GW - 24

GENERAL CORRESPONDENCE

YEAR(S):

2007 - 1991

Chavez, Carl J, EMNRD

To: Chavez, Carl J, EMNRD
Cc: Price, Wayne, EMNRD
Subject: Duke Energy Field Services- Note to File

On January 5 2007, Wayne Price and Carl Chavez of the Oil Conservation Division (OCD) contacted Ruth Lang of Duke Energy Field Services at (303) 605-1713 and left a phone message regarding the large number of expired facilities (see attachment) where the discharge plan was not renewed within 120 or in advance of their expiration. Wayne Price referred to Ms. Lang's December 21, 2006 e-mail message regarding "Duke Energy Field Services Expired Discharge Plan Facilities."

Mr. Price informed Ms. Lang that all discharge plan renewal applications need to be submitted to the OCD for review by March 1, 2007. In addition, she was informed that the OCD will be issuing an Notice of Violation for neglecting to renew its discharge plan permits with the OCD.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3491
Fax: (505) 476-3462
E-mail: CarlJChavez@state.nm.us
Website: http://www.emnrd.state.nm.us/ocd/
(Pollution Prevention Guidance is under "Publications")

Permit ID	Facility	Company	Status	Expired	Contact	phone	e-mail	Comments
150	Pure Gold "28" CS	Duke	A	11/22/03	Lisabeth Klein	303-605-1778	eaklein@duke-energy.com	Request 120 day extension to 4/1/07
162	Antelope Ridge Gas Plant	Duke	A	3/23/04	Lisabeth Klein	303-605-1778	eaklein@duke-energy.com	Request 120 day extension to 4/1/07
167	Malaga CS	Duke	A	7/25/04	Lisabeth Klein	303-605-1778	eaklein@duke-energy.com	Request 120 day extension to 4/1/07
311	Cotton Draw CS	Duke	A	1/6/05	Lisabeth Klein	303-605-1778	eaklein@duke-energy.com	Request 120 day extension to 4/1/07
316	Hat Mesa CS	Duke	A	1/6/05	Lisabeth Klein	303-605-1778	eaklein@duke-energy.com	Request 120 day extension to 4/1/07
176	Boot Leg CS	Duke	A	1/20/05	Lisabeth Klein	303-605-1778	eaklein@duke-energy.com	Request 120 day extension to 4/1/07
227	Lee CS	Duke	I	12/28/05	Lisabeth Klein	303-605-1778	eaklein@duke-energy.com	Submitted correspondence to Ben Stone during meeting in Sept. 2006
168	Feagen Booster Station	Duke	I	12/27/04	Lisabeth Klein	303-605-1778	eaklein@duke-energy.com	Closed 2/1/05
177	Maljamar CS	Duke	A	3/21/05	Lisabeth Klein	303-605-1778	eaklein@duke-energy.com	Request 120 day extension to 4/1/07
178	Wonton CS	Duke	A	3/21/05	Lisabeth Klein	303-605-1778	eaklein@duke-energy.com	Request 120 day extension to 4/1/07
24	Avalon Gas Plant	Duke	A	9/18/05	Lisabeth Klein	303-605-1778	eaklein@duke-energy.com	Request 120 day extension to 4/1/07
163	Apex CS	Duke	A	4/29/04	Lisabeth Klein	303-605-1778	eaklein@duke-energy.com	Request 120 day extension to 4/1/07
175	Hobbs Gas Process Plant	Duke	A	1/9/05	Lisabeth Klein	303-605-1778	eaklein@duke-energy.com	Request 120 day extension to 4/1/07
16	Eunice Gas Plant	Duke	A	4/25/09	Lisabeth Klein	303-605-1778	eaklein@duke-energy.com	Request 120 day extension to 4/1/07
139	CP-1 CS	Duke	A	3/23/04	Lisabeth Klein	303-605-1778	eaklein@duke-energy.com	Closed 10/15/03
42	Indian Hills Gas Plant	Duke	I	4/6/2002	Lisabeth Klein	303-605-1778	eaklein@duke-energy.com	Dismantled

Duke Energy. Field Services
A New Kind of Energy™

Duke Energy Field Services
P.O. Box 5493
Denver, Colorado 80217
370 17th Street, Suite 900
Denver, Colorado 80202
303/595-3331

March 22, 2002

CERTIFIED MAIL
RETURN RECEIPT

Mr. Jack Ford
New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, NM 87505

SUBJECT: Avalon Gas Plant
Discharge Plan No. GW-024
Eddy County, New Mexico

Dear Mr. Ford:

Duke Energy Field Services, LP (DEFS) is currently dismantling the Avalon Gas Plant located in NW/4 SE/4, T 21S, R 27E, Section 9 in Eddy County. Upon completion of the dismantling phase, DEFS will not have any active operations at the former gas plant. Therefore, DEFS will submit a closure plan as directed under our discharge plan condition of approval.

If you have any questions regarding this facility, please call me at (303) 605-1718.

Sincerely,
Duke Energy Field Services, LP

Stephen Weathers
Environmental Specialist

Noted in RBDMS

cc: Becky Moore – DEFS, Midland
Environmental Files - Denver

Duke Energy.
Field Services
A New Kind of Energy™

Duke Energy Field Services
P.O. Box 5493
Denver, Colorado 80217
370 17th Street, Suite 900
Denver, Colorado 80202
303/595-3331

January 31, 2002

CERTIFIED MAIL
RETURN RECEIPT

Mr. Jack Ford
New Mexico Energy, Minerals
& Natural Resources Department
Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, NM 87505

SUBJECT: Avalon Gas Plant
Discharge Plan No. GW-024
Eddy County, New Mexico

Dear Mr. Ford:

Duke Energy Field Services, LP (DEFS) submits the enclosed check in the amount of $1,667.50 for the Avalon Gas Plant discharge plan flat fee.

If you have any questions regarding this matter, please call me at (303) 605-1717.

Sincerely,
Duke Energy Field Services, LP

Karin Char
Environmental Specialist

Enclosure

cc: NMOCD District 2 Office
1301 W. Grand Avenue
Artesia, NM 88210

Duke Energy® Field Services

A New Kind of Energy

P.O. Box 5493
Denver, Colorado 80217
370 17th Street, Suite 900
Denver, Colorado 80202
Direct: 303-595-3331
Fax: 303-389-1957

January 23, 2001

CERTIFIED MAIL
RETURN RECEIPT 7099 3220 0001 5281 7330

Mr. Jack Ford
New Mexico Energy, Minerals
& Natural Resources Department
Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, NM 87504

RE: Stormwater Run-off Plan Submittal
Avalon Gas Plant (GW-024)

Dear Mr. Ford:

Duke Energy Field Services, LP respectfully submits the Stormwater Run-off Plans for the above facility as required by the discharge plan approval conditions.

If you have any questions, please call me at (303) 605-1717.

Sincerely,
Duke Energy Field Services, LLC

Karin Char
Environmental Specialist

Attachment

cc: Harley Temple — Corp. File 2.2.3.3
Andy Price — W. Permian Env. File 2.2.3.3
Jack Braun — Facility File 2.2.3.3

Duke Energy Field Services

A New Kind of Energy

STORMWATER RUN-OFF PLAN

FOR:

AVALON GAS PLANT (GW-024)

Rainwater collected inside containment structures at the facility is lost through evaporation. None of the containment structures at the facility have valves. Good housekeeping is practiced at the facility to help prevent contaminants from leaving the site during a rainstorm.

FULBRIGHT & JAWORSKI L.L.P.
A REGISTERED LIMITED LIABILITY PARTNERSHIP
1301 MCKINNEY, SUITE 5100
HOUSTON, TEXAS 77010-3095

TELEPHONE: 713/651-5151
FACSIMILE: 713/651-5246

WRITER'S INTERNET ADDRESS:
elewis@fulbright.com

WRITER'S DIRECT DIAL NUMBER:
713/651-3760

HOUSTON
WASHINGTON, D.C.
AUSTIN
SAN ANTONIO
DALLAS
NEW YORK
LOS ANGELES
MINNEAPOLIS
LONDON
HONG KONG

January 15, 2001

Re: Notification of Name Change to Duke Energy Field Services, LP

Mr. Roger Anderson
New Mexico Oil Conservation Division
2040 South Pacheco Street
Santa Fe, New Mexico 87505

Dear Mr. Anderson:

In a February 16, 2000 letter addressed to you from Mel Driver of GPM Gas Company, LLC, Mr. Driver informed you that GPM Gas Company, LLC and Duke Energy Field Services, LLC were planning to undergo an internal corporate reorganization later in the year. As a result of this corporate reorganization, which has now taken place, facilities that were formerly operated under the name of GPM Gas Company, LLC are now being operated under the name of Duke Energy Field Services, LP. A chart that lists facilities with New Mexico Oil Conservation Division permits that are affected by this change is enclosed with this letter. Please update your records to reflect Duke Energy Field Services, LP as the permit holder for the facilities listed on the enclosed chart.

Thank you for your assistance, and please feel free to call me at (713) 651-3760 if you have any questions.

