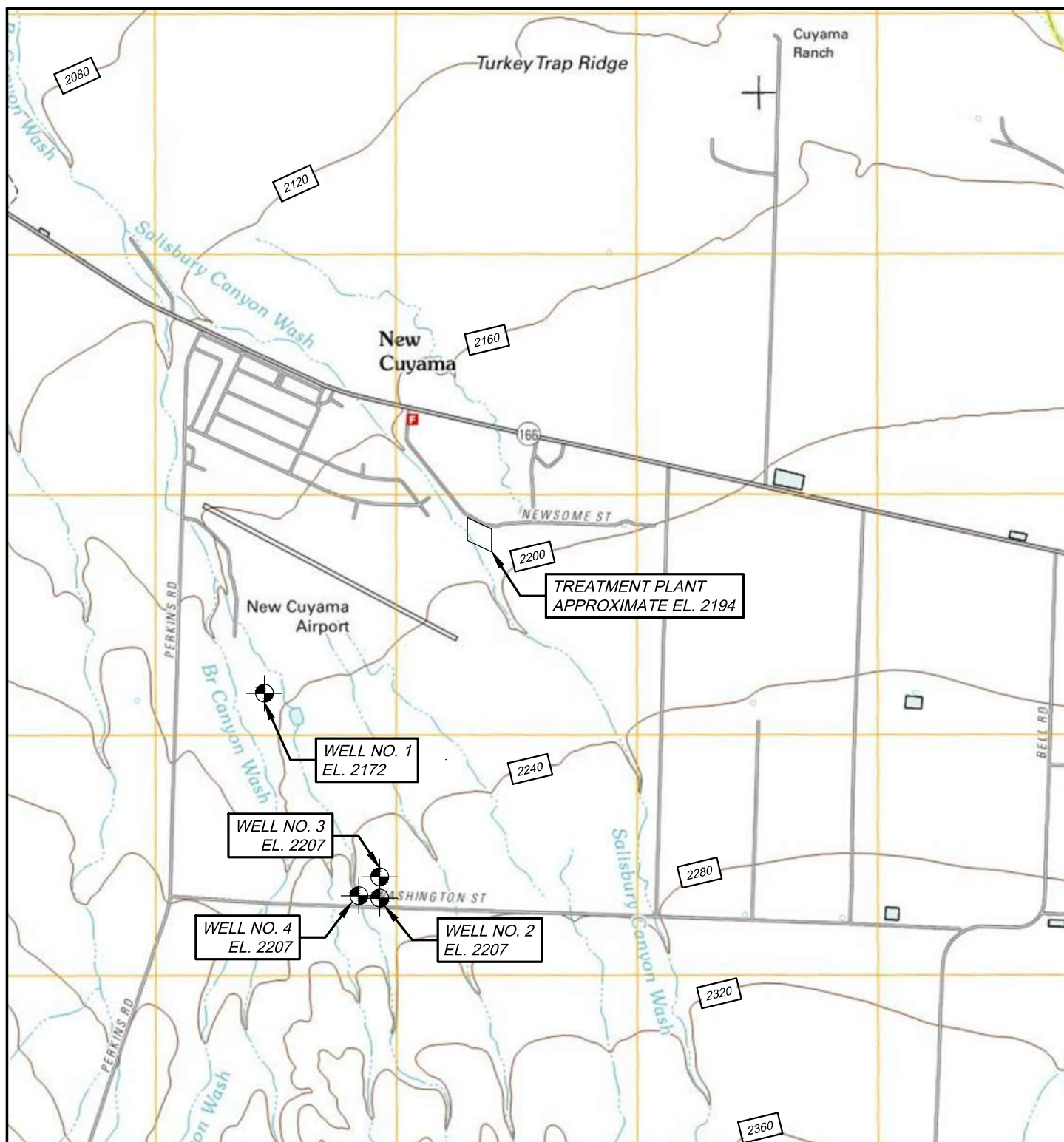
17.5- inch borehole was drilled 75 ft north of the Well No. 2 site, 855 ft deep and a 10-inch steel casing was installed. The 10-inch casing has .090 milled slots from 400 ft to 855 ft as a screen, and bird's eye gravel was installed up to 57 ft as a gravel pack. The top 57 ft is a cement sanitary seal. See Appendix A for the Well Completion Report and the Electric Gamma-Ray log of the well formation.

Bennett Water System provided a temporary pump and pump developed the well over a three-day period in December 2016. The well was only pumped for a total of 20 hours at rates of 550 gpm down to 460 gpm. The static water level was reported at 221 ft and the lowest water level reported during the pumping was 407 ft. The contractor did not establish a stable pumping rate and water level, however the pumping ended with a pumping rate of 460 gpm and a water level of 395 ft. See Appendix B for the pumping report. See Figure 5 for a photo of Well No. 3 well head and casing, which was not constructed with a gravel feed tube to replenish the gravel pack from settlement.

Unfortunately, the new well is not usable as a potable water well. When the well was pump tested it produced excessive amounts of sand and dirty water. The driller did not show that the well would meet the turbidity requirements for a drinking water well. The well was constructed with very large 0.090 milled slots and with only 3-inches of very coarse gravel pack, and is very unlikely to filter out the very fine sands and clays the well was drilled in. The problem with the well producing sand and dirt will only increase as more water is pumped and fine materials are removed, creating voids in and behind the small amount of coarse gravel pack. The gravel pack will collapse into the voids and with more fine materials moving into the coarse well screen slots.







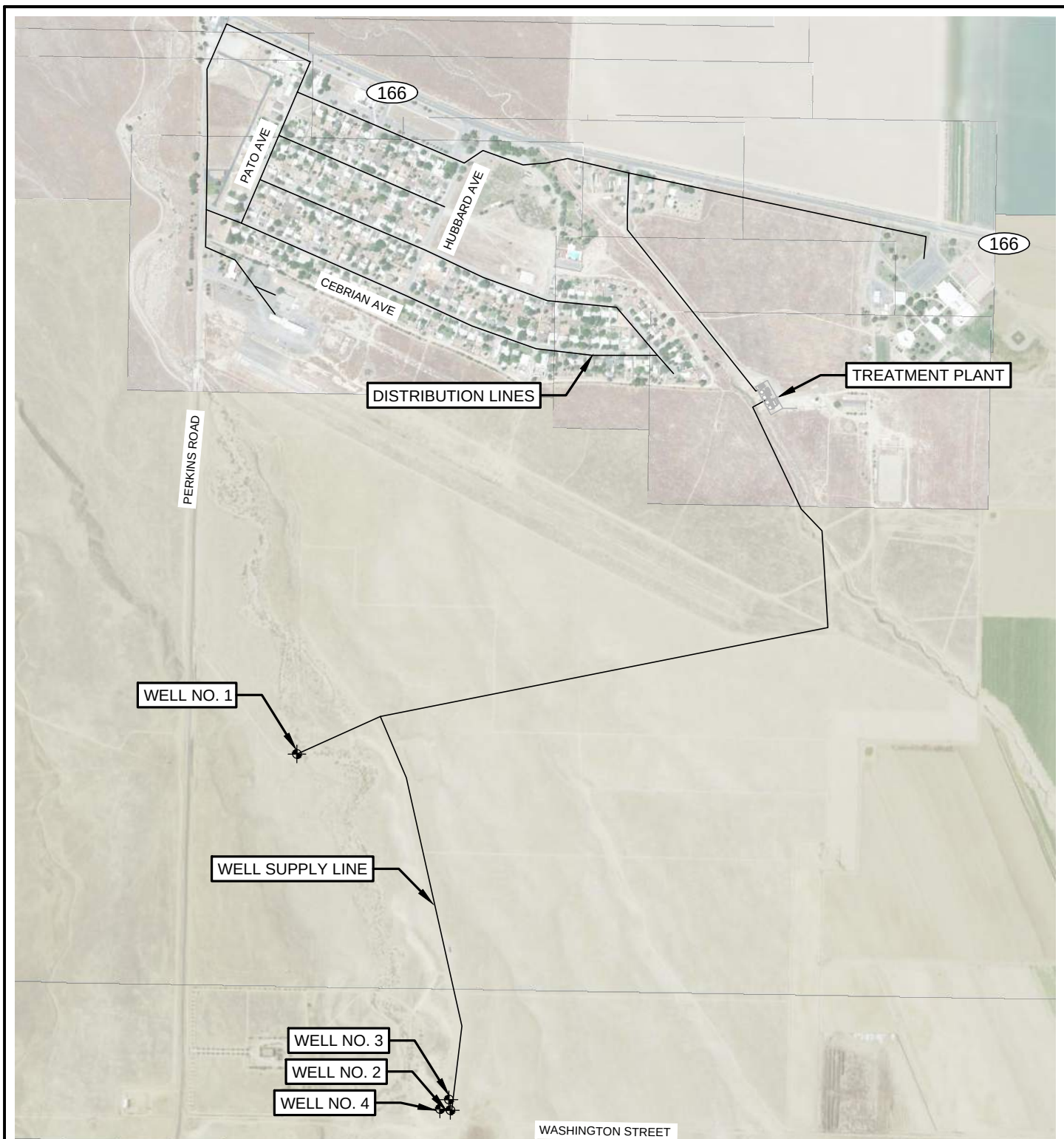
NOT TO SCALE

FIGURE 3

CUYAMA COMMUNITY SERVICES DISTRICT
WELL NO. 4 DRILLING AND EQUIPPING PROJECT
ENGINEERING REPORT

WATER WELL LOCATIONS

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0 500 1,000
1" = 1,000'

FIGURE 4

CUYAMA COMMUNITY SERVICES DISTRICT
WELL NO. 4 DRILLING AND EQUIPPING PROJECT
ENGINEERING REPORT

CCSD WATER SYSTEM

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C. EVALUATION OF ALTERNATIVE SOLUTIONS

The following provides a summary of the alternatives identified for the Project.

1. Evaluation of Alternatives and Cost Effectiveness

Three alternatives were evaluated as follows:

Alternative No. 1: No action

The Cuyama Community could not have a reliable water supply with only one well. Redundant wells are necessary when one fails or maintenance or replacement is needed.

Alternative No. 2: Consolidation with a nearby water system

Consolidation or receiving potable water from another water system is not feasible because the closest significant water system is Mariposa which is 16 miles away.

Alternative No. 3: Drill a Replacement Well

Drill a new well to replace Well No. 2 which has been abandoned.

2. Feasibility of Consolidation

As previously discussed, consolidation is not the preferred or most feasible alternative.

D. SELECTED CONSTRUCTION PROJECT

1. Situation

In order to restore the CCSD reliable water system with redundant water wells, a replacement water well needed to be drilled, developed, and tested. Then a well head, submersible well pump, replacement electrical panel, and connecting waterline needs to be constructed for the new well. Figure 5 is a photo of the area west of Well No. 2 where Well No. 4 will be drilled. Figure 6 is a parcel map and the parcel Well No. 4 will be on is APN 149-290-022.

2. Description of Proposed Project

The project will include drilling a 20-inch minimum bore hole approximately 800 ft deep and installing an 8-inch well casing and screens with appropriate gravel pack. The well will be equipped with a submersible pump approximately 300 gpm and sand separator. The project will include a meter and appurtenances at the well head, less than 100 ft of 8-inch waterline, connection to existing waterline, and chain link security fencing. A new electrical panel, a VFD controller, less than 100 ft of buried conduit and wiring, and a replacement emergency generator will also be provided for a complete and operating water supply well.

3. Evaluation of Water System Needs

The water usage data for CCSD shows average annual usage of 48.8 mg for the last 9 years and a maximum month of 8,837,00 gallons for August 2011 (see Appendix C). Therefore, the average day demand (ADD) is approximately 134,000 gallons and the maximum day demand (MDD) would be up to 427,597 gallons. The water treatment plant has a 320,000 gallon finished water tank and four 80,000 gallon raw water tanks, which can more than provide the MDD water needs. The old pump in Rehoboth, Well No. 2, was reported to pump 270 gpm. It is proposed to put a new submersible pump in Well No. 4 capable of 300 gpm. This would be capable of pumping 432,000 gallons per day which would meet the MDD and be truly a redundant supply to Rehoboth Well No. 1.

However, it is hoped to operate the wells on off peak power which would be 18 hours per day maximum. During off-peak power Well No. 4 with a 300 gpm pump would be capable of providing 324,000 gallons which would be 2.42 times the ADD.

4. Well Pump Design Capacity

Although the contractor did not do a good job developing and test pumping the well, and establishing a stable pumping rate and water level, during the last four hours the pumping rate was between 463 and 460 gpm and the water level was between 392 ft and 395 ft. The well may have stabilized at a pumping rate of 460 gpm with a water level of 400 ft or slightly less, which is an indication of a potential well capacity in that area.

There is a concern about the fine materials that the well was drilled in. Therefore, it may be prudent to design a pump at less than 75% of the test pumping capacity. The test pump contractor proposed a 300s400-10 Grundfos 40 hp submersible pump which has a capacity of 317 gpm at 361 pumping head (see Appendix D). Also included in Appendix D is a well pump calculation sheet that includes head loss for the well column pipe and the pipeline to the treatment plant. The proposed pump design point would be 300 gpm at 390 TDH and a 50 hp motor. A pumping rate of 300 gpm would be 65% of the 460 gpm Well No. 3 development pumping rate. However, as discussed previously it would be necessary to drill and design a new well to reliably produce 300 gpm. The well would need to have a larger bore hole and screens and gravel pack designed by a professional hydrogeologist.



FIGURE 5

CUYAMA COMMUNITY SERVICES DISTRICT
WELL NO. 4 DRILLING AND EQUIPPING PROJECT
ENGINEERING REPORT

WELL NO. 4 PHOTO

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It is recommended that a VFD controller be installed on the well to reduce the pumping rate if soil color or sand is detected in the water and to optimize the pump efficiency. See Appendix D for pump curves. It may also be prudent to install a sand separator or device to limit the sand and soil fines in the pumped water.

5. Describe How This Project Will Solve the Problem and Any Anticipated Operational Challenges, and Proposed Solutions.

The Project will solve the water quality problem by providing a new well that meets the drinking water MCLs. The CCSD will continue to operate two water wells; therefore, there are no new operational challenges or increase in operational costs.

6. Determine if the Project is Consistent with Local/County Planning.

The replacement Well No. 4 will be located on the same property as the old Well No. 2; therefore, there is no change to land use or water usage and the Project is consistent with the County land use planning.

7. Is The Selected Construction Project a Consolidation Project?

The Project is not a consolidation project.

8. List Any Land That Will Be Purchased or Acquired for This Construction Project.

The Project is on the existing Well No. 2 property, and the well easement will be modified for the new Well No. 4 location.

9. Water Rights Information

The Water System has historically pumped its water supply from its wells. The groundwater under the property is not located in an adjudicated basin. Therefore, the CCSD would have the water rights to continue to utilize the groundwater to meet the community needs.

10. Anticipated Benefits of Proposed Project

The anticipated benefits of the project include, but are not limited to:

1. Provide a well that meets the California Well Standards and provides potable water that meets the Drinking Water Standards to replace the damaged Well No. 2.

11. Analysis of Projected Growth

The New Cuyama Community population is not expected to have any significant growth. The existing water system and the new well will be adequate for the foreseeable future.

12. Ineligible Project Components

All elements of the proposed project would be new components of the water system, essential for providing a new water supply meeting the Drinking Water Standards and therefore would all be eligible for project funding.

E. FINAL PLANS AND SPECIFICATIONS

The following provides information on the design of the selected project.

1. Well Equipping

Well specifications will be prepared and bid out to include a pilot hole for determining water and geology and then reaming for a production well. The well screen and gravel pack will be designed by a professional hydrogeologist after reviewing the well log, e-log, well zones, and materials.

2. Final Plans, Specifications, and Design

Figure 7 shows the well site and the well equipping project components which include: concrete well head, discharge waterline to existing waterline, power conduits to the service panel location, emergency generator, and fencing.

