



D & W DRILLING COMPANY
Water Well Contractors
P. O. Box 6161
Lake Charles, Louisiana 70606
478-1467 - 477-9784

August 14, 1980

Conoco, VCM
Box 605
Westlake, La. 70669

Gentlemen:

As requested our price proposal for a 4" Water Well to produce 50 GPM at 50 PSI is as follows:

Drill and develop 1 - 4" PVC Water well up to 200' complete with:

1 - 5 HP - 60 GPM submersible pump
1 - 525 Gallon Galvanized pressure tank
126' - 2" Galvanized discharge pipe
140' - #8 Submersible pump cable
1 - 5 HP single phase control box
All pipe, valves and fittings to install system.

\$4950.00 ←

Extra footage past 200' up to a total depth of 300' (Maximum depth approved for PVC pipe) is \$7.50 Per foot.

If water bearing sand is deeper than 300' 4" galvanized pipe will be used.

The same well and system using 4" galvanized pipe up to 300' will be

\$6400.00

Additional footage past 300' will be \$12.50 per foot.

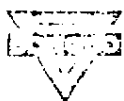
This bid is good for 30 days.

Thank you.

Yours truly,
Don Johnson

Don Johnson
D & W Drilling Company

VVC 000008861



ENGINEERING CENTER

PONCA CITY, OKLAHOMA

SPECIFICATION SHEET

PRESSURE REGULATORS

A.F.E. NO.

DATE 8-15-80

W.O. NO.

MADE BY SCR

INO. NO.

APP'D BY EJA

REQ. NO.

B.M. NO.

P.O. NO.

PLANT Lake Charles UCM PROJECT Process Water Provisions at Secondary
DESIGN NO. 163-700-390-SCR

ITEM NO. PCV-1

SERVICE Process Water Pressure Regulator

Item No. and Tag PCV-1

Service Process Water Pressure Regulator

Manufacturer Fisher Controls Company (or Equivalent.)

Model No. 75A

Line Size, Inches 1 1/2"

Stream and Valve

Fluid Water

Temp., °F 65-100

Inlet Pressure, PSIG Norm-Max. 45-60

Outlet Pressure, PSIG Norm-Max. 45-45

Sp. Gr. @F. T&P 1.0

Viscosity, @F. T&P, cp 1.0

Molecular Weight 18

Rate, ^{GPM}SCFH Norm-Max. 10-50

Body Size, Inches 1 1/2

Orifice Size, Inches 1 1/2

NOTES:

VVC 000008862

SHEET 3 OF 5 REV



ENGINEERING CENTER
PONCA CITY, OKLAHOMA
SPECIFICATION SHEET
PRESSURE GAUGES

A.F.E. NO. _____
DATE 8-15-80 W.O. NO. _____
MADE BY SCR INQ. NO. _____
APP'D BY ALP REQ. NO. _____
B.M. NO. _____ P.O. NO. _____

PLANT Lake Charles VCH PROJECT Process Water - Revisions at Secondary
DESIGN NO. 163-700-880-SCR

1	TAG		INSTRUMENT	OPERATING	OPERATING	
2	NO.	SERVICE	RANGE, PSIG	PRESS, PSIG	TEMP. OF	LOCATION
3	PG-1	Press. Reg. Dist. CT	0-100	45	65	Line 14" WD-2-N-A23
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						
33						
34						
35						
36						
37						
38						
39						
40						
41						
42						
43						
44						
45						
46						
47						
48						
49						
50						
51						
52						
53						
54						
55						
56						

VVC 000008863

QUOTATION WILL NOT BE CONSIDERED IF SUPPLIER DOES NOT COMPLETE RIGHT HAND COLUMN.

SHEET 4 OF 5 REV

CONTINENTAL OIL COMPANY

LAKE CHARLES VCM PLANT

Design No: 163-703-880-5CR

LAKE CHARLES, LA.

