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MAR 17 2004
DEPARTMENT OF WATER RESOURCES

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 63-31640
Exam Date: 2/20/2004

1. Current Owner: CTI - SSI FOOD SERVICES LLC
22303 HWY 95
WILDER ID 83676
(208)482-7844

2. Accompanied by: Randy Shuman
Phone No: (208) 482-7844
Address: 22303 Highway 95, Wilder, ID 836006
Relationship to Permit Holder: Vice President Engineering CTI-SSI Services LLC

3. **SOURCE** **TRIBUTARY**
GROUND WATER

B. OVERLAP REVIEW

1. Other water rights with the same place of use: 63-10727, 63-11254, 63-11243, 63-3587, and Wilder Irrigation Company

2. Other water rights with the same point of diversion: 63-10727 and 63-11254

C. DIVERSION AND DELIVERY SYSTEM

1. **LOCATION OF POINT(S) OF DIVERSION:**

GROUND WATER	NE1/4SE1/4	Sec. 10,	Twp 04N,	Rge 05W, B.M.
CANYON County				
GROUND WATER	NE1/4SE1/4	Sec. 10,	Twp 04N,	Rge 05W, B.M.
CANYON County				
GROUND WATER	NE1/4SE1/4	Sec. 10,	Twp 04N,	Rge 05W, B.M.
CANYON County				

Method of Determination:

2.
PLACE OF USE: INDUSTRIAL

Twp Rge Sec	NE				NW				SW				SE				Totals
	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
04N 05W 8									X	X	X	X					
04N 05W 10													X				
04N 05W 17	X	X	X		X	X	X	X									

Method of Determination:

3. YES_ Delivery System Diagram Attached (required). Indicate all major components and distances between components. Indicate weir size/pipe as applicable.

   YES__ Map Attached Showing Location(s) of point(s) of diversion and place(s) of use (required). Scale must be 1:24,000 or greater.

   YES__ Aerial Photo Attached (required for irrigation of 10+ acres).

   YES__ Photo of Diversion and System Attached

4.

Well or Diversion Identification No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
EAST WELL #1	FRANKLIN ELECTRIC	2 HP	282-3018-103	FRANKLIN ELECTRIC	2 IN DISCHARGE
WEST WELL #2	FLOWAY PUMPS	50 Hp	8JKL	FLOWAY	3 BOW 620001-B-R8
WEST WELL #3	UNKNOWN	25 Hp	230S250-8	UNKOWN	230S250-8

**Code to correspond with No. on map and aerial photo*

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
APMACAE	MAG METER	OWNERS INLINE FLOW METER	AE210MG	N/A	100	N/A

2. Measurements:

A theoretical calculation was performed and compared to the pump curves supplied by the applicant. The inline flow meter could not be used because it measured water coming from the water storage tanks instead of the wells. There was not a spot to attain an accurate measurement of the wells diversion rate using department equipment. Therefore, we relied on the theoretical and pump curves.

E. FLOW CALCULATIONS YES Additional Computation Sheets Attached

Measured Method:

West well #2 → Pump curve = 400 gpm, theoretical = 453 gpm → allowable 400 gpm
west well #3 → Pump curve = 280 gpm, theoretical = 254 gpm → allowable 254 gpm
east well #1 → covered under water right 63-11254 → allowable 0
CAPACITY OF INDUSTRIAL SYSTEM → 654 GPM → 1.45 CFS

Amount of industrial use covered under 63-10727 → 0.59 cfs
Amount of capacity left for this permit → 0.86 cfs
Amount allowed under permit → 0.75 cfs

PLEASE NOTE: The limiting factor for this permit is the amount requested under the permit of 0.75 cfs. The maximum allowable flow rate is 0.75 cfs. When combined with 63-10727 and 63-11254 the total diversion capacity of the system should be limited to 1.34 cfs.

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$V_{I.R.}$ = (Acres Irrigated) x (Irrigation Requirement) =

$V_{D.R.}$ = [Diversion Rate (cfs)] x (Days in Irrigation season) x 1.9835 =

V = Smaller of $V_{I.R.}$ and $V_{D.R.}$ =

2. Volume Calculations for Other Uses:

TOTAL PLANT VOLUME USE → 439 AFA PER ATTACHED SHEET

VOLUME COVERED UNDER WATER RIGHT 63-10727 → 92.4 AFA

ALLOWABLE VOLUME FOR THIS PERMIT IS 346.6 AFA

G. NARRATIVE/REMARKS/COMMENTS

The water diverted for this permit comes from three possible wells. These wells are described on the maps as west well #2, west well #3, and east well #1. The two west wells are located side by side and have been referred to as a single well. There are actually two casing rising from the ground surface.

East well #1 is a small 2 hp well used mainly to irrigate the landscaping on the east or front of the plant. This well is connected to the system for fire suppression purposes, but is rarely used in the plant due to water quality problems in the well. However, it can be used as a backup well when needed.

The two west wells are the main production wells for the plant. West well #2 is the main well and has a 50 hp pump, and is the deepest well. The west well #3 is a 25 Hp well that is shallower than the west # 2 well. West well # 3 is considered a backup well, but it is used quite often to fill the water storage tanks, so both pumps do operate at the same time during high use periods.

The water from the two west wells are diverted due east to the water distribution building. At this point the east #1 well is connected into the system. However, the east # 1 well has to be manually turned into the system. The two west wells are on a pressure switch and used when demand requires them to be turned on.

The water from the water distribution building is diverted due south to two 250,000 gallon water storage tanks(no storage component is needed because a diversion rate of 600 gpm can fill these tanks in less than 24 hours). However, the water from the wells can be diverted directly into the plant if something should happen to the storage tanks. The water from the wells fills the east storage tank. The water from the east storage tank can be diverted directly into the plant or diverted to the west storage tank. The water from the east storage tank is diverted directly to the plant during the cleanup time for the plant by a 30 Hp pump. The cleanup water cannot have any chemicals in it that may react with the cleaning solvents. The plant is required to clean the plant for approximately 4 hours every day. The water diverted to the west tank is pumped from the east tank by a 30 Hp pump and chlorinated. The chlorinated water is sent to the plant during processing through another 30 Hp pump. The water from both tanks can be delivered directly to fire pump that pumps directly into fire prevention system. The fire pump is a 1500 gpm diesel powered pump. The water that is sent back to the plant from either storage tank is routed through a separate pipeline to water distribution room.

The water returning from the storage tanks is connected into the main distribution line in the water distribution building. The water at this point is run through two 30 Hp pumps to boost the water pressure from 52 psi to 125 psi for the plant's water system. After the water leaves the boosters, it goes through 4 sock filters to remove any sediments in the water. The water then goes through the Aomacae flow meter, model number AE210MG, size 100. All of the industrial water flows through this meter. The only water that isn't metered is the water used for fire prevention and irrigation. This meter provides all the needed information for this industrial water right.

The wastewater also referred to as gray water from the plant is collected in a pipeline that runs along the back or west side of the building. Sewage is not collected in this pipeline, but is sent to a septic system. The gray water is collected in a small building and pumped over to the DAF building. The DAF building is a solids removal system that separates the fats introduced from the processing out of the water. The water from the DAF building is sent to 3-100 Hp relift pumps located on the northwest corner of the plant property that deliver the gray water to the pivots. There are also three evaporation ponds at this location that are used when the DAF system is being cleaned or is not operational. The ponds are filled with the unprocessed gray water and the water is evaporated leaving behind the solids.

The water diverted through the three relift pumps travels north across Fern Lane then turns west and parallels the road to the corner approximately 1/8 of mile west of the plant. The pipeline then turns south and travels south approximately ¼ miles parallel of Batt Corner Road to Red Top Road. The water travels parallel of Red Top Road to the west for two miles to the pivots.

At the pivots the wastewater is re-lifted by 3-100 Hp pumps to the three pivots for land application. Fresh water is incorporated into the pivots from the applicant's fresh water wells in the SW ¼ of Section 8 under water rights 63-11243 and 63-3587, and canal water is introduced into the system in the SWNE S17 from Wilder Irrigation Company. Approximately 417.4 acres are being used for land application purposes under the pivots and handlines in the corners. 439 afa of wastewater is being applied to these lands throughout the year and 324 af of wastewater is applied during the irrigation season. The wastewater supplies approximately 17.2 % of the 1878.3 afa of water allowed for irrigation of this property.

Water rights 63-10727 and 63-11254 overlap this permit. Water right 63-10727 is an industrial water right for 0.59 cfs and 92.4 afa. This right was the original industrial water right for the plant. Water right 63-11254 is an irrigation water right for the small landscaping on the east side of the plant (front) and the remaining lands in the plants complex. When 63-10727 and 63-111254 are combined they are limited to a total diversion rate of 0.59 cfs, but there is no combined diversion volume. This application was to increase the capacity of the industrial usage, and shouldn't affect the irrigation rights. Any rate of diversion over 0.59 cfs should be allowed and any volume used in the plant over 92.4 afa (from 63-10727) should also be allowed. Much of the lands associated with the irrigation right, 63-11254, are also served by Wilder Irrigation District water, therefore, it is basically a supplemental water right.

I found that the capacity of this system is 654 gpm or 1.45 cfs. A diversion rate of 0.59 cfs of this rate was licensed under water rights 63-10727 and 63-11254 allowing 0.86 cfs available for this permit. The original permit was split and the applicant's portion was 0.75 cfs, which is below he 0.86 cfs rate.

The applicant is required by other entities to maintain accurate records of the amount of water used in their processing and land application process. The applicant supplied a worksheet showing the daily delivery records from 11/01/2003 to 2/8/2004. This representation shows the last ¼ of water use. SSI-CTI purchased the plant on 7/10/2003, and these are the records that were readily available. The records supplied by the plant show an average volume of 439 afa of water being diverted into the plant. This does not include water for fire protection. Water right 63-10727 allows a total volume use of 92.4 afa leaving 346.6 afa allowable for this permit.

Proof for this water right was filed in 1998, and Shelley Keen asked that I investigate the possibility of expansion after that time period. A report completed by Ed Squires on March 27, 1999 shows a diagram of the facility, which is virtually identical to the current plant design. Very little has changed in this facility since 1998. There have been problems with water quality and the integrity of the wells from 1998 to the present. This has required the plant to follow strict management and monitoring practices to ensure the water quality remains consistent and that the wells will continue to be able to supply the water needs for the plant. A transfer has been filed on this water right and water right 63-10727 for additional points of diversion to avoid creating excess stress on the main production wells. Therefore, I am convinced that the current water use is very similar if not slightly less than water used at the time proof of beneficial use was filed. I recommend that this permit be licensed for 0.75 cfs and 346.6 afa of water.

Have conditions of permit approval been met? __X__Yes _____No

H. RECOMMENDATIONS

1. Recommended Amounts

BENEFICIAL USE	PERIOD OF USE		DIVERSION RATE	ANNUAL VOLUME
INDUSTRIAL	01/01 to 12/31		0.750 CFS	346.6 AFA
		Totals:	0.750 CFS	346.6 AFA

2. Recommended Amendments

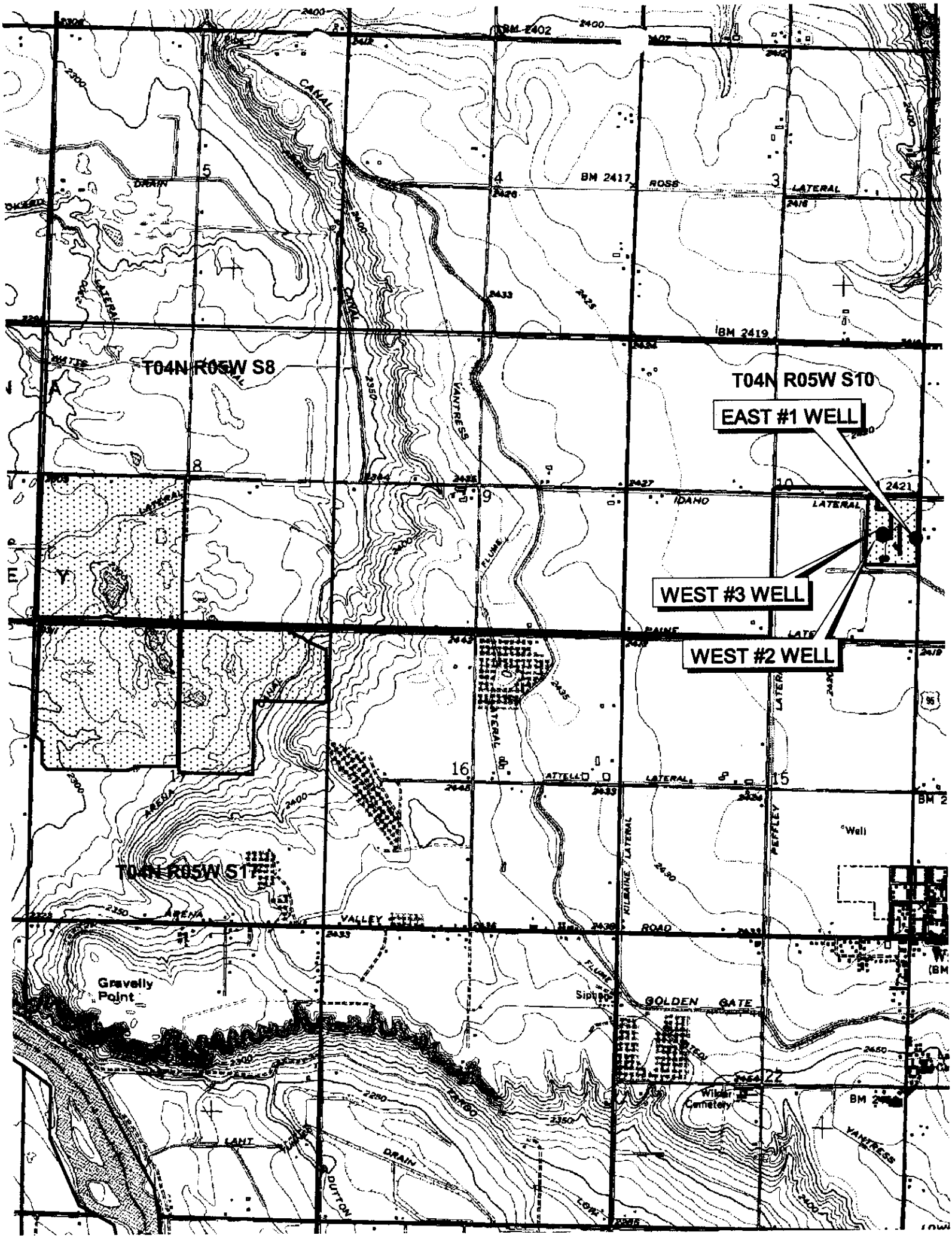
___Change P.D. as reflected above ___Add P.D. as reflected above ___None

___Change P.U. as reflected above ___Add P.U. as reflected above ___Other

I. AUTHENTICATION DANIEL A. NELSON – SENIOR AGENT

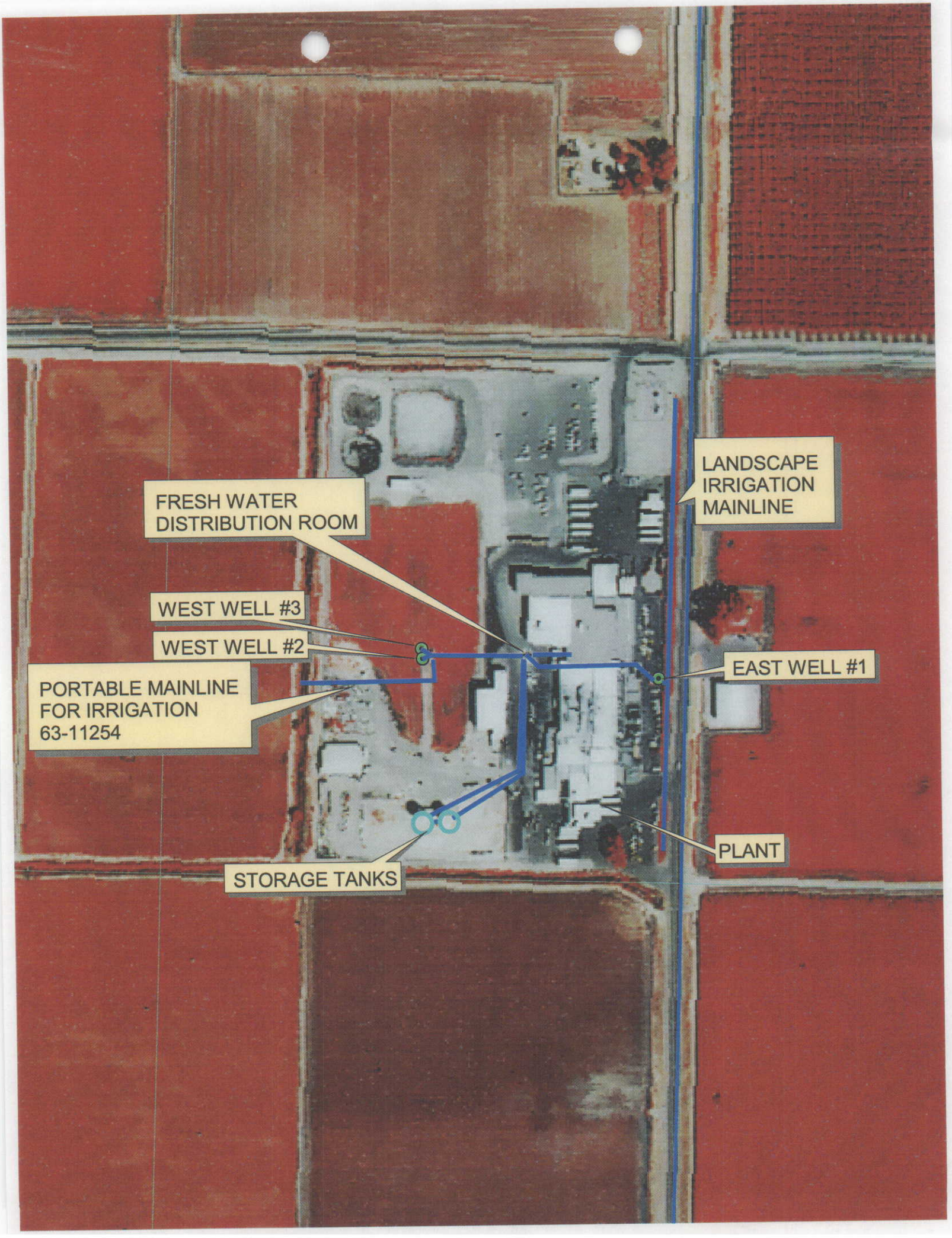
Field Examiner's Name Daniel A. Nelson Date 3-29-04

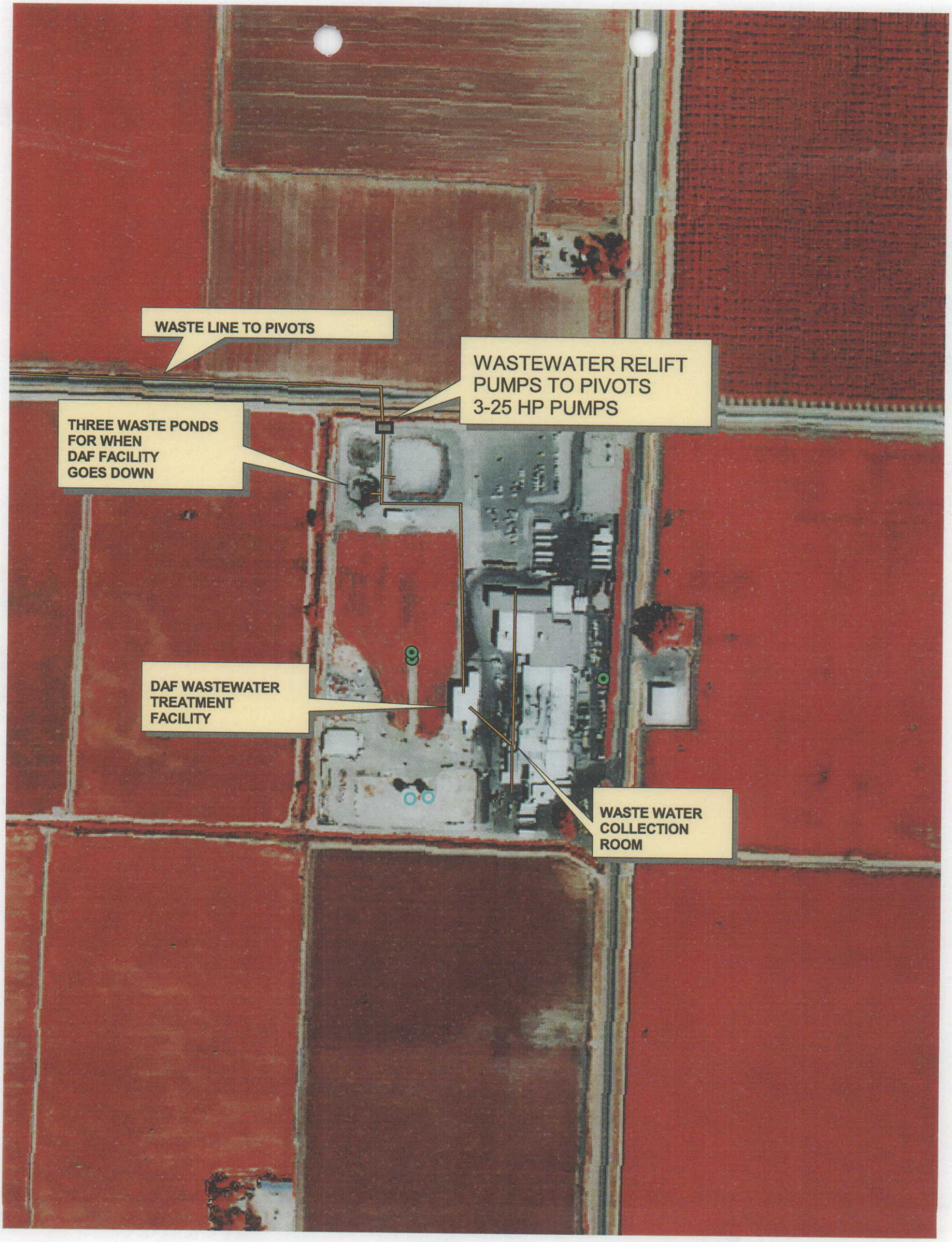
Reviewer _____ Date _____ SEAL


T04N R05W S8
T04N R05W S10
EAST #1 WELL
WEST #3 WELL
WEST #2 WELL
T04N R05W S17
BM 2402
BM 2417
BM 2419
ROSE
LATERAL
CANAL
DRAIN
IDAHO
PAINE
ATTELL
VALLEY
ROAD
GOLDEN GATE
Gravelly Point
Siphon
Well
Wilder Cemetery
DUTTON
LANE
ARENA
VANTRESS
PEFFLEY
KILBARRIE
FLUME


