

# GENERAL CORRESPONDENCE

# **YEAR(S):** 1989-1981

Order #= Exceptions to no pit ordinance in TI95 R32E Section 32 - 25 bbls/day - Case 4046 R3686 Sec. 16 - 260 bbls/day - Case 5812 R 3783 R5355 Sec. 19224 - Case 1836 R-7348 Sec. 13 - Case 3892 R 3554 1- ----Mike SORA- F15 367-1316 Rumon Vosquey 885-4270 Frank Burns



GREEN - TOP OF WATER



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PHILLES LUSK PLANT A. Three buried tanks. If we allow the unlined pond, do ve have to require periodic pressure testing for lacks. A loo # 20 and # 16 may fall under LUST Program. Flent Design spars dated 67 J nenewal in 1991 B. See Attach II C. Attach III indicates the presence of buried pipelines. Same questions apply as in (A) above. Is truck loading done with open or valued hoses? Jan 2 to neplac If pond is allowed does it matter? Check on Stemmer Al residence time for 1<sup>st</sup> Slop Tank, Is value from Sump Tank to Slop Tank Worm. Open and to skim-Long Lo men Norm- Closed. What are the aced gas & flare line drip tanks cap. and flow to skimmer pond. D. O.K. E. Look at 5-22-84 submitted to investigate sidestram filter basin. If we inspect plant, check water level in this basin to assess overflow nish. D. P. says JOK moris F. Daily inspection for leaks done visually. No mention made of underground vessels on buried pigning. G. O.K. (So So momention of parming - probably mat mecessary).

H. Bore Holes # 1, 2, 2 3 have TDS < 1000, Should really check these values out, OCD samples ? I. OK - Do they have an SPCC Plan Filed ? J. Double Check Flow nater to verify validity of this contingency plan. K. OK - We may wish to use as part of an OCD monitoring plan. L OK <u>M. OK</u> N. Check w/ State Emgrs. Office on This ?



New Mexico Health and Environment Department

GARREY CARRUTHERS Governor

> DENNIS BOYD Secretary

MICHAEL J. BURKHART Deputy Secretary

RICHARD MITZELFELT Director

October 25, 1989

Mr. Dave Boyer Oil Conservation Division State Land Office Bldg. P.O. Box 2088 Santa Fe, NM 87504

Dear Mr. Boyer:

Enclosed for your information are copies of EPA's Comprehensive Groundwater Monitoring Reports for the four Phillips Gas Plants - Artisia, Eunice, Lee and Lusk! These reports have not been reviewed by the Hazardous Waste Program and are to be considered as draft reports. At this time no further action is expected on the reports to finalize them.

If you have any questions, or need additional information please call me at 827-0170.

Sincerely,

More. Mayn

Suzanne Moore-Mayne Water Resource Specialist II Hazardous Waste Program

SMM/vga

Encl.

New Mexico Health and Environment Department

Dennis Boyd Secretary

MICHAEL J. BURKHART Deputy Secretary

RICHARD MITZELFELT Girector

September 13, 1989

William F. Ballard, Manager Phillips Petroleum Company 12 A4 Phillips Bldg. Bartlesville, OK 74004

RE: RCRA status Artesia, Eunice, Lee and Lusk Plants-NMD000709667, NMD000709634, NMD000709675, NMD000709639

Dear Mr. Ballard:

The New Mexico Environmental Improvement Division (NMEID), accepts Phillips Petroleum Company's (Phillips') position presented in their May 17, 1989 correspondence that the four Phillips facilities in New Mexico, Artesia, Eunice, Lee and Lusk are exempt from RCRA regulation based upon EPA's Regulatory Determination of July 6, 1988 Federal Register. NMEID also accepts Phillips' Certificate of No Hazardous Waste Activity included in the May 17, 1989 correspondence.

NMEID's acceptance of Phillips' position does not remove Phillips from regulation under the Hazardous Waste Management Regulations, (HWMR-5, as amended 1989) and the New Mexico Hazardous Waste Act, New Mexico Statutes Annotated 1978, (1989, Supp.), if Phillips transports, treats, stores or disposes of hazardous wastes in the future. To the extent that Phillips generates hazardous wastes, Phillips is subject to the generator requirements of HWMR-5.

If NMEID receives any new information that indicates that Phillips has been or may be regulated under RCRA, enforcement actions will be initiated. With NMEID's acceptance of Phillips' position, compliance with the April 19, 1988 Compliance Order/Schedule is determined to be resolved. However, Phillips may still be subject to EPA enforcement actions.

> - ENVIRONMENTAL IMPROVEMENT DIVISION -Harold Runnels Building 1 1 90 St. Francis Dr. Santa Fe, New Mexico 87503

Mr. Ballard September 13, 1989 Page 2

A copy of EPA's response to NMEID's request to provide an interpretation of the oil and gas exemption in the July 6, 1988 Federal Register is enclosed for Phillips' information.

If you have any questions or need additional information, please call me at (505) 827-2926.

Sincerely,

Doydhami

Boyd Hamilton Program Manager Hazardous Waste Program

BH/SMM/smm

Encl.

cc:

Lynn Prince, EPA Region 6 Tracy Hughes, Office of General Counsel, EID Knut Am, Phillips Petroleum Company Reese B. Copeland, Phillips Petroleum Company

UNITED STATES ENVIRONMENTAL PR

1445 1055 AVENUE, BUITE 1200 DALLAS, TEXAS 75202 ECTION AGENCY

July, 18, 1989

Mr. Boyd Hamilton Program Manager Hazardous Waste Program New Mexico Health and Environment Department Harold Runnels Building 1190 St. Francis Drive Santa Fe, New Mexico 87503

Dear Mr. Hamilton:

On June 8, 1989, you requested that the Environmental Protection Agency (EPA) provide an interpretation of the so called oil and gas exemption to the Resource Conservation and Recovery Act (RCRA) as delineated in the Regulatory Determination in the July 6, 1988, Federal Register (FR). Specifically, you asked if the exemption applied to four gas plants operated by Phillips Petroleum Company (Phillips) in eastern New Mexico. This request was prompted by Phillips' assertion, in a letter dated May 17, 1989, that the surface impoundments in question are not RCRA regulated units based on that regulatory determination. Phillips supported this position with a certificate of no hazardous waste activity for the four plants.

In EPA's regulatory determination, on Page 25454, cooling tower blowdown is specifically included in the wastes exempted from RCRA regulation. However, gas plant cooling tower cleaning wastes are specifically excluded from the exemption. These determinations are based on the three criteria included as an attachment to the June 6, 1989, letter from Dan Derkics, (Chief, Large Volume Waste Section EPA Headquarters) to Julie Wanslow, a copy of which was included in your letter to me of June 15, 1989. Mr. Derkics letter states that cooling tower blowdown "... is comprised only of water, scale or other wastes generated by the actual operation of the cooling tower." The Region interprets this to mean that corrosion inhibitors and biological control agents are included in cooling tower blowdown.

Mr. Derkics also clarifies the meaning of cooling tower cleaning wastes as those wastes which, may be generated by any cooling tower and includes "...solvents, scrubbing agents or other cleaning materials introduced into the process solely to remove-buildup or otherwise clean the equipment, and are not included as part of the functional operation of the cooling tower." Such wastes are not intrinsically derived from primary field operations for natural gas production. The Region interprets this to mean that the wastes generated during the periodic cleaning are not exempt.

In their No Hazardous Waste Activity Certificate, Phillips states that both chromate and non-chromate chemicals have been used in the cooling towers since November 19, 1980, as corrosion inhibitors at these sites. They further state that cooling towers must be cleaned on a periodic basis (approximately once every five years) and that this cleaning consists of removing the sludge by vacuum truck from the basin and removing scale from the cooling coil heads and laterals by sandblasting. Phillips also asserts that these materials have been tested and are not hazardous wastes.

One of the reasons that cleaning waste from a cooling tower may be RCRA hazardous waste is due to the chemicals added to the system for corrosion inhibition or control of biological agents. Chromate compounds have been widely used in this application as they have at the Phillips gas plants. Discarded materials generated in the cooling tower would be hazardous waste, as that term is defined in 40 CFR §261.3, when the chromium concentration reaches 5.0 mg/l when tested using the procedures for EP toxicity.

If the waste generated during the periodic cleaning exceeds a concentration of 5.0 mg/l for chromium, then the waste is hazardous waste. Phillips claims the waste is tested in their certificate but they do not provide enough information for a determination of the adequacy of the testing. Should this waste be EP Toxic and should it be placed in the same surface impoundments as the cooling tower blowdown, then the units are RCRA regulated regardless of the exemption for cooling tower blowdown. If on the other hand these conditions are not met, then the material is not hazardous waste. At the very least, the coil heads and laterals have the potential of having significant levels of chromium waste/scale which must be sandblasted off. It is this cooling tower cleaning waste that may make the units regulated, however, such a determination is not possible from the information provided in the certificate.

Some discussion is necessary about a mixture of an exempted waste and a nonexempted waste. EPA has in the past exempted some such mixtures as in the case of ash waste and flue gas emission control waste generated primarily from the combustion of coal and fossil fuels. [40 CFR 261.4(b)(4)] However, the wastes which are co-disposed and also exempt are those materials generated in conjunction with the exempted wastes. The waste materials are not segregated from the combustion wastes. Wastes which

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are segregated and disposed of or treated separately from combustion wastes and otherwise meet the definition of a hazardous waste are regulated under RCRA. This determination was made in 1981 in response to the Utility Solid Waste Activities Group.

The clearest exposition of EPA's stand regarding the applicability of the mixture rule when an exempted waste is mixed with a hazardous waste is found in the proposed rule published in the Federal Register on April 17, 1989, for mining waste.

"EPA has decided, however, that it is appropriate to revise the proposed regulatory status of some mixtures of non-excluded 'characteristic' wastes and Bevill wastes. In these instances, the mixture will be considered a hazardous waste if it exhibits one or more of the same hazardous characteristics that are exhibited by the non-excluded waste. If the mixture exhibits one or more hazardous characteristics that are exhibited by the Bevill waste but not by the non-excluded characteristic waste, then the mixture is not hazardous waste.

EPA wishes to make clear, however that in any case, mixing a characteristic hazardous waste with a Bevill waste would require a RCRA treatment, storage or disposal permit....

Although this interpretation applies to a proposed mining waste rule, EPA's Office of General Counsel has assured the Region that the same idea applies in the petroleum exclusion.

Clearly, if at any time the cooling tower cleaning waste meets the definition of hazardous waste and it is mixed with the exempted waste, the unit where mixing takes place is a regulated unit.

The interpretations of the exemption contained in this letter are consistent with those of EPA's Office of General Counsel.

I would suggest that EID review Phillip's analysis and all available information to determine if the cooling tower cleaning waste is EP-toxic for chromium or is not. You should also determine what quantity of waste is generated and if this waste is/was placed in the surface impoundments after 1980. Although further investigation/evidence is required to conclusively determine the regulatory status of these sites, I hope the information provided above will prove useful to your staff. If your staff has any questions, please have them call Court Fesmire at (214) 655-6775.

Sincerely, COC.co.

Randall E. Brown, Chief RCRA Enforcement Branch

cc: Tracy Huges Office of General Counsel NMEID



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PHILLIPS 66 NATURAL GAS COMPANY

A SUBSIDIARY OF PHILLIPS PETROLEUM COMPANY

ODESSA, TEXAS 79762 4001 PENBROOK

May 8, 1986

Monitor Well Analyses Lee and Lusk Gasoline Plants

Mr. Roger C. Anderson New Mexico Oil Conservation Division P. O. Box 2088 Santa Fe, New Mexico 87501

Dear Roger:

Attached please find copies of the chemical analyses performed on water samples from the monitoring wells at Lee and Lusk Gasoline Plants.

If you have any questions regarding these results, please contact me at (915) 367-1316.

Yours truly,

Michael D. Ford

Michael D. Ford Environmental Analyst

MDF:ggp

Attachments





DENISE D. FORT DIRECTOR

## **STATE OF NEW MEXICO**

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FPC

ENVIRONMENTAL IMPROVEMENT DIVISION P.O. Box 968, Santa Fe, New Mexico 87504-0968 (505) 984-0020

Files 218, 320, 388,

4-15-80 copied for:

R.D.SKINNEr W.C. STOITZ

R.B. Copeland

M.D. Ford



8 April 1986

B.F. Ballard Director, Environmental Control 10 D4 Phillips Building Phillips Petroleum Company Bartlesville, Oklahoma 74004

Dear Mr. Ballard:

Enclosed please find the results of analyses on the samples EID split with Phillips at your plants in Artesia, Eunice, Lee and Lusk, New Mexico.

If you have any questions regarding these results, please contact me at (505) 827-2931.

Sincerely,

Ann Claassen Water Resource Specialist Hazardous Waste Section

## **RESULTS OF SAMPLING**

## PHILLIPS PETROLEUM GAS REFINERIES

## ARTESIA, EUNICE, LEE AND LUSK

Attached are the results for the New Mexico Environmental Improvement Division's samples taken at the Phillips plants in August 1986. At each plant, samples were taken from each of the RCRA wells (4 wells per plant). At Lusk and Artesia, samples were also taken from surface impoundments. Table 1 identifies each sample.

All samples were collectd by Alice Barr with the assistance of Kelley Crossman. The samples were appropriately preserved and shipped under chain-of-custody to the State Laboratory in Albuquerque for analysis. Table 2 gives the analytical procedure for each parameter. Note that calcium and magnesium are reported under both General Chemistry and Metals. The Gen. Chem results were obtained by the Water Chemistry Section using wet analytical techniques; the Metals results were obtained by the Metals by the Metals Section using ICAP.

All results are in milligrams per liter (mg/l), except as follows:

pH conductivity temperature organics pH units micromhos/cm (lab cond. at 25 °C) degrees Celcius parts per billion

Abbreviations and symbols used to report the results are as follows:

conductivity Cond. general chemistry GEN. CHEM. not detected (see below) ND NR not reported parts per billion PPB temperature (in Celcius) Temp. total dissolved solids TDS (total filterable residue) total organic carbon TOC less than < > greater than approximately tentative identification []

The value of many metals is reported as ND (none detected). The detection limits, in mg/l, were as follows:

Arsenic	0.005
Mercury	0.0005
Selenium	0.005
Manganese	0.05
All others	0.1

## TABLE 1. SAMPLE IDENTIFICATION, PHILLIPS PETROLEUM PLANTS

NOTE: The designation of a well as upgradient or downgradient is Phillip's designation.

## Phillips Petroleum -- Artesia

MW-1
MW-3
MW-6
PND-1,w
PND-4,s
PND-2,s
PND-3,,w
Blank

## Phillips Petroleum -- Eunice

MW-1	monitoring well 1, upgradient
MW-2	monitoring well 2, downgradient
MW-3	monitoring well 3, downgradient
MW-4	monitoring well 4, downgradient

monitoring well 1, downgradient monitoring well 3, upgradient monitoring well 6, downgradient

Field blank using deionized water

first RCRA pond, surface water first RCRA pond, sediment second pond (middle), sediment

third pond, surface water

## Phillips Petroleum -- Lee

	MW-1	· · ·	monitoring well 1, upgradient
	MW-2		monitoring well 2, downgradient
	MW-3		monitoring well 3, downgradient
·	MW-4		monitoring well 4, downgradient
	Blank		Field blank using deionized water

## Phillips Petroleum -- Lusk

•	MW-1	monitoring well 1, upgradient
-	MW-2	monitoring well 2, downgradient
	MW-3	monitoring well 3, downgradient
	MW-4	monitoring well 4, downgradient
,	R-PND,w	RCRA pond, surface water
	R-PND.s	RCRA pond, sediment
	O-PND,s	Oily pond next to RCRA pond, sludge
	·	

## TABLE 2. ANALYTICAL METHODS

PARAMETER	PRESERVATION	ANALYTICAL METHOD
Gen Chem		
Field pH	none	Hach Mini pH Meter
Field Cond	none	Yellow Springs S-C-T Meter
Calcium	ice	FPA Method 215.2
Magnesium	ice	EPA Methods 130.2 and 215.2
Sodium	ice	Std Methods 325(b)
Potassium	ice	Std. Methods 325(b)
Bicarbonate	ice	EPA Method 310.1
Chloride	ice	EPA Method 325.2
Sulfate	ice	EPA Method 375.2
TDS	ice	EPA Method 160.1
Fluoride	ice	EPA Method 340.2
Nitrate-N	ice. H <sub>2</sub> SO <sub>4</sub>	EPA Method 352.2
TOC	ice. H <sub>2</sub> SO <sub>4</sub>	EPA Method 415.1
Metals		
Arsenic	HNO3	EPA Method 206.2
Mercury	HNO3	EPA Method 245.1
Selenium	HNO <sub>2</sub>	EPA Method 270.2
All others (ICAP Scan)	HNO	FPA Method 207
Organics	· · · · ·	· · · · · · · · · · · · · · · · · · ·
GC/MS Purgeables	lce	EPA Method 624

			· · · · · · · · · · · · · · · · · · ·	
	MW-1	MW-2	MW-3	MW-4
GEN CHEM.		······································		<u> </u>
Field pH	7.0	7.0	7.0	6.9
Field Cond.	1800	2050	2950	2850
Field Temp.	25	23	23	22
LabpH	· 7.93	8.12	8.21	7.84
Lab Cond.	1829	2188	2879	3455
Calcium	212.0	132.0	120.0	280.0
Magnesium	112.2	148.8	268.4	143.9
Soaium	103.5	142.6	225.4	308.2
Potassium	5.07	2./3	1.95	3.51
Bicarbonate	200.9	418.9	0/5 CO7 4	237.0
Chionae	150.2	377.4	607.4 405.0	549.0 1057
	1075	240.3	485.8	1057
Fluorida	1 21	200	2350 7 19	2022
Nitrato-N	20.87	2.09	0.21	2.14
TOC	20.07	8 5 8	27.6	71
		0.50	27.0	7.1
METALS				
Arsenic	0.010	0.060	0.078	0.020
Mercury	ND	ND	ND	ND
Selenium	0.009	ND	ND.	ND
Aluminum	ND	0.9	0.4	0.4
Barium	ND	0.3	0.7	ND
Beryllium	ND	ND	NÐ	ND
Boron	0.2	0.5	0.5	0.4
Cadmium	ND	ND	ND	ND
Calcium	210	134	125	275
Chromium	ND	ND	ND	ND
Cobalt	ND	ND	ND	ND
Copper	ND	ND	ND	ND
Iron	0.2	5.8	13	4.6
Leao	ND 04			
Manganasa	94 ND	100	2/5	100
Malubdanum			0.9 ND	
Nickol				
Silicon	36	23	20	22
Silver	ND			ND
Strontium	22	25	ΔΔ	<u>4</u> 1
Tin	ND	ND	ND	ND
Vanadium	ND	ND	ND	ND
Ytrrium	NR	ND	ND	ND
Zinc	ND	ND	ND	ND

# PHILLIPS PETROLEUM -- LUSK

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## PHILLIPS PETROLEUM -- LUSK, cont.

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	R-PND,w	R-PND,s	O-PND,s	ÿ
			e	
METALS				
Arsenic	0.019	0.078	0.15	
Mercury	ND	0.0036	0.0011	
Selenium	ND	0.018	ND	
Aluminum	ND	6.4	0.6	
Barium	0.3	0.5	0.4	
Beryllium	ND	ND	ND	
Boron	0.2	ND	0.1	
Cadmium	ND .	ND	ND	
Calcium	240	110	9.7	
Chromium	ND	17	ND	
Cobalt	ND	ND	ND	
Copper	ND	ND	ND	
Iron	ND	11	5.4	
Lead	ND	ND	ND	
Magnesium	25	11	0.8	
Manganese	ND	0.17	ND	
Molybdenum	ND	ND	ND	
Nickel	ND	ND	ND	
Silicon	33	2.8	0.8	
Silver	ND	ND	ND	
Strontium	2.4	0.6	ND	
Tin	ND	ND	ND	
Vanadium	ND	0.2	ND	
Ytrrium	NR	ND	ND	
Zinc	ND	6.4	0.6	

## PHILLIPS PETROLEUM -- LUSK

Gas Chromatograph/Mass Spectrometer Purgeable Screen

Results in [brackets] are tentative (unconfirmed) results.

SAMPLE	ORGANICS DETECTED	РРВ
 MW-1	None Detected	
MW-2	Benzene Ethylbenzene [Tetrahydrofuran] [Butanone] C3 substituted benzenes C4 substituted benzene	44 7 [>30] [>5] ~5 ~2
MW-3	Benzene Toluene Ethylbenzene p-Xylene m-Xylene o-Xylene Napthalene C3 substituted benzenes C4 substituted benzenes	68 1500 900 470 320 [present] 20-300 ~20
MW-4	Trichloromethane	2
R-PND,w	[Thiobismethane]	[1]
R-PND,s	None Detected	
O-PND,s*	Methylcyclohexane Heptane Toluene Nonane Dimethylcyclohexanes (2) Octane m-Xylene Ethylbenzene o-Xylene p-Xylene Decane Ethylcyclohexane Benzene	present present present present present present present present present present present present

\*Oil and water phases in the sample made quantitation impossible. High concentrations of aliphatic and aromatic hydrocarbons were indicated by the analysis.

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## SOUTHWESTERN LABORATORIES

Materials, environmental and geotechnical engineering, nondestructive, metallurgical and analytical services

· .	1703 W. Industrial Avenue (915 - 683-3348)	٠	P.O. Box 2150	2150 • Midland, Texas 797 Client No. 3355796	
				File No.	C-1950-W
				Report No.	36769
•				Report Date	9-23-85
Report of tests on:	Water		r	Date Received	8-29-85
Client:	Phillips Petroleum Company			Delivered By	A. Hubble

Identification:

Lusk Plant, MW-1

		mg/L
ArsenicLess	than	0.05
Barium		1.9
CadmiumLess	than	0.01
ChromiumLess	than	0.05
LeadLess	than	0.05
MercuryLess	than	0.002
SeleniumLess	than	0.01
SilverLess	than	0.05
NickelLess	than	0.2
Cyanide		0.001
-		

Technician: JDN, GMB, LT, MT

vies 3cc Phillips Petroleum Co. Attn: Mike Ford

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			I	File No.	C-1950-W
			·	Report No.	36770
	·		ş	Report Date	9-23-85
Report of tests on:	Water		ſ	Date Received	8-29-85
Client:	Phillips Petroleum Company		I	Delivered By	A. Hubble

Identification:

Lusk Plant, MW-2

		mg/L
Arsenic		0.08
BariumLess	than	1
CadmiumLess	than	0.01
ChromiumLess	than	0.05
Lead		0.24
MercuryLess	than	0.002
SeleniumLess	than	0.01
SilverLess	than	0.05
NickelLess	than	0.2
CvanideLess	than	0.001

Technician: JDN, GMB, LT, MT

3cc Phillips Petroleum Co. Copies Attn: Mike Ford

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	1703 W. Industrial Avenue (915 - 683-3348) • P.O. Box 2	2150 • Midland Client No	, Texas 79701 3355796
		File No	C-1950-W
		Report No	36771
		Report Date	9-23-85
Report of tests on:	Water	Date Received	8-29-85
Client:	Phillips Petroleum Company	Delivered By	A. Hubble

Identification:

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Lusk Plant, MW-3

	mg/L
Arsenic	0.05
Barium	1.1
Cadmium	0.01
ChromiumLess than	0.05
Lead	0.16
MercuryLess than	0.002
SeleniumLess than	0.01
SilverLess than	0.05
NickelLess than	0.2
CyanideLess than	0.001

JDN, GMB, LT, MT Technician:

3cc Phillips Petroleum Co. Copies Attn: Mike Ford

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	1703 W. Industrial Avenue (915 - 683-3348)	•	P.O. Box 215	0 • Midlar Client N	nd, Texas 79701 o . 3355796
				File No.	C-1950-W
				Report No.	36772
				Report Date	9-23-85
Report of tests on:	Water			Date Received	8-29-85
Client:	Phillips Petroleum Company			Delivered By	A. Hubble

Identification:

Lusk Plant, MW-4

	mg/L
ArsenicLess than	0.05
BariumLess than	1
CadmiumLess than	0.01
ChromiumLess than	0.05
Lead	0.12
MercuryLess than	0.002
SeleniumLess than	0.01
SilverLess than	0.05
NickelLess than	0.2
Cyanide	0.003

Technician: JDN, GMB, LT, MT

3cc Phillips Petroleum Co. Copies Attn: Mike Ford

> BOUTHWEB ERN LABORATORIES

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Our letters and reports are for the exclusive use of the client to whom they are addressed. The use of our name must receive our prior written approval. Our letters and reports apply only to the sample tested and/or inspected, and are not necessarily indicative of the quantities of apparently identical or similar products

119904



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	1703 W. Industrial Avenue (915 - 683-3348) •	• F	P.O. Box 2150	• Midland Client No	d, Texas 79701 3355796
			. F	ile No	C-1950-W
			F	leport No	36773
			P	leport Date	9-23-85
Report of tests on:	Water		C	ate Received	8-29-85
Client:	Phillips Petroleum Company		C	Jelivered By	A. Hubble

Identification: Lusk Plant, Surface Impoundment

		mg/L
ArsenicLess th	han	0.05
BariumLess th	han	1
CadmiumLess th	han	0.01
ChromiumLess th	han	0.05
Lead		0.15
MercuryLess th	han	0.002
SeleniumLess th	han	0.01
SilverLess t	han	0.05
NickelLess t	han	0.2
CvanideLess t	han	0.001

Technician: JDN, GMB, LT, MT

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Dies 3cc Phillips Petroleum Co. Attn: Mike Ford

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Phillips

Delivered By

1703 W. Industrial Avenue (915 - 683-3348)	•	P.O. Box 2150 • Midlan Client N	d, Texas 79701 o. 3355796 C-1950-X
		Report No.	27905
		Report Date	10-23-85
re		Date Received	9-3-85

Report of tests on: Sludge

Client:

Phillips Petroleum Company

Identification:

Lusk Plant Impoundment Sludge

SW-846, Total Metals, Method 3050

			p.p.m.
	ArsenicLess t	han	0.5
	Barium		230
	CadmiumLess t	han	3
(	Chromium		9410
:	LeadLess t	han	5
1	Mercury		1.5
1	Nickel		20
:	SeleniumLess t	han	0.1
·····	SilverLess t	han	3

Technician:

Copies

MAW, GMB

3cc Phillips Petroleum Attn: Mike Ford

SOUTHWESTERN LABORATORIES any

Devices of the end are not be exclusive use of the client to whom they are addressed. The vise introving end of the vise of the client of the second and the

## Attachment to Olb-15-86

## TABLE I

## VOLATILE ORGANIC ANALYSES OF LUSK PLANT WATER SAMPLES AND SURFACE SAMPLES

## Sample received: September 3, 1985

Analysis	Concentration, ppb					
		,			Sur	face
					Impou	ndment
	<u>M.W.#1</u>	<u>M.W.#2</u>	<u>M.W.#3</u>	<u>M.W.#4</u>	Water	Sludge
Chloromethane	2.2	1.7	<1	2.3	<1	7.9
Vinyl Chloride	<1	<1	<1	<1	<1	<1
Chloroethane	<1	<1	<1	<1	<1	<1
Bromomethane	<1	<1	<1	<1	<1	<1 ·
1,1-dichloroethylene	<1	1.4	<1	<1	· <1	<1
Methylene Chloride	8.0	8.1	5.7	4.1	4.6	2.4
trans-1,2-dichloroethylene	<1	<1	<1	<1	<1	<1
1,1-dichloroethane	<1	<1	<1	<1	<1	<1
Chloroform	1.5	1.6	1.3	2.5	1.6	1.5
1,2-dichloroethane	<1	<1	<1	<1	<1	<1
1,1,1-trichloroethane	<1	<1	<1	<1	<1	<1
Benzene	<1	<1	38	4.9	<1	2.4
Carbontetrachloride	<1	<1	<1	<1	<1	<1
1,2-dichloropropane	<1	<1	<1	<1	<1	<1
Bromodichloromethane	<1	<1	<1	<1	<1	<1
Trichloroethylene	<1	<1	<1	<1	<1	<1
2-chloroethylvinyl Ether	<1	<1	<1	<1	<1	<1
trans-1.3-dichloropropene	<1	<1	<1	<1	<1	<1
cis-1.3-dichloropropene	<1	<1	<1	<1	<1	<1
1.1.2-trichloroethane	<1	<1	<1	<1	<1	<1
Toluene	4.4	<1	66	25	<1	10.7
Dibromochloromethane	<1	<1	<1	<1	<1	<1
1.1.2.2-tetrachloroethylene	<1	<1	<1	<1	<1	<1
Chlorobenzene	<1	<1	<1	<1	<1	<1
Ethylbenzene	<1	<1	34	1.7	<1	<1
Bromoform	<1	<1	<1	<1	<1	<1
1,1,2,2-tetrachloroethane	<1	<1	<1	<1	<1	<1
31509-38-	1	2	3	4	5	6

## Attachment to Olb-21-86

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## TABLE I

## SEMIVOLATILE ORGANIC ANALYSES OF LUSK MONITORING WELL WATERS

Sample received: September 3, 1985

Analysis	Concentration, ppb			
	M.W. #1	M.W. #2	M.W. #3	<u>M.W.</u> #4
Bis(2-chloroethyl)ether	<20	<20	<20	<20
1,3-dichlorobenzene	<20	<20	<20	<20
1.4-dichlorobenzene	<20	<20	<20	<20
1.2-dichlorobenzene	<20	<20	<20	<20
Bis(2-chloroisopropyl)ether	<20	<20	<20	<20
N-nitorsodi-n-propylamine	(20	<20	<20	<20
Nitrobenzene	<20	<20	<20	<20
Hexachloroethane	<20	<20	<20	<20
Isophorone	<20	<20	<20	<20
n-nitrosodimethylamine	<20	<20	<20	<20
Bis-(2-chloroethoxy)methane	<20	<20	<20	<20
1.2.4-trichlorobenzene	<20	<20	<20	<20
Naphthalene	<20	<20	<20	<20
Hexachlorobutadiene	<20	<20	<20	<20
Hexachlorocyclopentadiene	<20	<20	<20	<20
2-chloronaphthalene	<20	<20	<20	<20
2.6-dipitrotoluene	<20	<20	<20	<20
Dimethylphthalate	<20	<20	<20	<20
Acenaphthylene	<20	<20	<20	<20
Acenaphthene	<20	<20	<20	<20
2.4-dinitrotoluene	<20	<20	<20	<20
Diethylnhthalate	<20	<20	<20	<20
Fluorene	. (20	<20	<20	<20
4-chlorophenvlphenvlether	<20	<20	<20	<20
N-pitrosodinhenylamine	<20	<20	<20	<20
4-bromonhenvlohenvlether	<20	<20	(20	<20
Heyachlorobenzene	<20	<20	<20	<20
Phenanthrene	<20	<20	<20	<20
Anthracene	<20	<20	<20	<20
Dibutyl phthalate	<20 ·	<20	<20	<20
Fluoranthene	<20	<20	<20	<20
Pyrene	<20	<20	<20	<20
Benzylhutylphthalate	<20	(20	(20)	<20
Bis(2-ethylbexyl)phthalate	<20	<20	<20	140
Benzidine	<20	<20	<20	<20
Di-n-octvlphthalate	<20	<20	<20	<20
Benzo(b&k)fluoranthene	<20	<20	<20	<20
Benzo(a)pyrene	<20	<20	<20	<20
3-3'-dichlorobenzidine	<20	<20	<20	<20
Chrysene & benzo(a)anthracene	<20	<20	<20	<20
Indeno(1.2.3-c.d)pyrene	<20	<20	<20	<20
Dibenzo(a,b)antbracene	<20	<20	<20	<20
Benzo(g.h.i)pervlene	<20	<20	<20	<20
Phenol	<20	<20	<20	<20
2-chlorophenol	<20	<20	<20	<20
2-nitrophenol	<20	<20	<20	<20
2.4-dimethylphenol	<20	<20	<20	< 20
2.4-dichlorophenol	<20	<20	<20	<20
4-chloro-3-methylphenol	<20	<20	<20	<20
2.4.6-trichlorophenol	<20	<20	<20	<20
2.4-dinitrophenol	<20	<20	(20	<20
4-nitrophenol	<20	<20	<20	<20
2-methyl-4.6-dinitronhenol	<20	(20	<20	<20
Pentachlorophenol	<20 <20	<20 <20	<20	<20
- encounter opicies	120	120	120	120
31509-38-	1	2	3	4

#### Attachment to 01b-21-86

#### TABLE II

## SEMIVOLATILE ORGANIC ANALYSES OF LUSK PLANT SURFACE IMPOUNDMENT SAMPLES

## Samples received: September 3, 1985

Analysis	Concentra	tion, ppb
	Water	Sludge
Bis(2-chloroethyl)ether	<20	<100
1,3-dichlorobenzene	<20	<100
l,4-dichlorobenzene	<20	<100
1,2-dichlorobenzene	<20	<100
Bis(2-chloroisopropyl)ether	<20	<100
N-nitorsodi-n-propylamine	<20	<100
Nitrobenzene	<20	<100
Hexachloroethane	<20	<100
Isophorone	<20	<100
n-nitrosodimethylamine	<20	<100
Bis-(2-chloroethoxy)methane	<20	<100
1,2,4-trichlorobenzene	<20	<100
Naphthalene	<20	<100
Hexachlorobutadiene	<20	<100
Hexachlorocyclopentadiene	<20	<100
2-chloronaphthalene	<20	<100
2,6-dinitrotoluene	<20	<100
Dimethylphthalate	<20	<100
Acenaphthylene	<20	<100
Acenaphthene	<20	<100
2,4-dinitrotoluene	<20	<100
Diethylphthalate	<20	125
Fluorene	<20	<100
4-chlorophenylphenylether	<20	<100
N-nitrosodiphenylamine	<20	<100
4-bromophenylphenylether	<20	<100
Hexachlorobenzene	<20	<100
Phenanthrene	<20	<100
Anthracene	<20	<100
Dibutyi phthalate	<20	630
Fluoranthene	< 20	<100
Pyrene '	<20	<100
Benzylburylphinalare	<20	<100
Bis(2"etnyinexyi)phthalate	<20	300
Denzidine Di-m-octulation	(20	<100
Bengo(b&k) fluoranthono	<20	<100
Benzo(a)pyrope	(20	<100
3-3'-dichlorobenzidine	<20	<100
Chrysene & henzo(a)anthracene	<20	<100
Indeno(1.2.3-c.d) pyrene	<20	<100
Dibenzo(a, h)anthracene	<20	<100
Benzo(g, h, j)pervlene	<20	<100
Phenol	(20	(100
2-chlorophenol	<20	<100
2-nitrophenol	<20	(100
2.4-dimethylphenol	<20	<100
2.4-dichlorophenol	20 200	(100
4-chloro-3-methylphenol	(20	<100
2.4.6-trichlorophenol	(20	<100
2.4-dinitrophenol	< 20	<100
4-nitrophenol	(20	<100
2-methyl-4.6-dinitrophenol	<20	<100
Pentachlorophenol	(20	<100
	120	100
31509-38-	5	6
	-	•

STATE OF NEW MEXICO



ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

GARREY CARRUTHERS

POST OFFICE BOX 2088 STATE LAND OFFICE BUILDING SANTA FE, NEW MEXICO 87504 (505) 827-5800

April 7, 1988

CERTIFIED MAIL RETURN RECEIPT REQUESTED

Mr. Michael D. Ford Environmental Analyst Phillips 66 Natural Gas Co. 4001 Penbrook Odessa, Texas 79762

RE: CW-30, Effluent Discharge Plan, Lusk Gasoline Plant, Lea County, New Mexico

Dear Mr. Ford:

Your letter of March 31, 1988 regarding shut-down of your Lusk Gasoline Plant has been received. Therefore, we have discontinued processing of the discharge plan for that facility. However, pursuant to Section 3-106.B. of the Water Quality Control Commission Regulations you will be required to notify this agency in advance if Phillips decides to reopen this facility in the future.

If you have any questions regarding this letter, please contact me at (505) 827-5812.

Sincerely

David G. Boyer, Hydrogeologist Environmental Bureau Chief

DGB:sl

cc: OCD - Hobbs NMEID - Hazardous Waste Section



PHILLIPS 66 NATURAL GAS COMPANY

A SUBSIDIARY OF PHILLIPS PETROLEUM COMPANY

ODESSA, TEXAS 79762 4001 PENBROOK

March 31, 1988

Effluent Discharge Plan Lusk Gasoline Plant Lea County, New Mexico

CERTIFIED MAIL RETURN RECEIPT NO. P-512 089 452

Mr. David G. Boyer Environmental Bureau Chief New Mexico Oil Conservation Division P. O. Box 2088 Santa Fe, New Mexico 87501

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Dear Mr. Boyer:

Pursuant to our phone conversation of March 28, 1988, this is to notify you we have no plans at this time to resume operating our Lusk Gasoline Plant, located in Lea County, New Mexico (plant was shut down in October of 1986). Therefore, as we agreed, your review of the effluent discharge plan submitted for this facility will no longer be required.

As you are aware, wastewater from the plant was disposed of in a skimmer pond and an evaporation pond while the plant was operating. The ponds have since dried up and will be backfilled upon final approval of the hazardous waste closure plan submitted to the New Mexico Environmental Improvement Division. Your office will be notified when the ponds have been backfilled.

If you should have any questions regarding this information, please contact me at (915) 367-1316.

n an an an Arden (1997) Tha tha an Arden (1998)

Very truly yours,

Michael D. Ford

Michael D. Ford Environmental Analyst

MDF

STATE OF NEW MEXICO OIL CONSERVATION DIVISION MEMORANDUM OF MEETING OR CONVERSATION Time Date 6/17/86 Telephone 9:30AM Personal Other Parties Originating Party DAVE BOYER EDR&-Phillips Mike Subject Chosure of Phillips Lucsk Skimmer (0,1 Discussion Mike Called to ask if we had any specy wements for clasure sumpline to en To ILAE Q wachum from the pon udselas 5 For drunn elvater Other Wo Ł Sono Conclusions or Agreements Phillips Lusk Plant Signed **Distribution** Sours

## PUBLIC NOTICE

## NEW MEXICO ENVIRONMENTAL IMPROVEMENT DIVISION HAZARDOUS WASTE SECTION P.O.Box 968 Santa Fe, New Mexico 87504

## PUBLIC NOTICE NO. 8

March 28,1986

## NOTICE OF INTENT TO TERMINATE INTERIM STATUS AND TO CLOSE THE SURFACE IMPOUNDMENT USED FOR TREATMENT AND DISPOSAL OF HAZARDOUS WASTE

The State of New Mexico is authorized to operate a hazardous waste management program in lieu of the Federal program for those portions of the Resource Conservation and Recovery Act (RCRA) in effect prior to the enactment of the Hazardous and Solid Waste Amendments of 1984 (HSWA). The HWSA imposes additional requirements on hazardous waste management facilities which will be administered and enforced by the U.S. Environmental Protection Agency (EPA) until the State of New Mexico receives additional authorization for these requirements. Therefore, both the EPA and the New Mexico Environmental Improvement Division (NMEID) of the State Health and Environment Department will determine whether to approve Phillip's Petroleum Lusk Natural Gasoline Plant (Phillip's Lusk Plant) request for termination of interim status and the proposed closure plan.

Under authority of the New Mexico Hazardous Waste Act (§ 74-4-1 et. seq. NMSA 1983 Repl. Pamp.) and the New Mexico Hazardous Waste Management Regulations (HWMR-2), the NMEID proposes to terminate the interim status of <u>Phillip's Lusk</u> Plant, EPA I.D. Number NMD000709634, located nine miles north of the intersection of highways 176 & 180, near Maljamar, New Mexico (32° 38'N, 103° 49'W) and to approve a closure plan for the surface impoundment used for the treatment and disposal of hazardous waste at that site. Phillip's Lusk Plant is involved in the production of natural gasoline and has conducted treatment and disposal of hazardous wastes associated with those processes.

The decision to terminate interim status is based on Phillip's Lusk Plant request to withdraw its Part A application for a hazardous waste treatment and disposal permit. As a result of changes in its waste management practices, the company will no longer be subject to the requirements of HWMR-2, Section 206.C. for the treatment and disposal of hazardous wastes in a surface impoundment. Termination of interim status is to be accomplished through permit denial as required by EID. The cause for this permit denial is a request by the Company and does not suggest any wrongdoing on the part of the Company.

The proposed closure plan describes the procedures to be used to demonstrate that none of the standing liquids, waste and waste residues, the liner (if any) and underlying and surrounding contaminated soil remaining are hazardous waste. If that demonstration can be made then the surface impoundment is no longer subject to the requirements of HWMR-2 as provided for in Section 206.C.6.f.(2). Persons wishing to comment upon the proposed termination of interim status or upon the proposed closure plan, or who wish to request a public hearing, should submit, in writing, comments and requests, along with the requestor's name and address to the New Mexico Health and Environment Department, Environmental Improvement Division, 1190 St. Francis Drive, P.O.Box 968, Santa Fe, New Mexico 87504-0968, ATTENTION: Peter H. Pache. Requests for a public hearing shall state the nature of the issues proposed to be raised in the hearing. These comments and/or requests must be received no later than May 19,1986 to be considered.

The administrative record for these decisions consist of a permit application (Part A), a "notice of intent to terminate interim status", a fact sheet, a closure plan, and related correspondence. The administrative record may be reviewed at either the EID District Office, 200 E. 5th Street, Roswell, New Mexico, or the EID Central Office, Harold Runnels Building, 1190 St. Francis Drive, Santa Fe, New Mexico.

To obtain a copy of the administrative record or any part thereof, please contact:

Peter H. Pache, Program Manager Hazardous Waste Section New Mexico Environmental Improvement Division 1190 St. Francis Drive, P.O.Box 968 Santa Fe, New Mexico 87504-0968 (505) 827-2924

All written comments submitted on the proposed termination of interim status and/or the proposed closure plan will be considered in formulating a final decision. The EID will notify Phillip's Lusk Plant and each person who submitted a written comment during the public comment period of the final decisions or of any public hearing which may be scheduled.

If, after consideration of all written comments, these proposed actions become EID's final decisions, EID will issue to Phillip's Lusk Plant a Notice of Termination, immediately terminating the interim status of the Company's facility. The Notice of Termination will require that the Company's closure activities be performed in conformity with applicable State law, as well as within the terms of the Company's closure plan.
## FACT SHEET

## Intent to Terminate Interim Status and to Close Under the New Mexico Hazardous Waste Act

<u>Activity</u>: Termination of Phillips Petroleum Company's Lusk Natural Gas Plant Interim Status and closure of it's surface impoundment.

## Facility Name: Lusk Natural Gas Plant

## EPA I.D. Number: NMD000709634

Location: The plant is located approximately nine miles North of the intersection of Highways 176 and 180 near Maljamar, New Mexico.

Landowner: Phillips Petroleum Company

#### Facility Operator: Phillips Petroleum Company

### Comment Period:

Any person, including the applicant, who wishes to comment on the tentative decisions to terminate the facility's interim status and to approve the proposed closure plan may do so by submitting written comments to the New Mexico Environmental Improvement Division (NMEID), Harold Runnels Building, 1190 St. Francis Drive, P. O. Box 968, Santa Fe, New Mexico 87504-0968, ATTENTION: Peter H. Pache, (505) 827-2924. All such comments must be received by May 19, 1986 to be considered. Note that the termination of interim status is achieved through permit denial, as required by EID regulations; however, no wrongdoing on the part of the facility is to be inferred.

#### Procedures for Requesting a Hearing:

Any person, including the applicant, who wishes to request a public hearing concerning the proposed actions may do so by submitting a written request to the New Mexico Environmental Improvement Division (NMEID), P. O. Box 968, Harold Runnels Building, 1190 St. Francis Drive, Santa Fe, New Mexico, 87504-0968, ATTENTION: Peter H. Pache. Any request for a hearing shall be submitted in writing and shall state the nature of the issues proposed to be raised in the hearing. All requests must include the requestor's name and address. Requests for a hearing must be received by April 30, 1986 to be considered.

#### Interim Status Activities:

Since November 19, 1980, Phillips Petroleum Company's Lusk Natural Gas Plant has been operating under interim status (defined in N.M. Hazardous Waste Management Regulations) as a hazardous waste disposal facility. Primary industrial activities conducted at the facility include processing raw natural gas for liquid hydrocarbon recovery. These activities require use of a cooling tower; chemicals containing chromium, a corrosion inhibitor and characteristic toxic waste, were used in the cooling tower until December 7, 1982. On December 7, 1982, the use of chromium at the facility was discontinued. All wastes have been disposed of in an unlined surface impoundment on site.

### Reasons Supporting Decision to Terminate Interim Status:

On February 10, 1984, Phillips Petroleum Company submitted a revised closure and post-closure plan for the Lusk Natural Gas Plant surface impoundment which was used for disposal of cooling tower blowdown water containing chromium. In the closure plan Phillips states that the use of chromium contained in cooling tower blowdown water has been discontinued and requests that the interim status authorization to operate be withdrawn. NMEID's review of the closure and post-closure plan indicated that the company's request to withdraw interim status and retain their EPA I.D. Number was justified. Therefore NMEID is hereby formally proposing to terminate Lusk Natural Gas Plant's interim status by denying a permit.

## Closure of the Facility:

The facility is currently operating under interim status. If this tentative decision becomes the final administrative disposition of the permit application, interim status will terminate and closure will begin immediately. Phillip's Lusk Natural Gas Plant closure plan has been previously submitted and reviewed by NMEID. A copy is available for public review at the NMEID Central Office, Harold Runnels Building, 1190 St. Francis Drive, Santa Fe, New Mexico and the NMEID District IV Office at 200 East Fifth Street, Roswell, New Mexico. The public notice and this fact sheet include the proposed approval of the closure plan for this facility's surface impoundment. The public is provided an opportunity to submit written comments on the plan, or request a public hearing as previously described elsewhere in this fact sheet. The owner/operator must implement the approved closure plan in accordance with its stipulated time schedule.

If the groundwater has been or will be impacted by a release of hazardous constituents from the surface impoundment, closure of the impoundment shall not relieve Phillips Petroleum Company of remedial liability.

#### **Final Decisions:**

All written comments submitted on the proposed termination of interim status and/or the proposed closure plan will be considered in formulating a final decision. The NMEID will notify Phillips Petroleum Company and each person who submitted a written comment during the public comment period of the final decisions made, or of any public hearing which may be scheduled.

G.W. File: Phillips Plants



## PHILLIPS PETROLEUM COMPANY

107 an 2 1 200

PHONE: 918 661-6600 CABLE CODE: PHILPETROL TELEX: 49-2455

HAZARDOUS WASTE SECTION

ENGINEERING AND SERVICES

BARTLESVILLE, OKLAHOMA 74004

March 21, 1986

Lusk, Lee, Eunice and Artesia Plants Supplemental Sampling Results

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CERTIFIED MAIL RETURN RECEIPT REQUESTED

Mr. Jack Ellvinger, Environmental Supervisor Hazardous Waste Section New Mexico Environmental Improvement Division P. O. Box 968 Harold-Runnels Building Santa Fe, NM 87501-0968

Dear Mr. Ellvinger:

Samples were procured from the Lusk, Lee, Eunice and Artesia Plants' water sampling wells and surface impoundments in the Fall of 1985 during a joint sampling effort by Phillips and the New Mexico Environmental Improvement Division (EID). Each sample that was procured was split between Phillips and the EID. Results of the analysis of Phillips' samples are attached.

Referring to the attached data, please note that for the Lusk, Lee and Eunice Plants, "well #1" corresponds to the "upgradient" well; in the case of the Artesia Plant, "well #3" is the upgradient well. Samples from monitoring wells #1 and #2 at the Eunice Plant were lost because the containers holding these samples froze and broke while being stored in a laboratory refrigerator prior to analysis. Analyses of the samples for metals were performed by Southwestern Laboratories of Midland, Texas. Analyses of the samples for volatile and semivolatile compounds were performed by the Phillips Research Center, located in Bartlesville, Oklahoma.

Phillips requests that EID provide Phillips a copy of all analytical results from the analysis of EID's split samples from the Lusk, Lee, Eunice and Artesia Plants.

It is Phillips' understanding that EID is currently preparing a public notice which, when published by EID in a local newspaper (or broadcast via radio or television), will extend to the public and to Phillips the opportunity to submit comments on the closure plans previously submitted by Phillips for the Lusk, Lee, Eunice and Artesia Plants. The Lusk plan is dated January 23, 1984; the other three plans are dated July 27, 1984. Following the comment period and after any questions are adequately addressed, EID will proceed with the administrative actions necessary to RCRA-close the Lusk, Lee, Eunice and Artesia Plants.

Mr. Jack Ellvinger, Environmental Supervisor March 21, 1986 Page 2

If you have any questions regarding the Lusk, Lee, Eunice or Artesia Plants, please contact either Frank Collis at (918) 661-1063 or W. C. Stoltz at (918) 661-5613.

Very truly yours,

B. F. Ballard, Director Environment Control 10 D4 Phillips Building

BFB:FPC:tsv/B:002 Enclosure

Swl

Materials, environmental and geotechnical engineering, nondestructive, metallurgical and analytical services

Phillips Petroleum Company	Delivered By	A. Hubble
Water	Date Received	8-29-85
	Report Date	9-23-85
	Report No.	36769
	File No.	C-1950-W
1703 W. Industrial Avenue [915 - 683-3348] • P.O. Box 2	2150 • Midlan Client No	d, Texas 79701 2 3355796

Identification:

Cent:

Report of tests on:

Lusk Plant, MW-1

		mg/L
ArsenicLess	than	0.05
Barium		1.9
CadmiumLess	than	0.01
ChromiumLess	than	0.05
LeadLess	than	0.05
MercuryLess	than	0.002
SeleniumLess	than	0.01
SilverLess	than	0.05
NickelLess	than	0.2
	×	

Cyanide 0.00	)1
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Technician: JDN, GMB, LT, MT

Ses 3cc Phillips Petroleum Co. Attn: Mike Ford

ABORATORIES

UPTC+-

Swf

Materials, environmental and geotechnical engineering, nondestructive, metallurgical and analytical services

119904

	1703 W. Industr	rial Avenue (915 - 683-33	48] • P.O. Box 2	2150 • Midlan Client No	d, Texas 79701
- -			· · · ·	File No	C-1950-W
				Report No.	36770
			н. Н	Report Date	9-23-85
Report of tests or	n Water	• • •		Date Received	8-29-85
Client:	Phillips Petrole	um Company	•	Delivered By	A. Hubble

Identification:

Lusk Plant, MW-2

			mg/L
Arsenic	- 		0.08
Barium	Less	than	1
Cadmium	Less	than	0.01
Chromium	Less	than	0.05
Lead			0.24
Mercury	Less	than	0.002
Selenium	Less	than	0.01
Silver	Less	than	0.05
Nickel	Less	than	0.2
Quani da		*	0.001

Technician: JDN, GMB, LT, MT

Comes 3cc Phillips Petroleum Co. Attn: Mike Ford

Survettars and reports are for the exclusive use of the cheric to whom they are addressed. The use of our name must receive our phon written approval. Our letters and reports apply only to the sample of state and information and are not percession indicative of the clientities of anomatic dentication sumarization of the sample.

Swl

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# SOUTHWESTERN LABORATORIES

Materials, environmental and geotechnical engineering, nondestructive, metallurgical and analytical services

	1703 W. Industrial Avenue [915 - 683-3348 	3] • P.O. Box 2150 • Midlar Client No File No	nd, Texas 79701 5. 3355796 C-1950-W
		Report No	36771
· · · ·		Report Date	9-23-85
Report of tests on:	Water	Date Received	8-29-85
Sent:	Phillips Petroleum Company	Delivered By	A. Hubble

ientification:

Lusk Plant, MW-3

	mg/L
Arsenic	0.05
Barium	1.1
Cadmium	0.01
ChromiumLess than	0.05
Lead	0.16
MercuryLess than	0.002
SeleniumLess than	0.01
SilverLess than	0.05
NickelLess than	0.2
CyanideLess than	0.001

JDN, GMB, LT, MT mncian:

3cc Phillips Petroleum Co. cres Attn: Mike Ford

Swl

119904

Materials, environmental and geotechnical engineering, nondestructive, metallurgical and analytical services

	1703 W. Industrial Avenue [915 - 683-3348]		P.O. Box 2150 • Midlar Client N	Box 2150 • Midland, Texas 79701 Client No. 3355796		
	•		File No.	C-1950-W		
			Report No.	36772		
• •			Report Date	9-23-85		
Report of tests on:	Water		Date Received	8-29-85		
Client:	Phillips Petroleum Company		Delivered By	A. Hubble		

Identification:

Lusk Plant, MW-4

		mg/L
ArsenicLess	than	0.05
BariumLess	than	_ <b>1</b> )
CadmiumLess	than	0.01
ChromiumLess	than	0.05
Lead		0.12
MercuryLess	than	0.002
SeleniumLess	than	0.01
SilverLess	than	0.05
NickelLess	s than	0.2
Cvanide		0,003

JDN, GMB, LT, MT Technician:

3cc Phillips Petroleum Co. Copies Attn: Mike Ford

Cyanide-

ann M.

Our latters and reports are for the exclusive use of the client to whom they are addressed. The use of our name must receive our prior nd reports apply only to the sample written approval. Our xested and/or inspected, and are not necessarily indicative of the quantities of apparently identical or similar products

Materials, environmental and geotechnical engineering, nondestructive, metallurgical and analytical services

	1703 W. Industrial Avenue (915 - 683-3348)	٠	P.O. Box 2150 • Midlar Client N	) • Midland, Texas 79701 Client No. 3355796		
	-		File No	C-1950-W		
			Report No.	36773		
			Report Date	9-23-85		
of tests on:	Water		Date Received	8-29-85		
	Phillips Petroleum Company		Delivered By	A. Hubble		

dentification:

Report

Cient:

Swl

mg/L Arsenic-0.05 ----Less than Barium-----1 ----Less than Cadmium-----0.01 -----Less than Chromium----------Less than 0.05 Lead------0.15 0.002 Mercury-----Less than 0.01 Selenium-----Less than 0.05 ----Less than Silver---Nickel-----0.2 -----Less than

Lusk Plant, Surface Impoundment

YanideLess	than	0.001
------------	------	-------

"echnician JDN, GMB, LT, MT

Des 3cc Phillips Petroleum Co. Attn: Mike Ford

BORATORIES

e our phon written approval. Our letters and mounts activ

Swl

Materials, environmental and geotechnical engineering, nondestructive, metallurgical and analytical services

119904

1703 W. Industrial Avenue (915 - 683-3348) • P.O. Box 2150 • Midland, Texas 79701

				CTIENC N	0. 2222/20	
	1		r f	File No.	C-1950-X	
-			<b>;</b>	Report No.	27905	
			•	Report Date	10-23-85	_
Sludge			1	Date Received	9-3-85	
Phillips	Petroleum	Company	· · · · · ·	Delivered By	Phillips	

Identification:

Cient:

Report of tests on:

Lusk Plant Impoundment Sludge

SW-846, Total Metals, Method 3050

	p.p.m.
ArsenicLess than	0.5
Barium	230
CadmiumLess than	3
Chromium	9410
LeadLess than	5
Mercury	1.5
Nickel	20
SeleniumLess than	0.1
SilverLess than	3

Technician:

MAW, GMB

Comes. 3cc Phillips Petroleum Attn: Mike Ford

TERN LABORATORIES

During the storage of the exclusive use of the client to whom they are addressed. The use of our name muscher out on once written workwer (but letters withey of the object of the client of the clien

## Attachment to Olb-15-86

## TABLE I

## VOLATILE ORGANIC ANALYSES OF LUSK PLANT WATER SAMPLES AND SURFACE SAMPLES

## Sample received: September 3, 1985

Analysis	Concentration, ppb									
· · · · ·					Sur	face				
		_	_		Impou	ndment				
·	<u>M.W.#1</u>	<u>M.W.#2</u>	<u>M.W.#3</u>	<u>M.W.#4</u>	Water	<u>Sludge</u>				
Chloromethane	2.2	1.7	<1	2.3	<1	7.9				
Vinyl Chloride	<1	<1	<1	<1	<1	<1				
Chloroethane	<1	<1	<1	<1	<1	<1				
Bromomethane	<1	<1	<1	<1	<1	<1				
1,1-dichloroethylene	<1	1.4	<1	<1	<1	<1				
Methylene Chloride	8.0	8.1	5.7	4.1	4.6	2.4				
trans-1,2-dichloroethylene	<1	<1	<1	<1	<1	<1				
1,1-dichloroethane	<1	. <1	<1	<1	<1	<1				
Chloroform	1.5	1.6	1.3	2.5	1.6	1.5				
1,2-dichloroethane	<1	<1	<1	<1	<1	<1				
1,1,1-trichloroethane	<1	<1	<1	<1	-<1	<1				
Benzene	<1	<1	38	4.9	<1	2.4				
Carbontetrachloride	<1	<1	<1	<1	<1	<1				
1,2-dichloropropane	<1	<1	<1	<1	<1	<1				
Bromodichloromethane	<1	€l	<1	<1	<1	<1				
Trichloroethylene	<1	<i< td=""><td>&lt;1</td><td>&lt;1</td><td>&lt;1</td><td>&lt;1</td></i<>	<1	<1	<1	<1				
2-chloroethylvinyl Ether	<1	<1	<1	<1	<1	<1				
trans-1,3-dichloropropene	<1	<1	<1	<1	<1	<1				
cis-1,3-dichloropropene	<1	<1	<1	<1	<1	<1				
1,1,2-trichloroethane	<1	<1	<1	<1	<1	<1				
Toluene	4.4	<1	66	25	<1	10.7				
Dibromochloromethane	<1	<1	<1	<1	<1	<1				
1,1,2,2-tetrachloroethylene	<1	<1	<1	<1	<1	<1				
Chlorobenzene	<1	<1	<1	<1	- <1	<1				
Ethylbenzene	<1	<1	34	1.7	<1	-<1				
Bromoform	<1	<1	<1	<1	<1	<1				
1,1,2,2-tetrachloroethane	<1	<1	<1	<1	<1	<1				
31509-38-	1	2	3	4	5	6				

#### Attachment to 01b-21-86

#### TABLE I

## SEMIVOLATILE ORGANIC ANALYSES OF LUSK MONITORING WELL WATERS

## Sample received: September 3, 1985

Analysis			Concentra	tion, ppb	
•		<u>M.W. #1</u>	<u>M.W. #2</u>	<u>M.W. #3</u>	<u>M.W.</u> #4
Rio(2-chlone-ch-1)-ch		(00)	(20	(00	(00
1 2 dichlanchanana		<20	<20	<20 (20	<20
1,5-dichlorobenzene		<20	<20	<20 (20	<20 _
1,4-dichiorobenzene		<20 (20	<20	<20 <00	<20 (20
1,2-dichiorobenzene		<20	<20	<20	<20
bis(2-cnioroisopropyi)ether		× <20	<20	<20	<20
N-nitorsodi-n-propylamine		<20 (20	<20	<20	<20
Nitrobenzene		<20	<20	<20	<20 <20
Teesheeree		<20	<20	< <u>20</u>	<20
		(20	(20	(20	<20
Rios (2-shlepesthere) methods		<20	<20	<20	<20
1 2 Artrichlerchersen		<20	(20	<20	<20
Naphthalana		<20	<20	<20	120
Naphthalene Novachlarobutadiana		<20	(20	<20	<20
Nexachiorobulatione		<20	(20	<20	<20
2 ablace abba lass		<20	(20	(20	(20
2-chloronaphthalene		<20	<20	<20	<20
2,0-dinitrotoluene		<20	<20	(20	<20
		<20	<20	<20	<20
Acenaphinytene		<20	< <20	<20	(20
Acenaphinene		. K20 -	<20	<20	<20
2,4-dinitrotoluene		<20	<20	<20	<20
		(20	<20	<20	<20 (20
/ uorene		<20 (20	<20 (20	<20	<20
4-chlorophenylphenylether	•	(20	<20	<20	<20
k-herebenulabanulaban		<20 ·	<20	<20	<20
4-bromophenyiphenyiether		<20	<20	<20	<20
Phonesthrone		<20	<20	<20	< 20
Anthracene		(20	<20	<20	<20
Dibutul phthelate		<20	120	<20	(20
Fluorantheno		<20	(20	<20	<20
Purene		<20	<20 <20	<20	<20
Bengylbutylobthalate		(20	<20	<20	<20
Bis(2-athylberyl) phthalate		<20	(20	<20	140
Benzidine		<20	<20	<20	140
Dispectvlphthelate		<20	<20	<20	(20
Benzo(b&k)fluoranthene		<20	<20	(20	<20
Benzo(a) pyrene		<20	<20	<20	<20
3-3'-dichlorobenzidine		<20	<20	<20	<20
Chrysene & benzo(a)anthracene		<20	<20	<20	<20
Indeno(1.2.3-c.d)pyrene		<20	<20	<20	<20
Dibenzo(a,h)anthracene		<20	<20	<20	<20
Benzo(g,h,i)pervlene		<20	<20	<20	<20
Phenol		<20	<20	<20	<20
2-chlorophenol		<20	<20	<20	<20
2-nitrophenol		<20	<20	<20	<20
2,4-dimethylphenol		<20	<20	<20	<20
2,4-dichlorophenol		<20	<20	<20	<20
4-chloro-3-methylphenol		<20	<20	<20	<20
2,4,6-trichlorophenol		<20	<20	<20	<20
2,4-dinitrophenol		<20	<20	<20	<20
4-nitrophenol		<20	<20	<20	<20
2-methyl-4,6-dinitrophenol	· .	<20	<20	<20	<20
Pentachlorophenol		<20	<20	<20	<20
-					
31509-38-		1	2	з	4

#### Attachment to Olb-21-86

#### TABLE II

#### SEMIVOLATILE ORGANIC ANALYSES OF LUSK PLANT SURFACE IMPOUNDMENT SAMPLES

## Samples received: September 3, 1985

Analysis		Concentra	tion, ppb
		Water	Sludge
Bis(2-chloroethyl)ether		<20	<100
1,3-dichlorobenzene		<20	<100
1,4-dichlorobenzene		<20	<100
1,2-dichlorobenzene		<20	<100
Bis(2-chloroisopropyl)ether		<20	<100
N-nitorsodi-n-propylamine		<20	<100
Nitrobenzene		<20	<100
Hexachloroethane	· · ·	<20	<100
Isophorone		<20	<100
n-nitrosodimethylamine		<20	<100
Bis-(2-chloroethoxy)methane	· · · · ·	<20	<100
1,2,4-trichlorobenzene		<20	<100
Naphthalene		<20	<100
Hexachlorobutadiene		<20	<100
Hexachlorocyclopentadiene		<20	<100
2-chloronaphthalene		<20	<100
2,6-dinitrotoluene		<20	<100
Dimethylphthalate		<20	<100
Acenaphthylene		<20	<100
Acenaphthene		<20	<100
2,4-dinitrotoluene		<20	<100
Diethylphthalate		<20	125
Fluorene		<20	<100
4-chlorophenylphenylether	· ·	<20	<100
N-nitrosodiphenylamine		<20	<100
4-bromophenylphenylether		<20	<100
Hexachlorobenzene		<20	<100
Phenanthrene		<20	<100
Anthracene		<20	<100
Dibutyl phthalate		<20	630
Fluoranthene		<20	<100
Pyrene		<20	<100
Benzylbutylphthalate		<20	<100
Bis(2-ethylhexyl)phthalate		<20	300
Denzidine Di-enertylabebelete		<20	<100
Bongo(bik)fluororthono		<20 (20	<100
Benzo(a) pyrope		<20	
3-3'-dichlorohenzidine	•	<20	<100
Chrysene & benzo(a)anthracene		<20	<100
Indeno(1.2.3-c.d)pyrene		<20	<100
Dibenzo(a,b)anthracene		(20	<100
Benzo(g,h,i)perviene		(20	<100
Phenol		<20	<100
2-chlorophenol		<20	<100
2-nitrophenol		<20	<100
2,4-dimethylphenol	<u>-</u>	<20	<100
2,4-dichlorophenol		<20	<100
4-chloro-3-methylphenol		<20	<100
2,4,6-trichlorophenol		<20	<100
2,4-dinitrophenol		<20	<100
4-nitrophenol	-	<20	<100
2-methyl-4,6-dinitrophenol		<20	<100
Pentachlorophenol		<20	<100
	-		

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## PHILLIPS PETROLEUM COMPANY

ODESSA, TEXAS 79762 4001 PENBROOK

EXPLORATION AND PRODUCTION GROUP Permian Basin Region March 4, 1985

Effluent Discharge Plan Lusk Gasoline Plant Lea County, New Mexico

Mr. Philip L. Baca New Mexico Oil Conservation Division P. O. Box 2088 State Land Office Building Santa Fe, New Mexico 87501

Dear Mr. Baca:

The following descriptions and attachments are submitted in response to your November 28, 1984 letter requesting further information on the Wastewater Discharge Plan for our Lusk Plant.

- A. A plant equipment layout is furnished in Attachment I. It should be noted that three of the plant storage tanks are buried. These three tanks are the engine room drain sump (No. 20 in Attachment I), the compressor oil sump (No. 16 in Attachment I), and the hydrocarbon drain sump (No. 30 in Attachment I).
- B. The plant basically recovers the ethane and heavier hydrocarbons from field gas through a chilled oil absorbtion process. The natural gas liquids produced by the plant are sent by pipeline to a refinery. The residue gas is sold to a transmission company. A plant process flow sheet is furnished in Attachment II.
- C. A schematic of the wastewater disposal system is furnished in Attachment III. The location of the sump tanks is shown in Attachment I. Construction details of the tanks are noted below:

Compressor Oil Sump (2' diam. x 6') - constructed of 1/4" steel Engine Room Drain Sump (3' diam. x 15') - constructed of 1/4" steel Hydrocarbon Drain Sump (5' diam. x 18') - constructed of externally and internally coated 1/4" steel

- D. Construction details of the evaporation pond are furnished in Attachment IV.
- E. The sidestream filter basin (an extension of the cooling tower basin) is constructed of six inch thick concrete. The basin measures ten feet by ten feet and is four feet deep. The sidestream filter basin receives backwash water from the sidestream filter and cooling tower blowdown. There are no hydrocarbons present in this wastewater stream. The drain from the basin bypasses the skimming pond and goes directly into the evaporation pond. There is no danger of overflow from the basin because of its designed capacity and open drain arrangement.

Effluent Discharge Plan Lusk Gasoline Plant Lea County, New Mexico Page 2

> Construction details of the skimming pond are furnished in Attachment IV. The waste fluid in the skimming pond is approximately ninety percent water and ten percent hydrocarbon fluids. The hydrocarbon fluid is vacuumed off on a periodic basis and taken to slop oil storage.

- F. Piping and equipment is inspected daily by the plant operators. The operators are required to notify the plant superintendent of any leaks. If the leak is significant, the plant superintendent will notify the Oil Conservation Division.
- G. Flood protection measures are not applicable to this site due to the arid climate and sandy soil conditions associated with this part of the state.
- H. A table containing all of the past water analyses performed on the impoundment water, bore hole water, and monitoring well water is furnished in Attachment V.
- I. Any spills from the plant process area would be NGL, liquid propane, or absorbtion oil. The NGL and liquid propane will vaporize when exposed to atmospheric temperature and pressure. Spills of absorbtion oil would be contained and cleaned up through use of a vacuum truck. Spills from storage vessels, depending on their fluid content, would be handled in the same manner.
- J. In the event the evaporation pond had to be shut down, a vacuum truck would be connected to the four inch line which discharges wastewater into the pond. The vacuum truck would pump the wastewater into a tank truck so that it could be hauled to a permitted disposal well.
- K. The monitoring wells are currently not required to be sampled on a frequent basis. The wells were installed as part of our RCRA Closure Plan for the plant. They were drilled with the intent to determine groundwater quality upgradient and downgradient in relation to the impoundment.
- L. Solid waste generated at the plant consists of a small amount of office trash and spent construction materials. The waste is disposed of on-site in an excavated trench. The location of the "landfill" is shown in Attachment I (No. 31).
- M. Material Safety Data Sheets for the treating chemicals used at the plant are furnished in Attachment VI.
- N. There are no water wells (plugged or producing) within one mile of the facility.

Effluent Discharge Plan Lusk Gasoline Plant Lea County, New Mexico Page Three

0. To our knowledge, there were no discharges made (e.g., injection wells, produced water pits) in the Lusk Plant area prior to plant construction.

We would again like to state it is our opinion that we have clearly demonstrated our method of disposing of the plant wastewater does not adversely affect the quality of groundwater in the area. We, therefore, feel the Effluent Discharge Plan should be approved.

Questions regarding this information should be directed to Rodney Holsworth or Mike Ford of this office at (915) 367-1302.

Very truly yours, PHILLIPS PETROLEUM COMPANY

Jack

E. E. Clark Authorized Agent, Permian Basin Region

EEC:MDF:ms

Attachments

Laguna Plata Salt	Land								1200	000				11940									
MW #4			<0.05			· <u>·</u>			EDE	0.60			0.05	GGUI		2536		10.45	••••••				
MW #3	+ 		<0.05						C 0 L	C7/			0.131	8/		1949		9.35					
MW #2 8.0	H0-0-+		0.05						AEA	+0+			0.084	84		1536		11.38					
MW #1 8.0			0.07						100	407			<0.001	94/		2108		10.67					
Lusk Impound Water	<pre>3-22-04</pre>	<.01	.00 .001	2.6	<.05	<.002	<b>~.</b> 1	<.01 201	GU•∕	404	<.2 .2	<.05	<.001	820		2208	.14	7.45	<2	0.4	< <b>.</b> 1		<0.5
Bore Hole #4	0		0.02	1.0	0	0	3.4	00			0.17	0	0	/61		598	0	7.54	0	0	0	0	0
Bore Hole #3	0		<b>50:</b> 0	0.8	0	0	5.7	00	2 2	t, C	5.7	0	0;	10		420	0	7.82	0	0	0	0	0
Bore Hole #2	0	00	0.04	0.8	0	0	3.4	00	7 0		0.63	0	0	88 <b>c</b> 7		4426	0	7.99	0	0	0	0	0
Bore Hole #1	0	00	0.04	1.2	0	0	1.1	00	2 4	ç Ç	0.50	0	0	3/1		794	0	7.96	0	0	0	0	0
Lusk Impound. Water	<pre>.05</pre>	0.01	3.1 <0.005	3.0	<0 <b>.</b> 0>	<0.002	1.5	0.02	U.1 552	10.0>	0.42	<0.05	0.016	940		2408	0.45	8.11	<1.0	0.4	<0.01	<0.5	<0.2
Lusk Impound. Water	10-1-1-1		16.2	4.0	1.0	0	6.8	00	С 0 Е 2 2	770	0.04	0	0.5	060		2840	1.5	7.9	0	0	0	0 0	0
Lusk Impound. Water	0		5.02 0	4.5	0	0	15.7	00	0 0	°, °	1.72	0	0	123/		2752	1.7	7.0	0	0	0	0	0
Raw Water	0		0.02	0.4	0	0	3.4	00			0.11	0	0,	07		348	0	8.19	0	0	0	0 0	0
N.M.Water Quality Regs.	0.1	0.01	0.05	1.6	c0 <b>•</b> 0	0.002	10.0	0.05	0.05 250	1.0	1.0	0.2	0.005	000		1000	10.0	6-9	5.0	0.75	0.05		0.2
Darameter	Arsenic	Cadmium	Chromium Cyanide	Flouride	Lead Total	Mercury	Nitrate	Selenium	Chlorido	Copper	Iron	Manganese	Phenols	Total	Dissolved	Solids	Zinc	- Hd	Aluminum	Boron	Cobalt	Molybdenum	NICKEL

ATTACHMENT V

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LUSK PLANT WATER ANALYSES (MG/L)

			× × © © © © © © ©				AFE NO.	SCALE 1" = 125' UNLESS OTHERWISE NOTED DWG NO.	10 .0 .0
• * * *		PROCESS BROCESS			* * *		. OKLAHOMA	ANT LAYOUT	ATTACHMENT #
		[] [] () () ()			*		BARTLESVILLE	LUSK PLI EQUIPMENT	
	1. PRODUCT STORABLE 2. COOLING TOMER 3. LEAN OLL STORABLE 4. LIQUID RECEIVER 5. OLL HEATER 6. ELYCOL RECONDITIONER 7. CONTROL BUILDING 8. CONDEN SATTEL STORABLE	9. AMINE STORNE 10. AMINE SURVE 11. SLOP DIL STORNE 11. SLOP DIL STORNE 13. PROPANE STORNE 13. LIGNUD RECEIVER 15. LEAN OLL STORNES 15. LEAN OLL STORNES 16. COMPRESSOR, OLL SUMP 11. COMPRESSOR, OLL SUMP	IB CONTRESSOR 18 ANTI-FREEZE STORAGE 20 ENGINE ROOKI DRAIN SUMP 21 LUBE OIL STORAGE 22 ENGINE ROOM 23 JACKET MATER STORAGE 23 JACKET MATER STORAGE	25 OFFICE 26 DRINKING WHTER STORAGE 27 RAW WATER STORAGE 27 STORMWATER BUILDING 29 STORMWATER RUNOFF AREA 30 HYDROCARBON DRAIN SUMP 31 LANDFILL	32 PROCESS FLARE 133 ACID GAS FLARE 134 MONITOR WELL 1 35 MONITOR WELL 2 36 MONITOR WELL 3 37 MONITOR WELL 3		FOR APPR	FOR CONST DRAWN FORD 2-7-85 CHECKED	0.44
	<b>—</b> Z								

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		O		*	a si da da anta anta anta		
22 24 21 21		O	X Ministration	*			
* ** * *		an fe the construction of the second s	*	erver prove international		APP	
		₽ ®	X NATER BATION DMENT	¢ ¢		CHKD	
			X WASTEL			7	
			<b>X</b>			REVISIO	62
							1/21:⇒S -=18/1
						0 X	FORM





ATTACHMENT III (cont.)