3. Proposed Facilities

a. Drill a Replacement Well

Because the well that was drilled is not usable it is necessary to drill a new well that will be reliable and meet drinking standards.

b. Equipping Well No. 4

A submersible pump capable of producing approximately 300 gpm at 390 ft of head will be installed in Well No. 4. It will be set at approximately 500 ft below ground with 6-inch PVC column pipe with stainless steel couplers.

c. Electrical Power and Controls

New buried conduit and cables will be installed from the existing electrical panel to the new submersible pump in Well No. 4 and for the water level sensor in the well.

d. Waterline Construction

New waterline will be 8-inches in diameter. Approximately 90 ft of 8-inch PVC waterline will be constructed from the new Well No. 4.

e. Existing Utilities

All Project work is contained on the existing CCSD well site which is surrounded by pasture area. Existing utilities to include the existing waterline, which will be located by potholing and a connection made to the new waterline from Well No. 4. The underground conduit to the old Well No. 2 will be located and new buried conduit installed to Well No. 4.

4. Commercial Uses

The Cuyama CSD Water System serves a store, two restaurants, and a school.

5. Useful Life of Key Project Components

The major components of the project consist of wells, tank, pump, and pipelines. The anticipated useful life of these items, with regular maintenance, is as follows:

1. Water wells 30-40 years
2. Pipelines 40-50 years
3. Pumps 10 years

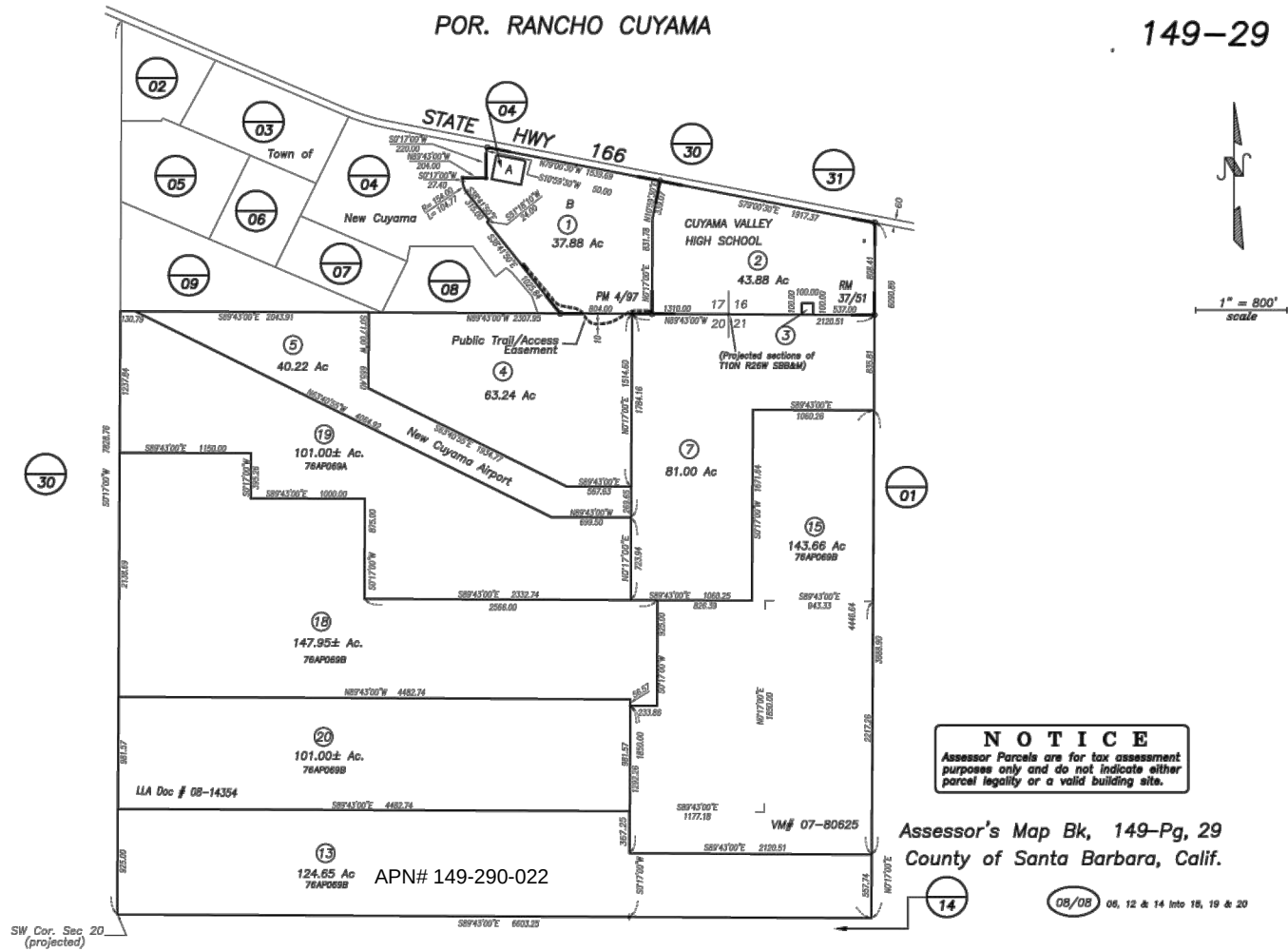


FIGURE 6

CUYAMA COMMUNITY SERVICES DISTRICT
WELL NO. 4 DRILLING AND EQUIPPING PROJECT
ENGINEERING REPORT

WELL NO. 4 PARCEL MAP

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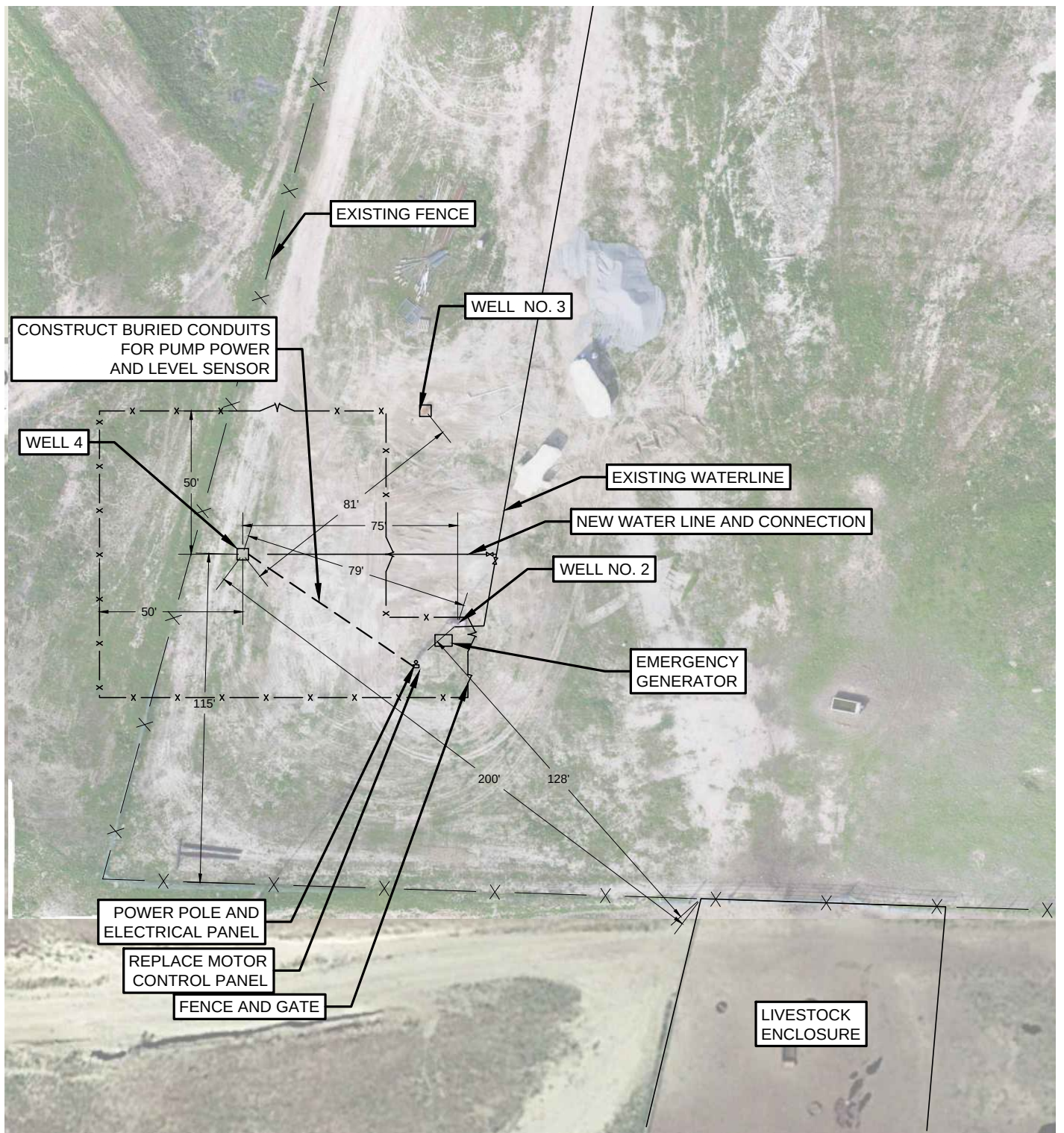


FIGURE 7

CUYAMA COMMUNITY SERVICES DISTRICT
WELL NO. 4 DRILLING AND EQUIPPING PROJECT
ENGINEERING REPORT

WELL NO. 4 EQUIPPING

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6. Cost Estimate

The engineer's opinion of probable construction costs for the Project is presented in Table 1 and 2.

TABLE 1
CCSD WELL NO. 4 DRILLING AND EQUIPPING PROJECT
ENGINEER'S OPINION OF PROBABLE COSTS – WELL DRILLING
FEBRUARY 2018

Item	Description	Qty	Unit	Unit Cost (\$/unit)	Cost (\$)
1	Mobilization and Demobilization	1	LS	\$30,000.00	\$30,000.00
2	Drill and Install 22-inch Conductor Casing and Sanitary Seal	60	LF	\$175.00	\$10,500.00
3	Drill a 6-inch Diameter (minimum) Pilot Hole	800	LF	\$60.00	\$48,000.00
4	Ream Borehole to 20-inch (minimum)	740	LF	\$60.00	\$44,400.00
5	Geophysics, Caliper Survey, Plumbness, and Alignment Tests	1	LS	\$7,000.00	\$7,000.00
6	Furnish/Install 8-inch PVC Well Casing	600	LF	\$55.00	\$33,000.00
7	Furnish/Install 8-inch PVC Well Screen	260	LF	\$175.00	\$45,500.00
8	Install Gravel Pack	300	LF	\$45.00	\$13,500.00
9	Install Transition Seal (30 Mesh Sand and Bentonite Chips)	20	LF	\$100.00	\$2,000.00
10	Install Well Seal	480	LF	\$40.00	\$19,200.00
11	Well Development with Rig	16	HR	\$300.00	\$4,800.00
12	Install/Remove Test Pump	1	LS	\$7,000.00	\$7,000.00
13	Well Development with Test Pump	32	HR	\$200.00	\$6,400.00
14	Step Drawdown Test with Test Pump	8	HR	\$200.00	\$1,600.00
15	Constant Rate Test with Test Pump	24	HR	\$200.00	\$4,800.00
16	Disinfection	1	LS	\$1,500.00	\$1,500.00
17	Well Abandonment	800	LF	\$5.00	\$4,000.00
	Subtotal				\$283,200
	<i>Contingency, 20%</i>				<i>\$56,645</i>
	<i>Subtotal Construction Cost (rounded)</i>				<i>\$339,800</i>
	Design, Bid Documents				\$30,000
	Hydrology and Well Drilling Oversight				\$35,000
	Environmental and Permits				\$25,000
	Project Management, Bidding Phase, Construction Management				\$45,000
	Labor Compliance				\$15,000
	Total Probable Cost (rounded)				\$489,800

TABLE 2
CCSD WELL NO. 4 DRILLING AND EQUIPPING PROJECT
ENGINEER'S OPINION OF PROBABLE COSTS – WELL EQUIPPING
FEBRUARY 2018

Item	Description	Qty	Unit	Unit Cost (\$/unit)	Cost (\$)
1	Mobilization	1	LS	30,000	30,000
2	Construct Concrete Well Pedestal and Slab	1	LS	7,000	7,000
3	Install Submersible Pump in Well, Column Pipe, and Appurtenances	1	EA	30,000	30,000
4	Install Desander Unit on Submersible Pump	1	EA	5,000	5,000
5	Provide Electrical Panel and VFD Well Starter/Controller	1	LS	35,000	35,000
6	Provide Buried Conduit and Wiring Submersible Pump Power	95	LF	60	5,700
7	Provide Water Level Probe in New Well, Conduit, Wiring and Pump Saver Unit	1	LS	15,000	15,000
8	Pump to Waste Assemblies	1	EA	3,000	3,000
9	Install Meter at Well	1	EA	3,000	3,000
10	Air Release/Vacuum Valves	1	EA	2,500	2,500
11	8-inch Water Supply Pipeline	80	LF	80	6,400
12	8-inch Gate Valves	2	EA	2,400	4,800
13	Connect to Existing 8-inch Waterline	1	EA	2,500	2,500
14	Fencing and Gates	600	LF	20	12,000
15	Furnish and Install Emergency Generator	1	EA	155,000	155,000
Subtotal					\$316,900
Construction Contingency, 20%					\$63,380
Subtotal Construction Costs (rounded)					\$380,280
Design, bid documents					30,000
Environmental					15,000
Project Management, Bidding Support, and Construction Oversight					\$50,000
Labor Compliance					15,000
Total Probable Cost (rounded)					\$485,280

Total CCSD Well No. 4 drilling and equipping project costs.

- Well Drilling \$489,800
- Well Equipping \$485,280
- \$975,080

7. Required Permits

A permit will be required from the Santa Barbara County to drill the well. The water system permit will need to be amended to show the new well and well site features.

F. PROPOSED CONSTRUCTION SCHEDULE

A tentative construction schedule for the Project is presented in Table 3.

TABLE 3
CCWD WELL NO. 4 DRILLING AND EQUIPPING PROJECT
PLANNING AND CONSTRUCTION SCHEDULE

Project Component	Tentative Completion Date
Planning	
Project Plans and Specifications, final	June 2017
Environmental Compliance Documents	February 2018
Complete Planning	February 2018
Submit Construction Funding Application	March 2018
Construction	
Obtain Funding Agreement	September 2018
Bid and Award Well Drilling	November 2018
Project Construction Well Drilling	January 2019
Bid and Award Well Equipping	December 2018
Begin Equipping Construction	March 2019
Construction Complete	May 2019
SWRCB Acceptance	May 2019

G. ATTACHMENTS TO ENGINEERING REPORT

As requested in the Technical Package (Construction) application form, the following documents are included in this report:

1. Schematic of Systems Existing Facilities (see Figure 4)
2. Documents justifying the ranked Problem (see section B Problem Description)
3. Schematic/Map of System's Proposed Facilities (see Figure 7)
4. Detailed Cost Estimate (see Table 1 and 2)
5. Proposed Project Schedules (see Table 3)

APPENDIX A

**WELL NO. 3 WELL COMPLETION REPORT
AND ELECTRIC LOG GAMMA RAY**

Database File21865.db

Dataset Pathnameelog

Dataset CreationWed Nov 16 12:52:01 2016

Calibration Report

ELOG Calibration Report

Serial: D4

Model: DTQ

Shop Calibration Performed: Mon Oct 17 09:16:51 2016

Before Survey Verification Performed: Mon Aug 10 14:17:03 2015

After Survey Verification Performed: Sat Sep 14 11:11:58 2013

Shop Calibration

	Readings			References			Results	
	Zero	Cal		Zero	Cal		Gain	Offset
Short	0.932	47.415		0.500	50.000	Ohm-m	1.085	-0.493
Long	2.768	189.120		2.000	200.000	Ohm-m	1.083	-0.941
IEE	23.600	5775.040	counts	0.026	6.320	A		
VSN	140.040	6593.240	counts	2.671	125.758	V		
VLN	75.960	1669.300	counts	1.419	31.840	V		

Before Survey Verification

	Readings			References			Results	
	Zero	Cal		Zero	Cal		Gain	Offset
Short	595.689	100.690		284.622	100.605	Ohm-m	0.372	63.173
Long	1048.540	102.773		545.833	102.665	Ohm-m	0.469	54.508
IEE	60.120	4905.320	counts	0.066	5.368	A		
VSN	402.360	5549.220	counts	7.675	105.845	V		
VLN	177.060	1416.000	counts	3.377	27.008	V		

