1R - 247

GENERAL CORRESPONDENCE

YEAR(S):

1992 - 1980

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
HOBBS DISTRICT OFFICE

BRUCE KING
GOVERNOR

POST OFFICE BOX 1980
HOBBS, NEW MEXICO 88241-1980
(505) 393-6161

September 21, 1992

Phillips Petroleum Co.
4001 Penbrook
Odessa, TX 79762

Attn: J. E. Stevens

RE: REMEDIATION-OGALALLA AQUIFER
SPS WELL NO. 28

Dear Mr. Stevens:

The Oil Conservation Division (OCD) agrees that Phillips Petroleum Co. has remediated the Ogalalla aquifer around SPS well No. 28, to where any additional remediation would not be cost effective. The chloride level of 150 is such that the water will not be of adverse quality for general use.

Since SPS and Phillips have reached agreement for the above the OCD agrees that Phillips can quit remediation of the fresh water aquifer.

Very truly yours,

JERRY SEXTON
District I Supervisor

JS/sad

PHILLIPS PETROLEUM COMPANY
ODESSA, TEXAS 79762
4001 PENBROOK

EXPLORATION AND PRODUCTION GROUP
Permian Basin Area

September 16, 1992

Southwestern Public Service (SPS)
Well No. 28 Chloride Remediation
Vacuum Field, Lea County, NM

New Mexico Dept. of Energy and
Minerals Oil Conservation Division
P. O. Box 1980
Hobbs, New Mexico 88240

Attn: Jerry Sexton

Dear Jerry:

Attached are three copies of a plot indicating the chloride level in the SPS Well No. 28. As can be seen on the plot, the level of chlorides was pumped down to an average level of 150 PPM. Phillips Petroleum believes the well has been satisfactorily remediated and requests the NMOCD's approval of a cessation in remediation efforts and a final approval for this project. Phillips Petroleum Company has cooperated with SPS in this remediation and Phillips has come to an agreement with SPS to perform no further remediation.

Your prompt response would be appreciated.