T04N R05W S8
T04N R05W S10
EAST #1 WELL
WEST #3 WELL
WEST #2 WELL
T04N R05W S17
BM 2402
BM 2417
ROSS
BM 2419
IDAHO
PAINE
ATTELL
VALLEY
ROAD
GOLDEN GATE
Gravelly Point
Siphon
Wilder Cemetery
BM 2468
Well
CANAL
LATERAL
DRAIN
FLUME
ARENA
VANTRESS
PEFFLEY
KILBAINE
FARGO
DUTTON
LAHT
TUNNEL
(ELEVATED)


T04N R05W S8
T04N R05W S10
T04N R05W S17


FRESH WATER
DISTRIBUTION ROOM
LANDSCAPE
IRRIGATION
MAINLINE
WEST WELL #3
WEST WELL #2
EAST WELL #1
PORTABLE MAINLINE
FOR IRRIGATION
63-11254
PLANT
STORAGE TANKS


WASTE LINE TO PIVOTS
WASTEWATER RELIFT PUMPS TO PIVOTS 3-25 HP PUMPS
THREE WASTE PONDS FOR WHEN DAF FACILITY GOES DOWN
DAF WASTEWATER TREATMENT FACILITY
WASTE WATER COLLECTION ROOM

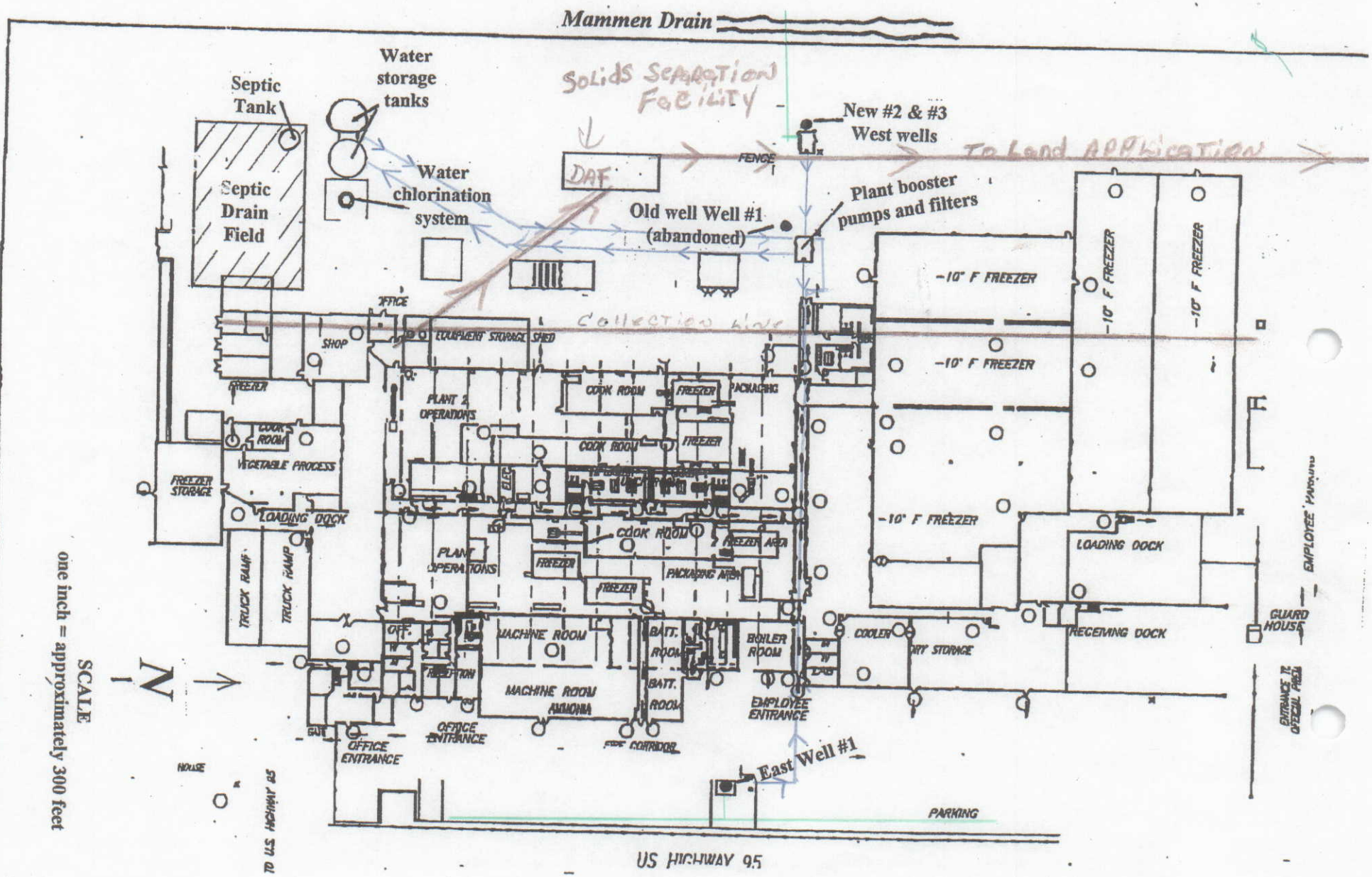
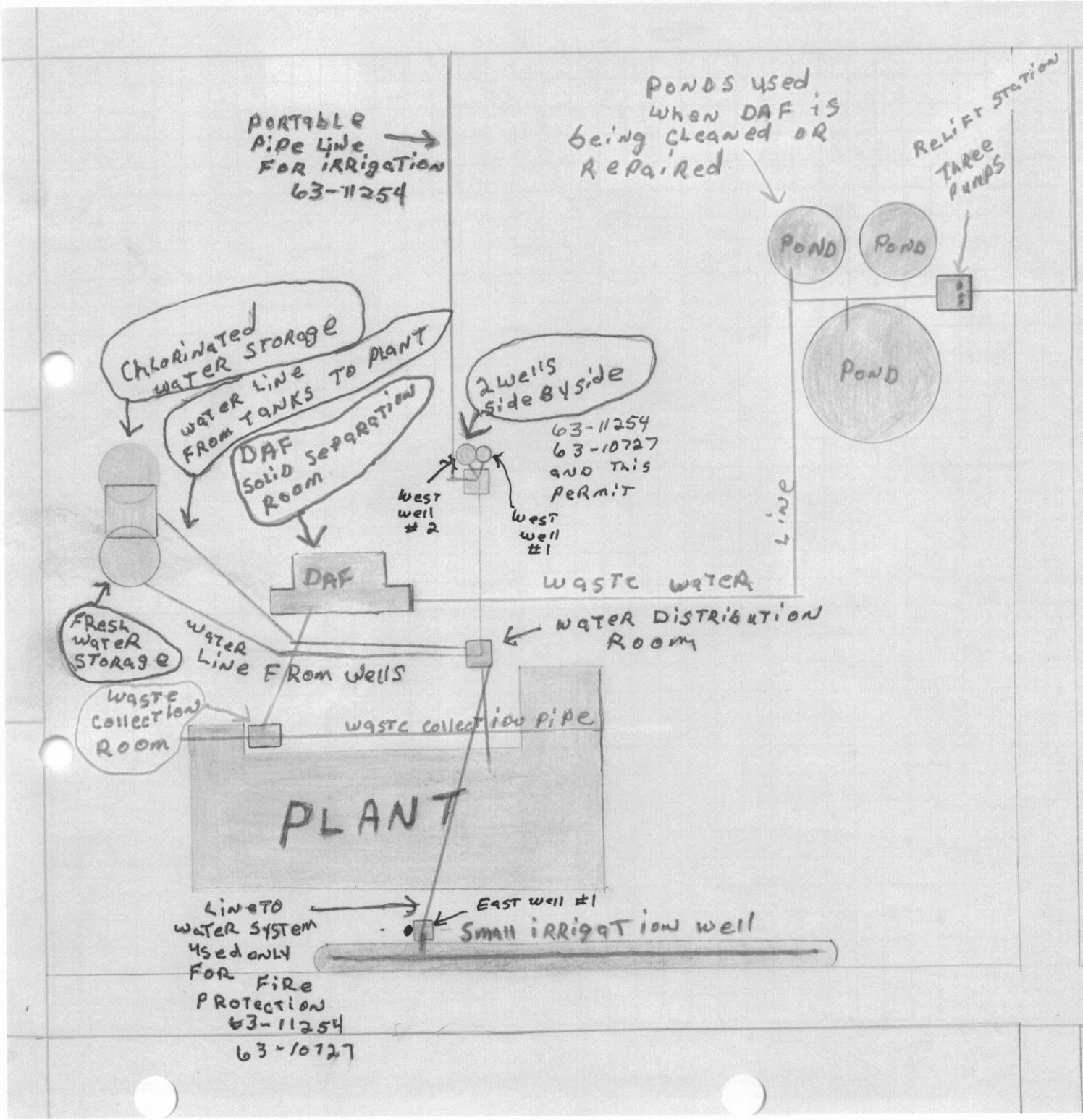


Figure 2.

SSI Food Services, Inc. Wilder Plant Water System

SCALE
one inch = approximately 300 feet

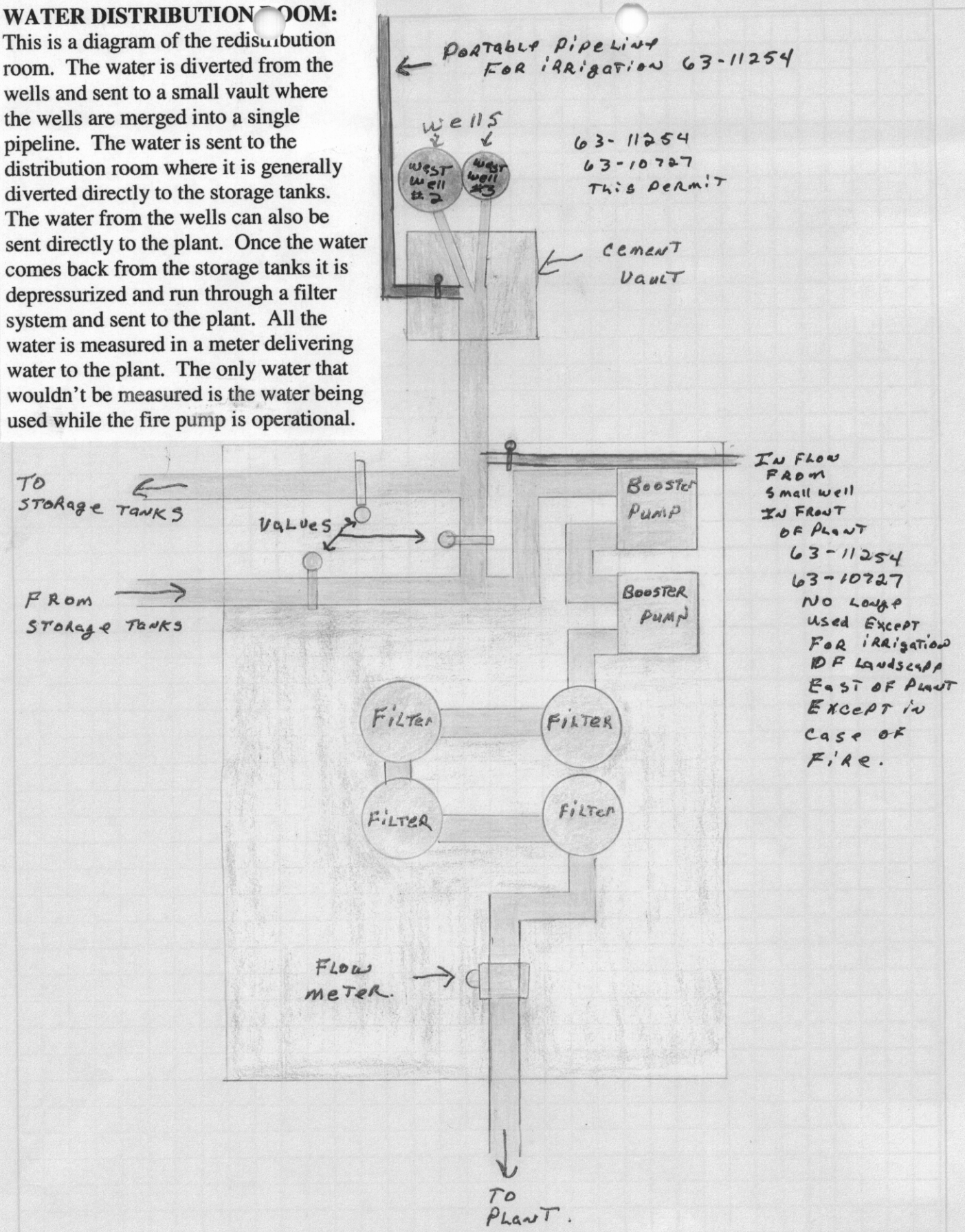
Figure 2.—



PLANT WATER SYSTEM:

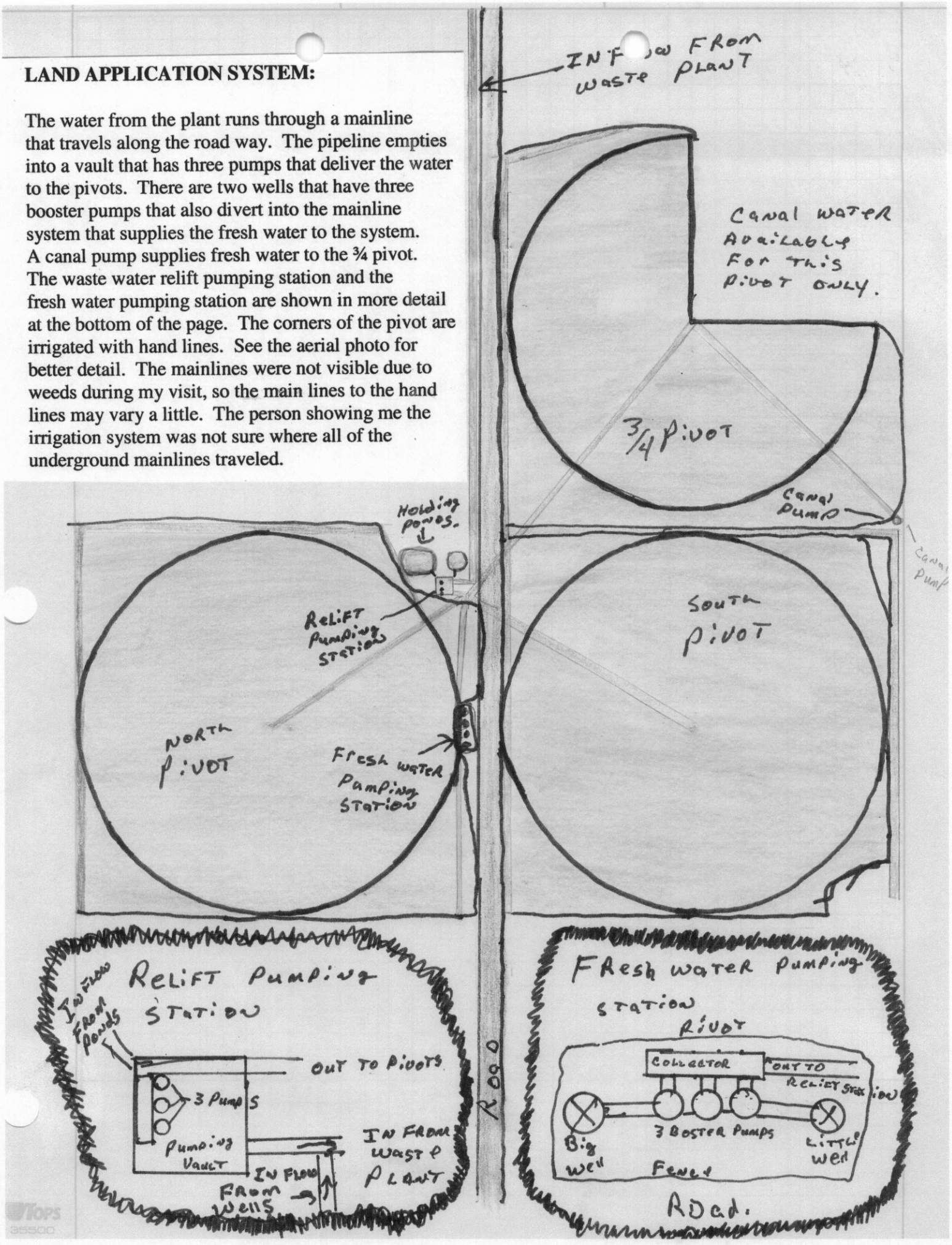
Water is diverted from the 2 side-by-side wells and delivered to the distribution room (see distribution room diagram). The water from the distribution room can go directly into the plant or be diverted to the water storage tanks (see water storage tank diagram). The water from the storage tanks is diverted back to the distribution room and sent into the plant. The wastewater from the plant is collected in a pipeline running along the back or west side of the building. The water is then pumped to the DAF building where the solids in the water are removed by two separators. The wastewater leaves the DAF building and is transported to a pump station with three re-lift pumps. These relift pumps transport the water to three pivots. If the DAF building is being cleaned or repaired the wastewater with the solids are diverted into the three ponds to allow the water to evaporate and leaving the solids. The ponds are only used when the DAF building breaks down or needs repair. A small irrigation well is used in the front of the building to irrigate some minimal landscapin (mostly trees and shrubs).

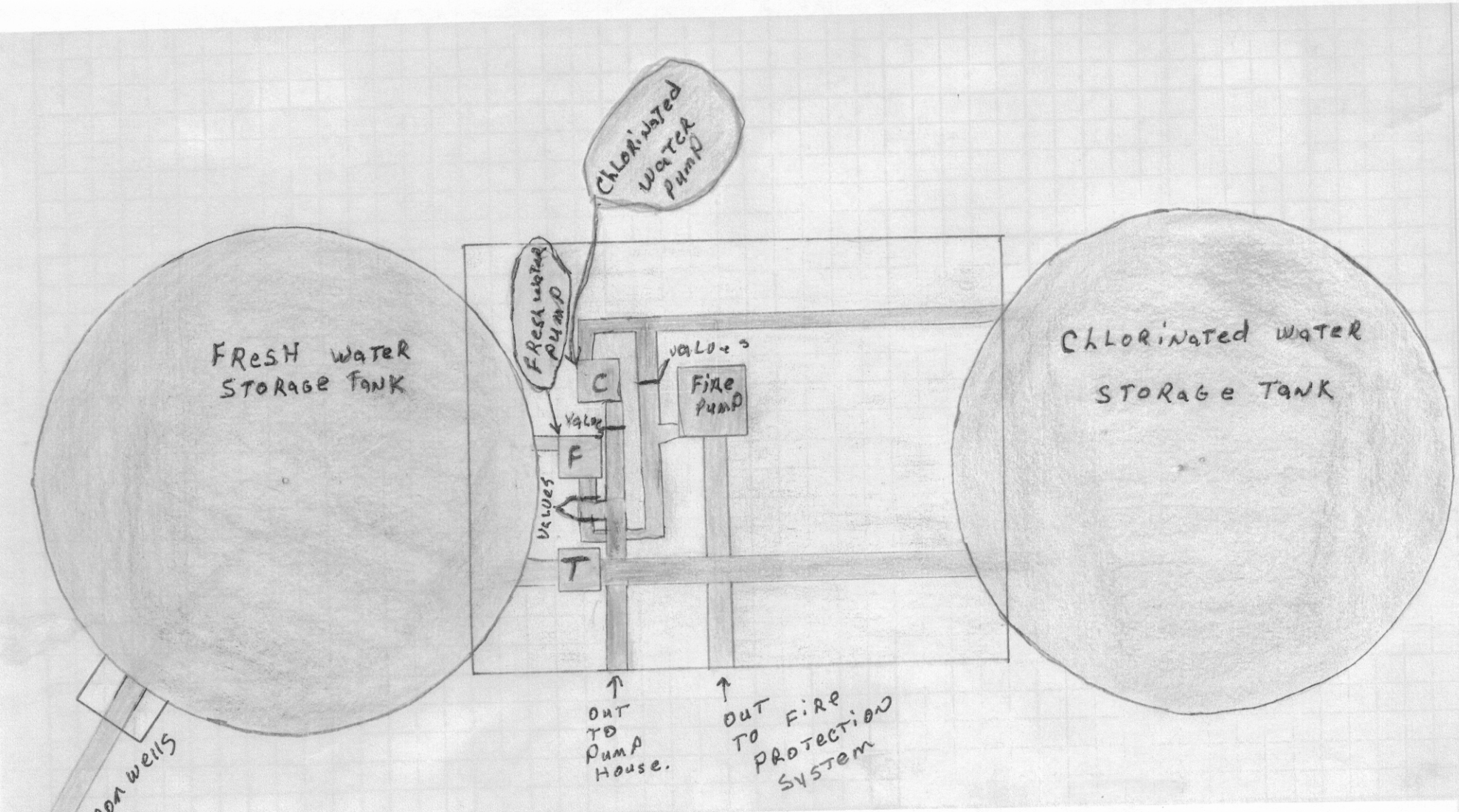
WATER DISTRIBUTION ROOM:
This is a diagram of the redistribution room. The water is diverted from the wells and sent to a small vault where the wells are merged into a single pipeline. The water is sent to the distribution room where it is generally diverted directly to the storage tanks. The water from the wells can also be sent directly to the plant. Once the water comes back from the storage tanks it is depressurized and run through a filter system and sent to the plant. All the water is measured in a meter delivering water to the plant. The only water that wouldn't be measured is the water being used while the fire pump is operational.