After Survey Verification

	Readings			References			Results	
	Zero	Cal		Zero	Cal		Gain	Offset
Short	40.270	101.200		40.249	101.201	Ohm-m	1.000	-0.035
Long	142.401	102.843		142.638	102.842	Ohm-m	1.004	-0.383
IEE	213.380	7077.580	counts	0.234	7.746	A		
VSN	96.540	8047.160	counts	1.841	153.490	V		
VLN	85.400	2044.440	counts	1.629	38.995	V		

After Survey Verification compared to Before Survey Calibration

	Zero			Cal				
	Before	After		Before	After			
Short	284.622	40.249	Ohm-m	100.605	101.201	Ohm-m		
Long	545.833	142.638	Ohm-m	102.665	102.842	Ohm-m		

Gamma Ray Calibration Report

Serial Number: D4

Tool Model: ELOG

Performed: Wed Jan 27 16:07:18 2016

Calibrator Value: 162.0

GAPI

Background Reading: 101.7

cps

Calibrator Reading: 326.7

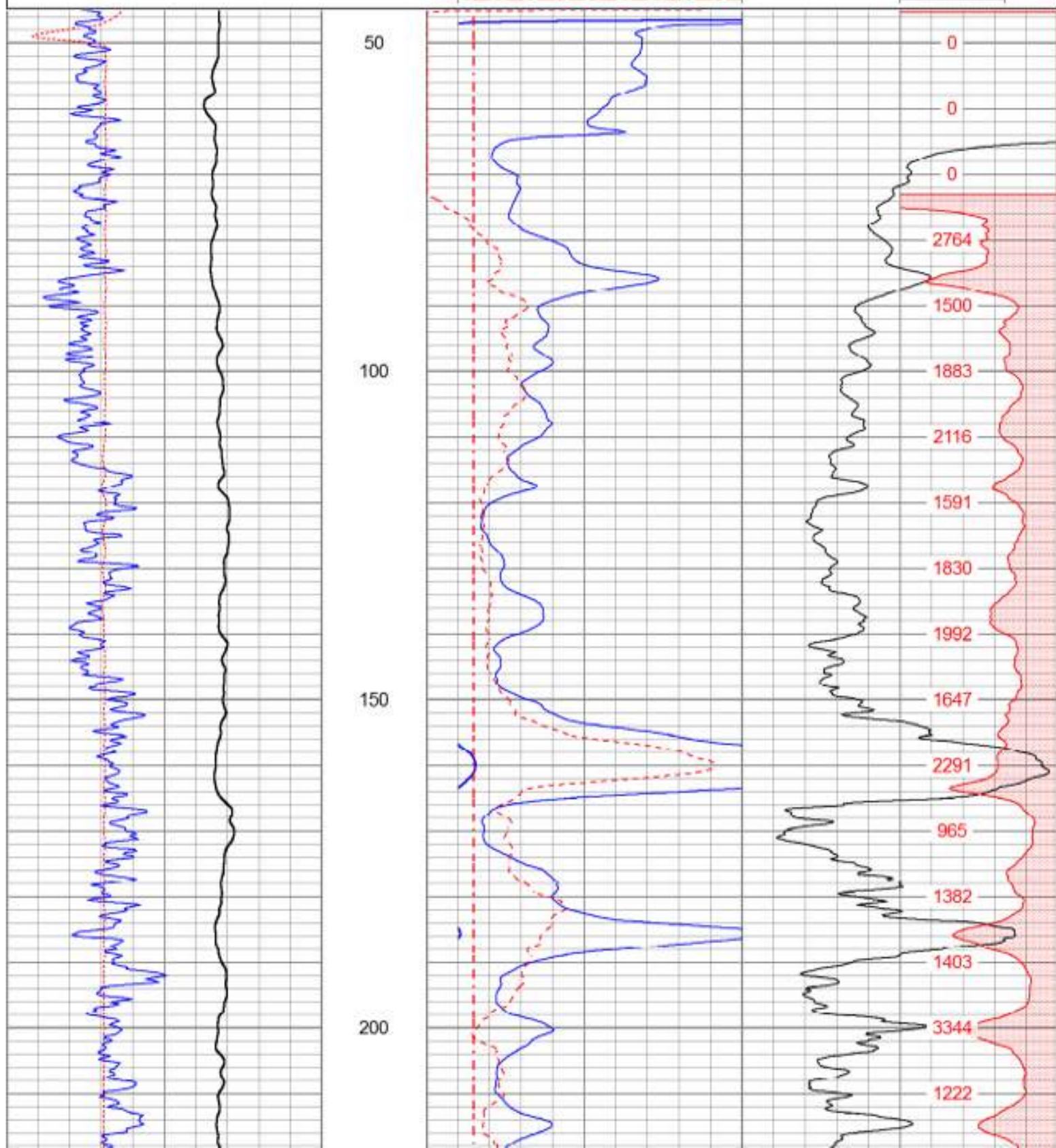
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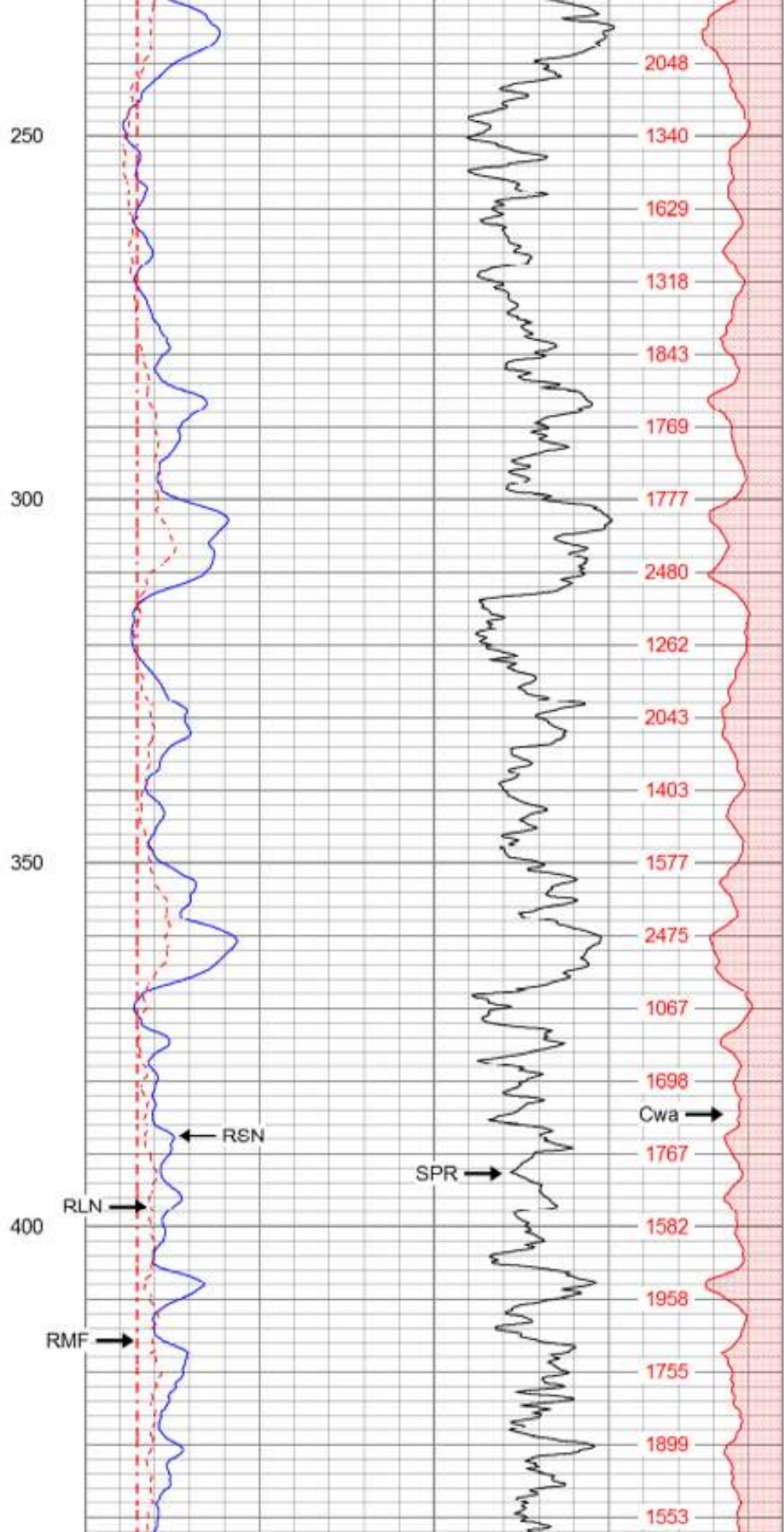
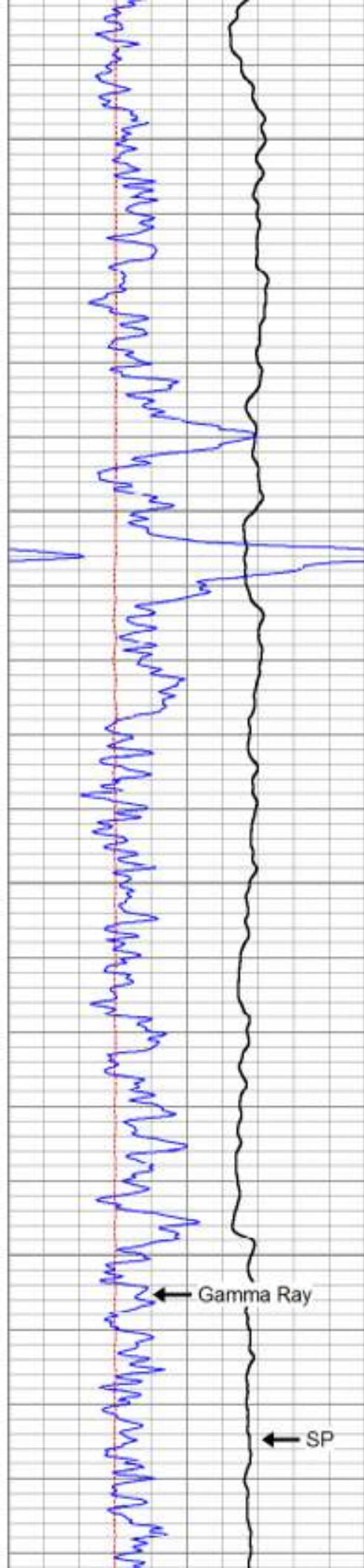
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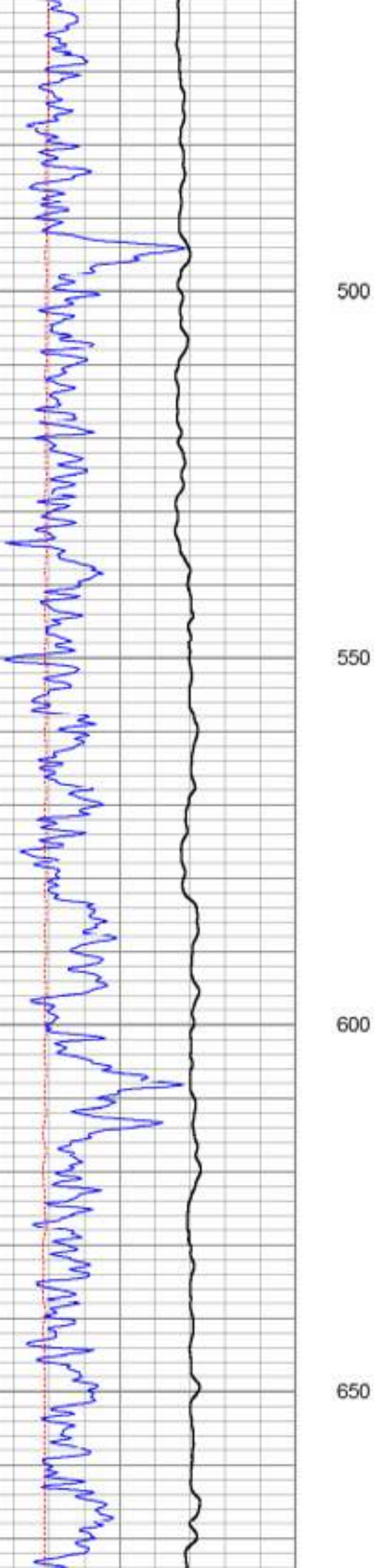
GAPI/cps

Database File 21865.db
 Dataset Pathname elog
 Presentation Format elog_cwa
 Dataset Creation Wed Nov 16 12:52:01 2016
 Charted by Depth in Feet scaled 1:240

-90	SP (mV)	10	0	RSN (Ohm-m)	50	0	SPR (Ohm-m)	50
0	Line Speed (ft/min)	-100	0	RLN (Ohm-m)	50		Cwa	
75	Gamma-Ray (GAPI)	225	0	RMF (Ohm-m)	50		6000 (uS/cm)	0
			50	RSN x 10 (Ohm-m)	500		Cwa	
			50	RLN x 10 (Ohm-m)	500		(uS/cm)	





