

EDISON LANDOWNERS AND FARMERS
WASTE WATER POLLUTION PROBLEM

First Meeting - January 28, 1960

Bakersfield, California

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Map Showing Location & Contours

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MEETING AND PURPOSE

A meeting was held January 28, 1960, at the Guimarra office at Edison, Bakersfield, California, between the Landowners and Farmers of the Edison District and officials of the State of California Regional Water Pollution Control Board (Central Valley Region), regarding the pollution of the irrigation and domestic water by the waste water from the Oil Fields now percolating from the pits, in the Northwest quarter (NW/4) of Section 24, Township 29 South, Range 29 East, Edison area, Kern County, California, into the Santa Margarita Formation.

MEMBERS ATTENDING FIRST MEETING

Landowners and Farmers:

A. J. Assad	1800 Chevy Chase Drive, Bakersfield Telephone FAirview 3-2558
Harley Barling	640 G Street, Wasco, Calif. EMpire 6-7356 or Wasco PLateau 8-6797
George Guimarra	P. O. Box 1653, Bakersfield. FAirview 4-4209
Joe Guimarra	P. O. Box 1653, Bakersfield. FAirview 2-4466
Sal Guimarra	P. O. Box 1653, Bakersfield. EMpire 6-4524
A. G. Haddad	1920 East 8th Street, Los Angeles Telephone MADison 7-2406
Arnold Kirschenman	425 Panorama Drive, Bakersfield. Telephone FA 2-0589
H. Kirschenman	1708 Los Robles Dr., Bakersfield. Telephone FA 3-9640
H. J. Kirschenman	1620 Hillside Dr., Bakersfield. FA 2-3554
W. B. Reed	Box 105, Edison, California. FA 2-0714

Others:

Lou Kemble	Kemble Pump Co. 501 34th St., Bakersfield. FA 7-8538
Roland Curran	Crest Mutual Water Co. & Pres. Mobilhome Corp. Box 15, Bakersfield. FA 4-1605
Henry R. Clark	Geologist 306 Oleander Ave., Bakersfield. FA 4-7989

Members Attending First Meeting

State of California

Absent: Joseph S. Gorlinski, Chairman, Regional Water Pollution Control Board (Central Valley Region).
608 - 13th Street, Sacramento, California. Telephone HIckory 2-4711

Present:

W. B. Baldwin, Assistant to Mr. Gorlinski. Address as above.
Charles T. Canahan, Pollution Control Engineer. Address as above.
Robert E. Thronson, Associate Engineering Geologist, Division of Resources Planning, State of California, Department of Water Resources. P. O. Box 1079, Sacramento 5, California, 401 Public Works Bldg., Telephone GI 2-4711

The following points were discussed at the first meeting:

1. RUINATION OF LANDOWNER'S AND FARMER'S LAND

The Landowners and Farmers will be ruined if this waste water (containing this excessive boron and salt) percolating from the pits in the Santa Margarita outcrops, continues to pollute their irrigation water. There are now fourteen water wells, within a three mile radius of the percolation pits, pumping from the upper and lower portion of the Santa Margarita Formation.

2. FIRST KNOWLEDGE OF PUMPING WASTE WATER TO PERCOLATION PITS.

The first knowledge the Landowners and Farmers had that the Valley Waste Disposal Co. was pumping this waste water into the percolation pits was from an article in the Bakersfield Californian of January 8, 1960 which is reproduced within this report on Page 2-a.

3. AUTHORITY OF REGIONAL WATER POLLUTION BOARD

The Regional Water Pollution Control Board (Central Valley Region) gave authority to the Valley Waste Disposal to pump this waste water into the Santa Margarita outcroppings without giving the Landowners and Farmers notice of their intentions.

The Regional Water Pollution Control Board (Central Valley Region) claims that notices were sent out. When ? and where ?

The Bakersfield Californian

Friday, Jan. 8, 1960

Oilfields

The Bakersfield Californian

Californian News Service

A quarter-million dollar waste water disposal facility is the latest answer to the problem of disposing of waste water produced with oil by this area's oil wells.

Located in the Race Track Hill district seven miles east of Bakersfield, the modern new facility was put into operation last month by Valley Waste Disposal Co., a non-profit corporation formed by oil operators for the purpose of disposing of waste water in conformity with requirements set up by the Central Valley Regional Water Pollution Control Board.