LUSK PLANT

SLOP TANE SYSTEM



---- ABOUE G.L. ---- BURIED





		•
		Sematon Read
	ATTACHMENT VI	Trevose, PA 19047
		Tel.: (215) 355-3300
		Telex: 84-5159
MATERIA	SAFFTY DATA SHFFT	
EMERGENCY T	ELEPHONE NUMBER 215/355-3300	*****
PRODUCT : BETZ 2020	EFFECTIVE DATE 1/84	* NFFA
		¥ HEALTH − 1
HAZAR	DOUS INGREDIENTS	* FIRE - 0
		* REACTIVITY-0
DEHA INGREDIENT PERMISSIBLE EX	POSURE LINTT:	* SPELIAL
NDNE	COURT FINITY	**************************************
ACGIH INGREDIENT TLV-TWA:		
NONE		
XXX RENE	RIC DESCRIPTION ###	
AN ARUEOUS SOLUTION OF AN ACRY	LATE COPOLYMER.	
		· · · · · · · · · · · · · · · · · · ·
· -·		•
SECTION 2TYPIC	AL PHYSICAL DATA	
PH: AS IS (APPRUX.) 5.3	B.FT.OF DR B.RANGE: ND	
FL.PT. (DEG.F): >200 SETA(UC)	SF.GR.(/0//06F)UR DENSITY:	1.125
VAPUR PRESSURE(MMHG); 20	VAPUK DENSITY(AIK=1); <1	
VISU 095/00F+ 19+0 FUAD DATE: /1 FTHED-1	AVULATILES: NI TOOLUBILITY/UATED.1 100	
EVHFICAL STATE: LIDER-I	ADDEADANCE: ODLODIEDO TO I	DOUN.
CHISICHE SIMIE: LIGGID	EDEETE DOINT (DEC. E) + 2-27	
ODOR: HILP	REELE FORRIGEO.	
REACT	IVITY DATA	****
THERMAL DECOMPOSITION YIELDS O	XIDES OF C,N,S,OR F IF PRESENT	
HEALT	H HAZARD EFFECTS	
ACUTE SKIN EFFECTS***	M	
ACUTE EYE EEEECTEWWY	n	
SITCHTLY TERITATING TO THE EYE	e	
ACUTE RESPIRATORY EFFECTS**	<b>x</b> .	
MISTS/AEROSOLS CAUSE IRRITATIO	N TO UPPER RESPIRATORY TRACT	
CHRONIC EFFECTS***		
CHRONIC EFFECTS OF THIS FORMUL	ATION HAVE NOT YET BEEN FULLY	EVALUATED
SECTION 5FIRS	T AID INSTRUCTIONS	
SKIN CONTACT***		
REMOVE CONTAMINATED CLOTHING.W	ASH EXPOSED AREA WITH A LARGE	QUANTITY OF
SOAP SOLUTION OR WATER FOR 15	MINUTES	
EYE CONTACT***	· · · · · · · · · · · · · · · · · · ·	
IMMEDIATELY FLUSH EYES WITH WA	TER FOR 15 MINUTES.IMMEDIATELY	CONTACT A
PHYSICIAN FOR ADDITIONAL TREAT	KENT	
INHALAIIUN EXPUSURE***		
REDUVE VICTIM FRUM CONTAMINATE	J AKEA IU FRESH AIR.AFFLY AFFF	UFRIATE
FIKSI AID IKEAIMENT AS NECESSA INGESTION***	K I	
GENERAL-NO NOT FEED ANYTHING B	Y. MOUTH TO AN UNCONSCIOUS OR (	CONVULSIVE VICTIM
SFECIFIC- DILUTE CONTENTS OF S	TOMACH.INDUCE VOMITING BY ONE	OF THE STANDARD
METHODIS.IMMEDIATELY	CONTACT A FHYSICIAN	

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SPILL, DISFOSAL AND FIRE INTRUCTIONS----------SECTION 6-----SFILL INSTRUCTIONS\*\*\* GENERAL-VENTILATE AREA, USE SPECIFIED PROTECTIVE EQUIPMENT, CONTAIN AND ARSORB ON ABSORBENT MATERIAL.FLACE IN WASTE DISPOSAL CONTAINER. THE WASTE CHARACTERISTICS OF THE ABSORBED MATERIAL, OR ANY CONTAMINATED SOIL, SHOULD BE DETERMINED IN ACCORDANCE WITH RCRA REGULATIONS. SPECIFIC- FLUSH AREA WITH WATER.WET AREA MAY BE SLIPPERY.IF SD, SPREAD SAND OF GRIT. DISPOSAL INSTRUCTIONS\*\*\* GENERAL-WATER CONTAMINATED WITH THIS PRODUCT MAY BE SENT TO A SANITARY SEWER, IN ACCORDANCE WITH ANY LOCAL AGREEMENT, A TREATMENT FACILITY OR DISCHARGED UNDER A NEDES FERMIT FRODUCT(AS IS)- INCINERATE OR BURY IN APPROVED LANDFILL FIRE EXTINGUISHING INSTRUCTIONS\*\*\* GENERAL-FIREFIGHTERS SHOULD WEAR POSITIVE PRESSURE SELF-CONTAINED BREATHING APPARATUS(FULL FACE-FIECE TYPE). DRY CHEMICAL, CARBON DIOXIDE, FOAM OR WATER, FOAM OR WATER CREATE A SLIPPERY CONDITION.SPREAD SAND OR GRIT -----SECTION 7------SPECIAL PROTECTIVE EQUIPMENT------VENTILATION PROTECTION\*\*\*. ADEQUATE VENTILATION RECOMMENDED RESPIRATORY FROTECTION\*\*\* IF VENTILATION IS INADEQUATE OR SIGNIFICANT PRODUCT EXPOSURE IS LIKELY, USE A RESPIRATOR WITH ORGANIC VAPOR AND DUST/MIST/FUME CARTRIDGES RECOMMENDED SKIN PROTECTION\*\*\* RUBBER GLOVES REPLACE AS NECESSARY RECOMMENDED EYE PROTECTION\*\*\* SFLASH FROOF CHEMICAL GOGGLES -----SECTION 8------STORAGE AND HANDLING FRECAUTIONS-----STORAGE INSTRUCTIONS\*\*\* GENERAL-KEEP CONTAINER CLOSED SPECIFIC- PROTECT FROM FREEZING HANDLING INSTRUCTIONS\*\*\* GENERAL-IMMEDIATELY REMOVE CONTAMINATED CLOTHING, WASH BEFORE REUSE SPECIFIC- NORMAL CHEMICAL HANDLING -----SECTION 9-----FEDERAL REGULATIONS------FIFRA(40CFR):EFA REG.NO. NOT AFPLICABLE OSHA(29CFR)-FDR RESFIRATORY PROTECTION USE PROPERLY FITTED MSHA/NIOSH APPROVED RESPIRATORY EQUIPMENT WITHIN USE LIHITATIONS.OTHERWISE, USE SUPPLIED AIR APPARATUS. CWA(40CFR)REPORTABLE QUANTITY: AS IS PRODUCT (HAZARDOUS SUBSTANCE) NOT AFFLICABLE RCRA(40CFR): IF DISCARDED, THIS MATERIAL BEARS HWI# NOT APPLICABLE DOT(49CFR)CLASSIFICATION: NOT APPLICABLE USDA FEDERALLY INSPECTED MEAT AND FOULTRY FLANTS- AUTHORIZATION: SEC.05,07 THIS FORM IS ESSENTIALLY EQUAL TO OSHA 20 FORM.WHILE THE INFORMATION AND RECOMMENDATIONS SET FORTH HEREIN ARE BELIEVED, TO BE ACCURATE AS OF THE DATE HEREOF, BETZ LABORATORIES, INC. MAKES NO WARRANTY WITH RESPECT THERETO AND DISCLAIMS ALL LIABILITY FROM RELIANCE THEREON. HAROLD M. HERSH

ENVIRONMENTAL INFORMATION COORDINATOF

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Somerton Road Trevose, PA 19047 Tel.: (215) 355-3300 Telex: 84-5159

MATERIAL SAFETY DATA SHEET EMERGENCY TELEFHONE NUMBER 215/355-3300 FRODUCT : BETZ 409 EFFECTIVE DATE 1/84	**************************************
SECTION 1HAZARDOUS INGREDIENTS	* FIRE - 0 * REACTIVITY-0
OSHA INGREDIENT PERMISSIBLE EXPOSURE LIMIT: Sodium Hydroxide-2mg/m3 Acgih ingredient tly-twa:	* SPECIAL - ALK **************
SODIUM HYDROXIDE-2MG/M3(CEILING),ETHYLENE GLYCOL-10MG/M3(S	TEL=20NG/H3)
*** GENERIC DESCRIPTION *** A WATER SOLUTION OF AN ALKYLPHENOXYPOLYALKYLENE GLYCOL ETHER, ETHYLENE OXIDE-PROPYLENE OXIDE COPOLYMER,ALKYLENE GLYCOL, SILICONE EMULSION AND SODIUM HYDROXIDE.	· .
SECTION 2TYPICAL PHYSICAL DATA	ار این میں
FH: AS IS(AFFRDX.) 12.4B.FT.OF DR B.RANGE: >200FL.FT.(DEG.F): >200 SETA(CC)SF.GR.(70/700F)OR DENSITY:VAFOR FRESSURE(mmHG): NDVAFOR DENSITY(AIR=1): ND	1.020
VISC CPS700F: 9.4ZVOLATILES: NDEVAF.RATE: <1 ETHER=1	
DIOR: NONE FREEZE FOINT(DEG.F): 25	
SECTION 3REACTIVITY DATA	
THERMAL DECOMPOSITION YIELDS OXIDES OF C,N,S,OR F IF FRESENT, STABLE	· _
SECTION 4HEALTH HAZARD EFFECTSACUTE SKIN EFFECTS***	
SLIGHTLY IRRITATING TO THE SKIN	
MODERATELY IRRITATING TO THE EYES ACUTE RESPIRATORY EFFECTS***	
MISTS/AEROSOLS CAUSE IRRITATION TO UPPER RESPIRATORY TRACT	
CHRONIC EFFECTS OF THIS FORMULATION HAVE NOT YET BEEN FULLY E	VALUATED
SECTION 5FIRST AID INSTRUCTIONS	
SKIN CONTACT*** Remove contactive clothing wash evensed area with a large o	MANTITY OF
SOAF SOLUTION OR WATER FOR 15 MINUTES EYE CONTACT***	CHAILII OF
IMMEDIATELY FLUSH EYES WITH WATER FOR 15 MINUTES, IMMEDIATELY FHYSICIAN FOR ADDITIONAL TREATMENT	CONTACT A
REMOVE VICTIM FROM CONTAMINATED AREA TO FRESH AIR.AFFLY AFFRO FIRST AID TREATMENT AS NECESSARY	PRIATE
INGESTION***	· · · · ·
SENERAL-DO NOT FEED ANYTHING BY MOUTH TO AN UNCONSCIOUS OF CO SFECIFIC- DO NOT INDUCE VOMITING.IMMED.CONTACT PHYSICIAN.DILU STOMACH USING 3-4 GLASSES MILK OF WATER	NVULSIVE VICTIM TE CONTENTS OF
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LABORATORIES, INC.

----SECTION 6------SFILL, DISPOSAL AND FIRE INSTRUCTIONS----SFILL INSTRUCTIONS\*\*\* GENERAL-VENTILATE AREA; USE SPECIFIED PROTECTIVE EQUIPMENT, CONTAIN AND ABSORD ON ABSORBENT MATERIAL, PLACE IN WASTE DISPOSAL CONTAINER. THE WASTE CHARACTERISTICS OF THE ABSORBED MATERIAL, OR ANY CONTAMINATED SOIL, SHOULD BE DETERMINED IN ACCORDANCE WITH RCRA REGULATIONS. SPECIFIC- FLUSH AREA WITH WATER.WET AREA MAY BE SLIPPERY.IF SD, SPREAD SAND OR GRIT. DISFOSAL INSTRUCTIONS\*\*\* GENERAL-WATER CONTAMINATED WITH THIS PRODUCT MAY BE SENT TO A SANITARY SEWER, IN ACCORDANCE WITH ANY LOCAL AGREEMENT, A TREATMENT FACILITY OR DISCHARGED UNDER A NEDES FERMIT FRODUCT(AS IS)- INCINERATE OR BURY IN APPROVED LANDFILL FIRE EXTINGUISHING INSTRUCTIONS\*\*\* GENERAL-FIREFIGHTERS SHOULD WEAR POSITIVE PRESSURE SELF-CONTAINED BREATHING APPARATUS(FULL FACE-FIECE TYPE). DRY CHEMICAL, CARBON DIOXIDE, FOAM OR WATER. FOAM OR WATER CREATE A SLIPPERY CONDITION, SPREAD SAND OR GRIT -----SECTION 7-----SPECIAL PROTECTIVE EQUIPMENT------VENTILATION FROTECTION\*\*\*. ADERUATE VENTILATION TO MAINTAIN AIR CONTAMINANTS BELOW EXPOSURE LIMITS RECOMMENDED RESPIRATORY PROTECTION\*\*\* IF VENTILATION IS INADERUATE OF SIGNIFICANT PRODUCT EXPOSURE IS LIKELY, USE A RESPIRATOR WITH ORGANIC VAPOR AND DUST/MIST/FUME CARTRIDGES RECOMMENDED SKIN PROTECTION\*\*\* RUBBER GLOVES REPLACE AS NECESSARY RECOMMENDED EYE FROTECTION\*\*\* SFLASH FROOF CHEMICAL GOGGLES ----SECTION 8-----STORAGE AND HANDLING FRECAUTIONS-----STORAGE INSTRUCTIONS\*\*\* GENERAL-KEEP CONTAINER CLOSED SPECIFIC- PROTECT FROM FREEZING HANDLING INSTRUCTIONS\*\*\* GENERAL-IMMEDIATELY REMOVE CONTAMINATED CLOTHING, WASH BEFORE REUSE SPECIFIC- ALKALINE.DO NOT MIX WITH ACIDIC MATERIAL. -----SECTION 9-----FEDERAL REGULATIONS------FIFRA(40CFR): EPA REG.NO. NOT APPLICABLE OSHA(29CFR)-FOR RESPIRATORY PROTECTION USE PROPERLY FITTED MSHA/NIOSH AFFROVED RESPIRATORY EQUIPMENT WITHIN USE LIMITATIONS.OTHERWISE, USE SUFFLIED AIR APPARATUS. CWA(40CFR)REPORTABLE RUARTITY: AS IS PRODUCT (HAZARDOUS SUBSTANCE) 94,177GAL (SODIUM HYDROXIDE) RERA(400FR); IF DISCARDED, THIS MATERIAL BEARS HWI: D002 DOT(49CFR)CLASSIFICATION: NOT AFPLICABLE . USDA FEDERALLY INSPECTED MEAT AND POULTRY FLANTS- AUTHORIZATION: SEC.05,07 THIS FORM IS ESSENTIALLY EQUAL TO OSHA 20 FORM. WHILE THE INFORMATION AND RECOMMENDATIONS SET FORTH HEREIN ARE BELIEVED TO BE ACCURATE AS OF THE DATE HEREOF, BETZ LABORATORIES, INC. MAKES NO WARRANTY WITH RESPECT THERETO AND DISCLAIMS ALL LIABILITY FROM RELIANCE THEREON.

> HAROLD M. HERSH ENVIRONMENTAL INFORMATION COORDINATE:

,	LABORATORIES, INC. ABORATORIES, INC. ABORATORIES, INC. ATTACHMENT VI (Continued)	Somerton Road Trevose, PA 19047 Tel.: (215) 355-3300 Telex: 84-5159
	HATERIAL SAFETY DATA SHEET EMERGENCY TELEPHONE NUMBER 215/355-3300 FRODUCT : BETZ 2040 EFFECTIVE DATE 1/84 FOR PROPOSAL USE ONLY SECTION 1HAZARDOUS INGREDIENTS OSHA INGREDIENT PERMISSIBLE EXPOSURE LIMIT:	*************** * NFPA * HEALTH - 2 * FIRE - 0 * REACTIVITY-0 * SPECIAL - ALK ****
	ACGIH INGREDIENT TLV-TWA: POTASSIUM HYDROXIDE-2MG/M3(CEILING)	
	*** GENERIC DESCRIPTION *** AN AQUEOUS SOLUTION CONTAINING POTASSIUM HYDROXIDE,MIXED PHOSP SALTS,AN ORGANOPHOSPHONATE AND AN AROMATIC NITROGEN HETEROCYCL	PHATE LE•
	SECTION 2TYPICAL PHYSICAL DATA PH: AS IS (AFFROX.) 12.1 B.PT.OF OR B.RANGE: ND FL.PT.(DEG.F): >200 SETA(CC) SP.GR.(70/700F)OR DENSITY: : VAPOR PRESSURE(mmHG): ND VAPOR DENSITY(AIR=1): ND VISC CPS700F: 33.8 ZVOLATILES: 61 EVAF.RATE: <1 ETHER=1 ZSOLUBILITY(WATER): 100 PHYSICAL STATE: LIQUID APPEARANCE: AMBER ODOR: MILD FREEZE POINT(DEG.F): 10	1.431
	SECTION 3REACTIVITY DATA	
	THERMAL DECOMPOSITION YIELDS OXIDES OF C,N,S,OR F IF PRESENT, STABLE	
	SECTION 4HEALTH HAZARD EFFECTSACUTE SKIN EFFECTS*** SLIGHTLY IRRITATING TO THE SKIN ACUTE EYE EFFECTS*** SEVERE IRRITANT TO THE EYES, POSSIBLY CORROSIVE ACUTE RESPIRATORY EFFECTS*** MISTS/AEROSOLS MAY CAUSE IRRITATION TO UPPER RESPIRATORY TRACT CHRONIC EFFECTS***	 T
	SECTION 5FIRST AID INSTRUCTIONS	
•	SKIN CONTACT*** REMOVE CONTAMINATED CLOTHING.WASH EXPOSED AREA WITH A LARGE QU SOAP SOLUTION OR WATER FOR 15 MINUTES EYE CONTACT*** IMMEDIATELY FLUSH EYES WITH WATER FOR 15 MINUTES.IMMEDIATELY OF PHYSICIAN FOR ADDITIONAL TREATMENT INHALATION EXPOSURE*** REMOVE VICTIM FROM CONTAMINATED AREA TO FRESH AIR.AFFLY AFFROM FIRST AID TREATMENT AS NECESSARY INGESTION***	JANTITY OF Contact A Priate
	SPECIFIC- DO NOT INDUCE VOMITING, IMMED, CONTACT PHYSICIAN, DILU STOMACH USING 3-4 GLASSES MILK DR WATER	TE CONTENTS OF

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SPILL INSTRUCTIONS\*\*\* ENERAL-VENTILATE AREA, USE SPECIFIED FROTECTIVE EQUIPMENT. CONTAIN ND ABSORB ON ABSORBENT MATERIAL PLACE IN WASTE DISPOSAL CONTAINER. HE WASTE CHARACTERISTICS OF THE ABSORBED MATERIAL, OR ANY CONTAMINATED OIL, SHOULD BE DETERMINED IN ACCORDANCE WITH RCRA REGULATIONS. PECIFIC- FLUSH AREA WITH WATER.WET AREA MAY BE SLIPPERY.IF SD, SPREAD SAND OR GRIT. DISPOSAL INSTRUCTIONS\*\*\* ENERAL-WATER CONTAMINATED WITH THIS PRODUCT MAY BE SENT TO A SANITARY EWER, IN ACCORDANCE WITH ANY LOCAL AGREEMENT, A TREATMENT FACILITY OR ISCHARGED UNDER A NPDES FERMIT RODUCT(AS IS)- INCINERATE OR BURY IN APPROVED LANDFILL FIRE EXTINGUISHING INSTRUCTIONS\*\*\* ENERAL-FIREFIGHTERS SHOULD WEAR POSITIVE PRESSURE SELF-CONTAINED REATHING APPARATUS(FULL FACE-PIECE TYPE). RY CHEMICAL, CARBON DIDXIDE, FOAM OR WATER ----SECTION 7-----SPECIAL PROTECTIVE EQUIPMENT-----VENTILATION PROTECTION\*\*\* DEQUATE VENTILATION TO MAINTAIN AIR CONTAMINANTS BELOW EXPOSURE LIMITS RECOMMENDED RESPIRATORY PROTECTION\*\*\* F VENTILATION IS INADEQUATE OR SIGNIFICANT PRODUCT EXPOSURE IS LIKELY, SE A RESPIRATOR WITH DUST/HIST/FUME CARTRIDGES RECOMMENDED SKIN PROTECTION\*\*\* UBBER GLOVES EPLACE AS NECESSARY RECOMMENDED EYE PROTECTION\*\*\* PLASH PRODE CHEMICAL GOGGLES ----SECTION B-----STORAGE AND HANDLING PRECAUTIONS-----STORAGE INSTRUCTIONS\*\*\* ENERAL-KEEP CONTAINER CLOSED PECIFIC- PROTECT FROM FREEZING HANDLING INSTRUCTIONS\*\*\*. ENERAL-IMMEDIATELY REMOVE CONTAMINATED CLOTHING, WASH BEFORE REUSE PECIFIC- ALKALINE, DO NOT MIX WITH ACIDIC MATERIAL. ----SECTION 9-----FEDERAL REGULATIONS-----IFRA(40CFR): EPA REG.NO. NOT APPLICABLE SHA(29CFR)-FOR RESPIRATORY PROTECTION USE PROPERLY FITTED MSHA/NIDSH PPROVED RESPIRATORY EQUIPMENT WITHIN USE LIMITATIONS.OTHERWISE, USE SUPPLIED IR APPARATUS. WA(40CFR)REFORTABLE QUANTITY: AS IS FRODUCT (HAZARDOUS SUBSTANCE) 1901GAL (POTASSIUN HYDROXIDE) CRA(40CFR): IF DISCARDED, THIS MATERIAL BEARS HWI # D002 DT(49CFR)CLASSIFICATION; NOT APPLICABLE SDA FEDERALLY INSPECTED MEAT AND POULTRY PLANTS- AUTHORIZATION: NONE HIS FORM IS ESSENTIALLY EQUAL TO OSHA 20 FORM. WHILE THE INFORMATION AND ECOMMENDATIONS SET FORTH HEREIN ARE BELIEVED TO BE ACCURATE AS OF THE ATE HEREOF, BETZ LABORATORIES, INC. MAKES NO WARRANTY WITH RESPECT THERETO ND DISCLAIMS ALL LIABILITY FROM RELIANCE THEREON. HAROLD M. HERSH ENVIRONMENTAL INFORMATION COORDINATOR

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LABORATORIES, INC.

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ATTACHMENT VI (Continued

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Somerton Road Trevose, PA 19047 Tel.: (215) 355-3300 Telex: 84-5159

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MATERIAL SAFETY DATA SHEET	· ·
EMERGENCY TELEPHONE NUMBER 215/335-3300 FRODUCT : FOAM-TROL CT EFFECTIVE DATE 1/84	**************************************
SECTION 1HAZARDOUS INGREDIENTS	* REALTH - 1 * FIRE - 1 * REACTIVITY-0
OSHA INGREDIENT FERMISSIBLE EXPOSURE LIMIT: None Acgih ingredient tly-twa: None	* SFECIAL *************
*** GENERIC DESCRIPTION *** A SOLUTION OF A FATTY ACID MIXTURE,MIXED POLYALKYLENE GLYCOL AND POLYALKYLENE GLYCOL IN MINERAL OIL.	FATTY ESTERS
SECTION 2TYPICAL PHYSICAL DATA PH: 50% SDL. (APPRDX.) 6.8 B.PT.OF OR B.RANGE: ND FL.PT.(DEG.F): >200 SETA(CC) SP.GR.(70/70oF)OR DENSITY: VAFOR PRESSURE(mmHG): <10 VAPOR DENSITY(AIR=1): >1 VISC 0PS700F: 18.0 ZVOLATILES: 90 EVAF.RATE: <1 ETHER=1 ZSOLUBILITY(WATER): 0 PHYSICAL STATE: LIQUID APPEARANCE: OFF-WHITE TO AM DDOR: MILD FREEZE POINT(DEG.F): -20	0.841 BER
SECTION 3REACTIVITY DATA	
THERMAL DECOMPOSITION YIELDS OXIDES OF C,N,S,OR F IF FRESENT, STABLE	-
SECTION 4HEALTH HAZARD EFFECTSACUTE SKIN EFFECTS*** SLIGHTLY IRRITATING TO THE SKIN ACUTE EYE EFFECTS*** SLIGHTLY IRRITATING TO THE EYES ACUTE RESPIRATORY EFFECTS*** MISTS/AEROSOLS MAY CAUSE IRRITATION TO UPPER RESPIRATORY TRAC CHRONIC EFFECTS*** CHRONIC EFFECTS OF THIS FORMULATION HAVE NOT YET BEEN FULLY EF	T VALUATED
SECTION SEIRST AID INSTRUCTIONS	
SKIN CONTACT*** REMOVE CONTAMINATED CLOTHING.WASH EXFOSED AREA WITH A LARGE QU SOAF SOLUTION OR WATER FOR 15 MINUTES EYE CONTACT*** IMMEDIATELY FLUSH EYES WITH WATER FOR 15 MINUTES.IMMEDIATELY ( FHYSICIAN FOR ADDITIONAL TREATMENT INHALATION EXPOSURE*** REMOVE VICTIM FROM CONTAMINATED AREA TO FRESH AIR.AFFLY AFFROM FIRST AID TREATMENT AS NECESSARY INGESTION*** ENERAL-DO NOT FEED ANYTHING BY HOUTH TO AN UNCONSCIOUS OR COM SPECIFIC- DO NOT INDUCE VOMITING.IMMED.CONTACT FHYSICIAN.DILU	UANTITY OF Contact a Priate NVULSIVE VICTIM TE CONTENTS OF
STOMACH USING 3-4 GLASSES MILK DR WATER	0.0F.R

SFILL/DISPOSAL AND FIRE INSTRUCTIONS-----SECTION 6-----SPILL INSTRUCTIONS\*\*\* GENERAL-VENTILATE AREA, USE SPECIFIED PROTECTIVE EQUIPMENT, CONTAIN AND ABSORD ON ABSORBENT MATERIAL PLACE IN WASTE DISPOSAL CONTAINER. THE WASTE CHARACTERISTICS OF THE ABSORBED MATERIAL, OR ANY CONTAMINATED SOIL, SHOULD BE DETERMINED IN ACCORDANCE WITH RCRA REGULATIONS. SPECIFIC- FLUSH AREA WITH WATER.WET AREA MAY BE SLIPPERY.IF SD, SPREAD SAND OR GRIT. DISPOSAL INSTRUCTIONS\*\*\* GENERAL-WATER CONTAMINATED WITH THIS FRODUCT MAY BE SENT TO A SANITARY SEWER, IN ACCORDANCE WITH ANY LOCAL AGREEMENT, A TREATMENT FACILITY OR DISCHARGED UNDER A NEDES FERMIT PRODUCT(AS IS) - INCINERATE OR BURY IN APPROVED LANDFILL FIRE EXTINGUISHING INSTRUCTIONS\*\*\* GENERAL-FIREFIGHTERS SHOULD WEAR POSITIVE PRESSURE SELF-CONTAINED BREATHING APPARATUS(FULL FACE-FIECE TYPE). DRY CHEMICAL, CARBON DIOXIDE, FOAM OR WATER. FOAM OR WATER CREATE A SLIPPERY CONDITION. SPREAD SAND OR GRIT -----SECTION 7------SPECIAL FROTECTIVE EQUIPMENT---------VENTILATION PROTECTION\*\*\* ADEQUATE VENTILATION RECOMMENDED RESPIRATORY FROTECTION\*\*\* IF VENTILATION IS INADEQUATE OR SIGNIFICANT PRODUCT EXPOSURE IS LIKELY, USE A RESPIRATOR WITH ORGANIC VAPOR CARTRIDGES RECOMMENDED SKIN PROTECTION\*\*\* NEOFRENE GLOVES REFLACE AS NECESSARY RECOMMENDED EYE PROTECTION\*\*\* SPLASH PROOF CHEMICAL GOGGLES. -----SECTION 8-----STORAGE AND HANDLING FRECAUTIONS-----STORAGE INSTRUCTIONS\*\*\* GENERAL-KEEP CONTAINER CLOSED SPECIFIC- PROTECT FROM FREEZING HANDLING INSTRUCTIONS\*\*\* GENERAL-IMMEDIATELY REMOVE CONTAMINATED CLOTHING, WASH BEFORE REUSE SPECIFIC- NORMAL CHEMICAL HANDLING -----SECTION 9-----FEDERAL REGULATIONS-------FIFRA(40CFR): EFA REG.NO. NOT AFPLICABLE OSHA(29CFR)-FOR RESPIRATORY PROTECTION USE PROPERLY FITTED MSHA/NIOSH APPROVED RESPIRATORY EQUIPMENT WITHIN USE LIMITATIONS.OTHERWISE, USE SUPPLIED AIR APPARATUS. CWA(40CFR)REPORTABLE QUANTITY: AS IS FRODUCT (HAZARDOUS SUBSTANCE) NOT AFFLICABLE RCRA(40CFR): IF DISCARDED, THIS MATERIAL BEARS HWI& NOT APPLICABLE DOT(49CFR)CLASSIFICATION: NOT.APPLICABLE USDA FEDERALLY INSPECTED MEAT AND FOULTRY FLANTS- AUTHORIZATION: NONE THIS FORM IS ESSENTIALLY EQUAL TO OSHA 20 FORM. WHILE THE INFORMATION AND RECOMMENDATIONS SET FORTH HEREIN ARE BELIEVED TO BE ACCURATE AS OF THE TATE HEREOF, BETZ LABORATORIES, INC. MAKES NO WARRANTY WITH RESPECT THERETO AND DISCLAIMS ALL LIABILITY FROM RELIANCE THEREON. HAROLD M. HERSH ENVIRONMENTAL INFORMATION COORDINATOR



ATTACHMENT VI (Conti ed)

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Somerton Road Trevose, PA 19047 Tel.: (215) 355-3300 Telex: 84-5159

MATERIAL SAFETY DATA SHEET EMERGENCY TELEPHONE NUMBER 215/335-3300 PRODUCT : SLIMICIDE C-71P EFFECTIVE DATE 1/84	*************** * NFPA
SECTION 1HAZARDOUS INGREDIENTS	* FIRE - 1 * REACTIVITY-2 * SPECIAL - DXY
OSHA INGREDIENT PERMISSIBLE EXPOSURE LIMIT: None	*****
ACGIH INGREDIENT TLV-TWA: None	<b>۴</b>
*** GENERIC DESCRIPTION *** 1-BRONO-3-CHLORO-5,5-DIMETHYL-HYDANTOIN AND INERT INGREDIENTS.	,
SECTION 2TYPICAL PHYSICAL DATA PH: 5% SOL. (APPROX.) 4.7 B.PT.OF OR B.RANGE: NA FL.PT.(DEG.F): >200 SETA(CC) SP.GR.(70/700F)OR DENSITY: M VAPOR PRESSURE(mmHG): NA VAPOR DENSITY(AIR=1): NA VISC CPS700F: NA ZVOLATILES: NA EVAP.RATE: NA WATER=1 ZSOLUBILITY(WATER): 1 PHYSICAL STATE: SOLID APPEARANCE: WHITE STICKS DDOR: HALDGEN FREEZE POINT(DEG.F): NA	 IA
SECTION 3REACTIVITY DATA	
THERMAL DECOMPOSITION YIELDS OXIDES OF C,N,S,OR P IF PRESENT, OXIDIZING AGENT.DO NOT STORE OR MIX WITH REDUCING AGENTS	-
SECTION 4HEALTH HAZARD EFFECTSACUTE SKIN EFFECTS*** SLIGHTLY IRRITATING TO THE SKIN ACUTE EYE EFFECTS*** SEVERE IRRITANT TO THE EYES ACUTE RESPIRATORY EFFECTS*** MISTS/AEROSOLS CAUSE IRRITATION TO UPPER RESPIRATORY TRACT CHRONIC EFFECTS*** CHRONIC EFFECTS OF THIS FORMULATION HAVE NOT YET BEEN FULLY EV	VALUATED
SECTION 5FIRST AID INSTRUCTIONS	
SKIN CONTACT*** REMOVE CLOTHING.WASH AREA WITH LARGE AMOUNTS OF SOAF SOLUTION FOR 15 MIN.IMMEDIATELY CONTACT PHYSICIAN EYE CONTACT*** IMMEDIATELY FLUSH EYES WITH WATER FOR 15 MINUTES.IMMEDIATELY OF PHYSICIAN FOR ADDITIONAL TREATMENT INHALATION EXPOSURE*** REMOVE VICTIM FROM CONTAMINATED AREA.APPLY NECESSARY FIRST AID TREATMENT.IMMEDIATELY CONTACT A PHYSICIAN. INGESTION***	OR WATER
GENERAL-DO NOT FEED ANYTHING BY MOUTH TO AN UNCONSCIOUS OR CON SPECIFIC- DILUTE CONTENTS OF STONACH.INDUCE VOMITING BY ONE OF METHODS.IMMEDIATELY CONTACT A PHYSICIAN	UULSIVE VICTIM THE STANDARD OVER

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SFILL INSTRUCTIONS\*\*\* GENERAL-VENTILATE AREA, USE SPECIFIED PROTECTIVE EQUIPMENT. SPILLED MATERIAL WHICH CAN NOT BE RECOVERED FOR RE-USE, SHOULD BE PLACED IN A WASTE DISPOSAL CONTAINER AND DISPOSED OF IN AN APPROVED PESTICIDES LANDFILL OR INCINERATOR. SPECIFIC- PRODUCT RELEASES CHLORINE WHEN WET.SPILL RESIDUE MAY BE NEUTRALIZED WITH 3% HYDROGEN PEROXIDE SOLUTION. DISPOSAL INSTRUCTIONS\*\*\* GENERAL-WATER CONTAMINATED WITH THIS FRODUCT MAY BE SENT TO A SANITARY SEWER, IN ACCORDANCE WITH ANY LOCAL AGREEMENT, A TREATMENT FACILITY OR DISCHARGED UNDER A NPDES PERMIT PRODUCT(AS IS)- INCINERATE OR BURY IN AN APPROVED PESTICILE FACILITY FIRE EXTINGUISHING INSTRUCTIONS\*\*\* GENERAL-FIREFIGHTERS SHOULD WEAR POSITIVE PRESSURE SELF-CONTAINED BREATHING APPARATUS(FULL FACE-PIECE TYPE). DRY CHEMICAL, CARBON DIDXIDE, FOAM OR WATER -----SECTION 7-----SPECIAL PROTECTIVE EQUIPMENT------VENTILATION PROTECTION\*\*\* ADEQUATE VENTILATION RECOMMENDED RESPIRATORY PROTECTION\*\*\* IF VENTILATION IS INADEQUATE OR SIGNIFICANT PRODUCT EXPOSURE IS LIKELY, USE RESPIRATOR WITH ORGANIC VAPOR, ACID GASSES AND DUST/MIST/FUHE CARTRIDGES RECOMMENDED SKIN PROTECTION\*\*\* NEOFRENE GLOVES REFLACE AS NECESSARY RECOMMENDED EYE PROTECTION\*\*\* AIRTIGHT CHEMICAL GOGGLES -----SECTION 8------STORAGE AND HANDLING FRECAUTIONS-----STORAGE INSTRUCTIONS\*\*\* GENERAL-KEEP CONTAINER CLOSED SPECIFIC- DO NOT EXPOSE TO MOISTURE HANDLING INSTRUCTIONS\*\*\* GENERAL-IMMEDIATELY REMOVE CONTAMINATED CLOTHING, WASH BEFORE REUSE SFECIFIC- OXIDIZER.ENITS TOXIC FUMES WHEN WET. ----SECTION 9-----FEDERAL REGULATIONS-------- FIFRA(40CFR); EPA REG.NO. 5785-57-3876 OSHA(29CFR)-FOR RESPIRATORY PROTECTION USE PROPERLY FITTED MSHA/NIOSH APPROVED RESPIRATORY EQUIPMENT WITHIN USE LIMITATIONS.OTHERWISE, USE SUPPLIED AIR AFFARATUS. CWA(40CFR)REFORTABLE QUANTITY: AS IS PRODUCT (HAZARDOUS SUBSTANCE) NOT APPLICABLE RCRA(40CFR): IF BISCARDED, THIS HATERIAL BEARS HWI NOT APPLICABLE DOT(49CFR)CLASSIFICATION: OXIDIZER USDA FEDERALLY INSPECTED NEAT AND FOULTRY FLANTS- AUTHORIZATION: NONE THIS FORM IS ESSENTIALLY EQUAL TO OSHA 20 FORM. WHILE THE INFORMATION AND RECOMMENDATIONS SET FORTH HEREIN ARE BELIEVED TO BE ACCURATE AS OF THE DATE HEREOF, BETZ LABORATORIES, INC. MAKES NO WARRANTY WITH RESPECT THERETO AND DISCLAIMS ALL LIABILITY FROM RELIANCE THEREON. HAROLD M. HERSH

ENVIRONMENTAL INFORMATION COORDINATOR

## Attachment V

Water	Anal	vsis	Summary

	Ground Water Sampling Well #1	Ground Water Sampling Well #2	Ground Water Sampling Well #3	Ground Wate Sampling Well #4	r Impoundment Water
Calcium	482	270	334	410	528
Magnesium	None	None	200	33	80
Sodium (Calc.)	225	417	117	399	331
Hydroxide	19	263	None	14	None
Carbonate	151	48	16	29	None
BiCarbonate	None	None	944	None	81
Sulfate	947	84	87	1055	1251
Chloride	284	454	723	596	709
Phenols Total Dissolved	less than .001	.084	.131	.005	less than .001
Solids (Calc.)	2108	1536	1949	2536	2939
Total Hardness		6 <b>7</b> 6	1000	1160	1650
(CaCo3)	1204	676	1660 .	1160	1650
рН	10.67	11.38	9.35	10.45	7.45

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*Materials, environmental and geotechnical engineering, nondestructive, metallurgical and analytical services* 1703 W. Industrial Avenue [915 - 683-3348] • P.O. Box 2150 • Midland, Texas 79701

			File No	<u>C-1950-W</u>
			Customer No.	3355796
			Report No.	35463
			Report Date	5-21-84
Report of tests on:	Water		Date Received	5-10-84
Client:	Dhilling	0.00000000		

Client: Phillips Petroleum Company

Identification:

Lusk Plant Pit

	mg/L
Calcium	528
Magnesium	80
Sodium (Calc.)	331
Carbonate	None
Bicarbonate	81
Sulfate	1251
Chloride	709
Phenols Less Than	、 0.00l
Total Dissolved Solids (Calc.)	2939
Total Hardness (as CaC0 <sub>3</sub> )	1650
рН 7.45	

Technician: KLH, SAM

Copies 3 cc: Phillips Petroleum Company Attn: Mike Ford

SOUTHWESTERN LABORATORIES m

Materials, environmental and geotechnical engineering, nondestructive, metallurgical and analytical services

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С

File No.	C-1950-W
ustomer No.	3355796
Report No.	35344
Report Date	4-9-84
Date Receive	4-3-84

Report of tests on: Water

Sw[

Client: Phillips Petroleum Company

Identification:

Lusk Plant, Monitor Well No. 1 Composite, Sampled 4-2-84 by Mike Ford

Calcium	482
Magnesium	None
Sodium (Calc.)	225
Hydroxide	19
Carbonate	151
Bicarbonate	None
Sulfate	947
Chloride	284
Phenols Less Than	0.001
Total Dissolved Solids (Calc.)	2108
Total Hardness (as CaC0 <sub>3</sub> )	1204

pH----- 10.67

Technician: KLH, SAM

Copies 3 cc: Phillips Petroleum Company Attn: Mike Ford

BOBATOBIES

mg/L
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1703 W. Industrial Avenue [915 - 683-3348] • P.O. Box 2150 • Midland, Texas 79701

File No.	C-1950-W
Customer No.	3355796
Report No.	35345
Report Date	4-9-84

Date Received <u>4-3-84</u>

119904

Report of tests on:

Sw[

Water

# Phillips Petroleum Company

Identification:

Client:

Lusk Plant, Monitor Well No. 2 Composite, Sampled 4-2-84 by Mike Ford

Calcium	270
Magnesium	None
Sodium (Calc.)	417
Hydroxide	263
Carbonate	48
Bicarbonate	None
Sulfate	84
Chloride	454
Phenols	0.084
Total Dissolved Solids (Calc.)	1536
Total Hardness (as CaC0 <sub>3</sub> )	676
pH 11.38	

Technician: KLH, SAM

Copies 3 cc: Phillips Petroleum Company Attn: Mike Ford

BOBATORIES

SOUTHWESTERN LABORATORIES

Materials, environmental and geotechnical engineering, nondestructive, metallurgical and analytical services 1703 W. Industrial Avenue [915 - 683 - 3348] • P.O. Box 2150 • Midland, Texas 79701

File No Customer No. Report No.	C-1950-W 3355796 35346
Report Data	<u>    4-9-84      </u>
Date Receiv	red 4-3-84

Water Report of tests on:

Sw[

Phillips Petroleum Company

Identification:

Client:

Lusk Plant, Monitor Well No. 3 Composite, Sampled 4-2-84 by Mike Ford

	mg/L
Calcium	334
Magnesium	200
Sodium (Calc.)	117
Hydroxide	None
Carbonate	16
Bicarbonate	944
Sulfate	87
Chloride	723
Phenols	0.131
motal Discolured Colida (Cola)	1040

Total Hardness (as	CaC0 <sub>3</sub> )	1660
pH	9.35	

KLH, SAM Technician:

Phillips Petroleum Company Copies 3 cc: Attn: Mike Ford

BOBATOBIES

JTHWESTERN LABORATORIES

Materials, environmental and geotechnical engineering, nondestructive, metallurgical and analytical services

1703 W. Industrial Avenue [915 - 683-3348] • P.O. Box 2150 • Midland, Texas 79701

File No.	C-1950-W
Customer No.	3355796
. Report No.	35347
Report Dat	e <u>4-9-84</u>
Date Receiv	ved 4-3-84

119904

Report of tests on: Water

Sw[

Phillips Petroleum Company

Client:

Identification: Lusk Plant, Monitor Well No. 4 Composite, Sampled 4-2-84 by Mike Ford

Calcium	410
Magnesium	33
Sodium (Calc.)	399
Hydroxide	14
Carbonate	29
Bicarbonate	None
Sulfate	1055
Chloride	596
Phenols	0.005
Total Dissolved Solids (Calc.)	2536
Total Hardness (as CaC0 <sub>3</sub> )	1160

pH----- 10.45

Technician: KLH, SAM

Copies 3 cc: Phillips Petroleum Company Attn: Mike Ford

Our letters and reports are for the exclusive use of the client to whom they are addressed. The use of our name must receive our prior written approval. Our letters and reports apply only to the sample



# PHILLIPS PETROLEUM COMPANY

ODESSA, TEXAS 79762 4001 PENBROOK

EXPLORATION AND PRODUCTION GROUP May 22, 1984 Permian Basin Region



Effluent Discharge Plan Lusk Gasoline Plant Lea County, New Mexico

Mr. Joe D. Ramey, Director New Mexico Oil Conservation Commission P. O. Box 2088 State Land Office Building Santa Fe, New Mexico 87501

Dear Mr. Ramey:

This report is in response to your letter, dated February 21, 1984, in which you requested additional information concerning our Effluent Discharge Plan application. Attached are the red bed map you requested (Attachment I), the most recent topographical map of the area around our Lusk Plant, which also details the location of any fresh water wells in the area (Attachment II), and a groundwater monitoring waiver statement, prepared by an Independent Hydrologist, which outlines the impact of our waste water on the surrounding groundwater (Attachment III). Attachment III also contains all of the other information you requested.

In your letter, you stated that even though there was only a small amount of groundwater present in our test holes, it still had to be protected for a "foreseeable" future use. You suggested we pursue the foreseeable future use aspect of the Water Quality Control Commission Rules in our plan. I would first like to state that it is still Phillips' position that, as groundwater is defined in 1+101-M of the Water Quality Cotrol Commission Rules, there is no "groundwater" present in the area and we therefore do not fall under the jurisdiction of these regulations, but, as it is Phillips' corporate philosophy to protect the environment at all times, we took the step of drilling four groundwater sampling wells to establish what the quality of the groundwater was in the area and what impact, if any, our impoundment water was having on it. Attachment IV is a report prepared by Ed Reed and Associates detailing where and how to drill the groundwater sampling wells. The analysis of the groundwater (Attachment V) and well logs plus completion drawings for the sampling wells (Attachment VI) are attached. As can be seen in Attachment V, the pH of the groundwater in the area (sampling well #1) is so high that it cannot be used for human or agricultural consumption. Also, as the pH of our wastewater is well below the pH of the area's groundwater, its effect on the area's groundwater is that of improving its quality as demonstrated by the pH of the water found in sampling well #3.

We have clearly demonstrated that our method of disposing of our wastewater does not adversely affect the quality of the groundwater in the area. We Effluent Discharge Plan Lusk Gasoline Plant Lea County, New Mexico Page 2

therefore feel that the Effluent Discharge Plan should be approved. Any questions concerning this matter should be directed to Robert Stubbs at (915) 367-1302.

NAX SAME

Very truly yours,

E. E. Clark Manager Permian Basin Region

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EEC:RGS:qqp

Attachments







Ed LeReed and AssociateseInc.

Consulting Hydrologists MIDLAND - CORPUS CHRISTI TEXAS

ED L. REED, P.E. CHAIRMAN OF THE BOARD A. JOSEPH REED PRESIDENT CHESTER F. SKRABACZ VICE PRESIDENT FIELD OPERATIONS. 1109 N. BIG SPRING. MIDLAND, TEXAS 79701 915.682-0556

V. STEVE REED EXECUTIVE VICE PRESIDENT OIL INDUSTRIES BLDG. SUITE: 315 723 UPPER N. BROADWAY CORPUS CHRISTI, TEXAS..78403. 512-883-1353

December 30, 1982

Mr. J. W. Maharg Engineering Director Permian Basin Region Phillips Petroleum Co. Odessa, Texas

# RE: Ground Water Monitoring Waiver Lusk Gasoline Plant Lea Co., New Mexico

Dear Mr. Maharg:

Submitted herewith is a discussion of the geology and ground water conditions in the vicinity of the Phillips Lusk gasoline plant to satisfy the U.S. EPA requirements for a groundwater monitoring waiver (Ref. 40CFR, Part 265.90 paragraph C). The plant is located near the north quarter corner of Section 19-19S-32E, Lea County, New Mexico.

The surface at the site and for several miles in all directions is covered with Quaternary to Recent alluvium (N. M. Bureau of Mines and Mineral Resources Ground Water Report 6, 1961, Plate 1). Near the site and to the southeast (down-gradient) this alluvial section ranges from 20 to about 50 feet in thickness (see logs of Test Holes 1 and 2 attached).

Underlying the Quaternary fill are red and gray clays and interbedded sands of Triassic age. Test Hole 2 at total depth of 350 is still in Triassic rocks. Based upon oil well data and a deep water well in the area it is believed that the Triassic sediments in the vicinity of the plant site are about 800 feet thick and rest unconformably upon the Rustler formation of upper Permian age.

Structurally the plant site is situated on the southwest flank of a broad regional northwest-southeast trending anticline. Locally, the eroded surface of the Triassic exhibits a southeast trending valley ending at Laguna Plata, a salt lake or playa with interior drainage both surface and subsurface. (See attached map.) The Triassic outcrops on the north side of Laguna Plata and salt water springs with very high chlorides and sulfated discharge into the northeast side of the playa.

The Phillips Lusk plant generates a waste stream consisting primarily of cooling tower blow down water with minor amounts of salt water derived from stripper operations. An average 10,080 gallons of waste water are placed daily into an unlined surface pit covering 0.86 acres. At the normal water depth of 4 feet, the free board is 3 feet (see attached drawing).

The waste stream can be characterized as a brackish water containing moderately high chloride and sulfate levels (553 and 1011 mg/l respectively) and total dissolved solids under 3000 mg/l (see attached analyses). The only toxic element in the waste stream above toxicity limits is hexavalent chromium which is no longer being added to the cooling water. The sludge accumulated from past years of discharging cooling tower water treated with chromates has 0.5 ug/g soluble hexavalent chromium and the leachate extracted according to Appendix 11, EP Toxicity Test contains 0.025 mg/l hexavalent chromium. (See Key Laboratories report October 18, 1982 attached).

Ground water under and for several miles in all diretions from the Lusk plant site is contained in sandstones of the Dockum group, Triassic age. The Dockum is divided into the Chinle clays and shales underlain by the Santa Rosa formation, a sequence of red fine to medium grained sandstones. Minor amounts of water are found in the Chinle under water table conditions; the <u>Santa Rosa generally contains</u> producible water under artesian conditions.

A test hole drilled by Phillips about 0.4 mile southeast of the plant site was completed at total depth 260 feet (3316 MSL) apparently still in Chinle sediments. Fifteen feet of Chinle water was found in the bottom of this test hole. The top of the Santa Rosa is probably twenty feet below the bottom of this test hole based upon the log of a second test hole drilled by Phillips at a location 0.7 miles southeast of the plant site. This second test, drilled to 350 feet may have found Santa Rosa sandstones at 280 feet but since the water level in this test hole is at 345 feet, only 5 feet above total depth, the exposed portion of the Santa Rosa is very tight.

Ground water in the vicinity of the site moves southeasterly toward Laguna Plata a depression with interior drainage. The salt springs at the northeast side of the playa are probably issuing from thin sands in the Chinle formation. The Santa Rosa piezometric surface forms a south-trending depression indicating discharge. However, since the pressure surface at the group of playas Laguna Plata, Laguna Gatuna and two smaller ones is well below the lake beds, it is believed that the Santa Rosa is discharging downward into the Rustler formation of upper Permian Age in the area of the playas (N. M. Bureau Mines Report 6, p 57). The Chinle water however probably does discharge for the most part into the playas.

The uppermost aquifer in this area is the Santa Rosa sandstone. The potential for migration of hazardous waste from the Lusk plant site to the Santa Rosa is considered to be negligible. Seepage from the pond is calculated to average about 4 gallons per minute based upon an input rate of 7 gpm, surface area of 0.86 acre and a net evaporation rate of 5.375 feet per year. It is expected that this seepage will be into the Quaternary alluvium above the Triassic exemplified by the upper 52 feet in Test Hole 1.

For the most part, it is expected that the waste water will move southeasterly along the contact between the alluvium and the Triassic Chinle clays. Assuming a permeability of 2 x  $10^{-3}$  cm/sec (42.4 gpd/ft<sup>2</sup>) for the alluvium and a gradient at the basal contact of 9.5 x  $10^{-3}$  ft/ft (50 ft/mi) the average flow velocity would be 98.3 feet per year requiring more than 200 years to reach Laguna Plata (4 miles distant).

Based upon permeability data secured recently from core tests in Sec. 16-17S-30E, about 15 miles to the northwest, it is believed that the average vertical permeability of the Chinle clays and shales is  $10^{-7}$  cm/sec. Assuming a depth of water in the pond to be 4 feet, that the 52 feet of alluvium is saturated and 192 feet of clays lie above the first permeable sand the vertical velocity becomes 0.67 feet per year. It would require almost 300 years for the waste water to reach a depth of 244 feet.

Finally, if by some means presently unknown the waste stream should reach the aquifer at about 250 feet below the land surface, the velocity in a horizontal direction would be 19.6 feet per year based upon a permeability of 1 x  $10^{-3}$  cm/sec (21 gpd/ft<sup>2</sup>) and a hydraulic gradient of 3.8 x  $10^{-3}$  ft/ft (20 ft/mi). This permeability has been found to be about average for the Dockum in West Texas and New Mexico. The nearest known water well to the site based upon records in the New Mexico State Engineers' office is in Sec. 34-195-32E about 4 miles southeast (not considering the Capitan Reef well in Sec. 31-195-32E). It would require 1078 years for water to move through the Santa Rosa sandstone from the plant site to the nearest uppermost aquifer.

As further and final evidence that ground water will not be affected by this waste disposal operation it should be noted that since a water supply could not be located at the plant site for operational purposes, water is obtained via pipe line from Tertiary Ogallala wells located about 20 miles to the east. It is my opinion based upon the hydrologic and geologic conditions surrounding the plant site that ground water will not be affected by the operation of the waste disposal pit serving the Phillips Lusk gasoline plant.

If you need further information regarding the hydrogeology of this area please advise.

Very truly yours,

ED L. REED & ASSOCIATES, INC.

Ed L. Reed, P. E.

ELR:1b



# Lusk Gasoline Plant Groundwater Sampling Well #1





THE LOFTIS COMPANY

P. O. BOX 7847 MIDLAND, TEXAS 79701

COMPANY: Phillips Oil Company DATE <u>March 30, 1984</u> ORDER NO. <u>Contract No.0-415</u> LOCATION <u>Lusk Gasoline Plant</u>, COUNTY: <u>Lea</u> <u>STATE NM</u>

PROPOSED USE Monitor Well #1 DIAMETER <u>8''</u> DEPTH <u>50'</u>

Top of water 40'

DRILLER

Roger Smith

DEPTH FT.	DRILLER'S LOG
10	surface sand
20	caliche
30	sand
40	water sand & clay
50	sandy clay
60	
70	
80	
90	
100	
110	
120	
130	
140	· · · · · · · · · · · · · · · · · · ·
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200	
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Lusk Gasoline Plant Groundwater Sampling Well #2



- 1.



COMPANY: Phillips Oil Company DATE March 30, 1984 ORDER NO. Contract No.0-415 LOCATION Lusk Gasoline Plant, COUNTY : Lea STATE NM

P. O. BOX 7847 MIDLAND, TEXAS 79701

PROPOSED USE Monitor Well #2 DIAMETER 8" DEPTH <u>50'</u>

Top of water 42'

brit DRILLER

Roger Smith

DEPTH FT.	DRILLER'S LOG
10	surface sand
20	caliche, & sand
30	<u>clay, water sand</u>
40	sand
	<u>sandy_clay</u>
60	
70	
80	
90	· · · · · · · · · · · · · · · · · · ·
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Lusk Gasoline Plant Groundwater Sampling Well #3



5)



THE LOFTIS COMPANY

P. O. BOX 7847 MIDLAND, TEXAS 79701

COMPANY: Phillips Oil Company DATE March 30, 1984 ORDER NO. Contract No.0-415 LOCATION Lusk Gasoline Plant, COUNTY: Lea STATE NM

PROPOSED USE Monitor Well #3 DIAMETER 8" DEPTH 50'

Top of water 38'

DRILLER

Roger Smith

Lusk Gasoline Plant Groundwater Sampling Well #4



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THE LOFTIS COMPANY P. O. BOX 7847

MIDLAND, TEXAS 79701

COMPANY :	Phillips	Oil Com	ipany
DATE Mar	ch 30, 198	34	
ORDER NO.	Contract	No.0-4	15
LOCATION	Lusk Gas	soline P	lant,
COUNTY :	Lea	STATE	NM

PROPOSED USE <u>Monitor Well</u> #4 DIAMETER <u>8''</u> DEPTH <u>50'</u>

Top of water 37'

DRILLER Kogu

Roger Smith

DEPTH FT.	DRILLER'S LOG
10	surface sand
20	caliche, sand
30	red clay
40	water sand
50	sandy clay
60	
79	
80	
90	
100	
110	
120	
130	
140	
150	
160	
170	
189	
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Attachment IV

Ed L. Reed and Associates, Inc.

Consulting Hydrologists MIDLAND - CORPUS CHRISTI TEXAS

ED L. REED. P.E. A. JOSEPH REED CHESTER F. SKRABACZ E PRESIDENT FIELD OPERATIONS 1109 N. BIG SPRING MIDLAND, TEXAS 79701 915 682.0556

V. STEVE REED EXECUTIVE VICE PRESIDENT OIL INDUSTRIES BLDG. SUITE 315 723 UPPER N. BROADWAY CORPUS CHRISTI, TEXAS 78403 512-883-1353

January 24, 1984

Mr. J. W. Maharg Engineering Director Permian Basin Region Phillips Petroleum Company Odessa, Texas 79762

> Re: Ground Water Monitoring Program Lusk Gasoline Plant Impoundment Lea County, New Mexico

Dear Mr. Maharg:

This letter presents the information you requested in your letter of January 18, 1984 concerning development of a ground water sampling program for the Lusk Gasoline Plant Impoundment. The information needed are as follows: ----5. 1. 11 a. Optimum monitor well placements.

- b. Completion plans for monitor wells.
- c. Sampling procedure.

#### Monitor Well Locations

The basic requirement for the placement of the monitor wells is the positioning of three wells down the hydraulic gradient from the impoundment and at least one well up-gradient from the impoundment. The down-gradient wells will enable sampling of contaminant that may be present in the uppermost aquifer as a result leaching from the The up-gradient well will enable sampling of uncontamimpoundment. inated ground water.

The uppermost formation of water-bearing potential consists of Quaternary alluvium fill. This is underlain by red and gray clays of Triassic age.

Fluid movement in the alluvium may be controlled by the topography of the Triassic surface since the alluvium is apparently not saturated. In this area the Triassic surface dips to the southeast at a relatively steep slope of 50 feet per mile.

The proposed locations for the monitor wells are shown on the

attached map. These are based on the anticipated direction of fluid movement which is southeast and on the need to drill the down-gradient wells as close as possible to the impoundment.

#### Construction Plans

The attached well profile diagram shows the design that is proposed for construction of the monitor wells. We recommend that a 12-inch hole be drilled to a depth of about 15 feet (base of caliche cap) and 8-inch steel casing cemented in place. After the cement has solidified a 6-3/4-inch hole should be air-drilled to the Triassic surface (approximately 50 feet) then the well cased with 4-inch PVC pipe and gravel packed. About 2 feet of clean sand should be placed above the gravel pack and the remainder of the hole cemented to the surface (about 13 feet of cement).

Although we anticipate that the alluvium is mostly unsaturated, care should be taken during the drilling of the 6-inch hole to sample any fluid encountered at regular intervals if possible.

#### Sampling Procedure

Once the well is constructed it should be developed by pumping or jetting depending on whether enough water is present. Development is complete when the pumped or bailed water is free of mud and sand. At this point a water sample should be collected and properly labeled.

Subsequent sampling of the monitor wells should be done on a regular basis; every three months would be adequate. Before collecting a sample the well should be pumped or bailed so that at least three casing volumes of water are removed. This will ensure that a representative ground water sample is obtained.

If you have any questions concerning this matter please call on us.

Very truly yours,

ED L. REED & ASSOCIATES, INC.

Ed L. Reed, P. E.

ELR:1b

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# Attachment III

# GROUND WATER MONITORING WAIVER LUSK GASOLINE PLANT LEA COUNTY, NEW MEXICO

Prepared For PHILLIPS PETROLEUM CO.

12/82

Ed L. Reed and Associates, Inc.

Consulting Hydrologists MIDLAND CORPUS CHRISTI TEXAS

ED L. REED. P.E. CHAIRMAN OF THE BOARD A. JOSEPH REED PRESIDENT

CHESTER F. SKRABACZ VICE PRESIDENT FIELD OPERATIONS

1109 N. BIG SPRING MIDLAND, TEXAS 79701 915 682-0556 V. STEVE REED EXECUTIVE VICE PRESIDENT OIL INDUSTRIES BLDG. SUITE 315 723 UPPER N. BROADWAY CORPUS CHRISTI. TEXAS 78403 512-883-1353

December 30, 1982

Mr. J. W. Maharg Engineering Director Permian Basin Region Phillips Petroleum Co. Odessa, Texas

> RE: Ground Water Monitoring Waiver Lusk Gasoline Plant Lea Co., New Mexico

Dear Mr. Maharg:

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A test hole drilled by Phillips about 0.4 mile southeast of the plant site was completed at total depth 260 feet (3316 MSL) apparently still in Chinle sediments. Fifteen feet of Chinle water was found in the bottom of this test hole. The top of the Santa Rosa is probably twenty feet below the bottom of this test hole based upon the log of a second test hole drilled by Phillips at a location 0.7 miles southeast of the plant site. This second test, drilled to 350 feet may have found Santa Rosa sandstones at 280 feet but since the water level in this test hole is at 345 feet, only 5 feet above total depth, the exposed portion of the Santa Rosa is very tight.

Ground water in the vicinity of the site moves southeasterly toward Laguna Plata a depression with interior drainage. The salt springs at the northeast side of the playa are probably issuing from thin sands in the Chinle formation. The Santa Rosa piezometric surface forms a south-trending depression indicating discharge. However, since the pressure surface at the group of playas Laguna Plata, Laguna Gatuna and two smaller ones is well below the lake beds, it is believed that the Santa Rosa is discharging downward into the Rustler formation of upper Permian Age in the area of the playas (N. M. Bureau Mines Report 6, p 57). The Chinle water however probably does discharge for the most part into the playas.

The uppermost aquifer in this area is the Santa Rosa sandstone. The potential for migration of hazardous waste from the Lusk plant site to the Santa Rosa is considered to be negligible. Seepage from the pond is calculated to average about 4 gallons per minute based upon an input rate of 7 gpm, surface area of 0.86 acre and a net evaporation rate of 5.375 feet per year. It is expected that this seepage will be into the Quaternary alluvium above the Triassic exemplified by the upper 52 feet in Test Hole 1.

For the most part, it is expected that the waste water will move southeasterly along the contact between the alluvium and the Triassic Chinle clays. Assuming a permeability of 2 x  $10^{-3}$  cm/sec (42.4 gpd/ft<sup>2</sup>) for the alluvium and a gradient at the basal contact of 9.5 x  $10^{-3}$  ft/ft (50 ft/mi) the average flow velocity would be 98.3 feet per year requiring more than 200 years to reach Laguna Plata (4 miles distant).

Based upon permeability data secured recently from core tests in Sec. 16-17S-30E, about 15 miles to the northwest, it is believed that the average vertical permeability of the Chinle clays and shales is  $10^{-7}$  cm/sec. Assuming a depth of water in the pond to be 4 feet, that the 52 feet of alluvium is saturated and 192 feet of clays lie above the first permeable sand the vertical velocity becomes 0.67 feet per year. It would require almost 300 years for the waste water to reach a depth of 244 feet.

Finally, if by some means presently unknown the waste stream should reach the aquifer at about 250 feet below the land surface, the velocity in a horizontal direction would be 19.6 feet per year based upon a permeability of 1 x  $10^{-3}$  cm/sec (21 gpd/ft<sup>2</sup>) and a hydraulic gradient of 3.8 x  $10^{-3}$  ft/ft (20 ft/mi). This permeability has been found to be about average for the Dockum in West Texas and New Mexico. The nearest known water well to the site based upon records in the New Mexico State Engineers' office is in Sec. 34-195-32E about 4 miles southeast (not considering the Capitan Reef well in Sec. 31-195-32E). It would require 1078 years for water to move through the Santa Rosa sandstone from the plant site to the nearest uppermost aquifer.

As further and final evidence that ground water will not be affected by this waste disposal operation it should be noted that since a water supply could not be located at the plant site for operational purposes, water is obtained via pipe line from Tertiary Ogallala wells located about 20 miles to the east. It is my opinion based upon the hydrologic and geologic conditions surrounding the plant site that ground water will not be affected by the operation of the waste disposal pit serving the Phillips Lusk gasoline plant.

If you need further information regarding the hydrogeology of this area please advise.

Very truly yours,

ED L. REED & ASSOCIATES, INC.

Ed L. Reed, P. E.

ELR:1b









CHEMICAL ANALYSES

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# SOUTHWESTERN LABORATORIES FORT WORTH - DALLAS - HOUSTON - MIDLAND - BEAUMONT - TEXARKANA

CONSULTING, ANALYTICAL CHEMISTS AND TESTING ENGINEERS

	Midland	. Texas	12-30-82	File	No	
•					•	
Report of tests on	Water			• '		
То	Phillips Petrole	eum Compa	ny	•	Date Rec'd.	12-21-82
Received from	Mike Ford - Phil	llips Pet	roleum			
Identification Marks	Lusk Plant, Lea 12-21-82	Co., New	Mexico, sar	mpled by Mi	ke Ford,	

	mg/	Ĺ
	Total Chromium	Chromium, +6
Sample Point 1	2.9	2.92
Sample Point 2	3.4	3.35
Sample Point 3	3.3	3.34

3 cc: Phillips Petroleum 2 cc: Ed L. Reed & Associates

ES SOUTHWESTERN LABORATON hack

Lab. No.

# Lage 1 of 3

mg/L

# SOUTHWESTERN LABORATORIES FORT WORTH - DALLAS - HOUSTON - MIDLAND - BEAUMONT - TEXARKANA

#### CONSULTING, ANALYTICAL CHEMISTS AND TESTING ENGINEERS

· · · ·	Midland	Texas	12-29-8	2	File No		
· .							
Report of tests on	Water	• ,	-				
To	Phillips Petro	leum Compa	iny		Da	ate Rec'd.	12-21-82
Received from	Mike Ford, Phi	llips Petr	coleum Cor	npany			
Identification Marks	Lusk Plant, Le	a Co., Nev	Mexico,	sampled b	y Mike I	Ford, 12	-21-82

Calcium	^ 	277
Magnesium	<u></u>	68
Sodium (calc.)		372
Potassium		29
Carbonate		-0-
Bicarbonate		65
Sulfate		946
Chloride		553
Fluoride		
Nitrate		1.5
TOTAL Dissolved Solids @ 180	<sup>D</sup> C 2,	,408
Aluminum	less than	1.0
Arsenic	less than	0.05
Barium		0.2
	SOUTHWEST	ERN LABORATORIES

Lab. No. 33896

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Our letters and reports are for the exclusive use of the clients to whom they are addressed. The use of our names must receive our prior written approval. Our letters and

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# age 2 of 3

# SOUTHWESTERN LABORATORIES

#### FORT WORTH - DALLAS - HOUSTON - MIDLAND - BEAUMONT - TEXARKANA

# CONSULTING. ANALYTICAL CHEMISTS AND TESTING ENGINEERS

	Midland Texas	12-29-82	File No
	en e	•. •	
Report of tests on	Water		
То	Phillips Petroleum Co	mpany	Date Rec'd. 12-21-82
Received from	Mike Ford, Phillips P	etroleum Company	
Identification Mark	s Lusk Plant, Lea Co.,	New Mexico sampled	l by Mike Ford, 12-21-82
		_	mg/L
	Boron		0.4
	Cadimum	less than	0.01
	Chromium, Total	وی این این این این این این این این این ای	3.1
	Chromium, + 6		3.05
:	Cobalt	less than	0.1
· · · ·	Copper	less than	0.1
	Iron		0.42
	Lead	less than	0.05
	Magnanese	less than	0.05
	Mercury	less than	0.002
	Molybdenum	less than	0.5
	Nickel	less than	0.2
	Selenium		0.02
· · · · ·	Silver	less than	0.1
	Zinc		0.45

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Lab. No. 33896

# SOUTHWESTERN LABORATORIES

FORT WORTH - DALLAS - HOUSTON - MIDLAND - BEAUMONT - TEXARKANA

#### CONSULTING, ANALYTICAL CHEMISTS AND TESTING ENGINEERS

-	Midland 7	Texas <u>12-29</u> -	82	File No	
·		· · · ·			
Report of tests on	Water		· · ·		
То	Phillips Petroleu	m Company		Date Rec'd	12-21-82
Received from	Mike Ford, Phillip	ps Petroleum (	Company		

Identification Marks Lusk Plant, Lea Co., New Mexico, sampled by Mike Ford, 12-21-82

mg/L

Cyanide	less	than	0.005
Phenol			0.016
Endrin	less	than	0.002

pH ----- 8.11

Tech: K.H., B.S. Chemist: G.M.B., R.Y., J.A., P.B.

3 cc: Phillips Petroleum 2 cc: Ed L. Reed & Assoc.

33896

SOUTHWESTERN LABORATORIES Jack Sall

Lab. No.
CHEMICAL ANALYSES KEY LABORATORIES

- 1912 - 1914 - 1914

### **KEY LABORATORIES**

Division of Production Profile 2636 WALNUT HILL LANE SUITE 275 DALLAS, TEX. 75229 214/350-5841

October 18, 1982

REPORT OF ANALYSIS

NUMBER: K-1204

CLIENT:

Rice-White Associates P.O. Box 12897 Fort Worth, Texas 76116

DESCRIPTION:

The client submitted a semi-solid sample for analysis in accordance with the "Federal Register, Vol. 45, No. 98, Monday, May 19, 1980" and EPA's "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," May, 1980. The sample's leachate was to be analyzed for chromium, hexavalent chromium, mercury, phosphate and sulfite. The sample as received was to be analyzed for oil and grease.

**PROCEDURES:** 

The sample was prepared for extraction and extracted in accordance with "Appendix 11, EP Toxicity Test" found on pages 7.1-3 through 7.1-6 of the above referenced method. The solid and extract were separated in accordance with the "Separation Procedure" on pages 7.1-6 through 7.1-8. Millipore filters, as specified in the literature, were 'used for the filtration step.

The filtrate was analyzed in accordance with procedures specified in <u>Standard Methods</u> for the Examination of Water and Wastewater, 15th edition.

The oil and grease was determined by the chloroform extraction procedure.

RESULTS: See attached sheet.

Submitted by:

KEY LABORATORIES

thia Blacko

Cynthia A. Placko, Senior Analyst

CAP/rsd

### KEY LABORATORIES Division of Production Profits

2636 WALNUT HILL LANE SUITE 275 DALLAS, TEX. 75229 214/350-5841

K-1204 Page 2

## DATA SHEET

Analyte	Leachate, mg/l	Semi-Solid*
Chromium	1.5	30
Hexavalent Chromium	.025	0.5
Mercury	<.05	<1
Phosphate	55	110
Sulfite	3.2	160
Oil and Grease, %	N/A	21.2

\*The values reported are in ug/g and reflect the amount soluble in the EP-Toxicity leachate not the amount possibly found in the sample as received. The value reported for oil and grease is in percent as noted above.

CHEMICAL ANALYSES MARTIN LABORATORIES

WATE

Martin Water Laboratories, Inc. WATER CONSULTANTS SINCE 1953

BACTERIAL AND CHEMICAL ANALYSES

709 W. INDIAN, MIDLAND, TEXAS 79 PHONE 683-4521

To: Mr. Bob Stubbs 4001 Penbrook Odessa, TExas

O. BOX 1468

943-3234 OR 563-1040

ONAHANS, TEXAS 79756

Laboratory No. 282215 Sample received 2-10-82 Results reported 2-18-82

### Company: Phillips Petroleum Company

Sulfate, as SO4

· . ]	County:	Lea, NM	
d for the set	Lease:	Lusk Gas Plant	
-	Subject:	To make determinations listed on water from tes by Robert C. Middleton, Martin Water Labs., Inc	st hole #1. Sample taken 2. on 2-10-82
1		DETERMINATION	MG/L
1		A. Human Health Standards	
		Arsenic, as As	0.000
- 1		Barium, as Ba	0.0
l			0.00

	( ·	
Cadium, as Cd		0.00
Chromium, as Cr		0.04
Cyanide, as CN	· · · ·	0.0
Fluoride, as F		1.2
Lead, Pb		0.0
Total Mercury, as Hg		0.000
Nitrate, as N		1.1
Selenium, as Se		0.00
Silver, as Ag		0.00

# B. Other Standards for Domestic Water SupplyChloride, as Cl45Copper, as Cu0.00Iron, as Fe0.50Manganese, as Mn0.00Phenols0.0

DETERMINATION	MG/L
Total Dissolved Solids	794
Zinc, as Zn	0.00
pH	7.96
C. Standards for Irrigation Use	
Aluminum, as Al	0.00
Boron, as B	0.0
Cobalt, as Co	0.00
Molybdenum, as Mo	· · · · ·

Remarks: The undersigned certifies the above to be true and correct to the best of his knowledge and belief.

Nickel, as Ni

Ylan C. Martin, M. A.

0.0

Martin Water Laboratories, Inc. WATER CONSULTANTS SINCE 1953 BACTERIAL AND CHEMICAL ANALYSES

709 W. INDIANA MIDLAND, TEXAS 78 PHONE 683-4521

P. O. BOX 1468 ONAHANS, TEXAS 79756 143-3234 OR 563-1040

To:	Mr.Bob Stubbs	<i>i</i>	- *	Laboratory No.	282219
	4001 Penbrook	. 9		Sample received	2-12-82
	Odessa, Texas			Results reported	2-18-82

Company:	Phillips	Petroleum	Company			
County:	Lea, NM					-
Field:	Lusk					
Lease:	Lusk Gas	Plant			· • .	

Subject:

4

To make determinations listed on water from test hole #2. Sample taken by Robert C. Middleton, Martin Water Labs., Inc. 2-12-82.

	<u>DE TE RMINATION</u>	MG/L
•	A. Human Health Standards	
•	Arsenic, as As	0.000
	Barium, as Ba	0.0
	Cadmium, as Cd	0.00
	Chromium, as Cr	0.04
	Cyanide, as CN	0.0
	Fluoride, as F	0.8
	Lead, as Pb	0.0
	Total Mercury, as Hg	0.000
•	Nitrate, as N	3.4
	Selenium, as Se	0.00
	Silver, as Ag	0.00
	B. Other Standards for Domestic Water S	upply
	Chloride, as Cl	75
	Copper, as Cu	0.00
	Iron, as Fe	0.63
	Manganese, as Mn	0.00
	Phenols	0.0
	Sulfate, as SO <sub>4</sub> 2,5	8 <u>8</u>

DETERMINATION	MG/L
Total Dissolved Solids, Evaporated	4,426
Zinc, as Zn	0.00
PH	7.99
C. Standards for Irrigation Use	
Aluminum, as Al	0.00
Boron, as B	0.0
Cobalt,as Co	0.00
Molybdenum, as Mo	0
Nickel, as Ni	0.0

Remarks: The undersigned certifies the above to be true and correct to the best of his knowledge and belief.

Martin, M. A. Ian С.

Martin Water Laboratories, Inc. water consultants since 1953 bacterial and chemical analyses

709 W. INDIANA MIDLAND, TEXAS 79 PHONE 683-4521

To:	Mr. Bob Stubbs
	4001 Penbrook
	Odessa, Texas

P. O. BOX 1468

NAHANS. TEXAS 79756

143-3234 OR 563-1040

Laboratory No.	232218
Sample received	2-10-32
Results reported	2-18-82

Company:	Phillips Petroleum Company		•
County:	Lea, NM		
Field:	Lusk	. *	
Lease:	Lusk Gas Plant		с

Subject: To make determinations listed on water from test hole #3. Sample taken by Robert C. Middleton, Martin Water Labs., Inc. 2-10-82.

	DETERMINATION	MG/L
	A. Human Health Standards	*
	Arsenic, as As	0.00 <b>0</b> .
	Barium, as Ba	0.0
	Cadmium, as Cd	0.00
	Chromium, as Cr	0.04
	Cyanide, as CN	0.0
	Fluoride, as F	0.8
	Lead, as Pb	0.0
	Total Mercury, as Hg	0.000
	Nitrate, as N	5.7
	Selenium, as Se	0.00
	Silver, as Ag	0.00
	B. Other Standards for Domestic Water Supply	
	Chloride, as Cl	34
	Copper, as Cu	0.00
	Iron, as Fe	5.7
•	Manganese, as Mn	0.00
	Phenols	0.0
	Sulfate, as SO,	61

# (Page 2)

DETERMINATION	MG/L
Total Dissolved Solids, Evaporated	420
Zinc, as Zn	0.00
рH	7.82
C. Standards for Irrigation Use	
Aluminum, as Al	0.00
Boron, as B	0.0
Cobalt, as Co	0.00
Molybdenum, as Mo	0
Nickel, as Ni	0.0

<u>Remarks</u>: The undersigned certifies the above to be true and correct to the best of his knowledge and belief.

Waylan C. Martin, M. Α.

Martin Water Laboratories, Inc. WATER CONSULTANTS SINCE 1953 BACTERIAL AND CHEMICAL ANALYSES

709 W. INDIANA MIDLAND, TEXAS 71 PHONE 683-4521

Mr. Bob Stubbs To: 4001 Penbrook Odessa, Texas

Laboratory No.	28221 <b>7</b>
Sample received	2-13-82
Results reported	.2-18-82

Company: Phillips Petroleum Company County: Lea,NM Field: Lusk Lease: Lusk Gas Plant

Subject:

P. O. BOX 1468

ONAHANS. TEXAS 79756

543-3234 OR 563-1040

To make determinations listed on water form test hole #4. Sample taken by Robert C. Middleton, Martin Water Labs., Inc. on 2-13-82.

DETERMINATION

MG/L

A. Human Health Standards

Arsenic, as As		0.000
Barium, as Ba		0.0
Cadmium, as Cd		0.00
Chromium, as Cr		0.02
Cyanide, as CN		0.0
Fluoride, as F		1.0
Lead, as Pb	•• •	0.0
Total Mercury, as Hg	· · · · · · · · · · · · · · · · · · ·	0.000
Nitrate, as N		3.4
Selenium, as Se	•	0.00
Silver, as Ag	•	0.00
B. Other Standards	for Domestic Water Supp	ly

	·	
Chloride, as Cl	•	51
Copper, as Cu	•	0.00
Iron, as Fe		0.17
Manganese, as Mn		0.00
Phenols		0.0
Sulfate, as SO,		157

DETERMINATION	MG/L
Total Dissolved Solids, Evaporated	598
Zinc, as Zn	0.00
pH	7.54
C. Standards for Irrigation Use	
Aluminum, as Al	0.00
Boron, as B	0.0
Cobalt, as Co	0.00
Molybdenum, as Mo	0
Nickel, as Ni	0.0

(Page 2)

<u>Remarks</u>: The undersigned certifies the above to be true and correct to the best of his knowledge and belief.

C. Martin, M. A. Waylan

O. BOX 1468 NAHANS, TEXAS 79756 43-3234 OR 563-1040

Martin Water Laboratories, Inc. WATER CONSULTANTS SINCE 1953 BACTERIAL AND CHEMICAL ANALYSES

709 W. INDIANA MIDLAND, TEXAS 79 PHONE 683-4521

To: Mr. Bob Stubbs 4001 Penbrook Odessa, Texas

Laboratory No.	282220
Sample received	2-12-82
Results reported	2-18-82

Phillips	Petroleum Company
Lea, NM	
Lusk	
Lusk Gas	Plant
	Phillips Lea, NM Lusk Lusk Gas

Subject: To make determinations listed on water from storage tank @ plant (used to drill test hole #4). Sample taken by Robert C. Middleton, Martin Water Labs., Inc. Ogsilala Water Ear on 2-12-82.

DETERMINATION

Sulfate, as SO4

MG/L

A. Human Health: Standards

Arsenic, as As	0.000
Barium, as Ba	0.0
Cadmium, as Cd	0.00
Chromium, as Cr	0.02
Cyanide, as CN	0.0
Fluoride, as F	0.4
Lead, as Pb	0.0
Total Mercury, as Hg	0.000
Nitrate, as N	3.4
Selenium, as Se	0.00
Silver, as Ag	0.00
B. Other Standards for Domestic Water Suppl	Ly
Chloride, as Cl	57
Copper, as Cu	0.00
Iron, as Fe	0.11
Manganese, as Mn	0.00
Phenols	0.0
Sulfate as SO.	26

•		- · .	
DETERMINATION			MG/L
Total Dissolved S	olids, Evaporated	•	348
Zinc, as Zn	· · · ·		0.00
рН			8.19
	C. Standards for	Irrigation Use	•••
Alumínum, as Al			0.00
Boron, as B			0.0
Cobalt, as Co			0.00
Molybdenum, as Mo			0
Niokal og Ni			0.0

(Page 2)

Remarks: The undersigned certifies the above to be true and correct to the best of his knowledge and belief.

aylan C. Martin, M. A.



Depth	in Feet	Thickness	Color and Type of Material Encountered
From		in Feet	
*0	4	4	blow sand
4	10	6	caliche
10	30	20	sand
30	52	22	sand & gravel
52	60	8	redbed
<u> </u>	61	1	clay gray
61	105	44	redbed
105	115	10	gray clay & rock
115	117	2	sand, black rock
117	152	35	gray clay & rock
152	162	10	red clay
162	230	68	red clay, layers of gray and brown dry clay
230	240	10	red clay
240	244	4	gray green clay
244	260	16	redbed
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Section 7. REMARKS AND ADDITIONAL INFORMATION

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above tescribed hole.