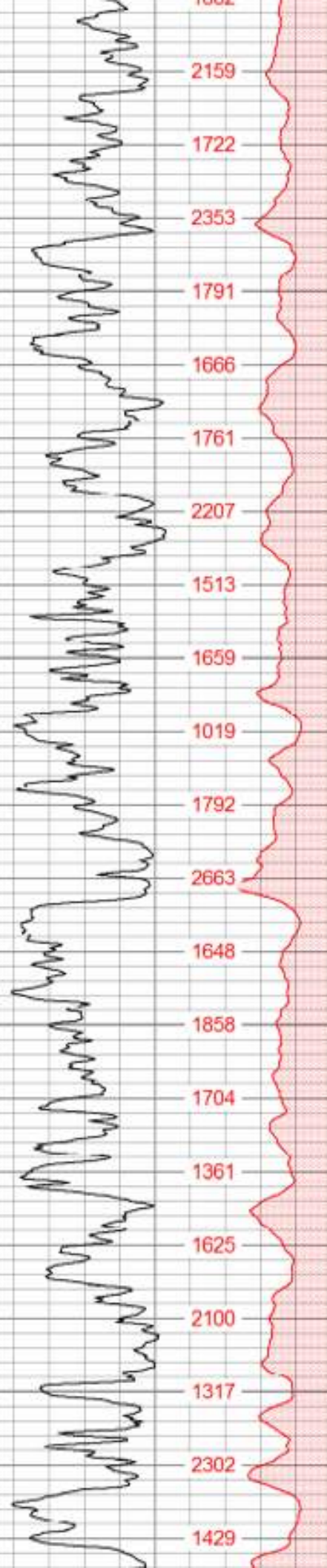


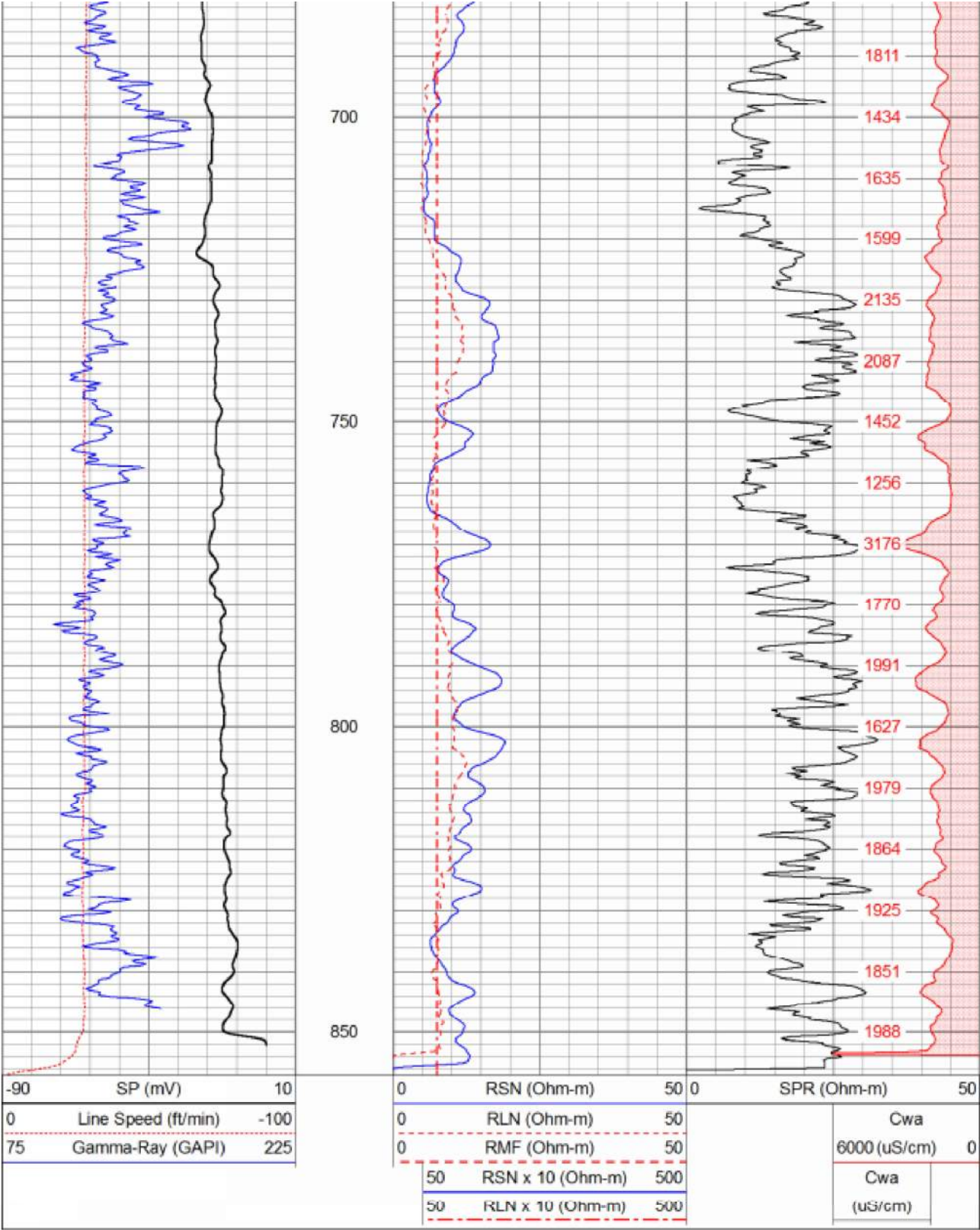
500

550

600

650





Pacific Surveys

a full service geophysical well logging company

Water Quality Analysis

Company: Bertram Drilling					Date: 16-Nov-16				
Well: CCSD					Run: One				
Field: New Cuyama					Job Ticket: 21865				
State: CA					Total Depth: 855'				
Rmf @ Temp: 7.42		Temp: 68.3							
Corrected Rmf @ 75 degree F:		6.81							
Rm @ Temp: 7.6									
Depth	S.P. mV	Rwe ohm-m	Rw NaCl ohm-m	Rw NaHCO3 ohm-m	EC umhos		T.D.S ppm		Remarks
					NaCl	NaHCO3	NaCl	NaHCO3	
284 ft to 368 ft	-4.00	6.0	7.4	8.7	1350.6	1148.0	715.8	1148.0	Class II
445 ft to 584 ft	-5.00	5.8	7.1	8.4	1405.7	1194.8	745.0	1194.8	Class II
570 ft to 582 ft	-3.00	6.2	7.7	9.1	1297.7	1103.1	687.8	1103.1	Class I & II
622 ft to 692 ft	-4.00	6.0	7.4	8.7	1350.6	1148.0	715.8	1148.0	Class II
720 ft to 834 ft	-2.00	6.4	8.0	9.4	1246.9	1059.9	660.8	1059.9	Class I & II

Class I : Less than 700 ppm (mg/l) Excellent to Good Quality

Class II : 700 to 2000 ppm (mg/l) Good to Injurious Quality

Class III: More than 2000 ppm (mg/l) Injurious to Unsatisfactory

This interpretation represents our best judgement based on given values. Since all interpretations are opinions based solely on interference from electrical and other measurements, we can not and do not guarantee the accuracy or correctness of this interpretation and shall not be liable for any cost, damages or expenses that may be incurred from this or any other interpretation.

800.919.7555
909.625.6262

4456 via st. ambrose
claremont ca 91711

fax: 909.399.3018

Log Variables

DatabaseC:\ProgramData\Warrior\Data\21865.db
Dataset field/well/run1/eolog/_vars_

Top - Bottom

BOREID in 18	BOTTEMP degF 73	CASEOD in 5.5	CASETHCK in 0	PERFS 0	RM_MEAS_R Ohm-m 7.6	RM_MEAS_T degF 68.3	RMF Ohm-m 7.42
RSH Ohm-m 20	SPSHIFT mV 0	SRFTEMP degF 65	TDEPTH ft 850				

APPENDIX B

**WELL NO. 3 PUMP DEVELOPMENT LOG
AND DRILLER PROPOSED PUMP INFORMATION**



SHEET NO. 1
 CLIENT: New Cuyama Water District
 WELL NAME/NUMBER: _____
 JOB NO. 946

DATE: 12/20/2016
 INSPECTOR: Mike Fletcher
 ORIFICE DIAM. _____
 DISCHARGE PIPE DIAM. 4"

INITIAL FLOW METER READINGS: _____ gals STATIC WATER _____ 221

ELEVATION 3'

TIME AM__ PM__	TEMP	PPT	PUMPING RATE (gpm)	PUMPING LEVEL (ft brp)	DRAWDOWN (ft)	SPECIFIC CAPACITY (gpm/ft ddn)	FAU	SURGES	PUMP SPEED (rpm)	5 MIN. SAND (ppm)	5-20 MIN. SAND (ppm)	PH	EC	TDS	COLOR	PSI	NOTES
8:20									3450	start sand	M.T.				dirty	40	start pump
9:20			550	380					3450	start sand	M.T.					40	
9:25			550	380					3450	full M.T.						40	
9:30			550	389					3450	start sand						40	tube filled at 9:30
9:40			550	391.5					3450	start sand						40	tube filled in 5 mins
9:50			550	395					3450	start sand						40	
10:00			550	397				X	3450	5						40	stop to repair discharge
11:15										start sand							start pump
11:30			550	389					3450	9.0 M.T.						40	
11:45			550	397					3450	full M.T.						40	tube filled in 10 mins

FINAL FLOW METER READING: _____

TOTAL PUMPED VOLUME: _____ gals

HOURS PUMPED THIS DAY: _____

TOTAL HOURS PUMPED TO DATE: _____



SHEET NO. 2
 CLIENT: New Cuyama Water District
 WELL NAME/NUMBER: _____
 JOB NO. 946

DATE: 12/20/2016
 INSPECTOR: Mike Fletcher
 ORIFICE DIAM. _____
 DISCHARGE PIPE DIAM. 4"

INITIAL FLOW METER READINGS: _____ gals STATIC WATER _____ 221

ELEVATION 3'

TIME AM__ PM__	TEMP	PPT	PUMPING RATE (gpm)	PUMPING LEVEL (ft brp)	DRAWDOWN (ft)	SPECIFIC CAPACITY (gpm/ft ddn)	FAU	SURGES	PUMP SPEED (rpm)	5 MIN. SAND (ppm)	5-20 MIN. SAND (ppm)	PH	EC	TDS	COLOR	PSI	NOTES
11:55			550					X	3450						dirty gray	40	tube filled in 12 mins
12:10			550	397					3450	full	M.T				dirty gray	40	start pump at 12:00
12:20			550	402					3450	full	M.T				gray	40	start sand at 12:15 filled in 5 mins
12:35			550	405				X	3450	full	M.T				gray	40	start sand at 12:25
1:00			550	405					3450	full	M.T				gray	40	start sand at 12:45 full in 15 mins
1:15			520	407				X	3450	6.4	M.T				gray	40	start sand at 1:05
1:40			520	403.25				X	3450	6.5	M.T				gray	40	start sand at 1:25
2:00			520	402					3450	full	M.T				gray	40	start sand at 1:50
2:10			520	404.5				X	3450	8.4	M.T				gray	40	start sand at 2:20
2:30			520	394					3450	6.5	M.T				gray	40	

FINAL FLOW METER READING: _____

TOTAL PUMPED VOLUME: _____ gals

HOURS PUMPED THIS DAY: _____

TOTAL HOURS PUMPED TO DATE: _____



SHEET NO. 3
 CLIENT: New Cuyama Water District
 WELL NAME/NUMBER: _____
 JOB NO. 946

DATE: 12/20/2016
 INSPECTOR: Mike Fletcher
 ORIFICE DIAM. _____
 DISCHARGE PIPE DIAM. 4"

INITIAL FLOW METER READINGS: _____ gals STATIC WATER _____ 221

ELEVATION 3'

TIME AM__ PM__	TEMP	PPT	PUMPING RATE (gpm)	PUMPING LEVEL (ft brp)	DRAWDOWN (ft)	SPECIFIC CAPACITY (gpm/ft ddn)	FAU	SURGES	PUMP SPEED (rpm)	5 MIN. SAND (ppm)	5-20 MIN. SAND (ppm)	PH	EC	TDS	COLOR	PSI	NOTES
3:00			466	397					3450	full in 10 mins					dirty	80	
3:10			460	398.83				X	3450	5.4 M.T.						80	
3:30			473	395.25					3450	4.5					gray	80	start pump at 3:20
3:40			470	397.41					3450	9 M.T.					gray	80	start sand at 3:45
3:50			469	399					3450	2.5					light gray	80	
4:00			464	399.5					3450	7.8					light gray	80	shut down

FINAL FLOW METER READING: _____

TOTAL PUMPED VOLUME: _____ gals

HOURS PUMPED THIS DAY: _____

TOTAL HOURS PUMPED TO DATE: _____



SHEET NO. 1
 CLIENT: New Cuyama Water District
 WELL NAME/NUMBER: _____
 JOB NO. 946

DATE: 12/21/2016
 INSPECTOR: Mike Fletcher
 ORIFICE DIAM. _____
 DISCHARGE PIPE DIAM. 4"
 ELEVATION 3'

INITIAL FLOW METER READINGS: _____ gals STATIC WATER 226

TIME AM__ PM__	TEMP	PPT	PUMPING RATE (gpm)	PUMPING LEVEL (ft brp)	DRAWDOWN (ft)	SPECIFIC CAPACITY (gpm/ft ddn)	FAU	SURGES	PUMP SPEED (rpm)	5 MIN. SAND (ppm)	5-20 MIN. SAND (ppm)	PH	EC	TDS	COLOR	PSI	NOTES
8:20			505	360					3450	start sand					light gray	80	start pump, tube filled in 10 mins
8:35			490	370.5					3450	start sand					light gray	75	tube filled in 13 mins
8:50			491	370.5					3450	start sand					light gray	75	
9:05			490	382					3450	6.5 M.T.					very light gray	75	start sand at 9:10
9:20			472	382.25					3450	3.3					very light gray	80	tube filled ay 9:33
9:50			474	386					3450	start sand					very light gray	80	
10:20			465	392.16					3450	6.5 M.T.					very light gray	80	start sand at 10:30
10:50			464	394.5					3450	3					very light gray	80	
11:20			464	395					3450	6.5 M.T.					very light gray	80	
11:50			464	396.83					3450	6.5 M.T.					very light gray	80	

FINAL FLOW METER READING: _____

TOTAL PUMPED VOLUME: _____ gals

HOURS PUMPED THIS DAY: _____

TOTAL HOURS PUMPED TO DATE: _____



SHEET NO. 2
 CLIENT: New Cuyama Water District
 WELL NAME/NUMBER: _____
 JOB NO. 946

DATE: 12/21/2016
 INSPECTOR: Mike Fletcher
 ORIFICE DIAM. _____
 DISCHARGE PIPE DIAM. 4"

INITIAL FLOW METER READINGS: _____ gals STATIC WATER _____ 226

ELEVATION 3'

TIME AM__ PM__	TEMP	PPT	PUMPING RATE (gpm)	PUMPING LEVEL (ft brp)	DRAWDOWN (ft)	SPECIFIC CAPACITY (gpm/ft ddn)	FAU	SURGES	PUMP SPEED (rpm)	5 MIN. SAND (ppm)	5-20 MIN. SAND (ppm)	PH	EC	TDS	COLOR	PSI	NOTES
12:20			463	396.83					3450	7.5 M.T.					very light gray	80	tube filled at 12:00, start sand at 12:05
12:50			466	397.08					3450	5.4 M.T.					very light gray	80	start sand at 1:00
1:20			466	397					3450	full M.T.					gray	80	sand filled at 1:40
1:50			466	397.25					3450						gray	80	2:00 PM SHUT DOWN GENERATOR FAILURE

FINAL FLOW METER READING: _____

TOTAL PUMPED VOLUME: _____ gals

HOURS PUMPED THIS DAY: _____

TOTAL HOURS PUMPED TO DATE: _____

BENNETT WATER SYSTEMS

JOB#	946	SWL	225'
CUSTOMER	New Cuyama Water District	AIRLINE	
DATE	12/22/2016	GPM	465
WELL#		RPM	3450
TIME	8:00 AM	DIS PSI	80

TIME OF DAY	ELAPSED TIME(MIN)	DISCHARGE PSI	GPM	PUMPING LEVEL	DRAWN DOWN	STATIC LEVEL	SPECIFIC CAPACITY	RPM	SAND PPM	COLOR REMARKS
8:31	0:01	90	473	337.5	112.5	225	4.2	3450	0.4	gray
8:32	0:02	87	473	353	128	225	3.69	3450	2.8	gray
8:34	0:04	87	474	355.25	130.25	225	3.63	3450	4.6	gray
8:35	0:05	87	471	356.66	131.66	225	3.57	3450	7.6	gray
8:37	0:07	87	470	359.16	134.16	225	3.5	3450	M.T.	gray
8:39	0:09	85	469	361.83	136.83	225	3.42	3450	2	light gray
8:41	0:11	85	469	363.5	138.5	225	3.38	3450	3.5	light gray
8:45	0:15	85	465	364.75	139.75	225	3.32	3450	6.5	light gray
8:50	0:20	85	466	366.83	141.83	225	3.28	3450	8.0 M.T.	light gray
8:55	0:25	85	464	368.41	143.41	225	3.23	3450	0.4	light gray
9:00	0:30	83	463	369	144	225	3.21	3450	1.8	light gray
9:05	0:35	83	466	369.75	144.75	225	3.21	3450	4.7	light gray
9:10	0:40	82	469	371.83	146.83	225	3.19	3450	8.7 M.T.	light gray
9:20	0:50	80	466	373	148	225	3.14	3450	3.8	light gray
9:30	1:00	80	470	376.5	151.5	225	3.1	3450	8.2 M.T.	light gray
9:40	1:10	80	469	377.5	152.5	225	3.07	3450	2.4	light gray
9:50	1:20	80	469	378	153	225	3.06	3450	5.7	light gray
10:00	1:30	80	468	379.41	154.41	225	3.03	3450	9.0 M.T.	light gray
10:10	1:40	80	469	380.33	155.33	225	3.01	3450	start sand	light gray
10:30	2:00	80	466	382.25	157.25	225	2.96	3450	8.0 M.T.	almost clr
11:00	2:30	80	467	383.91	158.91	225	2.93	3450	8.8 M.T.	clear
11:30	3:00	80	467	386	161	225	2.9	3450	7.5 M.T.	clear
12:30	4:00	80	463	392	167	225	2.77	3450	7.3 M.T.	gray
1:00	4:30	80	461	392.5	167.5	225	2.75	3450	full 12:55	clear
1:30	5:00	80	462	392.58	167.58	225	2.75	3450	full 1:15	light gray
2:30	6:00	80	463	393.66	168.66	225	2.74	3450	full 1:40	clear
3:30	7:00	80	462	393.83	168.83	225	2.73	3450	full 3:00	clear
4:30	8:00	80	460	395	170	225	2.7	3450	full M.T.	clear
	9:00									
	10:00									
	11:00									
	12:00									

M.T. tube at 12:10

3.9 at 1:30

full at 2:00 M.T. tube at 2:25 reading 1.1 at 2:30

M.T. tube at 3:00 6.6 at 3:30



ESTIMATE

Bertram
Cuyama
New Pump

10-Jan-17

QTY	UNIT	DESCRIPTION	UNIT	TOTAL
1		300s400-10 Grundfos	\$4,411.33	\$4,411.33
1		40hp Hitachi Motor	\$3,793.33	\$3,793.33
483		4" Galv drop pipe	\$12.07	\$5,829.81
500		4/4 flat jacket sub cable	\$3.80	\$1,900.00
1		50hp Standard pump panel	\$1,225.33	\$1,225.33
1		4" galv nips, Tee, check valve, plug, well seal	\$1,000.00	\$1,000.00
1		1" kwik set airline	\$400.00	\$400.00