Valley Waste Disposal Co. is made up of a number of different districts, of which the Race Track Hill district is the most recently organized. Participating in the district's planning, financing, construction and operation are Shell Oil Co., Mobil Oil Co., Barratt & Bysshe, Southwestern Development Co., Kern Oil California, Ltd., McBo Oil Co., Standard Oil Co. of California and D & R Oil Co.

Waste Water

Designed to handle at least 20,000 barrels per day of waste water, the new facility presently is handling about 15,000 barrels per day. The facility is the largest of its kind in the San Joaquin Valley. Oil operators in the Race Track Hill area previously took care of waste water disposal individually.

Components of the new facility include a collecting basin and pumping plant on Sec. 34, 29-29; receiving sumps and percolating pits in the hills north of Race Track Hill; and a gathering and discharge system.

Gathering System

The gathering system includes approximately 2 1/4 miles of 3-inch transite line running from the Mullany lease, Mountain View field, to the Jeppi lease, Edison field; 1 1/2 miles of 4-inch standard steel pipe running from the Jeppi lease to the Graham lease; and 2 1/4 miles of 8-inch cement-mortar-lined pipe running from the Graham lease to the collecting basin and pumping plant.

Percolation Pits

In the collecting basin, waste water goes through gunited sumps for gravity separation of oil and floatable solids, such as sludge and algae. There are two constant-level skimming sumps, each with a capacity of 5,000 bar-

rels, and one 10,000-barrel capacity settling sump.

From the settling sump, water is picked up by two turbine-type pumps and dispatched through 10-inch cement-mortar lined pipe some 19,000 feet to the percolation pits, which are about 540 feet higher than the level of the collecting basin.

The pumps are automatically actuated by the water level in the settling sump.

Percolation pits are situated on a 240-acre parcel that was purchased specifically for its present use by Valley Waste Disposal Co. The pits are situated in a hilly area of Santa Margarita outcroppings, and most were formed by construction of dams in existing canyons. The Santa Margarita sand does not produce potable water in the area.

Receiving Sumps

In the percolation area there presently are five receiving sumps, where water goes through more gravity separation before it is discharged to one of six percolation pits. The over-all plan calls for a total of 25 percolation pits to be built as needed.

It is estimated the 25 percolation pits will have 19 acres of water surface with a total barrel storage capacity of 1,435,360 barrels.

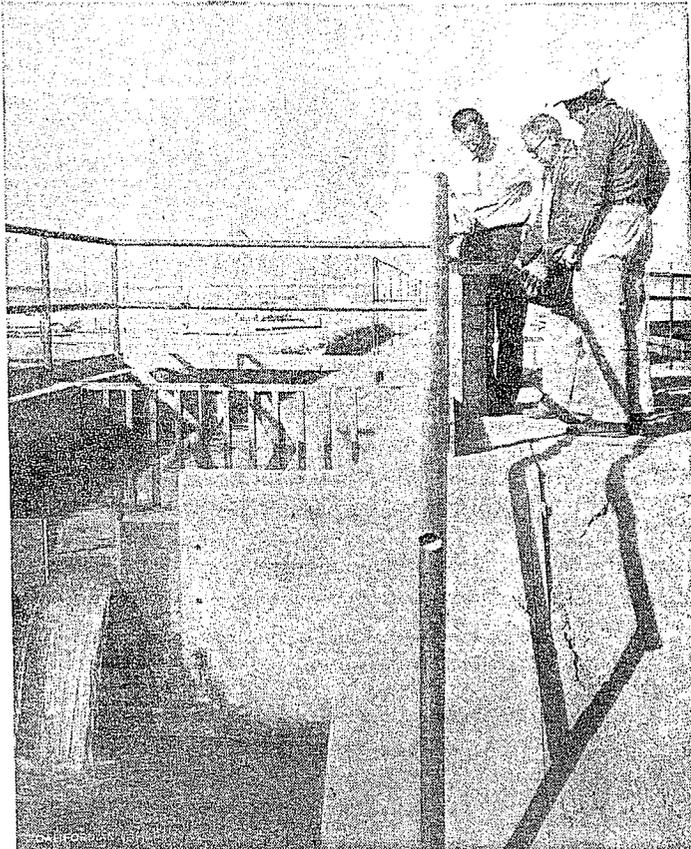
Water handled by the new facility varies from fresh to salt water. Requirements will be set on each operator as to the quality of water discharged into the system, with prime responsibility for getting oil out of water resting with the operator before Valley Waste Disposal Co. receives the water.