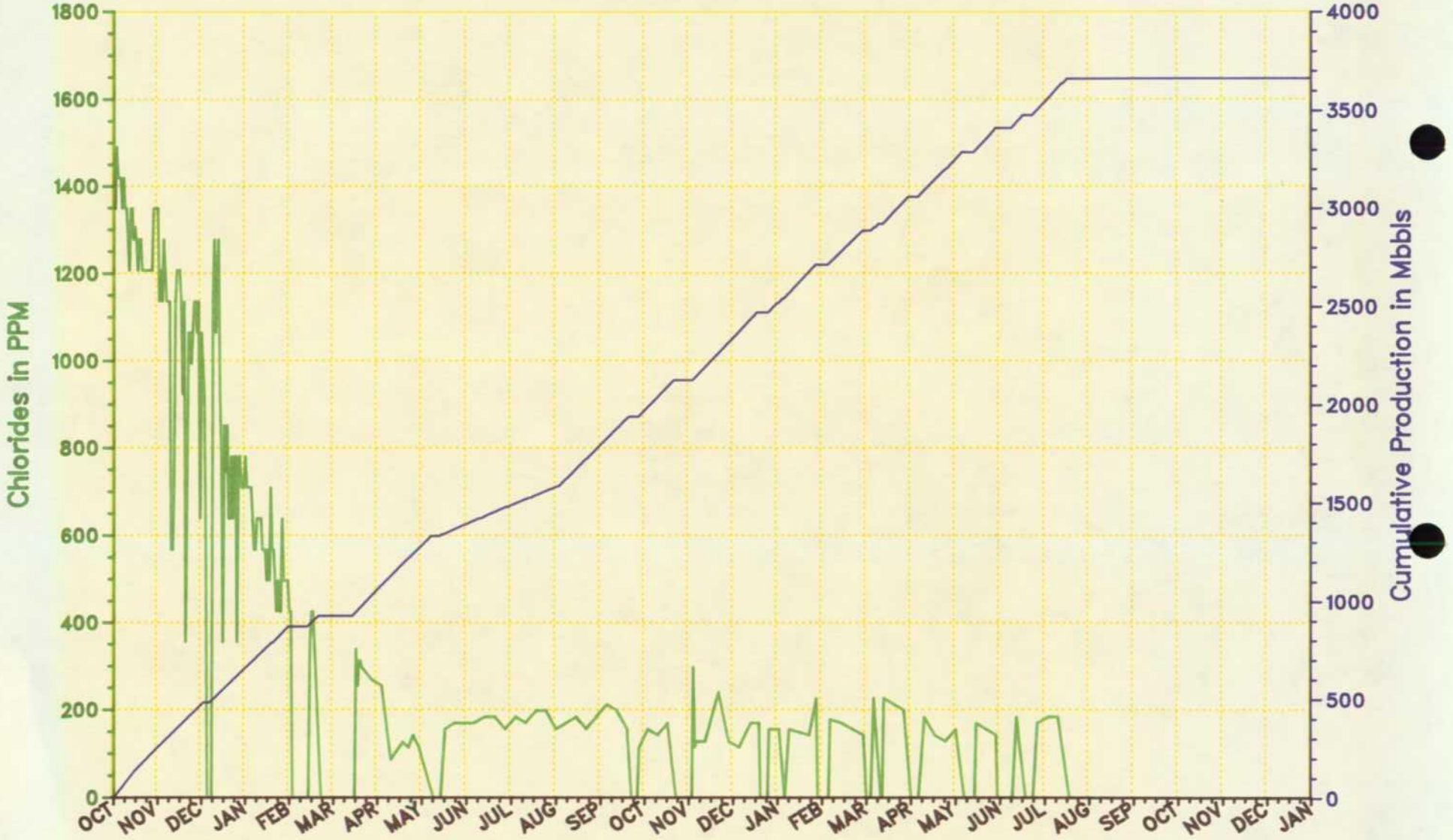
Regards,

J. E. Stevens
Senior Reservoir Engineer

JES:jj

Enclosures

Southwestern Public Service Company Well No. 28
Vacuum Field Area – Lea County, New Mexico
October, 1988 – January, 1991



Memo

From

JERRY SEXTON
District I Supervisor

To DAVE

ATTACHED IS THE RESULTS OF THE MEETING HELD W/ SPS & PHILLIPS ON THE CONTAMINATION PROBLEM IN THE UPC FIELD.

IF YOU HAVE ANY COMMENTS LET ME KNOW.

DAVE I WILL LEAVE IT TO YOU TO KEEP BILL INFORMED.

Oil Conservation Division
PO Box 1980, Hobbs, New Mexico 88240

SOUTHWESTERN PUBLIC SERVICE COMPANY
P. O. BOX 1261 • AMARILLO, TEXAS 79170 • 806/378-2121

October 11, 1988

Mr. Jerry Sexton
NEW MEXICO OIL AND GAS COMMISSION
1000 West Broadway
Hobbs, NM 88240

Dear Mr. Sexton:

At your request, I have summarized the meeting conducted at the Phillips office in Hobbs last Thursday, October 8, 1988, concerning the degradation of water quality in SPS well #28. I have attached a list of those individuals present.

The meeting opened with Mr. Sexton providing a brief discussion of the purpose of the meeting.

Gene Bernhardt provided a discussion of how SPS discovered the problem with well #28. SPS has a routine program of sampling each well on a quarterly basis. The well changed significantly from April, 1988 (48 mg/l chloride) to July, 1988 (2060 mg/l chloride).

Gene contacted Don Thorpe of Phillips to discuss the problem. Gene and Don investigated the problem and discovered a leak in the pipeline delivering brine to the injection system. This leak has been repaired.

The efforts are now focusing on the cleanup of well #28. Gene provided a description on the efforts to pump the well. The chlorides have ranged from approximately 1000 mg/l to 4000 mg/l during the pumping period.

Future efforts will concentrate on restoring the quality in this water well and insuring the future safety of the underground water supply.

The meeting was conducted in a spirit of cooperation. The meeting ended by briefly summarizing the discussion as follows:

1. SPS will continue pumping well #28 until at least November 1. A temporary 3 inch pipeline has been laid and Phillips is taking the water and injecting it into their water flood project.

2. Jerry Sexton will notify the state engineer.

3. Phillips will have a hydrologist investigate the problem and make recommendations to solution.

4. Another meeting will be held on about November 1 to discuss the progress of restoration and Phillips' hydrologist recommendations.

5. Phillips will test soil in ditch and in area of leak to determine if migration into well was through pipeline ditch.

6. Phillips has sampled state monitor well located about 1/2 mile from well #28 to determine the quality of water at the monitor well.

7. Jerry Sexton and SPS expressed concern if this is a localized problem or a widespread problem due to a number of brine pipelines in area. Jerry indicated there may need to be a safety program implemented to insure long term protection of groundwater from the pipelines.

If you have corrections or additions, please notify me at 378-2194.