LABOR:

1	Install pump at 485 ft	\$5,000.00	\$5,000.00
---	------------------------	------------	------------

	MATERIAL	\$18,559.80
*Madera (2.5%)	SALES TAX	\$464.00
	INSTALL	\$5,000.00
* farm exempt rate - excludes calif state tax of 5.25%	TOTAL	\$24,023.80

ACCEPTED BY	_____	DATE	_____
SUBMITTED BY	_____	DATE	_____



SHEET NO. 1
 CLIENT: New Cuyama Water District
 WELL NAME/NUMBER: _____
 JOB NO. 946

DATE: 12/20/2016
 INSPECTOR: Mike Fletcher
 ORIFICE DIAM. _____
 DISCHARGE PIPE DIAM. 4"

INITIAL FLOW METER READINGS: _____ gals STATIC WATER _____ 221

ELEVATION 3'

TIME AM__ PM__	TEMP	PPT	PUMPING RATE (gpm)	PUMPING LEVEL (ft brp)	DRAWDOWN (ft)	SPECIFIC CAPACITY (gpm/ft ddn)	FAU	SURGES	PUMP SPEED (rpm)	5 MIN. SAND (ppm)	5-20 MIN. SAND (ppm)	PH	EC	TDS	COLOR	PSI	NOTES
8:20									3450	start sand	M.T.				dirty	40	start pump
9:20			550	380					3450	start sand	M.T.					40	
9:25			550	380					3450	full M.T.						40	
9:30			550	389					3450	start sand						40	tube filled at 9:30
9:40			550	391.5					3450	start sand						40	tube filled in 5 mins
9:50			550	395					3450	start sand						40	
10:00			550	397				X	3450	5						40	stop to repair discharge
11:15										start sand							start pump
11:30			550	389					3450	9.0 M.T.						40	
11:45			550	397					3450	full M.T.						40	tube filled in 10 mins

FINAL FLOW METER READING: _____

TOTAL PUMPED VOLUME: _____ gals

HOURS PUMPED THIS DAY: _____

TOTAL HOURS PUMPED TO DATE: _____



SHEET NO. 2
 CLIENT: New Cuyama Water District
 WELL NAME/NUMBER: _____
 JOB NO. 946

DATE: 12/20/2016
 INSPECTOR: Mike Fletcher
 ORIFICE DIAM. _____
 DISCHARGE PIPE DIAM. 4"

INITIAL FLOW METER READINGS: _____ gals STATIC WATER _____ 221

ELEVATION 3'

TIME AM__ PM__	TEMP	PPT	PUMPING RATE (gpm)	PUMPING LEVEL (ft brp)	DRAWDOWN (ft)	SPECIFIC CAPACITY (gpm/ft ddn)	FAU	SURGES	PUMP SPEED (rpm)	5 MIN. SAND (ppm)	5-20 MIN. SAND (ppm)	PH	EC	TDS	COLOR	PSI	NOTES
11:55			550					X	3450						dirty gray	40	tube filled in 12 mins
12:10			550	397					3450	full	M.T				dirty gray	40	start pump at 12:00
12:20			550	402					3450	full	M.T				gray	40	start sand at 12:15 filled in 5 mins
12:35			550	405				X	3450	full	M.T				gray	40	start sand at 12:25
1:00			550	405					3450	full	M.T				gray	40	start sand at 12:45 full in 15 mins
1:15			520	407				X	3450	6.4	M.T				gray	40	start sand at 1:05
1:40			520	403.25				X	3450	6.5	M.T				gray	40	start sand at 1:25
2:00			520	402					3450	full	M.T				gray	40	start sand at 1:50
2:10			520	404.5				X	3450	8.4	M.T				gray	40	start sand at 2:20
2:30			520	394					3450	6.5	M.T				gray	40	

FINAL FLOW METER READING: _____

TOTAL PUMPED VOLUME: _____ gals

HOURS PUMPED THIS DAY: _____

TOTAL HOURS PUMPED TO DATE: _____



SHEET NO. 3
 CLIENT: New Cuyama Water District
 WELL NAME/NUMBER: _____
 JOB NO. 946

DATE: 12/20/2016
 INSPECTOR: Mike Fletcher
 ORIFICE DIAM. _____
 DISCHARGE PIPE DIAM. 4"

INITIAL FLOW METER READINGS: _____ gals STATIC WATER _____ 221

ELEVATION 3'

TIME AM__ PM__	TEMP	PPT	PUMPING RATE (gpm)	PUMPING LEVEL (ft brp)	DRAWDOWN (ft)	SPECIFIC CAPACITY (gpm/ft ddn)	FAU	SURGES	PUMP SPEED (rpm)	5 MIN. SAND (ppm)	5-20 MIN. SAND (ppm)	PH	EC	TDS	COLOR	PSI	NOTES
3:00			466	397					3450	full in 10 mins					dirty	80	
3:10			460	398.83				X	3450	5.4 M.T.						80	
3:30			473	395.25					3450	4.5					gray	80	start pump at 3:20
3:40			470	397.41					3450	9 M.T.					gray	80	start sand at 3:45
3:50			469	399					3450	2.5					light gray	80	
4:00			464	399.5					3450	7.8					light gray	80	shut down

FINAL FLOW METER READING: _____

TOTAL PUMPED VOLUME: _____ gals

HOURS PUMPED THIS DAY: _____

TOTAL HOURS PUMPED TO DATE: _____



SHEET NO. 1
 CLIENT: New Cuyama Water District
 WELL NAME/NUMBER: _____
 JOB NO. 946

DATE: 12/21/2016
 INSPECTOR: Mike Fletcher
 ORIFICE DIAM. _____
 DISCHARGE PIPE DIAM. 4"
 ELEVATION 3'

INITIAL FLOW METER READINGS: _____ gals STATIC WATER 226

TIME AM__ PM__	TEMP	PPT	PUMPING RATE (gpm)	PUMPING LEVEL (ft brp)	DRAWDOWN (ft)	SPECIFIC CAPACITY (gpm/ft ddn)	FAU	SURGES	PUMP SPEED (rpm)	5 MIN. SAND (ppm)	5-20 MIN. SAND (ppm)	PH	EC	TDS	COLOR	PSI	NOTES
8:20			505	360					3450	start sand					light gray	80	start pump, tube filled in 10 mins
8:35			490	370.5					3450	start sand					light gray	75	tube filled in 13 mins
8:50			491	370.5					3450	start sand					light gray	75	
9:05			490	382					3450	6.5 M.T.					very light gray	75	start sand at 9:10
9:20			472	382.25					3450	3.3					very light gray	80	tube filled ay 9:33
9:50			474	386					3450	start sand					very light gray	80	
10:20			465	392.16					3450	6.5 M.T.					very light gray	80	start sand at 10:30
10:50			464	394.5					3450	3					very light gray	80	
11:20			464	395					3450	6.5 M.T.					very light gray	80	
11:50			464	396.83					3450	6.5 M.T.					very light gray	80	

FINAL FLOW METER READING: _____

TOTAL PUMPED VOLUME: _____ gals

HOURS PUMPED THIS DAY: _____

TOTAL HOURS PUMPED TO DATE: _____



SHEET NO. 2
 CLIENT: New Cuyama Water District
 WELL NAME/NUMBER: _____
 JOB NO. 946

DATE: 12/21/2016
 INSPECTOR: Mike Fletcher
 ORIFICE DIAM. _____
 DISCHARGE PIPE DIAM. 4"
 ELEVATION 3'

INITIAL FLOW METER READINGS: _____ gals STATIC WATER _____ 226

TIME AM__ PM__	TEMP	PPT	PUMPING RATE (gpm)	PUMPING LEVEL (ft brp)	DRAWDOWN (ft)	SPECIFIC CAPACITY (gpm/ft ddn)	FAU	SURGES	PUMP SPEED (rpm)	5 MIN. SAND (ppm)	5-20 MIN. SAND (ppm)	PH	EC	TDS	COLOR	PSI	NOTES
12:20			463	396.83					3450	7.5 M.T.					very light gray	80	tube filled at 12:00, start sand at 12:05
12:50			466	397.08					3450	5.4 M.T.					very light gray	80	start sand at 1:00
1:20			466	397					3450	full M.T.					gray	80	sand filled at 1:40
1:50			466	397.25					3450						gray	80	2:00 PM SHUT DOWN GENERATOR FAILURE

FINAL FLOW METER READING: _____

TOTAL PUMPED VOLUME: _____ gals

HOURS PUMPED THIS DAY: _____

TOTAL HOURS PUMPED TO DATE: _____

BENNETT WATER SYSTEMS

JOB#	946	SWL	225'
CUSTOMER	New Cuyama Water District	AIRLINE	
DATE	12/22/2016	GPM	465
WELL#		RPM	3450
TIME	8:00 AM	DIS PSI	80

TIME OF DAY	ELAPSED TIME(MIN)	DISCHARGE PSI	GPM	PUMPING LEVEL	DRAWN DOWN	STATIC LEVEL	SPECIFIC CAPACITY	RPM	SAND PPM	COLOR REMARKS
8:31	0:01	90	473	337.5	112.5	225	4.2	3450	0.4	gray
8:32	0:02	87	473	353	128	225	3.69	3450	2.8	gray
8:34	0:04	87	474	355.25	130.25	225	3.63	3450	4.6	gray
8:35	0:05	87	471	356.66	131.66	225	3.57	3450	7.6	gray
8:37	0:07	87	470	359.16	134.16	225	3.5	3450	M.T.	gray
8:39	0:09	85	469	361.83	136.83	225	3.42	3450	2	light gray
8:41	0:11	85	469	363.5	138.5	225	3.38	3450	3.5	light gray
8:45	0:15	85	465	364.75	139.75	225	3.32	3450	6.5	light gray
8:50	0:20	85	466	366.83	141.83	225	3.28	3450	8.0 M.T.	light gray
8:55	0:25	85	464	368.41	143.41	225	3.23	3450	0.4	light gray
9:00	0:30	83	463	369	144	225	3.21	3450	1.8	light gray
9:05	0:35	83	466	369.75	144.75	225	3.21	3450	4.7	light gray
9:10	0:40	82	469	371.83	146.83	225	3.19	3450	8.7 M.T.	light gray
9:20	0:50	80	466	373	148	225	3.14	3450	3.8	light gray
9:30	1:00	80	470	376.5	151.5	225	3.1	3450	8.2 M.T.	light gray
9:40	1:10	80	469	377.5	152.5	225	3.07	3450	2.4	light gray
9:50	1:20	80	469	378	153	225	3.06	3450	5.7	light gray
10:00	1:30	80	468	379.41	154.41	225	3.03	3450	9.0 M.T.	light gray
10:10	1:40	80	469	380.33	155.33	225	3.01	3450	start sand	light gray
10:30	2:00	80	466	382.25	157.25	225	2.96	3450	8.0 M.T.	almost clr
11:00	2:30	80	467	383.91	158.91	225	2.93	3450	8.8 M.T.	clear
11:30	3:00	80	467	386	161	225	2.9	3450	7.5 M.T.	clear
12:30	4:00	80	463	392	167	225	2.77	3450	7.3 M.T.	gray
1:00	4:30	80	461	392.5	167.5	225	2.75	3450	full 12:55	clear
1:30	5:00	80	462	392.58	167.58	225	2.75	3450	full 1:15	light gray
2:30	6:00	80	463	393.66	168.66	225	2.74	3450	full 1:40	clear
3:30	7:00	80	462	393.83	168.83	225	2.73	3450	full 3:00	clear
4:30	8:00	80	460	395	170	225	2.7	3450	full M.T.	clear
	9:00									
	10:00									
	11:00									
	12:00									

M.T. tube at 12:10

3.9 at 1:30

full at 2:00 M.T. tube at 2:25 reading 1.1 at 2:30

M.T. tube at 3:00 6.6 at 3:30

APPENDIX C

CCSD WATER USAGE INFORMATION

**CCSD VOLUME REPORT
CALENDAR YEAR 2008**

	January	February	March	April	May	June	Subtotal
WATER REVENUE	\$10,106.84	\$10,338.26	\$10,377.65	\$11,406.48	\$11,918.32	\$12,187.01	\$66,334.56
SEWER REVENUE	4,888.97	4,959.82	6,914.85	6,929.71	6,925.98	6,874.61	37,493.94
TOTAL CHARGE	\$14,995.81	\$15,298.08	\$17,292.50	\$18,336.19	\$18,844.30	\$19,061.62	\$103,828.50
TOTAL CF IN 100 UNITS	2,350.00	2,647.00	2,746.00	5,273.00	6,478.00	7,193.00	26,687.00
METERED GALLONS	1,757,800.00	1,979,956.00	2,054,008.00	3,944,204.00	4,845,544.00	5,380,364.00	19,961,876.00
MASTER METER	1,999,000.00	2,146,000.00	2,548,000.00	4,251,000.00	5,561,000.00	5,602,000.00	22,107,000.00
% DIFF SERV/MASTER	1.12	1.08	1.19	1.07	1.13	1.04	
WELL #1 GALLONS	0.00	0.00	0.00	0.00	140,000.00	132,000.00	272,000.00
% DIFF MASTER/WELL	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	(32.61)	(38.76)	
WELL #2 GALLONS	1,969,000.00	2,078,000.00	2,421,000.00	3,955,000.00	5,028,000.00	5,714,000.00	21,165,000.00
% DIFF MASTER/WELL	1.11	1.05	1.15	1.00	1.04	1.06	

	July	August	September	October	November	December	Y-T-D Total
WATER REVENUE	\$12,894.09	\$12,925.71	\$13,124.97	\$11,765.46	\$11,360.82	\$10,195.56	\$138,601.17
SEWER REVENUE	6,932.65	6,869.36	6,845.83	6,735.41	6,665.88	6,754.81	78,297.88
TOTAL CHARGE	\$19,826.74	\$19,795.07	\$19,970.80	\$18,500.87	\$18,026.70	\$16,950.37	\$216,899.05
TOTAL CF IN 100 UNITS	8,838.00	9,211.00	9,781.00	6,420.00	5,552.00	3,088.00	69,577.00
METERED GALLONS	6,610,824.00	6,889,828.00	7,316,188.00	4,802,160.00	4,152,896.00	2,309,824.00	52,043,596.00
MASTER METER	7,520,000.00	8,178,000.00	8,047,000.00	4,955,000.00	4,847,000.00	2,627,000.00	58,281,000.00
% DIFF SERV/MASTER	1.12	1.16	1.09	1.03	1.14	1.12	
WELL #1 GALLONS	3,121,000.00	8,291,000.00	8,057,000.00	1,922,000.00	0.00	0.00	21,663,000.00
% DIFF MASTER/WELL	(0.12)	1.17	1.09	-0.50	#DIV/0!	#DIV/0!	
WELL #2 GALLONS	3,844,000.00	438,000.00	0.00	2,817,000.00	4,335,000.00	2,314,000.00	34,913,000.00
% DIFF MASTER/WELL	0.28	(13.73)	#DIV/0!	0.30	1.04	1.00	

**CCSD VOLUME REPORT
CALENDAR YEAR 2009**

	January	February	March	April	May	June	Subtotal
WATER REVENUE	\$9,942.85	\$9,892.36	\$9,950.07	\$10,716.20	\$11,695.50	\$11,905.46	\$64,102.44
SEWER REVENUE	6,769.90	6,751.68	6,831.99	6,826.11	6,831.83	6,914.02	40,925.53
TOTAL CHARGE	\$16,712.75	\$16,644.04	\$16,782.06	\$17,542.31	\$18,527.33	\$18,819.48	\$105,027.97
TOTAL CF IN 100 UNITS	2,320.00	2,131.00	2,225.00	3,840.00	6,063.00	6,565.00	23,144.00
METERED GALLONS	1,735,360.00	1,593,988.00	1,664,300.00	2,872,320.00	4,535,124.00	4,910,620.00	17,311,712.00
MASTER METER	2,004,000.00	1,836,000.00	1,784,000.00	2,638,000.00	5,123,000.00	5,217,000.00	18,602,000.00
% DIFF SERV/MASTER	1.13	1.13	1.07	0.91	1.11	1.06	
WELL #1 GALLONS	0.00	0.00	0.00	0.00	0.00	0.00	0.00
% DIFF MASTER/WELL	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
WELL #2 GALLONS	1,806,000.00	1,477,000.00	1,583,000.00	1,822,000.00	6,172,000.00	5,338,000.00	18,198,000.00
% DIFF MASTER/WELL	1.04	0.92	0.95	0.42	1.27	1.08	