Meters

Water will be metered as it comes off each lease, and the operator of the lease will be charged on a per barrel basis for the disposal cost.

The system has not been in operation long enough for a fixed disposal cost to be known.

The new facility was planned by an engineering committee consisting of A. E. Woollen, Standard Oil Co. of California; C. W. Pierce, Mobil Oil Co.; and R. J. Kettenberg, Shell Oil Co. C. E. (Chuck) Burdick is manager of Valley Waste Disposal Co.



WASTE WATER DISPOSAL—Looking at waste water disposal facilities in the new quarter-million-dollar Race Track Hill facility near Bakersfield are (from left to right), Art Geib, manager of the Kern Mosquito Abatement District; C. E. (Chuck) Burdick, manager, Valley Waste Disposal Co.; and Dick DeWitt of the mosquito abatement district.



PERCOLATION PITS—Huge percolation pits in the hills northeast of Bakersfield serve as an elimination area for waste water produced with oil in the Edison and Race Track

Hill oil fields. The disposal of such water is an increasing problem in California's oil areas. (For further details read today's Oilfields Column on Page 26.)

4. BORON AND SALT CONTENT

The Landowners and Farmers claim that 1 part per million of boron would ruin most crops, and that 0.75 parts per million would be detrimental to citrus and grape crops. Chemical analysis as follows:

<u>Location of Sample</u>	<u>Boron Parts per million</u>	<u>Total Solids</u>
Haddad Bros. Well #3, 36-29/29 Cased and cemented to 820' Liner 820 to 2300'	0.1	-
Mouth of Kern River	0.05	103.0
Haddad Bros. Well #4, 36-29/29		
Haddad Bros. Well #5, 36-29/29		
Sample from Percolation Pits at Santa Margarita Outcrops	17.0	

Regional Water Pollution Board
(Central Valley Region) calls for 1 or less

5. STARTING TIME OF SANTA MARGARITA WELLS

Question: Did the Regional Water Pollution Control Board (Central Valley Region) know that the Farmers in the Edison District had been pumping from the Santa Margarita for over 7 years?

Did the Valley Waste Disposal Co. know the same question?

6. QUESTION AS TO GEOLOGICAL FACTS

Had the Valley Waste Disposal Co. and the Regional Water Pollution Control Board (Central Valley Region) complete geological facts and information regarding the consequences of percolating the water from the pits through the Santa Margarita Formation?

7. CALCULATED RISK

Did the Valley Disposal Co. know all the geological facts but would take the CALCULATED RISK in order to dispose of this troublesome waste water?

HORNKOHL LABORATORIES

CHEMICAL AND TESTING ENGINEERS

714 TRUXTON AVENUE

BAKERSFIELD, CALIFORNIA

November 10, 1959

Laboratory No. 116108

Sample Water

Marked

New Well No. 23

Received November 7, 1959

Sec. 36 05° F 0.610

Submitted by Haddad Bros. Farms
1920 E. 8th Street
Los Angeles.

Section 36/298 299.

Cased and cemented solidly
to 120. Liner 120 to 2300.

IRRIGATION WATER ANALYSIS (PARTIAL)

CONSTITUENTS			PARTS PER MILLION	GRAINS PER GALLON	IRRIGATION WATER CLASSIFICATION
CARBONATES	(ALKALI)	(CO ₃)	0.0	0.00	Good
BICARBONATES		(HCO ₃)	159.8	9.35	Good
CHLORIDES	(SALT)	(Cl)	75.2	4.40	Good
SULPHATES		(SO ₄)	29.8	1.74	Good
SULPHIDES		(S)	0.0	0.00	Good
NITRATES		(NO ₃)			
CALCIUM	(LIME)	(Ca)			
MAGNESIUM		(Mg)			
SODIUM		(Na)			
BORON		(B)	0.1	0.01	Good
IRON		(Fe)			
HARDNESS AS CaCO ₃			60.0	3.51	Good
TOTAL SOLIDS @ 105°C					
TOTAL SOLIDS @ RED HEAT					
pH (HYDROGEN ION CONCENTRATION)			7.9		
SODIUM PERCENTAGE			22.4		
COLOR			Water White		
ODOR			None		
TURBIDITY			Slight - after filtering		
CONDUCTIVITY, MHOS/CM ² X10 ³ @25°C.			60.6		

EC 606 umhos/cm
Cl 75 mg/L
B 0.1 mg/L

Well Sec 36 T298 R29E

REMARKS: This water would be classified as excellent

Respectfully submitted,

HORNKOHL LABORATORIES INC.