Very truly yours,

Eddie Lewis

Edward C. Lewis

ECL/jnr

5589827.1

cc: Ms. Nelda Morgan
New Mexico Oil Conservation Division
1625 North French Drive
Hobbs, New Mexico 88240

Ms. Vicki Gunter
Duke Energy Field Services, LP
P. O. Box 50020
Midland, Texas 79710

FACILITY NAME	PERMIT NUMBER	CURRENT NAME	NEAREST CITY
Artesia Plant	GW-168	GPM Gas Company, LLC	Artesia
Avalon Plant	GW-024	GPM Gas Company, LLC	Carlsbad
Eunice Plane	GW-009	GPM Gas Company, LLC	Eunice
Feagen	GW-168	GPM Gas Company, LLC	Artesia
Hat Mesa	GW-128	GPM Gas Company, LLC	Hobbs
Hobbs	GW-044	GPM Gas Company, LLC	Hobbs
Indian Hills	GW-042	GPM Gas Company, LLC	Carlsbad
Lee Plant	GW-002	GPM Gas Company, LLC	Lovington
Linam Ranch Plant	GW-015	GPM Gas Company, LLC	Hobbs
Maljamar	GW-177	GPM Gas Company, LLC	Lovington
Sand Dunes	GW-142	GPM Gas Company, LLC	Loving
Won Ton	GW-178	GPM Gas Company, LLC	Lovington
Zia Plant	GW-145	GPM Gas Company, LLC	Maljamar

Artesia Daily Press

P.O. Box 190, Artesia, NM 88211-0190
Phone: (505) 746-3524
Fax: (505) 746-8795

INVOICE

Invoice Date:	06/22/00
Invoice Number:	1060602
Customer Number:	10005610

Oil Conservation Division
2040 South Pacheco St.
Santa Fe NM 87505

DATE	TYPE	DOC NO	REF NUMBER	DESCRIPTION	# OF INS	DEPTH	RATE	AMOUNT
06/22/00	INV	1060602	A/R:1060602 Ord:10731805	**LEGAL NOTICE NOTICE OF PUBLICA** Artesia Daily Press Legal Section, LEGAL NOTICE 6/21/0 State Sales Tax **This is your First Notice! Thank You!**	 1 1	 13.25 13.25	 46.64 2.89	 46.64 2.89
							TOTAL	49.53

I hereby certify that this is a true and correct statement to the best of my knowledge.

Barbara Boone
Bookkeeper

Please detach and return this portion with payment. To ensure proper credit to your account, please write your customer number on your check. If you have any questions about your account, please contact Accounts Receivable at (505) 746-3524.

Invoice Date	Invoice Number
06/22/00	1060602
Customer Number	
10005610	

Retail Advertising Legal 17025

PLEASE PAY: 49.53

ARTESIA DAILY PRESS
Attn: Accounts Receivable
P.O. Box 190
Artesia, NM 88211-0190

Oil Conservation Division
2040 South Pacheco St.
Santa Fe NM 87505

okd
6-27-00

Affidavit of Publication

NO. 17025

STATE OF NEW MEXICO

County of Eddy:

Gary D. Scott being duly sworn,says: That he is the **Publisher** of The Artesia Daily Press, a daily newspaper of general circulation, published in English at Artesia, said county and county and state, and that the here to attached

Legal Notice

was published in a regular and entire issue of the said Artesia Daily Press,a daily newspaper duly qualified for that purpose within the meaning of Chapter 167 of the 1937 Session Laws of the state of New Mexico for 1 consecutive weeks/days on the same day as follows:

First Publication June 21 2000

Second Publication

Third Publication

Fourth Publication

Gary D. Scott

Subscribed and sworn to before me this

21st day of June 2000

Barbara Ann Bacon

Notary Public, Eddy County, New Mexico

My Commission expires September 23, 2003

Copy of Publication:

LEGAL NOTICE

NOTICE OF PUBLICATION
STATE OF NEW MEXICO
ENERGY, MINERALS AND
NATURAL RESOURCES
DEPARTMENT
OIL CONSERVATION
DIVISION

Notice is hereby given that pursuant to New Mexico Water Quality Control Commission Regulations, the following discharge plan application(s) have been submitted to the Director of the Oil Conservation Division, 2040 South Pacheco, Santa Fe, New Mexico 87505, Telephone (505) 827-7131:

((GW-024) - Duke Energy Field Services formerly GPM Gas Company, Mel D. Driver, (915) 620-4142, P.O. Box 50020, Midland, Texas 79710-0020, has submitted a discharge renewal application for the Avalon Gas Plant located in the NW/4 SE/4 of Section 9, Township 21 South, Range 27 East, NMPM, Eddy County, New Mexico. Approximately 1050 gallons per day of process waste water is disposed of in an OCD approved offsite disposal facility. Waste water has a total dissolved solids concentration of approximately 2600 mg/1. Ground water most likely to be affected in the event of an accidental discharge is at a depth of approximately 80 feet with a total dissolved solids concentration of approximately 1100 mg/1. The discharge plan addresses how spills, leaks, and other accidental discharges to the surface will be managed.

Any interested person may obtain further information from the Oil Conservation Division and may submit written comments to the Director of the Oil Conservation Division at the address given above. The discharge plan application(s) may be viewed at the above address between 8:00 a.m. and 4:00 p.m., Monday through Friday. Prior to ruling on any proposed discharge plan application(s), the Director of the Oil Conservation Division shall allow at least thirty (30) days after the date of publication of this notice during which comments may be submitted and a public hearing may be requested by any interested person. Requests for a public hearing shall set forth the reasons why a hearing should be held. A hearing will be held if the Director determines there is significant public interest.

If no public hearing is held, the Director will approve or disapprove the proposed plan(s) based on information available. If a public hearing is held, the Director will approve or disapprove the proposed plan(s) based on the information in the discharge plan application(s) and information submitted at the hearing.

GIVEN under the Seal of the New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 14th day of June 2000.

STATE OF NEW MEXICO
OIL CONSERVATION
DIVISION
s-Lori Wrotenbery
LORI WROTENBERY, Director
S E A L

Published in the Artesia Daily Press, Artesia, N.M. June 21, 2000.

Legal 17025

THE SANTA FE
NEW MEXICAN
Founded 1849

RECEIVED
JUN 23 2000
OIL CONSERVATION DIVISION

NM OIL CONSERVATION DIVISION
ATTN: DONNA DOMINGUEZ
2040 S. PACHECO ST.
SANTA FE, NM 87505

AD NUMBER: 155211 ACCOUNT: 56689
LEGAL NO: 67610 P.O.#: 00199000278
183 LINES 1 time(s) at $ 80.67
AFFIDAVITS: 5.25
TAX: 5.37
TOTAL: 91.29

AFFIDAVIT OF PUBLICATION

STATE OF NEW MEXICO
COUNTY OF SANTA FE

I, B Pierce being first duly sworn declare and say that I am Legal Advertising Representative of THE SANTA FE NEW MEXICAN, a daily newspaper published in the English language, and having a general circulation in the Counties of Santa Fe and Los Alamos, State of New Mexico and being a Newspaper duly qualified to publish legal notices and advertisements under the provisions of Chapter 167 on Session Laws of 1937; that the publication #67610 a copy of which is hereto attached was published in said newspaper 1 day(s) between 06/22/2000 and 06/22/2000 and that the notice was published in the newspaper proper and not in any supplement; the first publication being on the 22 day of June, 2000 and that the undersigned has personal knowledge of the matter and things set forth in this affidavit.

/S/ Betsy Pierce
LEGAL ADVERTISEMENT REPRESENTATIVE

Subscribed and sworn to before me on this 22 day of June A.D., 2000

Notary Candace R. Durston

Commission Expires 11/16/2003

NOTICE OF PUBLICATION

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

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GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 14th day of June 2000.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION
LORI WROTENBERY,
Director

Legal #67610
Pub. June 22, 2000

NOTICE OF PUBLICATION

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

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(GW-024) - Duke Energy Field Services formerly GPM Gas Company, Mel D. Driver, (915) 620-4142, P.O. Box 50020, Midland, Texas 79710-0020, has submitted a discharge renewal application for the Avalon Gas Plant located in the NW/4 SE/4 of Section 9, Township 21 South, Range 27 East, NMPM, Eddy County, New Mexico. Approximately 1050 gallons per day of process waste water is disposed of in an OCD approved offsite disposal facility. Waste water has a total dissolved solids concentration of approximately 2600 mg/l. Ground water most likely to be affected in the event of an accidental discharge is at a depth of approximately 80 feet with a total dissolved solids concentration of approximately 1100 mg/l. The discharge plan addresses how spills, leaks, and other accidental discharges to the surface will be managed.

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GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 14th day of June 2000.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

for LORI WROTENBERY, Director

S E A L

Duke Energy Field Services Inc.
A Duke Energy Company

Formerly GPM Gas Company

P.O. Box 50020
Midland, TX 79710-0020

May 1, 2000

Mr. Roger Anderson
State of New Mexico
Energy, Minerals & Natural Resources Department
Oil Conservation Division, Environmental Bureau
2040 South Pacheco Street
Santa Fe, New Mexico 87505

RE: Discharge Plan Renewal
Avalon Gas Processing Plant
Discharge Plan GW-024

Dear Mr. Anderson:

Submitted herewith is the application and $50 filing fee to renew the ground water discharge plan (GW-024) for GPM Gas Company, LLC (GPM) Avalon Gas Processing Plant located in Eddy County, New Mexico in accordance with Title 20 New Mexico Administrative Code (NMAC) 6.2, Subpart III, Section 3106, Application for Discharge Plan Approvals and Renewals.