	July	August	September	October	November	December	Y-T-D Total
WATER REVENUE	\$13,064.52	\$16,091.10	\$14,924.36	\$14,148.92	\$13,424.21	\$12,429.99	\$148,185.54
SEWER REVENUE	6,914.27	8,895.69	8,792.13	8,714.82	8,783.55	8,729.31	91,755.30
TOTAL CHARGE	\$19,978.79	\$24,986.79	\$23,716.49	\$22,863.74	\$22,207.76	\$21,159.30	\$239,940.84
TOTAL CF IN 100 UNITS	9,226.00	11,061.00	8,423.00	6,438.00	4,944.00	2,857.00	66,093.00
METERED GALLONS	6,901,048.00	8,273,628.00	6,300,404.00	4,815,624.00	3,698,112.00	2,137,036.00	49,437,564.00
MASTER METER	7,501,000.00	8,756,000.00	7,000,000.00	5,090,000.00	3,936,000.00	2,309,000.00	53,194,000.00
% DIFF SERV/MASTER	1.08	1.06	1.10	1.05	1.06	1.07	
WELL #1 GALLONS	4,472,000.00	8,850,000.00	7,148,000.00	5,374,000.00	1,356,000.00	0.00	27,200,000.00
% DIFF MASTER/WELL	0.46	1.07	1.12	1.10	(0.73)	#DIV/0!	
WELL #2 GALLONS	3,186,000.00	0.00	0.00	0.00	2,578,000.00	2,434,000.00	26,396,000.00
% DIFF MASTER/WELL	-0.17	#DIV/0!	#DIV/0!	#DIV/0!	0.57	1.12	

**CCSD VOLUME REPORT
CALENDAR YEAR 2010**

	January	February	March	April	May	June	Subtotal
WATER REVENUE	\$12,202.58	\$12,166.82	\$11,779.94	\$12,824.72	\$13,414.57	\$14,135.08	\$76,523.71
SEWER REVENUE	8,716.83	8,676.33	8,755.38	8,876.88	8,792.97	8,751.15	52,569.54
TOTAL CHARGE	\$20,919.41	\$20,843.15	\$20,535.32	\$21,701.60	\$22,207.54	\$22,886.23	\$129,093.25
TOTAL CF IN 100 UNITS	2,289.00	2,058.00	1,632.00	4,007.00	5,586.00	7,220.00	22,792.00
METERED GALLONS	1,712,172.00	1,539,384.00	1,220,736.00	2,997,236.00	4,178,328.00	5,400,560.00	17,048,416.00
MASTER METER	1,642,000.00	1,387,000.00	1,338,000.00	2,884,000.00	4,390,000.00	5,470,000.00	17,111,000.00
% DIFF SERV/MASTER	0.96	0.89	1.09	0.96	1.05	1.01	
WELL #1 GALLONS	0.00	0.00	0.00	300,000.00	722,000.00	570,000.00	1,592,000.00
% DIFF MASTER/WELL	#DIV/0!	#DIV/0!	#DIV/0!	-7.99	(3.79)	(7.47)	
WELL #2 GALLONS	1,930,000.00	1,647,000.00	1,400,000.00	1,385,000.00	3,563,000.00	4,981,000.00	14,906,000.00
% DIFF MASTER/WELL	1.11	1.07	1.13	-0.16	0.83	0.92	

	July	August	September	October	November	December	Y-T-D Total
WATER REVENUE	\$14,607.97	\$15,373.18	\$14,861.47	\$13,535.99	\$12,176.65	\$12,204.36	\$159,283.33
SEWER REVENUE	8,661.66	8,584.32	8,491.23	8,544.09	8,555.04	8,603.10	104,008.98
TOTAL CHARGE	\$23,269.63	\$23,957.50	\$23,352.70	\$22,080.08	\$20,731.69	\$20,807.46	\$263,292.31
TOTAL CF IN 100 UNITS	8,371.00	9,913.00	8,895.00	5,846.00	2,910.00	2,682.00	61,409.00
METERED GALLONS	6,261,508.00	7,414,924.00	6,653,460.00	4,372,808.00	2,176,680.00	2,006,136.00	45,933,932.00
MASTER METER	7,125,000.00	7,158,000.00	6,954,000.00	4,385,000.00	2,153,000.00	2,037,000.00	46,923,000.00
% DIFF SERV/MASTER	1.12	0.96	1.04	1.00	0.99	1.02	
WELL #1 GALLONS	7,456,000.00	7,329,000.00	7,355,000.00	4,352,000.00	948,000.00	0.00	29,032,000.00
% DIFF MASTER/WELL	1.16	0.99	1.10	1.00	(0.30)	#DIV/0!	
WELL #2 GALLONS	0.00	0.00	0.00	0.00	1,419,600.00	2,285,000.00	18,610,600.00
% DIFF MASTER/WELL	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.47	1.12	

**CCSD VOLUME REPORT
CALENDAR YEAR 2011**

	January	February	March	April	May	June	Subtotal
WATER REVENUE	\$11,690.04	\$12,089.21	\$11,960.10	\$12,200.43	\$13,106.51	\$13,979.76	\$75,026.05
SEWER REVENUE	8,522.76	8,615.58	8,609.22	8,595.45	8,740.98	8,667.57	51,751.56
TOTAL CHARGE	\$20,212.80	\$20,704.79	\$20,569.32	\$20,795.88	\$21,847.49	\$22,647.33	\$126,777.61
TOTAL CF IN 100 UNITS	1,589.00	2,538.00	2,326.00	2,847.00	4,786.00	6,375.00	20,461.00
METERED GALLONS	1,188,572.00	1,898,424.00	1,739,848.00	2,129,556.00	3,579,928.00	4,768,500.00	15,304,828.00
MASTER METER	1,118,000.00	1,827,000.00	1,644,000.00	N/A **	N/A **	N/A **	4,589,000.00
% DIFF SERV/MASTER	0.94	0.96	0.94	#VALUE!	#VALUE!	#VALUE!	
WELL #1 GALLONS	176,000.00	0.00	20,000.00	68,000.00	426,000.00	5,469,000.00	6,159,000.00
% DIFF MASTER/WELL	-4.75	#DIV/0!	-84.99	-29.32	(6.40)	1.13	
WELL #2 GALLONS	576,000.00 **	2,278,000.00	2,152,000.00	2,242,000.00	3,473,000.00	47,000.00	10,768,000.00
% DIFF MASTER/WELL	-0.06	1.17	1.19	1.05	0.97	-99.46	

****Meter out of order.**

	July	August	September	October	November	December	Y-T-D Total
WATER REVENUE	\$14,892.38	\$15,512.20	\$14,576.37	\$14,067.45	\$12,813.46	\$12,328.86	\$159,216.77
SEWER REVENUE	8,764.86	8,894.94	8,915.67	8,862.93	8,792.31	8,762.70	104,744.97
TOTAL CHARGE	\$23,657.24	\$24,407.14	\$23,492.04	\$22,930.38	\$21,605.77	\$21,091.56	\$263,961.74
TOTAL CF IN 100 UNITS	8,474.00	9,954.00	7,526.00	6,620.00	3,926.00	2,782.00	59,743.00
METERED GALLONS	6,338,552.00	7,445,592.00	5,629,448.00	4,951,760.00	2,936,648.00	2,080,936.00	44,687,764.00
MASTER METER	N/A **	7,430,000.00	6,407,900.00	5,396,200.00	2,590,700.00	1,891,300.00	28,305,100.00
% DIFF SERV/MASTER	#VALUE!	1.00	1.12	1.08	0.87	0.90	
WELL #1 GALLONS	7,448,000.00	8,837,000.00	6,527,000.00	5,529,000.00	186,000.00	282,000.00	34,968,000.00
% DIFF MASTER/WELL	1.15	1.16	1.14	1.10	(13.79)	-5.38	
WELL #2 GALLONS	19,000.00	0.00	0.00	0.00	1,740,000.00	1,925,000.00	14,452,000.00
% DIFF MASTER/WELL	-331.61	#DIV/0!	#DIV/0!	#DIV/0!	0.31	0.92	

**CCSD VOLUME REPORT
CALENDAR YEAR 2012**

	January	February	March	April	May	June	Subtotal
WATER REVENUE	\$12,660.73	\$13,052.91	\$13,490.59	\$14,220.15	\$15,592.38	\$17,157.98	\$86,174.74
SEWER REVENUE	8,965.44	9,241.11	9,571.83	10,130.46	10,603.94	10,776.60	59,289.38
TOTAL CHARGE	\$21,626.17	\$22,294.02	\$23,062.42	\$24,350.61	\$26,196.32	\$27,934.58	\$145,464.12
TOTAL CF IN 100 UNITS	2,714.00	3,058.00	3,395.00	3,636.00	6,078.00	8,753.00	27,634.00
METERED GALLONS	2,030,072.00	2,287,384.00	2,539,460.00	2,719,728.00	4,546,344.00	6,547,244.00	20,670,232.00
MASTER METER	1,571,400.00	1,615,100.00	1,833,500.00	1,959,000.00	4,772,000.00	6,968,800.00	18,719,800.00
% DIFF SERV/MASTER	0.71	0.58	0.61	0.61	1.05	1.06	
WELL #1 GALLONS	110,000.00	209,000.00	220,000.00	0.00	0.00	5,755,000.00	6,294,000.00
% DIFF MASTER/WELL	-16.46	-8.94	-9.54	#DIV/0!	#DIV/0!	0.86	
WELL #2 GALLONS	1,920,000.00	2,110,000.00	2,304,000.00	2,219,000.00	5,421,000.00	1,502,000.00	15,476,000.00
% DIFF MASTER/WELL	0.94	0.92	0.90	0.77	1.16	-2.36	

	July	August	September	October	November	December	Y-T-D Total
WATER REVENUE	\$17,153.22	\$18,202.89	\$18,334.06	\$16,730.99	\$16,254.18	\$15,695.82	\$188,545.90
SEWER REVENUE	11,039.54	11,415.99	11,582.37	11,690.08	11,666.19	11,953.05	128,636.60
TOTAL CHARGE	\$28,192.76	\$29,618.88	\$29,916.43	\$28,421.07	\$27,920.37	\$27,648.87	\$317,182.50
TOTAL CF IN 100 UNITS	8,604.00	10,112.00	9,827.00	6,077.00	4,138.00	2,581.00	68,973.00
METERED GALLONS	6,435,792.00	7,563,776.00	7,350,596.00	4,545,596.00	3,095,224.00	1,930,588.00	51,591,804.00
MASTER METER	7,040,200.00	7,422,000.00	7,348,100.00	4,227,000.00	3,260,000.00	1,242,000.00	49,259,100.00
% DIFF SERV/MASTER	1.09	0.98	1.00	0.92	1.05	0.45	
WELL #1 GALLONS	6,966,000.00	8,260,000.00	7,038,000.00	6,380,000.00	1,975,000.00	0.00	36,913,000.00
% DIFF MASTER/WELL	1.08	1.08	0.96	1.29	0.43	#DIV/0!	
WELL #2 GALLONS	0.00	0.00	0.00	6,000.00	1,299,000.00	2,095,000.00	18,876,000.00
% DIFF MASTER/WELL	#DIV/0!	#DIV/0!	#DIV/0!	-755.60	-0.38	1.08	

**CCSD VOLUME REPORT
CALENDAR YEAR 2013**

	January	February	March	April	May	June	Subtotal
WATER REVENUE	\$16,073.40	\$17,117.29	\$16,946.61	\$17,979.70	\$19,191.96	\$19,852.84	\$107,161.80
SEWER REVENUE	12,281.93	12,750.90	12,681.23	13,146.09	13,234.99	13,171.93	77,267.07
TOTAL CHARGE	\$28,355.33	\$29,868.19	\$29,627.84	\$31,125.79	\$32,426.95	\$33,024.77	\$184,428.87
TOTAL CF IN 100 UNITS	2,217.00	3,590.00	3,124.00	4,767.00	7,237.00	8,636.00	29,571.00
METERED GALLONS	1,658,316.00	2,685,320.00	2,336,752.00	3,565,716.00	5,413,276.00	6,459,728.00	22,119,108.00
MASTER METER	1,081,000.00	1,688,000.00 **	0.00 **	3,997,800.00	5,566,600.00	6,246,400.00	18,579,800.00
% DIFF SERV/MASTER	0.47	0.41	#DIV/0!	1.11	1.03	0.97	
WELL #1 GALLONS	0.00	276,000.00	0.00	0.00	0.00	3,662,000.00	3,938,000.00
% DIFF MASTER/WELL	#DIV/0!	-7.73	#DIV/0!	#DIV/0!	#DIV/0!	0.24	
WELL #2 GALLONS	1,645,000.00	2,285,000.00	2,398,000.00	3,688,000.00	5,651,000.00	2,974,000.00	18,641,000.00
% DIFF MASTER/WELL	0.99	0.82	1.03	1.03	1.04	-0.17	

****Meter out of order.**

	July	August	September	October	November	December	Y-T-D Total
WATER REVENUE	\$20,353.33	\$20,022.36	\$20,451.14	\$19,341.53	\$18,593.63	\$16,995.00	\$222,918.79
SEWER REVENUE	13,096.46	13,185.74	13,119.22	13,029.89	12,970.45	12,855.21	155,524.04
TOTAL CHARGE	\$33,449.79	\$33,208.10	\$33,570.36	\$32,371.42	\$31,564.08	\$29,850.21	\$378,442.83
TOTAL CF IN 100 UNITS	10,208.00	9,274.00	10,080.00	6,903.00	6,089.00	2,923.00	75,048.00
METERED GALLONS	7,635,584.00	6,936,952.00	7,539,840.00	5,163,444.00	4,554,572.00	2,186,404.00	56,135,904.00
MASTER METER	7,086,900.00	8,417,000.00	7,605,700.00	4,956,000.00	3,986,300.00	1,469,700.00	52,101,400.00
% DIFF SERV/MASTER	0.92	1.18	1.01	0.96	0.86	0.51	
WELL #1 GALLONS	8,424,000.00	7,443,000.00	8,239,000.00	5,344,000.00	4,971,000.00	1,294,000.00	39,653,000.00
% DIFF MASTER/WELL	1.09	1.07	1.08	1.03	1.08	0.31	
WELL #2 GALLONS	0.00	0.00	0.00	0.00	0.00	752,000.00	19,393,000.00
% DIFF MASTER/WELL	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	-0.91	

**CCSD VOLUME REPORT
CALENDAR YEAR 2014**

	January	February	March	April	May	June	Subtotal
WATER REVENUE	\$17,355.51	\$17,131.74	\$17,124.37	\$18,196.74	\$19,188.62	\$19,802.33	\$108,799.31
SEWER REVENUE	12,949.47	12,963.06	13,003.26	13,165.83	13,174.52	12,865.82	78,121.96
TOTAL CHARGE	\$30,304.98	\$30,094.80	\$30,127.63	\$31,362.57	\$32,363.14	\$32,668.15	\$186,921.27
TOTAL CF IN 100 UNITS	3,211.00	3,293.00	3,153.00	5,254.00	6,931.00	9,046.00	30,888.00
METERED GALLONS	2,401,828.00	2,463,164.00	2,358,444.00	3,929,992.00	5,184,388.00	6,766,408.00	23,104,224.00
MASTER METER	1,583,300.00 **	0.00 **	0.00 **	3,471,100.00	4,370,800.00	6,170,000.00	15,595,200.00
% DIFF SERV/MASTER	0.48	#DIV/0!	#DIV/0!	0.87	0.81	0.90	
WELL #1 GALLONS	0.00	0.00	0.00	0.00	4,566,000.00	6,918,000.00	11,484,000.00
% DIFF MASTER/WELL	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.86	1.02	
WELL #2 GALLONS	2,762,000.00	2,273,000.00	2,522,000.00	3,957,000.00	434,000.00	0.00	11,948,000.00
% DIFF MASTER/WELL	1.13	0.92	1.06	1.01	-9.95	#DIV/0!	