ዥ Driller Ì p

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"NSTRUCTIONS: This form should be executed in triplicate, preferably typewritten, and submitted to the appropriate district office of the State Engineer. All sections, except Section 5, shall be answered as completely and accurately as possible when any well is druled, repaired or deepened. When this form is used as a plugging record, only Section 1(a) and Section 5 need be completed.

ER OFFICE	

•	4		ST	WELL	EER O	FFICE D	÷			
			Section	I. GENER	AL INFO	ORMATION				
(A) Owner of	well	Phillip P.C	Box 213	eum.			o	wner's Wel	l No	
Street or	Post Office Ac	idress <u>Hob</u>	bs, NM 8	8240			······		<u>.</u>	
City and i		. Test ho	le for E	PA			/1	1200'N	300'E	•.
Well was drilled	under Permit	No		. 1	an 0	nd is located	in the:		375	
<b>a</b>	_ % %	4 ¥4	¼ of S	ection	·	Township _		Range	JZE	N.M.P.
b. Tract	No	of Map No	)		of the					
c. Lot No Subdiv	o rision, recorde	of Block No. d in	L	ea	of the Cour	nty.				
d. X=		_ feet, Y=	·	fe	et, N.M.	Coordinate	System		-	Zone
the		Larry'	s Drilli	ng				wn	882	Grai
(B) Drilling C	ontractor	2601 W	. Bender	. Hobbs	. NM 8	8240	License No	,,		
Address	2-8-82		-1 1	2-9-82	, <u></u> -	t	ri-come			6 3/4
Drilling Began			pleted		I )	ype tools		Si	ze of hole.	
Elevation of lan	d surface or -				at well is.		_ ft. Total d	epth of wei	1200	
Completed well	is 🗆 si	hallow 🗖	artesian. Tes	t hole	Deg	oth to water	upon comple	tion of we	n <u>245</u>	
· ·		Se	ction 2. PRI	NCIPALW	ATER-B	EARING ST	TRATA			
Depth i	n Feet	Thicknes	s	Descriptio	on of Wat	er-Bearing H	ormation	(	Estimated	Yield minute)
From	10						<u> </u>		anons per	1111111111
				·						
						•				•
		·!	<u></u>			015010				
Diameter	Pounds	Threads	Depth	in Feet		Length	<b>T</b>	· 01	Perfo	orations
(inches)	per foot	per in.	Тор	Botto	m	(feet)	lype or	Shoe	From	To
			·.							
							:			1
		L		·	I			· · · · ·		
Denth i	n Feet	Sect	ion 4. RECO	RDOFM	UDDING	AND CEM	ENTING		<u></u>	
From	То	Diameter	of M	lud,	of Ce	ment	M	ethod of P	lacement	
								· .		
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	•	·	Sectio	on S. PLU	GGING R	ECORD				
lugging Contra Address	ctor	·····	•				Denti	in Feat		
lugging Method	l					No.	Тор	Botto	om o	Cement
Date Well Pluggi Plugging approv	ed by:	<u> </u>				- 1				
		State Eng	ineer Rentes	entative		- 3				
	. <u> </u>					<u> </u>		. I		
Jate Received	·		FOR USE	OF STAT	E ENGIN	NEER ONL	Y .			
				(	Quad		FW	L	FSL	
File No.				Use			Location No.			
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STATE	NEER OFFICE
WEEL I	RECORD



June 1972

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			Section 1	. GENER	AL INFO	(MA HO	N			
A) Owner of	wellPh	<u>illins Pe</u>	troleum C	ompany			Own	er's Well N	0 <u>P639</u>	(explora
Street or	Post Office Ad	idressR	00m 401	4001 Pe	enbrook	St				
City and	State	0	dessa, Te	xas						<u> </u>
ell was drilled	l under Permit	No. CP-639	(explora	tory)	and	is locate	dinthe: <b>#2</b> 2	400 N.12	200'W.	
۹	_ × ×	، ×	¼ of Se	ction	<u>20</u> T	ownship.	<u>    195    </u> R	ange <u>32</u> ;	5	<u>N.M.P.M</u> .
b. Tract	No	of Map No	),	•	of the	• 		. <u></u>		<u></u>
. c. Lot No Subdiv	o vision, recorded	of Block No. d ín		Lea	of the Count	y.		· · ·		
d. X=		_ fcet, Y=		fe	et, N.M. C	oordinat	e System			Zone in
the							· · · · · · · · · · · · · · · · · · ·			Grant.
) Drilling C	Contractor	_Larry's	_Drilling				License No	WD88;	2	·
ddress	· · · · · · · · · · · · · · · · · · ·	2601 W.	Bender	Hobbs,	NM RI	240				
nlling Began .	2-982	Com	pleted	2-10-82	2 Tyj	e tools_	tri-cone	Size	of hole	4-3/4 in.
evation of lar	nd surface or _		. <u></u>		at well is		ft. Total dept	th of well	350	<u>)                                    </u>
mpleted wei	lis 🗆 s	hallow 🗖	artesian.	test ho	le Depi	h to wat	er upon completio	on of well_	345	5 ft.
		Se	ction 2. PRIN	ICIPAL W	ATER-BE	ARING	STRATA		4 ÷	· ·
Depth	in Feet	Thicknes	3	Descriptio	on of Wate	-Bearing	Formation	Es	timated )	rield
From	<u>To</u>	u reet						(gau)	ons per u	
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		<u>.                                    </u>								
-	ļ	 	Sectio	on 3. REC	ORD OF (	ASING				
Diameter (inches)	Pounds	Threads	Section Depth	in Feet		ASING	Type of Sh	106	Perfor	ations
Diameter (inches)	Pounds per foot	Threads per in.	Section Depth Top	in Feet Botto	ORD OF (	ASING ength (feet)	Type of St	106	Perfor From	ations To
Diameter (inches)	Pounds per foot	Threads per in.	Sectio Depth Top	on 3. REC in Feet Botto	ORD OF (	ASING ength (feet)	Type of St	106	Perfor From	ations To
Diameter (inches)	Pounds per foot	Threads per in.	Sectio Depth Top	in Feet Botto	ORD OF (	ASING ength (feet)	Type of St	100	Perfor From	ations To
Diameter (inches)	Pounds per foot	Threads per in.	Sectio Depth Top	n 3. REC in Feet Botto		ASING ength (feet)	Type of Sh	106	Perfor From	ations To
Diameter (inches)	Pounds per foot	Threads per in.	Section Depth Top	n 3. REC in Feet Botto	ORD OF (	ASING Length (feet)	Type of St		Perfor From	ations To
Diameter (inches) Depth	Pounds per foot	Threads per in. Sect Hole	Section Depth Top	RD OF M		ASING ength (feet)	Type of Sh		Perfor From	ations To
Diameter (inches) Depth From	Pounds per foot in Feet To	Threads per in. Sect Hole Diameter	Section Depth Top	n 3. REC in Feet Botto RD OF M ks ud	UDDING	ASING ength (feet)	Type of St	noe	Perfor From ement	ations To
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Diameter (inches) Depth From	Pounds per foot in Feet To	Threads per in. Sect Hole Diameter	Section Depth Top	n 3. REC in Feet Botto RD OF M ks ud	UDDING	ASING Length (feet)	Type of St	noe	Perfor From ement	ations To
Diameter (inches) Depth From	Pounds per foot in Feet To	Threads per in. Sect Hole Diameter	Section Depth Top	n 3. REC in Feet Botto RD OF M ks ud	UDDING	ASING Length (feet) AND CE: Teet ent	Type of Sh	noe	Perfor From ement	ations To
Diameter (inches) Depth From	Pounds per foot	Threads per in. Sect Hole Diameter	Section Depth Top	n 3. REC in Feet Botto RD OF M ks ud	ORD OF (	ASING Length (feet) AND CE: Teet ent CORD	Type of Sh	noe	Perfor From ement	ations To
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Diameter (inches) Depth From ugging Contra ddress <u>Room</u> ugging Metho ate Well Plugg	Pounds per foot	Threads per in. Sect Hole Diameter ps Petrol Penbrook, hole from iary 11, 1	Section Depth Top tion 4. RECO Saclor of M Section Leum Compa Odessa, 7 350' (TD) 982	n 3. REC in Feet Botto RD OF M ks ud on 5. PLUC any fx 79 to surf	ORD OF ( Dom UDDING Cubic   of Cent GGING RI 762 ace wit Sand	ASING Length (feet) AND CE Teet ent CORD No.	Type of Sh MENTING Meth Depth in Top Surface	noe nod of Plac nod of Plac	Perfor From ement Cul of	ations To Dic Feet Cement f111
Diameter (inches) Depth From Usging Contra ddress Room usging Metho ate Well Plugg	Pounds per foot	Threads per in. Sect Hole Diameter Penbrook, hole from iary 11, 1	Section Depth Top tion 4. RECO Sacl of M Section Leum Compa Odessa, 1 350' (TD) 1982	n 3. REC in Feet Botto RD OF M ks ud on 5. PLUC any Xx 79 to surf	ORD OF ( Dom Dom UDDING Cubic I of Cent GGING RI 762 ace wit Sand	ASING Length (feet) AND CE Teet ent CORD AND. 1 2	Type of Sh MENTING MENTING Meth Depth in Top Surface	noe nod of Plac	Perfor From ement ement	ations To View of the set Cement fill
Diameter (inches) Depth From Usging Contra daress Room usging Metho ate Well Plugg	Pounds per foot	Threads per in. Sect Hole Diameter Penbrook, hole from tary 11, 1	Section Depth Top tion 4. RECO Sacl of M Section Leum Comps Odessa, 1 350' (TD) 1982	n 3. REC in Feet Botto RD OF M ks ud on 5. PLUC any Xx 79 to surf	ORD OF ( Dom Dom UDDING Cubic I of Cent GGING RI 762 ace wit Sand	ASING ength (feet) AND CE Feet ent CORD CORD AND. 1 2 3	Type of Sh MENTING MENTING Meth Depth in Top Surface	noe nod of Plac nod of Plac a Feet Bottom 350 '	Perfor From ement Cui of sand	ations To View of the set of the

Jate Received

File No

Use Location No.

FSL

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From	То	in Feet	Color and Type of Material Encountered	l		
<b>0</b>	10	10	blow sand	-		
10	20	10	caliche			í .
20	50	30	Ted sand			
50	80	30				1
80	85	5.				*
85	100	15				
	135	35	red dirt			
135	170	35	gray hard play	ĺ		
170	174	4	red clay & rock	 		
174	235	61	gray hard clay			
235	237	2				•
237	250	13	gray clay			
250	280	30	red had some orginal			
280	310	30	gray rock	r		
310	335	25	white rock red bed			
335	350	15	red bed	• •		
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1	- <b>f</b>	Section	7. REMARKS AND ADDITIONAL INFORMATION			
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- <b>-</b>	•					<u>F</u>
Plugging	report			i		
<b>j</b> .			· · · ·	:		- 
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The undersigned ho	med hereby certi de.	ifies that, to the	a best of his knowledge and belief, the foregoing is a true and correct record of the above			
_ <b>_</b>	•		file	• .	•	
WETBUCT	IONS: This form	should be seen	Operator: Phillips Petroleum Company	:		
of the State	Engineer. All a	when this form	Section S, shall be answered as completely and submitted to the appropriate district office section S, shall be answered as completely and accurately as possible when any well is in test as a bluewing when any well is		•	f
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Section	1.	GENER	AL.	INFO	RM/	TI	Ò١

Owner of Street or l City and S	wellPh Post Office Ad State	illips Petr ddress <u>Ra</u> Od	coleum Co com 401, lessa, TX	4001 1 79	Penbrool 762	c St.		wner's Well N	<u>oCP-64</u>	2 (explo:
was drilled	under Permit	No. CP-642	(Explora	tory)	and	is located	in the: #3-	-450'N 6	00'E	
a	_ % }	4 ¥	¼ of Sec	tion	2 <u>5                                    </u>	ownship	195	Range	31E	N.M.P.M.
b. Tract !	No0	of Map No.	· ,	•	of the	· .				
c. Lot No	». <u> </u>	of Block No			of the		<u></u>			
Subdiv	ision, recorde	d in	<u>Faav</u>		Count	у.			1	
d. X= the		feet, Y=		fe	eet, N.M. C	oordinate	System			Zone in Grant.
Drilling C	ontractor	Larry's	Drilling	<u> </u>			License No	WD	882	
1 <del>638</del>		2601 W.	Bender	Hobb	s, NM					
ling Began _	2_10	-82 Comp	leted	2-11-1	82 Ty	e tools	tri-cone	Size	of hole_	<u>4-3/4_in</u>
ation of lan	d surface or				at well is		ft. Total de	pth of well_	260	ft.
pieted well	.is 🖸 1	hallow 🗆 a	rtenan. te	st ho	le Depi	h to water	upon comple	tion of well_	220	ft,
		Sect	ioa 2. PRINC	PAL W	ATER-BE	ARING ST	RATA			
Depth i	n Feet	Thickness in Feet	D	escriptio	on of Wate	-Bearing F	ormation	E	timated	Yield Disute)
From	10									
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1		<u>I</u>								
Diameter	Pounds	Threads	Depth i	3. REC n Feet		ength	Type of	Show L	Perfor	ations
(inches)	per foot	per in.	Тор	Botto	om	(feet)	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		From	To
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Denth i	n East	Sectio	a 4. RECOR	D OF M	UDDING	AND CEM	ENTING	····	-	•
From	То	Diameter	of Mu	d.: .	of Cen	ent		thod of Plac	ement "	
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	<u></u>				ļ				·	
			Section	5. PLU	GGING RI	CORD		. •		
ging Contra	ctor Phill 401 4001	ips Petrole	Company	ay sa. T	x 79762	,				
ging Method	Sand fil	1 from 260	' (TD) to	surfa	ace	No,	Depth Top	in Feet Bottom	- Cu of	bic Feet Cement
Well Plugge	ed Febr	uary 12, 19	982			<b>L</b>	surface	260	gan	d £111
ang approx		State Engi	neer Benreser	tative		3		<u> </u>		
						4		1		
			FOR USE C	F STAT	re engin	EER ONL'	۲ · · · ·		,	•
Received		•						• •		

2 12	2	2	blow sand
2	12		
12		10	caliche
	36	24	sand
36	60	24	caliche
60	94	34	red dirt hard
94 1	.02	8	gray clay & rock
102 1	14	12	red dirt
114 1	16	2	gray rock
116 1	.30	14	red bed
130 - 1	68	38	gray rock
168 1	.72	4	red bed
172 1	.80	8	gray rock
180 2	10	30	red bed
210 2	23	13	gray rock
223 2	35	12	damp red bed
235 2	40	5	gray rock
240 2	60	20	red bed
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		Section 7	. REMARKS AND ADDITIONAL INFORMATION
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Plugging recor	rd		· · · · · · · · · · · · · · · · · · ·
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×		·	
The undersigned her	reby certifie	s that, to the	best of his knowledge and belief, the foregoing is a true and correct record of the above
issended hole.	•	•	Aprilie
			Hoeller - Sr. Engineering Specialist
NSTRUCTIONS: T	his form sho er. All secti	ould be executions, except S	ted in triplicate, preferably typewritten, and submitted to the appropriate district office section 5, shall be answered as completely and accurately as possible when any well is

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TATE	OFFICE
WELL RECO	RD



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) Owner of									(P
Street or	Fost Office Ac	idressR	00m 401, 4	any 4001 Penbro	ok St.	Owr	ner's Well N	10. <u>CP04 1</u>	(EXPIO
City and	State	0	dessa, Ter	<u>xas 79762</u>					
ell was drilled	d under Permit	No. <u>CP-641</u>			and is located	in the: #4 1	600' FN	L 1600'	FWL
a	¼° ¥	۵ X۵	¼ of Se	ction <u>36</u>	_ Township	<u>145                                    </u>	ange	31E	N.M.P.M
b. Tract	No	of Map No	o,	of the _	· · ·			<u> </u>	
c. Lot N	o	of Block No.		of the					
Subdr	vision, recorde	a 1a	Eddy	Co	unty.	•		•	
d. X= the	· · · · · · · · · · · · · · · · · · ·	_ feet, Y=		feet, N.M	. Coordinate	System			Zone iz Grant
) Drilling (	Contractor	Larry's	Drilling			License No	WD8	82	
dress		<b>2</b> 601 W.	Bender	Hobbs, NM	88240				
illing Barry	2_11_82			2_12_82	Type teels		8:	at hale of	34
uing segan		Con			Type (0013		5126	OI DOIS 7	m
rvation of la	nd surface or	··		at well	is	ft. Total dep	th of well	•	<u>300</u> ft
mpleted wel	lis 🗆 s	hallow 🗖 .	artesian. t	est hole D	epth to water	upon completio	on of well _	•	250 ft
			etion 2 PRIN	CIPAT WATER.	BEARING ST	"ፑልፕል			
Depth	in Feet	Thicknes	<b>S</b>		DEAILING S		Es	stimated Y	ield
From	To	in Feet		Description of W	ater-Bearing H	ormation	(gall	ons per m	inute)
							-		
····		•			· · · · · · · · ·		+		
							_		
			-						
		•	Sectio	n 3. RECORD C	F CASING			-	
Diameter	Pounds	Threads	Depth	in Feet	Length	Type of SI		Perfor	ations
(inches)	per foot	per in.	Тор	Bottom	(feet)	1700 01 31		From	To
1.x 5 <sup>1</sup> 1	160PVC	ļ				<u> </u>			
1.x 5 <sup>1</sup> 1	160PVC		0	220'					
<u>نا x</u> 54	160PVC		0	220'	······································				
1 x 5 <sup>1</sup> 2	160PVC			220'		ENTING			
z x 5 <sup>1</sup> z Depth	in Feet	Sect	0 tion 4. RECO	220' RD OF MUDDIN	IG AND CEM	ENTING			
2 x 5 <sup>1</sup> 2 Depth From	in Feet	Sect Hole Diameter	0 tion 4. RECO Sach of Mi	220' RD OF MUDDIN cs Cub ud of C	IG AND CEM ic Feet Cement	ENTING Meti	nod of Plac	ement	
z x 5½ Depth From	in Feet	Sect Hole Diameter	0 tion 4. RECO Sack of Mi	220' RD OF MUDDIN cs Cub ud of C	IG AND CEM ic Feet Cement	ENTING Meti	nod of Plac	ement	
يزيد کي Depth From	in Feet	Sect	0 tion 4. RECO Sack of Mi	220' RD OF MUDDIN cs Cub ud of C	IG AND CEM ic Feet Cement	ENTING Meti	nod of Plac	cement	
يزيد کي Depth From	in Feet	Sect Hole Diameter	0 bion 4. RECO Sack of Mi	2201 RD OF MUDDIN cs Cub of C	IG AND CEM ic Feet Cement	ENTING Met	nod of Plac	ement	
ير x 5 Depth From	in Feet	Sect Hole Diameter	0 bion 4. RECO Sack of Mi	220 <sup>1</sup> RD OF MUDDIN cs Cub ud of C	IG AND CEM ic Feet Cement	ENTING Meti	hod of Plac	eement	
يزيد كلي Depth From	in Feet	Sect	0 tion 4. RECO Sack of Mi	220' RD OF MUDDIN cs Cub ud of C	IG AND CEM ic Feet Cement RECORD	ENTING Meti	nod of Plac	rement	
ي x 5 ي Depth From	in Feet To	Sect Hole Diameter	0 bion 4. RECO Sack of Mi Section oleum Comp	2201 RD OF MUDDIN cs Cub of C ud of C	IG AND CEM ic Feet Cement RECORD	ENTING Met	hod of Plac	ement	
Depth From gging Contra dressRoc	in Feet To Dim 401, 400, 401, 401, 401, 401, 401, 401,	Sect Hole Diameter	0 bion 4. RECO Sach of Mi Sectio oleum Comp oleum Comp ok St., Oct	220' RD OF MUDDIN cs Cub ud of C n 5. PLUGGING pany lessa, TX 79	IG AND CEM ic Feet Cement RECORD	ENTING Meti	nod of Plac	ement Cut	Dic Feet
z x 5½ Depth From gging Contra dress <u>Roc</u> gging Metho te Well Plugg	actor Ph11. m 401, 400 M Sand f. red Februa:	Sect Hole Diameter 11ps Petr 01 Penbroo 111, CIBP ry 13, 19	0 tion 4. RECO Sack of Mi Section oleum Comp ok St., Oc , cement 82	220' RD OF MUDDIN cs Cub ud of C n 5. PLUGGING pany lessa, TX 75	IG AND CEM ic Feet Cement RECORD	ENTING Meti Depth is Top 120	nod of Plac	cement	oic Feet Cement fill
Depth From Gress Roc Igging Metho te Well Plugg gging approv	in Feet To To Jon 401, 400 Jon 401, 400 Jon 5 and f: red Februar	Sect Hole Diameter 11ps Petro 01 Penbroo 111, CIBP ry 13, 190	0 Sach of Mi Section oleum Comp ok St., Oct , cement 82	2201 RD OF MUDDIN cs Cub ud of C ud of C	IG AND CEM ic Feet Cement RECORD	ENTING Met Depth in Top 120 120	n Feet Bottom 300	cut cut of sand CIBP	oic Feet Cement fill
Depth From From dress <u>Roc</u> agging Metho te Well Plugg igging approv	in Feet To Dom 401, 400 ad Sand f. ged Februar ved by:	Sect Hole Diameter 11ps Petro 01 Penbroo 111, CIBP ry 13, 19 State En	0 Section 4. RECOL Sack of Mi Section Section Section oleum Comp ok St., Oc , Cement 82 gineer Represe	220' RD OF MUDDIN cs Cub ud of C n 5. PLUGGING pany lessa, TX 79 entative	IG AND CEM ic Feet Cement RECORD 0762 No. 1 2 3 4	Depth ii Top 120 120' 10'± 10'	n Feet Bottom 300 120 110±	cut cont cont cont cont cont cont cont con	ic Feet Cement fill eg_ceme fill
Depth From Comparing Contra dress <u>Roc</u> agging Metho te Well Plugg sging approv	in Feet To To actor	Sect Hole Diameter Ins Petro Ol Penbroo 111, CIBP ry 13, 190 State En	0 tion 4. RECO Sack of Mi Section oleum Comp ok St., Oc , cement 82 gineer Represse FOR USE	220' RD OF MUDDIN cs Cub ud of C ud of C n 5. PLUGGING Dany lessa, TX 75 cntative	IG AND CEM ic Feet Cement RECORD 976 1 2 3 4 UNEER ONI	Depth in Top 120 120' 110'± 10' SUrface	n Feet Bottom 300 120 110± 10 <sup>1</sup>	Cut of 0 sand CIBP lsx r sand i sx	bic Feet Cement fill <u>eg ceme</u> fill reg ce
Depth From Geging Contra Idress Roc Igging Metho te Well Plugg Igging approv	in Feet To To M 401, 400 M 5and f ged Februar	Sect Hole Diameter 11ps Petro 01 Penbroo 111, CIBP ry 13, 190 State En	0 bion 4. RECO Sach of Mi Sectio oleum Comp ok St., Oc , cement 82 gineer Repress FOR USE	220' RD OF MUDDIN cs Cub ud of C n 5. PLUGGING patry lessa, TX 7' entative OF STATE ENC	IG AND CEM ic Feet Cement RECORD 7762 1 2 3 4 SINEER ONL	Depth is Top 120 120' 110'± 10' Surface Y	n Feet Bottom 300 120 10±	cut cut of sand CIBP lsx r sand i sx	bic Feet Cement fill eg ceme fill ig ce
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	From	То	in-Feet	Color and Type of Material Encountered	· F					
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-	1.	2	1.	caliche		•	43. 1911 - 1			
1	2	. 18	16	white sand					•	
	18	40	22	brown sand		1 - 1. 21 - 1				
	40	100	60	brown sand & gravel		14 14				
	100	182	82	brown sand gravel						
8-	182	200	18	brown clay gravel				· .		
And and a	200	292	92	brown clay	-			•		
-	292	300		red bed						
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			Section	7. REMARKS AND ADDITIONAL INFORMATION			•	् अ		
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P	lugging r	eport	2					· . . ·	÷	
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т	he undersigne	d hereby certif	ies that, to the	best of his knowledge and belief, the foregoing is a true and correct record of the above		÷ •	n da Alar			
1	escribed hole.			- Dry M		· · ·				
<b>ہ۔۔</b>				V. Trueller - Sr. Engineering Specialist		. • .				
1	NSTRUCTION	S: This form insinger. All	hould be exec	uted in triplicate, preferably typewritten, and submitted to the appropriate district office Section 5 that he neward as completely and security with the second section of the second section with the						
ر لو	irilied, repaired	d or deepened.	When this form	is used as a plugging record, only Section 1(a) and Section 5 need be completed.						
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Ed LaReed and Associates Inc.

Consulting Hydrologists MIDLAND - CORPUS CHRISTI TEXAS

EO.L. REED. P.E. CHAIRMAN OF THE BOARD A. JOSEPH REED PRESIDENT CHESTER F. SKRABACZ CE PRESIDENT FIELD OPERATIONS 1109-N. BIG SPRING

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MIDLAND, TEXAS 79701 915 682-0556

V. STEVE REED EXECUTIVE VICE PRESIDENT OIL INDUSTRIES BLDG. SUITE 315 723 UPPER N. BROADWAY CORPUS CHRISTI, TEXAS 78403 512-883-1353

January 24, 1984

Mr. J. W. Maharg Engineering Director Permian Basin Region Phillips Petroleum Company Odessa, Texas 79762

> Re: Ground Water Monitoring Program Lusk Gasoline Plant Impoundment Lea County, New Mexico

Dear Mr. Maharg:

This letter presents the information you requested in your letter of January 18, 1984 concerning development of a ground water sampling program for the Lusk Gasoline Plant Impoundment. The information needed are as follows: a. Optimum monitor well placements.

b. Completion plans for monitor wells.

c. Sampling procedure.

### Monitor Well Locations

The basic requirement for the placement of the monitor wells is the positioning of three wells down the hydraulic gradient from the impoundment and at least one well up-gradient from the impoundment. The down-gradient wells will enable sampling of contaminant that may be present in the uppermost aquifer as a result leaching from the impoundment. The up-gradient well will enable sampling of uncontaminated ground water.

The uppermost formation of water-bearing potential consists of Quaternary alluvium fill. This is underlain by red and gray clays of Triassic age.

Fluid movement in the alluvium may be controlled by the topography of the Triassic surface since the alluvium is apparently not saturated. In this area the Triassic surface dips to the southeast at a relatively steep slope of 50 feet per mile.

The proposed locations for the monitor wells are shown on the

attached map. These are based on the anticipated direction of fluid movement which is southeast and on the need to drill the down-gradient wells as close as possible to the impoundment.

### Construction Plans

The attached well profile diagram shows the design that is proposed for construction of the monitor wells. We recommend that a 12-inch hole be drilled to a depth of about 15 feet (base of caliche cap) and 8-inch steel casing cemented in place. After the cement has solidified a 6-3/4-inch hole should be air-drilled to the Triassic surface (approximately 50 feet) then the well cased with 4-inch PVC pipe and gravel packed. About 2 feet of clean sand should be placed above the gravel pack and the remainder of the hole cemented to the surface (about 13 feet of cement).

Although we anticipate that the alluvium is mostly unsaturated, care should be taken during the drilling of the 6-inch hole to sample any fluid encountered at regular intervals if possible.

### Sampling Procedure

Once the well is constructed it should be developed by pumping or jetting depending on whether enough water is present. Development is complete when the pumped or bailed water is free of mud and sand. At this point a water sample should be collected and properly labeled.

Subsequent sampling of the monitor wells should be done on a regular basis; every three months would be adequate. Before collecting a sample the well should be pumped or bailed so that at least three casing volumes of water are removed. This will ensure that a representative ground water sample is obtained.

If you have any questions concerning this matter please call on us.

Very truly yours,

ED L. REED & ASSOCIATES, INC.

Ed L. Reed, P. E.

ELR:1b



# PHILLIPS PETROLEUM COMPANY ODESSA TEXAS 79762 4001 PENBROOK

NATURAL RESOURCES GROUP Exploration and Production

Lusk Gasoline Planr Discharge Plan

March 8, 1982

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Mr. Joe D. Ramey New Mexico Oil Conservation Commission P. O. Box 2088 Santa Fe, New Mexico 87501

Dear Mr. Ramey:

We have recently completed the drilling and sampling of four exploratory water wells, near our Lusk Plant facility, to determine if there is a need for groundwater protection in the area near our facility. The following actions were taken to determine this:

- 1. Information was secured from the State Engineers Office on the redbed depth in a Township area surrounding Lusk Plant.
- 2. The depth information was contoured by our geological section from which possible troughs and closures in the redbeds were isolated.
- 3. Four exploratory well locations were spotted where groundwater accumulation was possible. These locations were down dip from the plant and would be most susceptible to contamination from the plant.
- 4. The four exploratory wells were drilled. Wells #1 through #3 were drilled entirely with air. Well #4 was drilled with water to a depth of 220 feet due to hole condition. At this point casing was set, and the well was completed with air to a depth of 300 feet.

5. The four wells were allowed to stand overnight as there was not enough water upon completion for sampling. At time of sampling there was approximately 15 feet of water in Well #1, 5 feet of water in Well #2, 40 feet of water in Well #3 and 50 feet of water in Well #4.

Attached are the water analyses and drilling reports from these four wells. From these we do not feel that the subsurface water around Lusk Plant qualifies as "groundwater", per Section 1-101, Part M of the Water Quality Control Regulations, as sufficient amounts of water were not present to be utilized as a water supply. Mr. Joe D. Ramey Lusk Gasoline Plant Discharge Plan

March 8, 1982 Page 2

It is our interpretation of the Water Control Regulations, Part 3, that if there is no "groundwater" to protect, we are not subject to filing a discharge plan.

If you have any questions regarding this matter, please contact Bob Stubbs at (915) 367-1302.

Very truly yours,

E. E. Clark Manager, Permian Basín Region

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RGS:jj Attachments

NRE 543-1314 OR 183-1045       PHONE 883-4821         INT: BOD Stubbs       SAMPLE RECEIVED       As listed         0011 Penbrook, Odessa, Texas       RESULTS REPORTED       2-18-82         MFA: BOD Stubbs       SAMPLE RECEIVED       As listed         0011 Penbrook, Odessa, Texas       RESULTS REPORTED       2-18-82         MFA: BOD Stubbs       SURVEY       Lusk Gas Plnat         CLO OR POOL       Lusk       STATE         TION       BLOCK       SURVEY       COUNTY         JACE OF SAMPLE AND DATE TAKEN:       NO. 1       STATE         NO. 2       Recovered water - taken from test hole #1 (approx. 15' water in hole). 2-10-5         NO. 3       Recovered water - taken from test hole #2 (approx. 40' water in hole). 2-12-62         NO. 4       Recovered water - taken from test hole #2 (approx. 5' water in hole). 2-12-62         NO. 4       Recovered water - taken from test hole #2 (approx. 15' water in hole). 2-12-62         NO. 4       Recovered water - taken from test hole #1 (approximately 50' water in hole). 2-12-62         NO. 4       Recovered water - taken from test hole #1 (approximately 50' water in hole). 2-12-62         NO. 4       Recovered water - taken from test hole #1 (approximately 50' water in hole). 2-12-62         NO. 4       Recovered water - taken from test hole #1 (approximately 50' water in hole). 2-12-62
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OMPANY       Phillips       Petroleum Company       LEASE       Lusk         IELD OR POOL       Lusk         ECTION       BLOCK       SURVEY       COUNTY       Lea       STATE       MM         DURGE OF SAMPLE AND DATE TAKEN:       NO.1       Recovered water - taken from test hole #1 (approx. 15' water in hole). 2-10-6         NO.2       Recovered water - taken from test hole #2 (approx. 5' water in hole). 2-12-82         NO.4       Recovered water - raken from test hole #4 (approximately 50' water in hole). 2-12-82         NO.4       Recovered water - raken from test hole #4 (approximately 50' water in hole). 2-12-82         NO.4       Recovered water - raken from test hole #4 (approximately 50' water in hole). 2-12-82         NO.4       Recovered water - raken from test hole #4 (approximately 50' water in hole). 2-12-82         NO.4       Recovered water - raken from test hole #1 (approx. 5' water in hole). 2-12-82         NO.4       Recovered water - raken from test hole #1 (approx. 5' water in hole). 2-12-82         NO.4       Recovered water - raken from test hole #1 (approx. 5' water in hole). 2-12-82         NO.5       Recovered water - raken from test hole #1 (approx. 5' water in hole). 2-12-82         NO.4       Recovered water - raken from test hole #1 (approx. 5' water in hole). 2-12-82         NO.5       NO.4       Recovered water - raken from test hole #1 (approx. 5' water in hole). 2-12-82<
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Samples taken by Robert C. Middleton, Mertin Water Lab           CHEMICAL AND PHYSICAL PROPERTIES           No. 1         No. 2         No. 3         No. 4           Specific Gravity at 50° F.         1,0020         1.0012         1.0045         1.0016           pH When Sampled         1         1         1.0020         1.0012         1.0045         1.0016           pH When Received         7.96         7.82         7.99         7.54           Bicarbonate as HCO3         224         229         181         259           Supersaturation as CaCO3         0         0         0         0         0           Undersaturation as CaCO3         350         244         2,300         356           Catcium as Ca         62         54         560         82           Magnesium as Mg         47         26         219         36           Sodium and/or Potassium         131         26         296         43           Sulfate as S04         371         61         2,588         157           Chtoride as Cl         45         34         75         51           Jron as Fe         0.50         5.7         0.63         0.17
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Specific Gravity at 60° F.         1.0020         1.0012         1.0045         1.0016           pH When Sampled         7.96         7.82         7.99         7.54           Bicarbonate as HC03         224         229         181         259           Supersaturation as CaC03         0         0         0         0           Undersaturation as CaC03         0 <td< td=""></td<>
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pH When Received         7.96         7.82         7.99         7.54           Bicarbonate as HCO3         224         229         181         259           Supersaturation as CaCO3         0         0         0         0           Undersaturation as CaCO3         0         0         0         0         0           Total Hardness as CaCO3         0         10         0         0         0         10         0         0         0         10         0         10         10         10         10         10         10         10         10         10         10         10         10         10
Bicarbonate as HCO3       224       229       181       259         Supersaturation as CaCO3       Undersaturation as CaCO3       100       100       100         Undersaturation as CaCO3       350       244       2,300       356         Calcium as Ca       62       54       560       82         Magnesium as Mg       47       26       219       36         Sodium and/or Potassium       131       26       296       43         Sulfate as SO4       371       61       2,588       157         Chloride as C1       45       34       75       51          0.50       5.7       0.63       0.17         Barium as Ba       10.50       5.7       0.63       0.17         Total Solids, Calculated       880       430       3,919       628
Supersaturation as CaCO3         Image: CaCO3         I
Undersaturation as CaCO3         350         244         2,300         356           Calcium as Ca         62         54         560         82           Magnesium as Mg         47         26         219         36           Sodium and/or Potassium         131         26         296         43           Sulfate as SO4         371         61         2,588         157           Chloride as Ci         45         34         75         51           Iron as Fe         0.50         5.7         0.63         0.17           Barium as Ba             26           Turbidity, Electric            20.63         0.17           Color as Pt             20.62         28           Temperature °F.            20.53         3.919         62.8
Total Hardness as CaCO3       350       244       2,300       356         Calcium as Ca       62       54       560       82         Magnesium as Mg       47       26       219       36         Sodium and/or Potassium       131       26       296       43         Sulfate as SO4       371       61       2,588       157         Chloride as Cl       45       34       75       51         Jron as Fe       0.50       5.7       0.63       0.17         Barium as Ba       1       1       1       1       1         Turbidity, Electric       1       1       1       1       1       1         Color as Pt       1
Calcium as Ca       62       54       560       82         Magnesium as Mg       47       26       219       36         Sodium and/or Potassium       131       26       296       43         Sulfate as SO4       371       61       2,588       157         Chloride as Cl       45       34       75       51        lron as Fe       0.50       5.7       0.63       0.17         Barium as Ba             Turbidity, Electric             Color as Pt             Total Solids, Calculated       880       430       3,919       628         Carbon Dioxide, Calculated
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Solitate as 304     371     61     2,588     157       Chloride as Ci     45     34     75     51       .clron as Fe     0.50     5.7     0.63     0.17       Barium as Ba     0     0     0     0       Turbidity, Electric     0     0     0       Color as Pt     0     0     0       Total Solids, Calculated     880     430     3,919       Carbon Dioxide, Calculated     0     0     0
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Barium as Ba     0.50     5.7     0.65     0.17       Barium as Ba     Image: Constraint of the second seco
Turbidity, Electric     Image: Color as Pt       Color as Pt     Image: Color as Pt       Total Solids, Calculated     880       Temperature °F.     Image: Color as Pt       Carbon Dioxide, Calculated     Image: Color as Pt
Color as Pt
Total Solids, Calculated     880     430     3,919     628.       Temperature °F.     Carbon Dioxide, Calculated     628.     628.
Temperature °F.     Carbon Dioxide, Calculated
Carbon Dioxide, Calculated
Dissolved Oxygen. Winkler
Hydrogen Sulfide 0.0 0.0 0.0 0.0
Resistivity, ohms/m at 77° F. 8-90 19-50 2.00 13.50
Suspended Oil Unle #1 Hole #3 Hole #2 Hole #4
Filtrable Solids as mg/1
Volume Filtered, ml
Results Reported As Milligrams Per Liter

Waylan C. Martin, M. A.

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101		943	<b>.</b> 	<b>194</b> . Sig	OR		8-1			30°1 6 - 743	7-7	<u></u> ]	RES	UL	Т	OF	W	۱T (	ER	AN	AL	YSE	Ś	- :- 1,

					LABORA	TORY NO	282216	· .	
τo		Mr. Bob Stu	ıbbs		SAMPLE	RECEIVED	2-12-82	_1	
2	4001	Penbrook (	)dessa. Texas		RESULTS	REPORTED	2-18-82		
cc	MPANY	Phillips ]	Petroleum Con	pany	LEASE	Lusk Gas J	Plant		
_,		Bool	r		Lusk				

 FIELD OR POOL
 LUSK

 SECTION
 BLOCK
 SURVEY

 SOURCE OF SAMPLE AND DATE TAKEN:
 SOURCE OF SAMPLE AND DATE TAKEN:

NO. 1 Raw water - taken from water tank @ plant. 2-12-82

NO. 2

1 7

NO. 3 \_

NO. 4

REMARKS: \_\_\_\_\_\_ Water used to drill test hole #4

CHEMICAL A	AND PHYSICAL P	ROPERTIES		CHEMICAL AND PHYSICAL PROPERTIES								
	NO. 1	NO. 2	NO. 3	NO. 4								
Specific Gravity at 60° F.	1.0010											
pH When Sampled												
pH When Received	8.19											
Bicarbonate as HCO3	181											
Supersaturation as CaCO3												
Undersaturation as CaCO3												
Total Hardness as CaCO3	214											
Calcium as Ca	67											
Magnesium as Mg	11											
Sodium and/or Potassium	27		···									
Sulfare as SO4	26											
Chloride as Cl	57											
Iron as Fe	0.11											
Barium as Ba												
Turbidity, Electric			ji									
Color as Pt												
Total Solids, Calculated	379											
Temperature °F.	Ļ			ļ!								
Carbon Dioxide, Calculated	ļ/			ļ								
Dissolved Oxygen, Winkler	ļ	ļ		ļ								
Hydrogen Sulfide	0.0											
Resistivity, ohms/m at 77° F.	19.95	· · · · · · · · · · · · · · · · · · ·		· · ·								
Suspended Oil	Ĺ/											
Filtrable Solids as mg/1	<b>ل</b> ــــــا											
Volume Filtered, ml	<u> </u> /											
Carbonate, as CO3	10											
	<u> </u>											
	<u></u>	L										
	Ceported As Milligrams	s Per Liter	· · · · · · · · · · · · · · · · · · ·	1								
Additional Determinations And Remarks The unders	<u>signed certii</u>	ies the above	to be true	and correct								
to the best of his knowledge and be	liet.											
			<u> </u>									
	<u> </u>	······································										
	<u> </u>											
		بريدانككان وببعي كالمحادث والمروي فكالتب										

Form No. 3

AHANS, TEXAS 79756 43-3234 OR 563-1040

BOX 1468

Martin Water Laboratories, Inc. WATER CONSULTANTS SINCE 1953 BACTERIAL AND CHEMICAL ANALYSES

709 NDIANA MIDLAND. TEXAS 79701 PHONE 683-4521

To: Mr. Bob Stubbs 4001 Penbrook Odessa, TExas

Laboratory No.	282215
Sample received	2-10-82
Results reported	2-18-82

Company: Phillips Petroleum Company

County: Lea, NM.

Lusk Gas Plant Lease:

Subject: To make determinations listed on water from test hole #1. Sample taken by Robert C. Middleton, Martin Water Labs., Inc. on 2-10-82

DETERMINATION			MG/L
<u>A.</u>	Human Health	Standards	
Arsenic, as As			0.000
Barium, as Ba			0.0
Cadium, as Cd		· · · · ·	0.00
Chromium, as Cr	• •		0.04
Cyanide, as CN			0.0
Fluoride, as F			1.2
Lead, Pb			0.0
Total Mercury, as Hg			0.000
Nitrate, as N			1.1
Selenium, as Se		· · · ·	0.00
Silver, as Ag		· · · ·	0.00
<u>B. Other Sta</u>	ndards for Don	mestic Water	Supply
Chloride, as Cl	•		45

Copper, as Cu 0.00 Iron, as Fe. 0.50 Manganese, as Mn 0.00 Phenols 0.0

Sulfate, as SO4

1993. Alak		LADUIALULYNO	202215	(Page 2)
	<u>DETERMINATION</u>	<u>MG/L</u>		
	Total Dissolved Solids	794		
	Zinc, as Zn	0.00		
	<b>pH</b>	7.96		
	C. Standards for Irrigation Use			
	Aluminum, as Al	0.00		
	Boron, as B	0.0		
	Cobalt, as Co	0.00		
	Molybdenum, as Mo	0		
	Nickel, as Ni	0.0		· ·

<u>Remarks</u>: The undersigned certifies the above to be true and correct to the best of his knowledge and belief.

Waylan C. Martin, M. A.

		Martin Water Lat	boratories, Inc.			
P. O. BOX 146 MONAHANS. TEXAS	8 79756 3-1040	WATER CONSULTAN	NTS SINCE 191 Iemical Analy	SES	709 W. MIDLAND, PHONE	INDIANA TEXAS 79701
To: Mr.H 4001 Odes	ob Stubbs Penbrook sa, Texas			Laboratory No. Sample received Results reported	282219 2-12-82 2-18-82	
Company: County: Field: Lease:	Phillips Petroleum Lea, NM Lusk Lusk Gas Plant	Company				
<u>subject</u> :	Robert C. Middleton	ons listed on w , Martin Water	Labs., Inc	test hole #2. Sa . 2-12-82.	mple taken 1	Э <b>у</b>
ii ,	DETERMINATION			<u>MG/L</u>		
		A. Human Health	Standards			
	Arsenic, as As	• • .		0.000		
	Barium, as Ba			0.0	• • • • •	
	Cadmium, as Cd		· · ·	0.00		
, :,	Chromium, as Cr		•••	0.04		
•	Cy <b>a</b> nide, as CN		•	0.0	· · · · · · · · · · · · · · · · · · ·	
	Fluoride, as F		<u>.</u>	0.8		
	Lead, as Pb			0.0		· · · ·
	Total Mercury, as H	g	• •	0.000		
	Nitrate, as N			3.4	• •	· . ·
	Selenium, as Se			0.00	•	
	Silver, as Ag		•	0.00	•	· · · · ·
in an	B. Other S	Standards for	Domestic W	ater Supply		· · ·
en e	Chloride, as Cl			75		
	Copper, as Cu	•		0.00		
	Iron, as Fe			0.63		
	Manganese, as Mn			0.00		1
	Phenols			0.0		
	Sulfate, as SO <sub>4</sub>			2,588		

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di con

Tatal Di	<u>MG/L</u>
lotal Dissolved Solids, Evaporated	4,426
Zinc, as Zn	0.00
- <b>pH</b>	7.99
<u>C. Standards for Irri</u>	Igation Use
Aluminum, as Al	0.00
boron, as B	0.0
Cobalt,as Co	0.00
Molybdenum, as Mo	0
Nickel, as Ni	0

(Page 2)

10.

<u>Remarks</u>: The undersigned certifies the above to be true and correct to the best of his knowledge and belief.

Waylan C. Martin, M. A.

Martin Water Laboratories, Inc. WATER- CONSULTANTS SINCE 1953 EXAS 79758 BACTERIAL AND CHEMICAL ANALYSES OR 563-1040

> Mr. Bob Stubbs 4001 Penbrook Odessa, Texas

Laboratory No. 282218 Sample received 2-10-82 Results reported 2-18-82

709

MIDLAND, TEXAS 79701

PHONE 683-4521

🔆 Compan	y: Phillips Petroleum Company	7
County	: Lea, NM	
Field:	Lusk	
Lease:	Lusk Gas Plant	1:: • •

Subject: To make determinations listed on water from test hole #3. Sample taken by Robert C. Middleton, Martin Water Labs., Inc. 2-10-82.

DETERMINATION	MG/L
A. Human Health Standards	
Arsenic, as As	0.000
Barium, as Ba	0.0
Cadmium, as Cd	0.00
Chromium, as Cr	0.04
Cyanide, as CN	0.0
Fluoride, as F	0.8
Lead, as Pb	0.0
Total Mercury, as Hg	0.000
Nitrate, as N	5.7
Selenium, as Se	0.00
Silver, as Ag	0.00
B. Other Standards for Domestic Water Supply	• • •
Chloride, as Cl	34
Copper, as Cu	0.00
Iron, as Fe	5.7
Manganese, as Mn	0.00
Pheno1s	0.0
Sulfate, as SO,	61

(Page 2)

	DETERMINATION	MG/L
	Total Dissolved Solids, Evaporated	420
	Zinc, as Zn	0.00
ξ 	pH <u>C. Standards for Irrigation Use</u>	7.82
	Aluminum, as Al	0.00
	Boron, as B	0.0
•	Cobalt, as Co	0.00
•	Molybdenum, as Mo	0
	Nickel, as Ni	0.0

<u>Remarks</u>: The undersigned certifies the above to be true and correct to the best of his knowledge and belief.

Waylan C. Martin, M. A.

HANS TEXAS 79756 3-3234 OR 563-1040



Martin Water Laboratories, Inc. WATER CONSULTANTS SINCE 1953 BACTERIAL AND CHEMICAL ANALYSES

709 INDIANA MIDLAND, TEXAS 79701 PHONE 683-4521.

To: Mr. Bob Stubbs	Laborator N-
4001 Penbrook	Sample received 2 12 22
Odessa, Texas	Besults reported 2-13-82
	hesuits reported 2-18-82
Company: Phillips Petroleum Company	

### County: Lea, NM Field: Lusk ÷e. Lease: Lusk Gas Plant

÷.,

Subject: To make determinations listed on water form test hole #4. Sample taken by Robert C. Middleton, Martin Water Labs., Inc. on 2-13-82.

DETERMINATION	MG/L
A. Human Health Standa	ards
Arsenic, as As	0.000
Barium, as Ba	0.0
Cadmium, as Cd	0.00
Chromium, as Cr	0.02
Cyanide, as CN	0.0
Fluoride, as F	1.0
Lead, as Pb	0.0
Total Mercury, as Hg	0.000
Nitrate, as N	3.4
Selenium, as Se	0.00
Silver, as Ag	0.00
B. Other Standards for Domestic Wa	ater Supply
Chloride, as Cl	51
Copper, as Cu	0.00
Iron, as Fe	0.17
Manganese, as Mn	0.00
Phénols	0.0
Sulfate, as SO,	157
DETERMINATION	<u>MG/L</u>
------------------------------------	-------------
Total Dissolved Solids, Evaporated	598
Zinc, as Zn	0.00
	7.54
C. Standards for Irrigation Use	
Aluminum, as Al	0.00
Boron, as B	0.0
Cobalt, as Co	0.00
Molybdenum, as Mo	0
Nickel, as Ni	0.0

2)

Page

<u>Remarks:</u> The undersigned certifies the above to be true and correct to the best of his knowledge and belief.

Ian C. Martin, M. A.

P. O. BOX 14	68 MATER CONSULTAN	UIALWIIDD, IIIU. TS SINCE 1953	709 W. INDIANA
AHANS. TEXAS 43-3234 OR 5	79756 63-1040	MICAL ANALYSES	MIDLAND, TEXAS 79701 PHONE 683-4521
To: Mr. 400 Ode	Bob Stubbs 1 Penbrook ssa, Texas	Laboratory No. 2 Sample received 2 Results reported 2	82220 -12-82 -18-82
Company: County: Field: Lease:	Phillips Petroleum Company Lea, NM Lusk Lusk Gas Plant		
Subject:	To make determinations listed on wa test hole #4). Sample taken by Ro on 2-12-82.	ter from storage tank @ plant bert C. Middleton, Martin Wat	(used to drill er Labs., Inc.
	DETERMINATION	MG/L	
	A. Human Health	Standards	
e e e e	Arsenic, as As	0.000	
• • • • • •	Barium, as Ba	0.0	
	Cadmium, as Cd	0.00	
•	Chromium, as Cr	0.02	
	Cyanide, as CN	0.0	
• • • •	Fluoride, as F	0.4	
	Lead, as Pb	0.0	
· · ·	Total Mercury, as Hg	0.000	
n in Dana shekar	Nitrate, as N	3.4	en e
	Selenium, as Se	0.00	
	Silver, as Ag	0.00	
	B. Other Standards for D	omestic Water Supply	
	Chloride, as Cl	57	
	Copper, as Cu	0.00	
	Iron, as Fe	0.11	
	Manganese, as Mn	0.00	
	Phenols	0.0	
	Sulfate, as SO <sub>4</sub>	26	

#### DETERMINATION

MG/L Total Dissolved Solids, Evaporated 348 Zinc, as Zn 0.00 pH 👘 8.19 C. Standards for Irrigation Use Aluminum, as Al 0.00 Boron, as B 0.0 Cobalt, as Co 0.00 Molybdenum, as Mo 0 Nickel, as Ni 0.0

<u>Remarks</u>: The undersigned certifies the above to be true and correct to the best of his knowledge and belief.

Waytan C. Martin, Μ.

1900 41

P. O. BOX 1468 10NAHANS, TEXAS 79756 1.943-3234 or 563-1040

Martin Water Laboratories, Inc. WATER CONSULTANTS SINCE 1953 BACTERIAL AND CHEMICAL ANALYSES

709 W. INDIANA MDLAND, TEXAS 79701 Phone 683-4521

To: Mr. Marvin Stevenson 4001 Penbrook Odessa, Texas

Laboratory No. 1281890
Sample received 12-7-81
Results reported 12-14-81

Company: Phillips Petroleum Company

Project: Lusk Plant in Eddy County, NM

Subject: To make determinations listed on waste water from disposal pit. Sampled by James C. Powell, Martin Water Labs., Inc. on 12-7-81.

DETERMINATION	MG/L
A. Human Health Standards	
Arsenic, as As	0.000
Barium, as Ba	0.0
Cadmium, as Cd	0.00
Chromium, as Cr>	16.2
Cyanide, as CN	0.7
Fluoride, as F	> 4.0
Lead, as Pb	1.0
Total Mercury, as Hg	0.000
Nitrate, as N	6.8
Selenium,as Se	0.00%
Silver, as Ag	0.00
B. Other Standards for Domestic Water Supply	<u>7</u>
Chloride, as Cl	522
Copper, as Cu	0.00
Iron, as Fe	0.04
Manganese, as Mn	0.00
Phenols	0.5
Sulfate, as SO,	396

IO: Mr. Marvin Stevenson, Phillips Petroleum Company, Lusk Plant in Eddy County, NM, Laboratory No. 12818 (Page 2)

DETERMINATION	<u>MG/T</u>
Total Dissolved Solids	2,840
Zinc, as Zn	1.50
pH C. Standards for Irrigation	7.9 <u>Use</u>
Aluminum, as Al	0.00
Boron. as B	0.0
Cobalt. as Co	0.00
Molybdenum, as Mo	0
Nickel. as Ni	0.0

<u>Remarks</u>: The undersigned certifies the above to be true and correct to the best of his knowledge and belief.

Μ. Α. Martin, C Way lan

# STATE ENGINEER OFFICE

Revued June 1972:

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Owner of Street or City and	f well Post Office Ac State	ddress	P.C.Be	× 2130		Owne	r's Well No	
ll was drille	i under Permit	No			and is located	in that #1	1200 N 300"F	
a	_ ¼ ¾	4 ¼	¼ of Sec	tion19	Township	19S Rar	FIFE 32E	N.M.P.I
b. Tract	No	of Map No.		of the				
c. Lot N	o	of Block No.		of the				
d. X=	vision, recorde	d in	Lea	C	ounty. M. Coordinate	System		Zone
the			Lar	ru's Dril	ling	· · · · · · · · · · · · · · · · · · ·	WD882	Gran
Drilling (	Contractor		230	1 W. Bendi	er Hobb.	License No 6 , NM 88240		
lling Began	2-8-82	Comr	pleted2-	9 82	Type tools	tri-cone	Size of hole	4 3/4
	na sajitaco or			at well	l is	ft. Total depth	of well <sup>260</sup>	f
npleted wel	ll is sufficient s	hallow 🗆 a Sec	rtesian. <b>te</b> tion 2. PRINC	at wel st hole CIPAL WATER	l is Depth to water R-BEARING ST	ft. Total depth upon completion	of well <u>102</u>	f
mpleted wel Depth From	in Feet	hallow a Sec Thickness in Feet	tion 2. PRINC	at wel <b>5</b> t hole CIPAL WATEF Description of V	l is Depth to water R-BEARING ST Vater-Bearing F	ft. Total depth upon completion RATA ormation	of well <u>102</u> of well <u>102</u> Estimated (gallons per r	f f Yield minute)
npleted wei Depth From	in Feet	hallow a Sec: Thickness in Feet	tion 2. PRING	at wel	l is Depth to water R-BEARING ST Water-Bearing F	ft. Total depth upon completion RATA ormation	of well <sup>260</sup> of well <u>102</u> Estimated (gallons per r	Yield minute)
npleted wel Depth From	in Feet	hallow a Sec: Thickness in Feet	tion 2. PRING	at wel	l is Depth to water R-BEARING ST Water-Bearing F	ft. Total depth upon completion RATA ormation	of well <sup>260</sup> of well <u>102</u> Estimated (gallons per r	Yield minute)
mpleted wel Depth From	in Feet	hallow a Sec Thickness in Feet	rtesian. te tion 2. PRING	at well <b>st</b> hole CIPAL WATER Description of W	I is Depth to water R-BEARING ST Water-Bearing F	ft. Total depth upon completion RATA ormation	of well <sup>260</sup> of well <u>102</u> Estimated (gallons per r	f f Yield minute)
Diameter (inches)	I is since of a second	hallow a Sec: Thickness in Feet	tion 2. PRING	at wel at hole CIPAL WATEF Description of V 13. RECORD in Feet Bottom	I is Depth to water R-BEARING ST Water-Bearing F Water-Bearing F OF CASING Length (feet)	ft. Total depth upon completion RATA ormation Type of Sho	of well 260 of well 102 Estimated (gallons per r	rations To
Depth From Diameter (inches)	I is strate of a s	hallow a Sec: Thickness in Feet Threads per in.	tion 2. PRINO	at well st hole CIPAL WATEF Description of W a 3. RECORD in Feet Bottom	I is Depth to water R-BEARING ST Water-Bearing F Water-Bearing F OF CASING Length (feet)	ft. Total depth upon completion RATA ormation Type of Sho	of well <sup>260</sup> of well <u>102</u> Estimated (gallons per r gallons per r Perfor From	rations
Depth From Diameter (inches)	I is since of a second	hallow a Sec: Thickness in Feet Threads per in.	tion 2. PRING	at wel <b>St hole</b> CIPAL WATEF Description of V an 3. RECORD in Feet Bottom	I is Depth to water R-BEARING ST Water-Bearing F Water-Bearing F OF CASING Length (feet)	ft. Total depth upon completion RATA ormation Type of Sho	of well <sup>260</sup> of well <u>102</u> Estimated (gallons per r gallons per r e <u>Perfor</u> From	rations

Section 4. RECORD OF MUDDING AND CEMENTING

Depth	in Feet	Hole	Sacks Cubic F		Mathed of Discourses
From	То	Diameter	of Mud	of Cement	Method of Placement
	•				
				· · · ·	
					•

Section 5. PLUGGING RECORD

Plugging Contractor	<u> </u>		•	
Address		Depth	in Feet	Cubic Feet
Plugging Method	- NO.	Тор	Bottom	of Cement
Date Well Plugged	- 1			5. 120 Y
Plugging approved by:	2			
······································	- 3	•		
State Engineer Representative	4	· · · · · · · · · · · · · · · · · · ·		

FOR USE OF STATE ENGINEER ONLY

Date Received

File N

Quad

\_\_\_\_\_ Location No

FSL

Denth i	t i	Thickness	
From	To	in Feet	Color and Type of Material Encountered
0	4	4	blow sand
	10	6	caliche
10.	30	20	sand
30	52	22	sand & gravel
52	60	8	red hed R
60	61	1. <b>1</b>	clay gray
61	105	44	red bed ( Jeyth of water -
105	115		gray clay 5 rock
115	117	2	sand black rock
117	152	35	gray/clay & rock
152	162	10	red clay
162	230	58	red clay layers of gray & brown dry clay
230	240	10	red clay
240	244	4	gray green clay
244	250	16	red bed
<u> </u>			
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The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a correct record of the above true described hole.

all il. 1 Driller J ~

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INSTRUCTIONS: This form should be executed in triplicate, preferably typewritten, and submitted to the appropriate district office of the State Engineer. All sections, except Section 5, shall be answered as completely and accurately as possible when any well is drilled, repaired or deepened. When this form is used as a plugging record, only Section 1(a) and Section 5 need be completed.

#### STATE ENGINEER OFFICE WELL RECORD

**Revised** June 1972

Street or City and 'ell was drilled a b. Tract i	Post Office Ad	dressHobi	DA, HH 88240		<u> </u>			
ell was drilled a b. Tract i	under Permit							
ell was drilled a b. Tract l	under Permit I	TECT U	11E EOR ERA	Lo'r	(#/	44 344		•••••
a b. Tract i		No. ILSI NI	ULE FUR EFA	20 and as	located i	n the: *1 722	ON 120	óω
b. Tract	_ ¼ ¼	¥	¼ of Section	Tow	/nshipl	Rang	ge	N.M.P
	No	_ of Map No.		of the				
c. Lot N	0	of Block No		of the				
Subdiv	ision, recorded	in	Lea	County.				
d. X=		. feet, Y=		feet, N.M. Coo	ordinate S	ystem		Zone
the		Larr	s Orlling			U)	2882	Gra
<ol> <li>Drilling C</li> </ol>	ontractor	2601	W. Bender	Hebbs, HM	\$\$240	_ License No		
ddress	7-7-89		7-14-19			tzi-rone	<del></del>	4 3/4
rilling Began .		Comp	oleted	Туре	tools		Size of h	iole
levation of lar	nd surface or			_ at well is		. ft. Total depth (	of well	350
· · · · · · · · · · · · · · · · · · ·			<b>T</b> er # 1 - 1					345
ompleted wel	lis L⊸'sh	allow Lia	rtesian. 1882 AOI	Lepth	to water u	pon completion	of well	
	- <u>-</u>	Sec	tion 2. PRINCIPAL	WATER-BEAF	RING STI	LATA		
Erom	To	in Feet	Descrip	tion of Water-B	Bearing Fo	ormation	Estim: (gallons	per minute)
11011								
<u> </u>	· · ·	······································						
						<u> </u>		
	·		Section 3. RE	CORD OF CA	SING			
Diameter (inches)	Pounds per foot	Threads per in.	Depth in Feet	Le:	ngth eet)	Type of Shoe		reriorations
								10 10
	·							
							· ·	
		Secti	on 4. RECORD OF	MUDDING A	ND CEME	INTING		
Depth	in Feet	Hole	Sacks	Cubic Fe	et	Methor	d of Placem	
From	To	Diameter	of Mud	of Cemer	nt			
İ								
			1					
								. <u> </u>
<u></u>	L		ł					<u></u>
	1		Section 5. PL	UGGING REC	CORD			
lugging Contr	actor							•
ddress				[		Depth in F	Feet	Cubic Eee
lugging Metho	od bi				No.	Тор	Bottom	of Cement
ate Well Plug	ged			· [	1			
lugging appro	ved by:			ł	2			
		State Eng	ineer Representative		4			·
				ﺎ <del>ﻣﯩﺪﻩﺭ,</del>		l		
ato Bonche 1			FOR USE OF ST	ATE ENGINE	ER ONLY	ſ.		
ale Received				Ousd		FWI		FSI

Depth in	I cel	Thickness	
From	To	in Feet	Color and Type of Material Encountered
	••	1 10	h law sand
	<u> </u>		
••		· • •	adiaba
30	6.0	-20	and land
-27			
		30	and star
	••		
		<u> </u>	star clar
			<b>3</b>
			ned, gray, green clay
		f	
-100			red dire
		1	
135	170	- 35	gray hard clay
-170	- 174	4	red clay 8 roce
174	235	61	gray nara elay
235	137	- <b>z</b>	Ald city
		•••	
237	250	15	· gray cia;
			Red bec LOW CREWEL
250	200	50	
780	310	30	gray rock
310	335	25	white nock ned bed
335	350	15	ald bed
l			
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Section 7. REMARKS AND ADDITIONAL INFORMATION

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Driller

INSTRUCTIONS: This form should be executed in triplicate, preferably typewritten, and submitted to the appropriate district office of the State Engineer. All sections, except Section 5, shall be answered as completely and accurately as possible when any well is drilled, repaired or geepened. When this form is used as a plugging record, only Section 1(a) and Section 5 need be completed.

### STATE ENGINEER OFFICE

1.11

**Revised June 1972** 

	Pha	Illips Petro	Section 1	GENER	AL IN	FORM	ATIO	N				
) Owner of Street or	well	dressP	C. 502	130	· · · · · · · · · · · · · · · · · · ·				Own	er's Well N	0	
City and S	State	He	bbs, III	11240		. <u>.</u>						
ll was drilled	under Permit	No. TEST HC	E FGR I	РА		and is	locate	d in the	<b>#3-4</b> 50*	H 690	'E	
a	_ ¼¥	· ¼	_ ¼ of Se	ction	5	_ Tow	nship _	195	Ra	nge_91E		N.M.P.M
b. Tract l	No	of Map No	••••		of the					· · · · · ·		, 
c. Lot No	o	of Block No.			of the.		<u>.</u>					
Subdiv	ision, recorded	d in	Eddy		Co	ounty.						•
d. X≠	• • • • <u>•</u>	_ feet, Y=		fe	et, N.N	4. Coo	rdinate	System		•	· · · · · · · · · · · · · · · · · · ·	Zone in
the		Larry's	Prilli				<u></u>			w0881		Grant
Drilling C	ontractor	2601 4.	Bender	 Ho	bbs,	жы		Lice	nse No		<u></u>	
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Death	. Foot	Sectio	n 2, PRIN	CIPAL W	ATER	BEAF	RING S	STRATA				
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igging appro	ved by:					ł	2				<del>-  </del> .	
		State Engin	Par Danza	entative			<u> </u>					

FOR USE OF STATE ENGINEER ONLY

Date Received

File No

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Location No.

FWL

FSL

а) С	Depth	er To	Thickness in Feet	Color and Type of Material Encountered
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	12	36	24	sand
	<b>3</b> 6	60	24	callche
	60	94	. 34	red dirt hard
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a ga da Tablean a san an  102		· 12	- red dirt was the term and the second terms the second terms	
line	114	116		gray rock
-	116	130	14 .	red bed
	130	168	38	gray toct
· -	168	172	4	red bed
	172	180	8	gray rock
-	120	210	30	red bed
-	210	223	15	gray rock
-	223	235	12	damp red bed
	2 55	240	5	grey rock
	240	260	20	red bed
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The undersigned here by certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

7 D Ī Driller

INSTRUCTIONS: This form should be executed in triplicate, preferably typewritten, and submitted to the appropriate district office of the State Engineer. All sections, except Section 5, shall be answered as completely and accurately as possible when any well is drilled, repaired or deepened. When this form is used as a plugging record, only Section 1(a) and Section 5 need be completed.

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2

 WELL	RECORD	 ÷ -,

			Section 1	WELL RE		ATION				
	- 7	Littles Pr	Section 1.	GENERAL	. INFUR	MATION	_			
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, <b>s</b>	_ % %	¥	¼ of Sec	tion <u>36</u>	Tov	vnship	145 R	ange <u>51</u>	E	N.M.P.M
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c. Lot N Subdi	vision, recorded	in	Edi	<b>i</b> t	County.					
d. X=		. feet, Y=		feet.	N.M. Co	ordinate !	System			Zone i
the		Lessy	20/22/m					1011 14		Gran
B) Drilling (	Contractor			· · · · · · · · · · · · · · · · · · ·			License No	59466		·
ddress		za91 <b>U.</b>	. Ecosta	ilch.	26, 121 	88246				
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umuk negan	•	(0m)	Piercu		1ype			····€€₽Ф₩₿	390	
levation of la	nd surface or			at v	well is		ft. Total dept	th of well		f
Completed we	llis 🗆 sh	allow 🗖 a	artesian.	t hole	Depth	to water	upon completio	on of well.	<u> </u>	f
	· ·	Sec	tion 2. PRIN	CIPAL WAT	TER-BEA	RING ST	RATA			•
Depth	in Feet	Thickness in Feet		Description (	of Water-	Bearing F	ormation	Es	timated '	Yield ninute)
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		· · ·								
			Section	n 3. RECOR	ED OF C	SING				
Diameter	Pounds	Threads	Depth	in Feet	L	ength	Type of SI	noe	Perfor	ations
(Inches)	perioor	per in.	Top	Bottom					From	To
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	<u> </u>		<u> </u>	220	1	MIL	A.27			<u> </u>
				PO	N.		per 1			
		Sect	ion 4. RECO	ND OF MUT	DDING A	ND CEM	ENTING			
Depth	in Feet	Hole	Sack	s	Cubic F	eet	Met	hod of Pla	cement	· · · · ·
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		. * <b>*</b>	Sectio	n 5. PLUG(	JING RE	CORD				
Address	ractor	······				No	Depth i	n Feet	G	bic Feet
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Plugging Meth Date Well Plug Plugging appro						3	1.			
Plugging Meth Date Weil Pluy Plugging appro		State Eng	gineer Repres	entative		4				

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			Section 6. LOG OF HOLE.
	Depth in Eeet	Thickness in Feet	Color and for Material Encountered
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	1		callcke
		16	white Land
	18 40	79	barrow Land
	45 300	40	
	100		DROWA GARE & GARDEL
	100 182	82	DROWN LARG CROWEL
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Section 7. REMARKS AND ADDITIONAL INFORMATION

The undersigned here by certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above: described hole.

Lassy Driller 94

INSTRUCTIONS: This form should be executed in triplicate, preferably typewritten, and submitted to the appropriate district office of the State Engineer. All sections, except Section 5, shall be answered as completely and accurately as possible when any well is drilled, repaired or deepened. When this form is used as a plugging record, only Section 1(a) and Section 5 need be completed.

4.4

#### Attachment V

Water Analysis Summary

	Ground Water Sampling Well #1	Ground Water Sampling Well #2	Ground Water Sampling Well #3	Ground Wate Sampling Well #4	r Impoundment Water
Calcium	482	270	334	410	528
Magnesium	None	None	200	33	80
Sodium (Calc.)	225	417	117	399	331
Hydroxide	19	263	None	14	None
Carbonate	151	48	16	29	None
BiCarbonate	None	None	944	None	81
Sulfate	947	84	87	1055	1251
Chloride	284	454	723	596	709
Phenols	less than .001	.084	.131	.005	less than .001
Total Dissolved					
Solids (Calc.)	2108	1536	1949	2536	2939
Total Hardness	· · ·				
(CaCo3)	1204	676	1660	1160	1650
pH	10.67	11.38 -	9.35	10.45	7.45



### ESTERN LABURATORIES

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Materials, environmental and geotechnical engineering, nondestructive, metallurgical and analytical services 1703 W. Industrial Avenue (915 - 683-3348) • P.O. Box 2150 • Midland, Texas 79701

						-	C-1950-W	
					Curat	Hie No	225570C	
				•		Cus	omer No.	3333790
		•					Heport No.	35463
	· .					• •	Pecort Clate	5-21-84
								<u> </u>
Report of tests on:	Water						Date Received	5-10-84
Client:	Phillips	Petrole	eum Cor	mpany				
Identification:	Lusk Pla	nt Pit						
								•
	~ -							mg/L
Calcium			, 				. هلي چيد وهد آني ي	528
Magnesium	<u>1</u>							80
Sodium (C	Calc.)					,		331
Carbonate			· · · · · · · · · · · · · · · · · · ·					None
Carbonate								NOUE
Bicarbona	te							81
Sulfate								1251
Chloride-								709
	•							
Phenols					···	Less	Than	0.001
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IULAL DIS	SOTAGO 20	TTAP (CO		_ <b></b>				2333
Total Har	dness (as	$CaC0_{3})$			· · · · · · · · · · · · · · · · · · ·	و همه البين الملك الملك الملك الملك ا		1650

Technician: KLH, SAM

pH

Copies Phillips Petroleum Company 3 cc: Attn: Mike Ford

7.45

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Our letters and reports are for the exclusive use of the client to whom they are addressed. The use of our name must receive our prior written approval. Our letters and reports apply only to the sample tested and/or inspected, and are not necessarily indicative of the quantities of apparently identical or similar products.

119904

Sw

# SCUTHWESTERN LABORATORIES

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File No.	C-1950-W
Customer No.	3355796
Report No.	35344
Report Date	4-9-84
Date Receive	4-3-84

119904

Report of tests on: Water

Phillips Petroleum Company

Identification:

Client:

Lusk Plant, Monitor Well No. 1 Composite, Sampled 4-2-84 by Mike Ford

			mg/L
Col aium			482
Magnesium			None
Sodium (Calc.)			225
Hydroxide			19
Carbonate			151
Bicarbonate			None
Sulfate			947
Chloride			284
Phenols		Less Than	0.001
Total Dissolved Sol:	ids (Calc.)		2108
Total Hardness (as (	CaC0 <sub>3</sub> )		1204
	57		

Technician: KLH, SAM

Copies 3 cc: Phillips Petroleum Company Attn: Mike Ford

**80**U ABORATORIES

Our letters and reports are for the exclusive use of the client to whom they are addressed. The use of our name must receive our prior written approval. Our letters and reports apply only to the sample ""asted and doe not occurs and, indicative of the quantities of apparently identical or similar products.

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## SOUT WESTERN LABORATORIES

Materials, environmental and geotechnical engineering, nondestructive, metallurgical and analytical services. 1703 W. Industrial Avenue [915 - 683-3348] • P.O. Box 2150 • Midland, Texas 79701

				Fie No. Customer No Report N	<u>C-1950-W</u> 3355796 35345
•	•			Report D	ate <u>4-9-84</u>
ort-of tests on;	Water	· · · · · ·		Date Rec	eived <u>4-3-84</u>
nt:	Phillips Pe	etroleum Com	pany		
itification:	Lusk Plant Sampled 4-2	, Monitor We 2-84 by Mike	ll No. 2 Co Ford	mposite,	
	· .			· .	mg/L
Calcium	]				270
Magnesi	.um				None
Sodium	(Calc.)				417
Hydroxi	de				263

Total	Dissolved	Solids	(Calc.)	- 1536
Total	Hardness	(as CaCC	3)	676

\_\_\_\_

11.38 pH---

Inician: KLH, SAM

Carbonate--

Sulfate-----

Chloride-----

Phenols---

Bicarbonate-----

es 3 cc: Phillips Petroleum Company Attn: Mike Ford

BORATORIES

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None



Materials, environmental and geotechnical engineering, nondestructive, metallurgical and analytical services 1703 W. Industrial Avenue [915 - 683-3348] • P.O. Box 2150 • Midland, Texas 79701

File No.	C-1950-W
Customer No.	3355796
Report No.	35346
Decest Dete	4-9-84

Date Received: 4-3-84

119904

Water Report of tests on:

Phillips Petroleum Company Client:

Lusk Plant, Monitor Well No. 3 Composite, Identification: Sampled 4-2-84 by Mike Ford

	mg/L
Calcium	334
Magnesium	200
Sodium (Calc.)	117
Hydroxide	None
Carbonate	16
Bicarbonate	944
Sulfate	87
Chloride	723
Phenols	0.131
Total Discoluted Solids (Cale )	1949
Total Hardness (as CaCO <sub>3</sub> )	1660

pH-

9.35

KLH, SAM Technician:

3 cc: Phillips Petroleum Company Copies Attn: Mike Ford

ABORATORIES SOUTHV

ettens and reports and for the exclusive use of the client to whom they are addressed. The use of our name must receive our prior written approval. Our letters and reports apply only to the sample tred on similar conducts

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# SOUTHWESTERN LAEDRATORIES

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File No.	C-1950-W
Customer No.	3355796
Report No.	35347
Report Date	4-9-84
Date Receive	ad 4-3-84

119904

Report of tests on: Water

Phillips Petroleum Company

Identification:

Client:

Lusk Plant, Monitor Well No. 4 Composite, Sampled 4-2-84 by Mike Ford

Calcium	410
Magnesium	33
Sodium (Calc.)	399
Hydroxide	14
Carbonate	29
Bicarbonate	None
Sulfate	1055
Chloride	596
Phenols	0.005
	2526
Total Dissolved Solids (Calc.)	2536
Total Hardness (as CaCO <sub>3</sub> )	1160

pH----- 10.45

Technician: KLH, SAM

Copies 3 cc: Phillips Petroleum Company Attn: Mike Ford

ABORATORIES

Our letters and reports are for the exclusive use of the client to whom they are addressed. The use of our name must receive our prior written approval. Our letters and reports apply only to the sample





COMPANY: Phillips Oil Company DATE <u>March 30, 1984</u> ORDER NO. <u>Contract No.0-415</u> LOCATION <u>Lusk Gasoline Plant</u>, COUNTY: <u>Lea</u> <u>STATE NM</u>

PROPOSED USE Monitor Well #1 DIAMETER 8" DEPTH 50'

Top of water 40"

DRILLER

Roger Smith

DEPTH FT.	DRILLER'S LOG				
10	surface sand				
20	caliche				
30	sand				
20	water sand & clay				
50	sandy clay				
60					
70					
90					
40					
100					
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Lusk Gasoline Plant Groundwater Sampling Well #2



P. O. BOX 7847 MIDLAND, TEXAS 79701

COMPANY :	Phillips Oil Company
DATE March	30, 1984
ORDER NO	Contract No.0-415
LOCATION	Lusk Gasoline Plant,
COUNTY:	Lea STATE NM

PROPOSED USE <u>Monitor Well</u> #2 DIAMETER <u>8"</u> DEPTH <u>50'</u>

Top of water 42"

DRILLER Roger Smit

Roger Smith

DEPTH FT.	DRILLER'S LOG
10	surface sand
20	caliche, & sand
30:	clay, water sand
40	sand
50	sandy clay
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Lusk Gasoline Plant Groundwater Sampling Well #3.



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COMPANY: Phillips Oil Company DATE <u>March 30, 1984</u> ORDER NO. <u>Contract No.0-415</u> LOCATION Lusk Gasoline Plant, COUNTY: <u>Lea</u> STATE <u>NM</u>

THE LOFTIS COMP

P. O. BOX: 7847 MIDLAND, TEXAS: 79701

PROPOSED USE Monitor Well #3. DIAMETER 8" DEPTH 50

Top: of water 38."