LAND APPLICATION SYSTEM:

The water from the plant runs through a mainline that travels along the road way. The pipeline empties into a vault that has three pumps that deliver the water to the pivots. There are two wells that have three booster pumps that also divert into the mainline system that supplies the fresh water to the system. A canal pump supplies fresh water to the ¾ pivot. The waste water relift pumping station and the fresh water pumping station are shown in more detail at the bottom of the page. The corners of the pivot are irrigated with hand lines. See the aerial photo for better detail. The mainlines were not visible due to weeds during my visit, so the main lines to the hand lines may vary a little. The person showing me the irrigation system was not sure where all of the underground mainlines traveled.





STORAGE TANK BUILDING:

The above diagram is a depiction of the water flow through the water tanks. The actual piping system was too complicated to create an actual diagram. The water from the wells flows into the eastern water storage tank. The water from the fresh water tank is used in three ways. The first way the water is used is to pump this fresh water directly into the plant. The freshwater tank has its own separate pump. This water is used for cleanup purposes, because chlorinated water cannot be used with cleaning fluids. The second way the fresh water can go is through a booster pump to the chlorinated storage tank. The chlorine is injected into the system at the pump delivering water to the chlorinated storage tank. The water in the chlorinated storage tank is pumped to the plant for use during product processing. The final way that the fresh water can go is into the fire suppression system. The fire suppression system can take water from both tanks and is a diesel pump designed to operate with out electricity. The water traveling back to the plant from both the fresh water tank and the chlorinated tank uses the same pipeline and is boosted into the plant at the re-distribution room.

GROUNDWATER THEORETICAL ANNALYSIS

East well #1

FILE: 63-31640

DATE: 2-20-04

BY: Daniel A. Nelson

THEORETICAL RATE OF FLOW: $Q = \frac{(8.8 \text{ X } (HP) \text{ X } (EFF.)}{TDH}$

Q = CFS
HP = Total Brake Horsepower of pumping plant (including booster)
Eff. = Pumping plant efficiency (assume 70% or 0.70)
TDH = Total dynamic head = [(LIFT) + (PSI X 2.31)]
LIFT = Depth to water in FEET from land surface to pujping water level
PSI = Pumping pressure measured in PSI near pump (if open discharge assume [0])

$$Q = \frac{(8.8) \text{ X } (2 \text{ HP}) \text{ X } (0.70)}{[(70') + (50 \text{ X } 2.31)]} = \frac{12.32}{185.5} = 0.07 \text{ CFS}$$

30 gpm

LIFT FROM:	PSI FROM:	NOTES ON PUMP:
Measurement ( )	Measurement ( )	Motor Make, Serial or ID
Owner (X)	Owner (X)	FRANKLIN ELECTRIC
Area estimate ( )	Estimate ( )	Pump Make, Serial or ID, rating
Well Logs ( )	Owner Gage ( )	282-3018-103
	Booster (Y) (N)	

REMARKS: This pump is NO LONGER used in Peak Except FOR FIRE PREVENTION PURPOSES - The DIVERSION RATE FOR This well should NOT Be included in THE Capacity OF THE SYSTEM.

The 2 WEST WELLS already Exceed Capacity VS. WATER Rights.

This well should Be included FOR Backup PURPOSES ONLY!

GROUNDWATER THEORETICAL ANNALYSIS

West Well #2

FILE: 63- 31640

DATE: 2-20-04

BY: Daniel A. Nelson

THEORETICAL RATE OF FLOW: $Q = \frac{(8.8 \times (HP) \times (EFF.)}{TDH}$

Q = CFS
HP = Total Brake Horsepower of pumping plant (including booster)
Eff. = Pumping plant efficiency (assume 70% or 0.70)
TDH = Total dynamic head = [(LIFT) + (PSI X 2.31)]
LIFT = Depth to water in FEET from land surface to pumping water level
PSI = Pumping pressure measured in PSI near pump (if open discharge assume [0])

$$Q = \frac{(8.8) \times (50\ HP) \times (0.70)}{[(185) + (52 \times 2.31)]} = \frac{308}{305} = 1.01\ CFS$$

453 gpm

LIFT FROM:	PSI FROM:	NOTES ON PUMP:
Measurement ( )	Measurement ( )	Motor Make, Serial or ID
Owner (X)	Owner (/)	Floway BJKL
Area estimate ( )	Estimate ( )	Pump Make, Serial or ID, rating
Well Logs ( )	Owner Gage (X)	Floway BJKL.
Booster (Y) (N)		

REMARKS: The Pump Curve For This Well Rated The Pump @ 400gpm @ 185 FT Lift. or 300 FT Total Dynamic Head.

Theoretical Calculation = 453 gpm
Pump Curve = 400 gpm

Use Pump Curve estimate OF 400gpm For This Well

West Well #2 @ 400gpm + West Well #3 @ 254gpm = 654 gpm

ONLY 600 gpm is Allowed By Water Rights.

Capacity Exceeds Water Rights!

GROUNDWATER THEORETICAL ANNALYSIS

West Well #3

FILE: 63-31640

DATE: 2-20-04

BY: Daniel A. Nelson

THEORETICAL RATE OF FLOW: $Q = \frac{(8.8 \text{ X } (HP) \text{ X } (EFF.)}{TDH}$

Q = CFS
HP = Total Brake Horsepower of pumping plant (including booster)
Eff. = Pumping plant efficiency (assume 70% or 0.70)
TDH = Total dynamic head = [(LIFT) + (PSI X 2.31)]
LIFT = Depth to water in FEET from land surface to pujping water level
PSI = Pumping pressure measured in PSI near pump (if open discharge assume [0])

$$Q = \frac{(8.8) \text{ X } (25 \text{ Hp}) \text{ X } (0.70)}{[(152 \text{ Ft.}) + (52 \text{ psi X } 2.31)]} = \frac{154}{272} = 0.57 \text{ CFS} = 254 \text{ gpm.}$$

LIFT FROM:	PSI FROM:	NOTES ON PUMP:
Measurement ( )	Measurement ( )	Motor Make, Serial or ID
Owner (X)	Owner ( )	UNKNOWN
Area estimate ( )	Estimate ( )	Pump Make, Serial or ID, rating
Well Logs ( )	Owner Gage (X)	2305250-B
Booster (Y) (N)		

REMARKS: The Pump curve FOR This well Rated The Pump @ 280 gpm @ 152 FT LIFT or 272 FT Total Dynamic LIFT.

Theoretical calculation = 254 gpm
Pump curve = 280 gpm

Use Theoretical calculation OF 254 gpm FOR This well

West well #2 @ 400 gpm + west well #3 @ 254 gpm = 654 gpm

ONLY 600 gpm is allowed By water Rights

Capacity Exceeds water Rights!

CALCULATION OF TOTAL VOLUME FOR CTI-SSI

11/1/2003	419,100	419,100	392,842	392,842
11/2/2003	317,200	736,300	298,721	691,563
11/3/2003	286,200	1,022,500	293,036	984,599
11/4/2003	473,400	1,495,900	416,529	1,401,128
11/5/2003	454,200	1,950,100	414,725	1,815,853
11/6/2003	415,600	2,365,700	374,775	2,190,628
11/7/2003	339,700	2,705,400	309,473	2,500,101
11/8/2003	448,800	3,154,200	405,633	2,905,734
11/9/2003	357,800	3,512,000	367,173	3,272,907
11/10/2003	260,700	3,772,700	269,460	3,542,367
11/11/2003	492,700	4,265,400	388,726	3,931,093
11/12/2003	469,100	4,734,500	440,381	4,371,474
11/13/2003	428,000	5,162,500	396,687	4,768,161
11/14/2003	460,800	5,623,300	435,419	5,203,580
11/15/2003	439,100	6,062,400	415,508	5,619,088
11/16/2003	354,400	6,416,800	342,088	5,961,176
11/17/2003	276,700	6,693,500	278,992	6,240,168
11/18/2003	454,800	7,148,300	392,813	6,632,981
11/19/2003	487,700	7,636,000	453,326	7,086,307
11/20/2003	491,800	8,127,800	417,494	7,503,801
11/21/2003	347,500	8,475,300	397,033	7,900,834
11/22/2003	507,000	8,982,300	496,019	8,396,853
11/23/2003	467,300	9,449,600	464,768	8,861,621
11/24/2003	217,500	9,667,100	226,677	9,088,298
11/25/2003	493,100	10,160,200	461,246	9,549,544
11/26/2003	424,200	10,584,400	417,466	9,967,010
11/27/2003	418,900	11,003,300	335,423	10,302,433
11/28/2003	231,200	11,234,500	250,148	10,552,581
11/29/2003	344,300	11,578,800	357,558	10,910,139
11/30/2003	416,700	11,995,500	417,692	11,327,831
12/1/2003	307,700	12,303,200	344,874	11,672,705
12/2/2003	515,200	12,818,400	479,709	12,152,414
12/3/2003	488,000	13,306,400	494,062	12,646,476
12/4/2003	488,600	13,795,000	637,618	13,284,094
12/5/2003	421,600	14,216,600	315,227	13,599,321
12/6/2003	271,700	14,488,300	285,527	13,884,848
12/7/2003	410,900	14,899,200	396,967	14,281,815
12/8/2003	358,100	15,257,300	368,986	14,650,801
12/9/2003	517,000	15,774,300	470,718	15,121,519
12/10/2003	527,200	16,301,500	499,632	15,621,151
12/11/2003	527,900	16,829,400	549,416	16,170,567
12/12/2003	405,500	17,234,900	409,934	16,580,501
12/13/2003	360,800	17,595,700	371,525	16,952,026
12/14/2003	374,200	17,969,900	412,718	17,364,744
12/15/2003	272,000	18,241,900	248,339	17,613,083
12/16/2003	493,100	18,735,000	480,568	18,093,651
12/17/2003	501,100	19,236,100	506,777	18,600,428
12/18/2003	485,700	19,721,800	501,898	19,102,326
12/19/2003	366,500	20,088,300	418,365	19,520,691
12/20/2003	270,400	20,358,700	253,141	19,773,832

CALCULATION OF TOTAL VOLUME FOR CTI-SSI

12/21/2003	455,900	20,814,600	452,459	20,226,291
12/22/2003	291,000	21,105,600	325,348	20,551,639
12/23/2003	489,600	21,595,200	454,594	21,006,233
12/24/2003	446,900	22,042,100	492,158	21,498,391
12/25/2003	293,500	22,335,600	363,252	21,861,643
12/26/2003	161,000	22,496,600	166,723	22,028,366
12/27/2003	283,100	22,779,700	390,718	22,419,084
12/28/2003	522,300	23,302,000	555,467	22,974,551
12/29/2003	222,000	23,524,000	240,700	23,215,251
12/30/2003	440,000	23,964,000	442,290	23,657,541
12/31/2003	481,700	24,445,700	480,265	24,137,806
1/1/2004	286,800	24,732,500	343,197	24,481,003
1/2/2004	280,500	25,013,000	326,824	24,807,827
1/3/2004	441,400	25,454,400	472,808	25,280,635
1/4/2004	455,100	25,909,500	443,366	25,724,001
1/5/2004	355,400	26,264,900	402,533	26,126,534
1/6/2004	433,500	26,698,400	415,956	26,542,490
1/7/2004	450,000	27,148,400	439,136	26,981,626
1/8/2004	431,300	27,579,700	383,976	27,365,602
1/9/2004	382,200	27,961,900	344,214	27,709,816
1/10/2004	516,000	28,477,900	390,830	28,100,646
1/11/2004	391,600	28,869,500	379,355	28,480,001
1/12/2004	305,800	29,175,300	305,022	28,785,023
1/13/2004	486,800	29,662,100	420,676	29,205,699
1/14/2004	495,600	30,157,700	483,522	29,689,221
1/15/2004	444,400	30,602,100	448,096	30,137,317
1/16/2004	390,000	30,992,100	378,817	30,516,134
1/17/2004	447,800	31,439,900	457,765	30,973,899
1/18/2004	252,500	31,692,400	259,321	31,233,220
1/19/2004	210,600	31,903,000	208,335	31,441,555
1/20/2004	484,500	32,387,500	456,435	31,897,990
1/21/2004	478,300	32,865,800	500,534	32,398,524
1/22/2004	467,300	33,333,100	475,492	32,874,016
1/23/2004	419,300	33,752,400	412,017	33,286,033
1/24/2004	382,400	34,134,800	382,094	33,668,127
1/25/2004	188,500	34,323,300	179,091	33,847,218
1/26/2004	224,400	34,547,700	214,295	34,061,513
1/27/2004	479,300	35,027,000	447,814	34,509,327
1/28/2004	460,000	35,487,000	454,576	34,963,903
1/29/2004	452,000	35,939,000	456,530	35,420,433
1/30/2004	410,400	36,349,400	436,201	35,856,634
1/31/2004	444,600	36,794,000	452,417	36,309,051
2/1/2004	162,600	36,956,600	173,528	36,482,579
2/2/2004	183,100	37,139,700	176,518	36,659,097
2/3/2004	448,700	37,588,400	388,020	37,047,117
2/4/2004	455,400	38,043,800	459,340	37,506,457
2/5/2004	453,300	38,497,100	437,152	37,943,609
2/6/2004	484,700	38,981,800	456,615	38,400,224
2/7/2004	590,400	39,572,200	596,347	38,996,571
2/8/2004	201,100	39,773,300	208,502	39,205,073

CALCULATION OF TOTAL VOLUME FOR CTI-SSI

[redacted]

[redacted]	
TOTAL GALLONS DIVERTED FROM WELLS ==>	**39,773,300**
[redacted]	
NUMBER OF DAYS METER WAS READ ==>	**100**
[redacted]	
AVERAGE GALLONS DIVERTED FROM WELLS PER DAY==>	**397,733**
[redacted]	
AVERAGE GALLONS DIVERTED PER YEAR (365 DAYS)	**145,172,545**
[redacted]	
AVERAGE ACRE FEET PER YEAR (325850 GAL/ACRE FOOT) ==>	446
[redacted]	
TOTAL GALLONS LAND APPLIED ==>	**39,205,073**
[redacted]	
AVERAGE GALLONS LAND APPLIED PER DAY==>	**392,051**
[redacted]	
AVERAGE GALLONS LAND APPLIED PER YEAR ==>	**143,098,516**
[redacted]	
AVERAGE ACRE FEET LAND APPLIED PER YEAR==>	439
[redacted]	
GALLONS LAND APPLIED DURING IRRIGATION SEASON ==>	**105,600,000**
[redacted]	
ACRE FEET LAND APPLIED DURING IRRIGATION SEASON	324
[redacted]	

2002 Non-Grow Meter Readings

Date	Plant Water Meter # 1	Irr Total Water Meter # 3	DAF Meter Meter # 4	3/4 Pivot Meter # 5	S Pivot Meter # 6	N Pivot Meter # 7	North %	South %	3/4 %	Irr Total Meter # 3	Plant Meter # 1	DAF Meter # 4
11/01/03	475,496,600	123,413,000	108,468,341	400,812,700	403,817,800	410,425,600	100			659,000	419,100	392,842
11/02/03	475,813,800	123,678,000	108,767,062	400,812,700	403,817,800	410,676,700	100			265,000	317,200	298,721
11/03/03	476,100,000	123,935,000	109,060,098	400,812,700	403,817,800	410,921,100	100			257,000	286,200	293,036
11/04/03	476,573,400	124,264,000	109,476,627	391,118,000	403,817,800	410,921,100			100	329,000	473,400	416,529
11/05/03	477,027,600	124,370,000	109,891,352	391,263,800	403,817,800	410,921,100			100	106,000	454,200	414,725
11/06/03	477,443,200	124,627,000	110,266,127	391,536,200	403,817,800	410,921,100			100	257,000	415,600	374,775
11/07/03	477,782,900	124,823,000	110,575,600	391,748,900	403,817,800	410,921,100			100	196,000	339,700	309,473
11/08/03	478,231,700	125,087,000	110,981,233	392,028,400	403,817,800	410,921,100			100	264,000	448,800	405,633
11/09/03	478,589,500	125,356,000	111,348,406	402,310,600	403,817,800	410,921,100			100	269,000	357,800	367,173
11/10/03	478,850,200	125,539,000	111,617,866	392,506,300	403,817,800	410,921,100			100	183,000	260,700	269,460
11/11/03	479,342,900	125,797,000	112,006,592	392,772,300	403,817,800	410,921,100			100	258,000	492,700	388,726
11/12/03	479,812,000	126,096,000	112,446,973	393,077,800	403,817,800	410,921,100			100	299,000	469,100	440,381
11/13/03	480,240,000	126,371,000	112,843,660	393,362,800	403,817,800	410,921,100			100	275,000	428,000	396,687
11/14/03	480,700,800	126,656,000	113,279,079	393,664,100	403,817,800	410,921,100			100	285,000	460,800	435,419
11/15/03	481,139,900	126,869,000	113,694,587	393,894,500	403,817,800	410,921,100			100	213,000	439,100	415,508
11/16/03	481,494,300	127,087,000	114,036,675	394,128,500	403,817,800	410,921,100			100	218,000	354,400	342,088
11/17/03	481,771,000	127,261,000	114,315,667	394,309,200	403,817,800	410,921,100			100	174,000	276,700	278,992
11/18/03	482,225,800	127,528,000	114,708,480	394,309,200	404,048,700	410,921,100		100		267,000	454,800	392,813
11/19/03	482,713,500	127,882,000	115,161,806	394,309,200	404,368,000	410,921,100		100		354,000	487,700	453,326
11/20/03	483,205,300	128,242,000	115,579,300	394,309,200	404,683,700	410,921,100		100		360,000	491,800	417,494
11/21/03	483,552,800	128,546,000	115,976,333	394,309,200	404,957,300	410,921,100		100		304,000	347,500	397,033
11/22/03	484,059,800	128,991,000	116,472,352	394,309,200	405,352,300	410,921,100		100		445,000	507,000	496,019
11/23/03	484,527,100	129,348,000	116,937,120	394,309,200	405,667,100	410,921,100		100		357,000	467,300	464,768
11/24/03	484,744,600	129,500,000	117,163,797	394,309,200	405,797,900	410,921,100		100		152,000	217,500	226,677
11/25/03	485,237,700	129,736,000	117,625,043	394,309,200	405,999,000	410,921,100		100		236,000	493,100	461,246
11/26/03	485,661,900	129,989,000	118,042,509	394,309,200	406,215,100	410,921,100		100		253,000	424,200	417,466
11/27/03	486,080,800	130,358,000	118,377,932	394,309,200	406,541,000	410,921,100		100		369,000	418,900	335,423
11/28/03	486,312,000	130,938,000	118,628,080	394,309,200	407,038,500	410,921,100		100		580,000	231,200	250,148
11/29/03	486,656,300	131,566,000	118,985,638	394,309,200	407,569,900	410,921,100		100		628,000	344,300	357,558
11/30/03	487,073,000	132,159,000	119,403,330	394,309,200	408,055,600	410,921,100		100		593,000	416,700	417,692
12/01/03	487,380,700	132,829,000	119,748,204	394,309,200	408,606,100	410,921,100		100		670,000	307,700	344,874
12/02/03	487,895,900	133,472,000	120,227,913	394,309,200	409,124,800	410,921,100		100		643,000	515,200	479,709
12/03/03	488,383,900	133,917,000	120,721,975	394,309,200	409,124,800	411,358,400	100			445,000	488,000	494,062
12/04/03	488,872,500	134,290,000	121,359,593	394,309,200	409,124,800	411,715,900	100			373,000	488,600	637,618
12/05/03	489,294,100	134,640,000	121,674,820	394,309,200	409,124,800	412,048,300	100			350,000	421,600	315,227
12/06/03	489,565,800	134,860,000	121,960,347	394,309,200	409,124,800	412,254,100	100			220,000	271,700	285,527
12/07/03	489,976,700	135,178,000	122,357,314	394,309,200	409,124,800	412,564,600	100			318,000	410,900	396,967
12/08/03	490,334,800	135,478,000	122,726,300	394,309,200	409,124,800	412,847,300	100			300,000	358,100	368,986
12/09/03	490,851,800	135,838,000	123,197,018	394,309,200	409,124,800	413,203,500	100			360,000	517,000	470,718
12/10/03	491,379,000	136,794,000	123,696,650	394,309,200	409,124,800	414,127,600	100			956,000	527,200	499,632
12/11/03	491,906,900	137,144,000	124,246,066	394,309,200	409,124,800	414,456,400	100			350,000	527,900	549,416
12/12/03	492,312,400	137,475,000	124,656,000	394,309,200	409,124,800	414,775,200	100			331,000	405,500	409,934
12/13/03	492,673,200	137,782,000	125,027,525	394,309,200	409,124,800	415,065,100	100			307,000	360,800	371,525
12/14/03	493,047,400	138,131,000	125,440,243	394,309,200	409,124,800	415,396,200	100			349,000	374,200	412,718
12/15/03	493,319,400	138,328,000	125,688,582	394,309,200	409,124,800	415,586,700	100			197,000	272,000	248,339
12/16/03	493,812,500	138,733,000	126,169,150	394,309,200	409,124,800	415,967,100	100			405,000	493,100	480,568
12/17/03	494,313,600	139,154,000	126,675,927	394,309,200	409,124,800	416,353,800	100			421,000	501,100	506,777