Sincerely,

Olon Plunk

Olon Plunk
Manager, Licensing and
Environmental Affairs

OP/cc

Enclosure

cc: Dale Fisher
Gene Bernhardt
Bill Mueller

NAME	COMPANY	ADDRESS
DALE FISITER	PHILLIPS	HOBBS
Olan Plunk	SPS	Amarillo
Glen Bernhardt	SPS	Hobbs
[illegible]	[illegible]	[illegible]
Jerry Sexton	OCD	Hobbs
Bill Mullikin	Phillips	Odessa
Bob Tara	Phillips	Odessa
Don Thorp	Phillips	Lee field
MIKE FORD	PHILLIPS	ODESSA

Phillips
1625 W. Marland
Hobbs N. Mexico 88240

Called on 12-16-80

Memo

From

1957

To Tom No. 1 42.6

1½ to 2 ft per year 6 ft in 2 years, recharge

not steady

Gayle Henslee ½ Henslee

Gale Heaslee

Southwestern

27 to 40 ppm over last two year

806 378 2197

July 1975

25 27 and 37 ppm

135

321

26 41 85 68

27 38

28

76

Sept 4 9-16

40 to 100

@ 9-20

110 151

9-23 9-29

112 139

will give data on water rights

35,000 gal. per min.

Memo

From

called on 11-7-80

To

Kenneth L.
~~Kent~~ Ladd
Southwestern Public
Service
Amarillo
(806)-378-2192
or
378-2121

Oil Conservation Santa Fe, New Mexico

Sherman ● Galloway Tuesday ● May 6, 1980

Jim Wright – confirmed this on May 6, 1980 – will send me information brine ~~pits~~ quit. Jim Wright

South of Loco Hills — pits with water wells down dip.

Pit order are fairly recent

Lea County (?)

Oil Co. approached St. Eng office to have letter stating no fresh water – refused ← have St. Eng. inform us of these actions Consultant – says fresh water in area

---

May 6, 1980

Department

Dept.

Natural Gas Plants Dept.

Attn: Charles R. York

Mr York did not recieve it.

talked to Dick York about sending another copy of Water Quality Control Regulations to below address:

Getty Oil Company
Natural Gas Plants Department
Box 3000
Tulsa, Oklahoma 74102
Attention: Mr. Charles R. York
(918)-560-6385

Hydrology by Childs

Tom Tatkin May 7, 1980
Tim Hobbs
May be able to borrow copies of map from E&M Div. until ours come in

Summers book – never showed up here

Casey 2471
for Book Orders

St. Eng
909 E. 2nd. St.
Roswell, N. Mex.
622-6521

Tim

Hobbs – Ramada Inn – (505)-397-3291
Louis Martinez – 5621

Sandy Tue Tom Tockin
(505)-393-4101 Best Western
Lea wood Motel
1301 E. Bdway

May 6, 1980 – called back – G.W.
regulations were lost in the mail.
New copy sent on May 6, 1980

Dick York
Getty Oil Co.
Tulsa, Okl.
918-560-6385

Getty Oil Company
Natural Gas Plants Department
Box 3000
Tulsa, Oklahoma 74102
Attention: Mr. Charles R. York

4-12-80
4-13-80
12 — 4-14-80
4-15-80
10 — 4-16-80
8 — 4-17-80
4-18-80
6 — 4-19-80
4-20-80
4-21-80
4-22-80
4-23-80
4-24-80
4-25-80

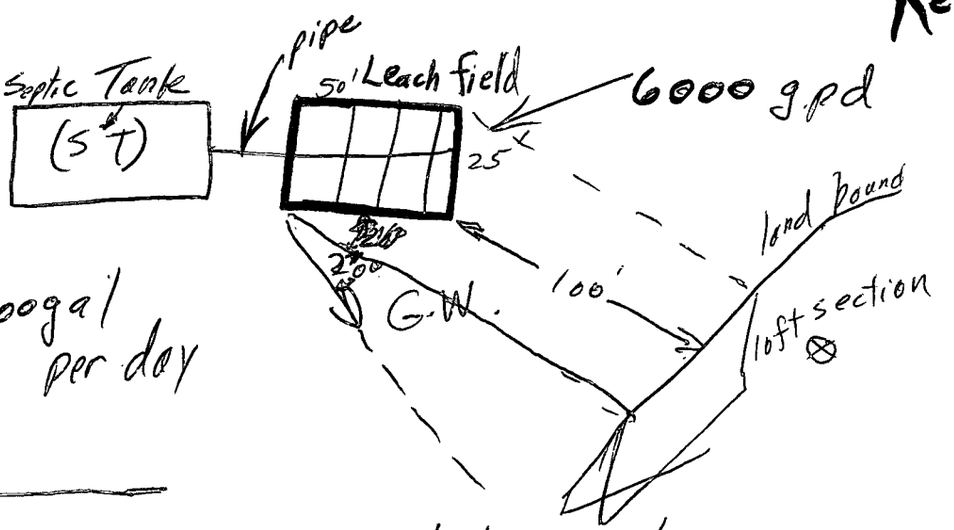
Tuesday April 29, 1980 9:00 A.M.