DRILLER

Roger Smith

DEPTH. FT.	DRILLER'S LOG			
10	surface sand			
20	caliche			
30	water sand			
40	clay			
50	sand			
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Lusk Gasoline Plant Groundwater Sampling Well #4



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COMPANY: Phillips Oil Company DATE March 30, 1984 ORDER NO. Contract No.0-415 LOCATION Lusk Gasoline Plant, COUNTY: Lea STATE NM

PANY

THE LOFTIS CO

P: O. BOX-7847 MIDLAND, TEXAS 79701

PROPOSED USE Monitor Well #4 DIAMETER <u>8"</u> DEPTH <u>50'</u>

Top of water 37"

DRILLER

Roger Smith

DEPTH: FT.	DRILLER'S LOG			
10	surface sand			
29	caliche, sand			
30	red clay			
40	water sand			
50	sandy clay			
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re Phillips-Lusk que monitoring and closure

#### from EID file

Ann's 9/4 memo was appropriate & flagged a potential problem at Phillips-Lusk. It also points up the need for careful reviews, done without nushing, for all our facilities. To sum up, my concern at Lusk is that their monitoring may have missed the main slug of chromium-laden water, which may have passed their shallow wells long ago. A less-likely scenario is that Cr levels have not yet peaked in their wells. Neither of these scenarios is a priori likely, in fact, but both are possible. A third possibility is we of a grodual elution of Cr from their port slugges by their percolating efficient, at levels belevor to public health The gw situation at Lusk is fairly simple, overall. A dry alluvium (normally dry

alluvium) overlies Triassic reduceds at the plant. The alluvium is basically send sill and caliche, with probably some clagglenses where wallows slakholes, etc. have existed in the past. It has a heterogeneous hydraulic propenties, and would be dry if Lusk plant wasn't there. The Lusk plant takes Ogalalla water from 20 miles to the east, concentrates the salts, and discharges over half of what's left to the alluvium. This makes a mound beneath the pond, probably with perded zones, conduits through cracks in the caliche, with the water auning downslope on top of the reduceds and to some extent in Altrahing (recharging) the heddeds, or with this recharge especially likely if deep seated collapse features (in the underlying salt beds) are locally present. These are suspected known to be present throughout the area, although they are obscured by, acolian sands.

Probably all of the Lusk wells are downgradient from the pond. The observed "Meindness of the gradient data is due to 1) all measurements being on the slopes of a mound, 2) the heterogeneity of the Gal sediments, end 3) the unevenness of the E surface, and 4) the vanying permeability (and therefore recharge) of the E rock. They correctly interpret regional geology but this is not locally relevant.

If the geology were better known, the shape of the mound could be predicted. As it is, the mound shape could be more thing ascertained directly.

It should be said that water occurs in the Qal in and probably near Longuna Plata, a playa 4 mile to the SE. The FE rocks are exposed in the (collapse) wall of this feature, and springs emerge from them.

Cr<sup>46</sup> discharge was discontinued 12/82, just before the 1/83 deadline for post-classine permits. Probably all the Cr<sup>46</sup>, or nearly all was reduced to Cr<sup>43</sup> and precipitated by 1/83; the conc. of Cr<sup>46</sup> was only 3.2 mg/R at the time of Cr discontinuance; this accounted for all the dissolved chromium, to two sig. digits. The wastewater itself, it we believe them, was only 5.02 mg/R total chromium, in based on a 12/20/79 sample. So they have almo proven that no HW was present by 1/26/83. So their gw monitoring (never done); closure, and post-closure are all 206.C. standards.

They have almost proven that no HW exists beneath the impoundment. The higher levels they found — about 7 mx10<sup>2</sup> mg/2 — are about one-scientieth of the EP to level. This level does not appear to have public health significance, if it is Cr<sup>+3.</sup> Any Crt6 probably has health significance. I believe that if a Eh-pH diagram were located or drawn (I don't know how to do this) for Cr spp. in gw, it would show that Cr<sup>+6</sup> is not at all stable under any forescenable gw conditions in the area. This should be cher Concertainter to plants Animals a Man GS Bull. 1466. Lusk has been intiltrating a 4gpm for 20 years, or 4.2x10 gallons in all, capable of saturating roughly 2:25 x10 ft<sup>3</sup>@ 25% porosity, if the Gal was initially totally dry, no intiltration has accurred, and no trakage through the R rocks has accurred. Probably all these accumptions are more-on-less faire, but this gives a general idea of the volume involved. The area of the pond is 37,500 ft?

The total amount of Cr. is uncertain. In the last years before discontinuence, 210 hg fyr of Cr were discharged; before this there are no records. Cr was discharged for 16 years. As a gress, Hen, 3360 kg Cr 1? were discharged. If rough calculations are made, hased on their soil and sludge analyses, one sees that a great deal of this Cr is very shallowly held, as chromic hydroxide probably:

# 3480 m x O. 1 meter @ 3500 ppm Cr - (about) 2430 kg Cr (± a lame number)

200 52 However, to raise the ECr.7 from the presumed background of 0.04 mg/R to 0.07 mg/R in the above 4.2 K10 gal of water requires only 48 kg of soluble Cr.

Note that the water they sampled in fairly rapid flux, since the mound will have "steep" sides. When the water sampled left the pond, we don't know, however. and stores

Some further details are found in the attached work sheets.

complex (pun) world of Cr in the soils.

The regulatory greations can now be addressed. Have they shown no HW present? To a high confidence limit, yes; to beyond all reasonable doubt, perhaps not. Note that the Cr levels in the wells are roughly proportional to their distance from the pond, i.e. to the presumptive length of time the pond water has taken to reach them. Is water over Smylk Cr going to be found farther out, or deeper? I It is very unlikely, because:

1) The pond water itself is < 0.2 mg/R and is in equilibrium w/ 3500 ppm Cr sludge 2) The original wastewater was probably only burly EP-toxic Contractions 3) It is very doubtful that Cr is soluble to Sung/l in groundwater because Cr +6 will be reduced (quickly?). B Data in The Hydrodysis of Cations, Bacs & Mesmer, suggest that @pH=8, chromic oxide dispones mostly as CK(OH)<sup>+</sup>, with a total concentration of all hydrolyzed species of 10<sup>5</sup> M. This is equivalent to roughly 0.5 mg/l Cr. I am not sure that this is the only robubility into that is Herant, though. However, this same test says that  $SO_q^2$  complexes with  $Cr^{43}$ , which could greatly increase solubility of  $Cr^{43}$ . Another paper, burdwikeloke from Pat L., shows that soils with active microorganisms and manganese (which includes most moist soils 2) can oxidize  $Cr^{43}$  to  $Cr^{46}$ . In fact, Pat L. has several interesting papers on the

The fast that we do not now see Cr complexed to asthere near an EP-tox level means that we are unlikely to ever it see it so complexed w/o massive additions of NH3, EDTA, etc. to the pond.

Adsorption of Cr+3 complicates the issue, Cr+6 is usually (?) anionic and is not much sorbed. Complexed Cr+3 would presumably sorb much less well than naked Cr+3.

We could require them to better demonstrate that HW is not present, but our case would be very terrous. Better would be to send them in NOV on gu monitoring Hey have done none of the required monitoring - and force them to do what we want in a settlement conterence. We cannot to repeat, get them to do turther monitoring as part of a closure plan acceptonce, I don't think.

The unfortunate part is that EPA, and to a lesser extent, EID, have led them to helieve they merely close to meet their regulatory requirement. No one has mentionel a gw monitoring problem since 1982.

Is there an environmental problem? We don't know because we don't know if (r<sup>46</sup> is present. Crts in que will not change to Crts; the levels of Cr found so far are not worth bothering with if they are Crt3, which is by far the most likely case

What to do? I am sursure.

I chadillac version : have them do the following: to me a. map the reduced surface (how? very unclear, that it could be done geophysically w/gov \ interforme ] =

b. map the mound/plume (cheaply done with induced electromagnetic techniques) c. defermine local and gradient from this map

-bz. And extent of mound could be done by b.; depth by seismic methods? - not really because of caliche interference. Difficult problem

d. select one or more gw sampling locations and sample both old and young gwaters over time for: i. wg. parameters to establish chemistry ii. [Criftotal and [Crt6]

The ric organic electron-acceptor scanon selected samples. e. sample pond sludge tor organics as in d. iii.

Drill a well were distance (Foo'away) Drill a well were provide discrete screened intervals which can be isolated with a movable packer & sampled. The deeper waters will be older to the Sample this well and the other four for a year.

2 3 Sample the existing wells quanterly for a year, for i., ii, x interfy for iii. END split on 1st sample.

I think we should write them an NOV on their gw monitoring under 206. C.I. I think we should write then an NUV on their yw montroury order we are We should just flat-out say that we are not interested in TOC or TOX, and we are interested in [Cr] total and [Cr+6]. Then we should split with them on the 1st sample, and analyze ours for [Cr] total, [Cr<sup>+6</sup>], organic electron-acceptor scan and perhaps also hunt for anomatics, and perhaps do suce the nest of the chemistry too. Then if all goes well we should just let them close in a year. This will really answer all our questions. If Cr<sup>+6</sup> is defected, then further action - probably under WQCC reys by Dave Boyer - must be taken. IF Crt3 levels are miles estable, then let em c1092

@ Analyze once in four wells for Cr+6 (EID split) and organic solvents, hotal Cr, gend chemista



Section AA': along redled dip (ESE) intiltration of 0.25 inch / day (area time are) or 7,60 Hlyeor of water R=109.Ft (1254300') erd at How this! soturate circa 30 FT/yr Contraction of the second actual secondor theory Furt Lactust reduced could have anyus hape nfiltration through Chinks downdig" by draulic grad it saturated @ A = 1  $\Rightarrow V_{verticed}$  of 110 ft/day (sard) down to 0.11 ft/day (silt) (i.e. 3.3 ft/mart) or 40ft/yr) Note reasonable as reement between infiltration average of 30 Ft/yr and saturated average vertical relating of 40 ft/yr in silt, higher in sards. We do not have saturated Flow except perhaps: inc conditions. Total HO percoland is SIG2X10 FTP, copole of salurating circa 23.5 xin + ft of sail.

	Lusk Test H	loles and	Monitorine	wells		
Test holes	<u>[c+]</u>	TDS	datesample	al wellhead ever	Halload Capt	
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I ton toping We	<u>16</u> [Cr] [č <sup>105</sup> , 7, 8, 7, 6 (6	r date	rough w elev	ellhead and and	depth to	depth (
II 6	x10 mg/l 15,5,5,5 (5.	2 4/84	/\$\$6\$ ; ''	-7 3535 (i.e. 30'dee 3535	γ) (40' <sup>(2)</sup> (40' <sup>(2)</sup>	50?
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	· · · · · · · · · · · · · · · · · · ·	784	ţr	3535	37'3	30'?

D'May obscure this saturated layers not competent to fill the test hole or not softened screened line ONot a good match of Mostly the driller seens to have recorded when damp material was encounded. May be over collapse structures, if accurate. Phillips presumably had more accurate and of the TE currence ; they attempted to locate these wells at red-bad lows. Our schood level. maps of the TR surface; they attempted to locate these wells at red-bed lows. Our 13 no water above this, evidently (1) "water sand" @ 30' The strakigruphy of these wells indicates they intercept spotty tenses of clay, sand; they

are not accurate to more than 10' anyway. The subsymptace material below the calible seens to be grite heterogeneous. There seems to be a fair correlation between expected marchal realised depth. These data suggest no meaningful gradient exists; water is probably actual perched + "semi-perched" as it moves downward taward in the second in the second product of the second product of the second product of the second taward taward to be a fair correlation between expected marchally actual



from Pat L.s. thesis.

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Materials, envirountal and geotechnical engineering, nondestructive, metallurgical and analytical services 1703 W. Industrial Avenue [915 - 683-3348] • P.O. 65x 2150 • Midland, Texas 79701

FROM EID FILE

File No.	C-1950-W
Customer No.	3355796
Report No.	35198
Report Date	

Date Received 2-29-84

Report of tests on: Water

Phillips Petroleum

Identification:

Client:

Lusk Plant Pit

	(
AluminumLess Than	2
ArsenicLess Than	0.05
BariumLess Than	1
Boron	0.4
CadmiumLess Than	0.01
Chromium	0.09
CobaltLess Than	0.1
CopperLess Than	0.1
IronLess Than	0.2
LeadLess Than	0.05
ManganeseLess Than	0.05
MercuryLess Than	0.002
MolybdenumLess Than	1
NickelLess Than	0.5
SeleniumLess Than	0.01
SilverLess Than	0.05
Zinc	0.14
Sulfate	820
Chloride	489
Fluoride	2.6
NitrateLess Than	0.1
CyanideLess Than	0.001
PhenolsLess Than	0.001
Total Dissolved Solids @ 180° C	2208

Technician: KLH, GMB, JHB, RY

Copies 3 cc: Phillips Petroleum Co. Attn: Mike Ford

WESTERN ABORATORIES

Our letters and retorus are for the exclusive use of the client to whom they are addressed. The use of our name must receive our prior written approval. Our letters and reports apply only to the symple testad and/or inspected, and are not necessarily indicative of the quantities of apparently identical or similar products.

#### Lusk Gasoline Plant RCRA Impoundment Sampling Results Summary

	Quadrant I	Quadrant II	Quadrant III	Quadrant IV
Impoundment Water EP Toxic Chromium, mg/*	*.2	*.2	*.2	*.2
Impoundment Sludge EP Toxic Chromium, mg/*	.6	.6	.6	1.5
Impoundment Sludge Total Available Chromium p.p.m.	2921	3455	3075	3851
Impoundment Soil EP Toxic Chromium, mg/L	L.2	L.2	L.2	
Impoundment Soil Total Available Chromium p.p.m.	333	835	470	

\*Indicates less than
• *	Water Well I EP Toxic Chromium mg/*	Water Well II EP Toxic Chromium mg/*	Water Well III EP Toxic Chromium mg/*	Water Well IV EP Toxic Chromium mg/*
Initial Water Cor	itact *.05	.06	*.05	*.05
Sample Pt 1**	.07	.05	*.05	*.05
Sample Pt 2	.08	.05	*.05	*.05
Sample Pt 3	.07	.05	*.05	*.05
Sample Pt 4	.06	.05	*.05	*.05

Lusk Gasoline Plant RCRA Groundwater Sampling Results Summary

\* Indicates less than

\*\* Sample points numbered from top to bottom with sample point number 1 being at the top.

#### LUSK IMPOUNDMENT

Water and Sludge Sampling Points

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Quad #3

Quad #2

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#### LUSK IMPOUNDMENT

Soil Sampling Points



Section 1

Section 2

Section 3

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TONEY ANAYA GOVERNOR

DENISE D. FOR DIRECTOR

ENVIRONMENTAL IMPROVEMENT DIVISION P.O. Box 968, Santa Fe, New Mexico 87504-0968 (505) 984-0020

STATE OF NEW MEXICO

December 31, 1984

Mr. B.F. Ballard, Director Environment Control 7 Phillips Building Phillips Petroleum Company Bartlesville, Oklahoma 74004

Re: Hazardous Waste Closure at the Lusk Natural Gas Plant

Dear Mr. Ballard:

In late July you should have received a copy of our technical comments on the Lusk Plant closure; these were attached to a July 19, 1984 letter from our section to Mr. William Taylor of EPA. A copy of those comments is also attached here for your convenience.

Before final acceptance of this closure plan, the EID will need to sample the monitoring wells at Lusk. This is a standard practice that we are following at all disposal facilities that are seeking closure. We hope to be able to do this sampling in January or February, and I will advise you of the exact date as soon as I know it. We would also like to sample at the Eunice, Lee and Artesia plants at that time.

Note that Phillips must notify EID if a post-closure process change is contemplated at Lusk that would increase the mobilization of chromium from the impoundment sludges and sediments and, when such a change is made, Phillips must commence a monitoring program to assure that hazardous waste is not being generated.

It is the understanding of the EID that, when the Lusk impoundment is no longer in service, it must be levelled and returned to a natural condition pursuant to the regulations of the Oil Conservation Division.

Reve 1/2/85

Mr. B.F. Ballard Page 2 December 31, 1984

Phillips may wish to sample its Lusk wells from time to time to monitor the concentration of chromium. At the present time, the Lusk plant may be operating in violation of the New Mexico Water Quality Control Commission regulations, as one of its monitoring wells appears to draw water in excess of the 0.05 mg/liter standard for chromium.

Please call Ann Claassen of my staff, at 505-984-0020, ext. 340 if you have any questions.

Sincerely,

Peter H. Pache Program Manager Hazardous Waste Section

PHP/mp

cc: Susan Stark, EPA Region VI , Dave Boyer, Oil Conservation Division



### ENERGY AND MINERALS DEPARTMENT OIL CONSERVATION DIVISION

TONEY ANAYA GOVERNOR

POST OFFICE BOX 2088 STATE LAND OFFICE BUILDING SANTA FE, NEW MEXICO 87501 (505) 827-5800

November 28, 1984

CERTIFIED MAIL RETURN RECEIPT REQUESTED

Phillips Petroleum Company 4001 Penbrook Odessa, Texas 79762

Attention: Mr. E. E. Clark

Dear Mr. Clark:

We have received your discharge plan for the Phillips Lusk Plant dated May 22, 1984. To continue with the review process, the following information is required:

- A. Provide a layout indicating the location of process equipment and storage tanks. Indicate disposition of any storage tanks (e.g., slop oil tanks; above or below ground).
- B. Provide a brief description of processes occurring at the plant; a process flow diagram would be helpful. The flow sheet for the waste disposal system has been reviewed ( see comments D & E).
- C. Provide a schematic diagram of the waste water disposal system including process waste lines and general plant drainage. Indicate whether or not the piping is above or below ground. Also provide locations and construction details on any sump pits located on site.
- D. Construction details of the evaporation pond.
- E. Construction details of the sidestream filter basin and skimming pond. From the waste dis-

posal drawing provided in the discharge plan there is no indication of what happens to skimmed hydrocarbons. Is there any danger of overflow from the sidestream filter basin?

- F. Description of inspection procedures (and frequency) for leaks in piping and equipment.
- G. Provide information on flooding potential and protection measures (curbs, berms, channels, etc.), if applicable.
- H. Additional chemical analysis of monitor wells and impoundment water is needed for those constituents listed in Section 3-103 of the WQCC regulations, Parts A, B, and C except those constituents already analyzed for in Attachment V of your discharge plan and except for silver, uranium, radioactivity and chlorinated hydrocarbons. Many of the metals in Parts B and C can easily be detected by means of an ICAP-SCAN. Analysis for xylenes is also requested. Consider the potential for fluctuations in effluent flow rates that could change effluent concentrations in the ponds.
- Describe procedures addressing containment and clean-up in case of spills from process units or storage vessels.
- J. Describe the contingency plan in the event of a major problem with the evaporation pond that would require the pond to be shut down.
- K. Describe the frequency of sampling monitor wells and reporting results.
- L. Describe any solid waste generated on a continuous or intermittent (e.g. spent catalyst) basis and the method of disposal. If disposed of on site, please indicate the location on a plant layout.
- M. Provide safety sheets for the treatment chemicals (i.e., cooling tower) used at the facility.
- N. Provide a description and location of any water wells (plugged or producing) within one mile

of the outside perimeter of the facility. Information of this type is needed to indicate whether there should be any concern over artificial penetration.

O. To your knowledge, were any discharges made to the area prior to plant construction (e.g., injection wells, produced water pits, etc.)?

Your letter of May 22, 1984, suggested that a discharge plan might not be required because there is no "ground water" present as defined by the WQCC regulations. In our judgment, the test wells drilled by Phillips in February 1982 yielded water in sufficient amounts to be termed "ground water" as per WQCC regulations. It should also be noted that effluent must conform to all the listed numerical standards of Section 3-103 (of the WQCC regulations), must have a total nitrogen content of 10 mg/l or less, and must not contain any toxic pollutant to be exempt from the discharge plan requirement (see WQCC regulation 3-105).

Please find enclosed the revised edition of the WQCC regulations. The information provided in your discharge plan is greatly appreciated. If

Postmark or Date			7. UNABLE TO DELIVER BECAUSE: 7. EMPLOYEES
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#### PHILLIPS PETROLEUM COMPANY

ODESSA, TEXAS 79762 4001 PENBROOK



EXPLORATION AND PRODUCTION GROUP May 22, 1984 Permian Basin Region

SANTA FE

Effluent Discharge Plan Lusk Gasoline Plant Lea County, New Mexico

Mr. Joe D. Ramey, Director New Mexico Oil Conservation Commission P. O. Box 2088 State Land Office Building Santa Fe, New Mexico 87501

Dear Mr. Ramey:

This report is in response to your letter, dated February 21, 1984, in which you requested additional information concerning our Effluent Discharge Plan application. Attached are the red bed map you requested (Attachment I), the most recent topographical map of the area around our Lusk Plant, which also details the location of any fresh water wells in the area (Attachment II), and a groundwater monitoring waiver statement, prepared by an Independent Hydrologist, which outlines the impact of our waste water on the surrounding groundwater (Attachment III). Attachment III also contains all of the other information you requested.

In your letter, you stated that even though there was only a small amount of groundwater present in our test holes, it still had to be protected for a "foreseeable" future use. You suggested we pursue the foreseeable future use aspect of the Water Quality Control Commission Rules in our plan. I would first like to state that it is still Phillips' position that, as groundwater is defined in 1+101+M of the Water Quality Cotrol Commission Rules, there is no "groundwater" present in the area and we therefore do not fall under the jurisdiction of these regulations, but, as it is Phillips' corporate philosophy to protect the environment at all times, we took the step of drilling four groundwater sampling wells to establish what the quality of the groundwater was in the area and what impact, if any, our impoundment water was having on it. Attachment IV is a report prepared by Ed Reed and Associates detailing where and how to drill the groundwater sampling wells. The analysis of the groundwater (Attachment V) and well logs plus completion drawings for the sampling wells (Attachment VI) are attached. As can be seen in Attachment V, the pH of the groundwater in the area (sampling well #1) is so high that it cannot be used for human or agricultural consumption. Also, as the pH of our wastewater is well below the pH of the area's groundwater, its effect on the area's groundwater is that of improving its quality as demonstrated by the pH of the water found in sampling well #3.

We have clearly demonstrated that our method of disposing of our wastewater does not adversely affect the quality of the groundwater in the area. We

Effluent Discharge Plan Lusk Gasoline Plant Lea County, New Mexico Page 2

therefore feel that the Effluent Discharge Plan should be approved. Any questions concerning this matter should be directed to Robert Stubbs at (915) 367-1302.

Very truly yours,

E. E. Clark Manager Permian Basin Region

EEC:RGS:ggp

Attachments

- In Separate envelope in Sile ANTS-



TONEY ANAYA GOVERNOR February 21, 1984

POST OFFICE BOX 2088 STATE LAND OFFICE BUILDING SANTA FE, NEW MEXICO 87501 (505) 827-5800

Phillips Petroleum Company 4001 Penbrook Odessa, Texas 79762 Attention: Mr. E. E. Clark

Gentlemen:

In reviewing correspondence relating to a discharge plan for your Lusk Gasoline Plant, you indicated the mapping of red beds plus the drilling of four test wells to determine water quality. I would like to see the red bed map with well locations in relation to your plant location.

I would also request that you furnish this office with the following information:

1. Location of water for plant operations.

2. Volume of waste water generated.

3. Area map showing fresh water wells within 10 miles of your plant site.

In my opinion there is ground water present in the four test wells. Admittedly the volume is small. However small, this office must protect that water if there is a foreseeable future use.

My suggestion to you would be to pursue the foreseeable future use aspect of the Water Quality Control Commission Rules and determine if you could so qualify.

Yours very truly,

JOE D. RAMEY Director

JDR/fd



#### PHILLIPS PETROLEUM COMPANY

ODESSA, TEXAS 79762 4001 PENBROOK

NATURAL RESOURCES GROUP Exploration and Production

March 8, 1982
Dischargo Plan
Discharge Han
MAR 1 5 1982
CIL CUIVSECTIONS LIVER ON

SANTA FE

Mr. Joe D. Ramey New Mexico Oil Conservation Commission P. O. Box 2088 Santa Fe, New Mexico 87501

Dear Mr. Ramey:

We have recently completed the drilling and sampling of four exploratory water wells, near our Lusk Plant facility, to determine if there is a need for groundwater protection in the area near our facility. The following actions were taken to determine this:

- 1. Information was secured from the State Engineers Office on the redbed depth in a Township area surrounding Lusk Plant.
- 2. The depth information was contoured by our geological section from which possible troughs and closures in the redbeds were isolated.
- 3. Four exploratory well locations were spotted where groundwater accumulation was possible. These locations were down dip from the plant and would be most susceptible to contamination from the plant.
- 4. The four exploratory wells were drilled. Wells #1 through #3 were drilled entirely with air. Well #4 was drilled with water to a depth of 220 feet due to hole condition. At this point casing was set, and the well was completed with air to a depth of 300 feet.
- 5. The four wells were allowed to stand overnight as there was not enough water upon completion for sampling. At time of sampling there was approximately 15 feet of water in Well #1, 5 feet of water in Well #2, 40 feet of water in Well #3 and 50 feet of water in Well #4.

Attached are the water analyses and drilling reports from these four wells. From these we do not feel that the subsurface water around Lusk Plant qualifies as "groundwater", per Section 1-101, Part M of the Water Quality Control Regulations, as sufficient amounts of water were not present to be utilized as a water supply.



Mr. Joe D. Ramey Lusk Gasoline Plant Discharge Plan March 8, 1982 Page 2

It is our interpretation of the Water Control Regulations, Part 3, that if there is no "groundwater" to protect, we are not subject to filing a discharge plan.

If you have any questions regarding this matter, please contact Bob Stubbs at (915) 367-1302.

Very truly yours,

E. E. Clark Manager, Permian Basin Region

RGS:jj Attachments

P O POY 1468 MONAHANS TEXAS 7

orm No

Mr. Bob Stubbs

COMPANY Phillips Petroleum Company FIELD OR POOL

#### RESULT OF WATER ANALYSES

Martin Water Laboratories

#### SINDIAN' MIDI AND TEXAS 7970 PHONE 683-4521

CEIVED As 11sted SAMPL 4001 Penbrook. Odessa. Texas

eum-Company Lierase Lusk Ex county<u>Lea</u>

SURVE SOURCE OF SAMPLE AND DAT No: : Recovered water - Laken from test hole /1 (approx. 15 water in hole) /2=10= Recovered water - taken from test hole #3 (approx: 40 water in hole) \* 2=10=8 PRecovered water = taken from test hole #2 (approx: 5' water in hole): 2-12-8 No 4: <u>Recovered water - taken from test hole #4- (approximately 50</u>" water in hole). Samples taken by Robert C. Middleton; Martin Water Labs REMARKS

CHEMICAL AND PHYSICAL PROPERTIES NO. 1 NO. 2 NO. 3 NO. 4 Specific Gravity at 60. F. - 1.0010 11.0012 11.0045. 11.0016 pH When Sampled The pH/When Received 7, 997 7, 54 Bicarbonate as HCO3 Supersaturation as CaCO3 Undersaturation as CaCO3 
 Total Hardness as CaCo3
 350
 2244
 2,300
 356

 Calcium as Ca
 54
 54
 560
 825

 Södium and/or /Pötassium
 131
 26
 296
 43

 Sulfate/as/SO4
 37/1
 61
 22,588
 157

 Chloride as Cl
 34
 75
 51
 Barlum as Ba -Turbidity, Electrics Color as Pt Temperature F Carbon Dioxide, Calculated

Dissolved Oxygen, Winkler 0.0 Suspended OII-#Filtrable Solids as mg/1 Volume Filltered (ml/ 如此是中国的东西,在小学业工作和中国的特征。如果不可以在中国的特殊的东方,可能也是一种主义是是一个 Results Reported As Milligrams Per Liter "Additional Determinations, And Remarks The understaned < certifies the above to be true and correct to the best of his knowledge and beliets

Wavlan C. Martin, M.

acht

#### Mr. Bob Stubbs 4001 Penbrook Odessa, Texas

Martin Water Laboratories Inc RESULT OF WATER ANALYSES

SAMP

09 W. INDIANA MIDLAND, TEXAS 7970 PHONE 683-4521

282216 LABORATORY NO. EIVED 2-1-8-82 RERORTED

COMPANY Phillips Petroleum Company FIELD OR POOL Lusk OURCE OF SAMPLE AND DATE TAKEN Raw water - taken from water tank @ plant, 2=12-82 NO REMARKS Water used to drull test hole #4 CHEMICAL AND PHYSICAL PROPERTIES NO. 1 NO. 2 NO. 3 NO. 4 pH When Sampled pH When Received Bicarbonate as HCO3 Supersaturation as CaCO3 Undersaturation as CaCO3 Total Hardness as CaCO3 Calcium as Ca Magnesiumias Mg Sodium and/or Potassium Sulfate as S04 Chloride as Cl lron as Fe Barium as Ba Turbidity Electric Color as Pt )Total Solids, Calculated Temperature F. Carbon Dioxide; Calculated Dissolved Oxygen Winkler Hydrogen Sülfide Resistivity...ohms/m.at 772° F

Suspended Oli Filtrable Solids as mg/IL TVolume Filltered ml Results Reported As Milligrams Per Liter 22 (1997) Additional Determinations And Remarks The stim de rst-gned certifites, they above stor bestfrue and correct to the best of his knowledge and betref. 

 $\mathbf{S}^{\mathbf{G}}$ 

P. O. BOX 1468 MONAHANS, TEXAS 79756 PH. 943-3234 OR 563-1040 Martin Water Laboratories, Inc. water consultants since 1953 bacterial and chemical analyses

709 W. INDIANA MIDLAND, TEXAS 79701 PHONE 683-4521

			and the second second second second second second second second second second second second second second second
To: Mr. M 4001 Odess	larvin Stevenson Penbrook a, Texas	Laboratory Sample reco Results re	No. 1281890 eived 12-7-81 ported 12-14-81
Company:	Phillips Petroleum Company		
Project:	Lusk Plant in Eddy County, NM		
Subject:	To make determinations listed on by James C. Powell, Martin Water	n waste water from d Labs., Inc. on 12-	isposal pit. Sample 7-81.
	DETERMINATION		MG/L
	<u>A. Human Hea</u>	alth Standards	
•	Arsenic, as As	· · · · · · · · · · · · · · · · · · ·	0.000
	Barium, as Ba		0.0
	Cadmium, as Cd	_ · ·	0.00
	Chromium, as Cr		16.2
• •	Cyanide, as CN		0.7
•	Fluoride, as F		4.0

B. Other Standards for Domestic Water Supply

Chloride, as Cl522Copper, as Cu0.00Iron, as Fe0.04Manganese, as Mn0.00Phenols0.5

Sulfate, as  $SO_{4}$ 

Lead, as Pb

Nitrate, as N

Selenium, as Se

Silver, as Ag

Total Mercury, as Hg

896

1.0

0.000

6.8

0.00

0.00

1281890 (Page 2) Lus lant in Eddy County, 1

DETERMINATION

Remarks:

Total Dissolved Solids

Zinc, as Zn рH

C. Standards for Irrigation Use Aluminum, as Al'

Boron, as B Cobalt, as Co 0.00 Molybdenum, as Mo 0.0

Nickel, as Ni 0.00

The undersigned certifies the above to be true and correct to the best of his knowledge and belief.

MG/L

1.50

7.9

2,840



Martin Water Laboratories, Inc.



#### Martin Water Laboratories, Inc. water consultants since 1953 bacterial and chemical analyses



MG/L

709 W. INDIANA MIDLAND, TEXAS 79701 PHONE 683-4521

	To: Mr. Bob Stubbs	
•	4001 Penbrook	÷. ,
	Odessa, TExas	

Laboratory No.	282215
Sample received	2-10-82
Results reported	2-18-82

Company: Phillips Petroleum Company

County: Lea, NM .

O. BOX 1468

MONAHANS, TEXAS 79756

PH. 943-3234 OR 563-1040

Lease: Lusk Gas Plant

Subject: To make determinations listed on water from test hole #1. Sample taken by Robert C. Middleton, Martin Water Labs., Inc. on 2-10-82

DETERMINATION

#### A. Human Health Standards

그는 것 같은 것 같은 것 같은 것 같은 것 같은 것 같은 것 같은 것 같	P
Arsenic, ás As	0.000
Barium, as Ba	0.0
Cadium, as Cd	0.00
Chromium, as Cr	0.04
Cyanide, as CN	0.0
Fluoride, as F	1.2
Lead, Pb	0.0
Total Mercury, as Hg	0.000
Nitrate, as N	1.1
Selenium, as Se	0.00
Silver, as Ag	0.00
B Other Standards for Domestic Water Su	op1v

Chloride, as Cl 45 Copper, as Cu 0.00Iron, as Fe 0.50Manganese, as Mn 0.00Phenols 0.0Sulfate, as SO<sub>4</sub> 371

o::	ВоЪ	Stubbs,	Phillips	Proleum	Company, Lu	usk Gas	Plant	Laboratory	No 282215	(Page 2)
مرد ارد مرجع										
•	• •									
		· · ·						a service a service ser		and the second second

DETERMINATION	MG/L
Total Dissolved Solids	794
Zinc, as Zn	0.00
$\mathbf{p}\mathbf{H}$	7.96
C. Standards for Irrigation Use	
Aluminum, as Al	0.00
Boron, as B	0.0
Cóbalt, as Co	0.00
Molybdenum, as Mo	0
Nickel, as Ni	0.0

<u>Remarks</u>: The undersigned certifies the above to be true and correct to the best of his knowledge and belief.

1º Wylan C. Martin, M. A.

in the state			
	Martin-Water La	boratories, Inc.	
P. O. BOX 1468	WATER CONSULTA	NTS SINCE 1953	709 W. INDIANA
MONAHANS, TEXAS 7 Ph. 943-3234 or 563	9756 -1040	HEMICAL ANALYSES	PHONE 683-4521
To: Mr.Bo	ob Stubbs	Laboratory No.	282219
4001 Odess	Penbrook sa. Texas	Sample received Results reported	2-12-82 2-18-82
Company:	Phillips Petroleum Company		
Field:	Lusk		
Lease:	Lusk Gas Plant		
Subject:	To make determinations listed on v Robert C. Middleton, Martin Water	water from test hole #2. San Labs., Inc. 2-12-82.	ple taken by
		MC/T	
	<u>DETERMINATION</u>	<u>ric</u> , <u>i</u>	
	<u>A. Human Healt</u>	h Standards	
	Arsenic. as As	0.000	
	Barium, as Ba	0.0	
	Cadmium, as Cd	0.00	
	Chromium, as Cr	0.04	
	Crimpido 20 CN	0' 0	
	cyalitie, as on		
	Fluoride, as F	0.8	
	Lead, as Pb	0.0	
	Total Mercury, as Hg	0.000	
	Nitrate, as N	3.4	
		0.00	
	Selenium, as se	0.00	
	Silver, as Ag		
	B. Other Standards for	Domestic Water Supply	
	Chloride, as Cl	75	
	Copper as Cu	0.00	5
	oopper, as our		
	Iron, as Fe	U.03	
	Manganese, as Mn	0.00	
	Phenols	0.0	
	Sulfate, as SO,	2,588	
	<b>4</b>		

•

Lusk Gas plant, Laboratory No. 28 DETERMINATION Total Dissolved Solids, Evaporated Zinc, as Zn MG/L PH 4,426 0.00 C. Standards for Irrigation Use Aluminum, as Al

7.99 Boron, as B Cobalt, as Co 0.00 Molybdenum, as Mo. 0.0 Nickel, as Ni 0.00 .

Remarks: The undersigned certifies the above to be true and correct to the best of

Waylan C. Martin, Μ. A.

0

Martin Water Laboratories, Inc.

P. O. BOX 1468 MONAHANS, TEXAS 79756 PH. 943-3234 OR 563-1040 Martin Water Laboratories, Inc. water consultants since 1953 bacterial and chemical analyses

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To: Mr. :4001 Odes	Bob Stubbs Penbrook sa, Texas	Laboratory No. Sample received Results reported	282218 2-10-82 2-18-82
Company:	Phillips Petroleúm Company		
Field:	Lea, NM Lusk		
Lease:	Lusk Gas Plant		
<u>Subject</u> :	To make determinations listed on water from by Robert C. Middleton, Martin Water Labs.,	test hole #3. San Inc. 2-10-82.	nple taken
, 	DETERMINATION	MG/L	
	A. Human Health Standa	rds	
	Arsenic, as As	0.000	
	Barium, as Ba	0.0	
· · · · · · · · · · · · · · · · · · ·	Cadmium, as Cd	0.00	
	Chromium, as Cr	0.04	
	Cyanide, as CN	0.0	
	Fluoride, as F	0.8	
	Lead, as Pb	0.0	
	Total Mercury, as Hg	0.000	
	Nitrate, as N	5.7	
	Selenium, as Se	0.00	• • • • • • • • • • • • • • • • • • •
	Silver, as Ag	0.00	м.
	B. Other Standards for Domestic Wa	ter Supply	
	Chloride, as Cl	34	
	Copper, as Cu	0.00	
	Iron, as Fe	, 5.7	
	Manganese, as Mn	0.00	
	Phenols	0.0	
	Sulfate, as $SO_4$	61	
			and a second

Petroleum Company, Lusk Gas An and a star and a star and a star Mr. Bob Stubbs, Phil MG/L (Page 2) 420 2.5 DETERMINATION 0.00 Total Dissolved Solids, Evaporated 7.82

Zinc, as Zn C. Standards for Irrigation Use

Aluminum, as, Al Boron, as B 0 Cobalt, as Co 0.0 Molybdenum, ás Mö

Remarks: The undersigned certifies the above to be true and correct to the best of his knowledge and helief

of his knowledge and belief.

pH.

lan C.

0.00

0.0

0.00

P. O. BOX 146 MONAHANS, TEXAS	B 79756	Martin Waler Water Consul Bacterial And	LADORALOHIUS, HIG TANTS SINCE 1 CHEMICAL ANA	953 Lyses		709 W. Midland, Phone	INDIANA TEXAS 79701 683-4521
рн. 943-3234 OR 56 То: Mr. 4001 Odes	Bob Stubbs Penbrook sa. Texas			Laboratóry Sample rece Results rec	No. vived	282217 2-13-82 2-18-82	
Company: County: Field: Lease:	Phillips Petroleum Lea,NM Lusk Lusk Gas Plant	Company		tost hole	the Som		
<u>Subject</u> :	Robert C. Middleton	, Martin Wat	er Labs., In	ic. on $2-13-8$	74. Sam 32.	pie taken	БУ

A. Human Health Standards

Arsenic, as As	0.000
Barium, as Ba	0.0
Cadmium, as Cd	0.00
Chromium, as Cr	0.02
Cyanide, as CN	0.0
Fluoride, as F	1.Ò
Lead, as Pb	0.0
Total Mercury, as Hg	0.000
Nitrate, as N	3.4
Selenium, as Se	0.00
Silver, as Ag	0.00
B. Other Standards for Domestic Water Supp	<u>ly</u>
Chloride, as Cl	51
Copper, as Cu	0.00
Iron, as Fe	0.17
Manganese, as Mn	0.00
Phenols	0.0
Sulfate, as SO <sub>4</sub>	57

To: Mr. Bob Stubbs, Phillips Petroleum Company, Lusk Gas Plant, Laboratory No. 282217 (Page 2)

DETERMINATION	MG/L
Total Dissolved Solids, Evaporated	598
Zinc, as Zn	0.00
pH	7.54
C Standarde for Trrigățion Heo	
d. Standards for infigation use	
Aluminum, as Al	0.00
Boron, as B	0.0

Remarks: The undersigned certifies the above to be true and correct to the best of his knowledge and belief.

Cobalt, as Co

Nickel, as Ni

Molybdenum, as Mo

0.00

0

0.0

Waylan C. Martin, M. Α.



P. O. BOX 1468

MONAHANS, TEXAS 79756 PH. 943-3234 OR 563-1040

Martin Water Laboratories, Inc. WATER CONSULTANTS SINCE 1953 BACTERIAL AND CHEMICAL ANALYSES 



•1

,	To. Mr. Bob Stubbs	Laboratory No. 202220	•
,	4001 Penhrook	Sample received 2-12-82	
	Odessa Texas	Results reported 2-18-82	
•	ouessa, iexuo		•
	Company: Phillips Petroleum Company		
1	Company. Infiliappi container		
	County: Lea, NM		,
	Field: Lusk		·
	Lease: Lusk Gas Plant		
• •			_
	Cubication To make determinations listed on water from	storage tank @ plant (used to dril	1
	Subject. D make determinations the Dataset C 1	Middloton Martin Water Labs Inc.	
	test hole #4). Sample taken by Robert C. r	MILUUIE CON, Har CIN Water Habber, and	1
	on 2-12-82.		т :

DETERMINATION	MG/L
<u>A. Human Health Standards</u>	
Arsenic, ás As	0.000
Barium, as Ba	0.0
Cadmium, as Cd	0.00
Chromium, as Cr	0.02
Cyanide, as CN	0.0
Fluoride, as F	0.4
Lead, as Pb	0.0
Total Mercury, as Hg	0.000
Nitrate, as N	3.4
Selenium, as Se	0.00
Silver, as Ag	0.00
B. Other Standards for Domestic Water Supp	<u>oly</u>
Chloride, as Cl	57
Copper, as. Cu	0.00
Iron, as Fe	0.11
Manganese, as Mn	0.00
Phenols	0.0
Sulfate, as SO <sub>4</sub>	26

Mr. Bob Stubbs, Philling Petroelum Company, Lusk Gas (Page 2)

••					MG/L
• •	DETERMIN	ATION	ide Eva	norated	348
,	Total Di	SSOTAGU 901			0.00
', •	Zinc, as	Zn			8.19

pH

Nickel, as Ni

#### Standards for Trrigation Use

0.00 Aluminum, as Al 0.0 Boron, as B 0.00 Cobalt, as Co Molybdenum, as Mo

Remarks: The undersigned certifies the above to be true and correct to the best of his knowledge and belief.

Waylan C. Martin, M. A.

0.0

Martin Water Laboratories, Inc.

#### STATE ENGINEER OFFICE

#### WELL RECORD

· .		5-1	Section 1	. GENER	AL INFO	RMATION				·
) Owner	of well	ullelps P	etroleum	~	<u> </u>	• .	`Owr	er's Well	No	,
Street of	or Post Office Ad	dress	Rebbs N	Z I SU A RALA						
City an	d State						4.1			
ell was drill	ed under Permit	No. TEST	HOLE FOR	EPA	and	l is located	in the. 1600'	FRIL-1	600' Fy <b>l</b>	i -
a	¼ ¼	· ¼	¼ of Se	ection _3	T	ownship	<b>195</b> R	ange <u>5</u>	18	N.M.P.
b. Trac	t No	of Map No	)	c	of the					<u></u>
c. Lot	No livision, recorded	of Block No. 1 ín		dy	of the Count	у.		· · · · · · · · · · · · · · · · · · ·	•	
d. X= _		_ feet, Y=		fe	et, N.M. C	oordinate	System		:	Zone
the _		Larry'	. Pallle	9			· · · · · · · · · · · · · · · · · · ·	2088	2	Gra
Drilling	Contractor	2601 0	, Benden	Na	obs, M	H 88240	License No			· ·
dress	2-11-8	2	2	-12-22			thistophere .	4-110	-7 7/7	<u>.</u>
illing Begai	n	Com	pleted		Туј	pe tools		220 Siz	600 hole_	- 4 3/
evation of l	and surface or			a	t well is		ft. Total dept	h of well	590	1 <u>1</u> 11 11 11 11 11 11 11 11 11 11 11 11 1
mpleted w	ell is 🗍 sh	nallow	artesian.	t hola	Dept	th to water	upon completic	n of well		· · · ·
		Sá	ction 2 PRIN	CIPAT W	ATER.BE	ARING ST	RATA			
Dept	n in Feet	Thicknes	s		ATER-DE				Estimated '	Yield
From	То	in Feet		Descriptio	n of Wate	r-Bearing F	ormation	(ga	allons per n	ninute)
				·						· ·
			-			• • •	·			. •
u <sub>n</sub> ,⊔≡u <sub>n</sub> ,_,,,,⊔										,
		L	Sectio	n 3 REC		CASING			<u>.</u>	
Diameter	Pounds	Threads	Depth	in Feet		Length	Type of Si	oe	Perfor	ations
(inches)	per foot	per in.	Top	Botto	<u>m</u>	(feet)			From	To
93,54	TEOFUC			300	<del>_</del>		STATE	†	40	-19
			0	220	2	WIN	DOA,			
			. <u></u>		QH		/~			· · · ·
		Sect	tion 4. RECO	RD OF M	UDDING	AND CEM	ENTING			
From	n in Feet To	Hole Diameter	Sac of M	ks lud	Cubic of Cen	Feet nent	Met	nod of Pl	acement	
										<i>.</i>
							· ··			
					····		<u></u>			II II.
			<b>k</b>			<u>k</u>				
ugging Con	tractor		Sectio	on 5. PLU	GGING R	ECORD				-
idress			······································			. No.	Depth i	n Feet	Cu	bic Feet
ugging Met	nod				· · · ·	•	Тор	Botto	m of	Cement
ugging app	oved by:				· .	2			· · · ·	
		State En	gineer Repres	entative		. 3				
	· · ·				· · · · ·	4			i	
ite Receive	d	· ·	FOR USE	OF STAT	E ENGIN	IEER ONL	Y FWL		FSL	

File No.\_\_\_

Use \_\_\_\_\_

Location No.\_\_\_\_

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**Revised June 1972** 

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Depth	in Feet	Thickness	
From	То	in Feet	Color and Type of Material Encountered
0	1	1	topical.
• 1	2	1	eatlche
2	18	16	white sand
. 18	40	22	brown sand
40	100	60	brown sand 8 gravel
100	182	82	brown sand gravel
182	200	18	brown clay gravel
200	292	92	bacan clay
292	500	° <b>¢</b>	ned bed
	· · · · ·		
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			in the second second second second second second second second second second second second second second second
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Section 7. REMARKS AND ADDITIONAL INFORMATION

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Larry <u>Driller</u> 9

INSTRUCTIONS: This form should be executed in triplicate, preferably typewritten, and submitted to the appropriate district office of the State Engineer. All sections, except Section 5, shall be answered as completely and accurately as possible when any well is drilled, repaired or deepened. When this form is used as a plugging record, only Section 1(a decimal dec

#### Revised June 1972

STATE ENGINEER OFFICE

#### WELL RECORD

Street or	I well Post Office Ad	dress	P.O. Box 2130		5	Owne	r s well No.	
City and	State		Hobbs, NM 882	40	s			· · ·
ll was drilled	d under Permit	No. <b>TEST H</b>	OLE FOR EPA	and	is located	in the: <b>#3-450</b> *	N 600'E	
а	1/4 1/4	1/4	<sup>1</sup> / <sub>4</sub> of Section	<b>25</b> To	wnship	195 Ran	oe <b>81</b> 5	NMP
1				<u> </u>		· .	8	
b. Iract	No	of Map No.		of the			· · · · ·	
c. Lot N Subdi	o vision_recorded	of Block No I in	Fddy	of the County	V.		<del></del>	<i></i>
		6 + X-	energy.		· · · · · · · · · · ·			
d. X= the		_ teet, Y =		ieet, N.M. Co	Sordinate S	ystem		Zone Gra
Drilling (	Contractor	larry'	s Prilling			_ License No	10882	
		2601 W	.Bender 1	lobbs, NM		· :		· · · ·
dress	2-10-82		2-11-1	32	······	tri-cone		4 3/4
lling Began		Com	oleted	Тур	e tools	· · ·	Size of	hole
vation of la	nd surface or		· · · · · · · · · · · · · · · · · · ·	_ at well is		_ ft. Total depth	of well	200
mpleted wel	ll is 🗆 sh	nallow 🗆 a	rtesian.	hole Depti	h to water	upon completion	of well	
	· · ·	Sec	tion 2 PRINCIPAL	WATER.BE	ARING ST	RATA		
Depth	in Feet	Thickness	Deserie	tion of Watan	Dooning E		Estir	nated Yield
From	То	in Feet	Descrip		-Bearing Fo		(gallon	s per minute)
				····			· ·	· · · · · · · · · · · · · · · · · · ·
								· · · · · · · · · · · · · · · · · · ·
				· .				
		· · · ·		i		· · · · · · · · · · · · · · · · · · ·	······	
·		· · · · · ·			<u> </u>		·	·
Diameter	Pounds	Threads	Section 3. RE	CORD OF C	ASING		·····	Perforations
(inches)	per foot	per in.	Top Bot	tom,	(feet)	Type of Sho	e Fi	rom To
			· · · · · · · · · · · · · · · · · · ·					
· · ·			······			· · · · · · · · · · · · · · · · · · ·		
•	1	<u>                                      </u>						
Denth	in Feet	Secti	on 4. RECORD OF	MUDDING A	AND CEMI	ENTING		
From	То	Diameter	of Mud	of Cem	ient	Metho	d of Placer	nent
					-	•		
د								
· .	· ·							, ····, ···
•	· · ·	<u>.</u>		,	·····	· · · · · · · · · · · · · · · · · · ·		
		•	Section 5. PL	UGGING RE	ECORD	· ·		
gging Contr	actor			· · · · · · · · · · · · · · · · · · ·	r	· · · · · · · · · · · · · · · · · · ·		
aging Metho	od	· · · · · · · · · · · · · · · · · · ·	······································	·····	No.	Depth in Top	Feet Bottom	Cubic Feet of Cement
Seme metho	ged				1		•	
te Well Plug		•			$\frac{2}{3}$			4
te Well Plug gging appro		Stata E	ineer Danman +-+!					
te Well Plug gging appro		State Eng	ineer Representative	<b>;</b>	4			· · · · · · · · · · · · · · · · · · ·

Use

Location No.

File No.

Depth 1	n Feet	Thickness	Color and Type of Ma	aterial Encountered
From	То	in Feet		
Ø	2.	I	blow sand	· · · · · · · · · · · · · · · · · · ·
2	12	10	caliche	
12	36	. 24	sand	
36	60	24	callche	
60	.94		ned dirt hard	
94	102	8	gray clay 8 rock	· · · · · · · · · · · · · · · · · · ·
102	114	12	red dirt	
114	116		grag rock	
115	150	14	aed bed	
130	168	38	gray rock	
168	172	4	ned bed	
172	180	. 8	gray rock	
180	210	30	red bed	
210	223	13	gray rock	
223	235	12	damp ned bed	
2 35	240	5	gray rock	
240	260	20	red bed	
	· .	·		
· · ·		۰.		
			<u>e a na seconda da se Seconda da seconda da se</u>	an an an an an an an an an an an an an a
	- *	9		
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Section 7. REMARKS AND ADDITIONAL INFORMATION

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The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

tarry k A Driller D

INSTRUCTIONS: This form should be executed in triplicate, preferably typewritten, and submitted to the appropriate district office of the State Engineer. All sections, except Section 5, shall be answered as completely and accurately as possible when any well is drilled, repaired or deepened. When this pairs is used as a plugging record, only Section 1 (pairs of the Section 5 need be completed.

#### Revised June 1972

#### STATE ENGINEER OFFICE

#### WELL RECORD

(A)	Owner of Street or l	well Post Office Ad	Phillips	Petrolew Bax 273	n N D		Owner	's Well No	X
	City and S	State	doh	da, mm bi	5240	1			
Well	was drilled	under Permit	No. TEST H	ole for i	EPA /	and as located i	n the: #2 <del>122</del>	0'N 500'E	W
	a	_ ¼ ¼	· ¼	¼ of Se	ection	Township	193 Ran	ge	N.M.P.M
	b. Tract N	lo	of Map No.	· ·	of the				. <u> </u>
	c. Lot No Subdiv	ision, recorded	of Block No 1 in	Lea	of the Co	ounty.		<u>. '</u>	
	d. X=		_ feet, Y=		feet, N.M	M. Coordinate S	ystem		Zone i
	tne		Larr	y's Dall	ling		W	0882	Gran
в)		ontractor	2601	W. Bende	in Hobbs	, HH 88240	_ License No		
ddr	ess	2-9-82		2-1	10-82		tri-cone		4 3/4
rilli	ng Began _		Com	oleted		. Type tools		Size of hole 35	eir Ø
leva	tion of lan	d surface or			at well	is	_ ft. Total depth	of well <b>34</b>	ft 5
omr	pleted well	is sh	nallow 🗔 a	irtesian. Tea	ic hole I	Depth to water u	pon completion	of well	f(
	Depth i	n Feet	Sec	tion 2. PRIN	CIPAL WATER	-BEARING ST	RATA	Fstimate	d Vield
I	From	То	in Feet		Description of W	Vater-Bearing Fo	ormation	(gallons pe	r minute)
							· .		
						74.157			,, <u></u>
				Sectio	n 3. RECORD (	OF CASING			
Di (i	iameter inches)	Pounds per foot	Threads per in.	Depth Top	in Feet Bottom	Length (feet)	Type of Shoe	e Per From	forations To
				<u> </u>					
		1	4						
			Secti	on 4. RECO	RD OF MUDDI	NG AND CEME	NTING		
	Depth i	n Feet	Secti Hole	on 4. RECO Sac	RD OF MUDDI	NG AND CEME	NTING Metho	d of Placement	
	Depth i From	n Feet To	Secti Hole Diameter	on 4. RECO Sac of M	RD OF MUDDI ks Cu ud of	NG AND CEME bic Feet Cement	NTING Metho	d of Placement	
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Plugg Plugg Date Plugg	Depth i From ging Contra ess ging Methoo Well Plugg ging approv	n Feet To ctor d ed bý:	Secti Hole Diameter	on 4. RECO Sac of M Sectio	RD OF MUDDI ks Cu lud of	NG AND CEME bic Feet Cement G RECORD	ENTING Metho Depth in I Top	d of Placement	Cubic Feet of Cement

Use

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Location No.

File No..

			Section 6. LOG OF HOLE
Depth i	n Feet	Thickness	Color and Type of Material Encountered
From	To	in Feet	
-0		10	blow sand
10	20	10	caliche
20			ned sand
50		30	red clay
80		5	gray clay
85	100	15	red, gray, green clay
100	195	35	red dirt
135	170	95	gray hard clay
170	174	4	ned clay s nock
174	235	61	gray hard clay
235	237	2	red clay
237	250	13	gray elay
250	280	<b>3</b> 0	ned bed some gravel
280	310	30	gray rock
310	535	25	white nock ned bed
535	350	15	red bed
	<u>.</u>	a	
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Section 7. REMARKS AND ADDITIONAL INFORMATION

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

R Driller Ø

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INSTRUCTIONS: This form should be executed in triplicate, preferably typewritten, and submitted to the appropriate district office of the State Engineer. All sections, except Section 5, shall be answered as completely and accurately as possible when any well is drilled, repaired or deepened. When this families used as a plugging record, only Section 1(a) Section 5 need be completed.

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Revised June 1972

#### WELL RECORD

 $\mathbb{E} \left\{ \left\{ \mathcal{M}_{i}^{0}, \left\{ t_{i} \right\} \in \mathcal{M}_{i}^{0} \right\} : \left\{ t_{i}^{0} \right\} \in \mathcal{M}_{i}^{0} \in \mathcal{M}_{i}^{0} : \left\{ t_{i}^{0} \right\} \in \mathcal{M}_{i}^{0} \in \mathcal{M}_{i}^{0} \right\}$ 

A) Owner of	f well					Owner's	Well No.	· · · · ·
City and	State		— <del>Р.V.Бох</del> — <del>Нобьь,</del>	NM 88240				
ell was drilled	d under Permit ]	No			_ and is located	in the: #1 12	00'N 300'E	
a	¼¼	1⁄4	¼ of Secti	.on	Township	19S Range	BIFE 32E	N.M.P.
b. Tract	No	of Map No		of the	·			
c. Lot N	0 (	of Block No	100	of the				
d. X=		feet. Y=	· · · · · · · · · · · · · · · · · · ·	feet. N.	M. Coordinate	System		Zone
the	, · •		10++	ule Deil			17.600	Grai
B) Drilling (	Contractor		2601	W Bond	ang Habb	License No	<u></u>	
ddress	2-8-80		2-9	w. Senu	22 1000	thin 00240	· · · · ·	A 2/A
rilling Began		Comp	leted	· · · · · · · · · · · · · · · · · · ·	_ Type tools	UN-CONE	_ Size of hole	4 3/4
evation of la	nd surface or	:	+01	at wel	1 is	ft. Total depth of	well <sup>260</sup>	
ompleted wel	l is Sh	allow 🗌 ar	tesian.	a noce	Depth to water	upon completion of	well 102	
Depth	in Feet	Sect Thickness	ion 2. PRINCI	PAL WATER	₹-BEARING ST	TRATA	Estimated \	 Yield
From	.То '	in Feet	De:	scription of V	Water-Bearing F	ormation	(gallons per n	ninute)
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	P		<u> </u>			<u></u>	<u></u>	<u> </u>
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Diamatar	Pounds	Threada	Section 3	3. RECORD	OF CASING	<u>ŕ <sup>·</sup></u>	Perfor	
(inches)	per foot	per in.		Bottom	(feet)	Type of Shoe	From	To
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	۰. ۲۰۰۰ ۲۰۰۰ ۲۰۰۰	3			<u> </u>			2.
· · · · · ·			`	) OF MUDD	ING AND CEM	ENTING		<u></u>
		Sectio	n 4. RECORE				6 701	
Depth From	in Feet	Sectio Hole Diameter	n 4. RECORL Sacks of Mud	Cu	ibic Feet Cement	Method	of Placement	. *
• Depth • From	in Feet	Sectic Hole Diameter	n 4. RECORI Sacks of Mud	Cu	ibic Feet Cement	Method	of Placement	· · · · ·
<u>Depth</u> From	in Feet	Sectic Hole Diameter	n 4. RECORI Sacks of Mud	Cu	ibic Feet Cement	Method		
Depth From	in Feet To	Sectic Hole Diameter	n 4. RECORI Sacks of Mud		abic Feet Cement	Method	of Placement	
<u>Depth</u> From	in Feet	Sectic Hole Diameter	n 4. RECORI Sacks of Mud Section	5. PLUGGIN	G RECORD	Method	of Placement	
Depth From	in Feet	Sectic Hole Diameter	n 4. RECORI Sacks of Mud Section	5. PLUGGIN	Ibic Feet Cement	Method	of Placement	
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Depth From Igging Contr Idress Igging Metho Ite Well Plug Igging appro	in Feet To actor od ged ved by:	Sectic Hole Diameter	n 4. RECORI Sacks of Mud Section Section neer Represen FOR USE O	5. PLUGGIN	IG RECORD	Method Depth in Fe Top B Y	et Cu ottom of	bic Feet Cement

			Section 6. LOG OF HOLE
Deptl	h in'Feet	Thickness	Color and Type of Material Encountered
From	То	in Feet	
0	4	-4	blow sand
4	10	6	caliche
10	30	20	sand
30	52	22	sand & gravel
52	60	8	red hed
60	61	1	clay gray
61	105	44	red bed
.105	115		gray clay & rock
115	117	. 2	sand black rock
117	152	35	gray clay & rock
152	162	10	red clay
162	230	68	red clay layers of gray & brown dry clay
2 30	240	10	red clay
240	244	4	gray green clay
244	260	16	red bed
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Section 7. REMARKS AND ADDITIONAL INFORMATION

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Driller

INSTRUCTIONS: This form should be executed in triplicate, preferably typewritten, and submitted to the appropriate district office of the State Engineer. All sections, except Section 5, shall be answered as completely and accurately as possible when any well is drilled, repaired or deepened. When this n is used as a plugging record, only Section 1( d Section 5 need be completed.



# STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT OIL CONSERVATION DIVISION

BRUCE KING GOVERNOR LARRY KEHOE SECRETARY POST OFFICE BOX 2088 STATE LAND OFFICE BUILDING SANTA FE, NEW MEXICO 87501 (505) 827-2434

December 3, 1981

Phillip Petroleum Co. 4001 Penbrook Odessa, Texas 79762

ATTENTION: Ms. Reda Johns

RE: Exploratory Water Well for Lusk Plant

Dear Ms. Johns:

Pursuant to the letter of November 18, 1981 from the State of New Mexico Commissioner of Public Lands, Phillips Petroleum Company is hereby authorized to drill an exploratory well within the SE/4 NW/4 of Section 36, Township 19 South, Range 31 East, NMPM, to obtain water quality data.

Please advise me when exactly you will start drilling the exploratory well so I can notify the Land Resources Division.

If you have any questions concerning this matter, please let call me.

Sincerely,

ceer a. Sempson Fl

Oscar A. Simpson, III Water Resource Specialist

OAS/dp
# State of New Mexico



ALEX J. ARMIJO COMMISSIONER

Commissioner of Public Lands

November 18, 1981

Ph. 827-2838 P. O. BOX 1148 SANTA FE, NEW MEXICO X8X50K Zip Code: 87504-1148

Energy and Minerals Department Oil Conservation Division P.O. Box 2088 Santa Fe, New Mexico 87501

Attention: Oscar A. Simpson, Water Resource Specialist

Dear Mr. Simpson:

In response to your correspondence of October 23, 1981, relative to permission to obtain water quality data from state trust lands, please be advised that permission is granted to go upon the land and conduct the activity necessary to obtain the water quality data.

Also, be advised that the necessary activity as stated above specifically involves the granting of the drilling of an exploratory well within the SE4NW4 of Section 36, Township 19 South, Range 31 East, to a depth of approximately 500 feet. The time involved in drilling the well and obtaining the requested data is hereby limited to three days to include drilling and cleaning up of the site.

Also, it should be further understood that as a result of permission being granted, the Land Office has the right to request and obtain the data derived from the above authorized activity.

If you have any questions concerning the situation, please do not hesitate in contacting me.

Yours very truly,

Benito Lopez, Directo

BL:msa

P.S. Please advise us as to the date you plan to drill the well.



- 19

PHILLIPS PETROLEUM COMPANY ODESSA, TEXAS 79762 4001 PENBROOK



EXPLORATION AND PRODUCTION GROUP

October 27, 1981

Re: Discharge Plan for Lusk Natural Gasoline Plant

Mr. Oscar A. Simpson, III Water Resource Specialist Energy & Minerals Department Oil Conservation Division P. O. Box 2088 Santa Fe, New Mexico 87501

Dear Sir:

As you requested, per your telephone conversation with Mr. Larry Nash and Ms. Rita Johns of this office, this letter is to request additional time for the preparation of a discharge plan for our <u>Lusk plant</u>. Our July 29, 1981, request for an extension was granted to obtain hydrologic data pertaining to the discharge plan. We received approval from the State Engineer's office to drill four exploratory wells on July 31, 1981. However, to date, we have not received right of way clearance from the State Land office to move on site and drill. Because of your help in this matter, we expect to receive clearance shortly.

Upon receipt of right of way, we estimate that the four exploratory wells can be drilled and sampled in accordance with Section 3-107 of the NMEIA Regulations in two weeks. A complete water analysis for the listed metal contaminants in Section 3-103 of the NMEIA Regulations can be completed in 10-14 days with the exception of uranium and radioactivity which must be run at a speciality lab--the nearest being in Santa Fe. Upon receipt of the completed water analysis and comparison of the analysis with an analysis of the Lusk plant waste water, a discharge plan will be prepared and expedited to your office, within six weeks from receipt of clearance to drill.

Because of the remote location of our <u>Lusk plant</u> and the lack of any existing waste water disposal systems and water injection systems, we have had difficulty in developing a practical and economical discharge plan. By drilling and testing the four water wells, we hope to determine the quantity and quality of the ground water around Lusk plant, determine if ground water protection is necessary and if a disposal method other than our evaporation pits is required. Mr. Oscar A. Simpson, III Re: Discharge Plan for Lusk Natural Gasoline Plant October 27, 1981 Page 2

We appreciate your cooperation and aid in this matter. If you need further information, please don't hesitate to contact Ms. Rita Johns at (915) 367-1302.

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Very truly yours,

B.Z. Routen

E. E. Clark, Manager Permian Basin Region

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STATE OF NEW MEXICO
 STATE OF NEW MEXICO
 ENERGY AND MINERALS DEPARTMENT
 OIL CONSERVATION DIVISION

BRUCE KING GOVERNOR LARRY KEHOE SECRETARY

POST OFFICE BOX 2088 STATE LAND OFFICE BUILDING SANTA FE, NEW MEXICO 87501 (505) 827-2434

October 23, 1981

State Land Office Old Santa Fe Trail Santa Fe, New Mexico 87501

ATTENTION: Dwain Glidewell

Dear Mr. Glidewell:

OAS/dp?

The Oil Conservation Division would like Mr. Alex Armijo, Land Office Commissioner of the State of New Mexico, to permit the OCD to obtain water quality data from the Ogallala formation beneath state land.

Water analysis data would be obtained from a 40-acre tract of land located as the SE/4 NW/4 of Section 36, Township 19 South, Range 31 East, NMPM, Eddy County, New Mexico. An exploratory well approximately 500 feet deep will be drilled by air for the purpose of obtaining water quality data. The well will take approximately three days to drill and clean-up the site.

The OCD would like permission to drill the exploratory well as soon as possible. Phillips Petroleum Company at the request of the OCD will provide all personnel and incur all expenses in connection with the exploratory drilling and water analysis. All geologic, hydrologic, and water analysis data obtained from the exploratory well will be sent to the OCD and in turn made available to the Land Office.

If there are any questions regarding this matter, please do not hesitate to contact me.

Sincerely,

scon a. Simpton

Oscar A. Simpson, Water Resource Specialist

August 10, 1981

Phillips Petroleum Company Exploration and Production Group 4001 Pen Brook Odessa, Texas 79762

ATTENTION: Mr. Glasgow

RE: Discharge Plan for Lusk Plant

Dear Mr. Glasgow:

Pursuant to the letter of July 29, 1981 by E. E. Clark of Phillips Petroleum Company requesting a 120-day extension of time for Lusk Plant Discharge Plan, the extension of time is hereby granted.

The extension of time was granted on the basis that Phillips needs additional time to obtain geologic and hydrologic data pertaining to the discharge plan. The extension of time for Busk Discharge Plan is hereby extended from July 29, 1981, to October 29, 1981. This is the second and the last extension to be granted for the Lusk Plant. The OCD expects at the end of this extension to receive a Discharge Plan for Lusk Plant.

If you have any questions regarding this matter, please call me at (505) 827-2534.

Sincerely,

Oscar A. Simpson, III Water Resources Specialist

OAS/dp



## PHILLIPS PETROLEUM COMPANY

ODESSA, TEXAS 79762 4001 PENBROOK

EXPLORATION AND PRODUCTION GROUP

July 29, 1981

Lusk Gasoline Plant Discharge Plan



Mr. Joe D. Ramey, Director New Mexico Oil Conservation Commission P.O. Box 2088 Santa Fe, New Mexico 87501

Dear Mr. Ramey:

After further study of the waste water discharge alternatives available to Phillips Petroleum at Lusk Plant, we have decided to determine if there is a need for ground water protection in the area near our facility. To this end, the following actions have been taken or are planned:

- 1. Information has been secured on the depth to Redbed in a Township area surrounding Lusk Plant.
- 2. Depth information has been contoured by our geological section and possible troughs and closures in the Redbed isolated.
- 3. Four exploratory well locations have been spotted where ground water accumulations are possible. These locations are down dip from the plant and would be most susceptible to contamination from plant waste water.
- 4. Permit applications for drilling the exploratory wells have been submitted to the State Engineer's Office and copies are attached for your information.
- 5. After obtaining state permission and legal right of way, the four wells will be drilled. Air drilling will be used so as not to damage possible producing formations. A production test and water sample will be secured from each well.
- 6. Test results and sample analysis will be reviewed to determine if protection and therefore a discharge plan are required.

Page Two Lusk Gasoline Plant Discharge Plan

7

This procedure has been discussed by telephone with Oscar Simpson of your office. Barring any undue delays in securing legal right of way, a determination of groundwater existence and quality can be obtained in 60 - 90 days. We respectfully request an extension in submitting a discharge plan.

If you have any questions regarding this matter, please do not hesitate to contact Mr. A.B. Glasgow, (915) 367-1439.

Yours very truly,

aver M E.E. Clark Regional Manager

ABG:ddc

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READ INSTRUCTIONS ON BACK

# APPLICATION TO APPROPRIATE UNDERGROUND WATERS IN ACCORDANCE WITH SECTION 75-11-1 NEW MEXICO STATUTES

\*Exploratory only--not for appropriation.

Date: \_

	ie and Address of Applicant: File No
Phi	illips Petroleum Company
Roc	om 401, 4001 Penbrook Street
Ode	essa. Texas 79762
2. Desc	ribe well location under one of the following subheadings:
a	<u></u> <u>¼</u> <u>SW</u> <u>¼</u> <u>NW</u> ¼ of Sec. <u>20</u> Twp. <u>19S</u> Rge. <u>32E</u> <u>N. M. P. M.,</u> <u>Lea</u> <u>County</u> .
b. Tı	ract No of Map No of the
c. Lo	of Block No of the
Su	bdivision, recorded in County.
d. X	= feet, Y = feet, N. M. Coordinate System Zor
111	Glan
e. Gi dis	ive street address or route and box No. of property upon which well is to be located, or location by direction an stance from known landmarks. Five miles northwest from Halfway, New Mexico.
	· · · · · · · · · · · · · · · · · · ·
 A n n r	$r_{\rm ext}$ fact, outside diameter of assists $p_{\rm ext}$ is the
. Аррі	inche
Name	e of driller (if known)
. Use o	of water (check appropriate box or boxes):
	Household, non-commercial trees, lawn and garden not to exceed 1 acre.
	Livestock watering.
, <b>1</b>	
لـــا	a commercial operation.
	Prospecting, mining or drilling operations to discover or develop natural resources.
	Construction of public works, highways and roads
x	Other
<b></b>	If any of the last three were marked, give name and nature of business under Remarks. (Item 5)
. Rema wate	rks: This is an exploratory water well for the purpose of determining if ground er located in the vicinity of the Phillips Petroleum Company's Lusk Gasoline it is of a quantity and quality designated to be protected by the New Mexico er Quality Control Commission Regulations as administered by the New Mexico Of Conservation Commission.
<u>Wate</u>	P 7 Devices and the second sec
<u>Vate</u> I, and b	<u>B. Z. Parker</u> , affirm that the foregoing statements are true to the best of my knowledg belief and that development shall not commence until approval of the permit has been obtained.
<u>Vate</u> I, and b Phil	<u>B. Z. Parker</u> , affirm that the foregoing statements are true to the best of my knowledge belief and that development shall not commence until approval of the permit has been obtained.
Plan Wate I, and b Phil By:	B. Z. Parker, affirm that the foregoing statements are true to the best of my knowledg belief and that development shall not commence until approval of the permit has been obtained. Lips Petroleum Company , Applicant <u>73.2. July 29, 1981</u> July 29, 1981
Plar <u>Wate</u> I, and t Phil By:	B. Z. Parker, affirm that the foregoing statements are true to the best of my knowledg belief and that development shall not commence until approval of the permit has been obtained. Llips Petroleum Company , Applicant <u>73.2. July 29, 1981</u> <u>3. Z. Parker, Manager-Production Operations</u> ACTION OF STATE ENGINEER
Plar <u>Wate</u> I, and b Phil By: E his app	B. Z. Parker, affirm that the foregoing statements are true to the best of my knowledg belief and that development shall not commence until approval of the permit has been obtained. Llips Petroleum Company <u>Applicant</u> <u>3. Z. Parker, Manager-Production Operations</u> ACTION OF STATE ENGINEER Lication is approved for the use indicated, subject to all general conditions and to the specific conditions numbered on the reverse side hereof. This permit will automatically expire unless this well is
Plar Wate I, and b Phil By: His app	B. Z. Parker, affirm that the foregoing statements are true to the best of my knowledg belief and that development shall not commence until approval of the permit has been obtained. Llips Petroleum Company <u>Applicant</u> <u>3. Z. Parker, Manager-Production Operations</u> <u>ACTION OF STATE ENGINEER</u> blication is approved for the use indicated, subject to all general conditions and to the specific conditions numbered <u>on the reverse side hereof. This permit will automatically expire unless this well is</u> r driven and the well record filed on or before
Plar Wate I, and b Phil By: bis app rilled or . E. Rey	B. Z. Parker, affirm that the foregoing statements are true to the best of my knowledge belief and that development shall not commence until approval of the permit has been obtained. Llips Petroleum Company 

File No.

READ INSTRUCTIONS ON BACK

# APPLICATION TO APPROPRIATE UNDERGROUND WATERS IN ACCORDANCE WITH SECTION 75-11-1 NEW MEXICO STATUTES

\*Exploratory only--not for appropriation.

1. Name and Address of Applicant:	File No
Phillips Petroleum Company	
Room 401, 4001 Penbrook Street	
Odessa, Texas 79762	
2 Describe well location under one of the following subh	eedings.
2. Describe wen location under one of the following such	10 m 105 m 32F
a ¼ ¼ ¼ ¼ of Lea County.	f Sec Iwp RgeN. M. P. M., I
b. Tract No of Map Noof the	
c. Lot No of Block No of the	
Subdivision, recorded in	County.
d. X = feet, Y = in the	feet, N. M. Coordinate SystemZone Zone Grant
e Cive street address or route and how No. of prope	arty upon which well is to be located, or location by direction one
distance from known landmarks Six miles no	orthwest from Halfway, New Mexico.
3. Approximate depth (if known) 200	feet; outside diameter of casing none inches
Name of driller (if known)	
. Use of water (check appropriate box or boxes):	
Household, non-commercial trees, lawn and gard	den not to exceed 1 acre.
Livestock watering.	
Drinking and sanitary purposes and the irrigati a commercial operation.	ion of non-commercial trees, shrubs and lawns in conjunction with
Prospecting, mining or drilling operations to dis	cover or develop natural resources.
Construction of public works, highways and roa	ads.
X Other If any of the last three were marked give name	and nature of husiness under Remarks (Item 5)
This is an exploratory water w	well for the purpose of determining if ground
water located in the vicinity of the P	hillips Petroleum Company's Lusk Gasoline Pla
Quality Control Commission Regulations	a to be protected by the New Mexico Water as administered by the New Mexico Oil
I, <u>B. Z. Parker</u> , affirm tha	Conservation Commission. At the foregoing statements are true to the best of my knowledge
and belief and that development shall not commence	until approval of the permit has been obtained.
Phillips Petroleum CompanyApplicant	
By: B B Conker B. Z. Parker, Manager-Production O	Date: July 29, 1981
ACTION OF	STATE ENGINEER
This application is approved for the use indicated, subjec	t to all general conditions and to the specific conditions numbered nereof. This permit will automatically expire upless this well is
Irilled or driven and the well record filed on or before	······································
S. E. Reynolds, State Engineer	
	•
By:	
Date:	File No

4



# APPLICATION TO APPROPRIATE UNDERGROUND WATERS IN ACCORDANCE WITH SECTION 75-11-1 NEW MEXICO STATUTES

*Exploratory onlynot for appropriation.	
1. Name and Address of Applicant:	File No
Phillips Petroleum Company	
Room 401, 4001 Penbrook Street	·
Odessa, Texas 79762	
2 Describe well location under one of the following subheadings:	
2. Describe well location under one of the following subleadings.	Two 19S Bao 31E NMPM in
a % Of Sec Eddy County.	Iwp Kge N. M. I. M., I
b. Tract No of Map No of the	·
c. Lot No of Block No of the	
Subdivision, recorded in	County.
d. X = feet, Y =	eet, N. M. Coordinate SystemZone Grant.
e. Give street address or route and box No. of property upon w distance from known landmarks <u>Six miles northwest</u>	hich well is to be located, or location by direction and from Halfway, New Mexico.
* 3 Approximate depth (if known) 200 feet	outside diameter of casing DODE inches
Neme of deiller (if known)	for side diameter of easing menes.
4. Use of water (check appropriate box or boxes):	
Household, non-commercial trees, lawn and garden not to e	xceed 1 acre.
Livestock watering.	
Drinking and sanitary purposes and the irrigation of non-c a commercial operation.	ommercial trees, shrubs and lawns in conjunction with
Prospecting, mining or drilling operations to discover or dev	elop natural resources.
Construction of public works, highways and roads.	
X Other If any of the last three were marked, give name and nature of	f business under Remarks. (Item 5)
5. Remarks: This is an exploratory water well for water located in the vicinity of the Phillips Plant is of a quantity and quality designated Water Quality Control Commission Regulations a I, B. Z. Parker, affirm that the forego and belief and that development shall not commence until approv	the purpose of determining if ground Petroleum Company's Lusk Gasoline to be protected by the New Mexico s administered by the New Mexico Oil Conservation Commission, bing statements are true to the best of my knowledge al of the permit has been obtained.
Phillips Petroleum CompanyApplicant	;
By: B.Z. Parker, Manager-Production Operations	Date: July 29, 1981
ACTION OF STATE EN	IGINEER
This application is approved for the use indicated, subject to all gene	ral conditions and to the specific conditions numbered
drilled or driven and the well record filed on or before	permit will automatically expire unless this well is
S. E. Reynolds, State Engineer	
By:	
Date:	File No

GENERAL CONDITIONS OF APPROVAL

1 11 101

A. The maximum amount of water that may be appropriated under this permit is 3 acre feet in any calendar year.

- B. The well shall be drilled only by a driller licensed in the State of New Mexico in accordance with Section 75-11-13 New Mexico Statutes Annotated. A licensed driller shall not be required for the construction of a driven well; provided, that the casing shall not exceed two and three-eights (2-3/8) inchest outside diameter (Section 75-11-13).
- C. Driller's log must be filed in the office of the State Engineer within 10 days after the well is drilled or driven. Failure to file the log within that time shall result in automatic cancellation of the permit. Log forms will be provided by the State Engineer upon request.
- **D.** The casing shall not exceed 7 inches outside diameter except under specific conditions in which reasons satisfactory to the State Engineer are shown.
- E. If the well under this permit is used at any time to serve more than one household, livestock in a commercial feed lot operation, or any other commercial purpose, the permittee shall comply with Specific Conditon of Approval number 5(b).
- F. In the event this well is combined with other wells permitted under Section 75-11-1 New Mexico Statutes Annotated, the total outdoor use shall not exceed the irrigation of one acre of non-commercial trees, lawn, and garden, or the equivalent outside consumptive use, and the total appropriation for household and outdoor use from the entire water distribution system shall not exceed 3 acre feet per annum.