2002 Non-Grow Meter Readings

12/18/03	494,799,300	139,813,000	127,177,825	394,309,200	409,386,900	416,353,800		100		659,000	485,700	501,898
12/19/03	495,165,800	139,977,000	127,596,190	394,309,200	409,698,800	416,353,800		100		164,000	366,500	418,365
12/20/03	495,436,200	140,247,000	127,849,331	394,309,200	409,929,600	416,353,800		100		270,000	270,400	253,141
12/21/03	495,892,100	140,995,000	128,301,790	394,309,200	410,289,500	416,353,800		100		748,000	455,900	452,459
12/22/03	496,183,100	140,995,000	128,627,138	394,309,200	410,554,600	416,353,800		100		0	291,000	325,348
12/23/03	496,672,700	141,441,000	129,081,732	394,309,200	410,927,900	416,353,800		100		446,000	489,600	454,594
12/24/03	497,119,600	141,883,000	129,573,890	394,309,200	411,306,400	416,353,800		100		442,000	446,900	492,158
12/25/03	497,413,100	142,222,000	129,937,142	394,309,200	411,595,300	416,353,800		100		339,000	293,500	363,252
12/26/03	497,574,100	142,849,000	130,103,865	394,309,200	412,115,800	416,353,800		100		627,000	161,000	166,723
12/27/03	497,957,200	143,583,000	130,494,583	394,309,200	412,720,600	416,353,800		100		734,000	383,100	390,718
12/28/03	498,479,500	144,385,000	131,050,050	394,309,200	413,383,000	416,353,800		100		802,000	522,300	555,467
12/29/03	498,701,500	144,682,000	131,290,750	394,309,200	413,633,800	416,353,800		100		297,000	222,000	240,700
12/30/03	499,141,500	145,111,000	131,733,040	394,309,200	413,991,400	416,353,800		100		429,000	440,000	442,290
12/31/03	499,623,200	145,561,000	132,213,305	394,309,200	414,376,900	416,353,800		100		450,000	481,700	480,265
01/01/04	499,910,000	145,894,000	132,556,502	394,309,200	414,661,200	416,353,800		100		333,000	286,800	343,197
01/02/04	500,190,500	146,192,000	132,883,326	394,309,200	414,917,000	416,353,800		100		298,000	280,500	326,824
01/03/04	500,631,900	146,601,000	133,356,134	394,309,200	415,269,600	416,353,800		100		409,000	441,400	472,808
01/04/04	501,087,000	147,066,000	133,799,500	394,309,200	415,512,800	416,353,800		100		465,000	455,100	443,366
01/05/04	501,442,400	147,066,000	134,202,033	394,309,200	415,512,800	416,353,800				0	355,400	402,533
01/06/04	501,875,900	147,066,000	134,617,989	394,309,200	415,512,800	416,353,800				0	433,500	415,956
01/07/04	502,325,900	147,066,000	135,057,125	394,309,200	415,512,800	416,353,800				0	450,000	439,136
01/08/04	502,757,200	147,545,000	135,441,101	394,309,200	415,512,800	416,938,200	100			479,000	431,300	383,976
01/09/04	503,139,400	148,208,000	135,785,315	394,309,200	415,512,800	417,561,600	100			663,000	382,200	344,214
01/10/04	503,655,400	148,893,000	136,176,145	394,309,200	415,512,800	418,204,000	100			685,000	516,000	390,830
01/11/04	504,047,000	149,507,000	136,555,500	394,309,200	415,512,800	418,779,000	100			614,000	391,600	379,355
01/12/04	504,352,800	150,201,000	136,860,522	394,309,200	415,512,800	419,424,700	100			694,000	305,800	305,022
01/13/04	504,839,600	150,857,000	137,281,198	394,309,200	415,512,800	420,021,400	100			656,000	486,800	420,676
01/14/04	505,335,200	151,253,000	137,764,720	394,309,200	415,512,800	420,375,900	100			396,000	495,600	483,522
01/15/04	505,779,600	151,653,000	138,212,816	394,309,200	415,512,800	420,734,600	100			400,000	444,400	448,096
01/16/04	506,169,600	151,968,000	138,591,633	394,309,200	415,512,800	421,027,000	100			315,000	390,000	378,817
01/17/04	506,617,400	152,372,000	139,049,398	394,309,200	415,512,800	421,402,300	100			404,000	447,800	457,765
01/18/04	506,869,900	152,577,000	139,308,719	394,309,200	415,512,800	421,598,800	100			205,000	252,500	259,321
01/19/04	507,080,500	152,832,000	139,517,054	394,309,200	415,512,800	421,771,500	100			255,000	210,600	208,335
01/20/04	507,565,000	153,168,000	139,973,489	394,309,200	415,512,800	422,150,800	100			336,000	484,500	456,435
01/21/04	508,043,300	153,672,000	140,474,023	394,309,200	415,988,700	422,150,800		100		504,000	478,300	500,534
01/22/04	508,510,600	154,019,000	140,949,515	394,309,200	416,368,500	422,150,800		100		347,000	467,300	475,492
01/23/04	508,929,900	154,422,000	141,361,532	394,309,200	416,715,700	422,150,800		100		403,000	419,300	412,017
01/24/04	509,312,300	154,777,000	141,743,626	394,309,200	417,023,300	422,150,800		100		355,000	382,400	382,094
01/25/04	509,500,800	154,945,000	141,922,717	394,309,200	417,172,000	422,150,800		100		168,000	188,500	179,091
01/26/04	509,725,200	155,149,000	142,137,012	394,309,200	417,305,400	422,150,800		100		204,000	224,400	214,295
01/27/04	510,204,500	155,587,000	142,584,826	394,309,200	417,732,100	422,150,800		100		438,000	479,300	447,814
01/28/04	510,664,500	156,000,000	143,039,402	394,309,200	418,100,900	422,150,800		100		413,000	460,000	454,576
01/29/04	511,116,500	156,456,000	143,495,932	394,309,200	418,493,700	422,150,800		100		456,000	452,000	456,530
01/30/04	511,526,900	156,847,000	143,932,133	394,309,200	418,839,200	422,150,800		100		391,000	410,400	436,201
01/31/04	511,971,500	157,258,000	144,384,550	394,309,200	419,198,200	422,150,800		100		411,000	444,600	452,417
02/01/04	512,134,100	157,402,000	144,558,078	394,309,200	419,330,800	422,150,800		100		144,000	162,600	173,528
02/02/04	512,317,200	157,563,000	144,734,596	394,309,200	419,473,000	422,150,800		100		161,000	183,100	176,518
02/03/04	512,765,900	157,971,000	145,122,616	394,309,200	419,825,000	422,150,800		100		408,000	448,700	388,020
02/04/04	513,221,300	158,375,000	145,581,956	394,309,200	419,825,000	422,522,500	100			404,000	455,400	459,340

2002 Non-Grow Meter Readings

02/05/04	513,674,600	158,770,000	146,019,108	394,309,200	419,825,000	422,884,000	100	395,000	453,300	437,152
02/06/04	514,159,300	159,174,000	146,475,723	394,309,200	419,825,000	423,261,300	100	404,000	484,700	456,615
02/07/04	514,749,700	159,708,000	147,072,070	394,309,200	419,825,000	423,749,000	100	534,000	590,400	596,347
02/08/04	514,950,800	159,907,000	147,280,572	394,309,200	419,825,000	423,934,400	100	199,000	201,100	208,502

Table 1. Monthly Process Water Volumes Recycled

Non-Growing Season[1]	Volume[3] (Million Gallons)
November , 2001	9.10
December, 2001	8.31
January, 2002	8.01
February, 2002	7.66
March 14, 2002	5.60
Total Non-Growing Season	**38.68**
Growing Season[2]	
March 15, 2002	4.92
April, 2002	8.67
May, 2002	7.41
June, 2002	7.64
July, 2002	8.46
August, 2002	10.04
September, 2002	9.45
October, 2002	10.33
Total Growing Season	**66.92**
Total Amount	**105.60**

NOTES:

[1]Non-growing season is from November 1 to March 14.

[2]Growing season is from March 15 to October 31.

[3]Metered volumes (see data in Appendix B).

Land Application Water
Waste water

c Terry - Riverside
RM 7/28/99

Edward Squires, R.P.G. - Hydrogeologist
1530 Knights Drive, Boise, ID 83712 (208) 342-8369 Fax (208) 342-3100

March 27, 1999

Mr. Bill Freeman, P.E.
Water Quality Engineer
Division of Environmental Quality
Boise Regional Office
1445 North Orchard Street
Boise, Idaho 83706-2239

PLEASE NOTE:
ALL WATER QUALITY MONITORING DOCUMENTS HAVE BEEN REMOVED FROM THIS REPORT BECAUSE THEY WERE NOT PERTINENT TO THE LICENSING OF THIS PERMIT.

DAN NELSON 3/11/2004
D. AN.

Subject: Wilder, ID SSI Food Services, Inc. 1999 West Well #1 replacement project.

Dear Bill:

Introduction:
This brief letter report, concerning a replacement well for SSI Food Services (SSI) of Wilder, ID (Figure 1), is submitted for your information and approval. SSI's water supply system is considered a Public Drinking Water System because it serves more than 25 people (employees) on a daily basis. As you are aware, SSI experienced an emergency situation during the summer of 1998 whereby their main supply well was jeopardized by voluminous sand production. SSI is dependent upon a groundwater source for its domestic water needs, industrial wash-up water, and for fire protection. Their lead well (West Well #1), drilled by Riverside, Inc., had produced sand since the well was completed in 1989. The problem had become so severe during 1998 that pump-replacement had become commonplace and a standby pump was kept at the ready. SSI became concerned over whether the well would be able to handle peak summer demand when additional water was needed to supply the cooling units for the plant. Closure of the plant, while a new source was developed, would have constituted financial hardship to SSI's many employees and hurt the local-area economy.

SSI asked for my assistance to work with SW District Health, the IDWR, Riverside, Inc. and your office (IDEQ-BRO) to effect an emergency replacement of their West Well #1. SSI would like to acknowledge the support and assistance of Sandy Hemenway (SW District Health), Rob Whitney (IDWR - Western Region), and yourself in successfully accomplishing this task. The location (Figure 2) and construction details (Figure 3) of the new replacement well (West Wells #2 & #3) provide significant improvements to the protection of public health and to the groundwater resource.

Surrounding land-use and potential for groundwater contamination:
I first spoke with Rob Howarth and Dean Yashon, of your office, on July 17, 1998, about known and/or potential groundwater contamination around the site. Apparently there is a history of waste land application and agricultural land use in the area. SSI operated its own waste land application on-site during the recent past, but this practice is no longer continued. Sporadic hits of the Trihalomethanes, Chloroform and Bromodichloromethane, have been detected in water samples of the SSI East Well (Figure 2) along with a single, one-time detection of the regulated VOC, vinyl chloride (Appendix A). The detected concentrations are well below maximum contaminant limits and remain unconfirmed.

Existing well construction:
SSI's existing West Well #1 was drilled to 405-feet below ground level (bgl) by Daugherty Drilling in 1989 (Figure 4 & Appendix B). This well was constructed with a 50-foot deep, concrete grout surface seal installed in the 6-inch annular space between the 24-inch drilled hole and the 12-inch diameter casing. The remaining 355-foot annular space was filled with 3/8-inch pea gravel. The gravel pack allows free hydraulic interconnection between seven sub-aquifer units between 110 and 390-feet bgl. The West Well #1 was located inside the SSI compound within a paved traffic and work area (Figure 5).

Site location, access, and potential for flooding:
To improve protection around the well and well-head, a new well site was selected 246 feet due west of the existing well (Figure 2) in a previously undeveloped area of the SSI compound. The new site is owned by SSI and has no buried utilities, property boundary, surface water courses, or other potential source of contamination within a 50-foot radius at this time. SSI's septic drain field is over 1700 feet to the south (Figure 2). Access is unlimited from all sides and unobstructed by overhead power lines or other utilities. The SSI site is situated on a high (100-foot +), well-drained terrace between the Boise and Snake Rivers (Figure 1) and is not prone to flooding.

Well seals:
Owing to the clay-dominated geologic section (Figure 6), the deeper aquifer units are naturally protected from surface contaminants. The exception is where poorly constructed and unsealed wells allow downward migration and/or commingling of waters of differing chemistry. One of IDWR's Conditions of Approval for the SSI replacement well Drilling Permit required that SSI's West Well #1 be properly abandoned (Figure 4). The newly completed West Well #2 has a full-depth surface seal to 266-feet and additional seals between aquifer units at 390-feet and 455-feet (Figures 3 & 6). The 5/8 inch, bentonite chip seal was poured into the annular space between the drilled hole and the well casings through the water column. The seal placement was verified by continuous tagging during the pour. The West Well #1 was properly abandoned by perforating and pressure grouting (Figure 4) to restore the natural protection to the aquifer system provided by the layered clay strata.

Drilled geologic section:
Because the SSI West Well #2 is now completed, the drilled geologic section beneath the site is well documented to 620 feet bgl (Figure 6). A thick soil (or ancient flood deposit) about 10 feet thick makes up the surface layer. Directly underlying the soil is a terrace gravel approximately 20-feet thick. The upper 10-feet of the gravel unit has been reported in several area Driller's Reports (Appendix B) as cemented or as "hard-pan". Beneath the

gravel, a clay-dominated section to 620 is punctuated with thin (10-to-30-foot) gravelly sand units. The saturated and permeable materials constitute about 25 percent of the upper 600 feet of drilled sediments. The remaining 75 percent is comprised of dark colored silty clays and mudstones. The sediments undergo a color change at about 175 feet bgl where the upper, brown-colored section gives way to dark gray (reduced) hues (Figure 6).

Hydrogeology:

The entire section is saturated including the shallow terrace gravel. This uppermost aquifer is probably recharged most directly from the Golden Gate Canal which traverses the bench to the west of the site (Figure 1). The deeper sub-aquifer units likely have a longer recharge path from the Boise River and its laterals to the northeast. A cumulative thickness of 200-feet of silty clays and clayey silts exists between ground surface and the top of the first screened interval of the SSI West Well #2 at 298-feet bgl. An overlying aquifer unit at 215 feet bgl was bypassed to allow for a deeper pump-setting and to increase available drawdown in the finished well (Figure 3). A full-depth bentonite seal was installed from 266 feet bgl to the surface.

Open-hole geophysical logs (Figure 6) suggest that the water chemistry between sub-aquifer units might be significantly different. Rather than complete a single well with screens spread across many sub-aquifer units, two separate wells, with smaller completion intervals, were completed within the 28-inch bore. In this way SSI was able to preserve two distinct water qualities and prevent commingling waters of differing chemistry within a single well. Two well casings (14-inch diameter and 8-inch diameter) were installed, to different depths, inside of the 28-inch diameter bore. The two separate tube wells are referred to, herein, as West Wells #2 & #3 respectively (Figure 3). An additional bentonite seal was installed between the two completion zones to prevent commingling of waters via the annular space outside of the casings. Spacer/centralizers were used to keep the two casings separated and to ensure an intact bentonite seal throughout the bore and surrounding the well casings (Figure 7).

Groundwater under the direct influence of surface water (GWUDI):

A small canal/drain courses along the west boundary of the SSI site (Figure 2). This drain (the highest limit of Mammen Gulch) carries water year-round and is located at a distance of 270 feet from the new SSI West Well #2 & #3. This canal is of sufficient depth to pierce the bottom of the mud deposit, which mantles the surface of the terrace at this location, and is probably not dug into the underlying gravels for a few feet as well. Therefore some recharge to the shallow groundwater probably occurs along this canal. Over 200 feet of silty clay and mudstone overlie the completion zone of the shallow (8-inch) well and 275 feet of low-permeability sediments overlie the 14-inch well completion zone. This natural protection combined with the full-depth, solid bentonite seal are judged to provide the best possible protection to the wells from surface water influence (Figure 6). The West Well #1 was perforated and pressure grouted with high-solids bentonite grout to further ensure that its gravel-filled annulus was not a conduit for surface waters (and shallow groundwater to migrate into the deeper section (Figure 4). The water chemistry from both wells (Appendix A & Table 1) is significantly different from surface water chemistry and drawdown curves from hydraulic pump-testing (Figures 8 & 9, Tables 2 & 3) do not indicate that positive (recharge) boundary conditions were encountered by the expanding cone of depression. A documented history of water chemistry analyses for SSI West Well #1 exists with the DEQ and this well was not previously classified as GWUDI. The 8-inch diameter replacement well

is completed into the same sub-aquifer units as the West Well #1 and the 14-inch replacement well is deeper yet (Figure 6). Based upon these observations, groundwater produced from SSI West Wells #2 & #3 is **not** under the direct influence of surface water. We request that these conclusions be reviewed by a qualified hydrogeologist within DEQ, that the well be classified as a non-GWUDI source, and that SSI be excused from unnecessary, time consuming, and expensive monitoring.

Water chemistry:
Water samples obtained from each of the new wells, after 6-hours of continuous pumping, were analyses at Analytical Laboratories of Boise, ID (Appendix A). Water from both wells is satisfactory for all culinary and industrial uses. No constituents exceed USEPA or IDEQ standards for maximum contaminant levels and both wells tested negative for the presence of coliform bacteria.

Installed pumping plant:
Two new submersible pumps, owned by SSI prior to completion of the new wells, were evaluated for service. Pump performance curves for both well pumps are shown on Figures 10 & 11. Based upon the completion pump-testing results and an analysis of the configuration of the existing distribution system (Figure 12), both pumps were judged satisfactory for installation and adequate to supply SSI's present water needs.

Changes/improvements to the water system:
Other than the mainline extension to the new well location (246 feet) the water distribution system has remained relatively unchanged. Both of the new wells have been equipped with pit-less adapters (Figure 13, Appendix C). Both of the pit-less units were tested for leaks by packing off the casing below the pit-less adapters with an inflatable bladder and filling the above ground casing with water. Neither unit was observed to leak (Figure 13). Discharge lines from both wells enter a buried vault at the well head (Figure 14). Within the vault, the 8-inch diameter well is equipped with a 3-inch double-check back-flow preventer and the 14-inch diameter well is equipped with a 6-inch double-check back-flow preventer (Figure 15). The 6-inch and 3-inch discharge lines are joined, in a ductile iron, 4-way fitting, to a 3-inch valved flush line and the 6-inch, C900 PVC mainline to the existing booster pump/filter station Figures 16 & 14).

Other wells within 500 feet:
The only well within 500 feet is the SSI East well (Figure 2) which is used for lawn irrigation. Other significant wells within one mile of SSI are plotted on Figure 1 and all homes in the area utilize small bore domestic wells for water supply.

Again, thank-you very much for your assistance with this project which, due to its emergent nature, had to be accomplished quickly. SSI now has better quality, better protected, sand-free water with a reliable redundant source. Please call if you have questions or require clarification with any of the above.