VCM - Process Water Remains at Secondary

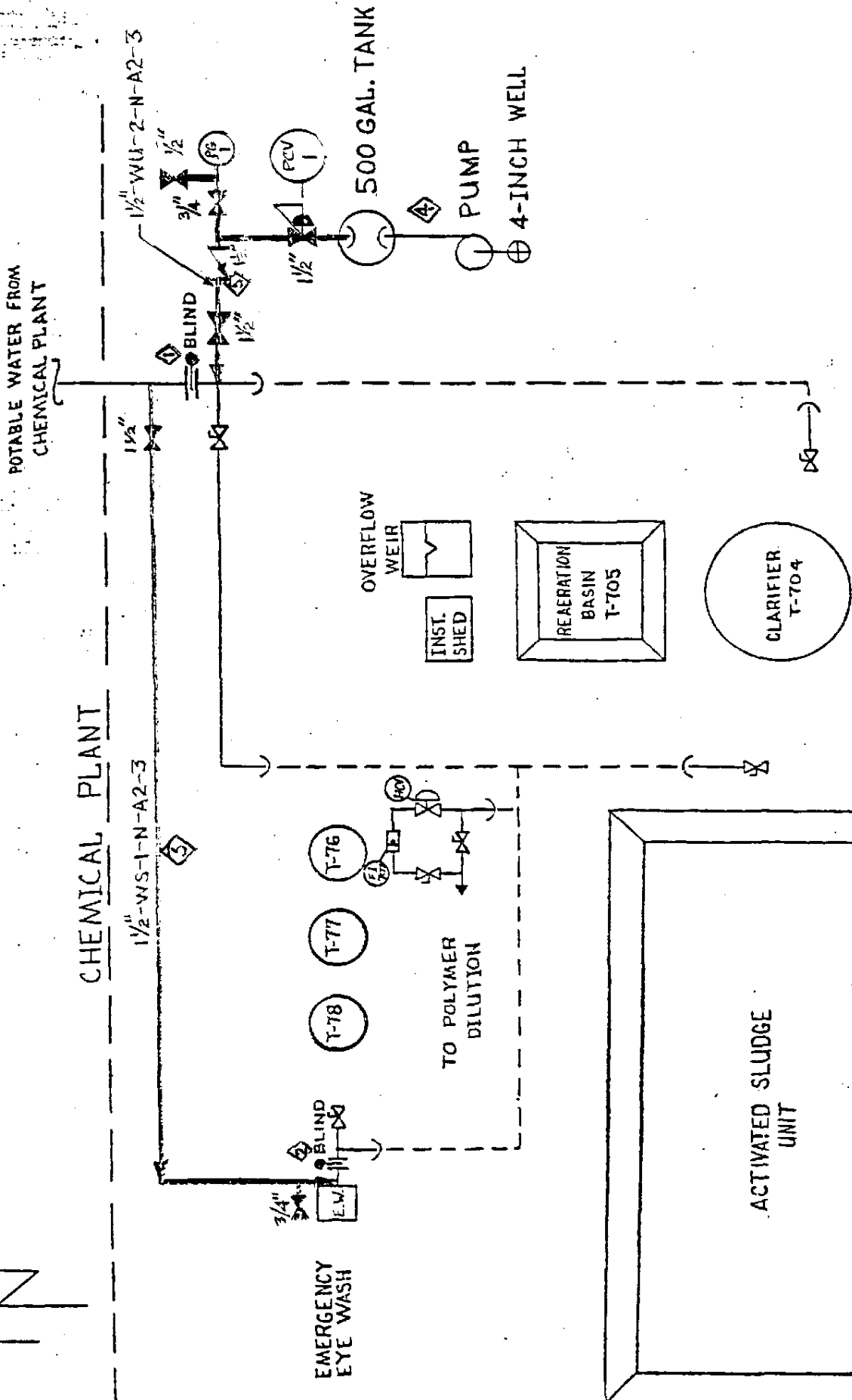
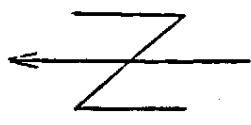
Sheet 5 of 5

PIPING SCHEDULE

ISU	DATE	DESCRIPTION	BY	CKD	APD
-----	------	-------------	----	-----	-----

[illegible]

VVC 000008864



- LEGEND**
- EXISTING ABOVE-GROUND LINE
 - - - EXISTING UNDER-GROUND LINE
 - NEW LINE
 - ◇ WORK LIST NO.

PROCESS WATER AT SECONDARY
 DWG. NO. VCM-163-1
 DES. NO. 163-700-880-SCR
 8-15-80



Interoffice Communication

To J. W. Ware
From S. C. Racca *L*
Date August 25, 1980
Subject Process Water Revisions at the Secondary
Design No. 163-700-880-SCR
Review Issue--Comments Due by 9-8-80

The attached Class "A" design provides for revision of the process water system at the Secondary Wastewater Treatment Facility. Presently the Chemical Plant's potable water system is used to supply process water at the Secondary. This design provides for drilling a new 4-inch water well at the Secondary to provide process water.

Federal regulations require that potable water and process water occupy discretely separate piping systems in order to eliminate the possibility of contaminating potable water with process water. In order to meet these requirements the following alternatives were considered:

- 1) Installation of piping to route process water from the VCM Plant process water system to the Secondary.
- 2) Use of treated water from the reaeration basin overflow weir for process water.
- 3) Installation of a break tank at the Secondary.
- 4) Drilling of a water well at the Secondary to supply process water only.

After evaluation of all alternatives it was determined that the best method for achieving defined objectives was to drill a water well at the Secondary Treatment Facility. This selection was based on estimated installation costs as outlined in the attached Table I as well as projected energy consumption.

By copy of the final design to J. R. Holcomb, a definitive cost estimate is requested. If there are any questions or comments concerning this design, please contact D. L. Davis.