### SPECIFIC CONDITIONS OF APPROVAL

(Applicable only when so indicated on the other side of this form.)

- Depth of the well shall not exceed the thickness of the (a) the valley fill or (b) Ogallala formation.
   The well shall be constructed to artesian well specifications and the State Engineer Office shall be notified before casing is landed or cemented.
  - 3. Appropriation and use of water under this permit shall not exceed a period of one year from the date of approval.
  - 4. Use shall be limited to household, non-commercial trees, lawn and garden not to exceed one acre and/or stock use.
  - 5. A totalizing meter shall be installed before the first branch of the discharge line from the well and the installation shall be acceptable to the State Engineer; the State Engineer shall be advised of the make, model, serial number, date of installation, and initial reading of the meter prior to appropriation of water and pumping records shall be submitted to the District Supervisor (a) for each calendar month, on or before the 30th day of the following month (b) on or before the 10th of January, April, July and October of each year for the three preceding calendar months (c) for each calendar year on or before the 30th day of January of the following year.
  - 6. The well shall be plugged upon completion of the permitted use and a plugging report shall be filed in the office of the State Engineer within 10 days.
- **Final approval for the use of the well shall be dependent upon a leakage test made by the State** Engineer Office.
  - 8. Use shall be limited strictly to household and/or drinking and sanitary purposes; water shall be conveyed from the well to the place of use in closed conduit and the effluent returned to the underground so that it will not appear on the surface. No irrigation of lawns, garden, trees or use in any type of pool or pond is authorized under this permit.

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The application shall be made in the name of the actual user of the well for the purpose specified in the application.

The application shall be executed in triplicate and forwarded with a \$1.00 filing fee to the appropriate office of the State Engineer.

A separate application must be filed for each well to be drilled or used.

If well to be used is an existing well, an explanation (and file number, if possible) should be given under Remarks. (Item 5.)

Applications for appropriation, well logs and request for information in the following basins should be addressed to the State Engineer at the office indicated;

## Bluewater, Estancia, Rio Grande, and Sandia Basins

District No. 7, 505 Marquette NW, Room 1023, Albuquerque, New Mexico 87101

Capitan, Carlsbad, Fort Sumner, Hondo, Jal, Lea, Penasco, Portales, Roswell, and Upper Pecos Basins

District No. 2, Box 1717, Roswell, New Mexico 88201

Animas, Gila-San Francisco, Hot Springs, Las Animas Creek, Lordsburg, Mimbres,

Nutt-Hockett, Playas, San Simon, and Virden Valley Basins

District No. 3, Box 844, Deming, New Mexico 88030

Canadian River Basin

State Engineer Office, State Capitol, Bataan Memorial Bldg., Santa Fe, New Mexico 87501

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	APPLICATION TO AN IN ACCORDANCE WITH	PROPRIATE UNDERGR	OUND WATERS
	*Exploratory onlynot for appro	opriation,	
1.	Name and Address of Applicant:		File No
	Phillips Petroleum Company		
	Room 401, 4001 Penbrook Street		
	Odessa, Texas 79762		
2	Describe well location under one of the following	ng subheadings:	2
	a 14 <u>SE 14 NW</u> Eddy County.	¼ of Sec <b>36</b> Twp	<u>195</u> Rge. <u>31E</u> N. M. P. M.,
	b. Tract No of Map No	_of the	
	c. Lot No of Block No of	the	
	Subdivision, recorded in	Count	<b>y.</b>
	d. X = feet, Y =	feet, N. M. C	Coordinate SystemZor Grar
	e. Give street address or route and box No. o distance from known landmarks Five mi	f property upon which well is lles northwest from H	s to be located, or location by direction a alfway, New Mexico.
+ 3	Approximate depth (if known) 200	feet: outride di	mater of casing DODE inche
π 5.	Normale depth (if known)		ameter of casing mene
	Name of driller (il known)		
4.	Use of water (check appropriate box or boxes):		and the second second second second second second second second second second second second second second second
	Household, non-commercial trees, lawn a	and garden not to exceed 1 acr	e.
	Livestock watering.		
w	Drinking and sanitary purposes and the a commercial operation.	irrigation of non-commercial	trees, shrubs and lawns in conjunction wit
	Prospecting, mining or drilling operation	s to discover or develop natura	l resources.
* [	<ul> <li>Construction of public works, highways</li> <li>Other</li> </ul>	and roads.	
5. 3 1	If any of the last three were marked, give Remarks: This is an exploratory wa vater located in the vicinity of Plant is of a quantity and qualit Vater Quality Control Commission	ter well for the purp the Phillips Petroley y designated to be pr Regulations as admin:	under Remarks (Item 5) pose of determining if ground um Company's Lusk Gasoline rotected by the New Mexico istered by the New Mexico Oil rustion Commission
	I, <u>B. Z. Parker</u> , aff and belief and that development shall not com	irm that the foregoing statem mence until approval of the p	ents are true to the best of my knowledger ermit has been obtained.
]	hillips Petroleum CompanyApplicant	24 3 7	
	By: B.J. Saka		
. ••	B. Z. Parker, Manager-Product	ion Operations	Ale. <u>002)</u> 27, 2702
	ACTI	ON OF STATE ENGINEER	n an the first of the second second second second second second second second second second second second second
Th	is application is approved for the use indicated, on the reverse	, subject to all general conditions side hereof. This permit w	ons and to the specific conditions numbere ill automatically expire unless this well is
dri	lled or driven and the well record filed on or before.	ore	
5.	L. Reynolus, State Engineer		
	By:		
	Date:	· · · · ·	File No

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#### **GENERAL CONDITIONS OF APPROVAL**

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- 6. The well shall be plugged upon completion of the permitted use and a plugging report shall be filed in the office of the State Engineer within 10 days.
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District No. 3, Box 844, Deming, New Mexico 88030

Canadian River Basin

State Engineer Office, State Capitol, Bataan Memorial Bldg., Santa Fe, New Mexico 87501





ENERGY AND MINERALS DEPARTMENT

**OIL CONSERVATION DIVISION** 

BRUCE KING

LARRY KEHOE

May 4, 1981

POST OFFICE BOX 2088 STATE LAND OFFICE BUILDING SANTA FE, NEW MEXICO 87501 (505) 827-2434

Mr. A.B. Glasgow Phillips Petroleum Company Exploration and Production Group Odessa, Texas 79762 NUPRESS 4001 PENBROOK

> Re: Lusk Gasoline Plant Discharge Plan Extension

Dear Mr. Glasgow:

We have received your letter of April 24, 1981, concerning your request for an extension of 90 days.

The information Phillips Petroleum Company submitted shows good cause why the Oil Conservation Division should grant a time extension. The due date is hereby extended to July 29, 1981.

Please let us know if you have any problems with this arrangement.

Very truly yours,

JOE D. RAMEY Director

JDR/OS/og

cc: Oil Conservation Division Box 1980 Hobbs, New Mexico



### PHILLIPS PETROLEUM COMPANY

ODESSA, TEXAS 79762 4001 PENBROOK

EXPLORATION AND PRODUCTION GROUP

April 24, 1981

Lusk Gasoline Plant Discharge Plan Extension

Mr. Joe D. Ramey, Director New Mexico Oil Conservation Commission P.O. Box 2088 Santa Fe, New Mexico 87501

Dear Mr. Ramey:

Phillips Petroleum Company is preparing a discharge plan for Lusk Plant as requested in your letter of December 29, 1980.

We are considering the feasibility of delivering the wastewater to a salt water disposal system or waterflood unit operated near the plant. We respectfully request a 90 day extension on submitting a discharge plan so that technical and contractual requirements can be completed.

If you have any questions regarding this matter, please do not hesitate to contact Mr. A. B. Glasgow, (915) 367-1439.

Very truly yours,

E. E. Clark Er. Regional Manager

ABG:ku





ENERGIAND MINERALS DEPARIMENT

BRUCE KING GOVERNOR

ARRY KEHOE SECRETARY POST OFFICE BOX 2088 STATE LAND OFFICE BUILDING SANTA FE, NEW MEXICO 87501 (505) 827-2434

December 29, 1980

Mr. Ben Ballard Director of Environmental Control 10C4 PB Phillips Petroleum Company Bartlesville, Oklahoma 74004

#### Re: Request for Discharge Plan

Dear Mr. Ballard:

Under provisions of the regulations of the Water Quality Control Commission you are hereby notified that the filing of a discharge plans for Phillips' Eunice Plan (Section 5, Township 21 South, Range 36 East) and Phillips' Lusk Plant (Section 19, Township 19 South, Range 32 East) is required. Discharge plans are defined in Section 1-101.1 of the regulations and a copy of the regulations is enclosed for your convenience.

This plan should cover all discharges of effluent at the plant sites or adjacent to plant sites. Section 3-106 A. of the regulations requires submittal of the discharge plans within 120 days of receipt of this notice unless an extension of this period is sought and approved.

The discharge plan should be prepared in accordance with Part 3 of the Regulations.

If there are any questions on this matter, please do not hesitate to call me or Thomas Parkhill at 827-3260. Mr. Parkhill has been assigned responsibility for review of all discharge plans.

Yours very truly,

JOE D. RAMEY Director

JDR/jc

cc: Oil Conservation Division - Hobbs

Phillips petroleum Company P. O. Box 66, Oil Center, New Mexico 88266

Phillips Petroleum Company P. O. Box 1297 Maljamar, New Mexico 88264

#### CITIES SERVICE COMPANY BOX 300 TULSA, OKLAHOMA 74102

#### May 31, 1979

New Mexicó Oil Conservation Division P. O. Box 1980 Hobbs, New Mexico 88240

Attention: Mr. Eddie Seay

Dear Mr. Seay:

Attached are the data you requested on your pits, ponds, and lagoons survey for Cities Service Company's Burton Flats Gas Processing Plant, Eddy County, New Mexico.

Cities Service also owns the Empire Abo plant in Eddy County. This plant was shut down in May, 1977. The plant remains down awaiting the installation of residue gas delivery facilities. We will provide the data requested on this survey when the plant is operational.

If you have any questions or need additional information, please contact me.

Very truly yours,

NATURAL GAS LIQUIDS DIVISION

E.E. Moore

E. E. Moore Manager, Southern Region

EEM:ww

attachments



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No. 1

Lagoon	No. 1
	· · · · · ·
Length (ft)	68
Width (ft)	68
Average Depth (ft)	10
Lining Material	Reinforced Neoprene Line
Annual Volumes (Gal/yr)	6,390
Phosphate	0
M-Alkalinity (CaCO3)	68
pH (std. units)	7.2
Chlorides (Cl)	424
Sulfate (SO <sub>4</sub> )	26
Silica (S <sub>i</sub> O <sub>2</sub> )	100
Total Hardness (CaCO3)	272
Sodium (Na)	850
TDS	1400
Conductivity (micromhos)	

\*Analyses results in ppm unless otherwise stated

PHULDIPE PETROLEUM CL LUSK PLANT PLANT LI 2 ALL IN NE/4, SEC 19, T-19-5, R-32-E, NMPM. LEA GUNTY NIMEXICO Pit: #1 80'X60' DEPTH OF 6' NO LINING # 2 325'X ISO' DEPTH OF 6' NO WINING

5.5 MM GALLONS PER YEAR OF FLUIDS PLACED IN THE PITS

CATER ANALYSIS ATTACHED

Form 3081 4-64



LABORATORY ANALYSIS RESULTS SUMMARY

PHILLIPS PETROLEUM MPANY

the state of the s

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ecured by: David U	19et	ann an		Date:	8/30/78
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SCIENTIFIC LABORATORY DIVISION 700 Camino de Salud NE STATE OFNEW MEXIC Albuquerque, NM 87106 841-2570 REAVATION DIVISION ENVIRONMENT 86- 155 -C DAVID G. BOYER S.L.D. NO .: OR- 55- H.B REPORT TO: PLEASE PRINT DATE REC. : \_/-27-16 NEW MEXICO OIL CONSERVATION 21V. P.O. BOX 2088 SLD PRIORITY #: SANTA FE, NM 87501 827-5812 USER CODE: | 8| 2|2|3|5| PHONE(S): BOYER SUBMITTER: DAUID SUBMITTER CODE: SAMPLE TYPE CODE: | | SAMPLE TYPE: WATERX, SOIL , OTHER COLLECTED: 86/01/09-17:20 BY 44/1/ MMDDHHMMI Ond Composite CODE: 1 + 1 + 1 odenatower SOURCE: NEAREST CITY: CODE: | | | | | JAK Plant CODE: LOCATION: Phillips pH=\_\_\_; Conductivity= 900 umho/cm at \_\_\_\_O°C; Chlorine Residual=\_ Dissolved Oxygen= mg/1; Alkalinity= ; Flow Rate= Sampling Location, Methods and Remarks (i.e. odors, etc.) omposite from 4 corners. I certify that the statements in this block accurately reflect the results of my field analyses, observations and activities Method of shipment to the Laboratory Hond Carried This form accompanies \_\_\_\_\_Septum Vials, \_\_\_\_ Glass Jugs, Containers are marked as follows to indicate preservation: No preservation; sample stored at room temperature. NP: P-Ice Sample stored in an ice bath (not frozen). P-Na25203; Sample preserved with Na25203 to remove chlorine residual. I (we) certify that this sample was transferred from \_ on at (location)\_\_\_\_ to \_\_\_\_ and that the statements in this block are correct. ATE AND TIME Evidentiary Seals: Not Sealed Seals Intact: Yes No 🥅 Signatures \_\_\_\_ (we) certify that this sample was transferred from / at (location) to on and that the statements in this block are correct. Evidentiary Seals: Not Sealed Seals Intact: Yes No 🥅 Signatures

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ul lu SCIENTIFIC LABORATORY DIVISION 700 Camino de Salud NE 21 \_\_\_\_ STATE OF NEW MEXICO <sup>1</sup> Albuquerque, NM 87106 841-2570 85- 1166 -C\* ENVILONMENDEC 27 16AP REPORT TOP CONSDAVIDICN BOYER S.L.D. No.: OR- ///// PLEASE PRINT. DATE REC. : 12102/84 NEW MEXICO OIL CONSERVATION DIV. P.O. BOX 2088 - 20-SLD PRIORITY #: SANTA FE, NM 87501 827-5812 USER CODE: |8|2|2|3|5| PHONE(S): SUBMITTER: David Boyer SUBMITTER CODE: SAMPLE TYPE: WATER X, SOIL , OTHER SAMPLE TYPE CODE: | | COLLECTED: <u>B5</u> 11 21 - 17:00 BY 4778 CODE: CODE: YMMDDHHMMII SOURCE: Tap Wates-Domestic Supply CODE: 11 11 NEAREST CITY: Carlshat CODE: | | | | | LOCATION: Phillips Lusk Gos Plant CODE: \_\_\_\_\_ TOWNSHIP RANGE SECTION TRACTS pH= 6.4; Conductivity= 350 umho/cm at 15.5°C; Chlorine Residual=\_ Dissolved Oxygen=\_\_\_\_mg/1; Alkalinity=\_\_\_\_; Flow Rate=\_\_\_; Sampling Location, Methods and Remarks (i.e. odors, etc.) Sample grom bathroom tap. Wate, source a caprock wellt. Water also supplies cooling tower. I certify that the statements in this block accurately reflect the results of my field analyses, observations and activities. human Method of shipment to the Laboratory This form accompanies \_\_\_\_Septum Vials, Glass Jugs, Containers are marked as follows to indicate preservation: NP: No preservation; sample stored at room temperature. P-Ice Sample stored in an ice bath (not frozen). NP: P-Na25203; Sample preserved with Na25203 to remove chlorine residual. I (we) certify that this sample was transferred from \_\_\_\_\_ to \_\_\_\_\_\_ at (location)\_\_\_\_\_ on` \_\_\_\_ and that the statements in this block are correct. Signatures (we) certify that this sample was transferred from -at (location)\_\_\_\_\_ to on and that the statements in this block are correct. Evidentiary Seals: Not Sealed Seals Intact: Yes No Signatures \_\_\_\_\_

ANAL PLEASI REQUII	YSES REQUESTED E CHECK THE APPROPRIA RED. WHENEVER POSSIB	TE BOXES BELOW TO LE LIST SPECIFIC C	INDIC COMPOU	L ATE T NDS S	AB. No.: ORG- THE TYPE OF ANALYTICA SUSPECTED OR REQUIRED	1/66 ML SCREENS
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Bailed Dipped	🗆 Pump 🛃 Tap	Water level		Discharge		Sample type	rab
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	New Mexico Heal SCIENTIFIC LAB 700 Camino de Si Albuquerque, NM	Ith and Environment ORATORY DIVISION alud NE I 87106 — (505) 841-2	Department 1 2555	GE 2	NERAL WATER	CHEMISTRY ANALYSIS
	02 X5 NO	5. <u>112 5276</u> SITE INFORM-►	CODE 59300 Sample location	sethroom f	HER: 82235	P
END	ENVIRONMENT M OIL CONS State Land	All BUREAU GERVATION DIV Office Bldg,	ISION DEJ PO Box 208	2. 1.8 1335	estusk 1 Gas	Vaterral Plant
Attn:	David Boy	(er	Qir QONS		Station/ well code Owner	
Bailed Dipped (00400)	Pump Tap	Water level		Water Temp (00010)	Sample	type Grab
AMPLE FIELD No. of samples submitted	TREATMENT	Check proper     Whole sample     (Non-filtered)	boxes Filtered in 0.45 μmer	field with mbrane filter	ni H₂SO₄/L addec	ales also
NA: No acional NALYTICAL R	d added .	ther-specify:	Units Date analyzed	1 F, NA		Units Date analyzec
<ul> <li>Conductivity (C 25°C (00095)</li> <li>Total non-filtera residue (susper (00530)</li> <li>Other:</li> </ul>	orrected) ble nded)	µ	mg/l	<ul> <li>Calcium (00915)</li> <li>Magnesium (00925)</li> <li>Sodium (00930)</li> <li>Potassium (00935)</li> <li>Bicarbonate (00440)</li> </ul>		mg/l mg/l mg/l mg/l
] Other: ] Other: IF, A-H₂SO₄	·			<ul> <li>Chloride (00940)</li> <li>Sulfate (00945)</li> <li>Total filterable residue (dissolved) (70300)</li> <li>Other:</li> </ul>		mg/i mg/i mg/i ma/i
<ul> <li>Other:</li> <li>Other:</li> <li>Nitrate-N + , Nit total (00630)</li> <li>Ammonia-N tota</li> <li>Total Kjeldahl-N ( )</li> <li>Chemical oxyge demand (00340</li> <li>Total organic ca ( )</li> <li>Other:</li> </ul>	trate-N al (00610) ł en )) irbon		mg/l mg/l mg/l mg/l mg/l	Chloride (00940)     Sulfate (00945)     Total filterable residue     (dissolved) (70300)     Other:     F, A-H₂ SO₄     Nitrate-N + , Nitrate-N     dissolved (00631)     Ammonia-N dissolved     (00608)     Total Kjeldahl-N     ( )     Other:	Z , / 0 2 , / 0 2 , . / 0 0 . 36	$= \frac{mg/l}{mg/l} = \frac{mg/l}{mg/l} = \frac{17/9}{mg/l} = \frac{12/9}{mg/l} = \frac{12/9}{mg/l} = \frac{12/9}{mg/l} = \frac{12/9}{mg/l} = \frac{12/9}{mg/l} = \frac{12/9}{mg/l} = \frac{12}{mg/l} = \frac{12}{mg$

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NALYTICAL F	id added	Dther-specify:	Units Date analyzed	I       F, NA <ul> <li>Calcium (00915)</li> <li>Magnesium (00925)</li> <li>Sodium (00930)</li> <li>Potassium (00935)</li> <li>Bicarbonate (00440)</li> <li>Chioride (00940)</li> <li>Sulfate (00945)</li> <li>Total filterable residue (dissolved) (70300)</li> <li>Other:</li> </ul> <li>F, A-H<sub>2</sub> SO<sub>4</sub></li> <li>Nitrate-N + , Nitrate-N dissolved (00631)</li> <li>Ammonia-N dissolved (00608)</li> <li>Total Kjeldahl-N</li>	Date Reported	Units         Date analy           mg/l	zed
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AMPLE FIELD	TREATMEN	T - Check prop	Filtered in	field with		1.10	
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197 Lab Number: mple Date Submitted: 12/2/85 116185 Analyzed: te DEC 26 2/18/85 Baily Reviewed By: By: Bo yen QIL CONSERVATION DIVISION QIL CONSERVATION Date Reported: 12/18/85 SAMTA? AA VALUE (MG/L) ICAP VALUE (MG/L) Element 40.1 Aluminum 0.1 Barium 40.1 Berylium 40.1 Boron Cadmium 64. Calcium 1.0> Chromium 40.1 Cobalt <0.1 Copper 20.1 Iron 20.1 Lead 11. Magnesium 10,05 Manganese 1.02 Molybdenum 20.1 Nickel 14. Silicon 40.1 Silver 0.6 Strontium 40.1 Tin 20.1 Vanadium 40.1 Zinc 40,005 Arsenic 40.00 Selenium Mercury

al\_lı ١í SCIENTIFIC LABORATORY DIVISION 700 Camino de Salud NE KANN STATE OF NEW MEXICO ENVIRONMENT ENVIRONMENT DEE 27 1985 Albuquerque, NM 87106 841-2570 H145 14 1-1 85-1164 -C DAVID G. BOYER S.L.D. NO.: OR-1/104-17.18 REPORT TO THE CONSERVATION B PLEASE PRINT DATE REC. : 12-02--NEW MEXICO OIL CONSERVATION DIV. P.O. BOX 2088 SLD PRIORITY #: . SANTA FE, NM 87501 827-5812 . . USER CODE: |8|2|2|3|5| PHONE(S): SUBMITTER: David Boyer SUBMITTER CODE: SAMPLE TYPE CODE: SAMPLE TYPE: WATER X, SOIL , OTHER COLLECTED: 85/ 11/21-15:50 BY 24R CODE: 1111 DHHMMII SOURCE: Phillips Lusk Cooling Town Ponce ODE: AQUIFER DEPTH NEAREST CITY: Canis ha LOCATION: Phillips Natural Gos Plant CODE: \_\_\_\_\_\_\_ TOWNSHIP RANGE SECTION TRACTS pH= 7. 3; Conductivity= 89D umho/cm at // °C; Chlorine Residual= Dissolved Oxygen=\_\_\_\_mg/1; Alkalinity=\_\_\_\_; Flow Rate=\_\_\_; Sampling Location, Methods and Remarks (i.e. odors, etc.) S.E. Corned of blow Down pond, no evidence of Floating oil, odos. Sompledupped I certify that the statements in this block accurately reflect the results of my field analyses, observations and activities. Method of shipment to the Laboratory Hank conride This form accompanies 2 Septum Vials, \_\_\_Glass Jugs, \_\_\_\_ Containers are marked as follows to indicate preservation: No preservation; sample stored at room temperature. ] NP: P-Ice Sample stored in an ice bath (not frozen). P-Na25203: Sample preserved with Na25203 to remove chlorine residual. I (we) certify that this sample was transferred from at (location) to on` : \_\_\_\_ and that the statements in this block are correct. ATE AND TIME Evidentiary Seals: Not Sealed Seals Intact: Yes 🔜 No Signatures (we) certify that this sample was transferred from at (location)\_\_\_\_ to \_\_\_\_ on \_ and that the statements in this block are correct. ATE AND TIME Evidentiary Seals: Not Sealed Seals Intact: Yes No  $\square$ Signatures

ANAL PLEASE REQUIE	YSES REQUESTED CHECK THE APPROPRIATE RED. WHENEVER POSSIBLE	BOXES BELOW TO T	INDICATE	AB. No.: ORG- THE TYPE OF ANALYTI SUSPECTED OR REOUIR	- //64 CAL SCREENS ED.
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AMPLE FIEL No. of samples submitted XNA: No ac NALYTICAL F, NA Conductivity ( 25°C (00095) Total non-filter residue (susp (00530) Other: Other: Other: Other: NF, A-H <sub>2</sub> SO <sub>4</sub>	D TREATMEN	The Check provided in the contract of the cont	Der boxes e $\mathbf{F}$ : Filtered in 0.45 $\mu$ m Units Date analyze $\mu$ mho $12/12$ mg/l $-12/18$	ed F, NA Calcium (00915) Magnesium (00930) Potassium (00930) Potassium (00930) Bicarbonate (0044) Sulfate (00945) Total filterable resis (dissolved) (70300 Other:	$2 \text{ ml } \text{H}_2 \text{SO}_4$ $2 \text{ ml } \text{H}_2 \text{SO}_4$ $2 \text{ ml } \text{H}_2 \text{SO}_4$ $2 \text{ ml } \text{H}_2 \text{SO}_4$ $2 \text{ ml } \text{H}_2 \text{SO}_4$ $2 \text{ ml } \text{ml } $	/L added 2 25 2 218 Units 220, mg/l 38.6 mg/l 135.2 mg/l 14.4 mg/l 24.4 mg/l 24.4 mg/l 166.8 mg/l 5/0 mg/l 196 mg/l 0.21 1.37	$\begin{array}{c} 1.339@ \\ \hline \\ 1.339@ \\ \hline \\ \hline \\ 12-4 \\ \\ \\ \\ \\ \\ \\ \\ 12/18 \\ \hline \\ 12/18 \\ \hline \\ 12/18 \\ \hline \\ 12/18 \\ \hline \\ 12/18 \\ \hline \\ 12/15 \end{array}$
AMPLE FIEL No. of samples submitted XNA: No action NALYTICAL F, NA Conductivity ( 25°C (00095) Total non-filter residue (susp. (00530) Other: Other: Other: NIF, A-H <sub>2</sub> SO <sub>4</sub> Nitrate-N <sup>+</sup> , N total (00630)	D TREATMEN	The Check provided in the second seco	Der boxes e $\mathbf{F}$ : Filtered in 0.45 $\mu$ m Units Date analyze $\mu$ mho $12/18$ mg/l 12/18	ed F, NA Calcium (00915) Magnesium (00930) Potassium (00930) Potassium (00930) Bicarbonate (0044) Sulfate (00945) Total filterable resil (dissolved) (70300) Chher: B F, A-H <sub>2</sub> SO <sub>4</sub>	$2 \text{ ml } \text{H}_2 \text{SO}_4$ $2 \text{ ml } \text{H}_2 \text{SO}_4$ $2 \text{ ml } \text{H}_2 \text{SO}_4$ $2 \text{ ml } \text{H}_2 \text{SO}_4$ $2 \text{ ml } \text{H}_2 \text{SO}_4$ $2 \text{ ml } \text{ml } $	/L added $2 \rightarrow 5 \ 2 \ 2 \ 2 \ 2 \ 2 \ 2 \ 2 \ 2 \ 2 \$	$\begin{array}{c} \hline 1.339@P\\ \hline Date analyzed\\ \hline 12-4\\ \hline \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\$
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AMPLE FIEL No. of samples submitted XNA: No ac NALYTICAL I F, NA Conductivity ( 25°C (00095) Total non-filter residue (suspi (00530) Other: Other: Other: NF, A-H <sub>2</sub> SO <sub>4</sub> Nitrate-N + , N total (00630) Ammonia-N to Total Kjeldahl- () Chemical oxy	D TREATMEN	T Check pro F: Whole sample (Non-filtered) Other-specify: m SAMPLES /909 7.99	$\frac{\text{Units Date analyze}}{\text{mg/l}}$	ed F, NA Calcium (00915) Magnesium (00925) Magnesium (00930) Potassium (00930) Potassium (00930) Potassium (00930) Chloride (00940) Sulfate (00945) Total filterable resis (dissolved) (70300 Other: F, A-H <sub>2</sub> SO <sub>4</sub> Nitrate-N + , Nitrat dissolved (00631) Ammonia-N disso (00608) Total Kieldabl-N	2 ml H <sub>2</sub> SO <sub>4</sub> / 2 2 4 (0 25) 30 due // due // due // due // due // due // due // due // due // due // due // due	/L added	$\begin{array}{c} 1339@ \\ \hline 1339@ \\ \hline \\ \hline \\ \hline \\ \hline \\ \hline \\ \hline \\ 12/19 \\ \hline \\ 12/19 \\ \hline \\ 12/19 \\ \hline \\ 12/19 \\ \hline \\ 12/19 \\ \hline \\ 12/17 \\ \hline \\ 12/17 \\ \hline \\ 12/17 \\ \hline \\ 12/15 \\ \hline \end{array}$
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Attn	David Bo	yer 🦸	<u>ta concerta</u> Stati	ATE		······································	······································
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SAMPLING CO	NDITIONS	·		<u></u>	Owner		<u> </u>
E Bailed	Pump Tap	Water level	~	Discharge		Sample type	re 6
pH (00400)	7.3	Conductivity (Unco	rrected) β μmho	Water Temp. (00010)	// •Ç	Conductivity at 2	5°C (00094) µmho
Field comments	Sama	le Eron	n J.F. (	omen x	1 pon	Q. Mar l	IPATIS.
	oil on	okor				~ <i>j / / / / / / j</i>	aur
SAMPLE FIELI	D TREATMEN	T — Check prope	er boxes	·····		·	
No. of samples		Whole sample	F: Filtered in	field with NA: 2	2 mi H₂SO₄/	L added	· · · · · ·
			0.45 μmei			· · ·	· · · · ·
		Jiner-speciry:					· · · · · · · · · · · · · · · · · · ·
ANALYTICAL I	RESULTS from	SAMPLES	Units Date analyzed	I F. NA	-	Units	Date analyzed
Conductivity (	Corrected)			Calcium (00915)		mg/l	······
25°C (00095)	. · ·		umho	- G Magnesium (00925	)	mg/l	· · · · · · · · · · · · · · · · · · ·
Total non-filter	able ended)	· ·	· ·	□ Potassium (00935)	·	mg/l	
(00530)	·		mg/l	- Bicarbonate (00440	) (	mg/i mg/i	
Differ:				Sulfate (00945)		mg/l	· · · · · · · · · · · · · · · · · · ·
D Other:				- (dissolved) (70300)	·	mg/l	· · · · · · · · · · · · · · · · · · ·
NF, A-H2SO4			· · · · · · · · · · · · · · · · · · ·	Other:		· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·
Nitrate-N + N total (00630)	litrate-N		mg/l	F, A-H <sub>2</sub> SO <sub>4</sub>		· · · · · · · · · · · · · · · · · · ·	
Ammonia-N to	otal (00610)	· · · · · · · · · · · · · · · · · · ·	mg/l	Nitrate-N +, Nitrate- dissolved (00631)	N <u>2</u> ,	45 mg/l	12/9
C Total Kjeldahl-	N	• • • •	mg/l	Ammonia-N dissolv	ed O	,74	12/4
Chemical oxy demand (0034	gen 40)		mg/l	Total Kjeldahl-N	1,	67 mg/l	12/6
Total organic (	carbon		mg/i	Other:		mg/la	- <i>t</i>
Other:				Analyst	Date R	eported Revie	wedby
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AMPLING CON	DITIONS			Owner	r 	
Bailed (	Pump Tap	Water level		Discharge	Sample type	6
pH (00400)	7 7	Conductivity (Ur	corrected)	Water Temp. (00010)	Conductivity at 25°C (00	0094)
	<u>.</u>		En Dun	nno		μπηο
	samp	re gro	mU.E	· onea of p	mx, no yib	aling
Ø	ile	rolor				
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AMPLE FIELD	TREATME	NT — Check pro	per boxes	<u> </u>		
SAMPLE FIELD No. of samples		NT — Check pro NF: Whole sample	per boxes	red in field with	Heerre added 4 ml	Foum
No. of samples submitted		NT — Check pro NF: Whole sample (Non-filtered)	per boxes Filter 0.45	red in field with µmembrane filter	-BEATL added 4 ml	Form
AMPLE FIELD No. of samples submitted	added	NT — Check pro NF: Whole sample (Non-filtered) Other-specify:	per boxes Filter 0.45	red in field with μmembrane filter <b>ΕΚΑ: Επαι-Η</b>	20017E added 4 ml	Foum
AMPLE FIELD No. of samples submitted	added	NT — Check pro NF: Whole sample (Non-filtered) Other-specify:	per boxes Filter 0.45	red in field with μmembrane filter	-200art added 4 ml	Foum
AMPLE FIELD No. of samples submitted NA: No acid NALYTICAL RE	added C	NT — Check pro NF: Whole sample (Non-filtered) Other-specify:	per boxes F: Filter 0.45 Units Date and	ed in field with μmembrane filter alyzed F, NA	Units Da	Foq m NO3
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AMPLE FIELD No. of samples submitted NA: No acid NALYTICAL RE DEFINE Conductivity (Cc 25°C (00095) Total non-filterab residue (suspen (00530)	added adde	NT — Check pro NF: Whole sample (Non-filtered) Other-specify:	per boxes	alyzed F, NA Calcium (00915) Magnesium (00925) Sodium (00930) Potassium (00935) Bicarbonate (00440)	Units Da	Foq m NO3
AMPLE FIELD No. of samples submitted NA: No acid NALYTICAL RE Conductivity (Co 25°C (00095) Conductivity (Co 25°C (00095) Total non-filterat residue (suspen (00530) Cother: Ica	Added adde	NT — Check pro NF: Whole sample (Non-filtered) Other-specify:	per boxes  E Filter 0.45  Units Date andmho	alyzed F, NA	Units         Da	Fog m NO3
AMPLE FIELD No. of samples submitted NA: No acid NALYTICAL RE DEFINE Conductivity (Cc 25°C (00095) Total non-filterab residue (suspen (00530) Other: A	added adde	NT — Check pro NF: Whole sample (Non-filtered) Other-specify:	per boxes  E Filter 0.45  Units Date andmmho	alyzed F, NA □ Calcium (00915) □ Magnesium (00925) □ Sodium (00930) □ Potassium (00935) □ Bicarbonate (00440) □ Chloride (00940) □ Sulfate (00945) □ Total filterable residue	Units Da	Foq m NO3
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AMPLE FIELD No. of samples submitted NA: No acid NALYTICAL RE UP TRA Conductivity (Cc 25°C (00095) Conductivity (Cc 25°C (00095) Total non-filterab residue (suspen (00530) Other: Other: Se Other: Se	added adde	NT — Check pro NF: Whole sample (Non-filtered) Other-specify:	per boxes  E Filter 0.45 Units Date and umho mg/l	red in field with       Image: Calcium (00915)         Image: Calcium (00915)       Image: Calcium (00925)         Image: Calcium (00930)       Image: Calcium (00930)         Image: Calcium (00930)       Image: Calcium (00935)         Image: Calcium (00935)       Image: Calcium (00935)         Image: Calcium (00935)       Image: Calcium (00935)         Image: Calcium (00935)       Image: Calcium (00935)         Image: Calcium (00945)       Image: Calcium (00945)         Image: Calcium (00945) <td>Units         Da           Units         Da           mg/l        </td> <td>Foq m NO3</td>	Units         Da           Units         Da           mg/l	Foq m NO3
AMPLE FIELD No. of samples submitted NA: No acid NALYTICAL RE DEFINE Conductivity (Cc 25°C (00095) Total non-filterab residue (suspen (00530) Other: Other: NF, A-H <sub>2</sub> SO.	added adde	NT — Check pro NF: Whole sample (Non-filtered) Other-specify:	per boxes	alyzed F, NA □ Calcium (00915) □ Sodium (00925) □ Sodium (00930) □ Potassium (00935) □ Bicarbonate (00440) □ Chloride (00940) □ Sulfate (00945) □ Total filterable residue (dissolved) (70300) □ Other: F, A-H₂ SO₄	Units         Da           Units         Da           mg/l	Fog m NO3
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AMPLE FIELD No. of samples submitted NA: No acid NALYTICAL RE Conductivity (Cc 25°C (00095) Total non-filterab residue (suspen (00530) Other: Other: NF, A-H <sub>2</sub> SO. Nitrate-N + Nitr total (00630) Ammonia-N tota Total Kjeldahl-N () Chemical oxyge demand (00340) Total organia	TREATME	NT — Check pro NF: Whole sample (Non-filtered) Other-specify:	per boxes	red in field with       μmembrane filter       μmembrane filter         alyzed       F, NA         □       Calcium (00915)         □       Magnesium (00925)         □       Sodium (00930)         □       Potassium (00935)         □       Bicarbonate (00440)         □       Chloride (00945)         □       Sulfate (00945)         □       Total filterable residue (dissolved) (70300)         □       Other: <b>F, A-H₂ SO4</b> □       Nitrate-N + , Nitrate-N dissolved (00631)         □       Ammonia-N dissolved (00608)         □       Total Kjeldahl-N (	Units         Da           Units         Da           mg/l	Foa m
AMPLE FIELD No. of samples submitted NA: No acid NALYTICAL RE Conductivity (Cc 25°C (00095) Conductivity (Cc Conductivity (Cc 25°C (00095) Conductivity (Cc Conductity (Cc Conductivity	Added adde	NT — Check pro NF: Whole sample (Non-filtered) Other-specify:	per boxes Units Date and Units Date and Units Date and mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l	red in field with       μmembrane filter       μmembrane filter         alyzed       F, NA         □       Calcium (00915)         □       Magnesium (00925)         □       Sodium (00930)         □       Potassium (00935)         □       Bicarbonate (00440)         □       Chloride (00945)         □       Total filterable residue (dissolved) (70300)         □       Other:         F, A-H₂ SO₄         □       Nitrate-N +, Nitrate-N dissolved (00631)         □       Ammonia-N dissolved (0608)         □       Total Kjeldahl-N (         (       )         □       Other:	Long         Long <thlong< th="">         Long         Long         <thl< td=""><td>Foq m NO3</td></thl<></thlong<>	Foq m NO3
AMPLE FIELD No. of samples submitted NA: No acid NALYTICAL RE Conductivity (Co 25°C (00095) Cond	TREATME	NT — Check pro NF: Whole sample (Non-filtered) Other-specify:	per boxes	red in field with       μmembrane filter       μmembrane filter         alyzed       F, NA.         □       Calcium (00915)         □       Magnesium (00925)         □       Sodium (00930)         □       Potassium (00935)         □       Bicarbonate (00440)         □       Chloride (00945)         □       Sulfate (00945)         □       Total filterable residue (dissolved) (70300)         □       Other: <b>F, A-H₂ SO4</b> □       Nitrate-N + , Nitrate-N dissolved (00631)         □       Ammonia-N dissolved (00608)         □       Other:         □       Other:	Units         Da           Units         Da           mg/l         mg/l	Foa m
AMPLE FIELD No. of samples submitted NA: No acid NALYTICAL RE Conductivity (Cc 25°C (00095) Conductivity (Cc Conductivity (Cc 25°C (00095) Conductivity (Cc Conductity (Cc Conductivity (Cc Conductivity (Cc Conductiv	TREATME	NT — Check pro NF: Whole sample (Non-filtered) Other-specify:	per boxes           Image: Second state s	red in field with       μmembrane filter       μmembrane filter         alyzed       F, NA         □       Calcium (00915)         □       Magnesium (00925)         □       Sodium (00930)         □       Potassium (00935)         □       Bicarbonate (00440)         □       Chloride (00945)         □       Total filterable residue (dissolved) (70300)         □       Other:         F, A-H₂ SO₄         □       Nitrate-N +, Nitrate-N dissolved (00631)         □       Total Kjeldahl-N ()         □       Other:         □       Other:	Long         Long <thlong< th="">         Long         Long         <thl< td=""><td>Fog m NO3 te analyzed</td></thl<></thlong<>	Fog m NO3 te analyzed
AMPLE FIELD No. of samples submitted NA: No acid NALYTICAL RE Conductivity (Co 25°C (00095) Conductivity (Co Conductivity (Co 25°C (00095) Conductivity (Co 25°C (00095) Conductivity (Co Conductivity (C	TREATME	NT — Check pro NF: Whole sample (Non-filtered) Other-specify:	per boxes         Per boxes         Per boxes         Per boxes         Per boxes         Per boxes         Per boxes         Units Date and         µmho         mg/l         mg/l         mg/l         mg/l         mg/l         mg/l         mg/l         mg/l         mg/l	red in field with       μmembrane filter       μmembrane filter         alyzed       F, NA.         □       Calcium (00915)         □       Magnesium (00925)         □       Sodium (00930)         □       Potassium (00935)         □       Bicarbonate (00440)         □       Chloride (00940)         □       Sulfate (00945)         □       Total filterable residue (dissolved) (70300)         □       Other: <b>F, A-H₂ SO4</b> □       Nitrate-N + , Nitrate-N dissolved (00631)         □       Ammonia-N dissolved (00608)         □       Other:         □       Other:	Units       Da         Units       Da         mg/l       mg/l         mg/l	For m

SLD	726	(12/84)
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PINK - EID Local Office

GOLDENROD - SLD

Lab Number: <u>HM1969</u> Date Submitted: <u>11/21/85</u> By: <u>Boyer/Bailin</u>

Sample code: (poling Tower) 12/16/85 Date Analyzed:\_\_\_\_ Reviewed By: Jim Rolly Date Reported: 12/31/85

Element	ICAP VALUE (MG/L)	AA VALUE (MG/L)
Aluminum		
Barium	0.2	, ,
Berylium		
Boron	0.2	· .
Cadmium		
Calcium	220.	<b></b>
Chromium		<u> </u>
Cobalt	40.1	
Copper	40.1	
Iron		
Lead	40.1	· · · · · · · · · · · · · · · · · · ·
Magnesium	33.	
Manganese	20.05	
Molybdenum	40.1	- og i stat som som som som som som som som som som
Nickel	40.1	. <u></u>
Silicon	30	
Silver		
Strontium	1.9	
Tin	.40.1	· · · · · ·
Vanadium	<0.1	· ·
Zinc	20.1	·
Arsenic		0.029
Selenium	•	10.005
Mercury		· · · · · · · · · · · · · · · · · · ·

11.11 SCIENTIFIC TABORATORY DIVISION 700 Camino de Salud NE STATE OF NEW MEXIC INM Albuquerque, NM 87106 841-2570 UCU 61 TY ENVIRONMENT 85-1168 -0 ON CONCEDUATION DAVID G. BOYER FE S.L.D. No.: OR- 1/10 REPORT TO: PLEASE PRINT DATE REC. : 12/02. NEW MEXICO OIL CONSERVATION DIV. P.O. BOX 2088 SLD PRIORITY #: SANTA FE, NM 87501 827-5812 USER CODE: |8|2|2|3|5| PHONE(S): SUBMITTER: Danie BOYER SUBMITTER CODE: SAMPLE TYPE: WATER , SOIL , OTHER SAMPLE TYPE CODE: | | COLLECTED: 11/21/85-16:10 BY 408 CODE: \_\_\_\_ MMDDHHMMII SOURCE: Skimmer Donk CODE: L | + | | + | | | AQUIFER DEPTH NEAREST CITY: Custs he CODE: LOCATION: Phillips Lusk Goal Plant CODE: 1111111 TOWNSHIP RANGE SECTION TRACTS pH= 5.1; Conductivity= 1220 umho/cm at 14 °C; Chlorine Residual= Dissolved Oxygen= \_\_\_\_mg/l; Alkalinity=\_\_\_\_; Flow Rate=\_\_\_ Sampling Location, Methods and Remarks (i.e. odors, etc.) Middle of S. Shore. Floating oil, strong sour ado? Sample dipped the efter swirting to purch oil esite 1. 28 - 28- 8 I certify that the statements in this block accurately reflect the results of my field analyses, observations and activities. (  ${\cal H}$ Method of shipment to the Laboratory Hand Conrick This form accompanies Z Septum Vials, Glass Jugs, Containers are marked as follows to indicate preservation: No preservation; sample stored at room temperature. NP: P-Ice Sample stored in an ice bath (not frozen). P-Na25,03; Sample preserved with Na25,03 to remove chlorine residual. I (we) certify that this sample was transferred from to at (location) on and that the statements in this block are correct. DATE AND TIME Evidentiary Seals: Not Sealed Seals Intact: Yes 🚺 No 🗍 Signatures (we) certify that this sample was transferred from \_\_\_\_\_\_ () at (location) to on and that the statements in this block are correct. ATE AND TIME Evidentiary Seals: Not Sealed Seals Intact: Yes No T Signatures
EQUIRED. WHENEVER POSSIB	TE BOXES BELOW TO LE LIST SPECIFIC C		ATE T	THE TYPE OF ANALYTI SUSPECTED OR REQUIR	CAL SCREENS ED.
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SCRE	ENS	QUAL	QUANT	SCREE	NS
ALIPHATIC HYDROCAR	BON SCREEN			ALIPHATIC HYDROC	ARBONS
AROMATIC HYDROCARB	ON SCREEN			CHLORINATED HYDR	OCARBON PESTICIDES
HALOGENATED HYDROC.	ARBON SCREEN			CHLOROPHENOXY AC	ID HERBICIDES
GAS CHROMATOGRAPH/	MASS SPECTROMETER		<u> </u>	HYDROCARBON FUEL	SCREEN
			1	ORGANOPHOSPHATE	PESTICIDES
				POLYCHLORINATED	BIPHENYLS (PCB's)
				POLYNUCLEAR AROM	ATIC HYDROCARBONS
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COMPOUND alo, purg. screes bergene toluene ethy l Remen	[PPB] home letected 230 240 50	C	OMI	POUND	
COMPOUND alo pyrg. screen bergene toliene ethylbengene	[PPB] home letected 230 240 50 35	C	OMI	POUND	
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(00400)	5.1	Conductivity (Unco	rrected)	Water Temp. (00010)	4 Conductiv	vity at 25 °C (00094)
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PLE FIEL b. of samples bmitted		T — Check prope F: Whole sample (Non-filtered)	er boxes □ F: Filtered in 0.45 μmer	field with	U II H₂SO₄/L added	
NA: No ac	D TREATMEN	T — Check prope F: Whole sample (Non-filtered) Other-specify:	er boxes □ F: <sup>Filtered in</sup> 0.45 μmer	field with mbrane filter: A: 2 m <b>G. Marcelo</b>	IH₂SO₄/Ladded	ond 1558
NA: No ac	D TREATMEN	T — Check prope F: Whole sample (Non-filtered) Other-specify: m SAMPLES	Filtered in 0.45 μmer	field with nbrane filter A: 2 m	IH₂SO₄/Ladded EsT (m ca	ond 1558
NPLE FIELD of samples bmitted NA: No ac LYTICAL I VF, NA	D TREATMEN	T — Check prope F: Whole sample (Non-filtered) Other-specify: m SAMPLES	The force of the second secon	field with mbrane filter: A: 2 m () / Teres 1 F, NA	Est for a	units Date analyz
NA: No ac NA: No ac	D TREATMEN	T — Check prope F: Whole sample (Non-filtered) Other-specify: m SAMPLES	er boxes F: Filtered in 0.45 μmer Press Units Date analyzed μmbo / λ/ (8)	field with mbrane filter: A: 2 m <b>Contractor</b> <b>A</b> <b>A</b> <b>A</b> <b>A</b> <b>A</b> <b>A</b> <b>A</b> <b>A</b>	U I H₂SO₄/L added EsT (orr co <u>472.0</u> 58.6	units Date analyz mg/1 <u>1236</u> mg/1 <u>1</u>
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IPLE FIELD o. of samples bmitted NA: No ac NF, NA Conductivity ( 25°C (00095) Total non-filter residue (suspo	D TREATMEN	T — Check prope F: Whole sample (Non-filtered) Other-specify: m SAMPLES	er boxes F: Filtered in 0.45 μmer Press Units Date analyzed μmho _/2/18	field with mbrane filter: A: 2 m <b>F, NA</b> Calcium (00915) Magnesium (00925) Sodium (00930) Potassium (00935)	472.0 472.0 472.0 472.0 58.6 29.9 3.51	$\frac{\text{Units}  \text{Date analyz}}{\text{mg/l}  \frac{1236}{\text{mg/l}  \frac{1}{4}}}$
NA: No ac NA: NO AC NO A	D TREATMEN	T – Check prope F: Whole sample (Non-filtered) Other-specify: m SAMPLES	er boxes $\Box$ F: Filtered in 0.45 µmer Proc Units Date analyzed umho $\frac{12}{18}$ mg/l $\frac{12}{18}$	field with mbrane filter: A: 2 m <b>F, NA</b> Calcium (00915) Magnesium (00925) Sodium (00930) Potassium (00935) Bicarbonate (00440) Chloride (00940)	U II H₂SO₄/L added EsT (orr co 472.0 58.6 29.9 3.51 863.6 /06.1	$\begin{array}{c c} & 1558 \\ \hline Units & Date analyz \\ mg/l & 1236 \\ mg/l & 4 \\ mg/l & 4 \\ mg/l & 4 \\ mg/l & 4 \\ mg/l & 1/2 \\ mg/l & 1/10 \\ \end{array}$
IPLE FIELD o. of samples bmitted NA: No activited NA: No activity (12 Conductivity (12 25°C (00095) Total non-filter residue (susper (00530) Other:	D TREATMEN	T – Check prope F: Whole sample (Non-filtered) Other-specify: m SAMPLES 2225 5.75	er boxes F: Filtered in 0.45 $\mu$ mer Free for Units Date analyzed umho $\frac{12}{18}$	field with mbrane filter A: 2 m <b>F</b> , NA Calcium (00915) Magnesium (00925) Sodium (00930) Potassium (00935) Bicarbonate (00440) Chloride (00940) Sulfate (00945)	U II H₂SO₄/L added EsT (10m ca 472.0 58.6 29.9 3.51 863.6 106.1 10	$\begin{array}{c c} & 1558 \\ \hline Units & Date analyz \\ mg/l & 12.36 \\ mg/l & 4 \\ mg/l & 4 \\ mg/l & 4 \\ mg/l & 4 \\ mg/l & 4 \\ mg/l & 12/18 \\ mg/l & 1/10 \\ mg/l & 12/31 \end{array}$
IPLE FIELD o. of samples bmitted NA: No ac NF, NA Conductivity ( 25°C (00095) Total non-filter residue (suspendent) Other: Other:	D TREATMEN	T – Check prope F: Whole sample (Non-filtered) Other-specify: 2225 5:/5	er boxes <b>F:</b> Filtered in 0.45 $\mu$ mer <b>Prec</b> Units Date analyzed umho $\frac{12}{18}$ mg/l	field with mbrane filter: A: 2 m <b>F</b> , NA Calcium (00915) Magnesium (00925) Sodium (00930) Potassium (00935) Bicarbonate (00440) Chloride (00940) Sulfate (00945) Total filterable residue (discolured) (72200)	U II H₂SO₄/L added EsT (orr co 472.0 58.6 29.9 3.51 863.6 106.1 10 2933	$\begin{array}{c c} & 1558 \\ \hline \\ \hline \\ \hline \\ \hline \\ \hline \\ \hline \\ \hline \\ \hline \\ \hline \\ $
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IPLE FIELD o. of samples bmitted NA: No activited NA: No activity NF, NA Conductivity ( 25 °C (00095) Total non-filter residue (susper (00530) Other: Other: A-H <sub>2</sub> SO <sub>4</sub>	D TREATMEN	T — Check prope F: Whole sample (Non-filtered) Other-specify: m SAMPLES 2225 5.15	er boxes $\Box$ F: Filtered in 0.45 µmer Proc Units Date analyzed umho $\frac{12}{18}$ mg/l <u>12/18</u>	field with mbrane filter: A: 2 m <b>F</b> , NA Calcium (00915) Magnesium (00925) Sodium (00930) Potassium (00935) Bicarbonate (00440) Chloride (00945) Sulfate (00945) Total filterable residue (dissolved) (70300) Other:	U II H₂SO₄/L added EsT (0m co <u>472.0</u> <u>58.6</u> <u>29.9</u> <u>3.51</u> <u>863.6</u> <u>106.1</u> <u>110</u> <u>2,933</u> <u>2,26</u> <u>0.62</u>	$\begin{array}{c c} & 1558\\ \hline \\ \hline \\ \text{Units} & \text{Date analyz}\\ \hline \\ mg/l & 1236\\ \hline \\ mg/l & 4\\ \hline \\ mg/l & 12/18\\ \hline \\ mg/$
IPLE FIELD o. of samples bmitted NA: No acc NA: No acc NA: No acc NA: No acc NA: No acc NA: No acc NO Conductivity (12 25°C (00095) Total non-filter residue (susperior) Other: Other: A-H <sub>2</sub> SO <sub>4</sub> Nitrate-N + , No total (00630)	D TREATMEN	T – Check prope F: Whole sample (Non-filtered) Other-specify: 2225 5.15	er boxes F: Filtered in 0.45 $\mu$ mer Filtered in 0.45 $\mu$ mer Units Date analyzed umho $\frac{12}{18}$ mg/l mg/l	field with mbrane filter: A: 2 m <b>F, NA</b> Calcium (00915) Magnesium (00925) Sodium (00930) Potassium (00935) Bicarbonate (00440) Chloride (00940) Sulfate (00945) Total filterable residue (dissolved) (70300) Other: <b>F, A-H<sub>2</sub> SO</b> <sub>4</sub>	U II H₂SO₄/L added EsT (0m co 472.0 58.6 29.9 3.51 863.6 106.1 10 2.933 2.26 0.62	$\begin{array}{c} & & 1558 \\ \hline \text{Units} & & \text{Date analyz} \\ & & \text{mg/l} & & 1236 \\ & & \text{mg/l} & & 4 \\ & & \text{mg/l} & & 4 \\ & & \text{mg/l} & & 4 \\ & & \text{mg/l} & & 4 \\ & & \text{mg/l} & & 4 \\ & & \text{mg/l} & & 140 \\ & & \text{mg/l} & & 140 \\ & & & \text{mg/l} & & 140 \\ & & & \text{mg/l} & & 140 \\ & & & \text{mg/l} & & 1275 \\ \end{array}$
IPLE FIELD o. of samples bmitted NA: No ac NA: No ac NET CAL I NF, NA Conductivity ( 25°C (00095) Total non-filter residue (suspendent) Other: Other: A-H <sub>2</sub> SO <sub>4</sub> Nitrate-N + , Notal (00630) Ammonia-N to	D TREATMEN	T — Check prope F: Whole sample (Non-filtered) Other-specify: m SAMPLES 2225 5.15	$r boxes$ $r boxes$ $F: Filtered in 0.45 \mu mer$ $r boxes$ Units Date analyzed $f(x) = \frac{12 / 18}{12 / 18}$ $r g/1$ $r g/1$	field with mbrane filter: A: 2 m A:	U I H₂SO₄/L added EsT (0m co 38.6 29.9 3.51 863.6 106.1 110 2.933 2.26 0.62	$\begin{array}{c c} & 1558 \\ \hline \\ \text{Units} & \text{Date analyz} \\ mg/l & 1236 \\ mg/l & 4 \\ mg/l & 4 \\ mg/l & 4 \\ mg/l & 4 \\ mg/l & 12/18 \\ mg/l & 1/10 \\ mg/l & 12/18 \\ mg/l$
IPLE FIELD o. of samples bmitted NA: No acc NA: No acc NA: No acc NA: No acc NA: No acc NET CAL I NF, NA Conductivity (12 25°C (00095) Total non-filter residue (susper 00530) Other: Other: A-H <sub>2</sub> SO <sub>4</sub> Nitrate-N + , N total (00630) Ammonia-N to Total Kjeldahl-	D TREATMEN	T — Check prope F: Whole sample (Non-filtered) Other-specify: <b>n SAMPLES</b> 2225 5./5	er boxes F: Filtered in 0.45 $\mu$ mer Prec Units Date analyzed umho $\frac{12}{18}$ mg/l mg/l mg/l mg/l	field with mbrane filter: A: 2 m A: A: 2 m A:	U II H₂SO₄/L added EsT (0m co <u>472:0</u> <u>58.6</u> <u>29.9</u> <u>3.51</u> <u>863.6</u> <u>106.1</u> <u>110</u> <u>2,933</u> <u>2,26</u> <u>0.62</u>	$\begin{array}{c c} & 1558\\ \hline \text{Units} & \text{Date analyz}\\ \hline \text{mg/l} & 1236\\ \hline \text{mg/l} & 4\\ \hline \text{mg/l} & 4\\ \hline \text{mg/l} & 4\\ \hline \text{mg/l} & 14\\ \hline \text{mg/l} & 12\\ \hline$
APLE FIELD o. of samples ibmitted NA: No activited NA: No activited NA: No activited NA: No activited NA: No activited NET CONDUCTION SCONDUCTION Notal non-filter residue (susperior (00530) Other: Other: A-H <sub>2</sub> SO <sub>4</sub> Nitrate-N + , N total (00630) Ammonia-N total (jeldahl- () Chemical oxyd	D TREATMEN	T — Check prope F: Whole sample (Non-filtered) Other-specify: m SAMPLES 2225 5:15	er boxes F: Filtered in 0.45 $\mu$ mer Press Units Date analyzed umho $\frac{12}{18}$ mg/l mg/l mg/l mg/l	field with mbrane filter: A: 2 m A:	472.0 £sT (0~ co 58.6 29.9 3.51 863.6 106.1 110 2.933 2.26 0.62	$\begin{array}{c c} & 1558 \\ \hline \\ \text{Units} & \text{Date analyz} \\ mg/l & 1236 \\ mg/l & 4 \\ mg/l & 4 \\ mg/l & 4 \\ mg/l & 4 \\ mg/l & 12/18 \\ mg/l & 1/10 \\ mg/l & 1/2 $
APLE FIELD o. of samples abmitted NA: No activited NA: No activited NA: No activited ALYTICAL I NF, NA Conductivity ( 25°C (00095) Total non-filter residue (susper (00530) Other: Other: A-H <sub>2</sub> SO. Nitrate-N + , N total (00630) Ammonia-N total (00630) Ammonia-N total (0064) Chemical oxyg demand (0034)	D TREATMEN	T – Check prope F: Whole sample (Non-filtered) Other-specify: 2225 5.15	er boxes F: Filtered in 0.45 $\mu$ mer Proc Units Date analyzed umho $12/18$ mg/l 	field with mbrane filter: A: 2 m A:	U II H₂SO₄/L added EsT (0~7 co <u>472.0</u> <u>58.6</u> <u>29.9</u> <u>3.51</u> <u>863.6</u> <u>106.1</u> <u>110</u> <u>2933</u> <u>2.26</u> <u>0.62</u>	$\begin{array}{c c} & 1558\\ \hline \\ \hline \\ Units & Date analyz\\ mg/l & 1236\\ mg/l & 4\\ mg/l & $
APLE FIELD o. of samples ibmitted NA: No act ALYTICAL I NF, NA Conductivity ( 25°C (00095) Total non-filter residue (susper (00530) Other: Other: A-H <sub>2</sub> SO. Nitrate-N + , N total (00630) Ammonia-N total (0064) Ammonia-N total (0064) Chemical oxyst demand (0034) Total organic of (1)	D TREATMEN	T – Check prope F: Whole sample (Non-filtered) Other-specify: m SAMPLES 2225 5:/5	er boxes         □ F: Filtered in 0.45 µmer         Prec         Units Date analyzed         µmho         12/18         mg/l	field with mbrane filter: A: 2 m A: 4 A:	U II H₂SO₄/L added EsT (10 m ca 3.51 863.6 106.1 110 2.933 2.26 0.62	Units       Date analyz         mg/l $1236$ mg/l $''$ <t< td=""></t<>
APLE FIELD o. of samples ibmitted NA: No act ALYTICAL I NF, NA Conductivity ( 25°C (00095) Total non-filter residue (susper (00530) Other: Other: A-H <sub>2</sub> SO <sub>4</sub> Nitrate-N + , N total (00630) Ammonia-N to Total Kjeldahl- () Chemical oxyg demand (003- Total organic of () Other:	D TREATMEN	T — Check prope F: Whole sample (Non-filtered) Other-specify: m SAMPLES 2225 5.15	er boxes         F: Filtered in 0.45 μmer         0.45 μmer         Inits Date analyzed         umho       /2/18         mg/l       12/18         mg/l	field with mbrane filter A: 2 m <b>F</b> , NA Calcium (00915) Magnesium (00925) Sodium (00930) Potassium (00935) Bicarbonate (00440) Chloride (00940) Sulfate (00945) Total filterable residue (dissolved) (70300) Other: <b>F</b> , A-H <sub>2</sub> SO <sub>4</sub> <b>F</b> , A-H <sub>2</sub> SO <sub>4</sub> Nitrate-N + , Nitrate-N dissolved (00631) Ammonia-N dissolved (00608) Total Kjeldahl-N ( ) Other:	U I H₂SO₄/L added EsT (0 m co <u>472.0</u> <u>58.6</u> <u>29.9</u> <u>3.51</u> <u>863.6</u> <u>106.1</u> <u>110</u> <u>2.933</u> <u>2.26</u> <u>0.62</u>	Units       Date analyz         mg/l $1236$ mg/l $''$ <t< td=""></t<>
APLE FIELD o. of samples ibmitted NA: No activited NA: No activited NA: No activited NA: No activited NA: No activited NF, NA Conductivity (25°C (00095)) Total non-filter residue (susper (00530) Other: Other: Other: A-H <sub>2</sub> SO. Nitrate-N + , N total (00630) Ammonia-N total (0034) Ammonia-N total (0034) Chemical oxyg demand (0034) Total organic of () Other: Other: Other: Other:	D TREATMEN	T — Check prope F: Whole sample (Non-filtered) Other-specify: <b>n SAMPLES</b> 2225 5./5	er boxes F: Filtered in 0.45 μmer Prec Units Date analyzed umho /2/18 mg/l 12/18 mg/l mg/l mg/l mg/l mg/l	field with       □       A: 2 m         Imbrane filter       □       A         Imbrane filter       □       00915)         Imbrane filter       □       00930)         Imbrane filter       □       00045)         Imbrane filter       □       00608)         Imbrane filter       □       □         Imbrane       □	U II H₂SO₄/L added EsT (10m co 	Units       Date analyz         mg/l $1236$ mg/l $4$ mg/l $12/3$ mg/l $12/5$ mg/l $12/5$ mg/l $12/5$ mg/l $12/5$ mg/l $12/5$
APLE FIEL D. of samples abmitted NA: No activited NA: No activited NA: No activited NA: No activited NA: No activited NET CALL NF, NA Conductivity ( 25°C (00095) Total non-filter residue (susperior (00530) Other: Other: Other: A-H <sub>2</sub> SO <sub>4</sub> Nitrate-N + , N total (00630) Ammonia-N to Total Kjeldahl- ( ) Chemical oxy demand (003- Total organic of ( ) Other: Other	D TREATMEN	T — Check prope F: Whole sample (Non-filtered) Other-specify: m SAMPLES 2225 5:15	er boxes F: Filtered in 0.45 μmer Prec Units Date analyzed μmho /2/18 mg/l 12/18 mg/l mg/l mg/l mg/l mg/l	field with mbrane filter: A: 2 m A:	$   \begin{array}{c}                                     $	units       Date analyz         mg/l $1236$ mg/l $''$ <t< td=""></t<>
APLE FIELD o. of samples ubmitted NA: No act ALYTICAL I NF, NA Conductivity ( 25°C (00095) Total non-filter residue (susper (00530) Other: Other: Other: A-H <sub>2</sub> SO. Mitrate-N + , N total (00630) Ammonia-N total (00630) Chemical oxyst demand (0034 Total organic of () Other: Other: Other: Other:	D TREATMEN	T — Check prope F: Whole sample (Non-filtered) Other-specify: <b>n SAMPLES</b> 2225 5./5	er boxes F: Filtered in 0.45 $\mu$ mer Proc Units Date analyzed umho $\frac{12}{18}$ mg/l mg/l mg/l mg/l mg/l mg/l	field with       □       A: 2 m         Imbrane filter       □       Calcium (00915)         Magnesium (00930)       Potassium (00935)       Bicarbonate (00440)         Imbrane filterable colored       □       Chloride (00945)         Imbrane filterable residue (dissolved) (70300)       Imbrane filterable residue (dissolved) (70300)         Imbrane filterable colored       □         Imbrane filterable colored       □      <	$ \frac{472.0}{5.57} $ $ \frac{472.0}{5.51} $ $ \frac{472.0}{5.51} $ $ \frac{5.51}{863.6} $ $ \frac{106.1}{100} $ $ \frac{7.933}{2.26} $ $ \frac{2.933}{2.26} $ $ \frac{5.6}{2} $ $ \frac{106.1}{100} $	Units       Date analyz         mg/l $1236$ mg/l $4$ mg/l $12/18$ mg/l $12/5$ mg/l $12/5$ mg/l $12/5$ mg/l $-12/5$ mg/l $-12/5$ mg/l $-12/5$ mg/l $-12/5$
APLE FIEL o. of samples ubmitted NA: No ac ALYTICAL I NF, NA Conductivity ( 25°C (00095) Total non-filter residue (susper (00530) Other: Other: Other: A-H <sub>2</sub> SO <sub>4</sub> Nitrate-N + , N total (00630) Ammonia-N total (00630) Ammonia-N total (0034) Chemical oxydemand (0034) Total organic of () Other: Ot	D TREATMEN	T — Check prope F: Whole sample (Non-filtered) Other-specify: m SAMPLES 2225 5:/5	er boxes F: Filtered in 0.45 μmer Proc 5 Units Date analyzed μmho /2/18 mg/l 12/18 mg/l mg/l mg/l mg/l mg/l	field with mbrane filter: A: 2 m A:		units       Date analyz         mg/l $1236$ mg/l $''$ <t< td=""></t<>

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Albuquerque,	ABOHAIOHY DIVISION e Salud NE NM 87106 — (505) 841-2555	and NI	L WATER CHEMISTRY TROGEN ANALYSIS
	NO. UC-5224 CODE 5 SITE Sample location C INFORM- ATION Collection site desc	59600 A OTHER: Kimmier Ponk	Phillipsnus K
ENVIRONME END NM OIL CO NAL State Lan EPORT Santa Fe, Attn:David_E	INTAL BUREAU INSERVATION DIVISION Id Office Bldg, PO Box 2 , NM 87501 Boyer	JAN 13 1986	
AMPLING CONDITIONS		Station/ well.code Owner	
Bailed      C Pump     Dipped     Tap     P(00400)	Water level	Discharge	Sample type GRAA Conductivity at 25°C (00094)
AMPLE FIELD TREATME No. of samples submitted	NT — Check proper boxes		
NA: No acid added	(Non-filtered) 0.45 µ	esilter XA: 2 ml H2SO	D₄/L added
NA: No acid added NALYTICAL RESULTS frc NF, NA Conductivity (Corrected) 25 °C (00095) Total non-filterable residue (suspended) (00530) Other: Other: Other: Other: HF. A-H-SO4	(Non-hiltered) 0.45 µ Other-specify: om SAMPLES Units Date anal µmho	Amembrane filter       XA: 2 ml H <sub>2</sub> S0         Amembrane filter       XA: 2 ml H <sub>2</sub> S0         Amembrane filter       XA: 2 ml H <sub>2</sub> S0         Amembrane filter       XA: 2 ml H <sub>2</sub> S0         Amembrane filter       XA: 2 ml H <sub>2</sub> S0         Amembrane filter       XA: 2 ml H <sub>2</sub> S0         Amembrane filter       XA: 2 ml H <sub>2</sub> S0         Amembrane filter       XA: 2 ml H <sub>2</sub> S0         Amembrane filter       XA: 2 ml H <sub>2</sub> S0         Amembrane filter       XA: 2 ml H <sub>2</sub> S0         Amembrane filter       XA: 2 ml H <sub>2</sub> S0         Amembrane filter       XA: 2 ml H <sub>2</sub> S0         Amembrane filter       XA: 2 ml H <sub>2</sub> S0         Amembrane filter       XA: 2 ml H <sub>2</sub> S0         Amembrane filter       XA: 2 ml H <sub>2</sub> S0         Amembrane filter       XA: 2 ml H <sub>2</sub> S0         Amembrane filter       XA: 2 ml H <sub>2</sub> S0         Amembrane filter       XA: 2 ml H <sub>2</sub> S0         Amembrane filter       XA: 2 ml H <sub>2</sub> S0         Amembrane filter       XA: 2 ml H <sub>2</sub> S0         Amembrane filter       XA: 2 ml H <sub>2</sub> S0         Amembrane filter       XA: 2 ml H <sub>2</sub> S0         Bicarbonate (00945)       XA: 2 ml H <sub>2</sub> S0         Amembrane filter       XA: 2 ml H <sub>2</sub> S0         Amembrane filter       XA: 2 ml H <sub>2</sub>	O₄/L added Units Date analyzed mg/l
□ NA: No acid added       □         NALYTICAL RESULTS frc       NF, NA         □ Conductivity (Corrected)       25°C (00095)         □ Total non-filterable	(Non-filtered) 0.45 µ Other-specify: Dom SAMPLES Units Date anal µmho mg/l	Amembrane filter       XA: 2 ml H <sub>2</sub> S0         Amembrane filter       XA: 2 ml H <sub>2</sub> S0         Amembrane filter       XA: 2 ml H <sub>2</sub> S0         Amembrane filter       XA: 2 ml H <sub>2</sub> S0         Amembrane filter       XA: 2 ml H <sub>2</sub> S0         Amembrane filter       XA: 2 ml H <sub>2</sub> S0         Amembrane filter       XA: 2 ml H <sub>2</sub> S0         Amembrane filter       XA: 2 ml H <sub>2</sub> S0         Amembrane filter       XA: 2 ml H <sub>2</sub> S0         Amembrane filter       XA: 2 ml H <sub>2</sub> S0         Amembrane filter       XA: 2 ml H <sub>2</sub> S0         Amembrane filter       XA: 2 ml H <sub>2</sub> S0         Amembrane filter       XA: 2 ml H <sub>2</sub> S0	O₄/L added Units Date analyzed mg/I mg/I mg/I mg/I mg/I mg/I mg/I mg/I mg/I mg/I mg/I
□ NA: No acid added         NALYTICAL RESULTS frc         NF, NA         □ Conductivity (Corrected)         25°C (00095)         □ Total non-filterable         residue (suspended)         (00530)         □ Other:         □ Other:         □ Other:         □ Other:         □ Total Kjeldahl-N         (         □ Chemical oxygen         demand (00340)         □ Total organic carbon         (	(Non-filtered)         0.45 μ           Other-specify:         μ           om SAMPLES         Units Date anal           μmho	Amembrane filter       XA: 2 ml H <sub>2</sub> S0         Amembrane filter       XA: 2 ml H <sub>2</sub> S0         Amembrane filter       XA: 2 ml H <sub>2</sub> S0         Amembrane filter       XA: 2 ml H <sub>2</sub> S0         Amembrane filter       XA: 2 ml H <sub>2</sub> S0         Amembrane filter       XA: 2 ml H <sub>2</sub> S0         Amembrane filter       XA: 2 ml H <sub>2</sub> S0         Amembrane filter       XA: 2 ml H <sub>2</sub> S0         Magnesium (00915)	$\begin{array}{c c c c c c c c c c c c c c c c c c c $
□ NA: No acid added         INALYTICAL RESULTS fr         NF, NA         □ Conductivity (Corrected)         25°C (00095)         □ Total non-filterable         residue (suspended)         (00530)         □ Other:         □ Other:         □ Other:         □ Other:         □ Nitrate-N + , Nitrate-N         total (00630)         □ Ammonia-N total (00610)         □ Total Kjeldahl-N         (         ) Chemical oxygen         demand (00340)         □ Total organic carbon         (         ) Other:         □ Other:	(Non-filtered) 0.45 µ Other-specify: om SAMPLES Units Date anal µmho mg/l mg/l mg/l mg/l mg/l mg/l	Amembrane filter       XA: 2 ml H <sub>2</sub> S0         Amembrane filter       XA: 2 ml H <sub>2</sub> S0         Amembrane filter       XA: 2 ml H <sub>2</sub> S0         Amembrane filter       XA: 2 ml H <sub>2</sub> S0         Amembrane filter       XA: 2 ml H <sub>2</sub> S0         Amembrane filter       XA: 2 ml H <sub>2</sub> S0         Amembrane filter       XA: 2 ml H <sub>2</sub> S0         Amembrane filter       XA: 2 ml H <sub>2</sub> S0         Magnesium (00915)	D <sub>4</sub> /L added Units Date analyzed mg/I