GPM has operated Avalon Gas Plant in accordance with the terms and conditions of Groundwater Discharge Plan GW-024. GPM has made no major changes to Avalon Gas Plant that would change the quantity or quality of the discharges since the original discharge plan went into effect and would like to renew the discharge plan under the present terms of the existing permit.

Please do not hesitate to contact me at (915) 620-4142 should you have any questions or require additional information.

Sincerely,

Mel P. Driver

Mel P. Driver, P.E.
Environmental Engineer
New Mexico Region

NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

Jennifer A. Salisbury
CABINET SECRETARY

Oil Conservation Div.
Environmental Bureau
2040 S. Pacheco
Santa Fe, NM 87505

March 14, 2000

CERTIFIED MAIL
RETURN RECEIPT NO. 5050 9368

Mr. Mel Driver
GPM Gas Company, LLC
P.O. Box 50020
Midland, Texas 79710-0020

RE: Discharge Plan Renewal Notice for GPM Gas Company, LLC Facility

Dear Mr. Driver:

GPM Gas Company, LLC has the following discharge plan which expires during the current calendar year.

GW-024 expires 9/18/2000 – Avalon Gas Plant

WQCC 3106.F. If the holder of an approved discharge plan submits an application for discharge plan renewal at least 120 days before the discharge plan expires, and the discharger is not in violation of the approved discharge plan on the date of its expiration, then the existing approved discharge plan for the same activity shall not expire until the application for renewal has been approved or disapproved. A discharge plan continued under this provision remains fully effective and enforceable. An application for discharge plan renewal must include and adequately address all of the information necessary for evaluation of a new discharge plan. Previously submitted materials may be included by reference provided they are current, readily available to the secretary and sufficiently identified to be retrieved. [12-1-95]

The discharge plan renewal application for each of the above facilities is subject to WQCC Regulation 3114. Every billable facility submitting a discharge plan renewal will be assessed a fee equal to the filing fee of $50.00 plus a flat fee equal to one-half of the original flat fee for gas plant facilities. The $50.00 filing fee is to be submitted with the discharge plan renewal application and is nonrefundable.

Please make all checks payable to: **NMED-Water Quality Management** and addressed to the OCD Santa Fe Office. Please submit the original discharge plan renewal application and one copy to the OCD Santa Fe Office and one copy to the OCD Hobbs District Office. **Note that the completed and signed application form must be submitted with your discharge plan renewal request.** (A copy of the discharge plan application form is enclosed to aid you in preparing the renewal application. A complete copy of the regulations is available on OCD's

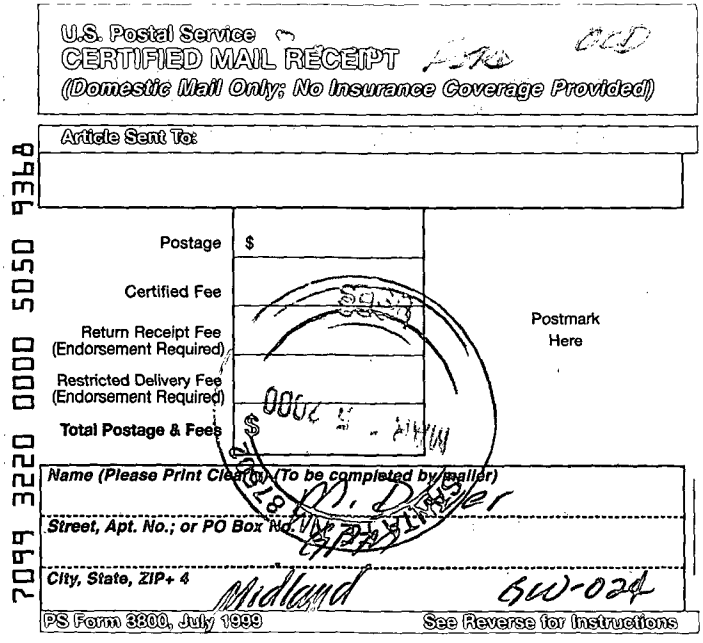
website at **www.emnrd.state.nm.us/ocd/**).

If the above sited facility no longer has any actual or potential discharges and a discharge plan is not needed, please notify this office. If the GPM Gas Company, LLC has any questions, please do not hesitate to contact me at (505) 827-7152.

Sincerely,

Roger C. Anderson
Oil Conservation Division

cc: OCD Hobbs District Office



GPM GAS CORPORATION

3300 N "A" ST. BLDG 7
MIDLAND, TX 79705-5421

MAILING ADDRESS
P.O. BOX 50020
MIDLAND, TX 79710-0020

February 16, 2000

Mr. Roger Anderson
New Mexico Oil Conservation Division
2040 South Pacheco Street
Santa Fe, New Mexico 87505

Subject: Notification of Name Change to **GPM Gas Company, LLC**

Dear Mr. Anderson:

This letter is to notify you that on February 1, 2000, GPM Gas Corporation underwent a **name change**. The name of the company is now **GPM Gas Company, LLC**. This name change relates to a change in corporate status which occurred in anticipation of the expected merger between GPM and a unit of Duke Energy. GPM and Duke currently expect that, if all necessary regulatory approvals are obtained, the merger should be completed in April of this year.

Submitted with this letter is a listing of all environmental permits that are affected by this name change. Please take the actions necessary to reflect this name change on your records.

As a matter of general information, we wanted also to advise you of the possibility of a further name change in the coming months. In connection with the expected merger, it is possible that a further change in name or in corporate status could take place. We will advise you of any future changes that occur.

We appreciate your assistance in this matter.

GPM Gas Company, LLC

Mel P. Driver

Mel P. Driver
Environmental Engineer
New Mexico Region

Attachment

Facility Name	Permit Number	Expiration Date	Issued by	Held by	Nearest City
Artesia Plant	GW-168	7/1/00	NMED OCD	GPM Gas Corporation	Artesia
Avalon Plant	GW-024	9/1/00	NMED OCD	GPM Gas Corporation	Carlsbad
Eunice Plant	GW-009	4/1/04	NMED OCD	GPM Gas Corporation	Eunice
Feagen	GW-168	12/1/99	NMED OCD	GPM Gas Corporation	Artesia
Hat Mesa	GW-128	11/1/02	NMED OCD	GPM Gas Corporation	Hobbs
Hobbs	GW-044	12/1/02	NMED OCD	GPM Gas Corporation	Hobbs
Indian Hills	GW-042	4/1/02	NMED OCD	GPM Gas Corporation	Carlsbad
Lee Plant	GW-002	3/1/01	NMED OCD	GPM Gas Corporation	Lovington
Linam Ranch Plant	GW-015	4/1/04	NMED OCD	GPM Gas Corporation	Hobbs
Maljamar	GW-177	3/1/00	NMED OCD	GPM Gas Corporation	Lovington
Sand Dunes	GW-142	5/1/03	NMED OCD	GPM Gas Corporation	Loving
Won Ton	GW-178	3/1/00	NMED OCD	GPM Gas Corporation	Lovington
Zia Plant	GW-145	7/1/03	NMED OCD	GPM Gas Corporation	Maljamar

NOTICE OF PUBLICATION
STATE OF NEW MEXICO
ENERGY, MINERALS & NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

Notice is hereby given that pursuant to the New Mexico Water Quality Control Commission Regulations, the following discharge plan renewal application has been submitted to the Director of the Oil Conservation Division, 2040 South Pacheco, Santa Fe, New Mexico 87505, Telephone (505) 827-7131:

(GW-187) - WILLIAMS Field Services, P.O. Box 58900, M.S. 2G1, Salt Lake City, Utah, 84158-0900 has submitted a Discharge plan application for their La Cosa Compressor facility located in the NE/4 nw/4, Section 34, Township 29 North, Range 11 West, NMPM, San Juan County, near Bloomfield, New Mexico. The total wash water discharge will be about 53 gallons/day, this water will be collected in a closed top tank and transported offsite for disposal at an OCD approved facility; Groundwater most likely to be affected by a spill, leak, or accidental discharge to the surface is at a depth of approximately 140 feet with a total dissolved solids concentration of approximately 2,000 mg/L. The discharge plan addresses how spills, leaks, and other accidental discharges to the surface will be managed.

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(GW-024) - GAS COMPANY OF NEW MEXICO, Alvarado Square Albuquerque, New Mexico, 871[illegible] 0900 has submitted a renewal application for the previously approved discharge plan for their Avalon Natural Gas Plant facility located in the NW/4 SE/4, Section 9, Township 21 South, Range 27 East, NMPM, Eddy Couty, near Cartsbad, New Mexico. Approximately 1,050 gallons/day of process wastewater is diposed of in an OCD approved offsite diposal facility. The wastewater has a total dissolved solids concentration of approximately 2600 mg/L. Groundwater most likely to be affected by a spill, leak, or accidental discharge to the surface is at depth of approximately 80 feet with a total dissolved solids concentration of 1100 mg/L. The discharge plan address how spills, leaks, and other accidental discharges to the surface will be managed.

