FRESH WATER CONTAMINATION

FRESH WATER CONTAMINATION
CROSSROADS AREA

MR. JOE BARNES WELL AND
KINSOLVING WATER STATION

GENERAL BACKGROUND

Mr. Joe Barnes came to the New Mexico Oil Conservation Commission office, Hobbs, N. M., July 24, 1968, to complain about one of his water wells going to salt water. Well is located in Unit M, Section 26, Township 9 South, Range 35 East, Approximately one mile south of Crossroads on the east side of Highway 18. (Refer to figure 1)

He reported that this well became unusable about the first of May, 1968. At this time there was a trailer-house at the well site which was moved because of the water.

Thirty yards south of Mr. Barnes' is located the Kinsolving Water Company, which has two fresh water wells, both wells appear contaminated. (Refer to figure 2) Well numbered 3 is located in NW/NW Section 35. The Kinsolving water station sells only fresh water.

Directly across the highway (west), 75 yards, is the Mansell Water Company which sells both fresh water and brine. The brine water is produced by circulating fresh water down the tubing of the brine well in to the salt section and the produced brine coming up the casing.

The brine well is drilled to 2600' and cased to surface, and cemented (circulated ???), so states Mr. Barnes.

The fresh water well of Mr. Barnes and those of Kinsolving are cased to the water sand, some 165'. The water sand is only 8 feet thick and produces from the Triassic formation.

Mr. Barnes reported that during the early part of May, the Mansell people put a blue dye in their brine well and this dye showed up in the sink of the trailer-house.

There is a small pit located at the north end of the Mansell station, this pit is full of cuttings and does have some water in it, and is used from time to time when the brine well is flushed out.

The nearest oil well is two miles northwest of the area.

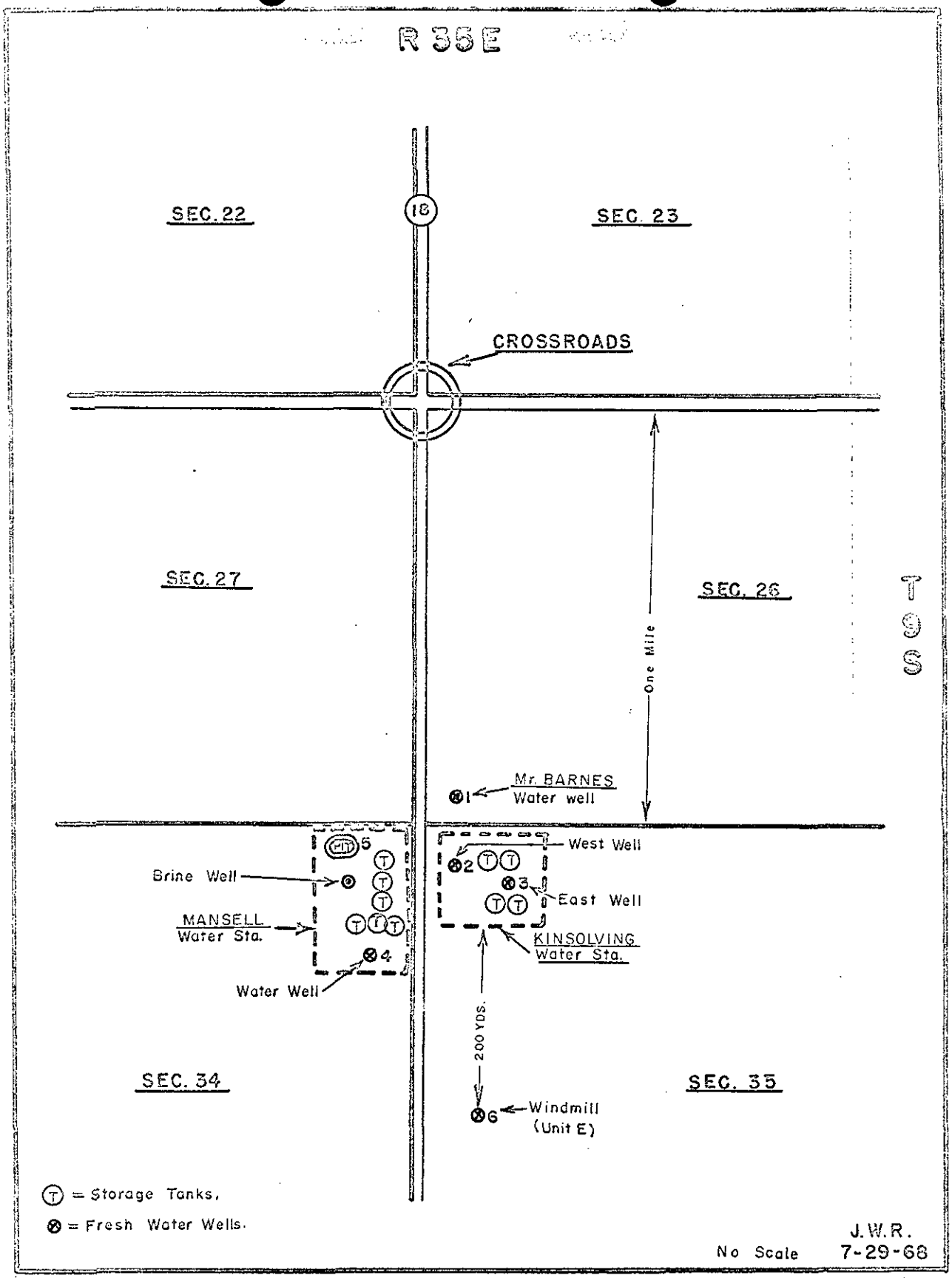
R 36 E
SEC. 22
18
SEC. 23
CROSSROADS
SEC. 27
SEC. 26
T 9 S
One Mile
Mr. BARNES
Water well
1
West Well
2
3
East Well
5
Brine Well
MANSELL
Water Sta.
4
Water Well
KINSOLVING
Water Sta.
200 YDS.
SEC. 34
SEC. 35
6
Windmill
(Unit E)
T = Storage Tanks.
⊗ = Fresh Water Wells.
No Scale
J.W.R.
7-29-68