Sincerely,

Ed Squires

cc: Randy Shuman, SSI
Sandy Hemenway, SW District Health

FIGURES

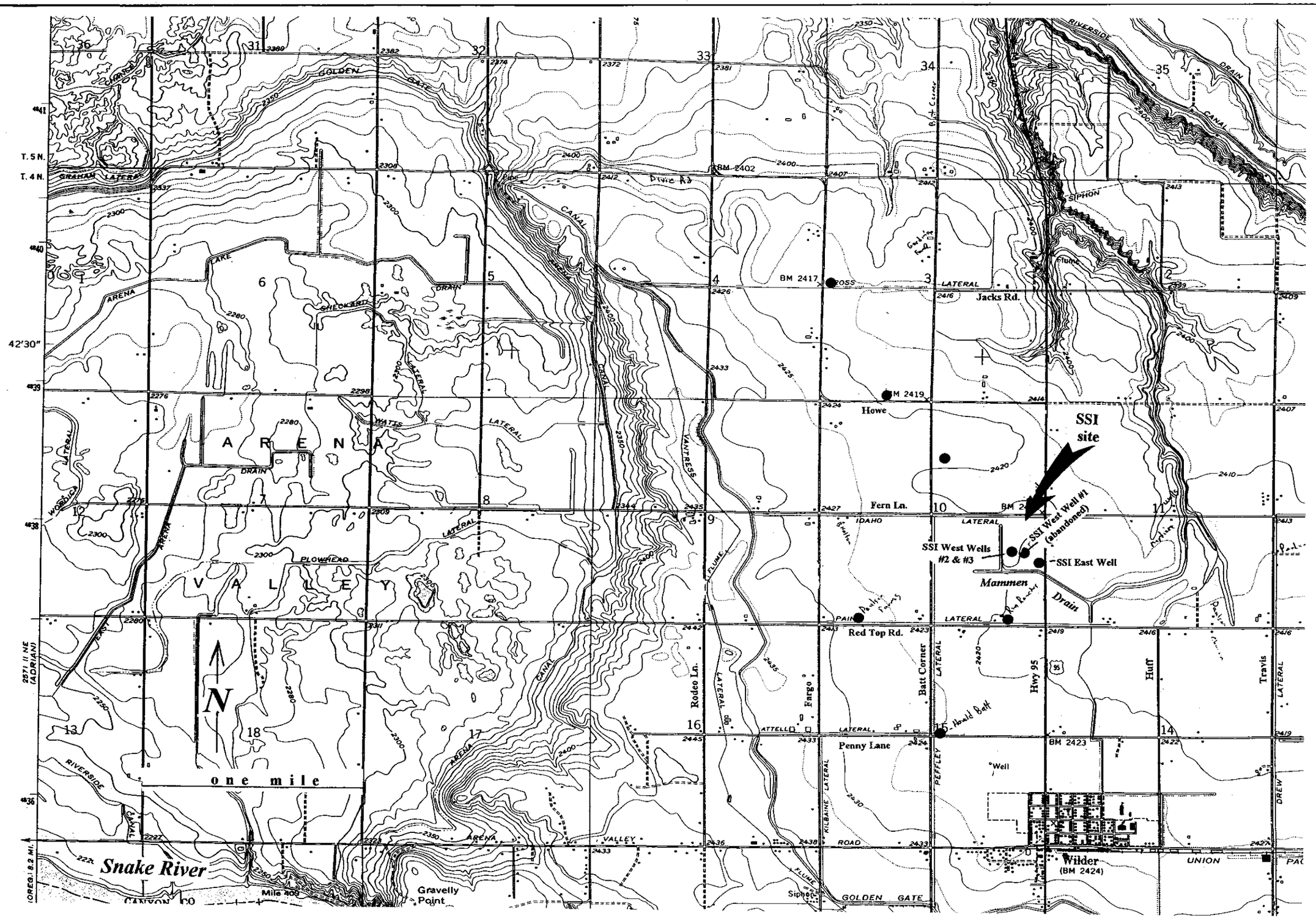


Figure 1. Location map showing the SSI Food Services, Inc. site near Wilder, Idaho. Large bore irrigation and industrial wells are indicated by heavy black dots. All residences are served from small bore domestic wells. Base map is copied from the Wilder Quadrangle of the USGS 1:24,000 topographic series (photo revised in 1971).

Figure 1.

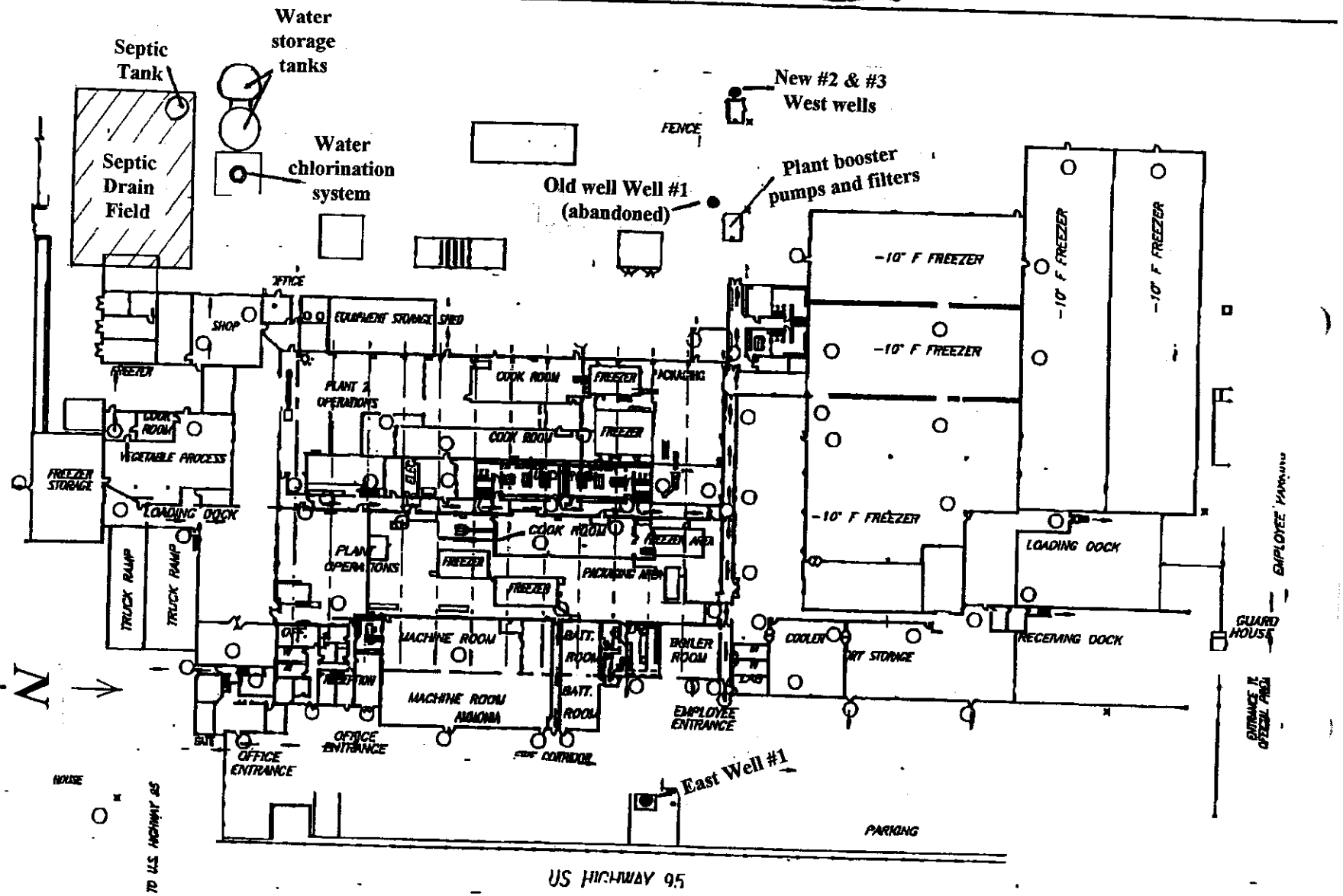


Figure 2.

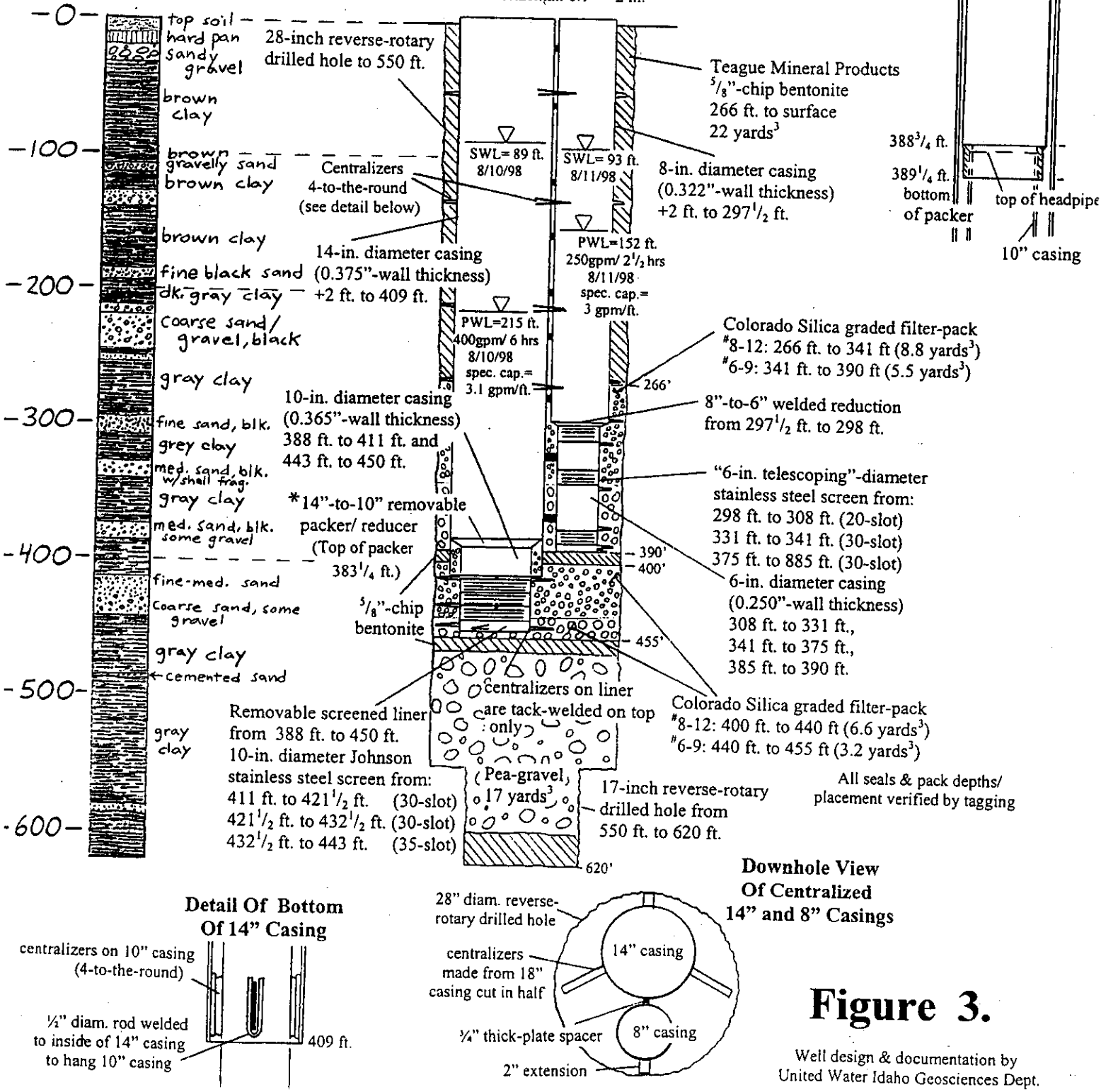
SSI Food Services, Inc. Wilder Plant Water System

Figure 2.

SSI Food Services 14" & 8" Wells

NE¼, SE¼, Sec. 10, T4N, R5W

Well completed by Riverside, Inc., Parma, ID.



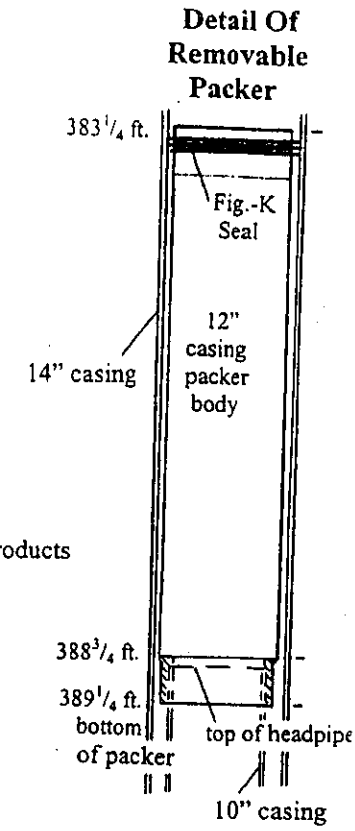


Figure 3.

Well design & documentation by United Water Idaho Geosciences Dept.

Existing Construction for the SSI "West" Supply Well
(From Driller's Report)

4-inch diameter tremie pipe for adding gravel pack

50'-

SWL Jan. 89 66-feet bgl

PWL Jan. 89 85-feet bgl
350 gpm/50hrs
Spec. Cap. @ 18 gpm/ft

12-inch diameter X .250-inch wall steel casing

3/8 -inch Glenns Ferry pea gravel placed from 50-to-405 feet bgl

289'-
294'-
304'-
334'-
344'-
374'-
384'-
390'-

30 lineal feet 8-inch diameter stainless steel "Roscoe Moss" .040"- slot well screen

6-foot tailpipe to 390 feet bgl

Cement grout surface seal to 50-feet bgl mixed 100 lbs per 5-gals water

24-inch diameter drilled hole to 405 feet bgl

12"-to-8" non-removeable reducer assembly

8-inch diameter X .250-inch wall steel casing

TD = 405 feet

vertical scale: 1" = 50'
horizontal scale: .1" = 1"

Depth Below Ground (feet)	Lithology (Driller 1989)	Lithology (Geologist 1998)
0		topsoil
		hardpan
		sandy gravel
50		brown clay
100		brown gravelly sand
150		brown clay
		fine black sand
200		dark gray clay
		coarse black sand & gravel
250		
300		fine black sand
		gray clay
350		gray clay
		black medium grained gravelly sand
400		gray clay

for driller's observations see 1989 Driller's Report by Daugherty Drilling (Attachment B).

E. Squires and Associates
3/5/1999

Grouted (Abandoned) SSI "West" Supply Well
As-Built

5/8-inch chip bentonite from 75-feet-to-5-feet. Chips poured through water column and capped with 5-feet of concrete to surface.

Cement grout surface seal to 50-feet bgl mixed 100 lbs per 5-gals water

100'-
105'-

Two rows of ¾-inch X 2-inch perforations 6-to-the-round 2-feet apart

155'-
160'-

High-solids (>25% by weight) bentonite grout pumped from the bottom-up and pressurized until no additional grout can be forced into well under 150 psi

255'-
260'-

A total of 8,725 gallons of grout pumped. Open borehole volume = 1800 gallons.

Total extent of grout infiltration unknown owing to probable voids behind screens from long-term sand production. Because 7400 gallons of grout were pushed beyond the casings through perforations and screens, there is high likelihood that a significant portion of the drilled hole is sealed with grout.

Screened liner filled in to 323-feet with filter sand from perforations in 12-inch casing.

vertical scale: 1" = 50'
horizontal scale: .1" = 1"

Figure 4.

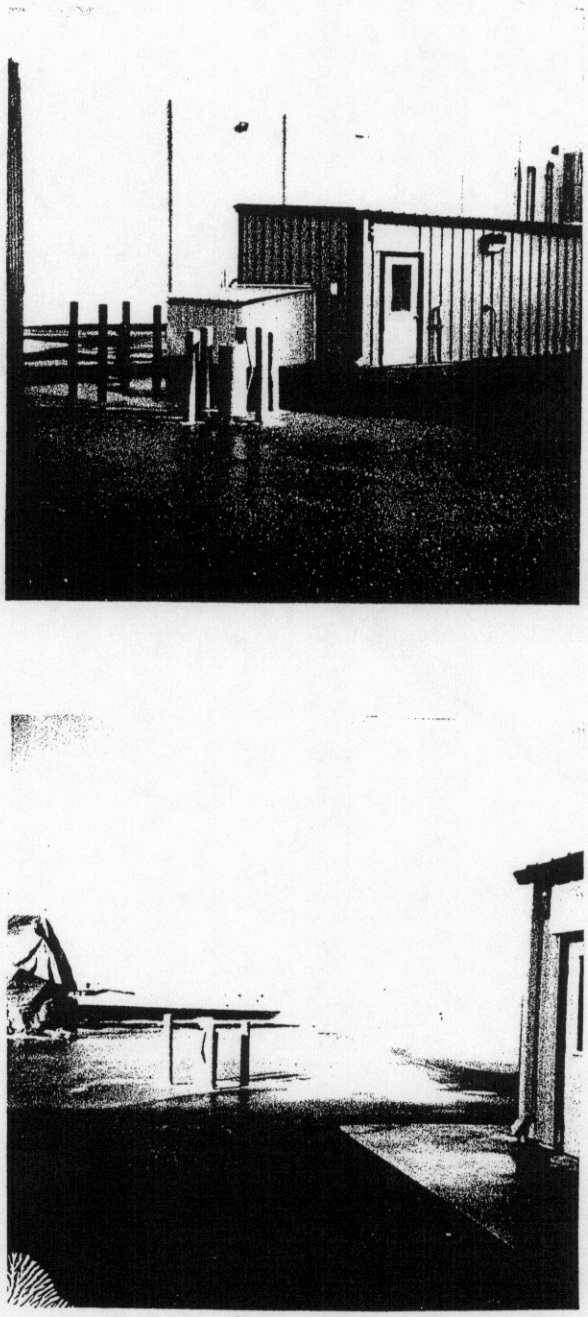


Figure 5. SSI West Well #1, drilled in 1989 by Daugherty Drilling, was located in a traffic area within the SSI compound. The 12-inch diameter well was protected by 4 pylons, equipped with a submersible pump and piped to a booster/filtration station (tan building) via a pitless adapter. The well was abandoned in 1999. The replacement well can be seen in the distance on the lower photo looking west. Photos taken by Mike Guilbert on Jan. 18, 1999 prior to abandonment of the well.

Figure 5.

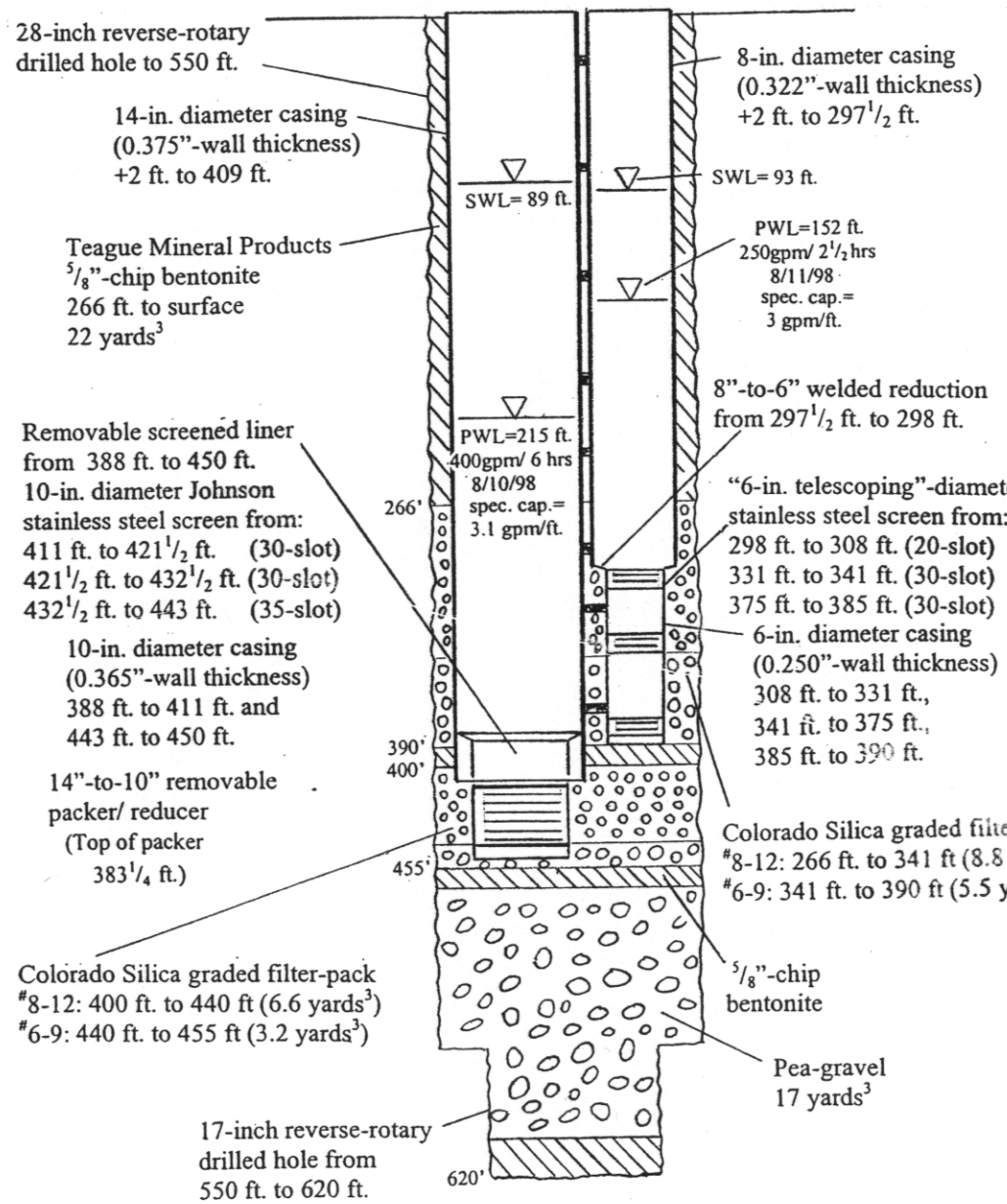
SSI Food Services 14" & 8" Wells

NE1/4 SE1/4, Section 10, T4N, R5W

Well completed by Riverside, Inc., Parma, ID.