(GW-179) - T&C TAnk Rental and Anchor Service Corporation, Mark Spolton, Manager, 11262 E. Highway 82, Artesia, New Mexico, 88210 has submitted a discharge plan application for their Artesia facility located in the E/2 NE/4, Section 18, Township 17 South, Range 27 East, NMPM, Eddy County, New Mexico. Approximately 630 gallons/day of produced water, with a total dissolved solids concentration of approximately 20,000 mg/L and will be collected and stored in a netted open top tank prior to transport to an offsite OCD approved disposal site. Groundwater most likely to be affected by a spill, leak, or accidental discharge to the surface is at a depth of approximately 224 feet with a total dissolved solids concentration of approximatley 1973 mg/L. The discharge plan addresses how spill, leaks, and othet, accidental discharges to the surface will be managed.

Any interested person may obtain further information from the Oil Conservation Division and may submit written comments to the Director of the Oil Conservation Division at the address given above. The discharge plan applicaitons may be viewed at the above address between 8:00 a.m. and 5:00 p.m., Monday through Friday. Prior to ruling on any proposed discharge plan or its modification, the Director of the Oil Conservation Division shall allow at least thirty (30) days after the date of publication of this notice during which comments may be submitted to him and public hearing may be requested by any interested person. Requests for public hearing shall set forth the reasons why a hearing shall be held. A hearing will be held if the Director determines that there is significant public interest.

If no public hearing is held, the Director will approve or disapprove the proposed plan based on information available. If a public hearing is held, the Director will approve or disapprove the proposed plan based on the information in the plan and information submitted at the hearing.

GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 28th day of April, 1995.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION
s/WILLIAM J. LEMAY, Director

Journal: May 5, 1995.

STATE OF NEW MEXICO
County of Bernalillo SS

Bill Tafoya being duly sworn declares and says that he is Classified Advertising manager of **The Albuquerque Journal**, and that this newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chapter 167, Session Laws of 1937, and that payment therefore has been made of assessed as court cost; that the notice, copy of which is hereto attached, was published in said paper in the regular daily edition, for [illegible] times, the first publication being of the 5 day of May, 1995, and the subsequent consecutive publications on [illegible], 1995

Bill Tafoya

Sworn and subscribed to before me, a notary Public in and for the County of Bernalillo and State of New Mexico, this 9th day of May 1995

PRICE $ 71.99

Statement to come at end of month.

Lucia

CLA-22-A (R-1/93) ACCOUNT NUMBER 580932

4. Any tanks and sumps that contain wastes need to be cleaned and emptied and mechanical integrity for each confirmed (see photos 2, 3, and 4.). Any below grade sump or tank that is found not to have integrity shall be reported to the Santa Fe OCD office with a proposed corrective action plan to repair the sump or below grade tank and identify possible contamination.

Note: Only Exploration an Production wastes that "Exempt from RCRA Subtitle C" may be disposed of in Class II UIC Salt Water Disposal wells.

5. GPM needs to take steps to insure the site security does not pose a future threat to the per OCD rule 18.B. (see photo 5)

Since this permit was renewed on June 7, 1997 GPM should address the above mentioned issues by July 30, 1997 with a follow-up report to the OCD documenting the compliance steps GPM has taken. The report shall be submitted by August 15, 1997 to the OCD Santa Fe and Artesia offices.

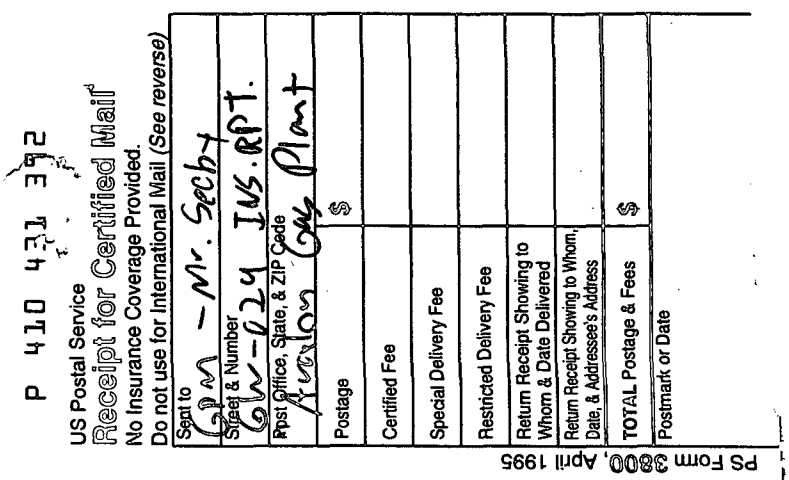
If GPM any questions with regards to this inspection report feel free to contact the me at (505)-827-7156.

Sincerely,

Patricio W. Sanchez
Petroleum Engineering Specialist
Environmental Bureau - OCD

(Enclosure - Photographs taken on April 9, 1997 by the OCD of the "Avalon" facility.)

c: OCD Artesia District



NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 South Pacheco Street
Santa Fe, New Mexico 87505
(505) 827-7131

May 30, 1997

CERTIFIED MAIL
RETURN RECEIPT NO. P-410-431-392

Mr. Scott Seeby
GPM Gas Corp.
4044 Penbrook
Odessa, Texas 79762

RE: Renewal Inspection
Discharge Plan GW-024
GPM "Avalon" Gas Plant

Dear Mr. Seeby:

The New Mexico Oil Conservation Division (OCD) has completed this inspection report as part of the permit renewal process for discharge plan GW-024. The following OCD staff members were present during the renewal inspection on Wednesday April 9, 1997 - Mr. Bryan Arrant and Mr. Patricio Sanchez. The purpose of this report is to provide GPM with the information that is needed to comply with the terms and conditions of GW-024 as this permit renewal was approved by the OCD on June 7, 1995. However, it will be GPM's responsibility to comply with the terms and conditions of GW-024 as approved by the OCD on June 7, 1995 .

1. GPM will submit a plan to pressure test all below grade lines (waste water) to 3 psig above normal working pressure of the line - see OCD "Discharge Plan Guidelines, Revised 12-95" page 9. **The testing plan must be approved by the Santa Fe OCD office.** Any below grade sump or tank that is found not to have integrity shall be reported to the Santa Fe OCD office with a proposed corrective action plan to repair the sump or below grade tank and identify possible contamination.

2. A work plan to investigate the hydrocarbon contamination at the facility burn drum area (see photo number 1) needs to be proposed by GPM. The plan shall address the nature and vertical as well as horizontal extent of possible contamination so that WQCC Groundwater Standards 20 NMAC 6.2.3103 will not be exceeded. Since the released fluid may be subject to characterization per 40 CFR Part 261, GPM will determine if the released fluid is hazardous or non-hazardous.

3. Any non-exempt waste(s) that are generated at the facility such as "lube oil" contaminated soil and wash down water need to be properly characterized per 40 CFR Part 261. If the wastes are non-hazardous OCD will be the approving agency, if the wastes are hazardous then GPM must notify the NMED, HRMB at (505)-827-1558 for proper guidance in the collection, storage, and disposal of hazardous waste.

GPM "AVALON" GW- 024
(PHOTOS BY OCD)

PHOTO NO. 1 DATE: 4/09 /97

PHOTO NO. 2 DATE: 4/09 /97

GPM "AVALON" GW-024
(PHOTOS BY OCD)

PHOTO NO. 3 DATE: 4/09 /97

PHOTO NO. 4 DATE: 4/09 /97

GPM "AVALON" GW- 024
(PHOTOS BY OCD)

PHOTO NO. 5 DATE: 4/09 /97

GPM GAS SERVICES COMPANY
A DIVISION OF PHILLIPS PETROLEUM COMPANY

4044 PENBROOK
ODESSA, TX 79762

September 18, 1995

Avalon Natural Gas Processing Plant
Discharge Plan GW-24 Transfer

Mr. William J. LeMay, Director
State of New Mexico
Energy, Minerals and Natural Resources Department
Oil Conservation Division
2040 S. Pacheco
Santa Fe, New Mexico 87505

Dear Mr. LeMay:

Pursuant to Water Quality Control Commission (WQCC) regulation 3-111, Transfer of Discharge Plan, William Field Services has transferred to GPM Gas Corporation (GPM) discharge plan GW-24 effective July 1, 1995. Discharge Plan GW-24 was approved on September 18, 1985 and renewed on June 7, 1995. GPM acknowledges receipt of a copy of discharge plan GW-24 for the Avalon Natural Gas Processing Plant and agrees to abide by the provisions and requirements of the plan.

Thank you for your attention to this matter. Please do not hesitate to contact me at (915) 368-1142 should you have any questions or require additional information. Thank you.

Sincerely,

Scott Seeby
Environmental Engineer
New Mexico Region

cc: Mr. Rob M. Hawksworth
Director, Shared Services
Williams Field Services
P.O. Box 58900, M.S. 2G1
Salt Lake City, UT 84158-0900

GPM GAS CORPORATION

GPM GAS SERVICES COMPANY
A DIVISION OF PHILLIPS PETROLEUM COMPANY

4044 PENBROOK
ODESSA, TX 79762

September 12, 1995

Mr. William J. LeMay
Director - Oil Conservation Division
Energy, Minerals and Natural Resources Department
P.O. Box 6429
Santa Fe, New Mexico 87505-6429

Discharge Plan GW - 024
Avalon Natural Gas Plant
Eddy County, New Mexico

Dear Mr. LeMay:

The renewal of Discharge Plan GW - 024 for GPM Gas Corporation's Avalon Gas Plant (recently acquired from Gas Company of New Mexico) located in NW/4 SE/4, Section 9, Township 21 South, Range 27 East, was approved by the New Mexico Oil Conservation Division (NMOCD) on June 7, 1995.