Stephen Racca DLD

S. C. Racca
Summer Chemist

Supervised by:

P. L. Fetzer
P. L. Fetzer
Chief Chemist

Approved by:

D. L. Davis
D. L. Davis

VVC 000008866

CC: JAD-GLF-JWW(4)-JRH(4)-WVH-PLF
DLD-CWT-PE

TABLE I
COST COMPARISON OF ALTERNATIVES
PROCESS WATER AT THE SECONDARY

<u>Alternative</u>	<u>Pump(s)</u> ⁽¹⁾	<u>Tank(s)</u> ⁽²⁾	<u>Filter(s)</u> ⁽³⁾	<u>Pipe</u> ⁽⁴⁾	<u>Well Drilling</u> ⁽⁵⁾	<u>Labor</u> ⁽⁶⁾	<u>Total</u>
1. Piping from Plant	\$2,000	-	-	\$3,640	-	\$4,230	\$ 9,870
2. Reaeration Basin Water	\$6,000	-	\$4,150	\$ 75	-	\$3,000	\$13,225
3. Break Tank	\$2,000	\$1,970	-	\$ 75	-	\$4,000	\$ 8,045
4. Water Well	(7)	(7)	-	\$ 30	\$5,000	\$1,500	\$ 6,530

(1) Pump estimates obtained from Durco, Goulds, Ingersoll-Rand, and Worthington.

(2) Estimate obtained for fiberglass tank from Triplex, Inc.

(3) Estimate obtained from Durco Filters.

(4) Piping estimates obtained from Republic Supply Company and Standard Supply and Hardware Company.

(5) Estimates obtained from D&W Water Well Drilling, Myrick Water Well Service, and Rutherford Water Well Service.

(6) Labor estimates based on cost of materials and degree of work required.

(7) Supplied by driller, included in well drilling cost.

DESIGN BASIS

Process water at the Secondary Waste Water Treatment Facility is used for polymer dilution, hosing down Secondary areas, instrument flushing, etc. Of these uses only polymer dilution requires a continuous flow. The normal flow requirement for polymer dilution is 5 to 20 gpm. On occasion when process water may be in use for other applications as well as polymer dilution, expected maximum flow requirement will be 50 gpm.

PROCESS DESCRIPTION

A 4-inch water well will be drilled to a depth of approximately 200 feet at the Secondary between the reaeration basin and the east fence. A submersible 5 HP motor and pump (maximum capacity of 50 gpm) will be installed to lift water from the well to a 500 gallon captive air surge tank. The pump will be controlled by a pressure switch which will maintain pressures in the tank between 45 psig and 60 psig. The pump, tank, and pressure switch will be supplied and installed by the well drilling contractor. Water from the tank will be delivered to the existing process water piping through a constant pressure regulating valve set at 45 psig. Constant pressure in the Secondary process water system is required to ensure constant continuous flow for polymer dilution.

ENVIRONMENTAL IMPACT STATEMENT

This project will have no effect on the environment.

ENERGY IMPACT STATEMENT

Based on a continuous flow of 10 gpm for polymer dilution and a capacity of 50 gpm for the water well pump, the estimated annual electrical energy consumption will be 6,532 KWH or an equivalent 65.32 MM BTU/Yr. on the CMA basis. Electrical energy consumption will vary when process water is used for applications besides that of polymer dilution, however, energy consumption due to other uses will have negligible impact.

SAFETY AND HEALTH IMPACT STATEMENT

Use of a separate well to supply process water to the Secondary will eliminate the possibility of contaminating the Chemical Plant's potable water system with Secondary process water. It will also provide for compliance with Federal regulations requiring separation of potable and process water.

WORK LIST

Refer to Drawing No. VCM-163-1

- 1) Install a 1½" blind in Chemical Plant's potable water piping just south of where it crosses the north Secondary fence section.
- 2) Install a 1½" blind between emergency shower and eyewash, located west of T-78, and the tee in the existing process water piping.
- 3) Route line 1½"-WS-1-N-A2-3 from Chemical Plant's potable water system to emergency shower and eyewash. Tie line into potable water upstream of blind installed in work list Item (1) above. Tie line into emergency shower and eyewash downstream of blind installed in Item (2) above. Install a 1½" block valve and a 3/4" bleeder on line 1½"-WS-1.
- 4) Drill 4" water well and install pump and tank.
- 5) Route line 1½"-WU-2-N-A2-3 from surge tank to existing process water system. Make tie in just downstream of blind installed in Item (1) above. Install pressure regulator PCV-1, pressure gauge PG-1, and a 1½" block valve in line 1½"-WU-2.



ENGINEERING CENTER
PONCA CITY, OKLAHOMA
SPECIFICATION SHEET
WATER WELL

A.F.E. NO. _____
DATE 8-15-80 W.O. NO. _____
MADE BY CCP INQ. NO. _____
APP'D BY WJD REQ. NO. _____
B.M. NO. _____ P.O. NO. _____

PLANT Lake Charles UCM PROJECT Process Water Revisions at Secondary
DESIGN NO. 163-700-PAN-SCR

ITEM NO. _____
SERVICE Process Water Well at Secondary Waste Water Treatment Facility

Location - 40 ft from North fence Section and 35 ft
from East fence Section (Between Recreation
Basin and East fence Section)

Depth - Estimated 200 ft to water bearing sands
capable of 50 GPM

Tank - 500 gal. Captive air surge tank, 45-60 psig op. pressure.

Pump - 5 HP Submersible with capacity of 50 GPM
to surge tank

NOTES: 1. SEE ATTACHED QUOTE.

VVC 000008871