As-Built Well Construction

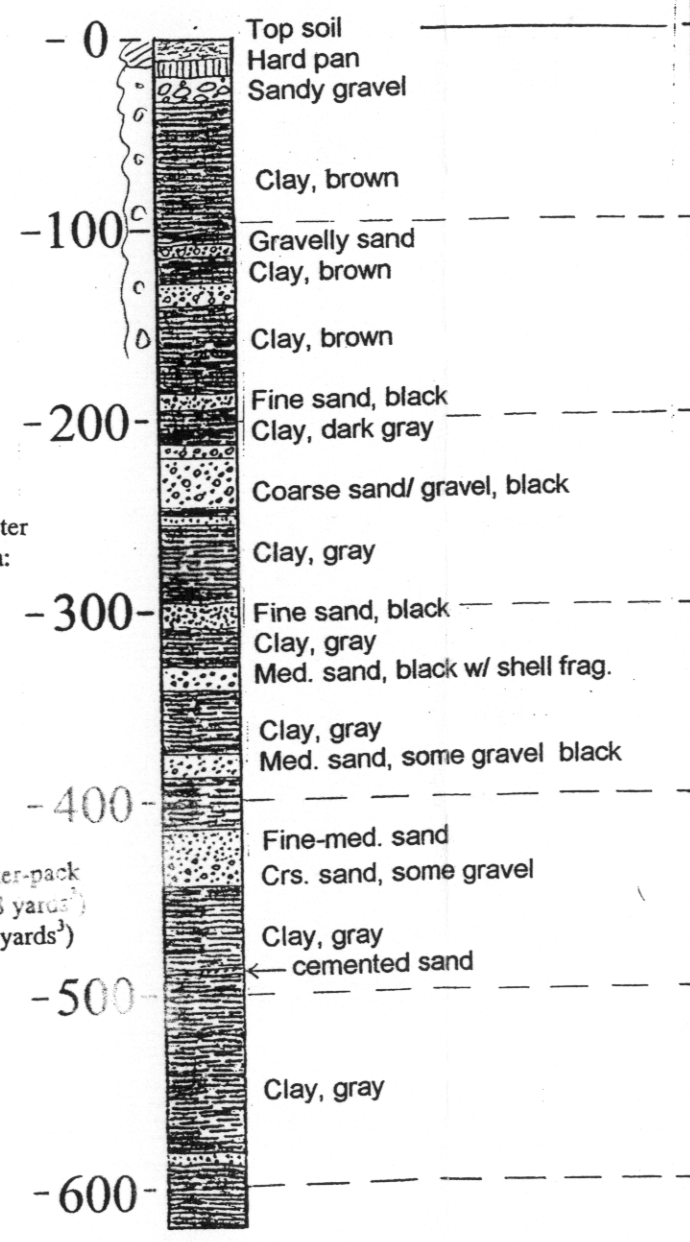
Scale: vertical: 1" = 100 ft.
horizontal: 0.1" = 2 in.



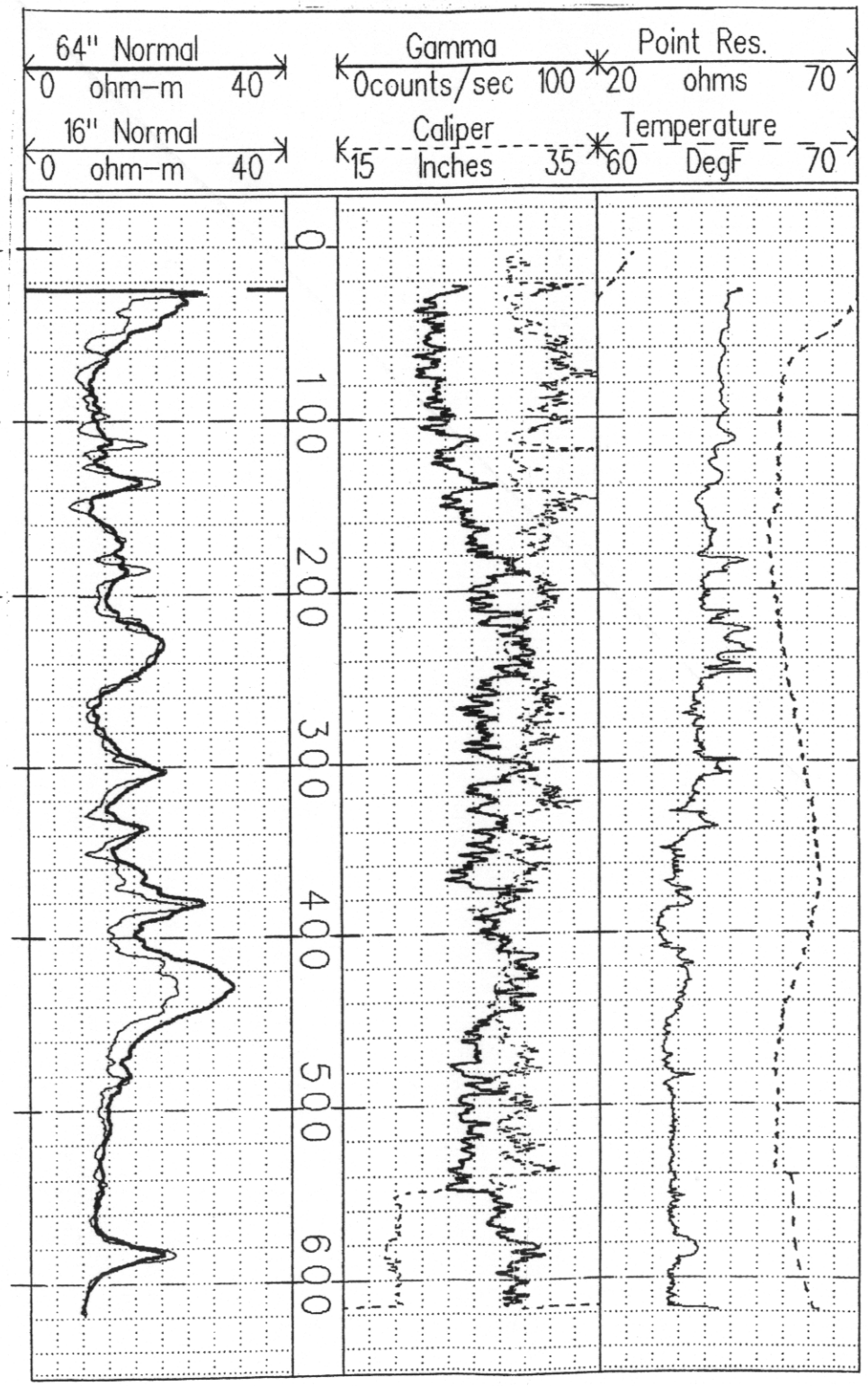
Well drilled and completed by Riverside, Inc. August, 1998

*Centralizers welded to 14" casing, 8" casing, and screened liners (centralizers on removable 10" liner are only tack welded at top)

Depth (ft. bgl) / Lithologic Log



Geophysical Logs



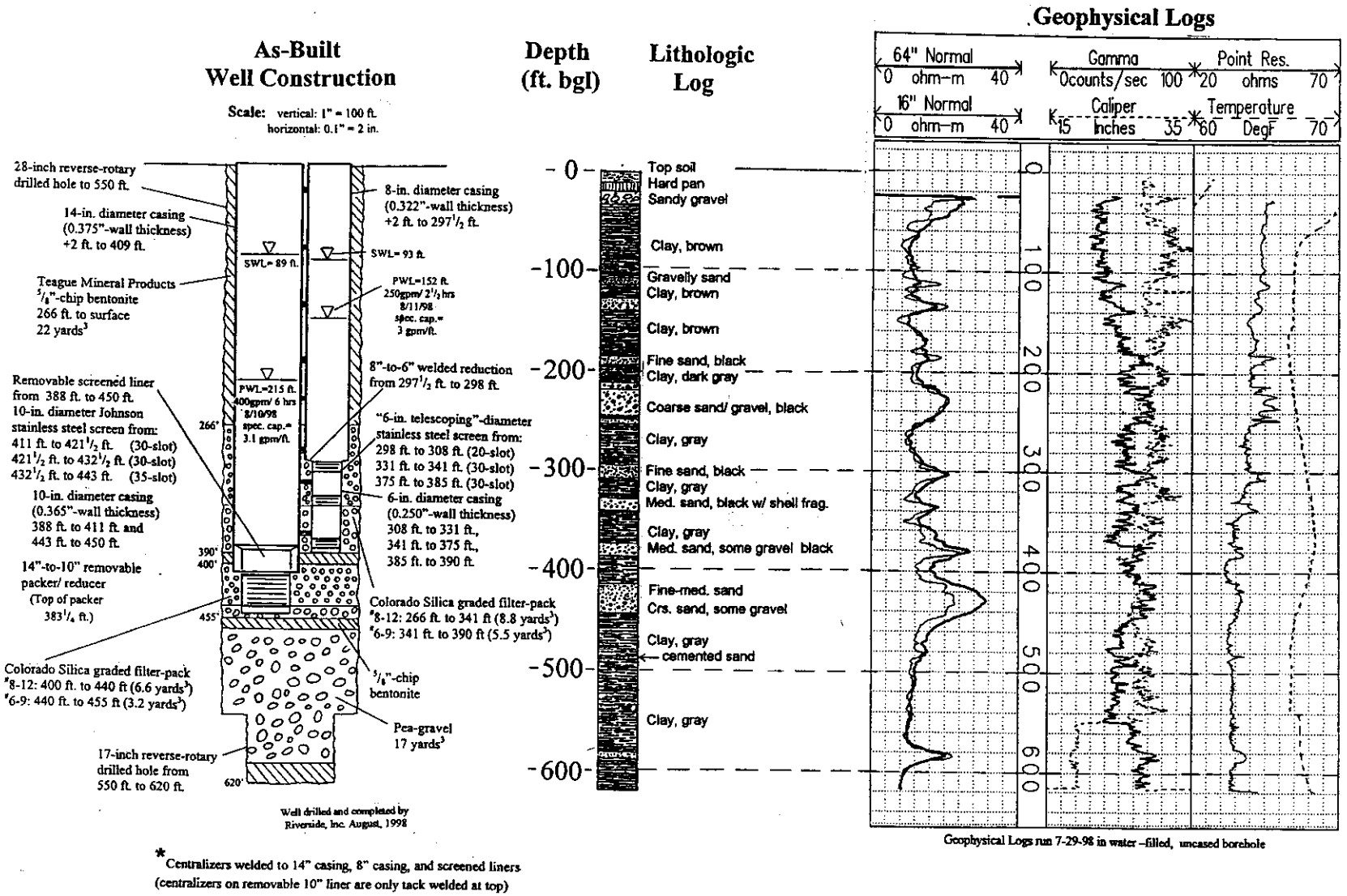
Geophysical Logs run 7-29-98 in water –filled, uncased borehole

Figure 6.

SSI Food Services 14" & 8" Wells

NE1/4, SE1/4, Section 10, T4N, R5W

Well completed by Riverside, Inc., Parma, ID.



* Centralizers welded to 14" casing, 8" casing, and screened liners (centralizers on removable 10" liner are only tack welded at top)

Figure 6.

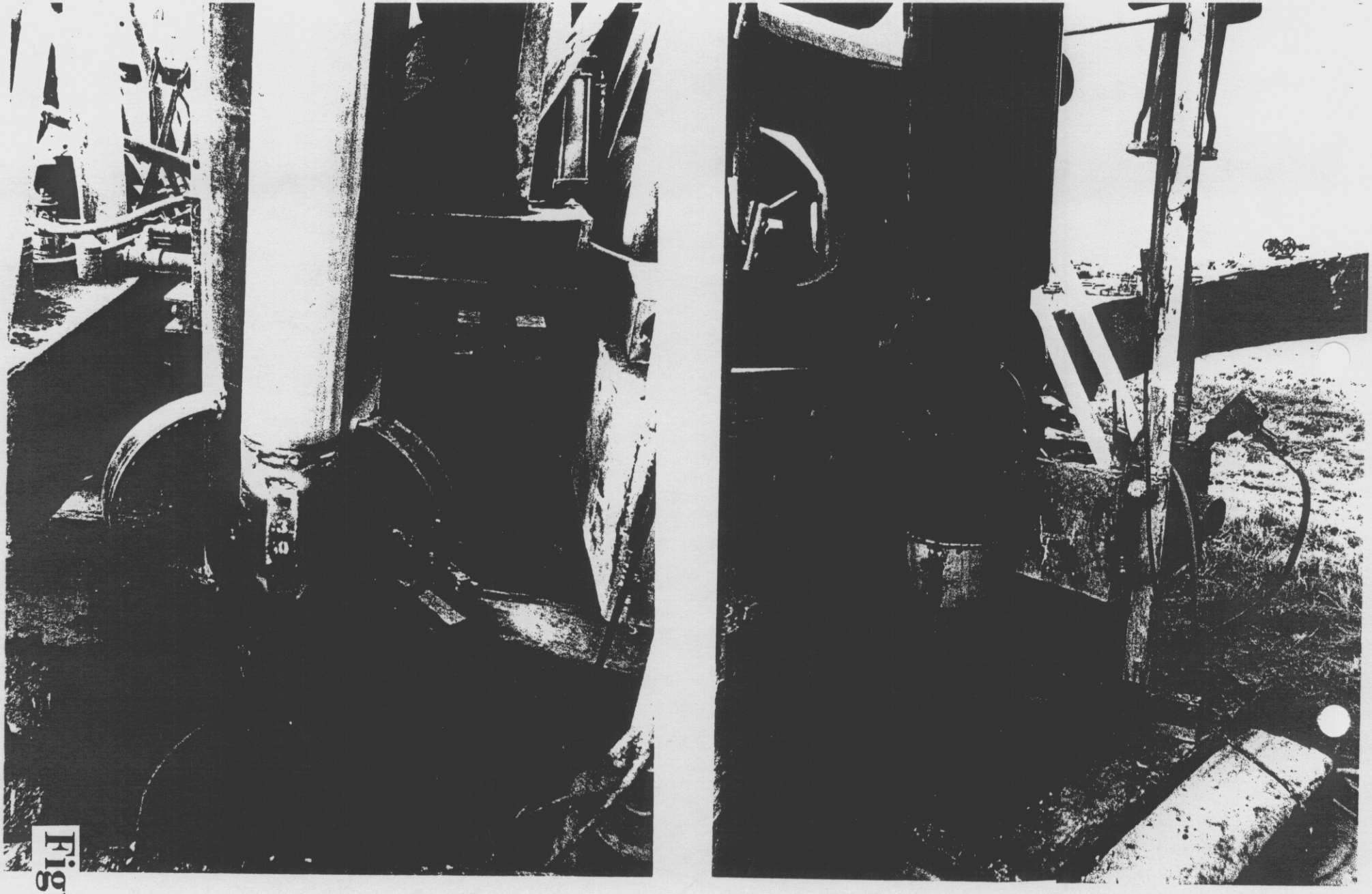


Figure 7.

Figure 7. SSI West Well #2 and #3 well casings and screens during construction of the well during summer of 1998. Shown are the centralizing bands welded to the casing to ensure that the sand filter and full-depth bentonite seal enveloped the casings and screens. The left photo shows the two (8-inch and 14-inch) casing strings which were separated from each other by 1-inch spacers to ensure seal and filter could surround and separate the casings.

SSI Food Services 14" Well

8/10/98 Constant Discharge Test and projected pumping levels at various discharge rates

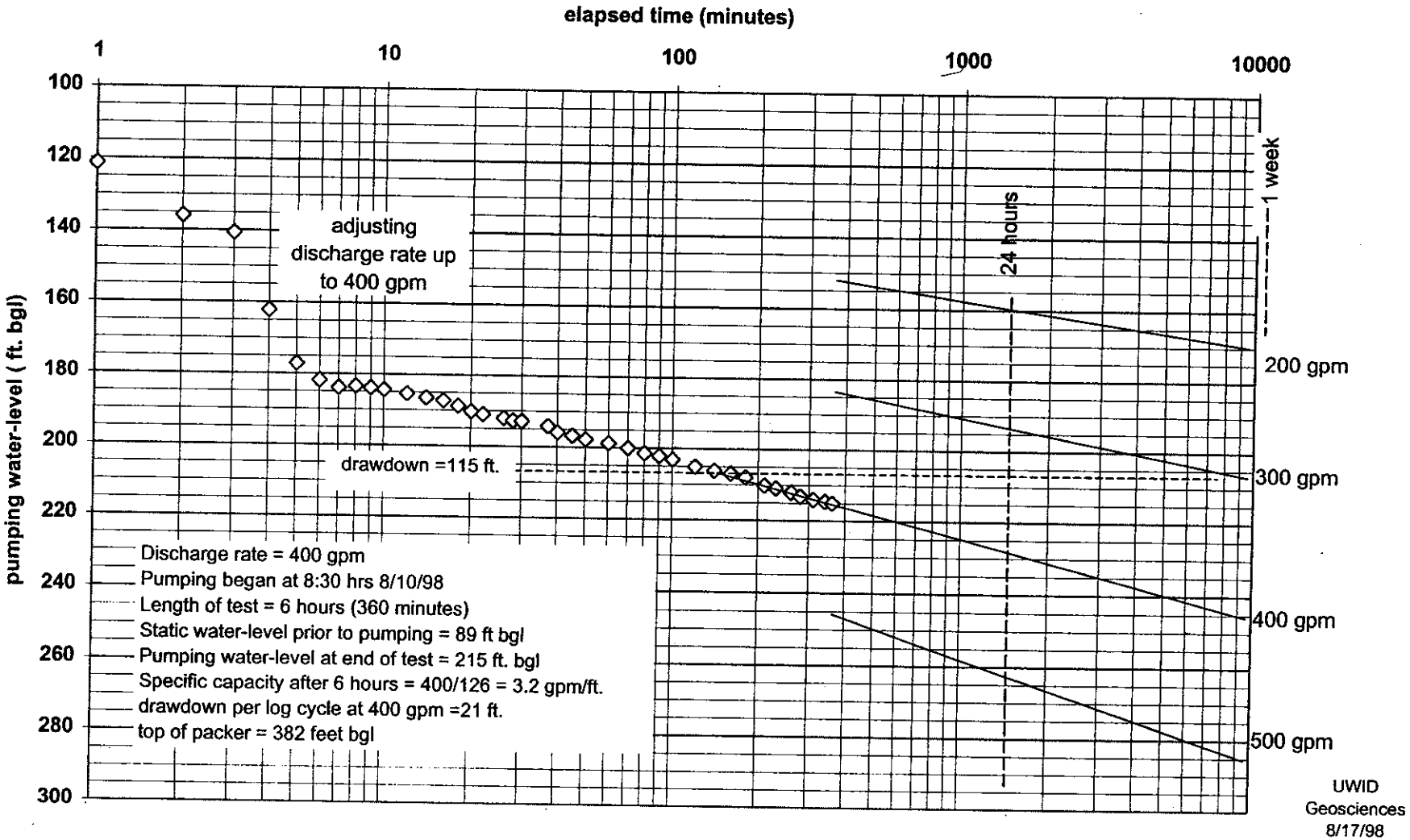


Figure 8.

SSI Food Services 8" Well

8/11/98 Pumping Test and projected pumping levels at various discharge rates

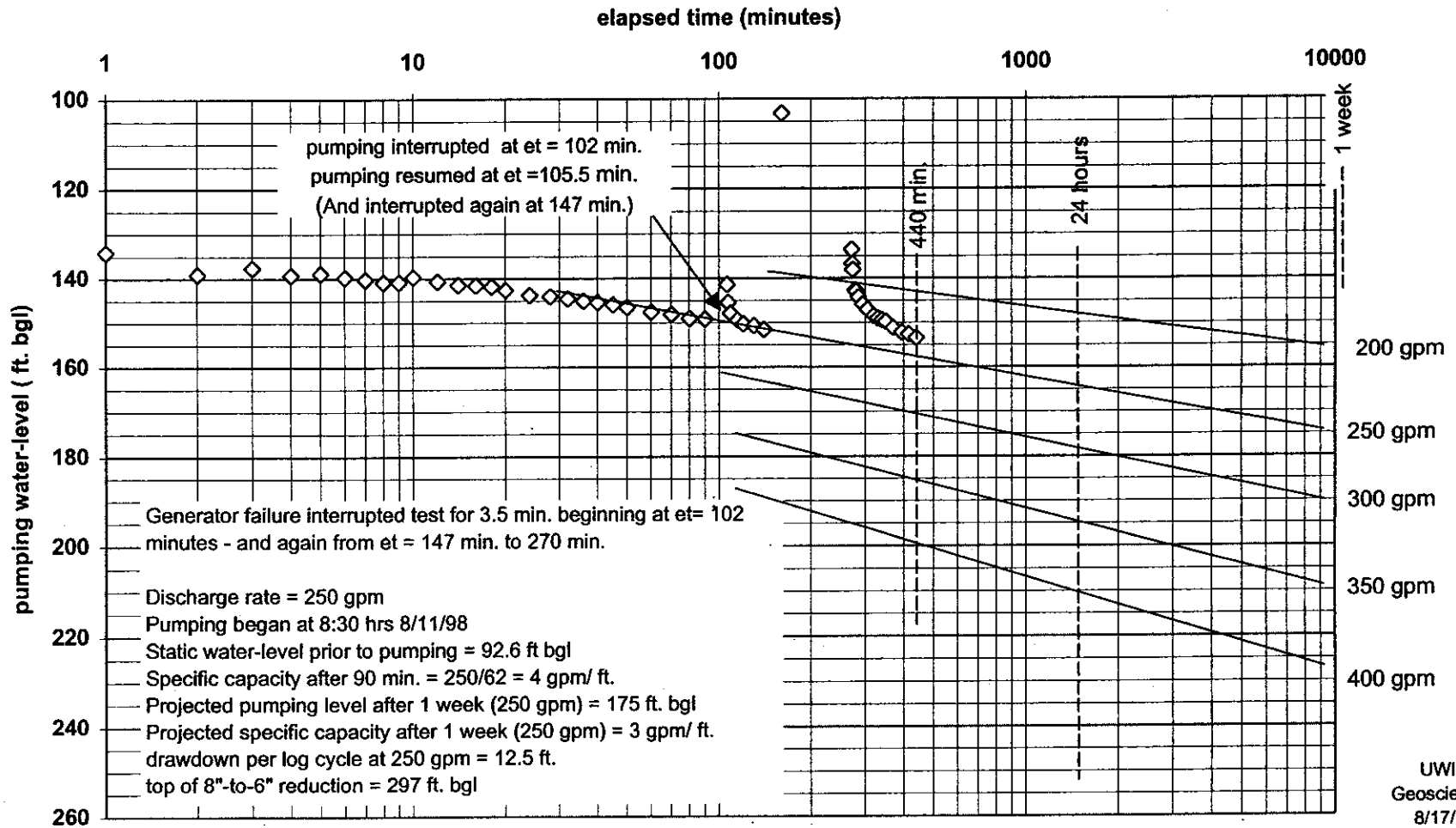


Figure 9.