Pursuant to Section 3-114 of the New Mexico Water Quality Control Commission Regulations, GPM is pleased to submit to the NMOCD the attached flat fee payment of one-thousand, six hundred and sixty seven dollars and fifty cents ($1667.50) payable to **NMED - Water Quality Management**. As stated in the above referenced approval letter, the filing fee of fifty dollars ($50) has been received by the NMOCD.

On behalf of GPM, I would like to thank you for your continued cooperation in support of our operations in New Mexico. If you have any questions or concerns regarding this matter, please contact me at (915) 368-1085.

Sincerely,

Vince Bernard
Safety & Environmental Director
New Mexico Region

VBB
Attachment

cc: Tim Gumm, OCD Artesia Office

WILLIAMS FIELD SERVICES
ONE OF THE WILLIAMS COMPANIES

P.O. Box 58900
Salt Lake City, UT 84158-0900
(801) 584-7033
FAX: (801) 584-6483

May 31, 1995

Mr. Roger Anderson
New Mexico Oil Conservation Division
2040 South Pacheco
Santa Fe, New Mexico 87504

Dear Mr. Anderson:

This letter is to notify you that the ownership of the following Sunterra Gas Processing Co. and Gas Company of New Mexico Facilities will be transferred to Williams Field Services (WFS) on or before July 1, 1995:

1. Avalon Natural Gasoline Plant (GW-24);
2. Five Points Compressor Station (GW-78);
3. Wild Horse Compressor Station (GW-79);
4. Indian Hills Purification Plant GW-42);
5. Crouch Mesa Compressor Station GW-129);
6. Kutz Canyon Processing Plant (GW-45); and
7. Lybrook Processing Plant (GW-47).

WFS has received copies of the discharge plans for the above referenced facilities. WFS has reviewed the plans and agrees to abide by the provisions and requirements of each plan.

The following changes apply to all seven (7) discharge plans.

Legally Responsible Party:
Williams Field Services
P.O. Box 58900, M.S. 2G1
Salt Lake City, Utah 84158-0900
(801) 584-6543

Contact Person:
Ms. Leigh E. Gooding, Environmental Specialist
Phone and Address, Same as Above

If you have any questions or require additional information, please do not hesitate to contact me at (801) 584-6543.

Sincerely,

Rob M. Hawksworth
Director, Shared Services

cc: Denny Foust, OCD District III Office

Affidavit of Publication

No. 15081

STATE OF NEW MEXICO,

County of Eddy:

Gary D. Scott being duly sworn, says: That he is the Publisher of The Artesia Daily Press, a daily newspaper of general circulation, published in English at Artesia, said county and state, and that the hereto attached Legal Notice

was published in a regular and entire issue of the said Artesia Daily Press, a daily newspaper duly qualified for that purpose within the meaning of Chapter 167 of the 1937 Session Laws of the state of New Mexico for 1 consecutive days weeks on the same day as follows:

First Publication May 5, 1995

Second Publication

Third Publication

Fourth Publication

Gary D. Scott

Subscribed and sworn to before me this 12th day of May 19 95

Barbara Ann Beans

Notary Public, Eddy County, New Mexico

My Commission expires September 23, 1996

Copy of Publ

LEGAL NOTICE

NOTICE OF PUBLICATION
STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

Notice is hereby given that pursuant to New Mexico Water Quality Control Commission Regulations, the following discharge plan applications and renewal application has been submitted to the Director of the Oil Conservation Division, 2040 South Pacheco, Santa Fe, New Mexico 87505, Telephone (505) 827-7131:

(GW-187) - WILLIAMS Field Services, P.O. Box 58900, M.S. 2 G1, Salt Lake City, Utah, 84158-0900 has submitted a Discharge plan application for their La Cosa Compressor facility located in the NE/4 NW/4, Section 34, Township 29 North, Range 11 West, NMPM, San Juan County, near Bloomfield New Mexico. The total wash water discharge will be about 53 gallons/day, this water will be collected in a closed top tank and transported offsite for disposal at an OCD approved facility. Groundwater most likely to be affected by a spill, leak, or accidental discharge to the surface is at a depth of approximately 140 feet with a total dissolved solids concentration of approximmately 2,000 mg/L. The discharge plan addresses how spills, leaks, and other accidental discharges to the surface will be managed.

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AFFIDAVIT OF PUBLICATION

No. 34728

STATE OF NEW MEXICO
County of San Juan:

ROBERT LOVETT being duly sworn says: That he is the Classified Manager of THE DAILY TIMES, a daily newspaper of general circulation published in English at Farmington, said county and state, and that the hereto attached Legal Notice was published in a regular and entire issue of the said DAILY TIMES, a daily newspaper duly qualified for the purpose within the meaning of Chapter 167 of the 1937 Session Laws of the State of New Mexico for publication on the following day(s):

Thursday, May 4, 1995

and the cost of publication was: $114.42

Robert Lovett

On 5/4/95 ROBERT LOVETT appeared before me, whom I know personally to be the person who signed the above document.

[illegible]

My Commission Expires

[illegible]

COPY OF PUBLICATION

Legals

NOTICE OF PUBLICATION
STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

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Any interested person may obtain [illegible]

NOTICE OF PUBLICATION

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ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

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If no public hearing is held, the Director will approve or disapprove the proposed plan based on information available. If a public hearing is held, the director will approve or disapprove the proposed plan based on information in the plan and information submitted at the hearing.

GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 28th day of April, 1995.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

S E A L

WILLIAM J. LEMAY, Director

Public Service Company of New Mexico

March 22, 1995

Mr. Roger Anderson
Oil Conservation Division
Energy, Minerals, and Natural Resources Department
State of New Mexico
PO Box 2088
Santa Fe, NM 87504

re: Renewal of Discharge Plan - Avalon Natural Gasoline Plant

Dear Mr. Anderson:

Gas Company of New Mexico is submitting three copies of the application for renewal of the discharge plan for Avalon Natural Gasoline Plant. The plan has been prepared in accordance with the "Guidelines for the Preparation of Ground Water Discharge Plans at Natural Gas Processing Plants, Oil Refineries, and Gas Compressor Stations" (revised 5.92), and with the Water Quality Control Commission (WQCC) Regulations 3-104 and 3-106.

Enclosed is a check for $50.00 in filing fees, as specified in WQCC 3-114. If you have any questions or comments, please call Jean Arya at 241-4954.

Sincerely,

John Renner
Vice President
Gas Supply Sourcing

Alvarado Square
Albuquerque, New Mexico 87158

5/92

State of New Mexico
Energy, Minerals and Natural Resources Department
OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, NM 87501

DISCHARGE PLAN APPLICATION FOR NATURAL GAS PROCESSING PLANTS, OIL REFINERIES AND GAS COMPRESSOR STATIONS

(Refer to OCD Guidelines for assistance in completing the application.)

I. TYPE: Natural Gas Processing Facility

II. OPERATOR: Gas Company of New Mexico

ADDRESS: Alvarado Square, Albuquerque, NM 87158-0900

CONTACT PERSON: John Renner PHONE: 632-3311

III. LOCATION: NW1/4 SE 1/4 Section 9 Township 21 South Range 27 East
Submit large scale topographic map showing exact location.

IV. Attach the name and address of the landowner(s) of the disposal facility site.

V. Attach description of the facility with a diagram indicating location of fences, pits, dikes, and tanks on the facility.

VI. Attach a description of sources, quantities and quality of effluent and waste solids.

VII. Attach a description of current liquid and solid waste transfer and storage procedures.

VIII. Attach a description of current liquid and solid waste disposal procedures.

IX. Attach a routine inspection and maintenance plan to ensure permit compliance.

X. Attach a contingency plan for reporting and clean-up of spills or releases.

XI. Attach geological/hydrological evidence demonstrating that disposal of oil field wastes will not adversely impact fresh water. Depth to and quality of ground water must be included.

XII. Attach such other information as is necessary to demonstrate compliance with any other OCD rules, regulations and/or orders.

XIII. CERTIFICATION

I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

Name: John Renner Title: Vice President, Gas Supply Sourcin

Signature: John Renner Date: 3/25/95

Groundwater Discharge Plan

Gas Company of New Mexico
Avalon Natural Gasoline Plant

prepared for

Public Service Company of New Mexico

Environmental Services, Inc.
4665 Indian School Rd. NE, Suite 106
Albuquerque, NM 87110
phone 505 • 266 • 6611
fax 505 • 266 • 7738

Contents

Avalon Natural Gasoline Plant
Discharge Plan

This Discharge Plan has been prepared in accordance with Oil Conservation Division "Guidelines for the Preparation of Ground Water Discharge Plans at Natural Gas Processing Plants, Oil Refineries, and Gas Compressor Stations (revised 05-92)" (see appendix 7) and New Mexico Water Quality Control Commission regulations 3-104 and 3-106.