SCIENTIFIC LABORATI 700 Camino de Salud N	ORY LE	T'N GEN	AL WATER CHEMICTRY
Albuquerque, NM 87106	6 — (505) 841-2555	 ***	82235
RECEIVED / 2 / 2 / NO. /7/	SITE Sample location		DI: 11. n-10 11
		Kimper Fork	, Minps USR
Collected by - Percon/Agency			Natural Gas Plan
- Douges / Sauces		STANIE III	
ENVIRONMENTAL	BUREAU JUREALER	1006	
NM OIL CONSERV	ATION DIVISION AN	13 1980	
IEPORT State Land Off Santa Fe. NM 8	7501	NATION DIVISION	······································
Attn: David Bover	OTL CONSEL	ANTA FE	
/ \[]]].		Station/	· · · · · · · · · · · · · · · · · · ·
•		weil code Owner	
AMPLING CONDITIONS			
⊂ Bailed ⊂ Pump   Wate ✓ Dipped ⊂ Tap		Discharge	Sample type GRAR
pH (00400) .5 / Conc	ductivity (Uncorrected)	Water Temp. (00010)	°C Conductivity at 25°C (00094)
Field comments		1 155/2	Elastic ail
Jample y	rom midd	le of J. suble	. floating ver,
Aron odo.	m pr	efillened only	
AMPLE FIELD TREATMENT - C	Check proper boxes		
No. of samples UNF: White No. of samples	hole sample $\Box$ <b>F:</b> Filtered $0.45 \mu$	d in field with membrane filter	Beart added 4m/ Fourms
□ NA: No acid added □ Other	-specify:	· · · · · · · · · · · · · · · · · · ·	LND.
		· · · · · · · · · · · · · · · · · · ·	11403
NALYTICAL RESULTS from SAN	APLES	vzed F. NA	Units Date analyzed
NALYTICAL RESULTS from SAN	<b>IPLES</b> Units Date analy	yzed F, NA	Units Date analyzed
ALYTICAL RESULTS from SAN	IPLES Units Date analy µmho	yzed F, NA Calcium (00915) Magnesium (00925)	Units Date analyzed mg/l
NALYTICAL RESULTS from SAN	MPLES Units Date analy µmho	yzed F, NA Calcium (00915) Magnesium (00925) Sodium (00930) Potassium (00935)	Units         Date analyzed          mg/l
NALYTICAL RESULTS from SAN	MPLES Units Date analy µmho	yzed F, NA Calcium (00915) Magnesium (00925) Sodium (00930) Potassium (00935) Bicarbonate (00440)	Units         Date analyzed           mg/l
NALYTICAL RESULTS from SAM	MPLES Units Date analy μmho mg/l	yzed         F,         NA <ul> <li>Calcium (00915)</li> <li>Magnesium (00925)</li> <li>Sodium (00930)</li> <li>Potassium (00935)</li> <li>Bicarbonate (00440)</li> <li>Chloride (00940)</li> <li>Output</li> </ul>	Units         Date analyzed           mg/l
NALYTICAL RESULTS from SAN	MPLES Units Date analy µmho mg/l	yzed         F,         NA <ul> <li>Calcium (00915)</li> <li>Magnesium (00925)</li> <li>Sodium (00930)</li> <li>Potassium (00935)</li> <li>Bicarbonate (00440)</li> <li>Chloride (00940)</li> <li>Sulfate (00945)</li> <li>Total filterable residue</li> </ul>	Units         Date analyzed          mg/l
NALYTICAL RESULTS from SAM	MPLES Units Date analy μmho mg/l	yzed         F,         NA <ul> <li>Calcium (00915)</li> <li>Magnesium (00925)</li> <li>Sodium (00930)</li> <li>Potassium (00935)</li> <li>Bicarbonate (00440)</li> <li>Chloride (00940)</li> <li>Sulfate (00945)</li> <li>Total filterable residue (dissolved) (70300)</li> </ul>	Units         Date analyzed           mg/l
NALYTICAL RESULTS from SAM	<b>APLES</b> <u>Units Date analy</u> <u>μmho</u> <u>mg/l</u>	yzed         F,         NA           Image: Calcium (00915)         Image: Calcium (00925)           Image: Calcium (00930)         Image: Calcium (00930)           Image: Calcium (00940)         Image: Calcium (00940)           Image: Calcium (00945)         Image: Calcium (00945)           Image: Calcium (00940)         Image: Calcium (00945)           Image: Calcium (00940)         Image: Calcium (00945)           Image: Calcium (00940)         Image: Calcium (00940)           Image: Calcium (00940)         Image: Calcium (00940	Units         Date analyzed          mg/l
NALYTICAL RESULTS from SAN  Conductivity (Corrected)  Sort (00095)  Total non-filterable residue (suspended) (00530) Cother: Other: Other: Sec  NF, A-H <sub>2</sub> SO.  Nitrate-N +, Nitrate-N Hond (00000)	<b>APLES</b> <u>Units Date analy</u> <u>μmho</u> <u>mg/l</u> <u></u>	yzed         F, NA                Calcium (00915) Magnesium (00925) Sodium (00930) Potassium (00935) Bicarbonate (00440) Chloride (00940) Chloride (00945) Sulfate (00945) Total filterable residue             (dissolved) (70300) Other: F, A-H <sub>2</sub> SO <sub>4</sub>	Units         Date analyzed           mg/l
NALYTICAL RESULTS from SAM	MPLES           Units Date analy           μmho           mg/l           mg/l           mg/l	yzed         F, NA                Calcium (00915) Magnesium (00925) Sodium (00930) Potassium (00935) Potassium (00935) Potassium (00940) Chloride (00940) Chloride (00945) Chloride residue             (dissolved) (70300) Other: F, A-H <sub>2</sub> SO <sub>4</sub> Initrate-N +, Nitrate-N             diract-N +, Nitrate-N             diract-N + (200021)	Units         Date analyzed
NALYTICAL RESULTS from SAM         Main Mark         Conductivity (Corrected)         25 °C (00095)         Total non-filterable         residue (suspended)         (00530)         Other:         Other:         Other:         Other:         Other:         NF, A-H <sub>2</sub> SO.         Nitrate-N + , Nitrate-N         total (00630)         Ammonia-N total (00610)         Total Kjeldahl-N	MPLES           Units Date analy           μmho           mg/l           mg/l           mg/l           mg/l	yzed         F, NA                Calcium (00915) Magnesium (00925) Sodium (00930) Potassium (00935) Bicarbonate (00440) Chloride (00940) Chloride (00945) Cholaf filterable residue             (dissolved) (70300) Other: F. A-H2 SO4 Nitrate-N +, Nitrate-N             dissolved (00631) Armmonia-N dissolved	Units         Date analyzed           mg/l
NALYTICAL RESULTS from SAM         Alenta         Conductivity (Corrected)         25°C (00095)         Total non-filterable         residue (suspended)         (00530)         Other:         Alenta         Nitrate-N + , Nitrate-N         total (00630)         Ammonia-N total (00610)         Total Kjeldahl-N         (         Chemical oxygen	MPLES           Units Date analy           μmho           mg/l           mg/l           mg/l           mg/l           mg/l	yzed         F, NA                Calcium (00915)              Magnesium (00925)              Sodium (00930)              Potassium (00935)              Potassium (00935)              Potassium (00940)              Chloride (00940)              Chloride (00945)              Chloride (00945)              Total filterable residue             (dissolved) (70300)              Chter:              F. A-H2 SO4              F. A-H2 SO4              Ammonia-N dissolved             (00608)	Units         Date analyzed          mg/l
NALYTICAL RESULTS from SAM         Image: Application of the second sec	MPLES           Units Date analy          µmho          mg/l          mg/l          mg/l          mg/l          mg/l	yzed         F, NA                Calcium (00915) Magnesium (00925) Sodium (00930) Potassium (00935) Potassium (00935) Potassium (00940) Chloride (00940) Chloride (00945) Chal filterable residue             (dissolved) (70300) Other: F. A-H2 SO4 Nitrate-N + , Nitrate-N             dissolved (00631) Armmonia-N dissolved             (00608) Total Kjeldahl-N             (())             )	Units         Date analyzed           mg/l
NALYTICAL RESULTS from SAM         Alights         Conductivity (Corrected)         25°C (00095)         Total non-filterable         residue (suspended)         (00530)         Other:         Alights	MPLES           Units Date analy           μmho           mg/l           mg/l           mg/l           mg/l           mg/l           mg/l           mg/l           mg/l	yzed         F, NA                Calcium (00915)              Magnesium (00925)              Sodium (00930)              Potassium (00935)              Potassium (00935)              Potassium (00940)              Chloride (00940)              Chloride (00940)              Chloride (00945)              Total filterable residue             (dissolved) (70300)              F. A-H2 SO4              F. A-H2 SO4              Total Kjeldahl-N             (u)	Units         Date analyzed          mg/l
NALYTICAL RESULTS from SAM         JEFFR         Conductivity (Corrected)         25°C (00095)         Total non-filterable         residue (suspended)         (00530)         Other:         JOther:         JOTAL Kjeldahl-N         (         Chemical oxygen         demand (00340)         Total organic carbon         (         Other:	MPLES           Units Date analy          µmho          mg/l          mg/l          mg/l          mg/l          mg/l          mg/l          mg/l	yzed         F,         NA <ul> <li>Calcium (00915)</li> <li>Magnesium (00925)</li> <li>Sodium (00930)</li> <li>Potassium (00935)</li> <li>Bicarbonate (00440)</li> <li>Chloride (00940)</li> <li>Sulfate (00945)</li> <li>Total filterable residue (dissolved) (70300)</li> <li>Other:</li> <li>F, A-H2 SO4</li> <li>Nitrate-N + , Nitrate-N dissolved (00631)</li> <li>Armonia-N dissolved (00608)</li> <li>Total Kjeldahl-N (</li> <li>Other:</li> <li>Other:</li> <li>Other:</li> <li>Dotal Kjeldahl-N</li> <li>Other:</li> <li>Dotal Kjeldahl-N</li> <li>Dotal Kjeldahl-N</li> <li>Dotal Kjeldahl-N</li> <li>Dotal Kjeldahl-N</li> <li>Dother:</li> <li>Dother:</li> <li>Dother:</li></ul>	Units         Date analyzed           mg/l         mg/l
NALYTICAL RESULTS from SAM         Image: Conductivity (Corrected)         25°C (00095)         Total non-filterable         residue (suspended)         (00530)         Other:         Jother:         Jother:         Jother:         Jother:         Other:         Jother:         Jotal Kjeldahl-N         (Chemical oxygen         demand (00340)         Total organic carbon         ()         Jother:	MPLES           Units Date analy           μmho           mg/l	yzed         F, NA                Calcium (00915)             Magnesium (00925)             Sodium (00930)             Potassium (00935)             Bicarbonate (00440)             Chloride (00940)             Chloride (00940)             Chloride (00945)             Total filterable residue             (dissolved) (70300)             Other:                 F. A-H2 SO4                 Nitrate-N + , Nitrate-N             dissolved (00631)             Ammonia-N dissolved             (00608)             Total Kjeldahl-N             (             )	Units         Date analyzed           mg/l         mg/l
NALYTICAL RESULTS from SAM	MPLES           Units Date analy          µmho          mg/l	yzed         F, NA           Calcium (00915)	Units         Date analyzed           mg/l         mg/l           gg/l         mg/l           gg/l         gg/l
NALYTICAL RESULTS from SAM         Jarren         Conductivity (Corrected)         25°C (00095)         Total non-filterable         residue (suspended)         (00530)         Other:         Jarren         Mitrate-N +         Nitrate-N +         Other:         Other         Other:         Other:         Other: <tr< td=""><td>MPLES           Units Date analy           μmho           mg/l           mg/l</td><td>yzed         F, NA                Calcium (00915)             Magnesium (00925)             Sodium (00930)             Potassium (00935)             Bicarbonate (00440)             Chloride (00940)             Chloride (00945)             Chloride (00945)             Total filterable residue             (dissolved) (70300)             Other:                 F. A-H2 SO4                 Nitrate-N + , Nitrate-N             dissolved (00631)                 Ammonia-N dissolved             (00608)                 Total Kjeldahl-N             (             )</td><td>Units         Date analyzed           mg/l         mg/l           gg/l         mg/l           mg/l         mg/l           mg/l         mg/l</td></tr<>	MPLES           Units Date analy           μmho           mg/l           mg/l	yzed         F, NA                Calcium (00915)             Magnesium (00925)             Sodium (00930)             Potassium (00935)             Bicarbonate (00440)             Chloride (00940)             Chloride (00945)             Chloride (00945)             Total filterable residue             (dissolved) (70300)             Other:                 F. A-H2 SO4                 Nitrate-N + , Nitrate-N             dissolved (00631)                 Ammonia-N dissolved             (00608)                 Total Kjeldahl-N             (             )	Units         Date analyzed           mg/l         mg/l           gg/l         mg/l           mg/l         mg/l           mg/l         mg/l
NALYTICAL RESULTS from SAM         Image: Additional system         Conductivity (Corrected)         25 °C (00095)         Total non-filterable residue (suspended) (00530)         Other:         JOther:         JOTOTAL Kjeldahl-N         (         )         Chemical oxygen         demand (00340)         Total organic carbon         (         )         Other:         Dother:         Dother:	MPLES           Units Date analy          µmho          mg/l	yzed         F, NA                Calcium (00915)             Magnesium (00925)             Sodium (00930)             Potassium (00935)             Potassium (00935)             Potassium (00940)             Chloride (00940)             Chloride (00940)             Sulfate (00945)             Total filterable residue             (dissolved) (70300)             Other:                 F. A-H2 SO4                 Nitrate-N + , Nitrate-N             dissolved (00631)             Ammonia-N dissolved             (00608)             Total Kjeldahl-N             ( )             Other:                 Analyst	Units         Date analyzed           mg/l         mg/l           gg/l         mg/l           mg/l         mg/l           <

CANARY --- WS System

PINK --- EID Local Office GOLDENROD --- SLD

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Lab Number: H-1966 Date Submitted: 11/22/85 By: Boyer/Bailey

Sample Co: Oil Skimmer Pord Date Analyzed: 12/16/85 Reviewed By: Jin Colly Date Reported: 12/31/85 AA VALUE (MG/L)

Element	ICAP VALUE(MG/L)	AA VALUE (MG
Aluminum	D.2	·
Barium	1,3	
Berylium		
Boron	3.5	
Cadmium		
Calcium	450. /Paitu	ie
Chromium	O.1 Vulue	Enom
Cobalt	Ashby 1	113/86
Copper	<u></u> ~ ~	XB
Iron	46	
Lead		<u></u>
Magnesium	33.	<u> </u>
Manganese	0.83	·.
Molybdenum	20.1	
Nickel		·
Silicon	1.6	
Silver		
Strontium	1.5	
Tin		
Vanadium	20,1	
Zinc	0.6	·
Arsenic	· · · · ·	3.1
Selenium		<0.005
Mercury		
		. •

85-1165 -C SCIENTIFIC LABORATORY DIVISION 700 Camino de Salud NE SIATEOT NEW MEXICO Albuquerque, NM 87106 841-2570 ach Bill ENVIRONMENT DAVID G. BOYER S.L.D. NO .: OR-1165.17 REPORT TO: PLEASE PRINT CONEWEMEXICON DIVISION DATE REC. : 12.02-85 P.0. BOX 2088 SLD PRIORITY #: SANTA FE, NM 87501 827-5812 USER CODE: |8|2|2|3|5| PHONE(S): SUBMITTER: David Boyer SUBMITTER CODE: SAMPLE TYPE: WATER , SOIL , OTHER SAMPLE TYPE CODE: COLLECTED: 25/11/21-16:30 BY 072 CODE: 111111 YMMDDHHMMIII SOURCE: Pond Mon. Well # 1 CODE: NEAREST CITY: Conts be CODE: LOCATION: Phillips Lusk Gas Mont CODE: \_\_\_\_\_ TOWNSHIP RANGE SECTION TRACTS pH= 6.3; Conductivity= 1000 umho/cm at 18 °C; Chlorine Residual= Dissolved Oxygen= mg/1; Alkalinity=\_\_\_\_; Flow Rate= Sampling Location, Methods and Remarks (i.e. odors, etc.) 4" Mon well pumped dry ( Cond 1000@ 19°c). Sampled by builes after 3 hour recovery I certify that the statements in this block accurately reflect the results of my field analyses, observations and activities. Method of shipment to the Laboratory Hand conride This form accompanies <u>A</u>Septum Vials, <u>Glass</u> Jugs, Containers are marked as follows to indicate preservation: No preservation; sample stored at room temperature. NP: P-Ice Sample stored in an ice bath (not frozen). P-Na25203; Sample preserved with Na25203 to remove chlorine residual. I (we) certify that this sample was transferred from at (location) to on and that the statements in this block are correct. DATE AND TIME Evidentiary Seals: Not Sealed Seals Intact: Yes No Signatures (we) certify that this sample was transferred from at (location) to on and that the statements in this block are correct. ATE AND TIME Evidentiary Seals: Not Sealed Seals Intact: Yes No Signatures \_

INHLYSES REQUES LEASE CHECK THE APPRO EQUIRED. WHENEVER PO	PRIATE BOXES BELOW TO DSSIBLE LIST SPECIFIC C	INDIC. OMPOU	ATE T NDS S	LHB. NO.: URG- THE TYPE OF ANALYTIC SUSPECTED OR REQUIRE	AL SCREENS D.
	GEABLE	<b>LTATIVE</b>	LTAT IV	EXTRACTA	BLE
	RÉENS	QUAL	QUAN	SCREEN	IS
ALIPHATIC HYDR	OCARBON SCREEN			ALIPHATIC HYDROCA	RBONS
AROMATIC HYDRO	CARBON SCREEN			CHLORINATED HYDRO	CARBON PESTICIDES
HALOGENATED HY	DROCARBON SCREEN			CHLOROPHENOXY ACI	D HERBICIDES
GAS CHROMATOGR	CAPH/MASS SPECTROMETER			HYDROCARBON FUEL	SCREEN
	· · · · · · · · · · · · · · · · · · ·			DOLYCULODINATE P	ESTICIDES
				POLYCHLORINATED B	TTC HYDROCARBONS
			+	TELAZINE HEDRICID	
	•			INTAZINE HERBICID	E2
· SPECIFIC	COMPOUNDS		-	SPECIFIC COM	POUNDS
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MARKS: COMPOUND alo, purg. scr rom. purg. scr	ANALYTICAL [PPB] een none letected een none letected	RE	SUL COMI	_TS POUND	[PPB]
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MARKS: COMPOUND alo. purg. scr. rom. purg. scr.	ANALYTICAL [PPB] een none letected een none letected	RE	SUL	_TS POUND	[РРВ]
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COMPOUND alo, purg, scr rom: purg, scr	ANALYTICAL [PPB] een none letected een noné letected	RE	SUL		[PPB]
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MARKS: COMPOUND a.lo. purg. scr rom. purg. scr rom. purg. scr al(s) Intact: Yes_ certify that I follow	ANALYTICAL [PPB] een none letected een none letected een detected CERTIFICATE OF AN NO Seal(s) broke red standard laboratory	RE C	SUL OMI	_TS POUND ECTION LIMIT , PERSONNEL es on handling and a	[PPB]         2.ugm/l         date:         nalysis of this         acaptive fact data
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MARKS: COMPOUND a.a. purg. scr rom. purg. scr rom. purg. scr al(s) Intact: Yes certify that I follow mple unless otherwise this page accurately te(s) of analysis: certify that I have r th the statements in	ANALYTICAL [PPB] een none letected een none letected een none letected CERTIFICATE OF AN NO Seal(s) broke red standard laboratory noted and that the st reflect the analytica eviewed and concur wit this block. Reviewers	RE C ALYTI ALYTI n by: proc atement 1 result 's st h the sign.	SUL OMI DETE	_TS POUND ECTION LIMIT PERSONNEL es on handling and a in this block and th for this sample. ture: Menergy lytical results for e: Menergy	[PPB]  2qm/  date: nalysis of this e analytical data  this sample and

SCIENTIFIC LABORATORY DIVISION	GENERAL WATER CHEMISTRY
Albuquerque, NM 87106 — (505) 841-2555	and NITROGEN ANALYSIS
ECEIVED 12 12 85 NOW 5272 CODE 59300	о <u>59600</u> 🕅 отнея: 82235
Ilection DATE SITE INFORM-	Mon well # Phillips Lusk
ATION Collection site description	Natural 600 Pd
Boug Ballet Inhold	[รีอุรินุรีซุรีซุรีซิซิซิซิซิซิซิซิซิซิซิซิซิซิซิซิซิซิซิ
ND NM OIL CONSERVATION DIVISION AL State Land Office Bldg, PO Box 208 Santa Fe, NM 87501	4"Mm well
Attn:David_Boyer	
	Station/ vělicode Øŵner
	Discharge Sample type
Dipped 🗆 Tap 37.20 DTW	~ 59pm pumper GRBb
Conductivity (Uncorrected) μmho	Water Tent (00010) 18 °C Conductivity at 25°C (00094) µmh
No. of samples I I NF: Whole sample Filtered in submitted I NF: (Non-filtered) F: Filtered in 0.45 μme	field with $\Box$ A: 2 ml H <sub>2</sub> SO <sub>4</sub> /L added
	51 CONC 1160
VALYTICAL RESULTS from SAMPLES	d F, NA Units Date analyzed
IALYTICAL RESULTS from SAMPLES $\[mathbf{MF}, NA \]Units Date analyzedConductivity (Corrected)174725 ^{\circ}C (00095)12/18Total non-filterableresidue (suspended)(00530)mg/l(00530)12/18Other:7_{0}9.3(12/18)$	d       F, NA       Units       Date analyzed $\square$ Calcium (00915) $\square$ 220.4 mg/l $i2.30$ $\square$ Calcium (00925) $\blacksquare$ 10.34 mg/l $i2.30$ $\square$ Magnesium (00930) $10345$ mg/l $"$ $\square$ Sodium (00935) $5.07$ mg/l $"$ $\square$ Potassium (00935) $5.07$ mg/l $"$ $\square$ Bicarbonate (00440) $226.7$ mg/l $12/19$ $\square$ Chloride (00945) $6.54$ mg/l $12/13$ $\square$ Total filterable residue $($
ALYTICAL RESULTS from SAMPLES         SF, NA       Units Date analyzed         Conductivity (Corrected) $1747$ $\mu$ mho $12/18$ Total non-filterable residue (suspended) $7_09.3$ $mg/l$ $12/18$ Other: $7_09.3$ $mg/l$ $12/18$ Other: $mg/l$ $mg/l$ $12/18$	d       F, NA       Units       Date analyzed $d$ F, NA       Units       Date analyzed $M$ Calcium (00915) $22D.4$ mg/l       mg/l $12-30$ $M$ Magnesium (00925) $81.6$ mg/l       mg/l $4'$ $M$ Sodium (00930) $103.6$ mg/l       mg/l $4'$ $M$ Potassium (00935) $5.07$ mg/l $12/18$ $M$ Bicarbonate (00440) $226.7$ mg/l $12/18$ $M$ Chloride (00945) $6.54$ mg/l $12/18$ $M$ Sulfate (00945) $6.54$ mg/l $12/2$ $M$ Total filterable residue (dissolved) (70300) $1559$ mg/l $12/2$ $M$ Other: $0.244$ $1/10$
IALYTICAL RESULTS from SAMPLES         Units Date analyzes $\begin{subarray}{c} \label{eq:subarray}{c} eq:$	d       F, NA       Units       Date analyzed $M$ Calcium (00915) $220.4$ mg/l       mg/l $12-30$ $M$ Magnesium (00925) $81.6$ mg/l       mg/l $1''$ $M$ Sodium (00930) $103.6$ mg/l $1''$ $M$ Potassium (00935) $5.07$ mg/l $1''$ $M$ Bicarbonate (00440) $226.7$ mg/l $12/18$ $M$ Chloride (00945) $654$ mg/l $12/12$ $M$ Other: $Q$ $0.244$ $1/2/12$ $M$ Other: $Q$ $0.244$ $1/2/12$ $M$ Other: $Q$ $0.244$ $1/2/12$ $M$ Other: $Q$ $0.244$ $1/2/15$
IALYTICAL RESULTS from SAMPLES         ΔF, NA       Units Date analyze         Conductivity (Corrected)       174-7       μmho       12/18         25°C (00095)       174-7       μmho       12/18         Total non-filterable residue (suspended) (00530)       mg/l       12/18         Other:       7₀9.3       12/18         Other:       7₀9.3       12/18         Other:	d       F, NA       Units       Date analyzed $d$ Calcium (00915) $22D.4$ mg/l $12.30$ Magnesium (00925) $R1.6$ mg/l $12.30$ Magnesium (00930) $103.6$ mg/l $12.30$ Potassium (00935) $S.07$ mg/l $11$ Potassium (00935) $S.07$ mg/l $12/18$ Bicarbonate (00440) $226.7$ mg/l $12/18$ Chloride (00945) $6.54$ mg/l $12/18$ Chloride (00945) $6.54$ mg/l $12/2$ Sulfate (00945) $6.54$ mg/l $12/2$ Chloride (00945) $6.54$ mg/l $12/2$ Total filterable residue (dissolved) (70300) $1559$ mg/l $12/2$ Other: $0.3244$ $1/2/0$ $12/2$ $12/2$ F, A-H <sub>2</sub> SO4 $0.3244$ $12/2$ $12/2$ Magnesium (00631)       mg/l $12/2$ $12/2$ Magnesium (00608) $0.3244$ $12/2$ $12/2$ Magnesium (00608) $0.3244$ $12/2$ $12/2$
<b>IALYTICAL RESULTS from SAMPLES AF, NA</b> Units Date analyze <b>Conductivity (Corrected)</b> 1947       µmho       12/18         25°C (00095)	d       F, NA       Units       Date analyzed $\square$ Calcium (00915) $\square$ Calcium (00925) $\blacksquare$ I.C.       mg/l       IZ-30 $\square$ Calcium (00930) $\square$ Bitch mg/l $IZ-30$ mg/l       I/I $\square$ Sodium (00930) $\square$ Bitch mg/l $IZ-30$ mg/l       I/I $\square$ Potassium (00935) $\square$ Bitch mg/l $II/I$ $\square$ Mg/l $II/I$ $\square$ Potassium (00935) $\square$ Bitch mg/l $II/I$ $\square$ Mg/l $II/I$ $\square$ Potassium (00935) $\square$ Mg/l $II/I$ $\square$ Mg/l $II/I$ $\square$ Potassium (00935) $\square$ Mg/l $II/I$ $\square$ Mg/l $II/I$ $\square$ Chloride (00945) $\square$ Gof $I$ $\square$ Mg/l $II/I$ $II/I$ $\square$ Chloride (00945) $\square$ Gof $I$ $II/I$ $II/I$ $II/I$ $II/I$ $\square$ Sulfate (00945) $\square$ Gof $I$ $II/I$ $II/I$ $II/I$ $II/I$ $II/I$ $\square$ Other: $\square$ Color $\square$ Mg/l $II/I$ $II/I$ $II/I$ $II/I$ $II/I$ $II/I$ $II/I$ $II/I$ $II/I$ $II/I$ $II/I$ $II/I$ $II/I$ </td
NALYTICAL RESULTS from SAMPLES $\Delta F, NA$ Units Date analyzes $\Delta F, NA$ Units Date analyzes         Conductivity (Corrected)       1947       µmho $12/18$ Total non-filterable residue (suspended)       mg/l         Iotal non-filterable residue (suspended)       mg/l         Other:       mg/l         Iotal colspan="2">Other:         Iother:       mg/l         Other:       mg/l         F, A-H <sub>2</sub> SO <sub>4</sub> mg/l         Nitrate-N + , Nitrate-N total (00630)       mg/l         Ammonia-N total (00610)       mg/l         Chemical oxygen demand (00340)       mg/l         Other:       mg/l         Ot	d       F. NA       Units       Date analyzed $Magnesium (00915)$ $22D - 4$ mg/l $12 - 30$ $Magnesium (00925)$ $81 - 6$ mg/l $4'$ $Magnesium (00930)$ $103 - 5$ mg/l $4'$ $Magnesium (00935)$ $5 - 07$ mg/l $12/18$ $Magnesium (00945)$ $6 - 54'$ mg/l $12/18$ $Magnesium (dissolved) (70300)$ $155'9$ mg/l $12/23$ $Magnesium (dissolved) (70300)$ $155'9$ mg/l $1/2/23$ $Magnesium (dissolved (00631)$ $mg/l$ $mg/l$ $mg/l$ $Magnesium (dissolved (00631)$ $mg/l$ $mg/l$ $mg/l$ $Magnesium (dissolved (dissolved (dissolved (dissolved (dissolved (dissolved (dissolved (dissolved (dissolved (dissolved (dissolved (dissolved (dissolved (dissolved (dissolved (dissolved$

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- Buryportagen	New Mexico Hea SCIENTIFIC LAE 700 Camino de S Albuquerque, NI	IIIh and Environm 30RATORY DIVIS 3alud NE 4 87106 (505) 8	hent Department SION OR_CONSER 941-2555	VATICA DIVISION	NERAL WA	TER CHEMIST SEN ANALYSI	ΓRY S
DATE RECEIVED	02 85 N	ABUC 527	CODE 593	00 🖸 59600 🕅 OT	HER: 8223	5	
BS // D/		SITE	Sample location	nd Mon Well	14, 14	illips LL	ISK
Collected by - Person/Ag	ency pr R	eiler 1	Collection site description	on		Natural	Gay Narol
E SEND N FINAL S REPORT S	NVIRONMENT M OIL CONS tate Land anta Fe, I	TAL BUREAU SERVATION I Office Blo NM 87501	DIVISION dg, PO Box 208	38	4"11	Um Wel	l
Attn: -	David Boy	/er			Station/		
					vell code Owner		
SAMPLING CON		Water level		Discharge	Sal Sal	mole type	
Dipped	⊐ Tap	32.2	o DTW	~ 5gpmpu	mper	GRB	26
<sup>рн (00400)</sup> 6.3 £	ant	Conductivity (U	ncorrected) μmho	Water Temb. (00010) 18	°C Co	nductivity at 25°C (	00094) µmho
Field comments	numbe	& dre	1 Cond	1000@ 19%	) Sam	ole by	/
be	Ana	lta, d	Thour.	recovers	/	V	
	TDEATMENT	Check pro		V			
No. of samples submitted		Whole sample (Non-filtered)	Filtered in 0.45 μme	field with 🗌 A: 2 n	nl H₂SO₄/L ac	lded	
NA: No acid	added 🗆 C	ther-specify:	,				
ANALYTICAL RE	SULTS from	SAMPLES			· · · · · · · · · · · · · · · · · · ·	······································	·
<b>M</b> F, NA			Units Date analyze	d F, NA	7	Units D	ate analyzed
Conductivity (Co 25°C (00095)	rrected)	1947	_µmho _12/18	K. Calcium (00915)     K. Magnesium (00925)     K. Sodium (00930)		21/-9 mg/l 76 mg/l 3.5 mg/l	<u>2-X0</u> 4 11
Total non-filterab residue (suspend (00530)	le Jed)		ma/l	X Potassium (00935) X Bicarbonate (00440)		07 mg/l mg/l	118
Cother: pH		193	12/18	Chloride (00940)	654	5 mg/l 5 mg/l	1/10
Cher:  Cher:			· · · · · · · · · · · · · · · · · · ·	Total filterable residue	15.59		2/22
				- A Other: B	0,3	14	1/10
$\overline{7}$ Nitrate-N + Nitra	nte-N		••••••••••••••••••••••••••••••••••••••	F, A-H <sub>2</sub> SO <sub>4</sub>	1231		(2/3
total (00630)	(00610)		mg/l	- 🔲 Nitrate-N +., Nitrate-N			
Ammonia-N total Total Kjeldahl-N			(IIY/I	dissolved (00631)		mg/l	
() Chemical oxyger	· · · · · · · ·	<u></u>	_, mg/l	- (00608)		mg/l	
demand (00340)			mg/l	- ( )		mg/l	
() ()			mg/l	- Other:	<u> </u>		· · ·
Other: Other:			······································	Analyst	Date Reporte	ed Reviewed b	y
Laboratory remarks		DAIH-	Viero is	the Chlor	ide on	This so.	mole
	· ·					· · · · · · · · · · · · · · · · · · ·	
		<i>A</i> ( <i>y</i> )	<u></u>				

TOO Camino de S Albuquerque, NM	alud NE 1 87106 — (505) 841-2555	a	nd NITROGEN ANALY	SIS
	ABUT 5278 USER CODE SITE INFORM-►	59300 59600 XX OTH	HER: 82235	LISK
IG30			Natura	1 boy Pla
ENVIRONMENT NM OIL CONS State Land Santa Fe, 1	TAL BUREAU SERVATION DIVISION Office Bldg, PO B MM 87501	JAN 16 1986	4"Mm We	Ų
Attn:David_Boy	/er			
			Station/ vell code	·
MPLING CONDITIONS		Discharge		
Dipped Tap	37.20 D7	W Sepman	mper Sample type	1.126
H (00400) 3 44	Conductivity (Uncorrected)	Water Temp. (00010)	°C Conductivity at 25°	C (00094)
AMPLE FIELD TREATMENT No. of samples submitted	- Check proper boxes Whole sample (Non-filtered)	Filtered in field with 0.45 µmembrane filter	nl H₂SO₄/L added	
AMPLE FIELD TREATMENT No. of samples submitted NF	Check proper boxes Whole sample (Non-filtered) Wher-specify: SAMPLES	Filtered in field with 0.45 µmembrane filter XA: 2 m	ni H <sub>2</sub> SO <sub>4</sub> /L added	Date analyzed
AMPLE FIELD TREATMENT No. of samples Submitted NF NA: No acid added C NALYTICAL RESULTS from NF, NA Conductivity (Corrected)	C Check proper boxes Whole sample (Non-filtered) Wher-specify: SAMPLES Units Dat	Filtered in field with 0.45 μmembrane filter XA: 2 m e analyzed F, NA	nl H₂SO₄/L added Units ma/l	Date analyzed
AMPLE FIELD TREATMENT No. of samples Submitted NR NA: No acid added C NALYTICAL RESULTS from NF, NA Conductivity (Corrected) 25°C (00095)	Check proper boxes Whole sample (Non-filtered) Wher-specify: SAMPLES Units Dat	Filtered in field with 0.45 µmembrane filter XA: 2 m e analyzed F. NA Calcium (00915) G Magnesium (00925)	nl H <sub>2</sub> SO <sub>4</sub> /L added Units mg/lmg/l	Date analyzed
AMPLE FIELD TREATMENT No. of samples Submitted NF NA: No acid added C NA: No acid added C NALYTICAL RESULTS from NF, NA Conductivity (Corrected) 25°C (00095)	Check proper boxes Whole sample (Non-filtered) WF: SAMPLES Units Dat	Filtered in field with 0.45 µmembrane filter XA: 2 m e analyzed F, NA Calcium (00915) Calcium (00925) Sodium (00930). Potassium (00935)	nl H <sub>2</sub> SO <sub>4</sub> /L added	Date analyzed
AMPLE FIELD TREATMENT         No. of samples         Submitted         Image: NA: No acid added         Image: NA: No acid added <td>Check proper boxes Whole sample (Non-filtered) Wher-specify: SAMPLES Units Dat</td> <td>Filtered in field with 0.45 µmembrane filter XA: 2 m e analyzed F, NA Calcium (00915) Magnesium (00925) Sodium (00930). Potassium (00935) Bicarbonate (00440)</td> <td>nl H<sub>2</sub>SO<sub>4</sub>/L added Units mg/lmg/lmg/lmg/lmg/l</td> <td>Date analyzed</td>	Check proper boxes Whole sample (Non-filtered) Wher-specify: SAMPLES Units Dat	Filtered in field with 0.45 µmembrane filter XA: 2 m e analyzed F, NA Calcium (00915) Magnesium (00925) Sodium (00930). Potassium (00935) Bicarbonate (00440)	nl H <sub>2</sub> SO <sub>4</sub> /L added Units mg/lmg/lmg/lmg/lmg/l	Date analyzed
AMPLE FIELD TREATMENT No. of samples Submitted NA: No acid added NA: No acid added NALYTICAL RESULTS from NF, NA Conductivity (Corrected) 25 °C (00095) Total non-filterable residue (suspended) (00530) Other:	Check proper boxes Whole sample (Non-filtered) Wher-specify: SAMPLES Units Datmho	Filtered in field with 0.45 µmembrane filter XA: 2 m e analyzed F. NA Calcium (00915) Calcium (00925) Sodium (00930). Potassium (00935) Bicarbonate (00440) Chloride (00940)	nl H <sub>2</sub> SO <sub>4</sub> /L added Units mg/l _	Date analyzed
AMPLE FIELD TREATMENT         No. of samples Submitted       Image: NF         Image: NA: No acid added       Image: Conductivity (Corrected)         25 °C (00095)       Image: Conductivity (Corrected	Check proper boxes Whole sample (Non-filtered) Wher-specify: SAMPLES Units Datmhomg/l	Filtered in field with 0.45 µmembrane filter XA: 2 m e analyzed F. NA Calcium (00915) Magnesium (00925) Sodium (00930). Potassium (00935) Bicarbonate (00440) Chloride (00945) Total filterable residue	nl H <sub>2</sub> SO <sub>4</sub> /L added Units mg/l mg/l mg/l mg/l mg/l	Date analyzed
MPLE FIELD TREATMENT         No. of samples submitted       Image: NF         NA: No acid added       Image: Original Conductivity (Corrected)         25°C (00095)       Image: Original Corrected)         25°C (00095)       Image: Original Corrected)         25°C (00095)       Image: Original Corrected)         Other:       Image: Original Corrected)         NF, NA       Image: Original Corrected)         NF, NA       Image: Original Corrected)         Other:       Image: Original Corrected)         Other:       Image: Original Corrected)         Other:       Image: Original Corrected)         Other:       Image: Original Corrected)         No:       Image: Original Corrected)         Other:       Image: Original Corrected)	Check proper boxes Whole sample (Non-filtered) Wher-specify: SAMPLES Units Datmhomg/l	Filtered in field with 0.45 µmembrane filter XA: 2 m Calcium (00915) Calcium (00915) Sodium (00930) Potassium (00935) Bicarbonate (00440) Chloride (00940) Sulfate (00945) Total filterable residue (dissolved) (70300)	nl H <sub>2</sub> SO <sub>4</sub> /L added Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l	Date analyzed
AMPLE FIELD TREATMENT         No. of samples submitted       Image: NF         Image: NA: No acid added       Image: Conductivity (Corrected)         25 °C (00095)       Image: Conductivity (Corrected)         26 °C (00095)       Image: Conductivity (Corrected)         27 °C (00095)       Image: Conductivity (Corrected)         28 °C (00095)       Image: Conductivity (Corrected)         29 °C (00095)       Image: Conductivity (Corrected	Check proper boxes Whole sample (Non-filtered) Wher-specify: SAMPLES Units Datmhomg/l	Filtered in field with 0.45 µmembrane lifter XA: 2 m e analyzed F. NA Calcium (00915) Magnesium (00925) Sodium (00930). Potassium (00935) Bicarbonate (00440) Chloride (00940) Sulfate (00945) Total filterable residue (dissolved) (70300) Other:	nl H <sub>2</sub> SO <sub>4</sub> /L added Units mg/l	Date analyzed
AMPLE FIELD TREATMENT         No. of samples submitted       Image: NF         Image: NA: No acid added       Image: Conductivity (Corrected)         25 °C (00095)       Image: Conductivity (Corrected)         26 °C (00095)       Image: Conductivity (Corrected)         27 °C (00095)       Image: Conductivity (Corrected)         28 °C (00095)       Image: Conductity (Corrected)<	Check proper boxes Whole sample (Non-filtered) Wher-specify: SAMPLES Units Datmhomg/l	Filtered in field with       0.45 μmembrane filter       XA: 2 m         e analyzed       F. NA       Calcium (00915)         G       Calcium (00930)       Output         Potassium (00935)       Bicarbonate (00440)         Chloride (00940)       Sulfate (00945)         Total filterable residue (dissolved) (70300)       Other:         F, A-H2 SO4       F, A-H2 SO4	nl H <sub>2</sub> SO <sub>4</sub> /L added	Date analyzed
AMPLE FIELD TREATMENT         No. of samples Submitted       NF         NA: No acid added       C         NF, NA       Conductivity (Corrected)         25 °C (00095)	Check proper boxes Whole sample (Non-filtered) Wher-specify: SAMPLES Units Datmhomg/lmg/lmg/lmg/l	Filtered in field with 0.45 μmembrane filter       XA: 2 m         e analyzed       F, NA         □       Calcium (00915)         □       Magnesium (00925)         □       Sodium (00930)         □       Potassium (00935)         □       Bicarbonate (00440)         □       Chloride (00945)         □       Total filterable residue (dissolved) (70300)         □       Other:         F, A-H2 SO4       X Nitrate-N + Nitrate-N	nl H <sub>2</sub> SO <sub>4</sub> /L added	Date analyzed
AMPLE FIELD TREATMENT         No. of samples Submitted       Image: NF         Image: NA: No acid added       Image: Construction of the samples Submitted       Image: NF         Image: NA: No acid added       Image: Construction of the samples NF, NA       Image: Construction of the samples Submitted       Image: Construction of the samples NF, NA         Image: Conductivity (Corrected) 25 °C (00095)       Image: Construction of the samples (00530)       Image: Construction of the samples (00530) <td>Check proper boxes Whole sample (Non-filtered) Cher-specify: SAMPLES Units Dat units Dat mg/l mg/l mg/l mg/l mg/l mg/l</td> <td>Filtered in field with 0.45 µmembrane filter ■ analyzed F. NA □ Calcium (00915) □ Magnesium (00925) □ Sodium (00930). □ Potassium (00935) □ Bicarbonate (00440) □ Chloride (00940) □ Chloride (00945) □ Total filterable residue (dissolved) (70300) □ Other: F, A-H<sub>2</sub> SO<sub>4</sub> ■ Nitrate-N + Nitrate-N dissolved (00631) ■ Ammonia-N dissolved</td> <td>nl H₂SO₄/L added Units mg/l</td> <td>Date analyzed</td>	Check proper boxes Whole sample (Non-filtered) Cher-specify: SAMPLES Units Dat units Dat mg/l mg/l mg/l mg/l mg/l mg/l	Filtered in field with 0.45 µmembrane filter ■ analyzed F. NA □ Calcium (00915) □ Magnesium (00925) □ Sodium (00930). □ Potassium (00935) □ Bicarbonate (00440) □ Chloride (00940) □ Chloride (00945) □ Total filterable residue (dissolved) (70300) □ Other: F, A-H <sub>2</sub> SO <sub>4</sub> ■ Nitrate-N + Nitrate-N dissolved (00631) ■ Ammonia-N dissolved	nl H₂SO₄/L added Units mg/l	Date analyzed
AMPLE FIELD TREATMENT         No. of samples         Submitted         NA: No acid added         NA: No acid added         NA: No acid added         ONALYTICAL RESULTS from         NF, NA         Conductivity (Corrected)         25°C (00095)         Total non-filterable         residue (suspended)         (00530)         Other:         Other:         Other:         Other:         Other:         Other:         Other:         Other:         Other:         Total (00630)         Ammonia-N total (00610)         Total Kjeldahl-N         (         Chemical oxygen         demand (00340)	Check proper boxes Whole sample (Non-filtered) Wher-specify: SAMPLES Units Dat units Dat mg/l mg/l mg/l mg/l mg/l mg/l	Filtered in field with 0.45 µmembrane filter XA: 2 m e analyzed F. NA □ Calcium (00915) □ Magnesium (00925) □ Sodium (00930). □ Potassium (00930). □ Potassium (00935) □ Bicarbonate (00440) □ Chloride (00940) □ Sulfate (00945) □ Total filterable residue (dissolved) (70300) □ Other: F. A-H <sub>2</sub> SO. X Nitrate-N + . Nitrate-N dissolved (00631) X Ammonia-N dissolved (00608) X Total Kjeldahl-N	nl H <sub>2</sub> SO <sub>4</sub> /L added Units mg/l	Date analyzed 1/9 12/4 12/4
AMPLE FIELD TREATMENT         No. of samples submitted       NF         NA: No acid added       C         Nitrate-N total (corrected) (00530)	Check proper boxes Whole sample (Non-filtered) Wher-specify: SAMPLES Units Dat units Dat umho mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l	Filtered in field with 0.45 µmembrane filter XA: 2 m a analyzed F. NA □ Calcium (00915) □ Magnesium (00925) □ Sodium (00930). □ Potassium (00930). □ Potassium (00935) □ Bicarbonate (00440) □ Chloride (00940) □ Sulfate (00945) □ Total filterable residue (dissolved) (70300) □ Other: F. A-H <sub>2</sub> SO. X Nitrate-N + . Nitrate-N dissolved (00631) X Ammonia-N dissolved (00608) X Total Kjeldahl-N ( ) □ Other:	nl H <sub>2</sub> SO <sub>4</sub> /L added Units mg/l	Date analyzed 1/9 12/4 12/9
AMPLE FIELD TREATMENT No. of samples Submitted NF NA: No acid added C NALYTICAL RESULTS from NF, NA Conductivity (Corrected) 25°C (00095) Total non-filterable residue (suspended) (00530) Other: Other: Other: Other: Other: NF, A-H <sub>2</sub> SO <sub>4</sub> Nitrate-N + Nitrate-N total (00630) Ammonia-N total (00610) Total Kjeldahl-N () Chemical oxygen demand (00340) Total organic carbon () Other: Other: Chemical oxygen demand (00340) NE NE NE NE NE NE NE NE NE NE	— Check proper boxes         Whole sample (Non-filtered)         Dther-specify:         SAMPLES         Units Dat        mg/l        mg/l	Filtered in field with 0.45 µmembrane lifter ♀A: 2 m analyzed F. NA □ Calcium (00915) □ Magnesium (00925) □ Sodium (00930). □ Potassium (00935) □ Bicarbonate (00440) □ Chloride (00940) □ Chloride (00940) □ Sulfate (00945) □ Total filterable residue (dissolved) (70300) □ Other: F, A-H <sub>2</sub> SO <sub>4</sub> ♥ Nitrate-N + Nitrate-N dissolved (00631) ♥ Ammonia-N dissolved (00608) ♥ Total Kjeldahl-N ( ) □ Other:	nl H <sub>2</sub> SO <sub>4</sub> /L added Units mg/l l l l l l l l l l l l l l	Date analyzed
AMPLE FIELD TREATMENT         No. of samples submitted       NF         NA: No acid added       Conductivity         NA: No acid added       Conductivity (Corrected)         25°C (00095)	— Check proper boxes         Whole sample (Non-filtered)         Dther-specify:         SAMPLES        mmho        mg/l	Filtered in field with 0.45 µmembrane filter XA: 2 m ■ Calcium (00915) ■ Magnesium (00925) ■ Sodium (00930). ■ Potassium (00930). ■ Potassium (00935) ■ Bicarbonate (00440) ■ Chloride (00940) ■ Sulfate (00945) ■ Total filterable residue (dissolved) (70300) ■ Other: F, A-H <sub>2</sub> SO. X Nitrate-N + Nitrate-N dissolved (00631) X Ammonia-N dissolved (00608) X Total Kjeldahl-N ( ) ■ Other: Analyst	nl H <sub>2</sub> SO <sub>4</sub> /L added Units mg/l	Date analyzed 1/9 12/4 12/4 12/9 ed by
AMPLE FIELD TREATMENT         No. of samples submitted       NF         NA: No acid added       C         State       Conductivity (Corrected)         25°C (00095)	— Check proper boxes         Whole sample (Non-filtered)         Dther-specify:         SAMPLES         Units Dat	Filtered in field with 0.45 µmembrane lifter №A: 2 m analyzed F. NA Calcium (00915) Magnesium (00925) Sodium (00930). Potassium (00935) Bicarbonate (00440) Chloride (00940) Sulfate (00945) Total filterable residue (dissolved) (70300) Other: F, A-H <sub>2</sub> SO <sub>4</sub> Nitrate-N + , Nitrate-N dissolved (00631) Ammonia-N dissolved (00608) Total Kjeldahl-N ( ) Other: Analyst	nl H <sub>2</sub> SO <sub>4</sub> /L added Units mg/l	Date analyzed Date analyzed 1/9 12/4 12/4 12/9 ed by Total

S!\_D 726 (12/84) DISTRIBUTION: WHITE - EID, GW&HW Bureau CANARY - WS System

ATE ECEIVED 1202 85	NO. 1411. 1973	USER CODE 11 25930	ОТОЙ XX ИС000000 СОЙОГОО	ER: 82235	
	SITE INFORM- ATION	Sample location	n & Mon well	# Phillips	usk
Rected by Person/Agency	Bailey	· · · · · · · · · · · · · · · · · · ·		Natura	al Got Plant
ENVIRONMI ND NM OIL CO VAL State Lan PORT Santa Fe	ENTAL BUREAU DNSERVATION DIVI nd Office Bldg, , NM 87501	ISION PO Box 208	38	4"Mm Ws	ell
Attn: <u>David</u>	30yer		Sta we	ation/ H code	
AMPLING CONDITIONS	·		04	rner •	
Bailed C Pump	Water level	NTU)	Discharge	Sample type	esh
6.3 <del>64</del>	Conductivity (Uncorr	rected) μmho	Water Termp. (00010)	Conductivity at 25	°C (00094) µmho
ield comments	nel drait	1 can D	18AN@ 10°C	Sample Or	'es
bullon	alter of	hour	recovers		
	and the surger of the surger o			***************************************	
AMPLE FIELD TREATME	NT — Check proper	boxes	V		
AMPLE FIELD TREATME No. of samples submitted J	NT — Check proper NF: Whole sample (Non-filtered) Other-specify:	boxes Filtered in 0.45 μme	n field with embrane filter	<del>H₂SO₄/L</del> added <b>4 m</b>	1 forming HAO3
AMPLE FIELD TREATME No. of samples submitted / NA: No acid added / NALYTICAL RESULTS fm	NT — Check proper NF: Whole sample (Non-filtered) Other-specify: om SAMPLES	boxes F: Filtered in 0.45 μme	n field with embrane filter	H2SO44 added 4 m Units	I forming HLO3 Date analyzed
AMPLE FIELD TREATME No. of samples submitted NA: No acid added NALYTICAL RESULTS fr ARTANA FA	NT – Check proper NF: Whole sample (Non-filtered) Other-specify: om SAMPLES	boxes Filtered in 0.45 μme	an field with ambrane filter	<u>H<sub>2</sub>CO<sub>4</sub>/L</u> added <b>4 m</b> Units	I forming HLO3 Date analyzed
AMPLE FIELD TREATME No. of samples submitted	NT — Check proper NF: Whole sample (Non-filtered) Other-specify: om SAMPLES	boxes Filtered ir 0.45 μme	ed F, NA Calcium (00915) Magnesium (00925) Sortium (00930)	H2004/L added 4 m Units	Date analyzed
AMPLE FIELD TREATME No. of samples submitted J NA: No acid added C NALYTICAL RESULTS fm MT, NA FAC Conductivity (Corrected) 25 °C (00095) Total non-filterable residue (suspended)	NT — Check proper NF: Whole sample (Non-filtered) Other-specify: om SAMPLES Ui	boxes Filtered in 0.45 μme	ed F. NA Calcium (00915) Magnesium (00925) Sodium (00930) Potassium (00935)	H2004/L         added         4 m           Units	I forming HAO3 Date analyzed
AMPLE FIELD TREATME No. of samples submitted NA: No acid added NALYTICAL RESULTS fr MP-NA Conductivity (Corrected) 25 °C (00095) Total non-filterable residue (suspended) (00530)	NT — Check proper NF: Whole sample (Non-filtered) Other-specify: om SAMPLES υι	boxes Filtered in 0.45 μme nits Date analyze	A field with A field with A field with A field with Calcium (00915) Calcium (00915) Calcium (00925) Sodium (00935) Bicarbonate (00440) Chicide (00040)	Units	I for ming HAO3 Date analyzed
AMPLE FIELD TREATME No. of samples submitted	NT – Check proper NF: Whole sample (Non-filtered) Other-specify: Om SAMPLES Un A	boxes Filtered in 0.45 µme	ed F. NA Calcium (00915) Calcium (00915) Magnesium (00925) Sodium (00930) Potassium (00935) Bicarbonate (00440) Chloride (00945)	Units	I from ming HLO3 Date analyzed
AMPLE FIELD TREATME No. of samples submitted	NT — Check proper NF: Whole sample (Non-filtered) Other-specify: om SAMPLES υι μη	boxes Filtered in 0.45 μme	A field with A field with A field with A field with A field with Calcium (00915) Calcium (00915) Magnesium (00925) Sodium (00930) Potassium (00935) Bicarbonate (00440) Chloride (00940) Sulfate (00945) Total filterable residue (discuber 4/(2000))	Units	I for ming HUO3 Date analyzed
AMPLE FIELD TREATME         No. of samples submitted         Submitted         NA: No acid added         Conductivity (Corrected)         25°C (00095)         Total non-filterable residue (suspended) (00530)         Other:         Conter:         Apple         Other:         Apple         Other:         Apple	NT — Check proper NF: Whole sample (Non-filtered) Other-specify: om SAMPLES Ui	boxes Filtered in 0.45 μme	ed F. NA Calcium (00915) Calcium (00915) Calcium (00930) Potassium (00935) Bicarbonate (00440) Chloride (00940) Sulfate (00945) Total filterable residue (dissolved) (70300) Other:	Units            mg/l	I from ming HUO3 Date analyzed
AMPLE FIELD TREATME No. of samples submitted NALY TICAL RESULTS fr MP-MA E A Conductivity (Corrected) 25 °C (00095) Total non-filterable residue (suspended) (00530) Cother: ECAP Se Other: Se	NT — Check proper NF: Whole sample (Non-filtered) Other-specify: om SAMPLES υμ	boxes Filtered in 0.45 µme nits Date analyze nho	A field with A	Units	I for ming HUO3 Date analyzed
AMPLE FIELD TREATME No. of samples submitted NA: No acid added NALYTICAL RESULTS fm MT-NA FA Conductivity (Corrected) 25 °C (00095) Total non-filterable residue (suspended) (00530) Other: FAP SC Other: SC Uther: SC IF, A-H <sub>2</sub> SO <sub>4</sub> Nitrate-N + , Nitrate-N total (00630)	NT Check proper NF: Whole sample (Non-filtered) Other-specify: om SAMPLES Ui	boxes Filtered in 0.45 μme nits Date analyze nho	ed F. NA Calcium (00915) Calcium (00915) Calcium (00925) Sodium (00930) Potassium (00935) Bicarbonate (00440) Chioride (00940) Sulfate (00945) Total filterable residue (dissolved) (70300) Other: F, A-H <sub>2</sub> SO <sub>4</sub>	Units	I from ming HUO3 Date analyzed
AMPLE FIELD TREATME No. of samples submitted NALYTICAL RESULTS fr AMPHIA Conductivity (Corrected) 25 °C (00095) Total non-filterable residue (suspended) (00530) Cother: <b>JCAP SE</b> Other: <b>SE</b> <b>F, A-H<sub>2</sub>SO</b> Nitrate-N + , Nitrate-N total (00630) Ammonia-N total (00610)	NT — Check proper NF: Whole sample (Non-filtered) Other-specify: om SAMPLES υμ	boxes Filtered in 0.45 μme nits Date analyze nho	A   A   A   Calcium (00915)   A   A   Calcium (00925)   Sodium (00930)   Potassium (00935)   Bicarbonate (00440)   Chloride (00940)   Sulfate (00945)   Total filterable residue   (dissolved) (70300)   Other:   F, A-H <sub>2</sub> SO <sub>4</sub>	Units	I for ming HUO3 Date analyzed
AMPLE FIELD TREATME No. of samples submitted NA: No acid added NALY TICAL RESULTS fm MALY	NT Check proper NF: Whole sample (Non-filtered) Other-specify: om SAMPLES Ui	boxes Filtered in 0.45 µme nits Date analyze nho ng/l ng/l	n field with         embrane filter         ed         F. NA <ul> <li>Calcium (00915)</li> <li>Magnesium (00925)</li> <li>Sodium (00930)</li> <li>Potassium (00935)</li> <li>Bicarbonate (00440)</li> <li>Chioride (00940)</li> <li>Sulfate (00945)</li> <li>Total filterable residue (dissolved) (70300)</li> <li>Other:</li> </ul> <li>F, A-H<sub>2</sub> SO<sub>4</sub></li> <li>Nitrate-N + Nitrate-N dissolved (00631)</li> <li>Ammonia-N dissolved</li>	Units           Units           mg/l	I from ming HUO3 Date analyzed
AMPLE FIELD TREATME         No. of samples submitted         Impose	NT — Check proper NF: Whole sample (Non-filtered) Other-specify: om SAMPLES υμ	boxes Filtered ir 0.45 μme nits Date analyze nho ng/l ng/l	n field with         embrane filter         ed         F. NA <ul> <li>Calcium (00915)</li> <li>Magnesium (00925)</li> <li>Sodium (00930)</li> <li>Potassium (00935)</li> <li>Bicarbonate (00440)</li> <li>Chioride (00940)</li> <li>Sulfate (00945)</li> <li>Total filterable residue (dissolved) (70300)</li> <li>Other:</li> <li>F, A-H<sub>2</sub> SO<sub>4</sub></li> <li>Nitrate-N + Nitrate-N dissolved (00631)</li> <li>Ammonia-N dissolved (00608)</li> <li>Total Kieldahi-N</li> </ul>	Units	I from ming HUO3 Date analyzed
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AMPLE FIELD TREATME No. of samples submitted NA: No acid added NALY TICAL RESULTS fr MPMM EA Conductivity (Corrected) 25 °C (00095) Total non-filterable residue (suspended) (00530) Cother: AS Other: SE IF, A-H <sub>2</sub> SO. Nitrate-N + , Nitrate-N total (00630) Ammonia-N total (00610) Total Kjeldahl-N () Chemical oxygen demand (00340) Total organic carbon () Other: SE Other: SE Ammonia-N total (00610) Total organic carbon () Other: SE Solution Notal organic carbon () Other: SE Solution Chemical oxygen demand (00340) Total organic carbon () Other: SE Solution Notal organic carbon () Solution Solution Notal organic carbon () Solution Solutio	NT — Check proper NF: Whole sample (Non-filtered) Other-specify: om SAMPLES υμ μη μη μη μη μη μη μη μη μη μη μη μη μη	boxes Filtered ir 0.45 μme nits Date analyze nho ng/l 	n field with         embrane filter         ed         F. NA <ul> <li>Calcium (00915)</li> <li>Magnesium (00925)</li> <li>Sodium (00930)</li> <li>Potassium (00935)</li> <li>Bicarbonate (00440)</li> <li>Chloride (00940)</li> <li>Sulfate (00945)</li> <li>Total filterable residue (dissolved) (70300)</li> <li>Other:</li> </ul> <li>F, A-H<sub>2</sub> SO<sub>4</sub></li> <li>Nitrate-N + Nitrate-N dissolved (00631)</li> <li>Ammonia-N dissolved (00608)</li> <li>Total Kjeldahl-N ( )</li> <li>Other:</li> <li>Analyst</li>	Units         Units         mg/l	I from ming HUO3 Date analyzed

Date Submitted: $\frac{1}{4} \frac{1}{2} \frac{1}{8}$ DEC as malyzed: Py: Byy/Bally CCCREENATION Reviewed By: $\frac{1}{4} \frac{1}{16} \frac{1}{8}$ Date Reported: $\frac{1}{2} \frac{1}{16} \frac{1}{8}$ Element ICAP VALUE(MG/L) AN VALUE(MG/L) Aluminum $\frac{40.1}{0.1}$ Berylium $\frac{40.1}{0.1}$ Boron $\frac{40.1}{0.1}$ Calcium $\frac{40.1}{0.1}$ Cabalt $\frac{40.1}{0.1}$ Copper $\frac{40.1}{0.1}$ Lead $\frac{40.1}{0.1}$ Magnessum $\frac{3}{0.1}$ Magnesse $\frac{40.05}{0.1}$ Mickel $\frac{40.1}{0.1}$ Silicon $\frac{13.}{0.1}$ Siliver $\frac{40.1}{0.1}$ Siliver $\frac{40.1}{0.1}$ Siliver $\frac{40.1}{0.1}$ Siliver $\frac{40.1}{0.1}$ Siliver $\frac{40.1}{0.1}$ Siliver $\frac{40.1}{0.1}$ Silicon $\frac{13.}{0.1}$ Siliver $\frac{40.1}{0.1}$ Silicon $\frac{13.}{0.1}$ Silicon $\frac{13.}{0.1}$ Silicon $\frac{13.}{0.1}$ Siliver $\frac{40.1}{0.1}$ Silicon $\frac{13.}{0.1}$ Silicon $\frac{13.}{0.005}$	а , в	Lab Number: #	1973 DISC.3	VETA Sample Cole: Pard Ma	a le allati
bits observed in the field of		Date Submitted:	12/2/85 DEC 00	Philip	0 Susk 12/16/05
Different Date Reported: $D_{1}$ $D_{2}$ Date Reported: $D_{1}$ Derylium $40.1$ Calcium $40.1$ Calcium $40.1$ Cobalt $40.1$ Copper $40.1$ Iron $40.1$ Magnesium $3$ Magnesium $40.1$ Nickel $40.1$ Silicon $13$ Silver $40.1$ Vanadium $40.1$ Vanadium $40.1$ Zinc $2.01$ Arsenic $D.003$ Selenium $0.005$		By: Rama Bail	C'L CONSERVATIO	DN Possiowed By:	Mar ~
Element         ICAP VALUE (MC/L)         AA VALUE (MG/L)           Aluminum         40.1		Dir Doger Dame	SXVITA	Date Reported: 12/18	186
Integrit         Intervention         All windermodule           Aluminum         40.1		Floment TO			
Attminum       -0.1         Barium       40.1         Berylium       40.1         Boron       40.1         Boron       40.1         Cadmium       40.1         Calcium       69.         Chromium       40.1         Cobalt       40.1         Cobalt       40.1         Copper       40.1         Copper       40.1         Iron       40.1         Magnesium       31.         Magnesium       32.         Malthinum       40.1         Nickel       40.05         Molybdenum       40.1         Nickel       40.1         Silicon       13.         Siliver       40.1         Siliver       40.1         Vanadium       40.1         Vanadium       40.1         Zinc       40.1         Zinc       40.1         Arsenic       0.005         Mercury       0.005		<u>Element</u> <u>IC</u>	AP VALUE (MG/L)	AA VALUE (MG/L)	• • • • • • • • • • • • • • • • • • •
Bartum       20.1         Berylium       40.1         Boron       40.1         Boron       40.1         Cadmium       40.1         Calcium       69.         Chromium       40.1         Cobalt       40.1         Cobalt       40.1         Copper       40.1         Copper       40.1         Iron       40.1         Magnesium       3).         Manganese       40.05         Molybdenum       40.1         Nickel       40.1         Silicon       13.         Silver       40.1         Tin       40.1         Vanadium       40.1         Zinc       40.1         Zinc       40.1         Arsenic       0.013         Selenium       0.005		Aluminum			
Berylium $20.1$ Boron $40.1$ Cadmium $40.1$ Calcium $69.$ Chromium $40.1$ Cobalt $40.1$ Copper $40.1$ Iron $40.1$ Lead $40.1$ Magnesium $31.$ Manganese $40.05^{-1}$ Molybdenum $40.1$ Nickel $40.1$ Silicon $13.$ Silver $40.1$ Strontium $1.1$ Tin $40.1$ Vanadium $40.1$ Zinc $40.1$ Arsenic $0.013.$ Selenium $0.005^{-1}$		Barium			
Boron $20.1$ Cadmium $40.1$ Calcium $69.$ Chromium $40.1$ Cobalt $20.1$ Copper $40.1$ Lead $40.1$ Magnesium $3].$ Manganese $40.05^{\circ}$ Molybdenum $40.1$ Nickel $40.1$ Silicon $13.$ Silver $40.1$ Tin $40.1$ Nickel $40.1$ Silver $40.1$ Silon $13.$ Silver $40.1$ Tin $40.1$ Tin $40.1$ Tin $40.1$ Strontium $1.1$ Tin $40.1$ Vanadium $40.1$ Zinc $40.1$ Arsenic $0.013.$ Selenium $0.00^{5}$ Mercury		Berylium			
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Calcium $69.$ Chromium $40.$ ]Cobalt $40.$ ]Copper $40.$ ]Iron $40.$ ]Iron $40.$ ]Lead $40.$ ]Magnesium $3].$ Manganese $40.0^{5}$ Molybdenum $40.$ ]Nickel $40.$ ]Silicon $J3.$ Silver $40.$ ]Silver $40.$ ]Silver $40.$ ]Silver $40.$ ]Silor $J3.$ Silver $40.$ ]Silor $J3.$ Silor $J3.$ Strontium $J.$ ]Tin $40.$ ]Arsenic $D.013$ Selenium $D.005$ Mercury		Cadmium	40.1	<u> </u>	
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Copper $40.1$ Iron $40.1$ Lead $40.1$ Magnesium $3$ ].Manganese $40.05$ Molybdenum $40.1$ Nickel $40.1$ Nickel $40.1$ Silicon $13.$ Silver $40.1$ Strontium $1.1$ Tin $40.1$ Vanadium $40.1$ Zinc $40.1$ Arsenic $0.013$ Selenium $0.005$		Cobalt	<0.1		
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Molybdenum		Manganese	40.05	· · · · · · · · · · · · · · · · · · ·	
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Silver $40.1$ Strontium $1.1$ Tin $40.1$ Vanadium $40.1$ Zinc $40.1$ Arsenic $0.013$ Selenium $0.005$ Mercury $0.005$		Silicon	13.		
Strontium $1.1$ Tin $40.1$ Vanadium $40.1$ Vanadium $40.1$ Zinc $40.1$ Arsenic $0.013$ Selenium $0.005$ Mercury $0.005$		Silver	40.1	<u> </u>	
Tin40.1Vanadium40.1Zinc40.1Arsenic0.013Selenium0.005Mercury		Strontium	<u>_I.l</u>		
Vanadium Zinc Arsenic Selenium Mercury		Tin	40.1		
Zinc <u>40.1</u> Arsenic <u>0.013</u> Selenium <u>0.005</u> Mercury		Vanadium	40.1		
Arsenic 0.013 Selenium 0.005 Mercury		Zinc	20.1		
Selenium 0.005 Mercury		Arsenic		0.013	
Mercury		Selenium		0.005	
	. Г	Mercury			

85-1160 - C CLABORATORY DIVISION THEME STATE OF NEW MEXICO Albuquerque, NM 87106 841-2570 ENVILONMENT EN HUNDER DAVID G. BOYER REPORT TO: S.L.D. NO.: OR- 1/10 -17 PLEASE PRINT DATE REC. : 12/12/8 NEW MEXICO OIL CONSERVATION DIV P.O. BOX 2088 SLD PRIORITY #: SANTA FE, NM 87501 827-5812 USER CODE: |8|2|2|3|5| PHONE (S): ROYER SUBMITTER: SUBMITTER CODE: | | | SAMPLE TYPE CODE: SAMPLE TYPE: WATER , SOIL , OTHER COLLECTED: 85/11/21-14:10 BY 94 CODE: INITIA #2 SOURCE: Pond Mon well CODE: AQUIFER DEPTH NEAREST CITY: CAR/Kha CODE: | | | | | | LOCATION: Phillips Lusk Gas Plant CODE: [1] [] TOWNSHIP RANGE SECTION TRACTS pH= 6.6; Conductivity= 1100 umho/cm at 20 °C; Chlorine Residual= Dissolved Oxygen= mg/l; Alkalinity=\_\_\_\_; Flow Rate= Sampling Location, Methods and Remarks (i.e. odors, etc.) Sumper to drynest by sub. pump, Samples bailes after recovery - 4" Mon Well. During pumping I certify that the statements in this block accurately reflect the results of my field analyses, observations and activities. Method of shipment to the Laboratory Hand Carried This form accompanies \_\_\_\_\_Septum Vials, \_\_\_\_Glass Jugs, \_\_\_\_\_ Containers are marked as follows to indicate preservation: P-Ice NP: No preservation; sample stored at room temperature. Sample stored in an ice bath (not frozen). P-Na, S, O; Sample preserved with Na, S, O; to remove chlorine residual. I (we) certify that this sample was transferred from at (location) to on and that the statements in this block are correct. Evidentiary Seals: Not Sealed Seals Intact: Yes No Signatures (we) certify that this sample was transferred from to at (location) on and that the statements in this block are correct. Evidentiary Seals: Not Sealed Seals Intact: Yes No Signatures

ANALY PLEASE REQUIRE	<b>(SES REQUESTED</b> CHECK THE APPROPRIATI CD. WHENEVER POSSIBLE	E BOXES BELOW TO E LIST SPECIFIC C	INDICA OMPOUN	ATE I NDS S	AB. No.: ORG- THE TYPE OF ANALYTICA SUSPECTED OR REQUIRED	<u>//60</u> ll screens
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	ALIPHATIC HYDROCARBO AROMATIC HYDROCARBO HALOGENATED HYDROCA GAS CHROMATOGRAPH/MA	ON SCREEN N SCREEN RBON SCREEN ASS SPECTROMETER			ALIPHATIC HYDROCAR CHLORINATED HYDROC CHLOROPHENOXY ACID HYDROCARBON FUEL S ORGANOPHOSPHATE PE	BONS ARBON PESTICIDES HERBICIDES CREEN
		с С			POLYCHLORINATED BI POLYNUCLEAR AROMAT TRIAZINE HERBICIDE	PHENYLS (PCB's) TC HYDROCARBONS S
	SPECIFIC COM	POUNDS			SPECIFIC COMP	
COM halo.	F 1POUND Jung Acreen Benzene	INALYTICAL [PPB] moneletected \$\$	RE	SUL OMF	TS POUND	
COM halo. p p v	F 1POUND <u>Jung Acreen</u> <u>bennene</u> <u>toluene</u> <u>toluene</u> <u>toluene</u> <u>toluene</u> <u>toluene</u> <u>toluene</u> <u>toluene</u> <u>toluene</u> <u>toluene</u> <u>toluene</u> <u>toluene</u>	NALYTICAL [PPB] noneletected SS Conceletected noneletected noneletected noneletected noneletected noneletected	RE	SUL		[PPB]
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COM halo. p p p p p p p c c REMAR Seal(s) [ certif sample u on this )ate(s) [ certif sith the	F 1POUND Mag. Acreen benne tolicene tolic	ANALYTICAL [PPB] Noneletected SS Lo Noneletected Non	RES C ALYTIC n by: proce atement 1 resu t's st h the signa	SUL OMF DETE CAL P edure nts i ilts ignat anal	TS POUND CTION LIMIT CTION LIMIT ERSONNEL des on handling and an in this block and the for this sample. ure: Manney yt fail results for t	[PPB] 2.mqm/l 2.mqm/l ate: alysis of this analytical data his sample and

RECEIVED 12 02 15	- LAB NO.UC -526	SUSER CODE D 59300	о 🗌 59600 🕅 ОТНЕ	ER: 82235	
	SITE	Sample location	n & Mon we	11#2,P	hillips Lust
Collected by - Person/Agency	ATION	Collection site description		Na J	Tural Gas PL
130	yer /Par /e				
FNVIRON	MENTAL BUREAU				
SEND NM OIL	CONSERVATION	DIVISION OL C	20NSERVATION DIVISION SANTA SE	ON	
REPORT Santa F	e, NM 87501	ug, 10 Dox 2000			
Attn: David	Boyer				
			Stat	tion/ I code	
SAMPLING CONDITION	S		Owr	ner	
Bailed Dump	Water level 7	8.65 114	Discharge	Sample t	
pH (00400)	Conductivity (L	Uncorrected)	Water Temp. (00010)	Conducti	vity at 25°C (00094)
Eiclid comments a 14		1100 µmho	20	°C	μm
MB	well, pu	meedry	( 455 Umbe	50 200	-). bailed
SAMPLE FIELD TREATM No. of samples submitted	AENT — Check pr NF: Whole samp (Non-filtered) Other-specify	roper boxes Dle KF: Filtered in f 0.45 μmen	field with $\Box A: 2 m I$ nbrane filter $E \le I \ Corr C$	H2SO4/Ladded	3
SAMPLE FIELD TREATM No. of samples submitted	AENT — Check pr NF: Whole samp (Non-filtered) Other-specify from SAMPLES	roper boxes Dle KF: Filtered in f 0.45 μmen	field with nbrane filter ロA: 2 ml EST Corr C	H2SO4/Ladded	3
SAMPLE FIELD TREATM No. of samples submitted NA: No acid added ANALYTICAL RESULTS F, NA	AENT — Check pr NF: Whole samp (Non-filtered) Other-specify from SAMPLES	roper boxes ble KF: Filtered in f 0.45 μmen Units Date analyzed	lield with nbrane filter ロA: 2ml EST Corr C	H2SO4/Ladded	3 Units Date analyze
SAMPLE FIELD TREATN No. of samples submitted NA: No acid added ANALYTICAL RESULTS F, NA Conductivity (Corrected) 25°C (00095)	IENT — Check pr NF: Whole samp (Non-filtered Other-specify from SAMPLES 2358	poper boxes ple $\mathbf{KF}$ : Filtered in f 0.45 $\mu$ men Units Date analyzed $\mu$ mho $/2/18$	field with nbrane filter $\Box$ A: 2 ml EST Corr C F, NA Calcium (00915) Magnesium (00925)	H2SO4/Ladded onl 12.2. 129.6 152.7	Units         Date analyze           mg/l         12-30           mg/l
SAMPLE FIELD TREATN No. of samples submitted NA: No acid added ANALYTICAL RESULTS F, NA Conductivity (Corrected) 25°C (00095)	AENT — Check pr NF: Whole samp (Non-filtered Other-specify from SAMPLES 2358	poper boxes ple $KF$ : Filtered in f 0.45 $\mu$ men Units Date analyzed $\mu$ mho $2/2/18$	field with nbrane filter $\Box$ A: 2 ml $EST \ Corr C$ <b>1</b> F, NA Calcium (00915) Magnesium (00925) Sodium (00930) Potassium (00935)	H2SO4/Ladded onl 122 129,6 129,6 4,29	Units         Date analyze           mg/l         /2-30           mg/l         //           mg/l         //
SAMPLE FIELD TREATN No. of samples submitted XNA: No acid added ANALYTICAL RESULTS F, NA Conductivity (Corrected) 25°C (00095) Total non-filterable residue (suspended) (00530)	AENT — Check pr         NF:       Whole samp (Non-filtered         Other-specify         from SAMPLES         2358	roper boxes ple F: Filtered in f 0.45 μmen Units Date analyzed μmho /2 /18 mg/l	field with nbrane filter A: 2 ml EST COM C I F. NA Calcium (00915) Magnesium (00925) Sodium (00930) Potassium (00935) Bicarbonate (00440)	H <sub>2</sub> SO <sub>4</sub> /L added $\sigma_{1}$ $2$ $1$ $2$ $2$ $2$ $1$ $2$ $2$ $2$ $2$ $1$ $2$ $2$ $2$ $2$ $2$ $2$ $2$ $2$ $2$ $2$	Units         Date analyze           mg/l         12-30           mg/l         ./           mg/l         ./           mg/l         ./           mg/l         ./           mg/l         ./           mg/l         ./
SAMPLE FIELD TREATN No. of samples submitted XNA: No acid added ANALYTICAL RESULTS F, NA Conductivity (Corrected) 25°C (00095) Total non-filterable residue (suspended) (00530) Other:	IENT — Check pr         NF:       Whole samp (Non-filtered         Other-specify         from SAMPLES         2358	roper boxes ple $KF$ : Filtered in f 0.45 $\mu$ men Units Date analyzed $\mu$ mho $\frac{12}{18}$	field with nbrane filter       □ A: 2 ml.         EST COVIC         1       F. NA         X       Calcium (00915)         Magnesium (00925)       Sodium (00930)         Potassium (00935)       Bicarbonate (00440)         Chloride (00940)       Sulfate (00945)	H2SO4/Ladded onl 1271 1291 1291 152.7 142.6 4,29 549.1 369.3 309	Units         Date analyze           mg/l         /2-30           mg/l         ./           mg/l         .//.0           mg/l         ./2./.3.1
SAMPLE FIELD TREATN No. of samples submitted XNA: No acid added ANALYTICAL RESULTS F, NA Conductivity (Corrected) 25°C (00095) Total non-filterable residue (suspended) (00530) Cother: Other: Other:	IENT — Check pr         NF:       Whole samp (Non-filtered         Other-specify         from SAMPLES         2358         7.79	$\frac{\mathbf{r}}{\mathbf{r}} \mathbf{r} \mathbf{r} \mathbf{r} \mathbf{r} \mathbf{r} $	field with       □       A: 2 ml         Imbrane filter       EST COND C         Imbrane filter       EST Cond C <td>H<sub>2</sub>SO<sub>4</sub>/L added <math>\sigma_{1}</math> <math>2</math> <math>2</math> <math>2</math> <math>2</math> <math>2</math> <math>2</math> <math>2</math> <math>2</math> <math>2</math> <math>2</math></td> <td>Units         Date analyze           mg/l         12-30           mg/l         1           mg/l         1/2           mg/l         1/2           mg/l         1/2           mg/l         1/2</td>	H <sub>2</sub> SO <sub>4</sub> /L added $\sigma_{1}$ $2$ $2$ $2$ $2$ $2$ $2$ $2$ $2$ $2$ $2$	Units         Date analyze           mg/l         12-30           mg/l         1           mg/l         1/2           mg/l         1/2           mg/l         1/2           mg/l         1/2
SAMPLE FIELD TREATN No. of samples submitted XNA: No acid added ANALYTICAL RESULTS F, NA Conductivity (Corrected) 25°C (00095) Total non-filterable residue (suspended) (00530) Other: Other: Other: NF, A-H <sub>2</sub> SO <sub>4</sub>	IENT — Check pr         NF:       Whole samp (Non-filtered         Other-specify         from SAMPLES         2358         7.79	roper boxes ple $\mathbf{KF}$ : Filtered in f 0.45 µmen Units Date analyzed $\mu$ mho $\frac{2}{2}/18$	field with       □       A: 2 ml         mbrane filter       □       A: 2 ml         £ £57 Corr       C         1       F, NA         2       Calcium (00915)         Magnesium (00925)       Sodium (00930)         Potassium (00930)       Potassium (00935)         Bicarbonate (00440)       Chloride (00940)         Sulfate (00945)       Total filterable residue         (dissolved) (70300)       Other:	H <sub>2</sub> SO <sub>4</sub> /L added $\sigma_1$ $l$	$\begin{array}{c c c c c c c c c c c c c c c c c c c $
SAMPLE FIELD TREATN No: of samples submitted XNA: No acid added ANALYTICAL RESULTS F, NA Conductivity (Corrected) 25°C (00095) Total non-filterable residue (suspended) (00530) Cother: Other: Other: NF, A-H <sub>2</sub> SO <sub>4</sub> Nitrate-N <sup>+</sup> , Nitrate-N	AENT — Check pr NF: Whole samp (Non-filtered) Other-specify from SAMPLES 2358	roper boxes ple $\mathbf{KF}$ : Filtered in f $0.45 \ \mu men$ Units Date analyzed $\mu mho \ /2 \ / 18$ mg/l $12 \ / 18$	field with       □       A: 2 mi         brane filter       □       A: 2 mi         £ £57 Com       C         4       F, NA         ★ Calcium (00915)       Magnesium (00925)         ★ Sodium (00930)       Potassium (00935)         ★ Bicarbonate (00440)       Chloride (00940)         ★ Sulfate (00945)       Total filterable residue         (dissolved) (70300)       Other:         F, A-H₂ SO4       F, A-H₂ SO4	H2SO4/Ladded onl 1226 1296 1296 1296 1426 4,29 549.1 369.3 309 1608 0,47 2.21	$\begin{array}{c c c c c c c c c c c c c c c c c c c $
SAMPLE FIELD TREATN No. of samples submitted XNA: No acid added ANALYTICAL RESULTS F, NA Conductivity (Corrected) 25°C (00095) Total non-filterable residue (suspended) (00530) Cother: Other: Other: NF, A-H <sub>2</sub> SO <sub>4</sub> Nitrate-N + , Nitrate-N total (00630) Ammonia-N total (00610)	AENT — Check pr NF: Whole samp (Non-filtered) Other-specify from SAMPLES 2358	roper boxes ple $KF$ : Filtered in f 0.45 µmen Units Date analyzed µmho $/2 / 18$ mg/l mg/l mg/l	field with nbrane filter       □ A: 2 ml         EST COM       EST COM         I       F, NA         I       Calcium (00915)         Magnesium (00925)       Sodium (00930)         Potassium (00935)       Bicarbonate (00440)         Chloride (00940)       Sulfate (00945)         Total filterable residue (dissolved) (70300)       Other:         F, A-H₂ SO4       □         Nitrate-N + Nitrate-N dissolved (00631)	H <sub>2</sub> SO <sub>4</sub> /L added $\sigma_{1}$ $(1)$	$\frac{\text{Units}}{\text{mg/l}} \frac{\text{Date analyze}}{12-30}$ $\frac{\text{mg/l}}{12} \frac{12}{10}$ $\frac{\text{mg/l}}{11} \frac{12}{18}$ $\frac{\text{mg/l}}{110} \frac{12}{12}$ $\frac{\text{mg/l}}{12} \frac{12}{13}$ $\frac{\text{mg/l}}{12} \frac{12}{12}$ $\frac{12}{12}$
SAMPLE FIELD TREATN No. of samples submitted XNA: No acid added ANALYTICAL RESULTS F, NA Conductivity (Corrected) 25°C (00095) Total non-filterable residue (suspended) (00530) Cother: Other: Other: NF, A-H <sub>2</sub> SO <sub>4</sub> Nitrate-N + , Nitrate-N total (00630) Ammonia-N total (00610) Total Kjeldahl-N ()	AENT — Check pr NF: Whole samp (Non-filtered Other-specify from SAMPLES 2.358 7.79	roper boxes ple $KF$ : Filtered in f 0.45 µmen Units Date analyzed µmho $/2/18$ mg/l mg/l mg/l	field with nbrane filter       A: 2 ml.         EST CONT C         I F. NA         X Calcium (00915)         Magnesium (00925)         Sodium (00930)         Potassium (00935)         Bicarbonate (00440)         Chloride (00940)         Sulfate (00945)         Total filterable residue (dissolved) (70300)         Other:         F. A-H2 SO4         Nitrate-N +, Nitrate-N dissolved (00631)         Ammonia-N dissolved (00600)	H <sub>2</sub> SO <sub>4</sub> /L added $\sigma_{1}$ $(2, 1)$ 12.2 12.2 12.2 12.2 142.6 4.29 5.49.1 369.3 30.9 1608 0, 47 2.21	$\frac{\text{Units}}{\text{mg/l}} \frac{\text{Date analyze}}{12-30}$ $\frac{\text{mg/l}}{12} \frac{12}{10}$ $\frac{\text{mg/l}}{11} \frac{1}{110}$ $\frac{\text{mg/l}}{12} \frac{12}{18}$ $\frac{\text{mg/l}}{12} \frac{12}{131}$ $\frac{\text{mg/l}}{12} \frac{12}{131}$ $\frac{\text{mg/l}}{12} \frac{12}{131}$ $\frac{12}{131}$ $\frac{\text{mg/l}}{131} \frac{12}{131}$ $\frac{12}{131}$ $\frac{12}{131}$ $\frac{12}{131}$ $\frac{13}{131}$
SAMPLE FIELD TREATN No. of samples submitted XNA: No acid added ANALYTICAL RESULTS F, NA Conductivity (Corrected) 25°C (00095) Total non-filterable residue (suspended) (00530) Cother: Other: Other: NF, A-H <sub>2</sub> SO <sub>4</sub> Nitrate-N +, Nitrate-N total (00630) Ammonia-N total (00610) Total Kjeldahl-N () Chemical oxygen demand (00340)	AENT - Check pr         NF:       Whole samp (Non-filtered)         Other-specify         from SAMPLES         2.358	roper boxes ple $KF$ : Filtered in f 0.45 µmen Units Date analyzed µmho $1/2/18$ mg/l mg/l mg/l mg/l mg/l mg/l	field with nbrane filter       □ A: 2 ml.         £ ST Corr C         1 F. NA         X Calcium (00915)         Magnesium (00925)         X Sodium (00930)         Potassium (00935)         X Bicarbonate (00440)         Chloride (00940)         Sulfate (00945)         Total filterable residue (dissolved) (70300)         Other:         F. A-H₂ SO₄         □ Nitrate-N +, Nitrate-N dissolved (00631)         □ Ammonia-N dissolved (00608)         □ Total Kjeldahl-N	H2SO4/Ladded onl. 122 129,L 152.7 142.6 4,29 549.1 369.3 309 1608 0,47 2.21	Units         Date analyze           mg/l         12-30           mg/l
SAMPLE FIELD TREATM         No. of samples submitted         XNA: No acid added         ANALYTICAL RESULTS         ♥F, NA         Y Conductivity (Corrected) 25 °C (00095)         □ Total non-filterable residue (suspended) (00530)         X Other:         □ Other:         □ Other:         Nitrate-N +, Nitrate-N total (00630)         □ Ammonia-N total (00610)         □ Total Kjeldahl-N (         □ Chemical oxygen demand (00340)         □ Total organic carbon	IENT — Check pr         NF:       Whole samp         (Non-filtered         Other-specify         from SAMPLES         2358	roper boxes ple $KF$ : Filtered in f 0.45 µmen Units Date analyzed µmho $12/18$ mg/l mg/l mg/l mg/l mg/l mg/l mg/l	field with nbrane filter       □ A: 2 ml.         £ ST Corr C         1 F. NA         Calcium (00915)         Magnesium (00925)         Sodium (00930)         Potassium (00935)         Bicarbonate (00440)         Chloride (00945)         Total filterable residue (dissolved) (70300)         Other:         F. A-H₂ SO4         □ Nitrate-N +, Nitrate-N dissolved (00631)         □ Ammonia-N dissolved (00608)         □ Total Kjeldahl-N (         □ Other:	H <sub>2</sub> SO <sub>4</sub> /L added $\sigma_{1}$ $(2, 1)$ 129, 1 132, 7 142.6 4,29 549.1 369.3 309 1608 0, 47 2.21	Units     Date analyze       mg/l     /2-30       mg/l     /1       mg/l     /1       mg/l     /2/18       mg/l     /2/23       mg/l     /2/23       mg/l     /2/23       mg/l     /2/23
SAMPLE FIELD TREATM         No. of samples submitted         XNA: No acid added         ANALYTICAL RESULTS         ♥F, NA         Y Conductivity (Corrected) 25 °C (00095)         Total non-filterable residue (suspended) (00530)         Y Other:         Other:         Other:         Other:         Nitrate-N +, Nitrate-N total (00630)         Ammonia-N total (00610)         Total organic carbon (         Chemical oxygen demand (00340)         Total organic carbon (         Other:	AENT — Check pr NF: Whole samp (Non-filtered) Other-specify from SAMPLES 2358 7.79	roper boxes ple $\[mathbb{K}\]$ F: Filtered in f 0.45 $\mu$ men Units Date analyzed $\[mathbb{L}\]$ $\[mathbb{L}\]$ $\[mathb$	field with       □       A: 2 ml.         Label{eq:A: 2 ml.       EST Corr C         A: 2 ml.       EST Corr C         A: Calcium (00915)       Magnesium (00925)         Magnesium (00930)       Potassium (00930)         Potassium (00935)       Bicarbonate (00440)         Chloride (00940)       Sulfate (00945)         Total filterable residue       (dissolved) (70300)         Other:       E         F, A-H2 SO4       Nitrate-N +, Nitrate-N         dissolved (00631)       Ammonia-N dissolved         (00608)       Total Kjeldahl-N         (	H <sub>2</sub> SO <sub>4</sub> /L added $\sigma_{1}$ $2$ $2$ $2$ $2$ $2$ $2$ $2$ $2$ $2$ $2$	$\frac{\text{Units}}{\text{mg/l}} \frac{\text{Date analyze}}{12-30}$ $\frac{\text{mg/l}}{12-30}$ $\frac{\text{mg/l}}{12-30}$ $\frac{\text{mg/l}}{12-30}$ $\frac{\text{mg/l}}{12-30}$ $\frac{\text{mg/l}}{12-30}$ $\frac{12-31}{12-31}$ $\frac{\text{mg/l}}{12-31}$ $\frac{12-2}{2}$ $\frac{12-2}{2}$ $\frac{12-2}{3}$ $\frac{12-2}{3}$ $\frac{12-2}{3}$ $\frac{12-3}{3}$
SAMPLE FIELD TREATN         No: of samples submitted         XNA: No acid added         ANALYTICAL RESULTS         ♥F, NA         Y Conductivity (Corrected) 25 °C (00095)         Total non-filterable residue (suspended) (00530)         X Other:         Other:         Other:         Other:         Nitrate-N +, Nitrate-N total (00630)         Ammonia-N total (00610)         Total organic carbon (         Other:	AENT — Check pr NF: Whole samp (Non-filtered) Other-specify from SAMPLES 2358 7.79	roper boxes ple $KF$ : Filtered in f 0.45 µmen Units Date analyzed µmho $/2 / 18$ mg/l $-2/18$ mg/l $-2/18$ mg/l $-2/18$ mg/l $-2/18$ mg/l $-2/18$	field with       □       A: 2 ml.         Label{eq:A: 2 ml.       EST Corr C         A: Calcium (00915)       Magnesium (00925)         Magnesium (00930)       Potassium (00935)         Bicarbonate (00440)       Chloride (00940)         Sulfate (00945)       Total filterable residue.         (dissolved) (70300)       Other:         F, A-H₂ SO4       Nitrate-N + Nitrate-N         Dissolved (00631)       Ammonia-N dissolved         Other:       Other:         Analyst       Analyst	H <sub>2</sub> SO <sub>4</sub> /L added $\sigma_{1}$ $2$ $1$ $2$ $2$ 127.6 127.6 127.6 127.6 4.29 549.1 369.3 309 1608 0.47 2.21 Date Reported 1 14 86	Units     Date analyze       mg/l     12-30       mg/l     //       mg/l     //       mg/l     //       mg/l     1/2/18       mg/l     1/2/13       mg/l     12/2
SAMPLE FIELD TREATN No: of samples submitted XNA: No acid added ANALYTICAL RESULTS F, NA Conductivity (Corrected) 25°C (00095) Total non-filterable residue (suspended) (00530) Cother: Other: Other: Other: NF, A-H <sub>2</sub> SO <sub>4</sub> Nitrate-N +, Nitrate-N total (00630) Ammonia-N total (00610) Chemical oxygen demand (00340) Chemical oxygen demand (00340) Total organic carbon () Other: Other: Other: Other: Other: Chemical oxygen demand (00340) Total organic carbon () Other: Ot	AENT — Check pr NF: Whole samp (Non-filtered Other-specify from SAMPLES 2358 7.79	coper boxes         ble       F: Filtered in f         0.45 μmen         Units Date analyzed         μmho       /2 / / 8         mg/l	field with nbrane filter       □ A: 2 ml.         EST CONC         1       F. NA         I       Calcium (00915)         Magnesium (00925)       Sodium (00930)         Potassium (00935)       Bicarbonate (00440)         Chloride (00940)       Sulfate (00945)         Total filterable residue (dissolved) (70300)       Other:         F, A-H₂ SO4       □ Nitrate-N +, Nitrate-N dissolved (00631)         □ Ammonia-N dissolved (00608)       □ Total Kjeldahl-N (         □ Other:       □ Other:	H <sub>2</sub> SO <sub>4</sub> /L added $\sigma_{1}$ $(2, 1)$ 12.9 $(2, 1, 7)12.64.295.49.1369.330.916080, 472.21Date Reported1 14 86$	Units       Date analyze         mg/l       12-30         mg/l       //         mg/l       //         mg/l       //         mg/l       //         mg/l       1/2/18         mg/l       1/2/18         mg/l       1/2/31         mg/l       1/2/31         mg/l       1/2/35         mg/l