****Meter out of order.**

	July	August	September	October	November	December	Y-T-D Total
WATER REVENUE	\$19,632.92	\$20,319.11	\$19,395.35	\$19,420.68	\$18,519.81	\$17,549.18	\$223,636.36
SEWER REVENUE	12,864.72	12,788.72	12,712.68	12,574.16	12,522.89	12,738.23	154,323.36
TOTAL CHARGE	\$32,497.64	\$33,107.83	\$32,108.03	\$31,994.84	\$31,042.70	\$30,287.41	\$377,959.72
TOTAL CF IN 100 UNITS	8,217.00	9,437.00	7,315.00	7,409.00	5,621.00	3,196.00	72,083.00
METERED GALLONS	6,146,316.00	7,058,876.00	5,471,620.00	5,541,932.00	4,204,508.00	2,390,608.00	53,918,084.00
MASTER METER	6,951,500.00	6,650,700.00	5,802,000.00	5,108,900.00	3,254,600.00	1,506,400.00	44,869,300.00
% DIFF SERV/MASTER	1.12	0.94	1.06	0.92	0.71	0.41	
WELL #1 GALLONS	7,379,000.00	7,107,000.00	6,384,000.00	5,958,000.00	4,158,000.00	515,000.00	42,985,000.00
% DIFF MASTER/WELL	1.17	1.01	1.14	1.07	0.99	-2.64	
WELL #2 GALLONS	0.00	0.00	0.00	0.00	308,000.00	2,071,000.00	14,327,000.00
% DIFF MASTER/WELL	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	-11.65	0.85	

**CCSD VOLUME REPORT
CALENDAR YEAR 2015**

	January	February	March	April	May	June	Subtotal
WATER REVENUE	\$17,241.60	\$17,057.01	\$17,678.50	\$18,162.81	\$18,373.15	\$19,025.71	\$107,538.78
SEWER REVENUE	12,685.11	12,647.50	12,585.32	12,672.67	12,807.39	12,882.06	76,280.05
TOTAL CHARGE	\$29,926.71	\$29,704.51	\$30,263.82	\$30,835.48	\$31,180.54	\$31,907.77	\$183,818.83
TOTAL CF IN 100 UNITS	2,487.00	2,527.00	3,899.00	4,945.00	5,015.00	6,677.00	25,550.00
METERED GALLONS	1,860,276.00	1,890,196.00	2,916,452.00	3,698,860.00	3,751,220.00	4,994,396.00	19,111,400.00
MASTER METER	1,117,300.00	1,218,200.00	2,308,400.00	2,956,000.00	3,720,700.00	4,590,100.00	15,910,700.00
% DIFF SERV/MASTER	0.34	0.45	0.74	0.75	0.99	0.91	
WELL #1 GALLONS	0.00	0.00	0.00	0.00	0.00	0.00	0.00
% DIFF MASTER/WELL	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
WELL #2 GALLONS	1,848,000.00	1,986,000.00	2,955,000.00	3,418,000.00	4,078,000.00	4,964,000.00	19,249,000.00
% DIFF MASTER/WELL	0.99	1.05	1.01	0.92	1.08	0.99	

	July	August	September	October	November	December	Y-T-D Total
WATER REVENUE	\$18,490.05	\$18,723.08	\$19,041.74	\$18,598.26	\$17,622.49	\$17,059.38	\$217,073.78
SEWER REVENUE	12,536.36	12,423.13	12,612.53	12,647.15	12,700.27	12,545.91	151,745.40
TOTAL CHARGE	\$31,026.41	\$31,146.21	\$31,654.27	\$31,245.41	\$30,322.76	\$29,605.29	\$368,819.18
TOTAL CF IN 100 UNITS	5,925.00	5,884.00	7,035.00	6,160.00	3,721.00	2,626.00	56,901.00
METERED GALLONS	4,431,900.00	4,401,232.00	5,262,180.00	4,607,680.00	2,783,308.00	1,964,248.00	42,561,948.00
MASTER METER	5,071,200.00	4,798,300.00	6,327,000.00	3,770,700.00	1,960,200.00	1,226,900.00	39,065,000.00
% DIFF SERV/MASTER	1.13	1.08	1.17	0.78	0.58	0.40	
WELL #1 GALLONS	1,665,000.00	5,625,000.00	6,940,000.00	4,436,000.00	0.00	0.00	18,666,000.00
% DIFF MASTER/WELL	(0.66)	1.22	1.24	0.96	#DIV/0!	#DIV/0!	
WELL #2 GALLONS	3,272,000.00	0.00	0.00	0.00	1,743,000.00	1,990,000.00	26,254,000.00
% DIFF MASTER/WELL	0.65	#DIV/0!	#DIV/0!	#DIV/0!	0.40	1.01	

**CCSD VOLUME REPORT
CALENDAR YEAR 2016**

	January	February	March	April	May	June	Subtotal
WATER REVENUE	\$17,012.99	\$16,985.84	\$16,969.71	\$17,636.57	\$18,530.63	\$19,198.03	\$106,333.77
SEWER REVENUE	12,521.20	12,508.93	12,479.81	12,522.66	12,715.89	13,024.61	75,773.10
TOTAL CHARGE	\$29,534.19	\$29,494.77	\$29,449.52	\$30,159.23	\$31,246.52	\$32,222.64	\$182,106.87
TOTAL CF IN 100 UNITS	2,073.00	2,359.00	2,506.00	3,717.00	5,625.00	6,321.00	22,601.00
METERED GALLONS	1,550,604.00	1,764,532.00	1,874,488.00	2,780,316.00	4,207,500.00	4,728,108.00	16,905,548.00
MASTER METER	960,500.00	0.00 **	0.00 **	1,885,000.00	3,095,800.00	4,720,500.00	10,661,800.00
% DIFF SERV/MASTER	0.39	#DIV/0!	#DIV/0!	0.53	0.64	1.00	
WELL #1 GALLONS	0.00	0.00	0.00	0.00	3,517,000.00	5,439,000.00	8,956,000.00
% DIFF MASTER/WELL	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.80	1.13	
WELL #2 GALLONS	1,383,000.00	1,681,000.00	1,885,000.00	3,086,000.00	320,000.00	0.00	8,355,000.00
% DIFF MASTER/WELL	0.88	0.95	1.01	1.10	-11.15	#DIV/0!	

****Meter out of order.**

	July	August	September	October	November	December	Y-T-D Total
WATER REVENUE	\$20,332.49	\$20,689.75	\$19,573.78	\$19,141.22	\$17,885.47	\$17,434.22	\$221,390.70
SEWER REVENUE	13,124.25	13,073.14	12,947.78	12,945.29	12,922.63	12,848.34	153,634.53
TOTAL CHARGE	\$33,456.74	\$33,762.89	\$32,521.56	\$32,086.51	\$30,808.10	\$30,282.56	\$375,025.23
TOTAL CF IN 100 UNITS	8,462.00	10,363.00	7,364.00	6,655.00	3,604.00	2,613.00	61,662.00
METERED GALLONS	6,329,576.00	7,751,524.00	5,508,272.00	4,977,940.00	2,695,792.00	1,954,524.00	46,123,176.00
MASTER METER	6,958,100.00	8,314,700.00	5,854,100.00	5,335,700.00	2,445,200.00	541,400.00 **	40,111,000.00
% DIFF SERV/MASTER	1.09	1.07	1.06	1.07	0.90	-1.61	
WELL #1 GALLONS	7,371,000.00	8,611,000.00	6,189,000.00	5,892,000.00	3,313,000.00	1,701,000.00	42,033,000.00
% DIFF MASTER/WELL	1.14	1.10	1.11	1.16	1.19	0.85	
WELL #2 GALLONS	0.00	0.00	0.00	0.00	0.00	0.00	8,355,000.00
% DIFF MASTER/WELL	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	

****Meter out of order.**

APPENDIX D

PUMP DESIGN INFORMATION

**CUYAMA COMMUNITY SERVICES DISTRICT
WELL NO. 3 EQUIPPING PROJECT
SUBMERSIBLE WELL PUMP CALCULATIONS (WELL NO. 3)**

Input Values

Elevation Information

Proposed Well Site EL

Groundwater Depth
(Based RNJ 3/19/2017)

WTP Site EL

Tank LWL + Foundation
(Estimated based on Detail D on IM02 of Carollo Drawings)

Static Head

Water Pumping Rate

2017 Pump Test

Column Pipe

Pipe Diam= 6 in

Pipe Area= 0.196 ft²
Approx. Length= 600 ft
C_{HW}= 130 (PVC)

Proposed 8" W

(from well to WTP)

Pipe Diam= 8 in

Pipe Area= 0.349 ft²
Approx. Length= 8,120 ft
C_{HW}= 130 (PVC)

Total Dynamic Head Calculations

Flow Rate (gpm)	Total Flow rate (cfs)	Static Head (ft)	Column Pipe				Proposed 8" Waterline				TDH _{req} (ft)
			Velocity (ft/s)	v ² /2g (ft)	Minor Losses ^a (ft)	Friction Losses (ft)	Velocity (ft/s)	v ² /2g (ft)	Minor Losses ^a (ft)	Friction Losses (ft)	
325	0.72	361.00	3.69	0.211	0.833	5.554	2.07	0.067	2.777	18.515	388.96

^a Assume minor losses are 15% of Friction Losses

Estimated Hydraulic Horsepower

Q = 0.72 cfs

Total TDH = 389.00 ft

whp = 32.0 hp

blhp = 42.3 hp

thp = 49.8 hp

Pump Efficiency =

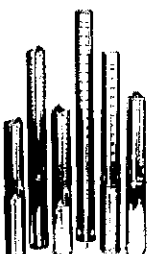
Motor Efficiency =

75.5%

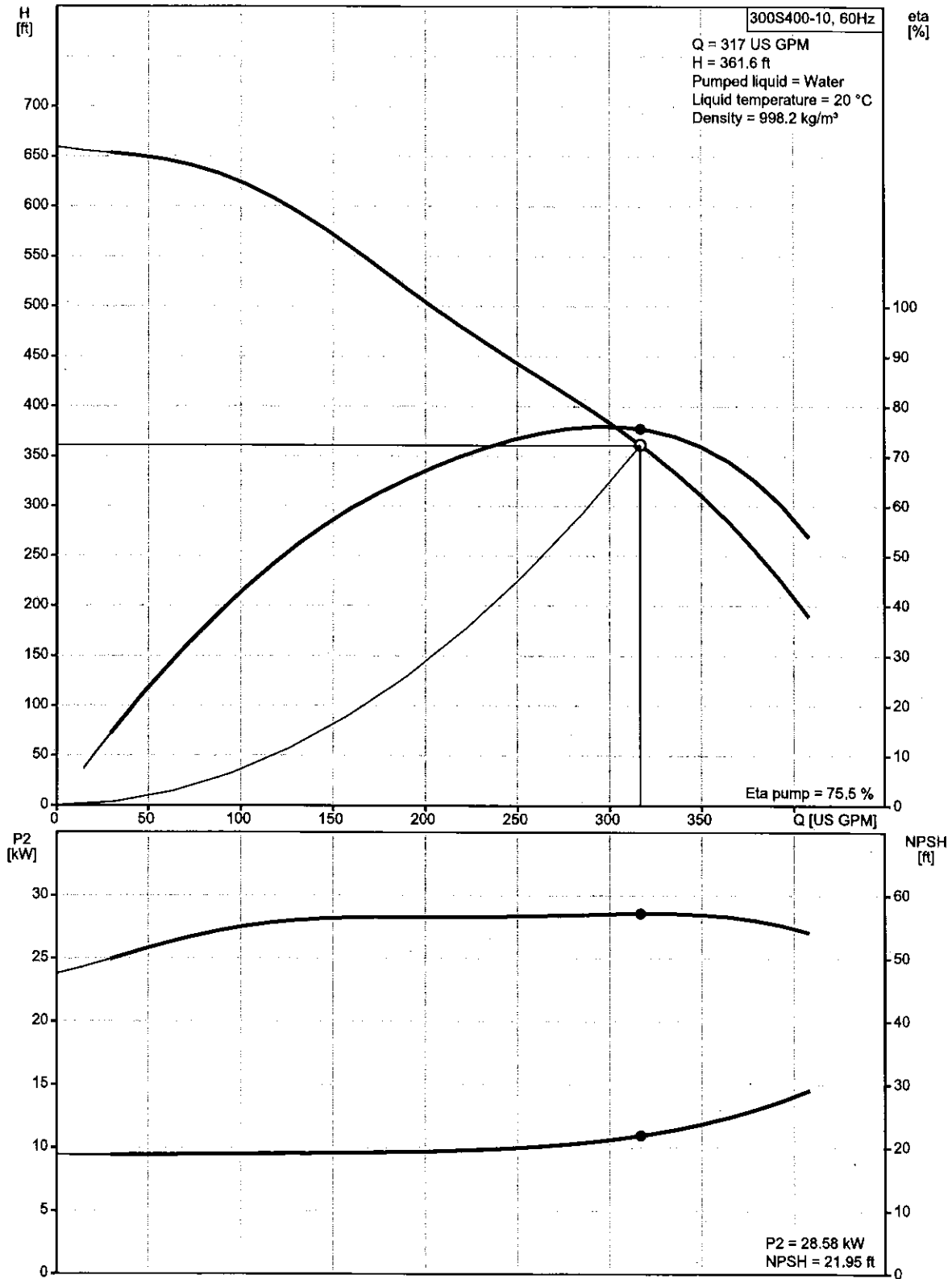
85.0%

64.2% Total system efficiency

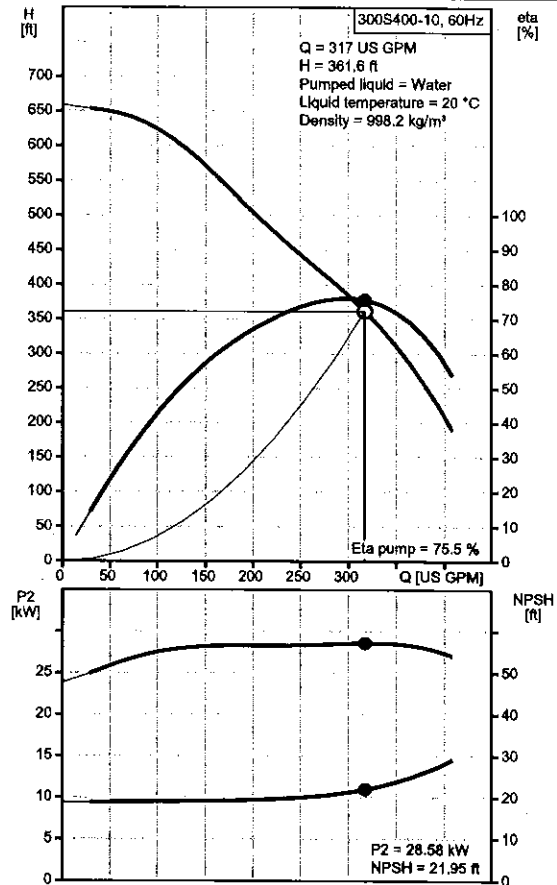
Recommend (1) 50.0 hp pump

Position	Qty.	Description
	1	300S400-10  Note! Product picture may differ from actual product Product No.: 14B60010 Multi-stage submersible pump for raw water supply, groundwater lowering and pressure boosting. The pump is suitable for pumping clean, thin, non-aggressive liquids without solid particles or fibres. The pump is made entirely of Stainless steel DIN W.-Nr. EN 1.4301. Liquid: Pumped liquid: Water Maximum liquid temperature: 40 °C Liquid temp: 20 °C Density: 998.2 kg/m³ Technical: Speed for pump data: 3450 rpm Actual calculated flow: 317 US GPM Resulting head of the pump: 361.6 ft Curve tolerance: ISO9906:2012 3B Materials: Pump: Stainless steel EN 1.4301 AISI 304 Impeller: Stainless steel EN 1.4301 AISI 304 Installation: Pump outlet: 4"NPT Motor diameter: 6 inch Electrical data: Rated power - P2: 30 kW Power (P2) required by pump: 30 kW Start. method: direct-on-line Others: ErP status: EuP Standalone/Prod. Net weight: 29.2 kg Gross weight: 55 kg Shipping volume: 0.2 m³