1 General Information

Type of Operation

The Avalon Natural Gasoline Plant is operated for the removal of various products from gas gathered in the facility operator's natural gas gathering system. The Avalon facility was constructed in 1963. The plant is currently in operation under ground water discharge plan GW-24. The submittal of this document constitutes application for renewal of that plan.

This facility uses a refrigerated lean oil absorption process to remove ethanes, propanes, butanes, pentanes, and hexanes from natural gas. The process takes place using scrubbers, exchangers, separators, chillers, flash tanks, and compressors. The design capacity of the plant is 30 MMcf/day. The facility utilizes ethylene glycol to dehydrate the gas, methanol to prevent the gas stream from freezing, and ambitrol as a coolant for the compressors. See appendix 3 for process flow diagrams.

All spills, leaks, and discharges from this site will be handled in accordance with OCD regulations and the guidelines set forth in the Avalon Natural Gasoline Plant Spill Prevention Control and Countermeasure (SPCC) Plan.

Operator/Legally Responsible Party

Public Service Company of New Mexico
Alvarado Square
Albuquerque, New Mexico 87158-0900
Attention: John Renner
Vice President, Gas Supply Sourcing
Gas Company of New Mexico
(505) 632-3311

Location of Discharge/Facility

199 Raines Road
Carlsbad, Eddy County, NM

NW 1/4 of SE 1/4 of Section 9, Township 21 South, Range 27 East
UTM Zone 13; 576 kmE, 3595.25 kmN

Landowner

According to the Eddy County Assessor's Office, the Public Service Company of New Mexico is the recorded landowner of the facility site. However, this facility is due to change ownership by Fall 1995.

Facility Description

The Avalon facility utilizes several process vessels as well as tanks and other storage vessels in the course of operation of the plant. The components of the site are discussed in section 2 of this application. All figures and maps are located in appendix 1. Appendix 2 lists all tanks and secondary containment areas at the facility. Process and water flow diagrams are included in appendix 3.

2 Plant Processes

Effluent Sources, Quantities, and Quality of Effluent and Waste Solids

Separators The Avalon Plant is equipped with several separators. The drip/condensate which accumulates in the separators is stored in the primary drip/condensate tank. The amount of drip/condensate which is produced by the separators varies with daily gas throughput.

Boilers Approximately 60 gallons per month of water with trace amounts of ethylene glycol are discharged from the glycol reboiler to the glycol system effluent tank.

Scrubbers The Avalon Plant is equipped with several scrubbers. The liquid waste stream which does not go on to further processing in some of the scrubbers is stored in the primary drip/condensate tank. The amount of drip/condensate which is produced by the scrubbers varies with daily gas throughput.

Engine Cooling Waters Two 550-hp engines are used for the compression of natural gas and propane at the facility. Water is used for engine cooling. Ambitrol is used in the radiators of the engines for corrosion control. 15-gallons of a 50% water and 50% ambitrol mixture is discharged to the waste oil tank monthly.

Cooling Towers The plant utilizes four cooling towers to cool the product and propane systems. The cooling water is treated with 74 ppm of sulfuric acid for pH control and 12 ppm of Antipol 190 for scale control. It is also treated every other week with one quart of Toxsene 72, for slime and algae control, and one quart of Toxsene 37, for bacteria control. The plant uses approximately 100,800 gallons per month of make up water. As stated in the 1985 discharge plan, approximately 30,000 gallons per month of blowdown is directed to the cooling tower water storage tank. Water funneled from the cooling tower water storage tank for turbidity control is stored in the primary water blowdown tank. Approximately

32,000 gallons per month of cooling tower waste water is removed from the cooling tower waste water tanks. The material safety data sheets (MSDS) for the cooling tower water additives are located in appendix 4.

Sewage The plant has a septic system for receiving non-hazardous sewage waste at the facility. Sewage effluent is completely separate from other effluents with no commingling. The sanitary waste water is discharged into a septic tank with leach line.

Waste Lubrication and Motor Oils Waste lubrication and motor oils are generated by compressor engine maintenance. Approximately 100 gallons of used motor oil are drained to the waste oil tank monthly.

Waste and Slop Oil The plant uses a recirculating lean oil absorption process to process natural gas. Therefore, the amount of waste , or excess, lean oil generated at the facility is minimal. Any excess lean oil which accumulates in the lean oil surge tank is discharged to the primary drip/condensate tank.

Used Filters Glycol and rich oil filters are utilized for plant processes. The two compressor engines utilize lube oil filters. The filters are drained at the point of removal from the equipment. After they are drained, the filters are stored in an above ground steel receptacle approximately 100 cubic feet in size located west of the glycol system. Approximately 144 glycol filters, 12 rich oil filters, and 44 lube oil filters are used per year at the facility.

Solids and Sludges The cooling tower water storage tank is cleaned out annually to remove dirt which is blown by wind into the tank and collects on the bottom. Less than three cubic feet of dirt is removed from the tank annually. The dirt may contain trace amounts of sulfuric acid, Toxsene 72, Toxsene 37, and Antipol.

Cleaning Operations Using Solvents/Degreasers Minor amounts of a non-chlorinated solvent are used in cleaning operations at the plant. Waste solvent is discharged to the waste oil tank. A 55-gallon drum of solvent is kept on site in the compressor shed. The MSDS for the solvent used at Avalon, Chevron Thinner 325, is located in appendix 4.

Truck, Tank, and Drum Washing Drums, tanks, and trucks are not washed down at the facility.

Other Liquid and Solid Wastes Compressors at the facility are washed down every two months. The amount of wash-down water from the compressor building varies with each wash. Typically, the water is contaminated with traces of motor oil and non-chlorinated solvent. The compressor shed is situated on a grated concrete pad which is equipped with a drain line to the waste oil tank.

Caustic (sodium hydroxide) is mixed with and removed from the product stream within an area located on a concrete pad. The concrete pad is equipped with a sump and drain line which deposits effluent and storm water to the caustic system effluent tank. This area is washed down monthly. Approximately 20 gallons of waste water with trace amounts of caustic is discharged to the caustic system effluent tank. Caustic removed from the product stream and not regenerated back into the caustic system in the blow case is stored in the spent caustic storage tank. Less than 8,808 gallons per year are discharged to the tank. Effluent in the spent caustic storage tank consists of 50% water and 50% caustic. Spent caustic which is carried to the Y-Grade product storage tanks is drained from the tanks to the tank bottoms storage tank.

The glycol system effluent tank receives spills and storm water which fall onto the concrete glycol dehydration pad on which the glycol pumps are located. This pad is equipped with a two inch angle iron which is bolted down every five feet and sealed to the concrete pad with silicon. A 0.25 inch bead of silicon is located inside the cage. A drain which runs into the glycol system effluent tank is located at a low point on the west end of the containment area. The effluent from the glycol dehydration pad consists of water with trace amounts of glycol.

Paper and other solid waste, excluding filters, are removed from the site weekly by a private contractor. All used drums at the facility are returned to their vendors. All drums currently in use are stored in the compressor shed or on concrete pads.

Tanks A total of 24 storage tanks are utilized at the facility for the storage of process chemicals, wastes, and marketable products. A complete inventory of the tanks at the facility, their contents, and berm volumes is located in appendix 2. The tank inventory also includes the direction of potential flow from each tank in the event of a spill. The location of these tanks is shown on the site diagram in appendix 1.

Quality Characteristics

The effluent streams from the plant have not been sampled at the time of this Discharge Plan. Due to the fact that no liquid waste streams are discharged directly onto the ground surface at Avalon, the facility operator is awaiting guidance from OCD concerning which effluent streams from the plant should be tested. Results of any sampling which may be conducted at Avalon will be kept in appendix 6.

The following table lists the expected waste materials, sources of the waste, expected quantities, and the planned disposition of the process waste materials.

Plant Waste Materials

Source	Disposition	Quantity	Waste Description
Glycol reboiler	Glycol system effluent tank	60 gal/month	Water with traces of glycol.
Wash down water - Compressor shed - Caustic bath	 - Waste oil tank - Caustic system effluent tank	 - Varies - 20 gal/month	 - Water with traces of motor oil & solvent. - Water with traces of caustic.
Filters	Steel receptacle	200/yr	Rich oil, ethylene glycol, and motor oil.
Cooling tower	- Water blowdown tanks - Dirt hill	- ~32,000 gal/month - < 3 cubic feet/yr	- Water with trace amounts of sulfuric acid, Antipol 190, Toxsene 72, and Toxsene 37. - Dirt, possibly with trace amounts of sulfuric acid, Antipol 190, Toxsene 72, and Toxsene 37.
Compressor engines	Waste oil storage tank	-15 gal/month -100 gal/month	- Coolant (50% water, 50% ambitrol) - Used engine oils.
Scrubbers and Separators	Primary drip/condensate tank	~735 gal/month	Produced water, pipeline liquids.
Lean oil surge tank	Primary drip/condensate tank	Varies (minimal)	Lean oil.
Tank bottoms	Tank bottoms storage tank	Varies (minimal)	Spent caustic.
Blow case	Spent caustic storage tank	< 8,808 gal/yr	50% water, 50% caustic

Commingled Waste Streams

There is no commingling of waste streams.

3 Transfer and Storage of Process Fluids and Effluents

The tank inventory in appendix 2 identifies storage tanks and secondary containment areas within the facility. Four of the tanks located at the facility are pressurized, the propane and three Y-Grade product tanks.