New Mexico Hei SCIENTIFIC LA 700 Camino de S Albuquerque. N	alth and Environment Department BORATORY Salud NE M 87106 — (505) 841-2555	GENERA and N	L WATER CHEMISTRY TROGEN ANALYSIS
DATE RECEIVED /2 /2 /5 K Calegion DATE S 111 21 Collection TIM 14/0	AB U 521 USER IO. U 521 CODE	59300 59600 XX OTHER:	B2235 Barlings Lusk
ENVIRONMEN SEND NM OIL CON FINAL State Land REPORT Santa Fe, Attn:David_Bo SAMPLING CONDITIONS	TAL BUREAU SERVATION DIVISION Office Bldg, PO Box NM 87501 yer	2088 C 18 1985	
Bailed C Pump	Water level 28 45 NTH	Discharge	Sample type
pH (00400)	Conductivity (Uncorrected)	Water Temp. (00010)	Conductivity at 25 °C (00094)
SAMPLE FIELD TREATMEN No. of samples submitted NA: No acid added ANALYTICAL RESULTS from NF, NA	T — Check proper boxes F: Whole sample (Non-filtered) KF: Filte 0.45 Other-specify: n SAMPLES Units Date an	alyzed F. NA	D₄/L added Units Date analyzed
Conductivity (Corrected) 25°C (00095) Total non-filterable residue (suspended) (00530) Other: Other: Other: NF A-H-SO.	µmho mg/l 	Calcium (00915)         Magnesium (00925)         Sodium (00930)         Potassium (00935)         Bicarbonate (00440)         Chloride (00940)         Sulfate (00945)         Total filterable residue (dissolved) (70300)         Other:	mg/l           mg/l           mg/l           mg/l           mg/l           mg/l           mg/l           mg/l           mg/l           mg/l           mg/l           mg/l           mg/l
□ Nitrate-N + , Nitrate-N		F, A-H <sub>2</sub> SO <sub>4</sub>	
total (00630) Ammonia-N total (00610) Total Kjeldahl-N ( ) Chemical oxygen demand (00340) Total organic carbon ( )	mg/i mg/i mg/i mg/i mg/i	Image: Nitrate-N + , Nitrate-N         dissolved (00631)         Image: Nitrate-N         (00608)         Image: Nitrate-N         Image: Nitrate-N <td><math display="block">\frac{0.04}{0.24} \text{ mg/l} \frac{12/9}{12/4}</math> <math display="block">\frac{12/4}{12/4}</math> <math display="block">\frac{12/4}{12/9}</math> <math display="block">\frac{12/9}{12/9}</math></td>	$\frac{0.04}{0.24} \text{ mg/l} \frac{12/9}{12/4}$ $\frac{12/4}{12/4}$ $\frac{12/4}{12/9}$ $\frac{12/9}{12/9}$
Other:      Other:	······	Analyst Date	e Reported Reviewed by
Laboratory remarks			

	Stre INFORM- ATION	no 59600 KX OTHER:	82235 #2, Phillips Li	usk
Collected by - Person/Agency Royer/ ENVIRONMENTAL	BUREAU	· · ·································	Natural Gas	<i>PLan</i>
INAL State Land Off REPORT Santa Fe, NM 8 Attn:David_Boyer_	ice Bldg, PO Box 208 7501	CONSERVATION DIVISION		
SAMPLING CONDITIONS	A.	Station/ well.code Owner		
K Bailed C Pump Wate	er level	Discharge	Sample type	
Dipped Tap	38.63 DIU	pumped ~ 5 gpm	GRAB	`. · ·
pH (00400) 6.6	ductivity (Uncorrected)	Water Temp. (00010)	°C	) µmho
SAMPLE FIELD TREATMENT - 0	Check proper boxes			· · · · · · · · · · · · · · · · · · ·
SAMPLE FIELD TREATMENT — ( No. of samples submitted I INF: W NA: No acid added I Other ANALYTICAL RESULTS from SAM	Check proper boxes hole sample poxes fon-filtered) F: Filtered in 0.45 μm or specify: MPLES Units Date analyze	n field with embrane filter	Oafte added 4m/ A HNC Units Date an	halyzed
SAMPLE FIELD TREATMENT — ( No. of samples submitted I NF: W (N NA: No acid added I Other ANALYTICAL RESULTS from SAM	Check proper boxes hole sample MF: Filtered in on-filtered) F: Filtered in 0.45 μmi 0.45 μmi 0.45 μmi 0.45 μmi 0.45 μmi 0.45 μmi	ed F. NA	Added      Am/      Am/      Am/      Am/      MN/     MN/     Units Date au     mg/l     mg/l	nalyzed
SAMPLE FIELD TREATMENT — (         No. of samples submitted       Image: NF: W         NA: No acid added       Other         ANALYTICAL RESULTS from SAI         Image: NF: Market addression         Conductivity (Corrected)         25 °C (00095)         Image: Total non-filterable residue (suspended)	Check proper boxes hole sample Infiltered) F: Filtered in 0.45 µm -specify: MPLES Units Date analyze	ed F. NA Calcium (00915) Calcium (00925) Sodium (00930) Potassium (00935)	Oatter       added       4 m/ f         Units       Date and mg/l        mg/l      mg/l        mg/l      mg/l        mg/l      mg/l	nalyzed
SAMPLE FIELD TREATMENT	Check proper boxes hole sample lon-filtered) F: Filtered in 0.45 µm -specify: MPLES Units Date analyzemho	ed F. NA Calcium (00915) Calcium (00925) Magnesium (00925) Sodium (00930) Potassium (00935) Bicarbonate (00440) Chloride (00940)	Oatt added       4 m/ f         Units       Date and f         mg/l	halyzed
SAMPLE FIELD TREATMENT       O         No. of samples submitted       I       NF: W (N         NA: No acid added       Other         ANALYTICAL RESULTS from SAM         Image: Solution of the second sec	Check proper boxes hole sample ion-filtered) F: Filtered in 0.45 μm 0	ed F. NA Calcium (00915) Calcium (00925) Calcium (00930) Potassium (00935) Bicarbonate (00440) Chloride (00940) Sulfate (00945) Total filterable residue.	Units         Date ar           Units         Date ar           mg/l	halyzed
SAMPLE FIELD TREATMENT	Check proper boxes  hole sample ion-filtered)  F: Filtered in 0.45 µm	ed F. NA Calcium (00915) Calcium (00915) Magnesium (00925) Sodium (00930) Potassium (00935) Bicarbonate (00440) Chloride (00940) Sulfate (00945) Total filterable residue (dissolved) (70300) Other:	Oatt       Added       A m/ f         Units       Date and mg/l         mg/l	SR 31/1 73 nalyzed
SAMPLE FIELD TREATMENT	Check proper boxes hole sample ion-filtered) F: Filtered in 0.45 μm 0	embrane filter	Units         Date ar           Units         Date ar           mg/l	halyzed
SAMPLE FIELD TREATMENT       O         No. of samples submitted       NF:       W         NA: No acid added       Other         ANALYTICAL RESULTS from SAI         Image: Solution of the second s	Check proper boxes hole sample ion-filtered)  → Specify:  MPLES mnhomg/lmg/lmg/lmg/l	ed F. NA Calcium (00915) Calcium (00915) Calcium (00925) Sodium (00930) Potassium (00935) Bicarbonate (00440) Chloride (00940) Sulfate (00945) Total filterable residue (dissolved) (70300) Chter: F. A-H <sub>2</sub> SO <sub>4</sub>	Oatter       Added       A m/ for the second	SR 31/17
SAMPLE FIELD TREATMENT	Check proper boxes  hole sample ion-filtered)  -specify:  MPLES  Units Date analyze  mg/l  mg/l  mg/l	m field with         embrane filter         ed         F. NA <ul> <li>Calcium (00915)</li> <li>Magnesium (00925)</li> <li>Sodium (00930)</li> <li>Potassium (00935)</li> <li>Bicarbonate (00440)</li> <li>Chloride (00940)</li> <li>Sulfate (00945)</li> <li>Total filterable residue (dissolved) (70300)</li> <li>Other:</li> <li>F. A-H<sub>2</sub> SO<sub>4</sub></li> <li>Nitrate-N + Nitrate-N dissolved (00631)</li> </ul>	Orante       Amily         Units       Date and mg/l         mg/l	halyzed
SAMPLE FIELD TREATMENT   No. of samples   submitted   NR: No acid added   NA: No acid added   Other   ANALYTICAL RESULTS from SAN   Image: Second stress   Conductivity (Corrected)   25°C (00095)   Total non-filterable residue (suspended) (00530) Other: Second Image: Second stress Image: Second stress NF, A-H2SO2 Nitrate-N + Nitrate-N total (00610) Total Kjeldahl-N (	Check proper boxes hole sample ion-filtered) specify:  MPLES Units Date analyze mmhomg/l	m field with       EA: 2         embrane filter       EA: 2         ed       F. NA <ul> <li>Calcium (00915)</li> <li>Magnesium (00925)</li> <li>Sodium (00930)</li> <li>Potassium (00935)</li> <li>Bicarbonate (00440)</li> <li>Chloride (00940)</li> <li>Sulfate (00945)</li> <li>Total filterable residue (dissolved) (70300)</li> <li>Other:</li> <li>F. A-H2 SO4</li> <li>Nitrate-N + Nitrate-N dissolved (00631)</li> <li>Ammonia-N dissolved (00608)</li> </ul>	Out       O	nalyzed
SAMPLE FIELD TREATMENT	Check proper boxes hole sample ion-filtered)  → specify:  MPLES  Units Date analyze  µmhomg/l	n field with       Image: 2000 - 10000 - 10000 - 10000 - 10000 - 1000000 - 1000000 - 1000000 - 1000000 - 1000000 - 1000000 - 1000000 - 1000000 - 1000000 - 10000000 - 10000000 - 10000000 - 10000000 - 10000000 - 10000000 - 1000000 - 10000000 - 100000000	Oatter       Added       A m/ for the set of the s	S A ANI 1 C S A ANI 1 A A A A A A A A A A A A A A A A A A A
SAMPLE FIELD TREATMENT   No. of samples   submitted   NR: No acid added   NA: No acid added   Other   ANALYTICAL RESULTS from SAM   Image: Second Stress   Conductivity (Corrected)   25°C (00095)   Total non-filterable residue (suspended) (00530) Other: Second NF, A-H2SO2 NF, A-H2SO2 Nitrate-N + Nitrate-N total (00630) Ammonia-N total (00610) Total Kjeldahl-N ( Chemical oxygen demand (00340) Total organic carbon	Check proper boxes hole sample ion-filtered) specify:  MPLES Units Date analyze mmhomg/l	m field with       EA: 2-m+++2         embrane filter       Calcium (00915)         Calcium (00915)	Oracle       Amily         Units       Date and mg/l         mg/l       mg/l         mg/l       mg/l         mg/l       mg/l         mg/l       mg/l         mg/l       mg/l         mg/l       mg/l         mg/l       mg/l         mg/l       mg/l         mg/l       mg/l         mg/l       mg/l         mg/l       mg/l         mg/l       mg/l         mg/l       mg/l	52 37/12 735
SAMPLE FIELD TREATMENT	V           Check proper boxes           hole sample ton-filtered)         F: Filtered in 0.45 μmin          specify:           MPLES           Units Date analyzin           μmho          mg/l          mg/l          mg/l          mg/l          mg/l          mg/l          mg/l          mg/l	Imfield with       Image: 2000	Oatt added       Amile         Units       Date and         mg/l	5 2 37/19 73 malyzed
SAMPLE FIELD TREATMENT   No. of samples   submitted   NF:   NA: No acid added   Other   ANALYTICAL RESULTS from SAM   Image: Solution of the second seco	Check proper boxes hole sample ion-filtered) specify:  MPLES Units Date analyze mnhomg/l	m field with embrane filter       Image: 2 miniple 20         ed       F. NA <ul> <li>Calcium (00915)</li> <li>Magnesium (00925)</li> <li>Sodium (00930)</li> <li>Potassium (00935)</li> <li>Bicarbonate (00440)</li> <li>Chloride (00940)</li> <li>Sulfate (00945)</li> <li>Total filterable residue (dissolved) (70300)</li> <li>Other:</li> <li>F. A-H2 SO4</li> <li>Nitrate-N + Nitrate-N dissolved (00631)</li> <li>Ammonia-N dissolved (00608)</li> <li>Total Kjeldahl-N</li> <li>Other:</li> <li>Other:</li> <li>Other:</li> <li>Data Kjeldahl-N</li> <li>Other:</li> </ul>	Oracle       Amily         Units       Date and mg/l         mg/l       mg/l         mg/l       mg/l         mg/l       mg/l         mg/l       mg/l         mg/l       mg/l         mg/l       mg/l         mg/l       mg/l         mg/l       mg/l         mg/l       mg/l         mg/l       mg/l         mg/l       mg/l         mg/l       mg/l         mg/l       mg/l         mg/l       mg/l         mg/l       mg/l         ft       mg/l	5 2 37/12 73
SAMPLE FIELD TREATMENT   No. of samples   submitted   NR: No acid added   NA: No acid added   Other   ANALYTICAL RESULTS from SAI   Image: Second Stress   Conductivity (Corrected)   25°C (00095)   Conductivity (Corrected) (00530) Other: Second Other: Second Nitrate-N + Nitrate-N total (00630) Total Noria-N total (00610) Total organic carbon ( Other:	Check proper boxes hole sample ion-filtered) specify:  MPLES  Units Date analyze  µmhomg/l	n field with embrane filter  ed F. NA  Calcium (00915)  Calcium (00925)  Sodium (00930)  Potassium (00935)  Bicarbonate (00440)  Chloride (00940)  Chloride (00940)  Sulfate (00945)  Total filterable residue (dissolved) (70300)  Chter:  F. A-H <sub>2</sub> SO <sub>4</sub> Nitrate-N +, Nitrate-N dissolved (00631)  Ammonia-N dissolved (00608)  Total Kjeldahl-N () Chter: Analyst Da	Out       Out       Out       Out         Units       Date au         mg/l       mg/l         fte       Reported         PAA       PAA	52 3)/12 73 5

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Lab Number:  $\frac{110970}{1202/85}$ Date Submitted:  $\frac{1202/85}{1892}$ By: Bayer / Bailer

Mon 1)ell #2 Sample Code: Fond Phillips Date Analyzed: 12/6/85 A- ash Reviewed By: 12/3 Date Reported 85 AA VALUE (MG/L)

0.027

Element	ICAP VALUE (MG/L)	·····
Aluminum	40.1	
Barium	0.]	٢
Berylium	40.1	
Boron	0.4	÷
Cadmium	20.1	
Calcium	120.	
Chromium		
Cobalt		
Copper	40.1	
Iron	1.5	•
Lead	40.1	:
Magnesium	160.	
Manganese	D.64	
Molybdenum		
Nickel	<0.1	
Silicon	22.	
Silver		
Strontium	2.6	
Tin	40.1	
Vanadium	20.1	
Zinc	<u> </u>	
Arsenic		
Selenium		
Mercury		

W 85 11 167 -C al la 6...... 700 Camino de Salud NE I III'STATE OF NEW MEXICO Albuquerque, NM 87106 841-2570 ENVIRONMENT -ON CONSERVATION DIVISION DAVID G. BOYER SANTA FE S.L.D. NO.: OR-//67-REPORT TO: PLEASE PRINT NEW MEXICO OIL CONSERVATION DIV. DATE REC. : 12, -D2. P.O. BOX 2088 SLD PRIORITY #: .7 SANTA FE, NM 87501 827-5812 USER CODE: 18 212 315 PHONE(S): SUBMITTER: David Royer SUBMITTER CODE: | | | | SAMPLE TYPE: WATER V, SOIL , OTHER SAMPLE TYPE CODE: | | COLLECTED: 85/11/21-14:45 BY AUS MMDD HHMMI SOURCE: Pond Mon Well # ? CODE: | | + | | + | | AQUIFER DEPTH NEAREST CITY: Carlsback CODE: | | | | | | LOCATION: Phillips Lusk Natural Gas Hombe: []] TOWNSHIP RANGE SECTION TRACTS pH= 6.7: Conductivity= /pno umho/cm at 18 °C; Chlorine Residual= Dissolved Oxygen= \_\_\_\_\_mg/1; Alkalinity=\_\_\_\_\_; Flow Rate=\_\_\_\_; Sampling Location, Methods and Remarks (i.e. odors, etc.) 4" mon. Well pumper to drephers by Sub. Pump. Semple after 105 min. recovery period During pumping Cond 1000 21 I certify that the statements in this block accurately reflect the results of my field analyses, observations and activities. Many Method of shipment to the Laboratory Wand Currico This form accompanies Z Septum Vials, Glass Jugs, Containers are marked as follows to indicate preservation: T. NP: No preservation; sample stored at room temperature. P-Ice Sample stored in an ice bath (not frozen). P-Na25,0; Sample preserved with Na25,0, to remove chlorine residual. I (we) certify that this sample was transferred from \_\_\_\_\_ at (location)\_\_\_\_\_ to on \_:\_\_\_\_ and that the statements in this block are correct. Evidentiary Seals: Not Sealed Seals Intact: Yes No Signatures (we) certify that this sample was transferred from to \_\_\_\_\_ at (location)\_\_\_\_\_ on and that the statements in this block are correct. Evidentiary Seals: Not Sealed Seals Intact: Yes No 🗍 Signatures

ANAL' PLEASE REQUIR	YSES REQUESTED CHECK THE APPROPRIATE ED. WHENEVER POSSIBLE	BOXES BELOW TO I LIST SPECIFIC CO	NDIC/ MPOUI	L ATE T NDS S	AB. No.: ORG- THE TYPE OF ANALYTICA SUSPECTED OR REQUIRED	1167 L SCREENS
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	ALIPHATIC HYDROCARBO AROMATIC HYDROCARBON HALOGENATED HYDROCAF GAS CHROMATOGRAPH/MA	N SCREEN SCREEN BON SCREEN SS SPECTROMETER			ALIPHATIC HYDROCAR CHLORINATED HYDROC CHLOROPHENOXY ACID HYDROCARBON FUEL S ORGANOPHOSPHATE PE POLYCHLORINATED BI POLYNUCLEAR AROMAT TRIAZINE HERBICIDE	BONS CARBON PESTICIDES O HERBICIDES CREEN STICIDES PHENYLS (PCB's) IC HYDROCARBONS S
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	F MPOUND	INALYTICAL	RE:	SUL :OMI	TS POUND	
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Seal(s) I certi sample on this Date(s) I certi with th	Intact: Yes NOX fy that I followed sta unless otherwise noted page accurately refle of analysis: fy that I have reviewe e statements in this b	ERTIFICATE OF ANA Seal(s) broken Indard laboratory and that the sta the analytical Analyst and concur with lock. Reviewers	LYTIC by: proce temer 's st the signa	CAL F edure nts i ults ignat anal ature	ERSONNEL des on handling and an an this block and the for this sample. sure: ytical results for the Meyer M	ate: alysis of this analytical data his sample and

RECEIVED ALDAILS NOTIT - 520	USER 59300	🗆 59600 , 🕅 отн	ER: 82235	· · · ·
Collection DATE SIT		2 Mon Well	3 Phillips	Lusk
Collection TIME ATION	Collection site description		1)	2001
Collected by Person/Agency Builen		ashenn	paliene	GOSPLO
	, त्रिद्धिः		4" Mon We	el
INVIRONMENTAL BUREAC	DIVISION AN 20	1986		······································
INAL State Land Office Bi	ldg, P0 Box 2088	TON DIVISION -		· · · · · · · · · · · · · · · · · · ·
Attn David Bover	CIL CONSERVA			. '
		Sta	ntion/	
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Bailed Dump Water level		Discharge	Sample type.	<u>A</u> /
Dipped Tap 3	8.00°07W	Pumpes ~ 58	pm 6	KU6
6.7 (Final) Conductivity	μαθο μmho		°C	25°C (00094)
Field comments Pumped Todr	yner (10	80 unhose	21°C). Ja	mples
by pailer ables	105min 1	povery		
No. of samples	ole	old with		
			habbe 1/. O2.H	
submitted (Non-filtered	d) <b>Δ. F</b> : 0.45 μmem	brane filter <b>A:</b> 2 ml	H <sub>2</sub> SO <sub>4</sub> /L added	
submitted     Image: (Non-filtered       XNA: No acid added     Image: Other-specify	d)	brane filter	H₂SO₄/L added	
Submitted (Non-filtered (Non-filtered (Non-filtered )) (Non-filtered ) (Non-fi	3) <b>Φ Γ</b> : 0.45 μmem	brane filter	H <sub>2</sub> SO <sub>4</sub> /L added	- Data anal
Submitted (Non-filtered NA: No acid added Cher-specify NALYTICAL RESULTS from SAMPLES F, NA	d) Φ F: 0.45 µmem	F, NA	H <sub>2</sub> SO <sub>4</sub> /L added	s Date anal
submitted       (Non-filtered         NA: No acid added       Other-specify         NALYTICAL RESULTS from SAMPLES         F, NA         Conductivity (Corrected)         25°C (00095)	d) Units Date analyzed μmho <u>12/(8</u>	F, NA         X Calcium (00915)         A Calcium (00925)	H <sub>2</sub> SO <sub>4</sub> /L added	s Date anal 1 <u>12-36</u> 1 <u>1</u>
submitted (Non-filtered NA: No acid added Cother-specify ANALYTICAL RESULTS from SAMPLES F, NA Conductivity (Corrected) 25°C (00095) Total non-filterable	d) <b>Δ F</b> : 0.45 μmem /: <u>Units Date analyzed</u> <u>μmho</u> <u>12/(8</u>	F, NA         X Calcium (00915)         Magnesium (00925)         Sodium (00930)         Y Potassium (00935)	H <sub>2</sub> SO <sub>4</sub> /L added Unit: 1 25,6 mg/ 258,15 mg/ 234,6 mg/ 2,73 mg/	s Date anal
submitted       Image: (Non-filtered (Non-filt	d) Units Date analyzed μmho12/( 8	F. NA         X Calcium (00915)         Magnesium (00925)         Sodium (00930)         Potassium (00935)         Bicarbonate (00440)	H <sub>2</sub> SO <sub>4</sub> /L added Unit 1 25.6 mg/ 258.15 mg/ 234.6 mg/ 2.73 mg/ 804.7 mg/	s Date anal $1 - \frac{12 - 36}{1}$ $1 - \frac{12}{1}$ $1 - \frac{12}{18}$
submitted       (Non-filtered         NA: No acid added       Other-specify         ANALYTICAL RESULTS from SAMPLES         F, NA         Conductivity (Corrected)         25°C (00095)         Total non-filterable         residue (suspended)         (00530)         Other:	d) Units Date analyzed μmho(2/(8 mg/l 12/18	F, NA         X Calcium (00915)         Magnesium (00925)         Sodium (00930)         Potassium (00935)         Bicarbonate (00440)         Chloride (00940)	H <sub>2</sub> SO <sub>4</sub> /L added Unit: 1 25.6 mg/ 258.15 mg/ 234.6 mg/ 2.73 mg/ 804.7 mg/ 615.7 mg/	s Date anal 1 - 12 - 36 1 - 12 1 - 12 1 - 12 1 - 12 1 - 12 1 - 12 1 - 12
submitted       (Non-filtered         NA: No acid added       Other-specify         ANALYTICAL RESULTS from SAMPLES         Image: Specify and the specify         ANALYTICAL RESULTS from SAMPLES         Image: Specify and the specify         Conductivity (Corrected)         25°C (00095)         3368         Image: Total non-filterable residue (suspended) (00530)         Image: Other:         Image: Other:         Image: Other:         Image: Other:         Image: Other:         Image: Other:	d) <b>Δ F</b> : 0.45 μmem /: <u>Units Date analyzed</u> μmho <u>12/(8</u> mg/l <u>12/18</u>	F, NA         X Calcium (00915)         Magnesium (00925)         Sodium (00930)         Potassium (00935)         Bicarbonate (00440)         Chloride (00940)         Sulfate (00945)         Total filterable residue	H <sub>2</sub> SO <sub>4</sub> /L added Unit: 1 25.6 mg/ 2.58.15 mg/ 2.73 mg/ 2.73 mg/ 804.7 mg/ 615.7 mg/	s Date anal 12-30 1-12-30 1-12 1-12 1-12 18 1/2/18 1/2/3
submitted       (Non-filtered         NA: No acid added       Other-specify         ANALYTICAL RESULTS from SAMPLES         IF, NA         Conductivity (Corrected)         25°C (00095)         Total non-filterable         residue (suspended)         (00530)         Other:         Other:         Other:         Other:	d) Units Date analyzed mmho2/(_8 mg/l12/18	F. NA         X Calcium (00915)         Magnesium (00925)         Sodium (00930)         Potassium (00935)         Bicarbonate (00440)         Chloride (00940)         Sulfate (00945)         Total filterable residue (dissolved) (70300)	H <sub>2</sub> SO <sub>4</sub> /L added Unit: 1 25,6 mg/ 258,15 mg/ 234,6 mg/ 2,73 mg/ 804.7 mg/ 615.7 mg/ 365 mg/ 2,530 mg/	$\begin{array}{c c} s & Date anal\\ 1 & 12-36\\ 1 & 1\\ 1 & 1\\ 1 & 1\\ 1 & 1\\ 1 & 1\\ 1 & 12 \\ 1 & 11\\ 1 & 11\\ 1 & 12 \\ 1 & 1\\ 1 & 12 \\ 1 & 1\\ 1 & 12 \\ 1 & 1\\$
submitted       (Non-filtered)         XNA: No acid added       Other-specify         ANALYTICAL RESULTS from SAMPLES         F; NA         Conductivity (Corrected)         25°C (00095)         Total non-filterable         residue (suspended)         (00530)         Other:         Other:         Other:	d) Units Date analyzed $\mu$ mho $12/(8$ mg/l 12/18	F, NA         Calcium (00915)         Magnesium (00925)         Sodium (00930)         Potassium (00935)         Bicarbonate (00440)         Chloride (00940)         Sulfate (00945)         Total filterable residue (dissolved) (70300)         Other:	H <sub>2</sub> SO <sub>4</sub> /L added Unit: 1 25,6 mg/ 258,15 mg/ 2,73 mg/ 2,73 mg/ 615.7 mg/ 615.7 mg/ 36.5 mg/ 2,5 30 mg/ 0,47	
submitted       (Non-filtered         NA: No acid added       Other-specify         NALYTICAL RESULTS from SAMPLES         IF, NA         Conductivity (Corrected)         25°C (00095)         Total non-filterable         residue (suspended)         (00530)         Other:         Other:         Other:         Other:         NF, A-H <sub>2</sub> SO <sub>4</sub>	d) Units Date analyzed mmho2/(_8 mg/l12/18	F, NA         X Calcium (00915)         Magnesium (00925)         Sodium (00930)         Potassium (00935)         Bicarbonate (00440)         Chloride (00940)         Sulfate (00945)         Total filterable residue (dissolved) (70300)         Other:	H <sub>2</sub> SO <sub>4</sub> /L added Unit: 1 25.6 mg/ 258.15 mg/ 273 mg/ 2.73 mg/ 804.7 mg/ 615.7 mg/ 36.5 mg/ 2.5 30 mg/ 3.5 30 mg/	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$
submitted       (Non-filtered         NA: No acid added       Other-specify         ANALYTICAL RESULTS from SAMPLES         #F, NA         Conductivity (Corrected)       3368         Total non-filterable residue (suspended) (00530)       7,81         Other:       7,81         Other:       7,81         Other:       7,81         NF, A-H2SO4       Nitrate-N.+, Nitrate-N total (00630)	d)	F. NA         A: 2 ml         A: 2 ml         Calcium (00915)         Magnesium (00925)         Sodium (00930)         Potassium (00935)         Bicarbonate (00440)         Chloride (00940)         Sulfate (00945)         Total filterable residue (dissolved) (70300)         Other:         F, A-H <sub>2</sub> SO <sub>4</sub> Nitrate N ± Nitrate N	H <sub>2</sub> SO <sub>4</sub> /L added Unit: 1 25.6 mg/ 258.15 mg/ 2,73 mg/ 2,73 mg/ 615.7 mg/ 615.7 mg/ 365 mg/ 2,530 mg/ 2,530 mg/ 2,530 mg/ 2,530 mg/	$\begin{array}{c c} s & Date anal\\ 1 & 12 - 36 \\ 1 & 1 \\ 1 & 1 \\ 1 & 1 \\ 1 & 1 \\ 1 & 1 \\ 1 & 1/2 $
submitted (Non-filtered   XNA: No acid added Other-specify     ANALYTICAL RESULTS from SAMPLES   F, NA   Conductivity (Corrected)   25°C (00095)   Total non-filterable   residue (suspended)   (00530)   Other:   Other:   Other:   Nitrate-N.+, Nitrate-N   total (00630)   Ammonia-N total (00610)	d) Units Date analyzed umho(2/(8) mg/li i i i i i i	F, NA         Calcium (00915)         Magnesium (00925)         Sodium (00930)         Potassium (00935)         Bicarbonate (00440)         Chloride (00940)         Sulfate (00945)         Total filterable residue (dissolved) (70300)         Chther:         F, A-H <sub>2</sub> SO <sub>4</sub> Nitrate-N + , Nitrate-N dissolved (00631)	H <sub>2</sub> SO <sub>4</sub> /L added Unit: 1 $25.6$ mg/ 2.58.15 mg/ 2.73 mg/ 2.73 mg/ 615.7 mg/ 615.7 mg/ 2.530 mg/ 2.530 mg/ 2.530 mg/ 2.28	s Date anal 12-30 1-12-30 1-12 1-12 1-12 12/18 1-12/13 1-12/17 12/17 12/17
submitted       (Non-filtered         NA: No acid added       Other-specify         ANALYTICAL RESULTS from SAMPLES         IF, NA         Conductivity (Corrected)         25°C (00095)         Total non-filterable         residue (suspended)         (00530)         Other:         Other:         Other:         Other:         NF, A-H <sub>2</sub> SO <sub>4</sub> Nitrate-N +, Nitrate-N         total (00630)         Ammonia-N total (00610)         Total Kjeldahl-N	d) Units Date analyzed mmho2/(_8	F, NA         X Calcium (00915)         Magnesium (00925)         Sodium (00930)         Potassium (00935)         Bicarbonate (00440)         Chloride (00945)         Total filterable residue (dissolved) (70300)         Other:         F, A-H <sub>2</sub> SO <sub>4</sub> Nitrate-N +, Nitrate-N dissolved (00631)         Ammonia-N dissolved	H <sub>2</sub> SO <sub>4</sub> /L added Unit: 1 25.6 mg/ 258.15 mg/ 273 mg/ 2.73 mg/ 804.7 mg/ 615.7 mg/ 56.5 mg/ 72.5 30 mg/ 2.5 30 mg/ 2.28 mg/ 0.47 mg/ 2.28 mg/	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$
submitted       (Non-filtered         Image: NA: No acid added       Other-specify         ANALYTICAL RESULTS from SAMPLES         Image: NA         Image: NA         Image: NA         Image: NA: No acid added         Imag	d)	F. NA         Calcium (00915)         Magnesium (00925)         Sodium (00930)         Potassium (00935)         Bicarbonate (00440)         Chloride (00940)         Sulfate (00945)         Total filterable residue (dissolved) (70300)         Other:         F, A-H <sub>2</sub> SO <sub>4</sub> Nitrate-N +, Nitrate-N dissolved (00631)         Ammonia-N dissolved (00608)	H <sub>2</sub> SO <sub>4</sub> /L added Unit: 1 25.6 mg/ 258.15 mg/ 273 mg/ 273 mg/ 615.7 mg/ 615.7 mg/ 2530 mg/ 2530 mg/ 2,530 mg/ 2,530 mg/ 2,530 mg/ 0,47 2,28	
submitted       (Non-filtered)         Image: NA: No acid added       Other-specify         ANALYTICAL RESULTS from SAMPLES         Image: NA         Image: NA         Image: NA         Image: NA: No acid added         Image: No acid added	d)	F, NA         Calcium (00915)         Magnesium (00925)         Sodium (00930)         Potassium (00935)         Bicarbonate (00440)         Chloride (00940)         Sulfate (00945)         Total filterable residue (dissolved) (70300)         Chher:         F, A-H <sub>2</sub> SO <sub>4</sub> Nitrate-N + , Nitrate-N dissolved (00631)         Ammonia-N dissolved (00608)         Total Kjeldahl-N	H <sub>2</sub> SO <sub>4</sub> /L added Unit: 1 $25.6$ mg/ 2.58.15 mg/ 2.73 mg/ 2.73 mg/ 615.7 mg/ 615.7 mg/ 2.530 mg/ 2.530 mg/ 2.530 mg/ 2.28	s Date anal 1 - 12 - 36 1 - 12 1 - 12
submitted       (Non-filtered         Image: NA: No acid added       Other-specify         ANALYTICAL RESULTS from SAMPLES         Image: F, NA         Image: Conductivity (Corrected)         25°C (00095)         Image: Total non-filterable residue (suspended) (00530)         Image: Other:         Im	d)	F, NA         X Calcium (00915)         Magnesium (00925)         Sodium (00930)         Potassium (00935)         Bicarbonate (00440)         Chloride (00940)         Sulfate (00945)         Total filterable residue (dissolved) (70300)         Other:         F, A-H <sub>2</sub> SO <sub>4</sub> Nitrate-N +, Nitrate-N dissolved (00631)         Ammonia-N dissolved (00608)         Total Kjeldahl-N (         )         Other:	H <sub>2</sub> SO <sub>4</sub> /L added Unit: 1 25.6 mg/ 258.15 mg/ 2.73 mg/ 304.7 mg/ 6/5.7 mg/ 56.5 mg/ 72.5 30 mg/ 2.28 mg/ 2.28 mg/ mg/ 	s Date anal 1 - 12 - 36 1 - 12 - 36 1 - 12 - 18 1 - 12 - 17 1 - 12
submitted       (Non-filtered         Image: NA: No acid added       Other-specify         ANALYTICAL RESULTS from SAMPLES         Image: NA         Image: Conductivity (Corrected) 25°C (00095)         Image: Stress of the stress	d)	F. NA         Calcium (00915)         Magnesium (00925)         Sodium (00930)         Potassium (00935)         Bicarbonate (00440)         Chloride (00940)         Sulfate (00945)         Total filterable residue (dissolved) (70300)         Other:         F. A-H <sub>2</sub> SO <sub>4</sub> Nitrate-N + , Nitrate-N dissolved (00631)         Ammonia-N dissolved (00608)         Total Kjeldahl-N ( )         Other:	H <sub>2</sub> SO <sub>4</sub> /L added Unit: 1 25,6 mg/ 258,15 mg/ 273 mg/ 273 mg/ 615.7 mg/ 615.7 mg/ 2530 mg/ 2,530 mg/ 2,530 mg/ 2,530 mg/ 2,530 mg/ 0,47 2,28	
submitted       (Non-filtered)         Image: NA: No acid added       Other-specify         ANALYTICAL RESULTS from SAMPLES         Image: F, NA         Image: Conductivity (Corrected)         25°C (00095)         Image: Total non-filterable residue (suspended) (00530)         Image: Total (00630)         Image: Total (00630)         Image: Total Kjeldahl-N (())         Image: Total organic carbon ()         Image: Total organi	d)	F, NA         X Calcium (00915)         Magnesium (00925)         Sodium (00930)         Potassium (00935)         Bicarbonate (00440)         Chloride (00940)         Sulfate (00945)         Total filterable residue (dissolved) (70300)         Other:         F, A-H <sub>2</sub> SO <sub>4</sub> Nitrate-N +, Nitrate-N dissolved (00631)         Ammonia-N dissolved (00608)         Total Kjeldahl-N ( )         Other:	H <sub>2</sub> SO <sub>4</sub> /L added Unit: 1 25.6 mg/ 258.15 mg/ 2.73 mg/ 2.73 mg/ 6/5.7 mg/ 56.5 mg/ 72.5 30 mg/ 2.28 mg/ 0.47	s Date anal 1 - 12 - 30 1 - 12 - 30 1 - 12 - 18 1 - 12 - 18 1 - 12 - 18 1 - 12 - 17 1 - 12
submitted       (Non-filtered)         Image: NA: No acid added       Other-specify         Image: NA: No acid added       Image: Other-specify         Image: No acid added       Image: Other-specify         Image: No acid added       Image: Other-specify         Image: Other:       Image: Other-specify <td>d)</td> <td>F, NA         Calcium (00915)         Magnesium (00925)         Sodium (00930)         Potassium (00935)         Bicarbonate (00440)         Chloride (00940)         Sulfate (00945)         Total filterable residue (dissolved) (70300)         Other:         F, A-H<sub>2</sub> SO<sub>4</sub>         Nitrate-N +, Nitrate-N dissolved (00631)         Ammonia-N dissolved (00608)         Total Kjeldahl-N ( )         Other:         Analyst</td> <td>H<sub>2</sub>SO<sub>4</sub>/L added Unit: 1 25.6 mg/ 2.73 mg/ 2.73 mg/ 2.73 mg/ 36.5 mg/ 2.530 mg/ 2.530 mg/ 2.530 mg/ 2.28 2.28 mg/ 2.28 mg/ 1 2.9 mg/ 2.28</td> <td>s Date anal 1 2.30 1 12.30 1 12.30 1 12.30 1 12.18 1 12.13 1 12.13 1 12.17</td>	d)	F, NA         Calcium (00915)         Magnesium (00925)         Sodium (00930)         Potassium (00935)         Bicarbonate (00440)         Chloride (00940)         Sulfate (00945)         Total filterable residue (dissolved) (70300)         Other:         F, A-H <sub>2</sub> SO <sub>4</sub> Nitrate-N +, Nitrate-N dissolved (00631)         Ammonia-N dissolved (00608)         Total Kjeldahl-N ( )         Other:         Analyst	H <sub>2</sub> SO <sub>4</sub> /L added Unit: 1 25.6 mg/ 2.73 mg/ 2.73 mg/ 2.73 mg/ 36.5 mg/ 2.530 mg/ 2.530 mg/ 2.530 mg/ 2.28 2.28 mg/ 2.28 mg/ 1 2.9 mg/ 2.28	s Date anal 1 2.30 1 12.30 1 12.30 1 12.30 1 12.18 1 12.13 1 12.13 1 12.17
submitted       (Non-filtered         Image: NA: No acid added       Other-specify         ANALYTICAL RESULTS from SAMPLES         Image: Frequencies         Image: Frequencies         Image: Solution of the second stress of the	d)	F. NA         Calcium (00915)         Magnesium (00925)         Sodium (00930)         Potassium (00935)         Bicarbonate (00440)         Chloride (00940)         Sulfate (00945)         Total filterable residue (dissolved) (70300)         Other:         F, A-H <sub>2</sub> SO <sub>4</sub> Nitrate-N +, Nitrate-N dissolved (00631)         Ammonia-N dissolved (00608)         Total Kjeldahl-N ( )         Other:	H <sub>2</sub> SO <sub>4</sub> /L added Unit: 1 25.6 mg/ 258.15 mg/ 234.8 mg/ 2,73 mg/ 615.7 mg/ 615.7 mg/ 615.7 mg/ 2,5 30 mg/ 2,5 30 mg/ 2,5 30 mg/ 2,5 30 mg/ 0,47 2,28 Date Reported Rev 1 14 86 Mev	s Date anal 1 - 12 - 36 1 - 12 - 36 1 - 12 - 36 1 - 12 - 36 1 - 12 - 37 1 - 12 - 17 1 - 12

	New Mexico Hea SCIENTIFIC LAE 700 Camino de S Albuquerque, NM	ilth and Environment BORATORY Salud NE A 87106 — (505) 841-	t Department N Aj -2555	GE	and NITRO	ATER CHEMI	STRY SIS
DATE BECEIVED 1/2	V2 185 N	1 5280		n ☐ 59600 XX ∩	тыға: 822	235	· · · ·
Collection DATE 2/		SITE INFORM-►	Sample location	nd Montecil		Killips L	usk
A45 Collected by Person	Agency / -		Collection site description			Vatural a	Car Plance
Reye	21 Bail			H9:1111	······		
. V			मितिग्रिय			Mon Luci	
SEND FINAL REPORT TO ►	NM OIL CONS State Land Santa Fe, i David Boy	SERVATION DI Office Bldg NM 87501	VISION 18 19 PO BOX 208 CONSERVATIO	05 N DIVISION		······································	
	·			j. j.	Station/		·····
					well code Owner		
SAMPLING CO		Water lovel		Discharge	l	Sample type	······································
Dipped		Water level 38.	.00 DTW	Pumper &	EPM		16
pH (00400) 6.	7 (Final)	Conductivity (Unco	orrected) ອີວີວີ μmho	Water Terfip. (00010) ノミ	3 °C	Conductivity at 25	°C (00094) µmho
Field comments	Pumpel	Todrey.	202 F. 12	80 unabol	2 21°	= ). Jan	noles
by	bailez.	effer 1	05 min	reinery	· · · · · · · · · · · · · · · · · · ·		· · · · · · · · · · · · · · · · · · ·
SAMPLE FIELD	D TREATMEN	<b>F</b> — Check prope	er boxes	······································			
No. of samples	/ 🗆 NF	Whole sample (Non-filtered)	F: Filtered in	field with <b>XA:</b> 21	ml H₂SO₄/L	added	1. 21 <sup>1</sup>
			<u></u>				
	id added 🛛 🖓	ther-specific	· ·				
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ANALYTICAL F	id added 🛛 C	Other-specify:	Units Date analyze	d F. NA		Units	Date analyzed
NA: No ac     ANALYTICAL F     NF, NA     Conductivity ((	id added	Other-specify:	Units Date analyze	d F. NA		Units mg/i	Date analyzed
NA: No ac     ANALYTICAL F     NF, NA     Conductivity ((     25°C (00095)	id added  Corrected)	Other-specify:	Units Date analyze μmho	d F. NA Calcium (00915) Magnesium (00925) Sodium (00930)		Units mg/i mg/i	Date analyzed
NA: No ac     ANALYTICAL F     NF, NA     Conductivity ((     25°C (00095)     Total non-filter     residue (susse)	id added	Other-specify:	Units Date analyze	d F, NA Calcium (00915) Magnesium (00925) Sodium (00930) Potassium (00935)		Units mg/i _ mg/i _ mg/i _ mg/i _	Date analyzed
<ul> <li>NA: No ac</li> <li>ANALYTICAL F</li> <li>NF, NA</li> <li>Conductivity (0 25°C (00095)</li> <li>Total non-filter residue (suspe (00530)</li> </ul>	id added	Other-specify:	<u>Units Date analyze</u> μmho mg/l	d F. NA Calcium (00915) Magnesium (00925) Sodium (00930) Potassium (00935) Bicarbonate (00440) Chlorida (00940)		Units mg/i mg/i mg/i mg/i mg/i	Date analyzed
<ul> <li>NA: No ac</li> <li>ANALYTICAL F</li> <li>NF, NA</li> <li>Conductivity ( 25°C (00095)</li> <li>Total non-filter residue (suspe (00530)</li> <li>Other:</li> </ul>	id added	Other-specify:	Units Date analyze μmho mg/l	d       F. NA		Units mg/i _ mg/i _ mg/i _ mg/i _ mg/i _ mg/i _	Date analyzed
<ul> <li>NA: No ac</li> <li>ANALYTICAL F</li> <li>NF, NA</li> <li>Conductivity (( 25°C (00095))</li> <li>Total non-filter residue (suspe (00530)</li> <li>Other:</li> <li>Other:</li> <li>Other:</li> </ul>	id added	Other-specify:	<u>Units Date analyze</u> μmho mg/l	d F. NA Calcium (00915) Magnesium (00925) Sodium (00930) Potassium (00935) Bicarbonate (00440) Chioride (00945) Sulfate (00945) Total filterable residue (2000)		Units mg/i mg/i mg/i mg/i mg/i	Date analyzed
<ul> <li>NA: No ac</li> <li>ANALYTICAL F</li> <li>NF, NA</li> <li>Conductivity ((25°C (00095))</li> <li>Total non-filter, residue (suspective)</li> <li>Total non-filter, residue (suspective)</li> <li>Other:</li> <li>Other:</li> <li>Other:</li> <li>Other:</li> </ul>	id added	Other-specify:	Units Date analyze μmho mg/l	d       F. NA         Calcium (00915)         Magnesium (00925)         Sodium (00930)         Potassium (00935)         Bicarbonate (00440)         Chloride (00940)         Sulfate (00945)         Total filterable residue (dissolved) (70300)         Other:		Units mg/i mg/i mg/i mg/i mg/i mg/i	Date analyzed
□ NA: No ac         ANALYTICAL F         NF, NA         □ Conductivity ((25°C (00095))         □ Total non-filter:         residue (suspection)         □ Other:         □ Other:         □ Other:         □ Other:         □ Nitrate NI + NI	id added	Other-specify:	Units Date analyze μmho mg/l	d       F. NA <ul> <li>Calcium (00915)</li> <li>Magnesium (00925)</li> <li>Sodium (00930)</li> <li>Potassium (00935)</li> <li>Bicarbonate (00440)</li> <li>Chloride (00940)</li> <li>Sulfate (00945)</li> <li>Total filterable residue (dissolved) (70300)</li> <li>Other:</li> </ul>		Units mg/i mg/i mg/i mg/i mg/i mg/i	Date analyzed
□ NA: No ac         ANALYTICAL F         NF, NA         □ Conductivity ((25°C (00095))         □ Total non-filter:         residue (suspection)         □ Other:         □ Other:         □ Other:         □ Other:         □ Nitrate-N + , N total (00630)	id added	Other-specify:	<u>Units Date analyze</u> μmho mg/l 	d       F. NA <ul> <li>Calcium (00915)</li> <li>Magnesium (00925)</li> <li>Sodium (00930)</li> <li>Potassium (00935)</li> <li>Bicarbonate (00440)</li> <li>Chloride (00940)</li> <li>Sulfate (00945)</li> <li>Total filterable residue (dissolved) (70300)</li> <li>Other:</li> </ul> <li>F, A-H<sub>2</sub> SO<sub>4</sub></li> <li>X Nitrate-N <sup>+</sup>, Nitrate-N</li>		Units mg/i mg/i mg/i mg/i mg/i mg/i	Date analyzed
□ NA: No ac         ANALYTICAL F         NF, NA         □ Conductivity ((25°C (00095))         □ Total non-filter, residue (suspective)         (00530)         □ Other:         □ Other:         □ Other:         □ Other:         □ Nitrate-N +, N total (00630)         □ Ammonia-N to         □ Total Kialdath	id added	Other-specify:	Units Date analyze μmho mg/l mg/l mg/l	d       F, NA <ul> <li>Calcium (00915)</li> <li>Magnesium (00925)</li> <li>Sodium (00930)</li> <li>Potassium (00935)</li> <li>Bicarbonate (00440)</li> <li>Chloride (00940)</li> <li>Sulfate (00945)</li> <li>Total filterable residue (dissolved) (70300)</li> <li>Other:</li> </ul> <li>F, A-H<sub>2</sub> SO<sub>4</sub></li> <li>X Nitrate-N + , Nitrate-N dissolved (00631)</li>	· · · · · · · · · · · · · · · · · · ·	Units mg/i	Date analyzed
□ NA: No ac         ANALYTICAL F         NF, NA         □ Conductivity ((25°C (00095))         □ Total non-filter:         residue (suspection)         □ Other:         □ Total Kjeldahi-()         () □ Otal Kjeldahi-()	id added  C RESULTS from Corrected) able ended) itrate-N tal (00610) N	Other-specify:	<u>Units Date analyze</u> μmho mg/l  mg/l mg/l	d       F. NA <ul> <li>Calcium (00915)</li> <li>Magnesium (00925)</li> <li>Sodium (00930)</li> <li>Potassium (00935)</li> <li>Bicarbonate (00440)</li> <li>Chloride (00940)</li> <li>Sulfate (00945)</li> <li>Total filterable residue (dissolved) (70300)</li> <li>Other:</li> </ul> <li>F, A-H2 SO4</li> <li>Nitrate-N + , Nitrate-N dissolved (00631)</li> <li>Ammonia-N dissolved (00608)</li>	d	Units mg/i mg/i mg/i mg/i mg/i mg/i mg/i mg/i	Date analyzed
□ NA: No ac         ANALYTICAL F         NF, NA         □ Conductivity (0         25°C (00095)         □ Total non-filter:         residue (suspection)         □ Other:         □ Other:         □ Other:         □ Other:         □ Nitrate-N +, N         total (00630)         □ Ammonia-N to         □ Total Kjeldahl-()         □ Chemical oxyge demand (0034)	id added	Other-specify:	Units Date analyzer  µmho mg/l mg/l mg/l mg/l	d       F. NA <ul> <li>Calcium (00915)</li> <li>Magnesium (00925)</li> <li>Sodium (00930)</li> <li>Potassium (00935)</li> <li>Bicarbonate (00440)</li> <li>Chloride (00940)</li> <li>Sulfate (00945)</li> <li>Total filterable residue (dissolved) (70300)</li> <li>Other:</li> </ul> <li>F. A-H2 SO4</li> <li>Nitrate-N + , Nitrate-N dissolved (00631)</li> <li>Ammonia-N dissolved (00608)</li> <li>Total Kjeldahl-N</li>	d <u>O</u> ,	Units mg/lmg/lmg/lmg/lmg/lmg/lmg/lmg/lmg/lmg/l	Date analyzed
□ NA: No ac         ANALYTICAL F         NF, NA         □ Conductivity (( 25°C (00095))         □ Total non-filter: residue (suspection)         □ Other:         □ Chemical (00630)         □ Ammonia-N to         □ Chemical oxyge demand (0034         □ Total organic c	id added	Other-specify:	Units Date analyze μmho mg/l mg/l mg/l mg/l mg/l mg/l	d       F. NA <ul> <li>Calcium (00915)</li> <li>Magnesium (00925)</li> <li>Sodium (00930)</li> <li>Potassium (00935)</li> <li>Bicarbonate (00440)</li> <li>Chioride (00945)</li> <li>Sulfate (00945)</li> <li>Total filterable residue (dissolved) (70300)</li> <li>Other:</li> </ul> <li>F, A-H<sub>2</sub> SO<sub>4</sub></li> <li>Nitrate-N + , Nitrate-N dissolved (00631)</li> <li>Ammonia-N dissolved (00608)</li> <li>Total Kjeldahl-N</li>	d <u>O</u> ,	Units           mg/l	Date analyzed 12/9 12/4 12/4 12/9
□ NA: No ac         ANALYTICAL F         NF, NA         □ Conductivity ((25°C (00095))         □ Total non-filter:         residue (suspection)         □ Other:         □ Other:         □ Other:         □ Other:         NF, A-H2SO4         □ Nitrate-N + N         total (00630)         □ Ammonia-N to         □ Total Kjeldahl-()         □ Chemical oxyg         demand (0034         □ Total organic c         () □ Other:	id added	Other-specify:	Units Date analyzer  µmho mg/l mg/l mg/l mg/l mg/l mg/l	d       F. NA <ul> <li>Calcium (00915)</li> <li>Magnesium (00925)</li> <li>Sodium (00930)</li> <li>Potassium (00935)</li> <li>Bicarbonate (00440)</li> <li>Chioride (00940)</li> <li>Sulfate (00945)</li> <li>Total filterable residue (dissolved) (70300)</li> <li>Other:</li> </ul> <li>F, A-H2 SO4</li> <li>Nitrate-N + , Nitrate-N dissolved (00631)</li> <li>Ammonia-N dissolved (00608)</li> <li>Total Kjeldahl-N             <ul> <li>Other:</li> <li>Other:</li> </ul> </li>	d 0,	Units mg/i mg/i mg/i mg/i mg/i mg/i mg/i mg/i	Date analyzed
□ NA: No ac         ANALYTICAL F         NF, NA         □ Conductivity (( 25°C (00095))         □ Total non-filter: residue (suspection)         □ Other:         □ Chemical oxyge demand (0034         □ Total organic c         ( ) Other:         □ Other:         □ Other:	id added  C RESULTS from Corrected) able ended) itrate-N itrate-N itrate(00610) N gen H0) sarbon	Other-specify:	Units Date analyze μmho mg/l mg/l mg/l mg/l mg/l mg/l mg/l	d       F. NA <ul> <li>Calcium (00915)</li> <li>Magnesium (00925)</li> <li>Sodium (00930)</li> <li>Potassium (00935)</li> <li>Bicarbonate (00440)</li> <li>Chloride (00945)</li> <li>Chloride (00945)</li> <li>Total filterable residue (dissolved) (70300)</li> <li>Other:</li> </ul> <li>F, A-H<sub>2</sub> SO<sub>4</sub></li> <li>Nitrate-N + , Nitrate-N dissolved (00631)</li> <li>Ammonia-N dissolved (00608)</li> <li>Total Kjeldahl-N</li>	d 0, 1 0, 1 0, 1 0, 1 1 Date Re	Units           mg/l	Date analyzed 12/9 12/9 12/9 12/9 12/9 12/9 12/9 12/9 12/9
□ NA: No ac         ANALYTICAL F         NF, NA         □ Conductivity ((25°C (00095))         □ Total non-filter:         residue (suspection)         □ Other:         □ Chemical oxygedemand (0034         □ Total organic constant         □ Other:	id added	Other-specify:	Units Date analyzer μmho mg/l mg/l mg/l mg/l mg/l mg/l	d       F. NA <ul> <li>Calcium (00915)</li> <li>Magnesium (00925)</li> <li>Sodium (00930)</li> <li>Potassium (00935)</li> <li>Bicarbonate (00440)</li> <li>Chloride (00940)</li> <li>Sulfate (00945)</li> <li>Total filterable residue (dissolved) (70300)</li> <li>Other:</li> </ul> <li>F, A-H2 SO4</li> <li>Nitrate-N + , Nitrate-N dissolved (00631)</li> <li>Ammonia-N dissolved (00608)</li> <li>Total Kjeldahl-N             <ul> <li>Other:</li> <li>Analyst</li> </ul> </li>	d 0, 1.1 Date Re 1.2	Units mg/l	Date analyzed 12/9 12/9 12/4 12/9 red by Oleman
□ NA: No ac         ANALYTICAL F         NF, NA         □ Conductivity ((25°C (00095))         □ Total non-filter:         residue (suspective (suspective))         □ Other:         □ Other:         □ Other:         □ Other:         □ Nitrate-N +, N         total (00630)         □ Ammonia-N to         □ Total Kjeldahl-(         (         □ Chemical oxygedemand (0034         □ Total organic co         (         □ Other:         □ Other:         □ Other:	id added	Other-specify:	Units Date analyzer μ(mho	d       F. NA <ul> <li>Calcium (00915)</li> <li>Magnesium (00925)</li> <li>Sodium (00930)</li> <li>Potassium (00935)</li> <li>Bicarbonate (00440)</li> <li>Chloride (00945)</li> <li>Total filterable residue (dissolved) (70300)</li> <li>Other:</li> </ul> <li>F, A-H<sub>2</sub> SO<sub>4</sub></li> <li>X Nitrate-N + , Nitrate-N dissolved (00631)</li> <li>X Ammonia-N dissolved (00608)</li> <li>Total Kjeldahl-N (</li>	d 0, 1 0, 1 0, 1 1 Date Re 1 2	Units mg/l	Date analyzed 12/9 12/4 12/4 12/9 red by <i>O.l.m.</i>
□ NA: No ac         ANALYTICAL F         NF, NA         □ Conductivity ((25°C (00095))         □ Total non-filter:         residue (suspection)         □ Other:         □ Chemical oxyge demand (0034         □ Other:	id added	Other-specify:	Units Date analyze μmho mg/l mg/l mg/l mg/l mg/l mg/l	d       F. NA <ul> <li>Calcium (00915)</li> <li>Magnesium (00925)</li> <li>Sodium (00930)</li> <li>Potassium (00935)</li> <li>Bicarbonate (00440)</li> <li>Chioride (00940)</li> <li>Sulfate (00945)</li> <li>Total filterable residue (dissolved) (70300)</li> <li>Other:</li> </ul> <li>F, A-H2 SO4</li> <li>Nitrate-N + , Nitrate-N dissolved (00631)</li> <li>Ammonia-N dissolved (00608)</li> <li>Total Kjeldahl-N (</li>	d 0, Date Re 12	Units mg/I	Date analyzed 12/9 12/9 12/9 12/9 12/9 12/9 12/9 12/9 12/9 12/9 12/9