Frederick Fischer
Frederick Fischer, Chief

kmb

HORNKOHL LABORATORIES

CHEMICAL AND TESTING ENGINEERS

714 TRUXTUN AVENUE
 BAKERSFIELD, CALIFORNIA

November 16, 1959

Laboratory No. 116,109

Sample Water

Marked Kern River near mouth

Received Nov. 7, 1959

Submitted by L. S. Kemble
 Bakersfield, Calif

IRRIGATION WATER ANALYSIS

<u>CONSTITUENTS</u>			<u>PARTS PER MILLION</u>	<u>GRAINS PER GALLON</u>	<u>IRRIGATION WATER CLASSIFICATION</u>
CARBONATES	(ALKALI)	(CO ₃)	0.0	0.00	Good
BICARBONATES		(HCO ₃)	50.0	2.92	Good
CHLORIDES	(SALT)	(Cl) ⁻	17.0	0.99	Good
SULPHATES		(SO ₄)	11.5	0.67	Good
SULPHIDES		(S)	0.0	0.00	Good
NITRATES		(NO ₃)			
CALCIUM	(LIME)	(CA)			
MAGNESIUM		(MG)			
SODIUM		(NA)			
BORON		(B)	0.05	---	Good
IRON		(FE)	0.1	---	Good
HARDNESS AS CaCO ₃			66.0	3.86	Good
TOTAL SOLIDS @ 105°C			103.0	6.00	
TOTAL SOLIDS @ RED HEAT					
pH (HYDROGEN ION CONCENTRATION)					Good
SODIUM PERCENTAGE			29.5%		Good
COLOR	Water White				
ODOR	None				
TURBIDITY	Clear				
CONDUCTIVITY, MHOS/CM ² X10 ⁵ @25°C.			20.2		

EC 202 μ mhos/cm
 Cl 17 mg/L
 B 0.05 mg/L

HORNKOHL LABORATORIES, INC.

L. S. Kemble

BC LABORATORIES

OIL - CORES - SOIL - WATER

3016 UNION AVE. + FAIRVIEW 3-0077
BAKERSFIELD, CALIFORNIA

Submitted By **Giunarra Vineyards Corp.**
P.O. Box 1653
Bakersfield, California

Date Reported: 1/21/60
Date Received: 1/20/60
Laboratory No: 40543

Marked: "Seepage Pits at Santa Margarita Outcrop" - Sec. 24, T. 29 S., R. 29 E.

IRRIGATION WATER ANALYSIS

Key to Qualitative Classification

Class I Excellent to Good
Class II Good to Injurious
Class III Injurious to Unsatisfactory

	Kx10 ⁶ @ 25°C	Boron (B) ppm	Sodium Percent	Chloride epm
Less Than:	100	0.5	50	5
	100-300	0.5-2.0	50-70	5-10
More Than:	300	2.0	70	10

Sample Description

Boron, ppm **17.1** **III**
Sodium Percentage
Chloride, epm **55.79** **III** (1975 ppm)
x10⁶ at 25°C (Salinity) **655** **III**
Gypsum Application for treating
"Residual Sodium Carbonate"
Lbs. 100% Gyp./Hr *
*100 Gallons per min. flow rate

EC 6,550 μ mhos/cm
Cl 1,975 mg/L
B 17.1 mg/L

Constituents, P. P. M.