Above Ground Storage Tanks

According to OCD Discharge Plan Guidelines (5/92), VII.D., above ground storage tanks which contain fluids other than fresh water must be bermed. Berms must be capable of containing 1.3 times the volume of the largest tank for which they are providing containment. Berms providing secondary containment for interconnected tanks must be designed to contain 1.3 times the total volume of the interconnected tanks. Above ground tanks must also be placed on gravel pads. The following tanks located at Avalon meet the above OCD requirements.

- The caustic tank is situated on a gravel pad within an earthen berm which provides adequate containment capacity.

- The spent caustic tank is situated on a gravel pad within an earthen berm which provides adequate containment capacity.

- The waste oil tank is located within an earthen berm which provides adequate containment capacity. However, it is not situated on a concrete or gravel pad. Therefore, per OCD regulations, the facility owner will clean out and visually inspect the tank every five years.

The following above ground storage tanks located at Avalon were exempted from berming requirements by the OCD in its approval of the 1990 Discharge Plan renewal application. The facility owner would like to request continuance of the exemptions as the use of the tanks and composition of the materials discharged to the tanks has not changed since the submittal of the 1990 renewal application.

- The 8,808-gallon secondary drip/condensate tank is an overflow tank for the primary drip/condensate tank. This tank is normally empty. The tank is situated on a gravel pad.

- The two 8,808-gallon cooling tower waste water tanks contain water blowdown from the cooling towers. No chromate compounds are used to treat cooling tower water. The tanks are situated on a gravel pad with foundation ring.

Based on the cooling tower waste water tanks berming exemption, the facility owner is requesting a similar exemption from berming for the cooling tower water storage tank as this tank feeds the cooling tower waster water tanks.

The following above ground tanks do not meet the OCD guidelines pertaining to secondary containment. Secondary containment devices for storage tanks containing oils as identified in the tank table in appendix 2 will be upgraded to meet OCD requirements within one year. Secondary containment devices for the remaining storage tanks will be upgraded to meet OCD requirements within the next five-year period of GW-24 effectiveness.

- The 11,202-gallon horizontal drip/condensate tank is 7 feet in diameter by 39 feet in length. The tank is situated on supports over a 400 square foot concrete pad with 2-inch angle iron. The angle iron is bolted down every 5 feet and has a silicon seal between the inside edge of the iron and concrete.

- The 8,808-gallon lean oil storage tank is 15 feet high by 10 feet in diameter. It is situated on a round concrete pad which is 12 feet in diameter and 10 inches above grade. This pad is surrounded by a square concrete pad which is 169 square feet. The outer pad is 6 inches thick with 1 inch extending above grade. The interface between the two pads is sealed with silicon rubber. A 2-inch angle iron is situated around the perimeter of the square pad. The angle iron is bolted down every 5 feet and has a silicon seal between the iron and pad.

- The 10,987-gallon lean oil storage tank is 7 feet in diameter by 39 feet in length. It is supported horizontally by steel supports. A 10 foot by 40 foot concrete pad is situated around the tank. A 2-inch angle iron is situated around the perimeter of the pad. The angle iron is bolted down every 5 feet and has a silicon seal between the iron and pad.

- The 527-gallon methanol tank is situated on stilts over gravel.

- The 554-gallon methanol tank and two ambitrol tanks are situated on adjoining stilts over a concrete pad.

- The ethylene glycol tank is located on stilts which are situated on a concrete pad.

- The two engine oil storage tanks are located within the compressor building which is situated on a concrete pad.

OCD regulations regarding above ground storage tanks do not apply to the following storage tanks located at Avalon as they do not contain liquid material.

- (3) Y-Grade product tanks
- propane tank

Since both of these substances volatilize at or immediately after reaching ambient temperature and pressures, they do not pose a threat to surface or ground water.

Below-Grade Storage Tanks

The following below-grade storage tanks are located at the plant.

- caustic system effluent tank
- glycol system effluent tank
- tank bottoms tank

All below-grade tanks at the plant are double lined. The tanks and liners were installed prior to the implementation of OCD's "Guidelines for the Selection and Installation of Below-Grade Produced Water Tanks (Revised 10/91)." Per written and verbal correspondence between the plant manager and the OCD, the leak detection systems of the below-grade storage tanks consist of sump systems which were designed to provide enough clearance between the liners and tanks to inspect for leakage. The liquid level of the below-grade tanks is monitored daily which meets the maintenance requirements listed in the above-mentioned guidelines which state "leak detection sumps shall be inspected on a routine basis at a minimum of once every 30 days." Refer to appendix 7 for OCD guidelines regarding below-grade tanks.

The ground surface surrounding the perimeter of the open top glycol and caustic system effluent tanks has been built up to create a berm around the tanks which will prevent storm water run off from entering the tanks. The tanks are equipped with a grate over the top to prevent accidental intrusion.

The open top tank bottoms storage tank protrudes above the ground surface approximately three inches. This situation prevents storm water run off from entering the tank. This tank is equipped with a grate over the top and a rail around the perimeter of the tank to prevent accidental intrusion.

Process Area

The process area of the plant is graveled to allow for early leak detection and immediate response by plant personnel in the event of a spill. All process piping at Avalon is located above ground.

Drums, Underground Pipelines, and Water Use

All drums used and stored at Avalon are stored in buildings or on paved areas.

The facility utilizes underground pipelines for the transfer of waste streams to the appropriate storage tank. These underground waste water pipelines were installed at the time of the facility construction. All process pipelines at the facility are constructed of steel, except for lines to effluent storage areas. Those lines are PVC plastic with the exception of two wrapped steel lines. Any leaks detected within the system are immediately investigated. At such time, underground pipelines are exposed and inspected for damage and repaired accordingly. Separators and pipelines at the facility are pressurized with pressures varying between 120 and 600 pounds per square inch.

As required by "Guidelines for the Preparation of Ground Water discharge Plans at Natural Gas Processing Plants, Oil Refineries, and Gas Compressor Stations (Revised 5/92)," VII.E., hydrostatic testing of all underground waste water pipelines at the plant will be performed at 3 PSI above operating pressure within the next five-year period of GW-24 effectiveness. A specific test protocol will be submitted to the OCD for approval prior to performance of the test. Due to the pending change in ownership of this plant, the test date cannot be stipulated to in this application.

An average of approximately 144 gallons per hour of water is used in plant processes. The plant feed water is supplied by the City of Carlsbad. All waste water is stored in storage tanks. See appendix 3 for water flow diagram.

4 Effluent Disposal

All effluent disposal from the facility is handled in accordance with OCD regulations. The following effluents are removed from the facility by OCD-approved licensed waste removers or recyclers.

- The spent caustic storage tank, caustic system effluent tank, glycol system effluent tank, and the tank bottoms storage tank are emptied as needed, which is normally once per year, by Rowland Trucking for disposal into off-site injection wells.

- The water blow down tanks are emptied once per week by Rowland Trucking for disposal into an off site injection well.

- The drip/condensate tanks are emptied once per year by Navajo Refining Co. and removed from site to undergo additional processing at Navajo's Artesia plant.

- The waste oil tank is emptied once per year by Industrial Service Corporation. The waste oil is transported to Industrial Services oil recycling plant located between Slaton and Lubbock, Texas.

- Used filters and other solid material is removed from the facility by Waste Management. Used filters are removed once per year, remaining solid material wastes are picked up weekly.

The dirt which accumulates in the cooling tower water storage tank is spread out on a hill on the east side of the plant. No special precautions are taken when applying the dirt to the land as there should only be trace amounts, if any, of the cooling tower water additives in the dirt.

The effluent picked up by Rowland Trucking from the Avalon Plant may be disposed into any of the

following injection wells located in the Carlsbad area.

Injection Wells

Name	Owner	Id #	Class	Location
Springs	Rowland Trucking	SWD86	II	S27, T20S, R26E
BKE	Rowland Trucking	SWD495	II	S13, T22S, R27E
Myrtle Myra	Ray Westall	SWD391	II	S32, T21S, R27E
The Salty Bill	Corine Grace	30SWDR118	II	S36, T22S, R26E

The solid waste removed from the facility by Waste Management is normally disposed in a landfill located in Hobbs which is owned and operated by Waste Management. In the event that the truck picking up the waste material from Avalon is not able to haul the material to Hobbs, it will be dumped in a public landfill owned by the City of Carlsbad and Eddy County. However, the filters picked up by Waste Management are always disposed in the landfill owned and operated by Waste Management. The filters are classified as a special waste. Therefore, they are located in a segregated area of the landfill. Full documentation concerning the quantity and disposal location of the filters is maintained by Waste Management.

The addresses of the contractors who remove effluents from the facility are as follows.

- Rowland Trucking - 1609 East Green Street, Carlsbad, NM 885-2053
- Navajo Refining - East Main, Artesia, NM 748-3311
- Industrial Service Corporation - 12212 County Road 31, Slaton, TX (806)828-3183
- Waste Management - 2608 Lovington Highway, Hobbs, NM 392-6571

A septic system is located at the facility which utilizes a concrete tank with leach field. The septic system serves the Avalon facility and does not receive non-sewage or mixed flow from any process units or internal drains. No injection wells, drying beds, or pits are used the facility. No other on-site disposal, other than the methods already described are utilized at the facility.