14B60010 300S400-10 60 Hz

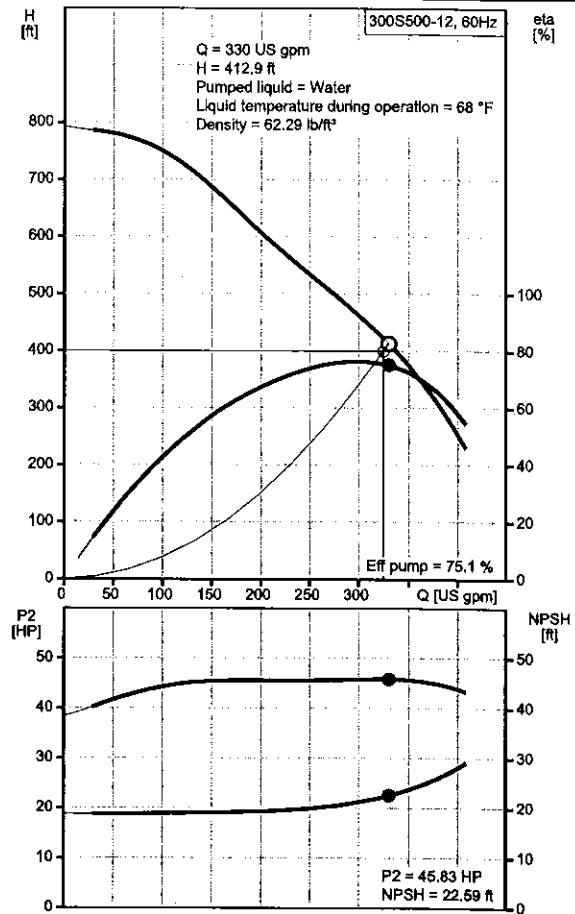


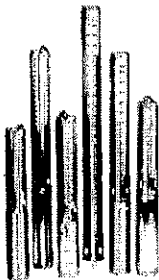
Description	Value
General information:	
Product name:	300S400-10
Product No:	14B60010
EAN number:	5700391740848
Price:	On request
Technical:	
Speed for pump data:	3450 rpm
Actual calculated flow:	317 US GPM
Resulting head of the pump:	361.6 ft
Impeller reduc.:	NONE
Curve tolerance:	ISO9906:2012 3B
Stages:	10
Model:	B
Valve:	YES
Materials:	
Pump:	Stainless steel EN 1.4301 AISI 304
Impeller:	Stainless steel EN 1.4301 AISI 304
Installation:	
Pump outlet:	4"NPT
Motor diameter:	6 inch
Liquid:	
Pumped liquid:	Water
Maximum liquid temperature:	40 °C
Liquid temp:	20 °C
Density:	998.2 kg/m³
Electrical data:	
Applic. motor:	GRUNDFOS
Rated power - P2:	30 kW
Power (P2) required by pump:	30 kW
Start. method:	direct-on-line
Others:	
ErP status:	EuP Standalone/Prod.
Net weight:	29.2 kg
Gross weight:	55 kg
Shipping volume:	0.2 m³
Sales region:	Namreg



Position	Count	Description
	1	300S500-12  Product photo could vary from the actual product Product No.: 14B60012 Multi-stage submersible pump for raw water supply, groundwater lowering and pressure boosting. The pump is suitable for pumping clean, thin, non-aggressive liquids without solid particles or fibers. The pump is made entirely of Stainless steel DIN W.-Nr. EN 1.4301 and suitable for horizontal and vertical installation. The pump is fitted with a built-in non-return valve. Liquid: Pumped liquid: Water Maximum liquid temperature: 104 °F Q_OpFluidTemp: 68 °F Density: 62.29 lb/ft³ Kinematic viscosity: 1 cSt Technical: Speed for pump data: 3450 rpm Actual calculated flow: 330 US gpm Resulting head of the pump: 412.9 ft Curve tolerance: ISO9906:2012 3B Materials: Pump: Stainless steel EN 1.4301 AISI 304 Impeller: Stainless steel EN 1.4301 AISI 304 Installation: Pump outlet: 4"NPT Motor diameter: 6 inch Electrical data: Rated power - P2: 50 HP Power (P2) required by pump: 50 HP Start. method: direct-on-line Others: ErP status: EuP Standalone/Prod. Net weight: 75 lb Gross weight: 86.9 lb Shipping volume: 2.4 ft³

Description	Value
General information:	
Product name:	300S500-12
Product No.:	14B60012
EAN:	5700391740923
Price:	On request
Technical:	
Speed for pump data:	3450 rpm
Actual calculated flow:	330 US gpm
Resulting head of the pump:	412.9 ft
Impeller reduc.:	NONE
Curve tolerance:	ISO9906:2012 3B
Stages:	12
Model:	B
Valve:	YES
Materials:	
Pump:	Stainless steel EN 1.4301
Impeller:	Stainless steel EN 1.4301 AISI 304
Installation:	
Pump outlet:	4"NPT
Motor diameter:	6 inch
Liquid:	
Pumped liquid:	Water
Maximum liquid temperature:	104 °F
Q_OpFluidTemp:	68 °F
Density:	62.29 lb/ft³
Kinematic viscosity:	1 cSt
Electrical data:	
Applic. motor:	GRUNDFOS
Rated power - P2:	50 HP
Power (P2) required by pump:	50 HP
Start. method:	direct-on-line
Others:	
ErP status:	EuP Standalone/Prod.
Net weight:	75 lb
Gross weight:	86.9 lb
Shipping volume:	2.4 ft³
Sales region:	Namreg



Position	Count	Description
	1	385S400-6-B  Product photo could vary from the actual product Product No.: 16B736C6 Multi-stage submersible pump for raw water supply, groundwater lowering and pressure boosting. The pump is suitable for pumping clean, thin, non-aggressive liquids without solid particles or fibers. The pump is made entirely of Stainless steel DIN W.-Nr. EN 1.4301 and suitable for horizontal and vertical installation. The pump is fitted with a built-in non-return valve. The motor is a 3-phase motor of the canned type with a sand shield, liquid-lubricated bearings and pressure-equalizing diaphragm. Liquid: Pumped liquid: Water Maximum liquid temperature: 32 °F Max liquid temperature at 0.15 m/sec: 104 °F Q_OpFluidTemp: 68 °F Density: 62.29 lb/ft³ Kinematic viscosity: 1 cSt Technical: Speed for pump data: 3450 rpm Actual calculated flow: 309 US gpm Resulting head of the pump: 388 ft Shaft seal for motor: SIC/SICNBR Curve tolerance: ISO9906:2012 3B Motor version: T40 Materials: Pump: Stainless steel EN 1.4301 AISI 304 Impeller: Stainless steel EN 1.4301 AISI 304 Motor: Stainless steel DIN W.-Nr. 1.4301 AISI 304 Installation: Maximum ambient pressure: 870 psi Pump outlet: 4"NPT Motor diameter: 6 inch

Company name:

Created by:

Phone:

Date:

3/21/2017

Position	Count	Description
		Electrical data: Motor type: MS6000 Rated power - P2: 40.23 HP 40 HP Main frequency: 60 Hz Rated voltage: 3 x 440-460-480 V Service factor: 1.15 Rated current: 65.0-62.0-61.0 A Starting current: 470-520-560 % Cos phi - power factor: 0.88-0.86-0.84 Rated speed: 3440-3460-3480 rpm Start. method: direct-on-line Enclosure class (IEC 34-5): IP68 Insulation class (IEC 85): F Built-in temperature transmitter: yes Others: ErP status: EuP Standalone/Prod. Net weight: 283 lb Gross weight: 361 lb Shipping volume: 10.4 ft³

Description	Value
-------------	-------

General information:

Product name:	385S400-6-B
Product No.:	16B736C6
EAN:	5711496474828

Technical:

Speed for pump data:	3450 rpm
Actual calculated flow:	309 US gpm
Resulting head of the pump:	388 ft
Impeller reduc.:	B
Shaft seal for motor:	SIC/SICNBR
Curve tolerance:	ISO9906:2012 3B
Stages:	6
Model:	C
Valve:	YES
Motor version:	T40

Materials:

Pump:	Stainless steel EN 1.4301 AISI 304
Impeller:	Stainless steel EN 1.4301 AISI 304
Motor:	Stainless steel DIN W.-Nr. 1.4301 AISI 304

Installation:

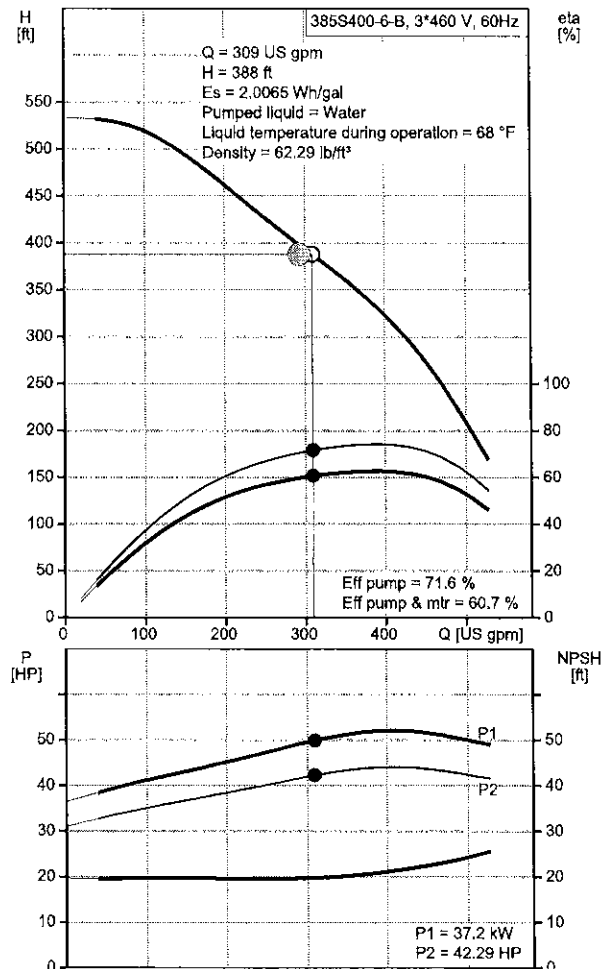
Maximum ambient pressure:	870 psi
Pump outlet:	4"NPT
Motor diameter:	6 inch

Liquid:

Pumped liquid:	Water
Maximum liquid temperature:	32 °F
Max liquid temperature at 0.15 m/sec:	104 °F
Q_OpFluidTemp:	68 °F
Density:	62.29 lb/ft³
Kinematic viscosity:	1 cSt

Electrical data:

Motor type:	MS6000
Applic. motor:	GRUNDFOS
Rated power - P2:	40.23 HP
	40 HP
KVA code:	H
Main frequency:	60 Hz
Rated voltage:	3 x 440-460-480 V
Service factor:	1.15
Rated current:	65.0-62.0-61.0 A
Starting current:	470-520-560 %
Cos phi - power factor:	0.88-0.86-0.84
Rated speed:	3440-3460-3480 rpm
Axial load max:	59.5 lb
Start. method:	direct-on-line
Enclosure class (IEC 34-5):	IP68
Insulation class (IEC 85):	F
Motor protection:	NONE



Company name:

Created by:

Phone:

Date:

3/21/2017

Description	Value
Thermal protec:	external
Built-in temperature transmitter:	yes
Motor Number:	96166170
Cable number:	96163476

Others:

ErP status:	EuP Standalone/Prod.
Net weight:	283 lb
Gross weight:	361 lb
Shipping volume:	10.4 ft ³
Sales region:	Namreg

Model: VIT**Size: 7CLC****60Hz****RPM: 3550****Stages: 4**

Job/Inq.No. :

Purchaser : UNDEFINED

End User :

Issued by :

Rev. : 0

Item/Equip.No. : ITEM 001

Quotation No. :

Date : 03/21/2017

Service :

Order No. :

Operating Conditions

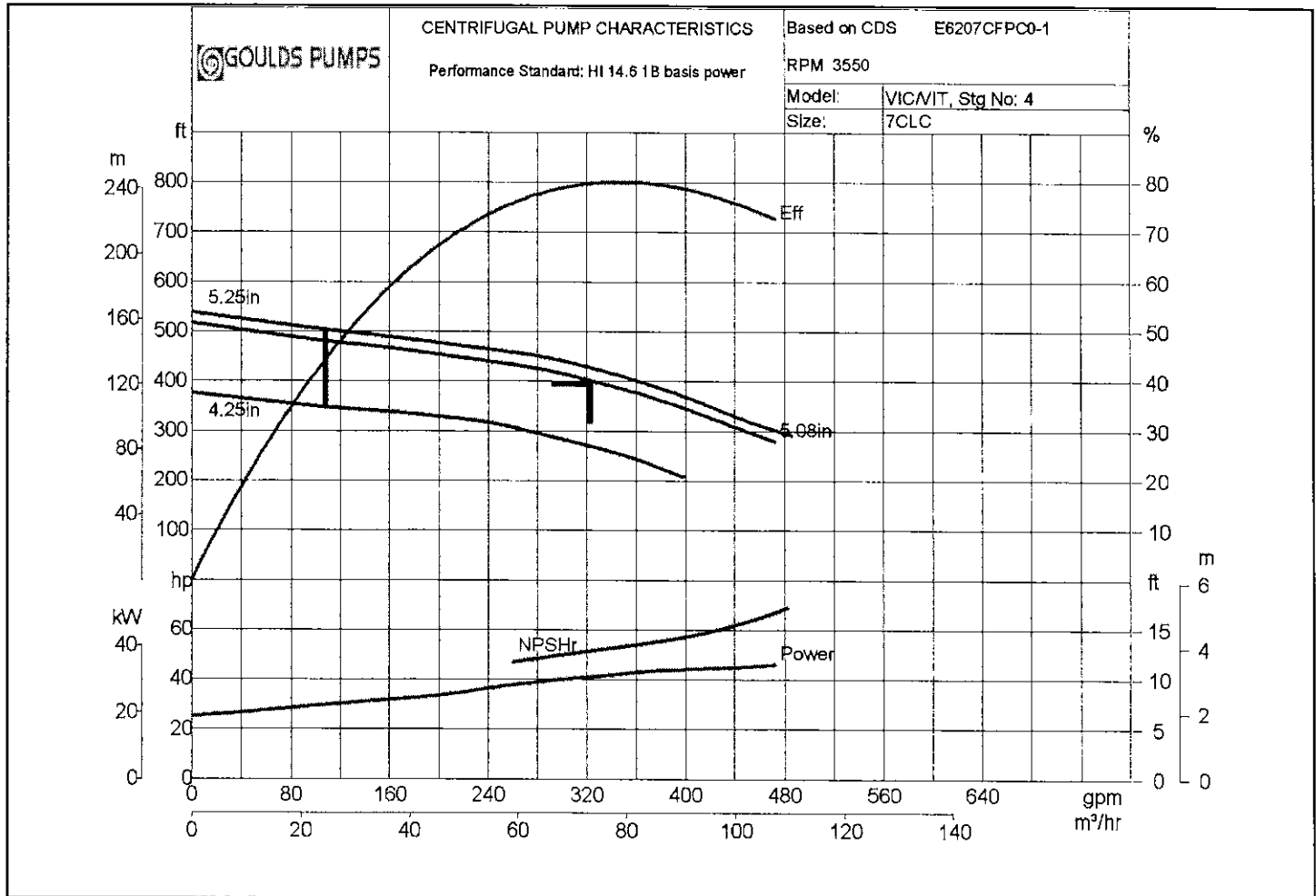
Liquid: Water
Temp.: 70.0 deg F
S.G./Visc.: 1.000/1.000 cp
Flow: 325.0 gpm
TDH: 400.0 ft
NPSHa:
Solid size:

Pump Performance

Published Efficiency: 79.7 %
Rated Pump Efficiency: 79.7 %
Rated Total Power: 41.2 hp
Non-Overloading Power: 45.8 hp
Imp. Dia. First 1 Stg(s): 5.08 in
NPSHr: 12.9 ft
Max. Solids Size: 0.0000 in
Specific Speed 1st stg: 2,145 gpm(US) ft
Specific Speed Adl stg: 2,145 gpm(US) ft
Min. Hydraulic Flow: 108.7 gpm
Imp. Dia. Adl Stg(s): 5.08 in
Shut off Head: 517.6 ft
% Susp. Solids (by wtg):

Vapor Press:

Notes: 1. The Mechanical seal increased drag effect on power and efficiency is not included, unless the correction is shown in the appropriate field above. 2. Magnetic drive eddy current on power and efficiency is not included. 3. Elevated temperature effects on performance are not included. 4. Non Overloading power does not reflect v-belt/gear losses.



Viscosity corrections have been performed in accordance with HI 9.6.7-2015