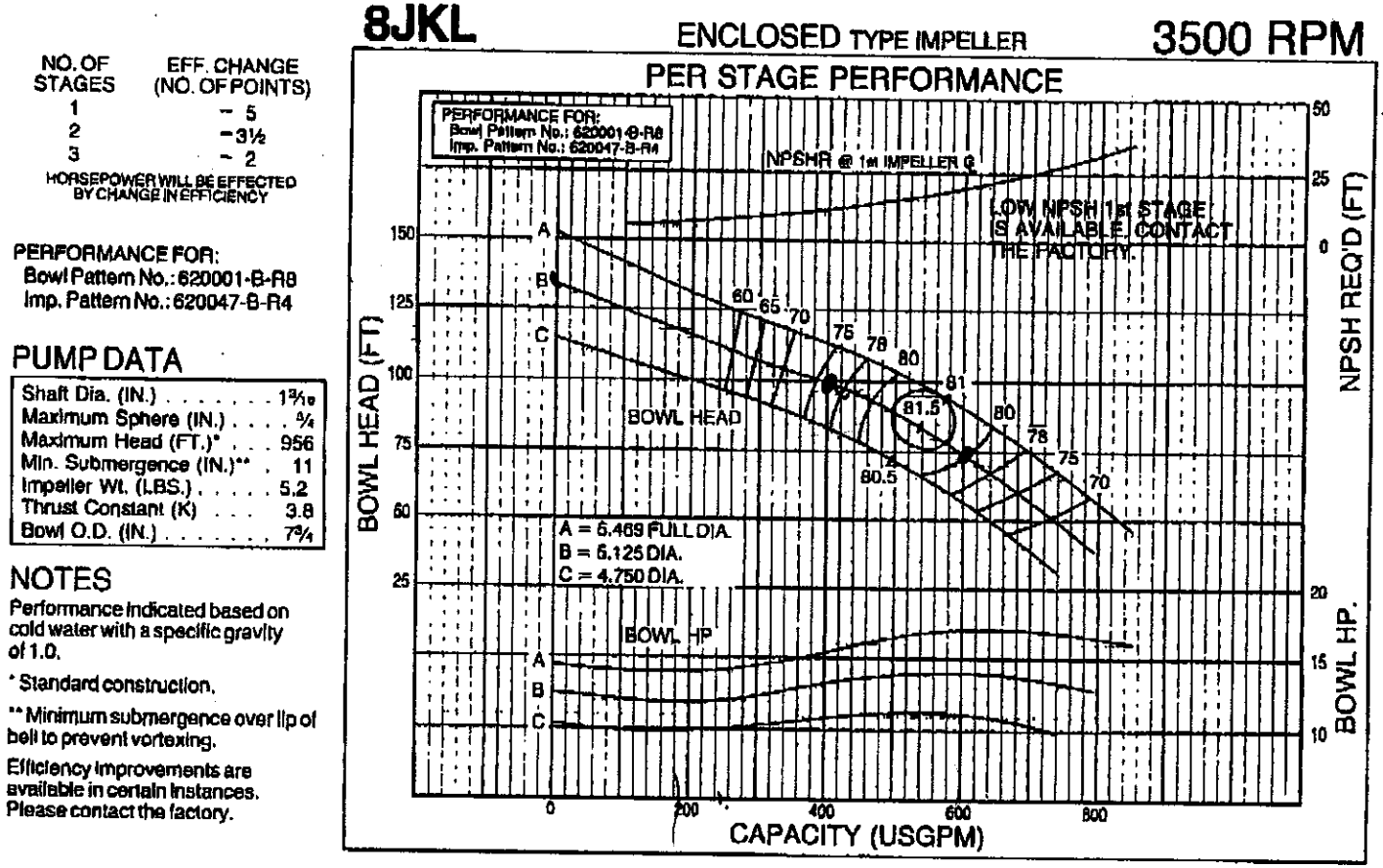


Figure 10. Pump performance curve for the pump installed in the SSI West Well #2 (14-inch diameter casing).

Figure 10.

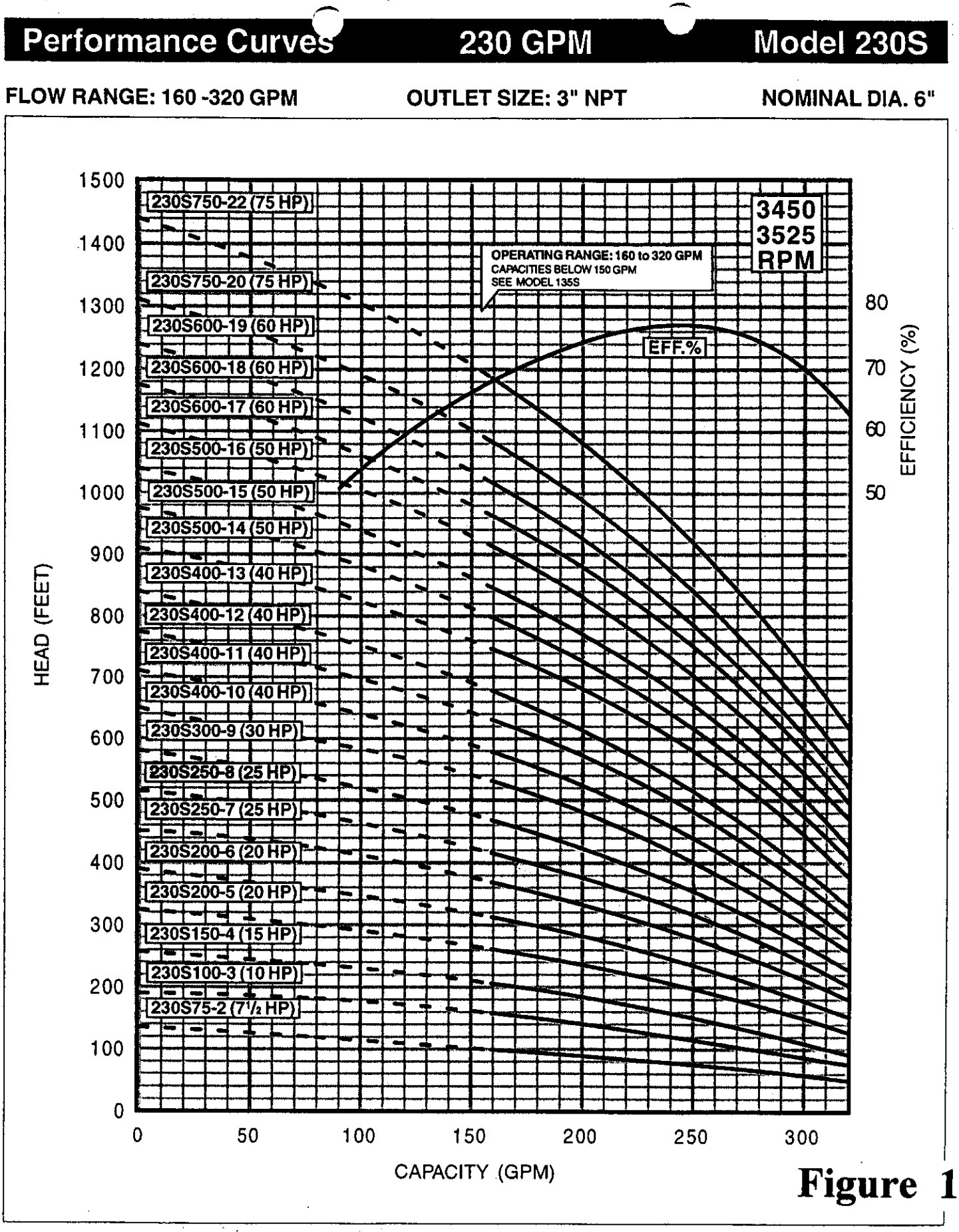


Figure 11.

Figure 11. Pump performance curve for pump installed in the SSI West Well #3 (8-inch diameter casing.

SSI FOOD SERVICE, INC.
P.O. Box 286, 22303 HWY. 95 • Wilder, ID 83676

Project/Meeting _____
Participants _____
Time _____ Date _____
Approved by _____

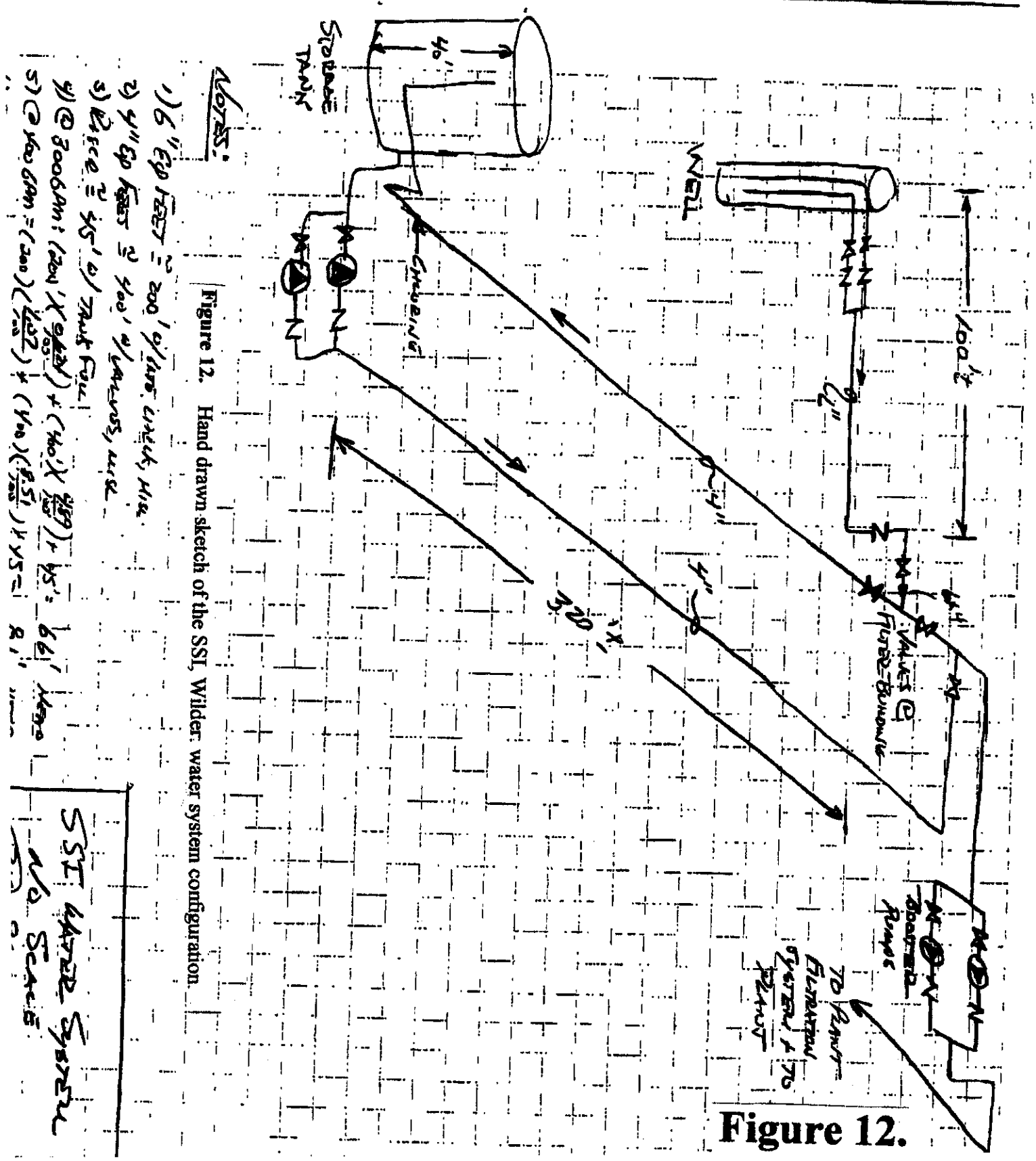


Figure 12. Hand drawn sketch of the SSI, Wilder, water system configuration.

Figure 12.

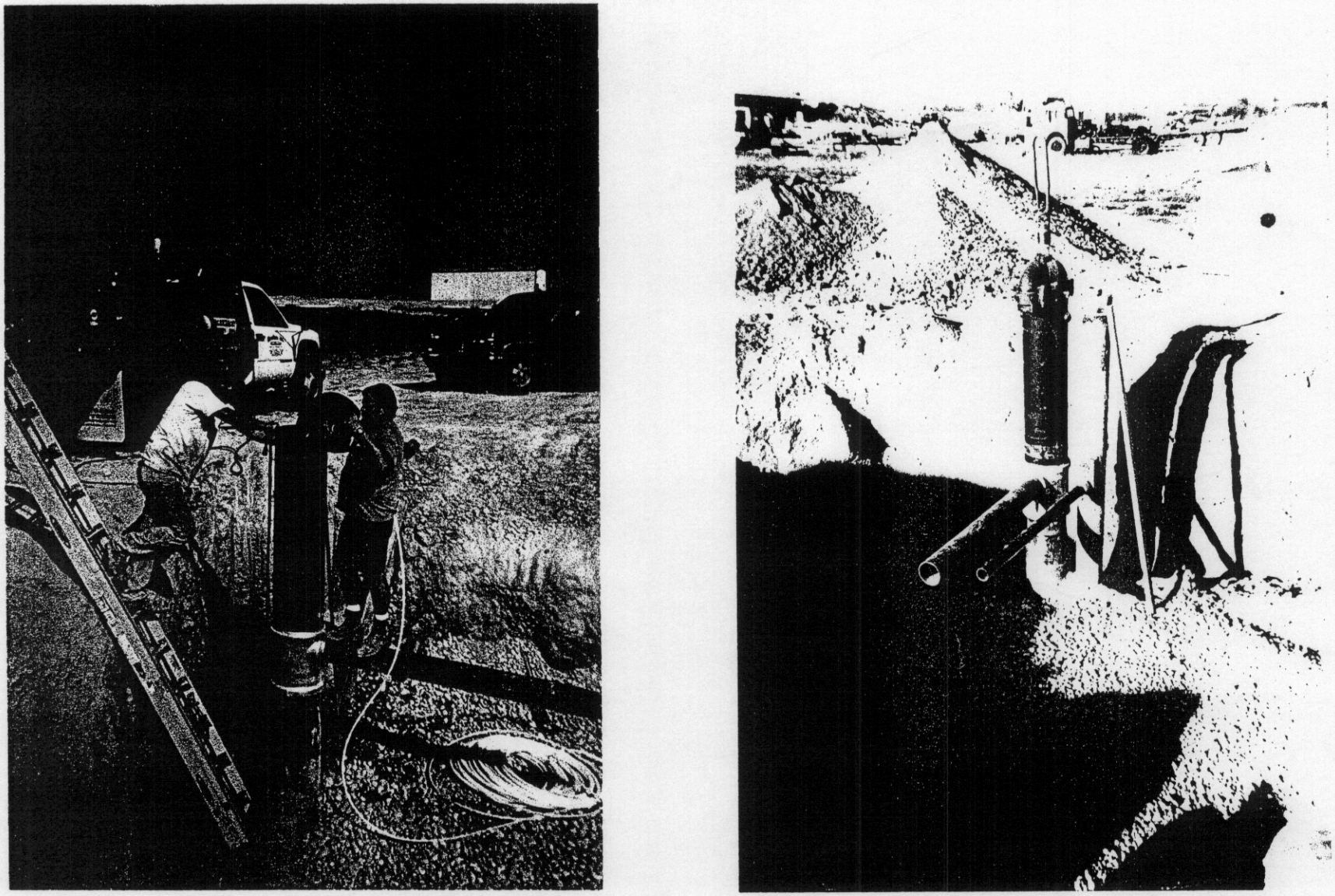


Figure 13. Photographs of the pit-less adapter installations for the SSI West Wells #2 & #3 (14-inch and 8-inch diameter wells). The left photo shows the installation of an inflatable packer used during the leak-test of the pit-less adapter seals.

Figure 13.

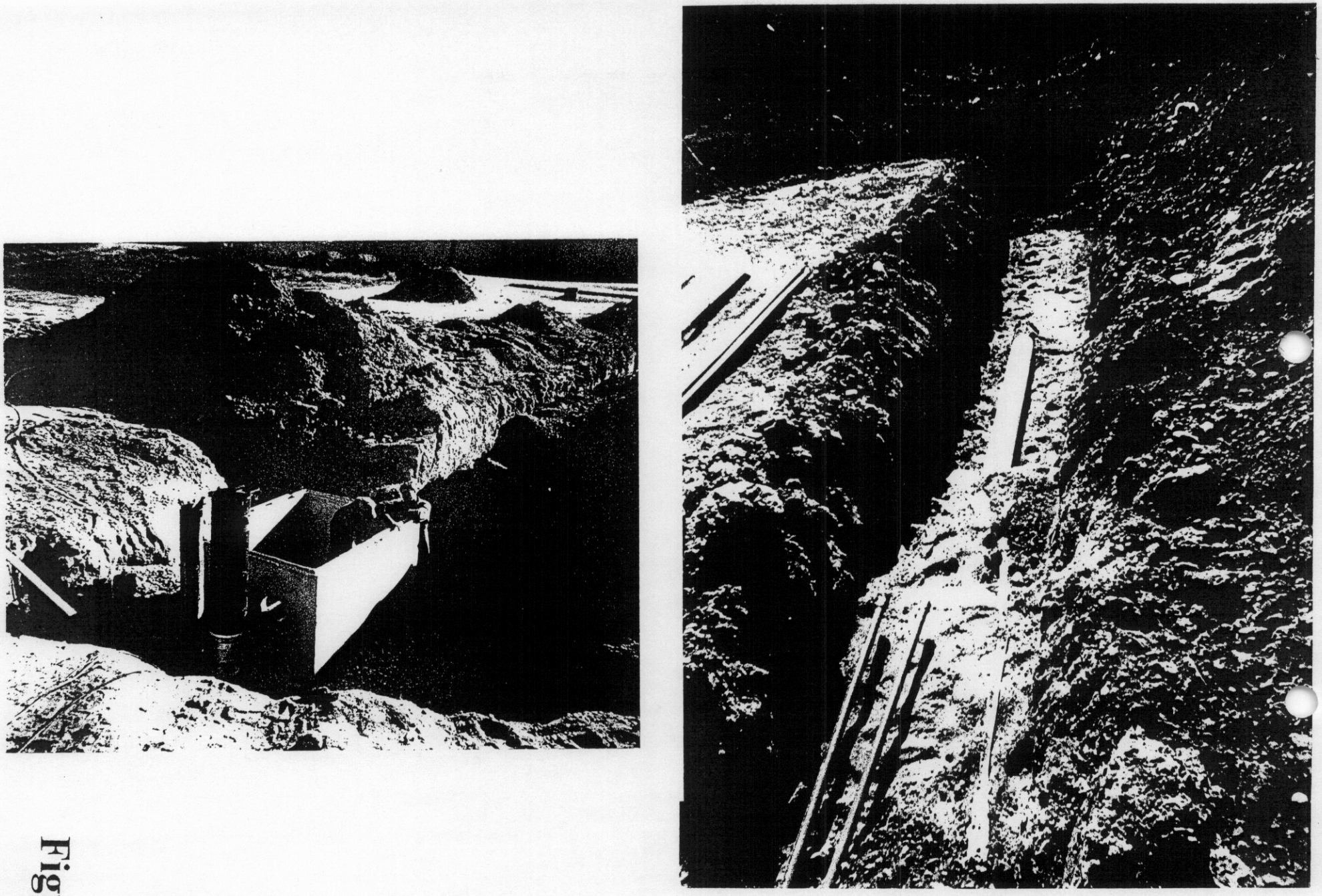


Figure 14.