FIGURE NO. 1

WATER ANALYSIS

On July 26, 1968, six water samples were taken and analyzed by the Commission, additional sample analysis were furnished by Mr. Kinsolving and the State Engineer, Roswell.

Locations from which samples were taken are designated by numeral locations, shown on figures 1 and 2.

The sample taken from the Mansell pit (location - 5) is probably contaminated with rainwater, therefore not too reliable.

W A T E R A N A L Y S I S

Well	Location	Analyze by	Status	Date	S.C. m/	TDS ppm	Cl ppm	SO4 ppm
Mr. Barnes	1	Haliburton	Pump	5-15-68	---	---	4,000	---
Mr. Barnes	1	N.M.O.C.C.	Static	7-26-68	9,500	8,840	3,337	316
Kensolving	2	Haliburton	Pump	5-10-68	---	---	3,523	---
Kensolving	2	N.M.O.C.C.	Pump	7-26-68	4,300	3,990	1,280	200
Kensolving	3	St. Eng.	Pump	7- 1954	809	750	67	179
Kensolving	3	Haliburton	Pump	5-10-68	---	---	206	---
Kensolving	3	N.M.O.C.C.	Pump	7-26-68	3,200	2,970	780	276
Mansell	4	N.M.O.C.C.	Pump	7-26-68	1,200	1,110	263	316
Mansell-Pit	5	N.M.O.C.C.	Static	7-26-68	7,500	6,975	2,270	492
Windmill	6	N.M.O.C.C.	Pump	7-26-68	940	874	106	408

Legend:

S.C. = Specific conductance

TDS = Total dissolved solids

Cl = Clorides

SO4 = Sulfate

FIGURE No. 2

CONCLUSIONS

Due to the water analysis from the Kinsolving Station, Mr. Barnes' well and the one taken in 1954 (before the Mansell Water Station was in existance) definitely indicates the area has been contaminated.

The dye test (reported by Mr. Barnes) run by the Mansell people and its appearance in the water at the trailer-house indicates the Mansell's brine well is the probable cause of the contamination in the area.

The brine well water may be channeling up outside the casing or the casing may be leaking.

Additional dye testing or pressure testing of the Mansell brine well should be conducted to determine if the well is the actual source of contamination, if so, then remedial steps should be taken.

NEW MEXICO OIL CONSERVATION COMMISSION

JOHN W. RUNYAN
GEOLOGIST
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