GOLDENROD --- SLD

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CENTED I/2 / 2 / 2 / 2 / 2 / 2 / 2 / 2 / 2 / 2	ATE 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2		×X 2	- 82235	
SIV_PCI       INFORM - MON.         WEIGHT - MON.       MON.         Contention as escipance and the second and the	ECEIVED / 2 02 5 NO. H/1 -/		0 <u>59600</u> <u>OTHE</u>	A: 02233	· .
HATS       International Stress of the second		0RM->	na mon well-	S Phillips Lice	
MCLIC: // Recurrent       Initial Lay MCLIC: Childrent         No       ENVIRONMENTAL BUREAU INN GIL CONSERVATION DIVISION       JAN 13 1985         No       INITIAL REPORT CONSERVATION DIVISION       Santa Fe, NM 87501         Attr:       David Boyar       Santa Fe, NM 87501         Attr:       Conductively (Incorrected)       Water Feefic (0000)         Indoornees       Conductively (Incorrected)       Water Feefic (0000)         Indoornees       Conductively (Incorrected)       Jumho         Meld comments       Pump CD Boby (Incorrected)       Jumho         May CD Boby (Incorrected)       Incorrected)       Jumho         No of samples       Incorrected)       Incorrected         No of samples       Incorrected)       Incorrected         Incorrected       Incorrected       Incorrected         Incorrected       Incorrected       Incorrected         Incorrected       Incorected       Incorrected      <	H44-5	Collection site description	JFA0/15/101	Naturne Garple	red
NO       ENVIRONMENTAL BUREAU       JAN 13 1985         NO       MM OTL CONSERVATION DIVISION Santa Fe, NM 87501       SANTA #5         PORT       Santa Fe, NM 87501       SANTA #5         Attr:       Lazda Lado Office Bldg, PO-BOS 2085WATION DIVISION Santa Fe, NM 87501       Santa #5         Attr:       Data Each Jano Office Bldg, PO-BOS 2085WATION DIVISION Santa Fe, NM 87501       Santa #5         Attr:       Data Each Jano Office Bldg, PO-BOS 2085WATION DIVISION Santa Fe, NM 87501       Sample Upe Consultation         Y Bailed       Pump       Water fixed       Sample Upe Consultation       Sample Upe Consultation         Y Bailed       Consultation       Consultation       Sample Upe Consultation       Sample Upe Consultation       Sample Upe Consultation         Y Consultation       Consultation       Sample Upe Consultation       Sample Upe Consultation       Sample Upe Consultation       Sample Upe Consultation         Y Consultation       Consultation       Yano Consultation       Sample Consultation       Sample Consultation         Y Consultation       Consultation       Yano Consultation       Sample Consultation       Sample Consultation         Y Consultation       Yano Consultation       Yano Consultation       Sample Consultation       Sample Consultation         Y Consultation       Yano Consultation <td< td=""><td>Royal Backer</td><td>יושואויי</td><td>MELLE ATT</td><td></td><td>·····</td></td<>	Royal Backer	יושואויי	MELLE ATT		·····
No       EVENTIONED THE BORNED OF UNIS IN A state Land Office Bidg, POLOSCAPSEVATION DIVISION State Land Office Bidg, POLOSCAPSEVATION DIVISION Attr:David_Boyer		MAL MAL JAN	13 1985	4 Mon Weel	
ALL PORT         State Land Office Bldg, P0-288 208 MATA FS           Attr:	NM OIL CONSERVATIO	N DIVISION			·····
Attn:       David.Boyer         Attn:       David.Boyer         Attn:       David.Boyer         Attn:       David.Boyer         Attn:       David.Boyer         Ballot       Pump         Ower       Sample type         Discharge       Ower         Z Balled       Pump         Water level       38.001 DTW         JBDO       Discharge         Water level       38.001 DTW         JBDO       Discharge         Water level       Conductivity (Uncorrected)         JBDO       JDDO         JBDO       JDDO         JBDO       JDDO         JAMPLES       Conductivity (Uncorrected)         JMPLE FIELD TREATMENT - Check proper boxes         No of samples       JONE:         No of samples       INF:         White Sample       F: Filtered in field with         JAS JUNNA       Mark No acid added         Other:       Other specify:         NALYTICAL RESULTS from SAMPLES       Magnesium (00935)         Conductivity (Corrected)       Magnesium (00935)         JOHER       Sate analyzed         Conductivity (Corrected)       Bachonate (00446)         Sta	NAL State Land Office	Bldg, PO-Box-2088	RVATION DIVISION	<u>4</u>	
Attr:	Santa Fe, NM 87501	•	ANIA		
XMPLING CONDITIONS       Vater level       38.001 bT/w       Display         2 Bailed       Pump       Water level       38.001 bT/w       Display       Sample type         100900       Conductivity (Uncorrected)       Water Terfs. (00010)       8 oc       Conductivity at 25°C (00094)         H (00400)       Conductivity (Uncorrected)       Water Terfs. (00010)       8 oc       Conductivity at 25°C (00094)         H (00400)       Conductivity (Uncorrected)       Water Terfs. (00010)       8 oc       Conductivity at 25°C (00094)         H (00400)       Conductivity (Uncorrected)       Water Terfs. (00010)       8 oc       Conductivity at 25°C (00094)         Interfs.       Marker Terfs. (Non-Iteractor)       F. Filtered in field with       WA:       2 ocnductivity (Corrected)         NA : No acid added       Other-specify:       Water Terfs. (00915)       mg/l       HM/Q         2 conductivity (Corrected)	Attn:Uav10_Boyer	- <u>*</u>		· · · · · · · · · · · · · · · · · · ·	
AMPLING CONDITIONS         Owner           Z Bailed         Pump         Water level         38.00 DTw         Discharge         Sample type         Child S           Dipped         Tap         Conductivity (Uncorrected)         IDBPD µmh0         Water TeMp. (00010)         S oc         Conductivity at 25°C (00094)         µmh0           Water TeMp. (00010)         Conductivity at 25°C (00094)         IDBPD µmh0         Water TeMp. (00010)         S oc         Conductivity at 25°C (00094)         µmh0           Water TeMp. (00010)         Conductivity at 25°C (00094)         IDBPD µmh0         Water TeMp. (0010)         S oc         Sample S         Sample S           MAPLE FIELD TREATMENT - Check proper boxes         No of samples         F. Fittered in field with         IDA:         Sample S         Sample S           No cold added         Other-specify:         NALYTICAL RESULTS from SAMPLES         Marca         Marca         mg/l         Social (00930)         mg/l         Social (00440)         mg/			Stati well		
Z Baied       Pump       Water level       38.001 Disped       Sample type       Sample type <td< td=""><td>AMPLING CONDITIONS</td><td>· .</td><td>Own</td><td>er</td><td></td></td<>	AMPLING CONDITIONS	· .	Own	er	
Initial Conductivity (Decreted)       Image: I	Z Bailed Pump Water level	38 00' MW	Discharge	Sample type	-
b. / [Guide]       1900 µmh0       18 °C       µmh0         ield comments       Pumpe()       10 druine fill       10 80 µmhail @ 21 %       . Sample fill         ield comments       Pumpe()       10 fill and	(00400) $(-)$ $(-)$ $(-)$ $(-)$ $(-)$ $(-)$ $(-)$ $(-)$ $(-)$	tv (Uncorrected)	Water Terrip. (00010)	Conductivity at 25°C (00094)	
ield comments       pumped       Dedruiners       [1090       pumbed1@Diff       Sampled         AMPLE FIELD TREATMENT - Check proper boxes       No. of sample       [NF: Whole sample       Vertice and the sample       [NF: Whole sample       [NF: filtered]       [NF: Whole sample       [NF: filtered]       [NA: No acid added       [Non-filtered]       [NA: No acid added       [Other-specify:       [NA: No acid added       [Other-specify:       [NA: Social added]       [Nat No acid added]       [Nat	6.) (Final)	1880 µmho	18	°C μι	mho
AMPLE FIELD TREATMENT - Check proper boxes         AMPLE FIELD TREATMENT - Check proper boxes         No. of sample submitted       NF. Whole sample (Non-filtered)         NA: No acid added       Other-specify:         NA: No acid added       Other-specify:         NALYTICAL RESULTS from SAMPLES       MADO3         "Mathematication of the sample state analyzed state analyzed state analyzed state analyzed state analyzed state an	ield comments Pumped Dd	runer (10	80 umbal @	2/°C). Samples	J ,
AMPLE FIELD TREATMENT - Check proper boxes         No. of samples       INF: Whole sample         INF: Whole sample       F: Filtered in field with 0.45 µmembrane filter         INA: No acid added       Other-specify:         NALYTICAL RESULTS from SAMPLES       Inits Date analyzed         Magnesium (00935)       mg/l         Conductivity (Corrected)       µmho         Conductivity (Corrected)       Galcium (00915)         Total non-filterable       mg/l         Insistence       Sodium (00925)         Insistence       Sodium (00935)         Insistence       Sodiatic (00945)         Insistence       Sodiatic (00945)         Insistence       Sodium (0093	Lu hailan etter	VIDSmin	piner u		
AMPLE FIELD TREATMENT - Check proper boxes         No. of samples       INF: Whole sample       F: Filtered in field with 0.45 µmembrane filter       IA: Grant Sont 1.200 H.200 H.400  H.400 H.400 H.4000 H.400 H.400 H.400 H.400 H.400 H.400 H.400 H		<i>f</i>			
No. of samples       NF.       Whole sample (Non-filtered)       NF.       Piltered in field with (A: 2 control of the control of th	AMPLE FIELD TREATMENT - Check	(proper boxes			
□ NA: No acid added       □ Other-specify:       Units Date analyzed       F. NA       Units       Date analyzed         □ Conductivity (Corrected)		<u></u>	· · · · · · · · · · · · · · · · · · ·		<u> </u>
NALYTICAL RESULTS from SAMPLES       Units Date analyzed       F, NA       Units       Date analyzed         Conductivity (Corrected)	No. of samples / C NF: Whole sa submitted / C NF: Whole sa (Non-filte	ample ered) <b>Κ. F:</b> Filtered in t 0.45 μmer	nbrane filter	H2802th added 4 ml Fee	- 789 /
Conductivity (Corrected)       µmho       □ Calcium (00915)       mg/l         25°C (00095)       µmho       □ Magnesium (00925)       mg/l         □ Total non-filterable       □ Sodium (00930)       mg/l         □ Sodium (00930)       mg/l       □         □ Ottar:       ↓ Potassium (00935)       mg/l         □ Ottar:       ↓ Potassium (00945)       mg/l         □ Ottar:       ↓ Potassium (00945)       mg/l         □ Ottar:       ↓ Potassium (00945)       mg/l         □ Ottar:       ↓ Dotassium (00945)       mg/l         □ Other:       ↓ Ottar (0040)       mg/l         □ Other:       ↓ Ottar (00630)       mg/l         □ Armonia-N total (00610)       mg/l       □ Nitrate-N + , Nitrate-N +	No. of samples submitted     Image: Non-filter (Non-filter)       Image: Non-filter     Image: Non-filter       Image: Non-filter     Image: Non-filter	ample <b>F:</b> Filtered in fored) <b>F:</b> 0.45 µmer	ield with nbrane filter	Hesouth added 4 ml Fee	- 799 /
25°C (00095)       µmho       Image: Magnesium (00925)       mg/l         I Total non-filterable       Potassium (00930)       mg/l         I Total non-filterable       Potassium (00930)       mg/l         I Total non-filterable       Potassium (00930)       mg/l         I Other:       Image: Potassium (00940)       mg/l         I Total filterable residue       (dissolved) (70300)       mg/l         I Other:       Image: Potassium (00630)       mg/l       Image: Potassium (00631)         I Total Kjeidahl-N       Image: Potassium (00630)       mg/l       Image: Potassium (00608)         I Other:       Image: Potassium (00630)       mg/l       Image: Potassium (00630)       mg/l         I Other:       Image: Potassium (00630)       mg/l       Image: Potassium (00608)       mg/l	No. of samples submitted / NF: Whole sa (Non-filte) NA: No acid added  Other-spec NALYTICAL RESULTS from SAMPLE	Ample F: Filtered in t ered) F: 0.45 μmer cify: S Units Date analyzed	ield with nbrane filter	Units Date analys	zeci
Total non-filterable       img/l       img/l         residue (suspended)       mg/l       img/l       img/l         (00530)       img/l       img/l       img/l       img/l         Other:       img/l       img/l       img/l       img/l       img/l         Other:       img/l       img/l       img/l       img/l       img/l       img/l         Other:       img/l       <	No. of samples submitted / NF: Whole sa (Non-filte NA: No acid added Other-spece NALYTICAL RESULTS from SAMPLE Conductivity (Corrected)	ample ered) F: Filtered in t 0.45 μmer Sify: S Units Date analyzed	F, NA   Calcium (00915)	Units Date analys	zeci
residue (suspended)       mg/l	No. of samples submitted NF: Whole sa (Non-filte NA: No acid added Other-spece NALYTICAL RESULTS from SAMPLE Conductivity (Corrected)	ample F: Filtered in ored) F: 0.45 μmer cify: S Units Date analyzed	I     F, NA       I     Calcium (00915)       I     Magnesium (00925)	Leson         Anded         And Sec           Units         Date analys	zed
Other:	No. of samples submitted NF: Whole sa (Non-filte NA: No acid added Other-spect NALYTICAL RESULTS from SAMPLE Conductivity (Corrected) 25°C (00095) Total non-filterable	ample ample F: Filtered in to 0.45 μmen cify: S Units Date analyzed μmho	F, NA   Calcium (00915)   Magnesium (00925)   Sodium (00930)   Potassium (00935)	Units         Date analys	zed
Other:	No. of samples submitted NF: Whole sa (Non-filte NA: No acid added Other-spect NALYTICAL RESULTS from SAMPLE Conductivity (Corrected) 25°C (00095) Total non-filterable residue (suspended) (00530)	ample F: Filtered in t ored) F: 0.45 μmer cify: S Units Date analyzed μmho	Ield with         nbrane filter         I F, NA         Calcium (00915)         Magnesium (00925)         Sodium (00930)         Potassium (00935)         Bicarbonate (00440)	Units         Date analys           mg/l         mg/l           mg/l         mg/l           mg/l         mg/l	zeci
Other:       (dissolved) (70300)       mg/l         IF, A-H_2SO_4       Other:	No. of samples submitted NF: Whole sa (Non-filte NA: No acid added Other-spect NALYTICAL RESULTS from SAMPLE Conductivity (Corrected) 25°C (00095) Total non-filterable residue (suspended) (00530) Other: CAD South	ample F: Filtered in t ored) F: 0.45 μmer cify: S Units Date analyzed μmho mg/l	Ield with         nbrane filter         F, NA         Calcium (00915)         Magnesium (00925)         Sodium (00930)         Potassium (00935)         Bicarbonate (00440)         Chloride (00945)         Sulfate (00945)	Units         Date analys	zed
INF, A-H2SO4       Content         Nitrate-N +, Nitrate-N       mg/l         Ammonia-N total (00610)       mg/l         Total Kjeldahl-N       mg/l         Chemical oxygen       mg/l         demand (00340)       mg/l         Total organic carbon       mg/l         Other:       mg/l         Other:       mg/l         Other:       mg/l         Date Reported       Reviewed by         Inter:       Inter:         Analyst       Date Reported         Reviewed by       mg/l         Analyst       Mate Reported         Reviewed by       mg/l         Analyst       Mate Reported	No. of samples       Submitted       Whole samples         Submitted       NF:       Whole samples         NA: No acid added       Other-spectrom         NALYTICAL RESULTS from SAMPLE         NE-MR         Conductivity (Corrected)         25 °C (00095)         Total non-filterable         residue (suspended)         (00530)         Other:         Other:         A	ample F: Filtered in t ored) 0.45 μmer cify: S Units Date analyzed μmho mg/l	Ield with         nbrane filter         F, NA         Calcium (00915)         Magnesium (00925)         Sodium (00930)         Potassium (00935)         Bicarbonate (00440)         Chloride (00940)         Sulfate (00945)         Total filterable residue	Units         Date analys           mg/l	zed
Nitrate-N + , Nitrate-N       mg/l       F, A-H <sub>2</sub> SO <sub>4</sub> total (00630)       mg/l       lissolved (00631)       mg/l         Ammonia-N total (00610)       mg/l       lissolved (00631)       mg/l         Total Kjeldahl-N       mg/l       lissolved (00631)       mg/l         Chemical oxygen       mg/l       lissolved (00608)       mg/l         Chemical oxygen       mg/l       lissolved (00608)       mg/l         Total Kjeldahl-N       lissolved (00608)       mg/l       lissolved (00608)         Total organic carbon       mg/l       lissolved (00ther:       mg/l         Other:       mg/l       lissolved lissol	No. of samples submitted NF: Whole sa (Non-filte NA: No acid added Other-spect NALYTICAL RESULTS from SAMPLE Conductivity (Corrected) 25°C (00095) Total non-filterable residue (suspended) (00530) Other: Other: Other: Other:	ample F: Filtered in to ored) V F: 0.45 μmer cify: S Units Date analyzed mmho	Ield with         nbrane filter         F, NA         Calcium (00915)         Magnesium (00925)         Sodium (00930)         Potassium (00935)         Bicarbonate (00440)         Chloride (00945)         Sulfate (00945)         Total filterable residue         (dissolved) (70300)	Units         Date analys           Units         Date analys           mg/l	zed
Interviewed by       Interviewed by         Image: Animonia - N total (00610)       Image: Animonia - N total (00631)       Image: Animonia - N dissolved (00631)         Image: Animonia - N total (00610)       Image: Animonia - N dissolved (00631)       Image: Animonia - N dissolved (00631)         Image: Animonia - N dissolved (00630)       Image: Animonia - N dissolved (00608)       Image: Animonia - N dissolved (00608)         Image: Animonia - N dissolved (00340)       Image: Animonia - N dissolved (00608)       Image: Animonia - N dissolved (00608)         Image: Animonia - N dissolved (00340)       Image: Animonia - N dissolved (00608)       Image: Animonia - N dissolved (00608)         Image: Animonia - N dissolved (00340)       Image: Animonia - N dissolved (00608)       Image: Animonia - N dissolved (00608)         Image: Animonia - N dissolved (00340)       Image: Animonia - N dissolved (00608)       Image: Animonia - N dissolved (00608)         Image: Animonia - N dissolved (00340)       Image: Animonia - N dissolved (00608)       Image: Animonia - N dissolved (00608)         Image: Animonia - N dissolved (00340)       Image: Animonia - N dissolved (00608)       Image: Animonia - N dissolved (00608)         Image: Animonia - N dissolved (00340)       Image: Animonia - N dissolved (00608)       Image: Animonia - N dissolved (00608)         Image: Animonia - N dissolved (00340)       Image: Animonia - N dissolved (00608)       Image: Animonia - N dissolved (00608)	No. of samples       Submitted       Whole satisfies         NA: No acid added       Other-spect         NA: No acid added       Other-spect         NALYTICAL RESULTS from SAMPLE         Conductivity (Corrected)         25 °C (00095)         Total non-filterable         residue (suspended)         (00530)         Other:         Other:         Other:         Solution         Other:         Solution         Other:         Solution         Other:         Solution         Other:         Solution         Solution	ample F: Filtered in t ored) 0.45 μmer cify: S Units Date analyzed μmho mg/l	Ield with         nbrane filter         F, NA         Calcium (00915)         Magnesium (00925)         Sodium (00930)         Potassium (00935)         Bicarbonate (00440)         Chloride (00940)         Sulfate (00945)         Total filterable residue (dissolved) (70300)         Other:	Units         Date analys           Units         Date analys           mg/l	zed
Total Kjeldahl-N       mg/l       mg/l       mg/l         Chemical oxygen demand (00340)       mg/l       Total Kjeldahl-N       mg/l         Total organic carbon ()       mg/l       mg/l       mg/l         Other:       mg/l       Other:       mg/l         Other:       Mnalyst       Date Reported       Reviewed by         Iz       31       85       mg/lythered         aboratory remarks       Magutud       Magutud       Magutud	No. of samples submitted NF: Whole sa (Non-filte NA: No acid added Other-spect NALYTICAL RESULTS from SAMPLE Conductivity (Corrected) Conductivity (Corrected) Conducti	ample F: Filtered in to ored) VF: 0.45 μmer cify: S Units Date analyzed μmho mg/l	ield with         nbrane filter         F, NA         Calcium (00915)         Magnesium (00925)         Sodium (00930)         Potassium (00935)         Bicarbonate (00440)         Chloride (00940)         Sulfate (00945)         Total filterable residue         (dissolved) (70300)         Other:         F, A-H <sub>2</sub> SO <sub>4</sub>	Units         Date analys	zed
( )       mg/l       mg/l       mg/l         Chemical oxygen demand (00340)       mg/l       Total Kjeldahl-N       mg/l         Total organic carbon ( )       mg/l       mg/l       mg/l         Other:       mg/l       Img/l       Img/l         Other:       Img/l       Img/l       Img/l         Other:       Img/l       Img/l       Img/l         Other:       Img/l       Img/l       Img/l         Other:       Img/l       Img/l       Img/l         Img/l       Img/l       Img/l       Img/l       Img/l         Img/l       Img/l       Img/l       Img/l       Img/l </td <td>No. of samples submitted       Image: NF: Whole sate (Non-filte NA: No acid added       Image: NF: Whole sate (Non-filte State         Image: NA: No acid added       Image: Other-spectrum         Image: Other:       Image: Other-spectrum</td> <td>ample ample x F: Filtered in t 0.45 µmer cify: S Units Date analyzed µmho mg/l mg/l</td> <td>Image: Image: /td> <td>Units         Date analys           Units         Date analys           mg/l        </td> <td>zed</td>	No. of samples submitted       Image: NF: Whole sate (Non-filte NA: No acid added       Image: NF: Whole sate (Non-filte State         Image: NA: No acid added       Image: Other-spectrum         Image: Other:       Image: Other-spectrum	ample ample x F: Filtered in t 0.45 µmer cify: S Units Date analyzed µmho mg/l mg/l	Image: Image:	Units         Date analys           Units         Date analys           mg/l	zed
demand (00340)       mg/l       Instal Kjeldahl-N         1 Total organic carbon       ()       mg/l       mg/l         ()       Instal organic carbon       Instal organic       mg/l       Instal organic         ()       Instal organic carbon       Instal organic       Instal organic       Instal organic         ()       Instal organic       Instal organic       Instal organic       Instal organic         ()       Instal organic       Instal organic       Instal organic       Instal organic         ()       Instal organic       Instal organic       Instal organic       Instal organic         ()       Instal organic       Instal organic       Instal organic       Instal organic         ()       Instal organic       Instal organic       Instal organic       Instal organic         ()       Instal organic       Instal organic       Instal organic       Instal organic         ()       Instal organic       Instal organic       Instal organic       Instal organic         ()       Instal organic       Instal organic       Instal organic       Instal organic         ()       Instal organic       Instal organic       Instal organic       Instal organic       Instal organic         ()       Instal organic	No. of samples submitted       Image: NF: Whole sate (Non-filter Description of the samples (Non-filter NALYTICAL RESULTS from SAMPLE Description of the sample NALYTICAL RESULTS from SAMPLE Description of the sample Sample of the sample Sample of the sample Sample of the sample Sample of the sample Sample of the sample Sample of the sample Sample of the sample Non-filterable residue (suspended) (00530)       Image: Sample of the sample Sample of the sample Sample of the sample Sample of the sample Sample of the sample of the sample of the sample Sample of the sample of the sample of the sample of the sample Sample of the sample of the sam	ample arred       F: Filtered in to 0.45 μmer         cify:       0.45 μmer         S       Units Date analyzed         μmho	F, NA   Calcium (00915)   Magnesium (00925)   Sodium (00930)   Potassium (00935)   Bicarbonate (00440)   Chloride (00940)   Sulfate (00945)   Total filterable residue   (dissolved) (70300)   Other:   F, A-H <sub>2</sub> SO <sub>4</sub> Nitrate-N + , Nitrate-N   dissolved (00631)   Ammonia-N dissolved	Units         Date analys           Units         Date analys           mg/l	zeci
Total organic carbon       mg/l       I Other:         I Other:       Analyst       Date Reported.         Reviewed by       12 31 85       Implably         aboratory remarks       Aigested	No. of samples submitted       Image: NF: Whole sate (Non-filte NA: No acid added       Image: NF: Whole sate (Non-filte added         Image: NA: No acid added       Image: Other-spect Other: Sete         Image: NA: No acid added       Image: Other-spect Other-spect         Image: NA: No acid added       Image: Other-spect         Image: Other:       Image: Other-spect	ample F: Filtered in 1 0.45 μmer cify: S Units Date analyzed μmho mg/l mg/l mg/l	Ield with         nbrane filter         I F, NA         Calcium (00915)         Magnesium (00925)         Sodium (00930)         Potassium (00935)         Bicarbonate (00440)         Chloride (00940)         Sulfate (00945)         Total filterable residue (dissolved) (70300)         Other:         F, A-H <sub>2</sub> SO <sub>4</sub> Nitrate-N +, Nitrate-N dissolved (00631)         Ammonia-N dissolved (00608)	Units         Date analys           Units         Date analys           mg/l	zed
Other:	No. of samples submitted       NF: Whole sa (Non-filte Result of the samples (Non-filte NA: No acid added       Other-spect Other-spect NALYTICAL RESULTS from SAMPLE         NE: MA: No acid added       Other-spect Other-spect         Conductivity (Corrected)       25°C (00095)         Conductivity (Corrected)       25°C (00095)         Total non-filterable residue (suspended) (00530)       Conter: Cother:         Other:       Conter:         Other:	ample arred       F:       Filtered in to 0.45 μmer 0.45 μmer         cify:       0.45 μmer         S       Units Date analyzed	iield with         nbrane filter         F, NA         Calcium (00915)         Magnesium (00925)         Sodium (00930)         Potassium (00935)         Bicarbonate (00440)         Chloride (00940)         Sulfate (00945)         Total filterable residue         (dissolved) (70300)         Other:         F, A-H2 SO4         Nitrate-N +, Nitrate-N         dissolved (00631)         Ammonia-N dissolved         (00608)         Total Kjeldahl-N         (	Leebath       added       Am/ See         Units       Date analys         mg/l	zeci
aboratory remarks aigested	No. of samples submitted       Image: NF: Whole sate (Non-filte NA: No acid added       Image: NF: Whole sate (Non-filte added         Image: NA: No acid added       Image: Other-spect Other: Sete         Image: NA: Notal (00630)       Image: Other-spect Other: Sete         Image: NA: Notal (00610)       Image: Other-spect Other: Sete         Image: Na: Notal (00340)       Image: Other-spect Other-spect Other-spect Other-s	ample pred)       F: Filtered in 1 0.45 μmer         cify:       0.45 μmer         S       Units Date analyzed         μmho	Ield with       Image: A:	Units         Date analys           mg/l         mg/l	zed
aboratory remarks digested	No. of samples submitted       Image: NF: Whole sate (Non-filte NA: No acid added       Image: NF: Whole sate (Non-filte added         Image: NA: No acid added       Image: Other-spect Other: Sate         Image: Other: Sate       Image: Other-spect Other: Sate         Image: Other: O	ample arrol       F: Filtered in to 0.45 μmer         cify:       0.45 μmer         S       Units Date analyzed         μmho	Image: Inter Image:	Units       Date analysis         Units       Date analysis         mg/l       mg/l	zeci
ugested (/ /	No. of samples submitted       NF:       Whole sa (Non-filte (Non-filte         NA: No acid added       Other-spect         NALYTICAL RESULTS from SAMPLE         Solution       Samples         Conductivity (Corrected)         25°C (00095)         Total non-filterable residue (suspended) (00530)         Other:       Samples         Other:       Samples         Other:       Samples         Nitrate-N + Nitrate-N total (00630)       Samples         Nitrate-N + Nitrate-N total (00630)       Samples         Chemical oxygen demand (00340)       Samples         Other:       Samples         Other:       Samples         Other:       Samples	ample pred)       F: Filtered in to 0.45 μmer 0.45 μmer         cify:       0.45 μmer         S       Units Date analyzed         μmho	iield with         nbrane filter         F, NA         Calcium (00915)         Magnesium (00925)         Sodium (00930)         Potassium (00935)         Bicarbonate (00440)         Chloride (00940)         Sulfate (00945)         Total filterable residue (dissolved) (70300)         Other:         F, A-H <sub>2</sub> SO <sub>4</sub> Initrate-N + , Nitrate-N dissolved (00631)         Ammonia-N dissolved (00608)         Total Kjeldahl-N ()         Other:	Leedade       Am/ See         Units       Date analys         mg/l       mg/l	zed
	No. of samples   submitted     NR: No acid added   NA: No acid added   Other-spect     NALYTICAL RESULTS from SAMPLE   NE-MR   Conductivity (Corrected)   25°C (00095)     Total non-filterable   residue (suspended)   (00530)   Other:   Other:   Other:     NF, A-H2SO4     Nitrate-N + Nitrate-N   total (00630)   Ammonia-N total (00610)   Total organic carbon   (   Other:   Other:     Other:     Ammonia-N total (00610)     Total organic carbon   (   Other:     Other:     Ammonia N total (00610)     Total organic carbon   (   Other:     Other:     Animonia N total (00610)     Total organic carbon   (   Other:     Other:	ample arrole arrol       F: Filtered in to 0.45 μmer 0.45 μmer         cify:       0.45 μmer         S       Units Date analyzed         μmho	Image: Image:	Units         Date analys           Units         Date analys           mg/l         mg/l           mg/l         mg/l	zed

SI\_D 726 (12/84) DISTRIBUTION: WHITE - EID, GW&HW Bureau CANARY - WS System PINK - EID Local Office GOLDENROD - SLD

- Lab Number: <u>1967</u> Date Submitted: <u>11/22/85</u> By: <u>Boyer</u>

sample ce: Pond Mon well #3 Date Analyzed: 12/14/85 Reviewed By: Jim Cally Date Reported:  $\frac{12/31/85}{2}$ 

Element	ICAP VALUE (MG/L)	AA VALUE (MG/L)
Aluminum	<u> </u>	
Barium	0.3	
Berylium	<u> </u>	· · · · · · · · · · · · · · · · · · ·
Boron	0.4	
Cadmium		
Calcium	100.	· · · · · · · · · · · · · · · · · · ·
Chromium	20.1	
Cobalt	<u> &lt;0.1</u>	
Copper	40.1	
Iron	3.6	
Lead	<0.1	
Magnesium	230.	·
Manganese	0.83	
Molybdenum	20.1	
Nickel	<0.1	·
Silicon	17	
Silver	<0.	and a second second second second second second second second second second second second second second second
Strontium	3.9	<u></u>
Tin	<0.1	· · ·
Vanadium	20.1	. <del>.</del>
Zinc	40.1	
Arsenic		0.053
Selenium		< 0.005
Mercury		

<b>25</b> - 1159 -C	
	SCIENTIFIC LABORATORY DIVISION
STATE OF NEW MEXICO	- Albuquerque, NM 87106 841-2570
ENVIRONMENT DEL 191	
DAVID GANBOYER	5. L. D. NO.: OR-1159 HB
PLEASE PRINT NEW MEXICO OIL CONSERVATION I	DIV DATE REC. : $12/32/85$
P.O. BOX 2088	SLD_PRIORITY #:
SANTA FE, NM 87501	
PHONE(S): 827-5812	USER CODE: [8] 2] 2] 3] 5]
SUBMITTER: D. BOYCR	SUBMITTER CODE:
SAMPLE TYPE: WATER , SOIL ], OTHER	SAMPLE TYPE CODE:
COLLECTED: 85/11/21-15:30 BY 2013	
SOURCE: Pond Mon Well #4	
NEAREST CITY: Carlsbad	CODE: []
LOCATION: Phillips Lusk Gas Plan	
pH= 6.4; Conductivity= 950 umho/cm a	t _/8 °C; Chlorine Residual=
Dissolved Oxygen=mg/l; Alkalinity	=; Flow Rate=
Sampling Location, Methods and Remarks	(i.e. odors, etc.)
4" Well pumped dry In ("IL"	
	ump. Sampred by area asea
2hr 10min necevery. Pumped	Cond 1320@ 212
I certify that the statements in this b	lock accurate reflect the results
<b>The Jomin Recovery Pumped</b> I certify that the statements in this b of my field analyses, observations and	lock accurately reflect the results activities.
<b>The Jomin Recovery Pumped</b> I certify that the statements in this b of my field analyses, observations and Method of shipment to the Laboratory	lock accurately reflect the results activities. <u>My Bays</u>
<b>This form accompanies Septum Vials</b> ,	lock accurately reflect the results activities. <u>Magazy</u> Glass Jugs,
<b>L</b> certify that the statements in this b of my field analyses, observations and Method of shipment to the Laboratory This form accompaniesSeptum Vials, Containers are marked as follows to ind [ NP: No preservation; sample	Cond 1320 2/2 lock accurately reflect the results activities. <u>Hissys</u> Glass Jugs, icate preservation: stored at room temperature.
<b>L</b> certify that the statements in this b of my field analyses, observations and Method of shipment to the Laboratory This form accompanies Septum Vials, Containers are marked as follows to ind NP: No preservation; sample P-Ice Sample stored in an ice P-Na_S_O; Sample preserved with Na	Inck accurately reflect the results activities. Glass Jugs, icate preservation: stored at room temperature. bath (not frozen). Soo, to remove chlorine residual.
<b>2</b> hy 10 min recovery. Pumped I certify that the statements in this b of my field analyses, observations and Method of shipment to the Laboratory This form accompanies Septum Vials, Containers are marked as follows to ind NP: No preservation; sample P-Ice Sample stored in an ice $P-Na_2S_2O_3$ ; Sample preserved with Na	Cond 1320 2/2 lock accurately reflect the results activities. Glass Jugs, icate preservation: stored at room temperature. bath (not frozen). 2 <sup>S</sup> 2 <sup>O</sup> 3 to remove chlorine residual.
<b>Jhy Jomin Revuents</b> . <b>Pumped</b> I certify that the statements in this b of my field analyses, observations and Method of shipment to the Laboratory This form accompanies <b>D</b> Septum Vials, Containers are marked as follows to ind D NP: No preservation; sample <b>P</b> -Ice Sample stored in an ice D P-Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> ; Sample preserved with Na I (we) certify that this sample was trans	Cond 1320 2/2 lock accurately reflect the results activities. Glass Jugs, icate preservation: stored at room temperature. bath (not frozen). 2 <sup>S</sup> 2 <sup>O</sup> 3 to remove chlorine residual.
<b>Jhy Jomin Revuery</b> . Pumped I certify that the statements in this b of my field analyses, observations and Method of shipment to the Laboratory This form accompaniesSeptum Vials, Containers are marked as follows to ind NP: No preservation; sample Method in an ice P-Ice Sample stored in an ice P-Na_2S_2O_3; Sample preserved with Na I (we) certify that this sample was tra- to at (location	lock accurately reflect the results activities. Glass Jugs, icate preservation: stored at room temperature. bath (not frozen). 2 <sup>S</sup> 2 <sup>O</sup> 3 to remove chlorine residual. on'
<b>Jhy IDmin Reputery</b> . Pumped I certify that the statements in this b of my field analyses, observations and Method of shipment to the Laboratory This form accompaniesSeptum Vials, Containers are marked as follows to ind NP: No preservation; sample P-Ice Sample stored in an ice P-Na_2S_0_3; Sample preserved with Na I (we) certify that this sample was tra to at (location and that the state	lock accurately reflect the results activities. Glass Jugs, icate preservation: stored at room temperature. bath (not frozen). 2 <sup>S</sup> 2 <sup>O</sup> 3 to remove chlorine residual. 
<b>L</b> certify that the statements in this b of my field analyses, observations and Method of shipment to the Laboratory This form accompaniesSeptum Vials, Containers are marked as follows to ind NP: No preservation; sample P-Ice Sample stored in an ice P-Na_2S_2O_3; Sample preserved with Na I (we) certify that this sample was tra to at (location and that the state Evidentiary Seals: Not Sealed Se	ump. Samples of etc.         Cond 1320@ 2/2         lock accurately reflect the results         activities.         Max accurately reflect the results         activities.         Glass Jugs,         icate preservation:         stored at room temperature.         bath (not frozen).         2203 to remove chlorine residual.         unsferred from         on'         ements in this block are correct.         als Intact: Yes         No
<b>Jhy IDmin RePURY</b> . Pumped I certify that the statements in this b of my field analyses, observations and Method of shipment to the Laboratory This form accompaniesSeptum Vials, Containers are marked as follows to ind NP: No preservation; sample P-Ice Sample stored in an ice P-Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> ; Sample preserved with Na I (we) certify that this sample was trace to and that the state Evidentiary Seals: Not Sealed Septime Signatures	lock accurately reflect the results activities. Glass Jugs, icate preservation: stored at room temperature. bath (not frozen). 2 <u>S_03 to remove chlorine residual.</u> 
<b>L</b> certify that the statements in this b of my field analyses, observations and Method of shipment to the Laboratory This form accompaniesSeptum Vials, Containers are marked as follows to ind NP: No preservation; sample P-Ice Sample stored in an ice P-Na_2S_2O_3; Sample preserved with Na I (we) certify that this sample was tra- to at (location and that the state Evidentiary Seals: Not Sealed Se Signatures	ump. Samples of etc.         Cond 1320@ 2/2         lock accurately reflect the results         activities.         Max Carrie         Glass Jugs,         icate preservation:         stored at room temperature.         bath (not frozen).         22_0_3 to remove chlorine residual.         unsferred from         units in this block are correct.         eals Intact: Yes         No
<b>Lertify</b> that the statements in this b of my field analyses, observations and Method of shipment to the Laboratory This form accompanies Septum Vials, Containers are marked as follows to ind NP: No preservation; sample P-Ice Sample stored in an ice P-Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> ; Sample preserved with Na I (we) certify that this sample was trans to at (location 	ump. Samples of etc.         Cond 1320@ 2/c         lock accurately reflect the results         activities.         Ump. Carrie         Glass Jugs,         icate preservation:         stored at room temperature.         bath (not frozen).         22203         to remove chlorine residual.         unsferred from         on'         ements in this block are correct.         eals Intact: Yes         No         on         on         on         on
<b>Jhn 10 min recPUENY</b> . Pumped I certify that the statements in this b of my field analyses, observations and Method of shipment to the Laboratory This form accompanies Septum Vials, Containers are marked as follows to ind NP: No preservation; sample P-Ice Sample stored in an ice P-Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> ; Sample preserved with Na I (we) certify that this sample was transformed to and that the state Evidentiary Seals: Not Sealed Se Signatures (we) certify that this sample was transformed (we) certify that this sample was transformed at (location) (we) certify that this sample was transformed (we) certify that this certify that the state	lock accurately reflect the results activities. Glass Jugs, icate preservation: stored at room temperature. bath (not frozen). <u>25203</u> to remove chlorine residual. nsferred from on' ments in this block are correct. als Intact: Yes No nsferred from on ments in this block are correct.
<b>Jhn 10 min recPUPNY. Pumped</b> I certify that the statements in this b of my field analyses, observations and Method of shipment to the Laboratory	ump. Samples of each and a solution.         Cond 1320@ 2/2         lock accurately reflect the results activities.         activities.         Glass Jugs,         icate preservation:         stored at room temperature.         bath (not frozen).         25203 to remove chlorine residual.
Jonnin recovery. Pumped         I certify that the statements in this b         of my field analyses, observations and         Method of shipment to the Laboratory	ump. Samples of etc.         Cond 13 20 212         lock accurately reflect the results         activities.         Ump. Carrie         Glass Jugs,         icate preservation:         stored at room temperature.         bath (not frozen).         .25203 to remove chlorine residual.

<b>ANA</b> PLEAS REQUI	LYSES REQUESTED E CHECK THE APPROPRIATE BOXES BELOW TO RED. WHENEVER POSSIBLE LIST SPECIFIC O	INDIC COMPOU	ATE 1 NDS S	AB. No.: ORG- THE TYPE OF ANALYTICA SUSPECTED OR REQUIRED	<u>1159</u> L SCREENS
QUANTITATIVE	PURGEABLE SCREENS ALIPHATIC HYDROCARBON SCREEN AROMATIC HYDROCARBON SCREEN HALOGENATED HYDROCARBON SCREEN GAS CHROMATOGRAPH/MASS SPECTROMETER	QUALITATIVE	QUANTITATIVE	EXTRACTAE SCREENS ALIPHATIC HYDROCAR CHLORINATED HYDROCA CHLOROPHENOXY ACID HYDROCARBON FUEL S ORGANOPHOSPHATE PES POLYCHLORINATED BI POLYNUCLEAR AROMAT TRIAZINE HERBICIDE	BLE BONS ARBON PESTICIDES HERBICIDES CREEN STICIDES PHENYLS (PCB's) IC HYDROCARBONS S
	SPECIFIC COMPOUNDS	<u> </u>		SPECIFIC COMP	OUNDS
		<u> </u>			·····
REMARE	S :				
			SUL	_15	
halo aron	PMPOUND [PPB] Purg. screen none letected purg. screen none letected			POUND	
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·		┼┼──			
					1 11am /
	ARKS:	<u>  *</u>	DETE	CTION LIMIT	1 mill
Seal(s I cert sample on thi Date(s I cert with t	CERTIFICATE OF AN ) Intact: Yes N0 . Seal(s) broke ify that I followed standard laboratory unless otherwise noted and that the st s page accurately reflect the analytica ) of analysis: <b>Dec S</b> . Analys ify that I have reviewed and concur with he statements in this block. Reviewers	ALYTI n by: proc ateme il res it's s t's s th the s sign	CAL F edure nts i ults ignat anal ature	ERSONNEL da s on handling and and n this block and the for this sample. ure: <u>for the</u> ytical/results for the 	ate: alysis of this analytical data his sample and
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DATE	ABIN ETTIS		T specific IXX ~	LED. 82235	
RECEIVED / / / / / / / / / / / / / / / / / / /	NO. <i>UC _DA   .</i> ∦ SITE SITE INFORM-►		A Mon well	<b>1</b> 4, pl;	llips Lusk
Collected by - Person/Agency	100			Na	Tural Cast
Nog-R/Das	J	VIAG WI	20 1966	·	
END NM OIL CON INAL State Land O Santa Fe,	VTAL BUREAU VSERVATION DIV J Office Bldg, NM 87501	ISION CONSE PO Box 2088	RVATION DIVISION	31 13	
Attn: <u>David Bo</u>	yer	·	 Si	tation/	······
			w O	ell code wner	
Bailed Dump	Water level	- 1 A - 1	Discharge	Sample	type
Dipped Tap	Conductivity (Uncorr	W N7W	V50000 000	mpez Conduc	<b>C C C</b> (00094)
6.4	9	50 μmho	<u> </u>	<b>8</b> °C	μm
AMPLE FIELD TREATMEN No. of samples submitted / No. No. acid added No. of samples	IT — Check proper IF: Whole sample (Non-filtered) Other-specify:	boxes KF: Filtered in fi 0.45 μmem	ield with $\Box A: 2 m$ E ST correct	$H_2SO_4/L$ added to cond $M_1$	d 0 5
AMPLE FIELD TREATMEN No. of samples submitted / N NA: No acid added NALYTICAL RESULTS from F, NA	IT — Check proper IF: Whole sample (Non-filtered) Other-specify: m SAMPLES	boxes KF: Filtered in fi 0.45 μmerr	ield with hbrane filter EST cov	f Il H <sub>2</sub> SO <sub>4</sub> /L added $r con \mathcal{L}$ $   l$	d OS Units Date analyze
AMPLE FIELD TREATMEN No. of samples submitted / N NA: No acid added NALYTICAL RESULTS from F, NA Conductivity (Corrected) 25°C (00095)	IF: Whole sample (Non-filtered) Other-specify: m SAMPLES U 3/15 µr	boxes $\mathbf{K} \mathbf{F}$ : Filtered in filtered in filtered in filtered in filtered in filtered in filtered in filtered in filtered for the filtered	ield with hbrane filter EST corr F, NA Magnesium (00915) Magnesium (00925)	7 nl H₂SO₄/L added r con R \\ l 276 11840	d Units Date analyze
AMPLE FIELD TREATMEN No. of samples submitted N NA: No acid added NALYTICAL RESULTS from F, NA Conductivity (Corrected) 25°C (00095) Total non-filterable residue (suspended)	IT — Check proper IF: Whole sample (Non-filtered) Other-specify: m SAMPLES U 3/15 μr	boxes $\mathbf{K}\mathbf{F}$ : Filtered in filtered i	ield with abrane filter $\Box$ A: 2 m E ST correct F, NA Calcium (00915) Magnesium (00925) Sodium (00935) Potassium (00935) Bischarge (00440)	$\frac{1}{276}$ $\frac{276}{118.0}$ $\frac{276}{118.0}$ $\frac{276}{14.29}$	d Units Date analyze $2 mg/l$ $12-3f_{2}$ mg/l $1/2mg/l$ $mg/lmg/l$ $mg/l$
AMPLE FIELD TREATMEN No. of samples submitted NALYTICAL RESULTS from F, NA Conductivity (Corrected) 25°C (00095) Total non-filterable residue (suspended) (00530) Other: DH	$\begin{array}{c} \textbf{IT} = Check \ proper \\ \textbf{IT} = Check \ proper \\ \textbf{IF}: \ (Non-filtered) \\ \textbf{Other-specify:} \\ \textbf{m SAMPLES} \\ \hline \textbf{U} \\ \hline \textbf{3/15} \\ \mu \textbf{r} \\ \hline \textbf{7.87} \end{array}$	boxes $\mathbf{K}\mathbf{F}$ : Filtered in filtered i	ield with       □       A:       2 m         brane filter       □       A:       2 m         E ST cove       E       Software       Software         F, NA       Magnesium (00915)       Magnesium (00925)       Sodium (00930)         Potassium (00935)       Bicarbonate (00440)       Chloride (00940)         Chloride (00940)       Chloride (00945)       Coverts	$\frac{1}{4}$	d Units Date analyze $2 mg/l$ $12-3f_l$ $mg/l$ $1/2-3f_l$ mg/l $1/2mg/l$ $1/2/18mg/l$ $1/10$
AMPLE FIELD TREATMEN No. of samples submitted NALYTICAL RESULTS from F, NA Conductivity (Corrected) 25°C (00095) Total non-filterable residue (suspended) (00530) Other: D Other:	$\frac{f_{eq}}{11 - Check proper}$ $\frac{11}{11 - Check proper}$	boxes $\mathbf{K}\mathbf{F}$ : Filtered in filtered i	ield with       □       A:       2 m         brane filter       □       A:       2 m         E ST cove       E       ST       Cove         F, NA       Magnesium (00915)       Magnesium (00925)       Sodium (00930)         Potassium (00935)       Bicarbonate (00440)       Chloride (00940)       Sulfate (00945)         Total filterable residue       Total filterable residue       State (00945)       State (00945)	$\frac{1}{276}$ $\frac{276}{118.0}$ $\frac{276}{118.0}$ $\frac{118.0}{4.29}$ $\frac{4.29}{280.2}$ $\frac{4.29}{280.2}$ $\frac{4.29}{2.25}$	d Units Date analyze $\frac{12}{30}$ mg/l mg/l mg/l mg/l mg/l mg/l mg/l l2/l8 mg/l l2/31 mg/l l2/23
AMPLE FIELD TREATMEN No. of samples submitted  NALYTICAL RESULTS from F, NA  Conductivity (Corrected) 25°C (00095)  Total non-filterable residue (suspended) (00530)  Other: Othe	<b>affig J</b> <b>IT</b> — Check proper <b>IF</b> : Whole sample (Non-filtered) Other-specify: <b>m SAMPLES</b> <u>U</u> <u>3</u> /15 μr <u>7.87</u>	boxes $\mathbf{K}\mathbf{F}$ : Filtered in filtered i	ield with       Image: Arrow of the filter         F, NA       F, NA         Magnesium (00915)       Magnesium (00925)         Sodium (00930)       Potassium (00935)         Bicarbonate (00440)       Chloride (00940)         Sulfate (00945)       Total filterable residue (dissolved) (70300)         Other:       Bicarbonate (00440)	$\frac{7}{2326}$	d Units Date analyze 20  mg/l $12-372  mg/l$ $1/mg/l$ $mg/l$ $mg/l$ $1/mg/l$ $mg/l$ $mg$
AMPLE FIELD TREATMEN No. of samples submitted No. of samples submitted NALYTICAL RESULTS from F, NA Conductivity (Corrected) 25°C (00095) Total non-filterable residue (suspended) (00530) Other: Other: NF, A-H <sub>2</sub> SO <sub>4</sub> Nitrate-N + Nitrate-N	IT — Check proper IF: Whole sample (Non-filtered) Other-specify: m SAMPLES U 3/15 μr 7.87	boxes $\mathbf{K} \mathbf{F}$ : Filtered in filtered	ield with       A: 2 m         ibrane filter       A: 2 m         E ST cover         F, NA         Calcium (00915)         Magnesium (00925)         Sodium (00930)         Potassium (00935)         Bicarbonate (00440)         Chloride (00945)         Total filterable residue (dissolved) (70300)         Other:         F, A-H <sub>2</sub> SO <sub>4</sub>	$\frac{7}{276}$ $\frac{276}{118.0}$ $\frac{276}{118.0}$ $\frac{178.3}{4.27}$ $\frac{4.27}{280.2}$ $\frac{453.3}{84.2}$ $\frac{232.6}{0.41}$ $\frac{2.32}{2.33}$	d Units Date analyze 20  mg/l $12-302  mg/l$ $1/-\text{mg/l} -\frac{12}{18}-mg/l$ $12/18-mg/l$ $12/23-mg/l$ $12/23-\frac{12}{25}$
AMPLE FIELD TREATMEN No. of samples submitted No. of samples submitted NALY TICAL RESULTS from F, NA Conductivity (Corrected) 25°C (00095) Total non-filterable residue (suspended) (00530) Cother: DOther: NF, A-H <sub>2</sub> SO <sub>4</sub> Nitrate-N +, Nitrate-N total (00630)	IT — Check proper IF: Whole sample (Non-filtered) Other-specify: m SAMPLES U 3/15 μr 7.87	boxes $\mathbf{K} \mathbf{F}$ : Filtered in fi 0.45 $\mu$ merr Date analyzed mho $\underline{12/18}$ mg/l $\underline{12/18}$	ield with       A: 2 m         brane filter       A: 2 m         E ST cover         F, NA         Magnesium (00915)         Magnesium (00925)         Sodium (00930)         Potassium (00935)         Bicarbonate (00440)         Chloride (00945)         Total filterable residue (dissolved) (70300)         Other:         F, A-H2 SO4         Nitrate-N +, Nitrate-N	$\frac{7}{276}$ $\frac{276}{1180}$ $\frac{276}{1180}$ $\frac{177.3}{4.27}$ $\frac{4.27}{280.2}$ $\frac{4.27}{2.33}$ $\frac{94.8}{0.42}$ $\frac{2.326}{0.41}$ $\frac{2.33}{2.33}$	d Units Date analyze 12  mg/l $12 - 372  mg/l$ $1/mg/l$ $1/mg/l$ $1/2mg/l$ $1/2mg/l$ $1/2mg/l$ $1/2$
AMPLE FIELD TREATMEN No. of samples submitted  NA: No acid added  NALYTICAL RESULTS from F, NA  Conductivity (Corrected) 25°C (00095)  Total non-filterable residue (suspended) (00530)  Other: Other: Other: Other: NF, A-H <sub>2</sub> SO <sub>4</sub> Nitrate-N +, Nitrate-N total (00630)  Ammonia-N total (00610)  Total Kjeldahl-N	IT — Check proper IF: Whole sample (Non-filtered) Other-specify: m SAMPLES U 3/15 μr 7.87	boxes boxes F: Filtered in filtered in file 0.45 $\mu$ mem boxes boxes 0.45 $\mu$ mem boxes 12/18 12/18 mg/l mg/l mg/l	ield with       A: 2 m         brane filter       A: 2 m         E ST corr         F, NA         Calcium (00915)         Magnesium (00925)         Sodium (00930)         Potassium (00935)         Bicarbonate (00440)         Chloride (00945)         Total filterable residue (dissolved) (70300)         Other:         F, A-H2 SO4         Nitrate-N +, Nitrate-N dissolved (00631)         Ammonia-N dissolved	$\frac{7}{11}$ $\frac{1}{12}SO_4/L added $ $\frac{276.3}{118.0}$ $\frac{277.3}{4.29}$ $\frac{4.29}{453.3}$ $\frac{4}{2}$ $\frac{232.5}{0.41}$ $\frac{2.32}{2.33}$	d Units Date analyze 12  mg/l $12 - 372  mg/l$ $1/2mg/l$ $mg/l$ $mg/l$ $1/2mg/l$ $mg/l$ $mg$
AMPLE FIELD TREATMEN No. of samples submitted NALYTICAL RESULTS from F, NA Conductivity (Corrected) 25°C (00095) Total non-filterable residue (suspended) (00530) Other: Other: Other: NF; A-H <sub>2</sub> SO <sub>4</sub> Nitrate-N +, Nitrate-N total (00630) Ammonia-N total (00610) Total Kjeldahl-N () Chemical oxygen	IT — Check proper IF: Whole sample (Non-filtered) Other-specify: m SAMPLES U 3/15 µr 7.87	boxes $\mathbf{K} \mathbf{F}$ : Filtered in filtered	ield with       A: 2 m         brane filter       A: 2 m         E ST cover         F, NA         Calcium (00915)         Magnesium (00925)         Sodium (00930)         Potassium (00935)         Bicarbonate (00440)         Chloride (00945)         Total filterable residue (dissolved) (70300)         Other:         F, A-H2 SO4         Nitrate-N +, Nitrate-N dissolved (00631)         Ammonia-N dissolved (00608)         Total Kieldahl-N	$\frac{7}{11}$ $\frac{1}{12}SO_4/L added $ $\frac{276.3}{118.0}$ $\frac{1}{127}$ $\frac{277.3}{4.29}$ $\frac{4.29}{453.3}$ $\frac{4}{53.3}$ $\frac{94.8}{2.326}$ $0.42$ $2.33$	d Units Date analyze 12  mg/l $12 - 372  mg/l$ $1/2 - 372  mg/l$ $1/2mg/l$ $mg/l$
AMPLE FIELD TREATMEN No. of samples submitted No. of samples submitted NALYTICAL RESULTS from F, NA Conductivity (Corrected) 25°C (00095) Total non-filterable residue (suspended) (00530) Total non-filterable residue (suspended) (00530) Cother: DOther: Other: NF, A-H <sub>2</sub> SO <sub>4</sub> Nitrate-N +, Nitrate-N total (00630) Ammonia-N total (00610) Chemical oxygen demand (00340) Chemical organic carbon	IT — Check proper IF: Whole sample (Non-filtered) Other-specify: m SAMPLES U 3/15 μr 7.87	boxes boxes F: Filtered in fi 0.45 µmerr Date analyzed mho $12/18$ mg/l mg/l mg/l mg/l	ield with       A: 2 m         brane filter       A: 2 m         E ST corr         F. NA         Calcium (00915)         Magnesium (00925)         Sodium (00930)         Potassium (00935)         Bicarbonate (00440)         Chloride (00940)         Sulfate (00945)         Total filterable residue (dissolved) (70300)         Other:         F, A-H2 SO4         Nitrate-N +, Nitrate-N dissolved (00631)         Ammonia-N dissolved (00608)         Total Kjeldahl-N (, )         Other:	$7$ $1 H_2SO_4/L added 1 Con Q    l 276. 118.0 277.3 4.29 4.29 453.3 84.8 232.6 0.41 2.33$	d Units Date analyze 12 mg/l $12 - 372 mg/l$ $1/mg/l$ $1/mg/l$ $1/2mg/l$ $mg/l$ $mg/l$ $mg/l$ $mg/l$ $mg/l$ $mg/l$
AMPLE FIELD TREATMEN No. of samples submitted No. of samples submitted NALYTICAL RESULTS from F, NA Conductivity (Corrected) 25°C (00095) Total non-filterable residue (suspended) (00530) Other: Other: Other: Other: NF; A-H2SO4 Nitrate-N +, Nitrate-N total (00630) Ammonia-N total (00610) Total Kjeldahl-N () Chemical oxygen demand (00340) Cher: Other:	IT — Check proper IF: Whole sample (Non-filtered) Other-specify: m SAMPLES U 3/15 μr 7.87 	boxes $k \in F$ : Filtered in f	ield with       A: 2 m         E ST cover         F, NA         Calcium (00915)         Magnesium (00925)         Sodium (00930)         Potassium (00935)         Bicarbonate (00440)         Chloride (00945)         Total filterable residue (dissolved) (70300)         Other:         F, A-H2 SO4         Nitrate-N +, Nitrate-N dissolved (00631)         Ammonia-N dissolved (00608)         Total Kjeldahl-N (, )         Other:	$\frac{7}{276}$ $\frac{276}{1180}$ $\frac{276}{1180}$ $\frac{2776}{1180}$ $\frac{1180}{2773}$ $\frac{4129}{2800}$ $\frac{453.3}{948}$ $2.326$ $0.412$ $2.326$ $0.412$ $2.33$	d Units Date analyze 12 mg/l $12-372 mg/l$ $1/mg/l$ $1/mg/l$ $1/mg/l$ $1/2mg/l$ $mg/l$ $1/2mg/l$ $mg/l$ $m$
AMPLE FIELD TREATMEN No. of samples submitted NALYTICAL RESULTS from F, NA Conductivity (Corrected) 25°C (00095) Total non-filterable residue (suspended) (00530) Other: Other: Other: Other: NF, A-H2SO4 Nitrate-N +, Nitrate-N total (00630) Ammonia-N total (00610) Total Kjeldahl-N () Chemical oxygen demand (00340) Cher: Other: Othe	IT — Check proper IF: Whole sample (Non-filtered) Other-specify: m SAMPLES U 3/15 μr 7.87 n n n n	boxes boxes F: Filtered in filtered in	ield with       A: 2 m         E ST cov         F, NA         Calcium (00915)         Magnesium (00925)         Sodium (00930)         Potassium (00935)         Bicarbonate (00440)         Chloride (00945)         Total filterable residue (dissolved) (70300)         Other:         F, A-H2 SO4         Nitrate-N +, Nitrate-N dissolved (00631)         Ammonia-N dissolved (00608)         Total Kjeldahl-N (. )         Other:         Analyst	$\frac{7}{276}$ $\frac{276}{118}$ $\frac{276}{118}$ $\frac{277}{280}$ $\frac{118}{429}$ $\frac{429}{2326}$ $0.42$ $2.326$ $0.42$ $2.33$ Date Reported $1   14   < 2$	d Units Date analyze 12 mg/l $12-372 mg/l$ $1/mg/l$ $1/mg/l$ $1/mg/l$ $1/10mg/l$ $1/10mg/l$ $1/10mg/l$ $1/10mg/l$ $1/2/231/10mg/l$ $1/2/23mg/l$ $1/2/5mg/l$ $mg/l$ $mg/lmg/l$ $mg/lmg/l$ $mg/lmg/l$ $mg/l$

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RefErven / 2       0.2       0.2       0.5		EMISTRY	ER CHEM EN ANALY	AL WATER	GEN and	pf	nent	nt Departr DN 1-2555	NVIR IY D - (505) 84	aith and Er BORATOR Salud NE M 87106	exico Hea IFIC LAS nino de S erque, NM	New Me SCIENT 700 Car Albuque		el le
Martinest         Martinest           131         Artion           131         Concerne a exercise           141         Concerne a exerc	K	s Lus,	;11,05	82235 <b>4 0 1</b>		) <u>5960</u>		2 USER CODE Sample to	527 SITE	AB. OUC	85 N	021	12	CEIVED
ENVIRONMENTAL BUREAU IMM OIL CONSERVATION DIVISION         DEC 11/15/33           NOT State Land Office Bldg, P0 Box 2008 ONT WATCOIL DIVISION         Same           AMPLING CONDITIONS         Baseon Comer           Called         Pump           Conductivity (Uncorreged) PH (00400)         Conductivity (Uncorreged) PH (00400)         Samples Sample type GR & 6 Samples Conductivity (Uncorreged) PH (00400)         Conductivity (Uncoreged) PH (00400)<	es Pla	ral Ca	ature	Ne		REFI	n site descriptio	Collection	ATION	loy	Bail	gency /	Person/A	lection TIM Iscted by -
AMPLING CONDITIONS       Sample type				) N	ION DIV SIO	DEG 18	N Box 208	IVISIO J, PO	REAU ION D e Bld	TAL BU SERVAT Offic NM 875	ONMÉN L CON Land Fe,	ENVIR NM OI State Santa	V	ND AL PORT
AMPLING CONDITIONS       Sample type       GR a 6         Salided       Tap       Water level 37.20' STW       Discharge       Sample type       GR a 6         Dipped       Tap       Conductivity (Uncorregate)       water Tamb. (00010)       R °C       Conductivity at 25 °C (00094)         H (00400)       6.4       Conductivity (Uncorregate)       µmho       R °C       Conductivity at 25 °C (00094)         H (00400)       6.4       Conductivity (Uncorregate)       µmho       R °C       Conductivity at 25 °C (00094)         MPLE FIELD TREATMENT - Check proper boxes       A       10 Mmho 26 µmembrane filler       X A: 2 ml H₂SO₄/L added         No. of samples       /       NF: Whole sample (Non-fillerable (Non-fillerable)       F: Filtered in field with (Non-fillerable)       X A: 2 ml H₂SO₄/L added         Softward(Soft)       MALYTICAL RESULTS from SAMPLES       Magnesium (00925)       mg/l       Galum (00930)       mg/l         Conductivity (Corrected)				n/ bde	Station well co Owner			********		y. <del>.</del>		C264_¥.	Aun.	
Order       Conductivity (Ungeregen) (18 °C       Conductivity at 25 °C (00094) (18 °C       Conductivity at 25 °C (00094) (18 °C         ield comments       A'' Man       Well purmped lay (Corrol 13 °C       Conductivity at 25 °C (00094) (13 °C       Conductivity at 25 °C (00094) (14 °C       Conductivity at 25 °C (00094) (14 °C       Conductivity at 25 °C (00095)       Sample (14 °C         On ther:       Image: Sample (13 °C       Image: Sample (14 °C       Image: Sample (14 °C       Image: Sample (13 °C       Image: Sample (14 °C       Image: Sample (14 °C       Image: Sample (14 °C       Image: Sample (14 °C       Image: Sample (14 °C       Image: Sample (14 °C       Image: Sample (14 °C       Image: Sample (14 °C       Image: Sample (14 °C       Image: Sample (14 °C       Image: Sample (14 °C       Image: Sample (14 °C       Image: Sample (14 °C       Image: Sample (14 °C       Image: Sample (14 °C <td></td> <td>GRab</td> <td>nple type 6</td> <td>Sampl</td> <td>may bum</td> <td>Discharge</td> <td>NTW</td> <td>'סב.</td> <td>evel 37</td> <td>Water le</td> <td>DNS 1p</td> <td>DITIC</td> <td></td> <td>Bailed Dipped</td>		GRab	nple type 6	Sampl	may bum	Discharge	NTW	'סב.	evel 37	Water le	DNS 1p	DITIC		Bailed Dipped
ield comments       4 '' Mm woll pumped lay (Cord 13200 21°) Sampl         by bailes       after the sample       10 M'm Peconency         AMPLE FIELD TREATMENT - Check proper boxes       AMPLE FIELD TREATMENT - Check proper boxes         No. of samples       Image: Sample submitted       F: Filtered in field with the sample when the sample of the sample	µmho	tt 25°C (00094)	nductivity at 25	°C Condu	0010)	Water Temp.	umho		tivity (Un	Conduc		.4	' 6	+ (00400
NRL 110AL FIESOLIS (10ff) SAMPLES       Units Date analyzed       F. NA       Units       Date anal         2 Onductivity (Corrected)			lded	₂SO₄/L adde	<b>XA:</b> 2 ml H	field with nbrane filter	S Filtered in 0.45 μme	er boxe KF:	eck prop e sample filtered) Decify:	T — Che F: Whole (Non- Other-sp		d adde	FIELD mples d. No aci	MPLE No. of sa submitte
Conductivity (Controlled)	alyzed	its Date and	Units	······	00016)	I F. NA	ate analyze	Units D	LED					NF, NA
□       Iotal non-initerable       mg/l       mg/l       mg/l         □       Potassium (00935)       mg/l       mg/l       mg/l         □       Other:       □       Chloride (00940)       mg/l       mg/l         □       Other:       □       Chloride (00945)       mg/l       mg/l         □       Other:       □       Total filterable residue       (dissolved) (70300)       mg/l		g/l g/l	mg/l mg/l _		m (00925) 00930)	Magnes		_µmho		<u></u> .			00095)	25°C (0
IF, A-H <sub>2</sub> SO <sub>4</sub> Conter:       Ind/1         Nitrate-N +, Nitrate-N total (00630)       mg/l       F, A-H <sub>2</sub> SO <sub>4</sub> Ammonia-N total (00610)       mg/l       Nitrate-N +, Nitrate-N dissolved (00631)       3.06 mg/l         Total Kjeldahl-N       mg/l       Vammonia-N dissolved (00631)       3.06 mg/l       12.0         Chemical oxygen demand (00340)       mg/l       Mg/l       12.19       12.19         Total organic carbon (0)       mg/l       Other:       0.176 mg/l       12.19         Other:       Analyst       Date Reported Reviewed by 12.10       Reviewed by 12.10       Reviewed by 12.10		g/l g/l g/l g/l	mg/l mg/l		ate (00935) ate (00440) 00940) 0945) bble residue	Potassiu     Bicarbo     Chloride     Sulfate     Total filte		_ mg/l				ible nded)	on-filtera (suspe )	Other: Other:
Nitrate-N + , Nitrate-N total (00630)       mg/l       mg/l $Mitrate-N + , Nitrate-N dissolved (00631)$ $3.06$ mg/l $12/2$ Ammonia-N total (00610)       mg/l $Mitrate-N + , Nitrate-N dissolved (00631)$ $3.06$ mg/l $12/2$ Total Kjeldahl-N       mg/l $Mitrate-N + , Nitrate-N dissolved (00631)$ $3.06$ mg/l $12/2$ Chemical oxygen demand (00340)       mg/l $Mitrate-N + , Nitrate-N dissolved (00608)$ $0.477$ mg/l $12/2/4$ Total Kjeldahl-N       mg/l $0.477$ mg/l $12/2/4$ Total organic carbon (       mg/l $0.176$ mg/l $12/9$ Other:       mg/l $12/9$ $12/9$ $12/9$ Other:       Malyst       Date Reported Reviewed by 12/10 $12/10$ $85$		4/1			i) (70300)	- C Other:							04	F. A-H2S
total (00630)       mg/l       mg/l       Nitrate-N + , Nitrate-N dissolved (00631)       3.06 mg/l       1214         Ammonia-N total (00610)       mg/l       Mmonia-N dissolved (00631)       3.06 mg/l       1214         Total Kjeldahl-N       mg/l       Mmonia-N dissolved (00631)       0.47 mg/l       12/4         Chemical oxygen demand (00340)       mg/l       mg/l       1.76 mg/l       12/9         Total organic carbon (       mg/l       0       0       1.76 mg/l       12/9         Other:       mg/l       Malyst       Date Reported Reviewed by 12/10 85       Reviewed by 12/10 85       0			······································		· · · · · · · · · · · · · · · · · · ·	F, A-H <sub>2</sub> SO						trate-N	N+, Ni	Nitrate
□ Chemical oxygen demand (00340)       mg/l       Img/l	<u>19</u> 4	911 <u>120</u> 911 <u>12/4</u>	mg/I . Z mg/I .	3.06 0.47	+ , Nitrate-N (00631) -N dissolved	Nitrate- dissolve Ammon (00608)	·	mg/I mg/I mg/I			0)	al (0061) N	u630) nia-N to eldahl-l )	total (0 Ammo Total Kj (
Other:	9	12/	mg/l _	1,76	lahl-N )	Total Kje ( Other:		_ mg/l			· <u> </u>	en 0) arbon	cal oxyg d (0034 ganic c )	Chemi deman Total or
appretony remarks	~	eviewed by	ed Review	Date Reported		Analyst					, <del></del>			( Other: Other:
				<u> </u>		· · · · · · · · · · · · · · · · · · ·						s	remark	aboratory

ENVIRONMENT	700 Camino de S Albuquerque, Ni	Salud NE M 87106 — (505) 84	1-2555 DEC	261		EN ANALYSIS	
ATE RECEIVED	02 85 1	AB HM . 197.	CODE, L-5930	DO NALDSBOOD XX OTH	IER: 82235		
ollection TIME		SITE INFORM- ATION	Sample'ibčation Po	nd Men well	#4 PK	illips Lus	K.
ollected by - Person/A	PRIL Ro	104			N	a Tural O	es Than
	<del>,</del>	<u> </u>		·····	· · · · · · · · · · · · · · · · · · ·		
END NIAL S EPORT S O	ENVIRONMEN MM OIL CON State Land Santa Fe,	TAL BUREAU SERVATION D Office Bld NM 87501	IVISION g, PO Box 208	38			
Attn:	David Bo	yer					
				St	ation/ ell code	· · · · · · · · · · · · · · · · · · ·	
AMPLING COI	NDITIONS		· . · ·	0	wner		
Bailed	🗌 Pump	Water level 27	201 1-10	Discharge	San	nple type	
Dipped		Conductivity (Ung		Water Terror (00010)	mper Con	OF A O	
6	.4	Conductivity (On	950 µmho		<u>8</u> °C		µmho
Field comments	4" mm	well su	moedd	su (cond 13	3200:	22) Same	les
by	bailer	after	hy JOM	In' recover	7		
AMPLE FIELD	TREATMEN	T —"Check prop	her hoxes				
No of samples		- Whole sample	Filtered in	n field with	· · · · · · · · · · · · ·		-
No. of samples submitted	/ 🗆 NI	F: Whole sample (Non-filtered)	Filtered ir 0.45 μme	n field with embrane filter	H-1280-14 ad	ded 4mlf	oem.
No. of samples submitted		F: Whole sample (Non-filtered) Other-specify:	<b>K</b> F: Filtered ir 0.45 μme	n field with embrane filter	H-1290-4 ad	ided 4ml f	604m 3
No. of samples submitted	d added C	F: Whole sample (Non-filtered) Other-specify: n SAMPLES	KF: Filtered ir 0.45 μme	n field with embrane filter	<del>HI2SO<sub>0</sub>/4</del> ad	uded <b>4</b> m/ f HNC Units Date an	<b>Carm</b> <b>3</b> Dalyzed
No. of samples submitted NA: No acid NALYTICAL R	d added C ( ESULTS from	F: Whole sample (Non-filtered) Other-specify: n SAMPLES	<b>K</b> F: Filtered ir 0.45 μme	en field with embrane filter	H-1289-4 ad	Units Date an	oæm 3
No. of samples submitted NA: No acid NALYTICAL R NP, NA Conductivity (C 25°C (00095)	d added C ( ESULTS from orrected)	F: Whole sample (Non-filtered) Other-specify: n SAMPLES	Units Date analyze	ed F, NA Calcium (00915) Magnesium (00925)	<u>₩1290,44</u> ad	Ided         Image: Amount of the second	alyzed
No. of samples submitted NA: No acid NALYTICAL R NP, NA Conductivity (C 25°C (00095) Total non-filtera	d added C ( ESULTS from orrected)	F: Whole sample (Non-filtered) Other-specify: n SAMPLES	Units Date analyze	ed F. NA Calcium (00915) Calcium (00925) Sodium (00930) Potassium (00935)	+++ <b>299</b> _+/4 ad	Units         Date and	alyzed
No. of samples submitted NA: No acid NALYTICAL R NALYTICAL R Conductivity (C 25°C (00095) Total non-filtera residue (susper (00530)	d added C ( ESULTS from orrected)	F: Whole sample (Non-filtered) Other-specify: n SAMPLES	Units Date analyze	ed F, NA Calcium (00915) Calcium (00925) Sodium (00930) Potassium (00935) Bicarbonate (00440)	+++ <del>290_+/</del> + ad	Units         Date and           mg/l	alyzed
No. of samples submitted NA: No acid NALYTICAL R NF, NA Conductivity (C 25°C (00095) Total non-filtera residue (susper (00530) Other: CC	d added C ( ESULTS from orrected)	F: Whole sample (Non-filtered) Other-specify: n SAMPLES	Units Date analyze	ed F, NA Calcium (00915) Calcium (00925) Sodium (00930) Potassium (00935) Bicarbonate (00440) Chloride (00946) Sulfate (00945)	₩ 1 <b>289</b>	Units         Date and           Units         Date and           mg/l	alyzed
No. of samples submitted NA: No acid NALYTICAL R NALYTICAL R NALYTICAL R NALYTICAL R NALYTICAL R NALYTICAL R NALYTICAL R NALYTICAL R Oddeter (00530) Other:	d added C ESULTS from orrected) ble nded) c f Sc 4 7	F: Whole sample (Non-filtered) Other-specify: n SAMPLES	Units Date analyze	ed F, NA Calcium (00915) Calcium (00925) Sodium (00930) Potassium (00935) Bicarbonate (00440) Chloride (00940) Sulfate (00945) Total filterable residue	++ 1 <sub>2</sub>	Units         Date and	alyzed
No. of samples submitted NA: No acid NALYTICAL R NP: NA Conductivity (C 25°C (00095) Total non-filtera residue (susper (00530) Other: Other: Cother:	d added ESULTS from orrected)	F: Whole sample (Non-filtered) Other-specify: n SAMPLES	Units Date analyze	n field with         embrane filter         ed       F, NA <ul> <li>Calcium (00915)</li> <li>Magnesium (00925)</li> <li>Sodium (00930)</li> <li>Potassium (00935)</li> <li>Bicarbonate (00440)</li> <li>Chloride (00940)</li> <li>Sulfate (00945)</li> <li>Total filterable residue (dissolved) (70300)</li> </ul>	H 1788 ad	Units         Date and           Units         Date and           mg/l	alyzed
No. of samples submitted NA: No acid NALYTICAL R NF, NA Conductivity (C 25°C (00095) Total non-filtera residue (susper (00530) Other: Other: Other:	d added C ESULTS from orrected) C ble hded) c f Sc 4 7 C	F: Whole sample (Non-filtered) Other-specify: n SAMPLES	Units Date analyze	ed F, NA Calcium (00915) Calcium (00925) Calcium (00930) Potassium (00935) Bicarbonate (00440) Chloride (00945) Chloride (00945) Total filterable residue (dissolved) (70300) Other:	H 1289.44 ad	Units         Date and	alyzed
No. of samples submitted NA: No acid NALYTICAL R NF, NA Conductivity (C 25°C (00095) Total non-filtera residue (susper (00530) Other: Other: Other: NF, A-H <sub>2</sub> SO <sub>4</sub> Nitrate-N + , Nit	d added C ( ESULTS from orrected) ble hded) cop Sear	F: Whole sample (Non-filtered) Other-specify: n SAMPLES	Units Date analyze	n field with         embrane filter         ed       F, NA <ul> <li>Calcium (00915)</li> <li>Magnesium (00925)</li> <li>Sodium (00930)</li> <li>Potassium (00935)</li> <li>Bicarbonate (00440)</li> <li>Chloride (00940)</li> <li>Sulfate (00945)</li> <li>Total filterable residue (dissolved) (70300)</li> <li>Other:</li> </ul>	+++799+/+ ad	Units         Date and           Units         Date and           mg/l	alyzed
No. of samples submitted NA: No acid NALYTICAL R NH, NA Conductivity (C 25°C (00095) Conductivity (C 25°C (00095) Total non-filtera residue (susper (00530) Other: Other: Coth	d added C ESULTS from orrected) ble nded) c p Sc 4 7 rate-N orrected)	F: Whole sample (Non-filtered) Other-specify: n SAMPLES	KF:       Filtered ir 0.45 μme         Units Date analyze         μmho         mg/l         mg/l	ed F, NA Calcium (00915) Calcium (00915) Calcium (00925) Sodium (00930) Potassium (00935) Bicarbonate (00440) Chloride (00945) Chloride (00945) Total filterable residue (dissolved) (70300) Other: F, A-H <sub>2</sub> SO <sub>4</sub> Nitrate-N + , Nitrate-N.	H 1289.44 ad	Units         Date and           Units         Date and           mg/l	alyzed
No. of samples submitted NA: No acid NA: No acid NALYTICAL R NF, NA Conductivity (C 25°C (00095) Total non-filtera residue (susper (00530) Other: Other: Other: Nitrate-N +, Nit total (00630) Ammonia-N total Total Kieldahl-N	d added C ( ESULTS from orrected) ble nded) c p Sc Q T (rate-N al (00610)	F: Whole sample (Non-filtered) Other-specify: n SAMPLES	C F:         Filtered ir 0.45 μme           Units Date analyze           μmho           mg/l           mg/l	n field with         embrane filter         ed       F, NA <ul> <li>Calcium (00915)</li> <li>Magnesium (00925)</li> <li>Sodium (00930)</li> <li>Potassium (00935)</li> <li>Bicarbonate (00440)</li> <li>Chloride (00940)</li> <li>Sulfate (00945)</li> <li>Total filterable residue (dissolved) (70300)</li> <li>Other:</li> <li>F, A-H<sub>2</sub> SO<sub>4</sub></li> <li>Nitrate-N + , Nitrate-N dissolved (00631)</li> <li>Ammonia N dissolved</li> </ul>	++ 1289	Units         Date and	alyzed
No. of samples submitted NA: No acid NALYTICAL R NF. NA Conductivity (C 25°C (00095) Conductivity (C 25°C (00095) Total non-filtera residue (susper (00530) Other: Other: Other: NF, A-H <sub>2</sub> SO <sub>4</sub> Nitrate-N + , Nit total (00630) Ammonia-N tot: Total.Kjeldahl-N ()	Image: Normal Science       d added       d added       ESULTS from       orrected)       ble       hded)       xp       Sc       rrate-N       al (00610)	F: Whole sample (Non-filtered) Other-specify: n SAMPLES	Image: With Source       Filtered in 0.45 μme         Units Date analyze         μmho         mg/l         mg/l         mg/l         mg/l	embrane filter     ed   F, NA     Calcium (00915)   Magnesium (00925)   Sodium (00930)   Potassium (00935)   Bicarbonate (00440)   Chloride (00945)   Sulfate (00945)   Total filterable residue   (dissolved) (70300)   Other:   F, A-H2 SO4   Nitrate-N + , Nitrate-N   dissolved (00631)   Ammonia-N dissolved   (00608)	++ 1 <sub>2</sub> ad	Units         Date and           Units         Date and           mg/l	alyzed
No. of samples submitted NA: No acid NA: No acid NALYTICAL R NF, NA Conductivity (C 25°C (00095) Total non-filtera residue (susper (00530) Other: Other: Other: NF, A-H <sub>2</sub> SO <sub>4</sub> Nitrate-N + Nit total (00630) Ammonia-N tota () Chemical oxyge demand (00340	d added C ( ESULTS from orrected) ble nded) c p S c 4 7 rrate-N al (00610) en ))	F: Whole sample (Non-filtered) Other-specify: n SAMPLES	Image: With Source       Filtered in 0.45 μme         Units Date analyze         μmho	ed F, NA Calcium (00915) Calcium (00915) Calcium (00925) Sodium (00930) Potassium (00935) Bicarbonate (00440) Chloride (00940) Sulfate (00945) Total filterable residue (dissolved) (70300) Other: F, A-H <sub>2</sub> SO <sub>4</sub> Nitrate-N +, Nitrate-N dissolved (00631) Ammonia-N dissolved (00608) Total Kjeldahi-N	++ 1 <sub>2</sub>	Units         Date and	koleman Balyzed
No. of samples submitted NA: No acid NA: No acid NALYTICAL R NF, MA Conductivity (C 25°C (00095) Total non-filtera residue (susper (00530) Other: Other: Other: Other: NF, A-H <sub>2</sub> SO <sub>4</sub> Nitrate-N + , Nit total (00630) Ammonia-N total ( ) Chemical oxyge demand (00340 Total organic ca ( )	Image: Non-state index       Image: Non-state index <t< td=""><td>F: Whole sample (Non-filtered) Other-specify: n SAMPLES</td><td>Image: With State and St</td><td>ed F, NA Calcium (00915) Calcium (00915) Magnesium (00925) Sodium (00930) Potassium (00935) Bicarbonate (00440) Chloride (00940) Sulfate (00945) Total filterable residue (dissolved) (70300) Other: F, A-H<sub>2</sub> SO<sub>4</sub> Nitrate-N + , Nitrate-N. dissolved (00631) Ammonia-N dissolved (00608) Total Kjeldahi-N ()) Other:</td><td>++ 1<sub>2</sub></td><td>Units         Date and           Units         Date and           mg/l        </td><td>alyzed</td></t<>	F: Whole sample (Non-filtered) Other-specify: n SAMPLES	Image: With State and St	ed F, NA Calcium (00915) Calcium (00915) Magnesium (00925) Sodium (00930) Potassium (00935) Bicarbonate (00440) Chloride (00940) Sulfate (00945) Total filterable residue (dissolved) (70300) Other: F, A-H <sub>2</sub> SO <sub>4</sub> Nitrate-N + , Nitrate-N. dissolved (00631) Ammonia-N dissolved (00608) Total Kjeldahi-N ()) Other:	++ 1 <sub>2</sub>	Units         Date and           Units         Date and           mg/l	alyzed
No. of samples submitted NA: No acid NA: No acid NALYTICAL R NF, NA Conductivity (C 25°C (00095) Total non-filtera residue (susper (00530) Other: Other: Other: Nitrate-N +, Nit total (00630) Nitrate-N +, Nit total (00630) Ammonia-N tota () Chemical oxyge demand (00340 Total organic ca () Other:	Image: Normal Science       Image: Normal Science	F: Whole sample (Non-filtered) Other-specify: n SAMPLES	Image: Solution of the second sec	ed F, NA Calcium (00915) Calcium (00915) Calcium (00925) Sodium (00930) Potassium (00935) Bicarbonate (00440) Chloride (00940) Sulfate (00945) Chloride (00945) Total filterable residue (dissolved) (70300) Other: F, A-H <sub>2</sub> SO <sub>4</sub> Nitrate-N +, Nitrate-N dissolved (00631) Ammonia-N dissolved (00608) Total Kjeldahi-N ()) Other:	++ 1289	Units         Date and generation           Units         Date and generation           mg/l	ialyzed
No. of samples submitted NA: No acid NA: No acid NALYTICAL R NF, NA Conductivity (C 25°C (00095) Conductivity (C 25°C (00095) Total non-filtera residue (susper (00530) Cother: Other: Other: NF, A-H <sub>2</sub> SO <sub>4</sub> Nitrate-N + , Nit total (00630) Ammonia-N tota Total.Kjeldanl-N () Chemical oxyge demand (0034C Total organic ca () Other: Other:	Image: Non-state indext ind	F: Whole sample (Non-filtered) Other-specify: n SAMPLES	Image: With the second sec	ed F, NA Calcium (00915) Calcium (00925) Sodium (00930) Potassium (00935) Bicarbonate (00440) Chloride (00940) Sulfate (00945) Total filterable residue (dissolved) (70300) Other: F, A-H <sub>2</sub> SO <sub>4</sub> Nitrate-N + , Nitrate-N. dissolved (00631) Ammonia-N dissolved (00608) Total Kjeldahi-N () Other: Analyst	Date Report	Ided     Image: Additional state and the state	
No. of samples submitted NA: No acid NALYTICAL R NF, NA Conductivity (C 25°C (00095) Total non-filtera residue (susper (00530) Other: Other: Other: Other: NF, A-H <sub>2</sub> SO <sub>4</sub> Nitrate-N +, Nit total (00630) Ammonia-N tota Other: Chemical oxyge demand (0034C Total organic ca () Other: Other: Other: Other: Other: Other: Other: Other: Other: Other: Other: Other: Other:	d added C ( ESULTS from orrected) ble hded) 2	F: Whole sample (Non-filtered) Other-specify: n SAMPLES	Image: Solution of the second sec	h field with   embrane filter     ed   F, NA     Calcium (00915)   Magnesium (00925)   Sodium (00930)   Potassium (00935)   Bicarbonate (00440)   Chloride (00945)   Sulfate (00945)   Total filterable residue   (dissolved) (70300)   Other:   F, A-H2 SO4   Nitrate-N + , Nitrate-N   dissolved (00631)   Ammonia-N dissolved   (00608)   Total Kjeldahi-N   (   Other:	Date Reporte [2] 18	Ided       Image: Amount of the second of the	
No. of samples submitted NA: No acid NA: No acid NA: No acid NALYTICAL R NF, NA Conductivity (C 25°C (00095) Total non-filtera residue (susper (00530) Other: Other: Other: Nitrate-N +, Nit total (00630) Nitrate-N +, Nit total (00630) Ammonia-N tota (00340 Chemical oxyge demand (00340 (00340 Other: Other: Other: Other: Other: Other: Other: Other: Other: Other: Nitrate-N +, Nit total (00630)	Image: Non-state index       Image: Non-state index <t< td=""><td>F: Whole sample (Non-filtered) Other-specify: n SAMPLES</td><td>Image: Solution of the second sec</td><td>n field with         embrane filter         ed       F. NA            <ul> <li>Calcium (00915)</li> <li>Magnesium (00925)</li> <li>Sodium (00930)</li> <li>Potassium (00935)</li> <li>Bicarbonate (00440)</li> <li>Chloride (00945)</li> <li>Total filterable residue (dissolved) (70300)</li> <li>Other:</li> </ul>            F, A-H<sub>2</sub> SO<sub>4</sub>           Nitrate-N + , Nitrate-N dissolved (00631)           Ammonia-N dissolved (00608)           Total Kjeldahi-N ()           Other:              Analyst           Image: Analyst</td><td>H 1289.44 ad</td><td>Ided     Image: Additional state of the stat</td><td>alyzed</td></t<>	F: Whole sample (Non-filtered) Other-specify: n SAMPLES	Image: Solution of the second sec	n field with         embrane filter         ed       F. NA <ul> <li>Calcium (00915)</li> <li>Magnesium (00925)</li> <li>Sodium (00930)</li> <li>Potassium (00935)</li> <li>Bicarbonate (00440)</li> <li>Chloride (00945)</li> <li>Total filterable residue (dissolved) (70300)</li> <li>Other:</li> </ul> F, A-H <sub>2</sub> SO <sub>4</sub> Nitrate-N + , Nitrate-N dissolved (00631)           Ammonia-N dissolved (00608)           Total Kjeldahi-N ()           Other:              Analyst           Image: Analyst	H 1289.44 ad	Ided     Image: Additional state of the stat	alyzed

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Lab Number:	A 1972	Sample are: Pond Mon. Well #4	-
Date Submitte	ed: 12/2/85	Date Analyzed:	-
By: Boyer/B	ailey DEC?	Reviewed By: Jimbably	-
0 1	O CONSER	ATION DIVISION ATION DAte Reported: 12/18/85	-
Element	ICAP VALUE (MG/L)	AA VALUE (MG/L)	-
Aluminum	20,1		
Barium	20.1		
Berylium	<0.1		
Boron	0.4		
Cadmium	<0.1		
Calcium	260.	· · · · · · · · · · · · · · · · · · ·	
Chromium	40.1	· · · · ·	
Cobalt	40.1	·	
Copper	20.1	a di seconda r>Seconda di seconda di se	
Iron	D.7		
Lead	40.	·	
Magnesium	120.		
Manganese	1.5	· · · · · · · · · · · · · · · · · · ·	
Molybdenum	<0.1		
Nickel	20.1		
Silicon	2).	· · · · · · · · · · · · · · · · · · ·	
Silver	<0.1		
Strontium	3.8		
Tin	<0.		
Vanadium	<0.1		
Zinc	۲٥.	· .	
Arsenic		0.006	
Selenium		40.005	
Mercury			

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