Figure 14. Photographs of the SSI West Wells #2 & #3 (14-inch and 8-inch diameter wells) during construction of the vault which houses the valving, flush-line, and back-flow prevention check valves for each well. The right and photo shows the 6-inch partially buried C900 PVC piping used to connect the new wells to the existing SSI water system

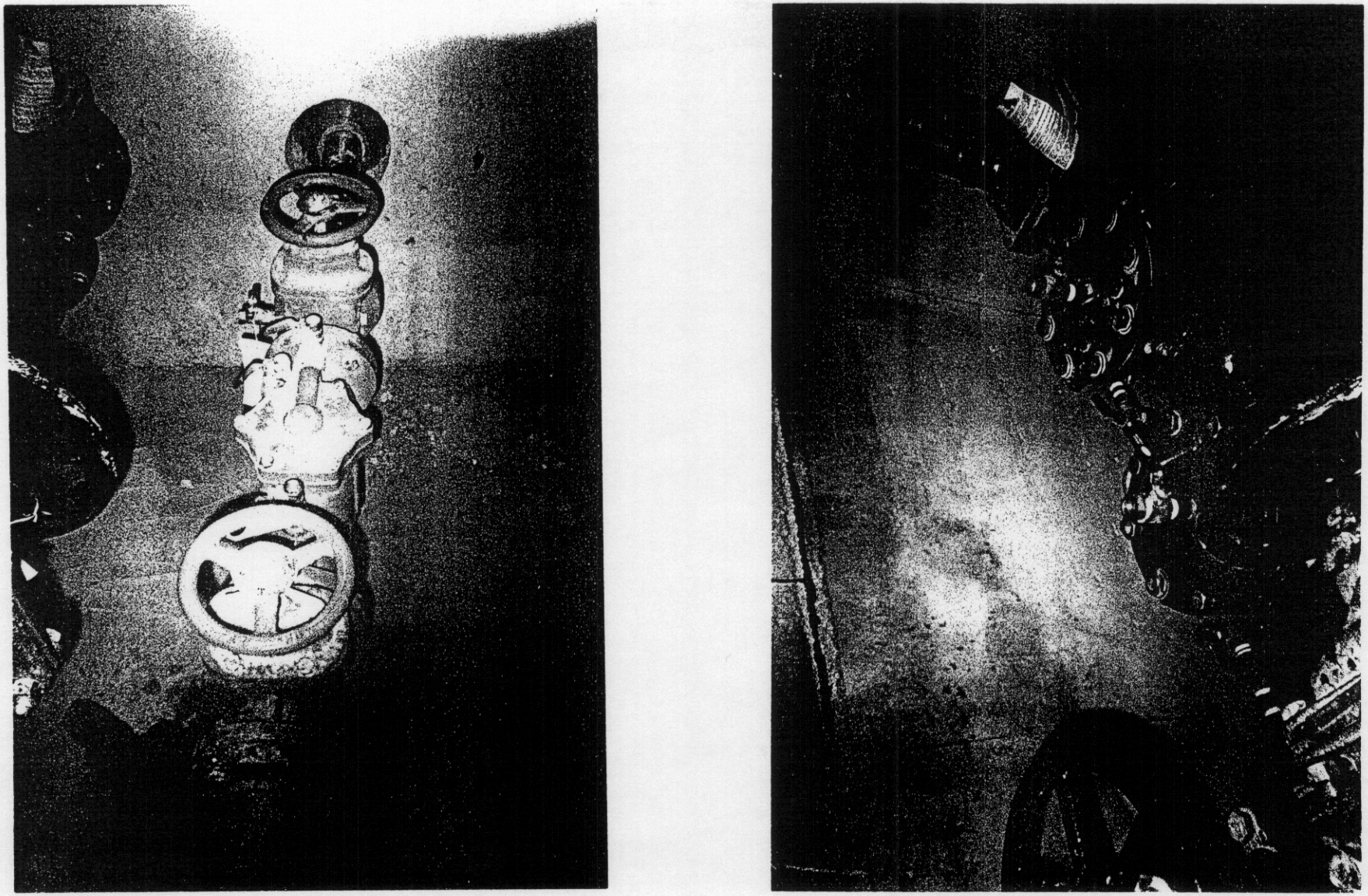


Figure 15. Photographs of the valving and backflow prevention check valves for the SSI West Wells #2 & #3 as they have been installed inside of the vault at the wellhead.

Figure 15

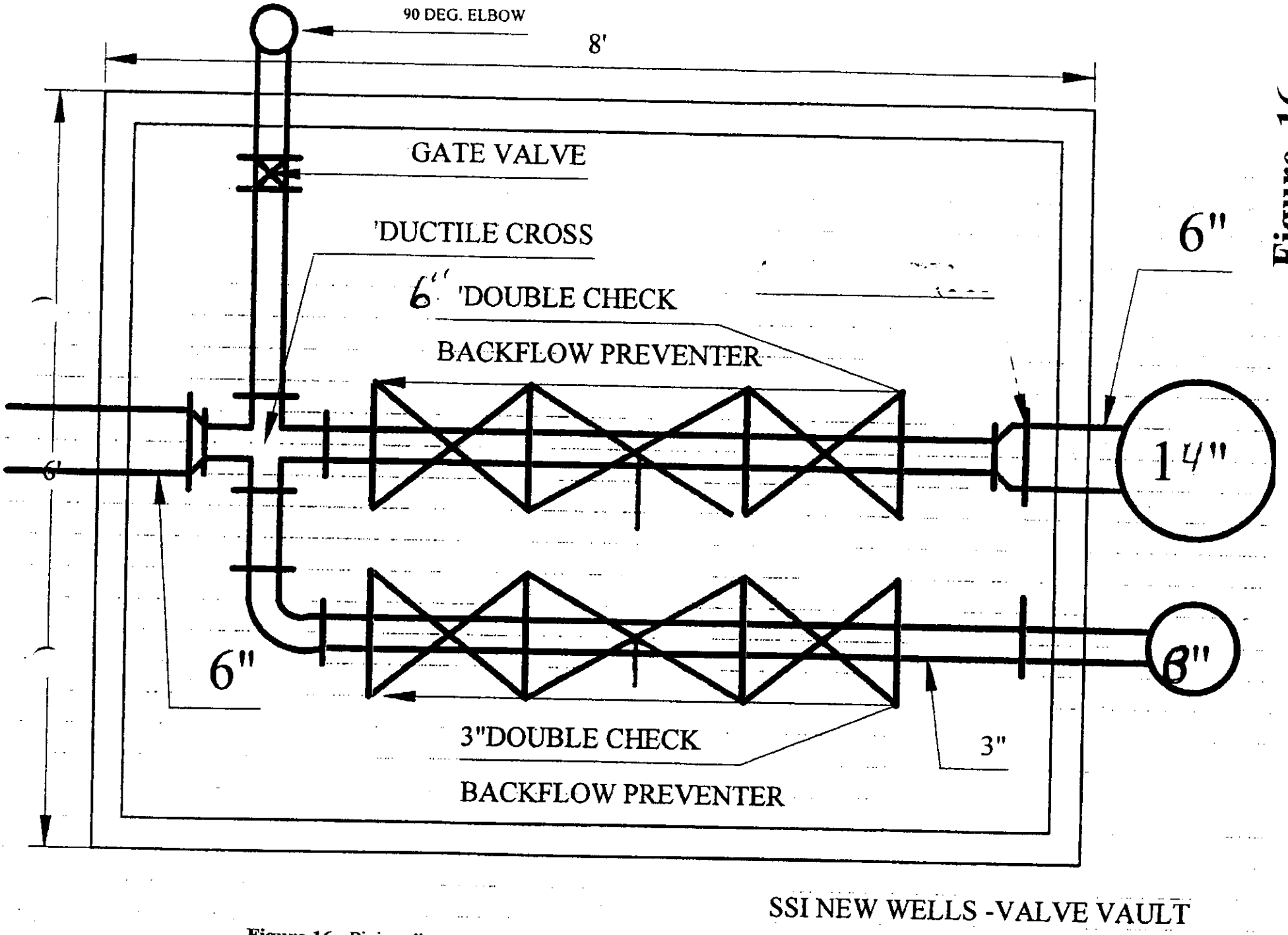


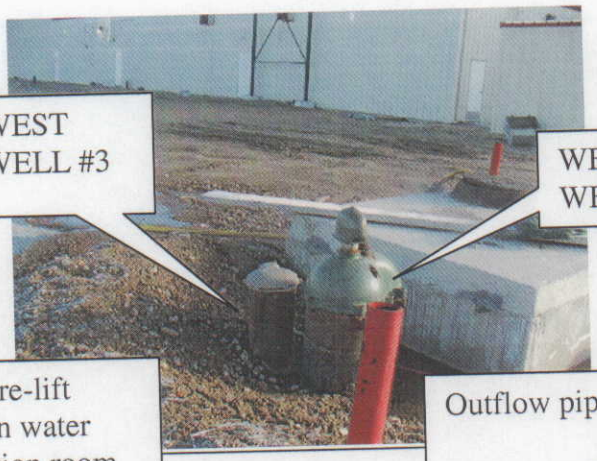
Figure 16.

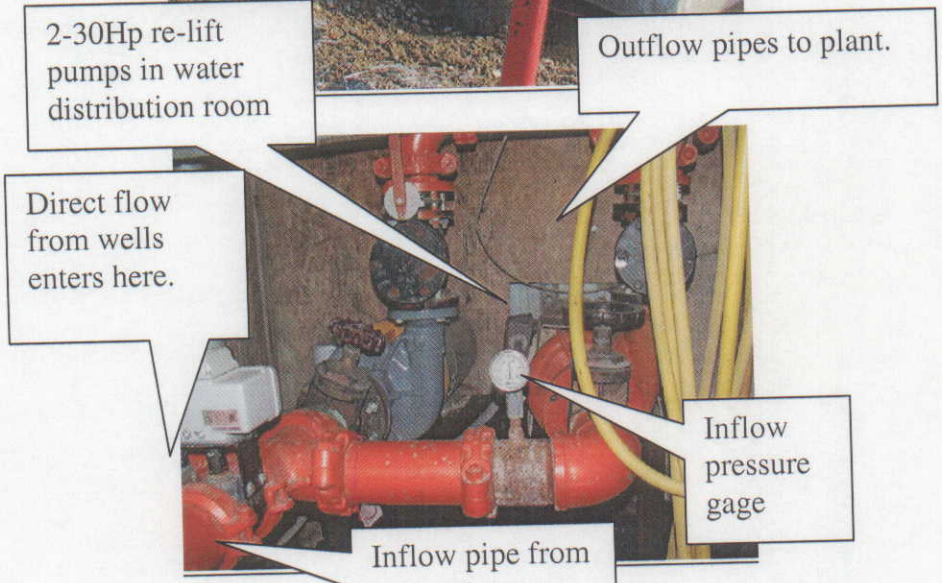
Figure 16. Piping diagram for the SSI West wells #2 & #3 in the buried vault at the wellhead.

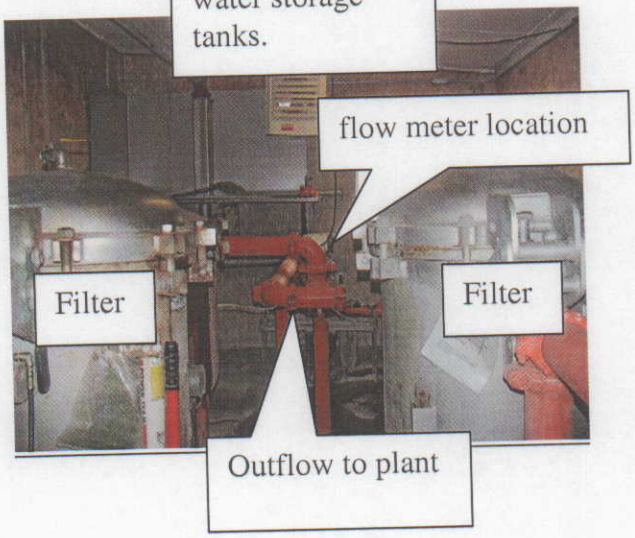
P.01

PHOTOGRAPHER AND DATE OF PHOTOS DANIEL A NELSON 2/20/2004

FILE NUMBER 63-31640







The water from both the West Wells #2 and #3 flow into the concrete box and combine into a single mainline. An outlet pipe is located at this box for the irrigation associated with water right 64-11254. The water from the bunker flows into the water distribution building where it is sent either to the water storage tanks or directly into the plant. The water entering the water distribution room is at 52 psi. 2-30-Hp relift pumps boost the water pressure supplied to the plant to 125 psi. The water is then run through the four sock filters to clean impurities in the water and is delivered through a mainline. The mainline to the plant has a flow meter on it showing the volume of water used in the plant.

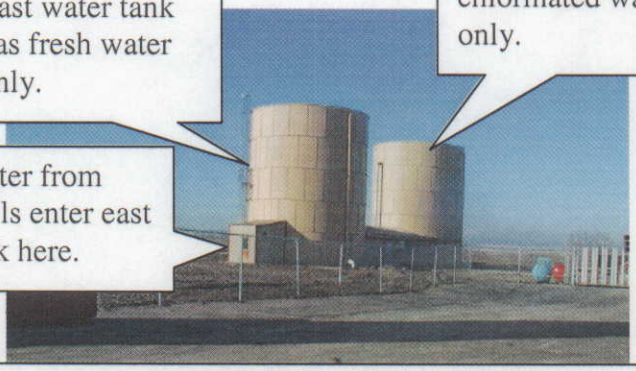
PHOTOGRAPHER AND DATE OF PHOTOS DANIEL A NELSON 2/20/2004

FILE NUMBER 63-31640

East water tank has fresh water only.

West Water Tank chlorinated water only.

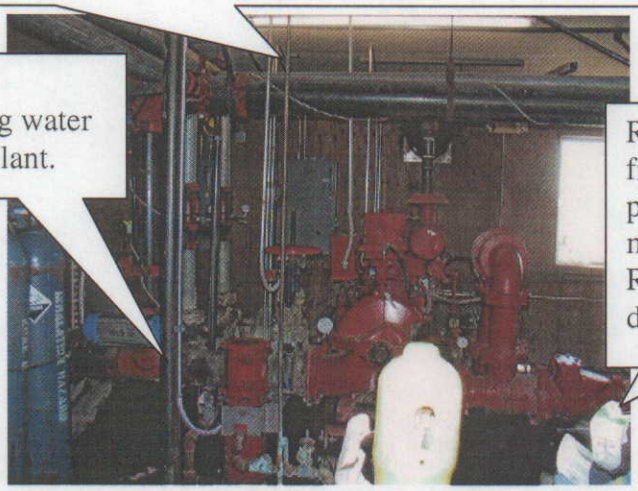
Water from wells enter east tank here.



Overhead piping are lines from each tank. Both tanks can be used for fire prevention, and water from both tanks can be sent to plant.

Pumps delivering water back to plant.

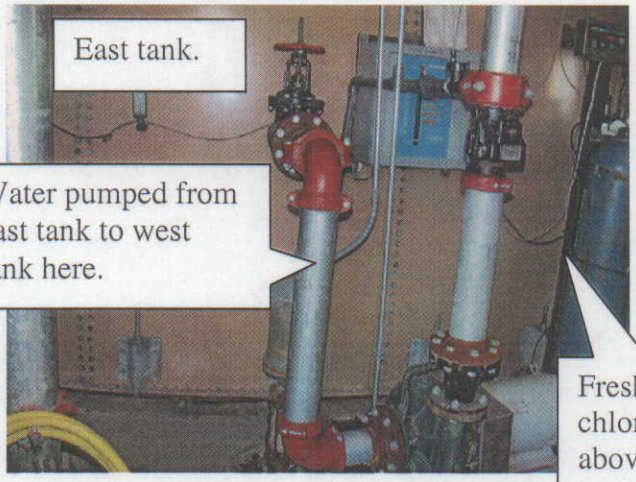
Red lines are fire prevention mainline. Red pump is diesel pump.



East tank.

Water pumped from east tank to west tank here.

Fresh water chlorinated above pump in the mainline.

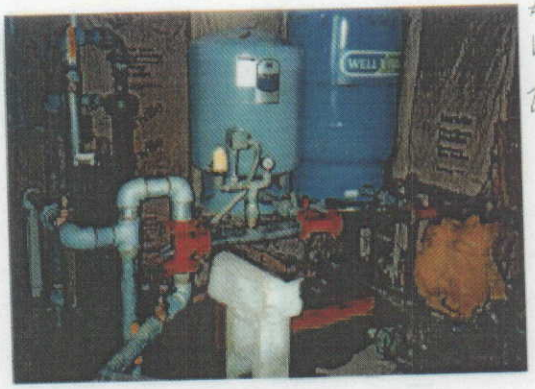


The water from the wells is diverted to the water distribution building and then sent to the water storage tanks. The water from the wells enters the east storage tank through the outside building. The water from the east storage tank can be pumped back into the plant for cleaning purposes. The water from the east tank can also be pumped over to the west tank. When the water is pumped to the west tank it is chlorinated. The water from the west tank is piped to back to the plant for processing purposes. Both tanks are plumbed to supply water to the 1500 gpm fire pump. The fire pump feeds the sprinkler systems and diesel powered to operate during power failures.

PHOTOGRAPHER AND DATE OF PHOTOS DANIEL A NELSON 2/20/2004

FILE NUMBER 63-31640

63-11254



#5
View inside front well house



#4
Well house for front well. Part of lawn and shrubs irrigated from front well are also shown.

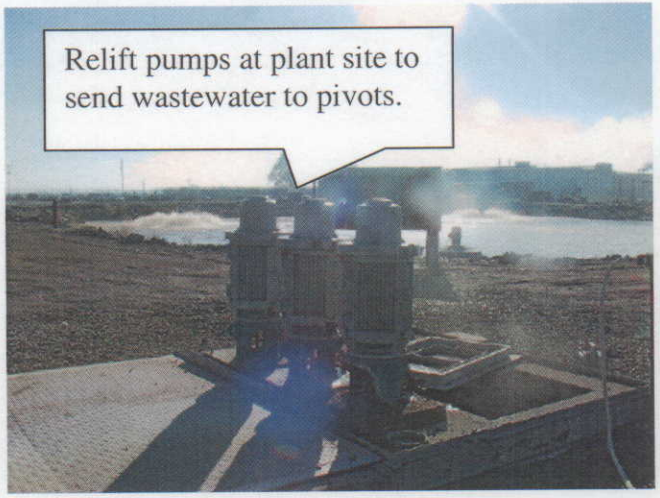


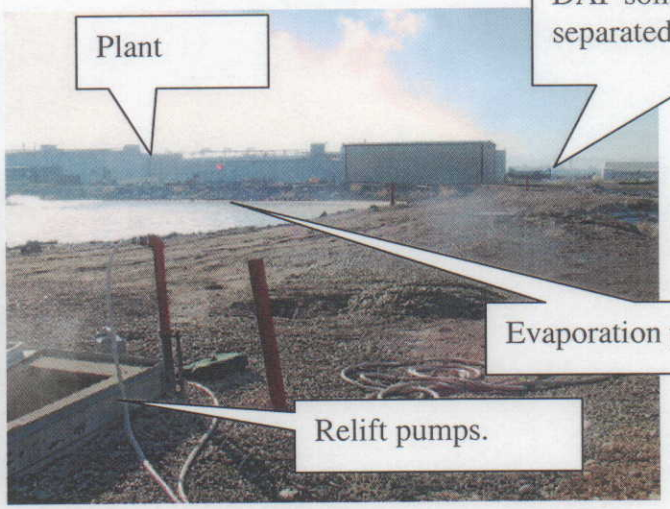
#2
PID - front well

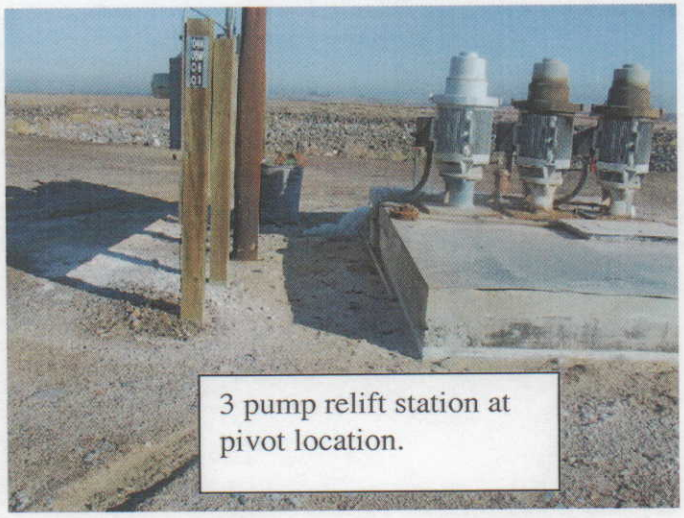
These photos are of the East well #1. During my visit the shrubs shown in the photo had overgrown the well casing and I couldn't get a good photo of the well location. These are photos from the field exam file in 63-11254. The well and well house did not change, but the shrubs are much larger now.

PHOTOGRAPHER AND DATE OF PHOTOS DANIEL A NELSON 3/11/2004

FILE NUMBER 63-10000







The top two photos were taken at the relift pump station for the wastewater. The waste water is run through a solid removal system known as the DAF system ,and sent the three pumps shown in the picture above. If the DAF system goes down the water with the solids are diverted into the ponds. This water is naturally evaporated and the solids are removed after the water is gone.

The processed wastewater pumped through the three pumps in the above picture is diverted into a mainline that runs approximately three miles to the pivot pump station. At the pivot pump station, the wastewater is diverted into the cement vault shown in the picture to the right and diverted to the pivots. There are irrigation rights from wells on these lands that are diverted into the mainline system during the irrigation season. Wilder Irrigation District water is also pumped into the system for the ¾ pivot shown on the maps.

PHOTOGRAPHER AND DATE OF PHOTOS DANIEL A NELSON 2/20/2004

FILE NUMBER 63-130640






The above pictures are of the lands where the wastewater is being land applied. The third picture shows irrigation wells and the irrigation pump system that is located approximately 1/8 of a mile from the wastewater pumping station. The mainline from these wells runs east to this pumping station and diverts directly into the mainline.