Crown Building meeting. pick up more copies of Regs. (5)

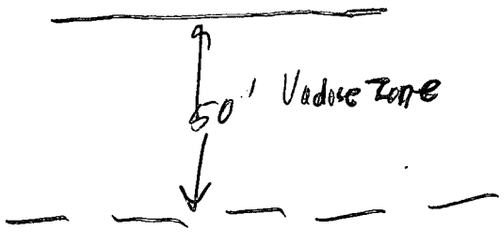
Joint Conference Room

E.I.D. does work on discharges greater than 2000 g.pd.

Ken ~~Ken~~ Ken



5000 gal per day



5 to 6 years to come into contact with G.W.

Have to figure dilution factor

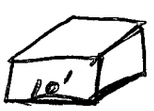
High concentrations below it → lower concentration away from the leach field

60 mg/L

$K = 2{,}000$ gpd/ft² (permability) $I = \frac{10}{3000} = 0.003$ Gradient

ABCD field = 1,250 ft²

thickness — 10 ft



K X thickness X W X gradient

$$\frac{C_1 Vol_1 + C_2 Vol_2}{Vol_1 + Vol_2}$$

$$\frac{(.01)(6000) + (60)(5{,}000)}{5{,}000 + 50{,}000} = 9.5 \text{ mg/L}$$

Nitrogen

close to limit of 10 mg/L

Maxine would speak to Ken about providing me with the above information on dispersion of material in ground water. Maxine will also send us 12 copies of new regulations when they become available in about 30 days from today

April 2, 1980

Call

Les Clements

393-6161

I called back same day. I talked about history of pit and what undisturbed was

Call Les on April 10, 1980

called on April 11, 1980 left message would come down on April 14, 1980

John, Eddy or Jerry

Leewood

Holiday Motel 6

Soads Desert

Ramada Inn - 22.36

6 P.M.

expenses →

2-26-80

Tom,

Enclosed are a few of the water contamination reports, I will send you the others as I can zerox them.

Also, I am sending you some work copies, base, maps on the "Southwest Public Service" & "Phillips Lusk supply well" water contamination problems. I will mail them tomorrow, as they are at the printers today.

John Runyan
Geologist-OCD
Hobbs, N.M.

Recieved on 2-29-80

988-3600

$335.00

Country Club Apt.
471-0880
Appt. 5

from Apt. 1 available on April 15, 1980

RECOMMENDATIONS

The Hardin-Houston Brine Station Well No. 2 is the source of the contamination plume and should be closely watched to determine if the well is permanently plugged. This would be done by taking water samples from the Phillips' Lusk water supply well each month for two (2) years to determine if this well is still leaking. The chloride content in the water must continue to decline. If it (chloride content) does not, then the brine well must be re-plugged with cement from the salt section to ground level.

The future construction of all brine wells must be done in a manner which adequately protects the ground water. To accomplish this, a well must be drilled to accommodate a large diameter casing, then a smaller diameter, non-corrosive production casing should be installed about ten (10) to fifteen (15) feet into salt section, with the packer installed about five (5) to ten (10) feet above the production zone. Inside the production casing, a small diameter injection tube should be installed in a manner such that it extends almost to the bottom of the hole. This type of well can be monitored for leaks in the production casing.

A study should be conducted using computer modeling to determine if the aquifer can be rehabilited or if containment of the contamination plume is possible.

Samples of the observation water wells (1-3, 1-4, 1-5, 1-6, 1-9 and 1-10), the Phillips'-Lusk water supply well and the State Crude Oil Water Station well should be donce once every month for the following chemical ions: calcium (Ca), magnesium (Mg), potassium (K), sodium (Na), bicarbonate (HCO_3), carbonate (CO_3), chloride (Cl) sulfate (SO_4) and total dissolved solids (T.D.S.)

The water samples should be collected only after the well has been pumped for a forty five minute period. This is to insure that the water sample taken is a representative one of the water contained in the aquifer.

Preatiss:

This is the last written part of the Phillips-Lusk report.

I still needs to have a chloride isograd map. I plan to do this when I publish a modified version of this report.

If there are any questions, please don't hesitate to call me.

Tom Pasbleib