Calcium, (Ca)
Magnesium, (Mg)
Sodium, (Na) **1200**
Potassium, (K)
Carbonates, (CO₃)
Bicarbonates, (HCO₃)
Chlorides, (CL) **1975**
Sulphates (SO₄)
Nitrate, (NO₃)
Fluoride, (F)
Total Iron, (Fe)
Total Hardness as CaCO₃
Total Dissolved Solids, 105°C **3700**
Total Dissolved Solids Red Heat

pH or Hydrogen-ion activity

BC LABORATORIES

By _____

GEOLOGICAL REPORT FOR THE EDISON LANDOWNERS AND FARMERS

By HENRY R. CLARK (local Geologist)

The purpose of this report is to show that waste water percolating through the Santa Margarita Formation, from surface pits in the Santa Margarita outcrops in Section 24, Township 29 South, Range 29 East will pollute the irrigation water in wells now pumping in Sections 27 and 36 of Township 29 South, Range 29 East.

The first map shows the location of the pits, of the water wells in Sections 27 and 36 of T. 29 S., R. 29 E., the outcrops of the Santa Margarita Formation and the outcrops of the Round Mountain Silt which underlies the Santa Margarita in the vicinity of the pits and also shows the contours on Top of Santa Margarita extending southwest from the pits for over 5 miles. This map also shows the location of the cross sections which make up a second map, which will be discussed later.

The sole purpose of the contour map is to show that the Santa Margarita Formation dips from the percolation pits in a southwesterly direction for over 5 miles without interruption (except for minor faulting of less than 100 feet displacement) at about eight degrees, and that from the percolation pits to the Haddad water well in Section 27 the dip is approximately six degrees. The direction of flow of all water is therefore in a SOUTHWESTERLY direction in the vicinity of the pits and water wells.

The second map (mentioned previously) shows the three cross-sections, AC, BC, and CC, starting three to four miles southwest of the percolating pits, then passing through the pits and continuing northeast for about two miles.

These cross-sections reveal that the Santa Margarita Formation is approximately 1200 feet thick. Underlying it is the Round Mountain Silt, approximately 800 to 1200 feet thick. It too dips in a Southwesterly direction like the Santa Margarita. It too has minor faulting of less than 100 foot displacement.

The most important fact to consider is that the Santa Margarita is a very porous, easily permeable sand and water can easily travel through it. On the other hand, the Round Mountain Silt is a tight, non permeable silt or shale and it is impossible for water to penetrate it.

WATER NOW PERCOLATING FROM THE PITS CAN ONLY FALL TO THE TOP OF THE ROUND MOUNTAIN SILT AND MOVE SOUTHWESTERLY TO THE WATER WELLS.

I will show but one Electric Log, that of the Franco Western Oil Company, Featherstone USL #21 in Section 24, Township 29 South, Range 29 East, drilled in 1953 to a total depth of 2,838 feet by the electric log. This "dry" hole is located in the percolation pits near the north line.

The electric log reveals that the well practically spudded in the Santa Margarita outcrops (the first 200 feet was not recorded by the electric log) and that this Santa Margarita continues from 200 feet to 1160 feet where the

Round Mountain Silt begins. It in turn continues down to 2235 feet where the Olcese sand begins. This definitely shows that the Santa Margarita sand is at least 960 feet thick, and the Round Mountain Silt is at least 1075 feet thick in this area.

It is very important to remember that although the water wells in Sections 27 and 36 are from 1500 to 2300 feet in depth, the PUMPS are set at only 600 feet from the surface. The elevation of the Haddad well is approximately 850 feet above sea level, so that the standing water table would be at plus 250 feet. Projecting this plus 250 feet to the percolation pits would take in the lower 300 feet of the Santa Margarita Formation, showing that the PERCOLATING WATER FROM THE PITS IS RIGHT NOW POLLUTING THE IRRIGATION WATER.

Signed

Henry R. Clark

Henry R. Clark



MEMBER
PETROLEUM GEOLOGIST

CONCLUSIONS

Testimony and documentary evidence, submitted at this meeting, will be reviewed by the Regional Water Pollution Control Board (Central Valley Region) at the next meeting to be held in Sacramento on February 18, 1960.

The Edison Landowners and Farmers selected the following to attend this meeting:

A. J. Assad

Residence: 1800 Chevy Chase Drive,
Bakersfield. Telephone FAirview 3-2558

Harley Barling

Residence: 640 G Street, Wasco.
Telephone PLateau 8-6797

Sal Guimarra

P. O. Box 1653, Bakersfield.
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Henry R. Clark

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