5 Inspection, Maintenance, and Reporting

The plant is manned 24 hours per day, 365 days per year. The site will be inspected daily by the facility operator. Inspection and maintenance will be performed according to the guidelines set forth in the Avalon SPCC plan. All areas that have been identified during operation as susceptible to leaks or spills will be paved, bermed, or otherwise contained to prevent the discharge of any effluents. Containers used to

contain leaks and spills are emptied into the primary drip tank.

The Avalon facility does not have a storm water retention system in place. Therefore, storm water which runs onto or falls on the facility will most likely come into contact with the process area. However, the facility operator repairs and/or contains leaking or dripping equipment as soon as possible to insure that storm water run off does not come into contact with process material constituents.

6 Spill/Leak Prevention and Reporting (Contingency Plans)

Leaks, spills, and drips will be handled in accordance with OCD rule 116 and the spill response procedures outlined in the Avalon SPCC Plan. The SPCC Plan was developed according to the guidelines set forth in 40 CFR part 112 and is located in the facility office. Plant personnel anticipate that most leaks and spills will occur at connection points between equipment. Areas perceived by plant personnel as having high spill or leak potential are inspected daily. Small leaks and drips are contained with buckets or rags until appropriate repairs are made. Spills and ruptures are handled in accordance with the spill response procedures in the SPCC plan.

Reportability of the various spill types depends on the substance and quantity spilled. To determine reporting applicability, plant personnel will refer to the GCNM Spill Manual which is kept on site in the plant office. The manual contains documentation forms and reporting guidelines to follow in the event of a spill. The facility operator will contact OCD in the event of a spill in accordance with rule 116. Copies of necessary reporting forms are in located in the Spill Manual.

Effect of Discharge Plan on Wildlife Species

Plant personnel will not unnecessarily disturb or destroy wetlands, riparian vegetation, or any identified threatened or endangered species' sensitive habitat on or near the site during operation of the facility. If adverse impacts cannot be avoided, the facility operator will notify the USFW so that the adverse impacts can be discussed in greater detail. The plant owner will inform on-site employees of any threatened or endangered species and habitat on or near the site to increase individual awareness of these issues.

The open top glycol and caustic system effluent tanks and the open top tank bottoms tank are equipped with grates. The open top cooling tower water storage tank is covered with wood planks. Therefore, the open top tanks located at the facility are non-hazardous to wildlife and migratory birds and comply with the OCD migratory bird regulations (Rule 8).

7 Site Characteristics

The Avalon natural Gasoline Plant is located in the NW 1/4 of the SE 1/4 of Section 9, Township 21 South,

Range 27 East, in Eddy County, New Mexico. The facility is approximately 5.5 miles north northeast of Carlsbad, New Mexico. The site is rural in nature. It is located on level terrain at an elevation of approximately 3230 feet above mean sea level. The facility is indicated on the Carlsbad East 7.5 minute topographic map in appendix 1.

Hydrologic Features

The facility is located on the west side of Alacran Hills. The terrain on which the plant is located slopes gently to the northwest. Therefore, runoff from the plant flows northwest off of the facility.

The USGS 7.5 minute map shows an unnamed intermittent stream 2000 feet northwest of the facility. The stream, or drainage channel, originates from runoff in the hills south of the plant. The channel terminates at intermittent Alkali Lake located approximately 2.4 miles north of the plant.

According to *Geology and Ground-Water Resources of Eddy County, New Mexico*, by Hendrickson and Jones (NMIMT 1985) and interviews with personnel from the State Engineer's Office (SEO) in Roswell, the following water wells located in Township 21 South, Range 27 East, are located within one mile of the plant.

Well Record Information

Location	Owner	Date Drilled	Well depth (ft)	Depth to water (ft)	Date measured	Use	Aquifer
SW1/4,SW1/4,S9	na	na	na	80	1/25/50	stock	alluvium
SW1/4,SW1/4,SW1/4,S9	Gerald Elmer	na	92	~80	1966	stock	alluvium
NW1/4,SE1/4,S9	na	1966	120	76.9	1988	exploratory	alluvium

na = not available

According to Hendrickson and Jones, Total Dissolved Solids (TDS) for the first well listed above was measured on January 25, 1950. TSD for this well measured 1,090 ppm. The specific conductance of the water from this well was measured at 1370 ppm. Water sampled from this well registered 608 parts per million sulfate. According to the SEO, the well located in the NW 1/4 of the SE 1/4 of Section 9 is artesian and contains limestone and sulfur. Because the water from this well contains sulfur, the representative from the SEO believed that this well was most likely drilled for exploratory use. No sampling of groundwater quality in the area appears to have been conducted since 1988.

According to personnel from the SEO, the depth to groundwater for the area in which the plant is located

is 76.9 feet, as measured in 1988.

According to Hendrickson and Jones, the direction of ground water flow in the area is southwest towards the Pecos River which is located approximately 4.3 miles from the plant.

Geologic Description of Discharge Site

The plant is located on sedimentary deposits of alluvium from stream and valley bottoms. According to the *Soil Survey of Eddy Area, New Mexico*, United States Department of Agriculture, Soil Conservation Service, there is one soil type classification in the facility area. The soil for the area is classified as Simona-Bippus complex. Simona soils are shallow and well drained, while Bippus soils are deep and well drained. Please refer to relevant excerpts from the soil survey in appendix 5 for more detail.

According to the 1985 discharge plan for the facility, the plant is located on sedimentary surficial deposits of alluvium of stream and valley bottom. This deposit of alluvium appears to be located on the Rustler formation which ranges in thickness from 200 to 500 feet moving north to south. The Rustler formation consists of material such as anhydrite, gypsum, interbedded red and green sandy clay, and some beds of dolomite. This formation overlies the Salado formation. The information regarding the Rustler and Salado formations was found in Hendrickson and Jones. The depth of the Salado formation was not given.

Flood Information

According to the Federal Emergency Management Agency's Flood Insurance Rate Map for the area (parcel map 3501200475B), the Avalon Plant lies outside the 500-year floodplain.

8 Additional Information

No other information is being submitted with this discharge plan renewal as there are no discharges of liquid onto the ground surface at the Avalon plant.

Affirmation

I hereby certify that I am familiar with the information contained in and submitted with this discharge plan for the Avalon Natural Gasoline Plant and that such information is true, accurate, and complete to the best of my knowledge and belief.

John Renner — Signature

3/24/95 — Date

John Renner
Vice President, Gas Supply Sourcing
Gas Company of New Mexico

WILLIAMS FIELD SERVICES
ONE OF THE WILLIAMS COMPANIES

P.O. Box 58900
Salt Lake City, UT 84158-0900
(801) 584-7033
FAX: (801) 584-6483

May 31, 1995

Mr. Roger Anderson
New Mexico Oil Conservation Division
2040 South Pacheco
Santa Fe, New Mexico 87504

Dear Mr. Anderson:

This letter is to notify you that the ownership of the following Sunterra Gas Processing Co. and Gas Company of New Mexico Facilities will be transferred to Williams Field Services (WFS) on or before July 1, 1995:

1. Avalon Natural Gasoline Plant (GW-24);
2. Five Points Compressor Station (GW-78);
3. Wild Horse Compressor Station (GW-79);
4. Indian Hills Purification Plant GW-42);
5. Crouch Mesa Compressor Station GW-129);
6. Kutz Canyon Processing Plant (GW-45); and
7. Lybrook Processing Plant (GW-47).

WFS has received copies of the discharge plans for the above referenced facilities. WFS has reviewed the plans and agrees to abide by the provisions and requirements of each plan.

The following changes apply to all seven (7) discharge plans.

Legally Responsible Party:
Williams Field Services
P.O. Box 58900, M.S. 2G1
Salt Lake City, Utah 84158-0900
(801) 584-6543

Contact Person:
Ms. Leigh E. Gooding, Environmental Specialist
Phone and Address, Same as Above

If you have any questions or require additional information, please do not hesitate to contact me at (801) 584-6543.

Sincerely,

Rob M. Hawksworth
Director, Shared Services

cc: Denny Foust, OCD District III Office

MEMORANDUM OF MEETING OR CONVERSATION

X TELEPHONE ___ PERSONAL TIME 7:55 (AM)/PM DATE 8/2/95

ORIGINATING PARTY: Pat Sanchez - NMOCD
OTHER PARTIES: Scott Seibe - GPM 915-368-1066

SUBJECT: Avalon Renewal Flat Fee - GW-24

DISCUSSION: Told Scott the Renewal was approved on June 7, 1995 - However No Flat of 1,667.50# has been submitted by GCNM, WFS, or GPM.

CONCLUSIONS/AGREEMENTS: Scott will take to his staff meeting - will find out who is responsible for the payment of the Flat Fee. will get back with me today.

PATRICIO W. SANCHEZ: Patricio W. Sanchez

xc: FILE,

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

CARLSBAD EAST QUADRANGLE
NEW MEXICO-EDDY CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)

Avalon Natural Gasoline Plant
NW1/4 of SE1/4 of S9, T21S, R27E
Eddy County, NM

Avalon Natural Gasoline Plant

104° 15′ — 104° 07′ 30″ — 32° 30′ — 32° 22′ 30″

PRODUCED BY THE UNITED STATES GEOLOGICAL SURVEY

CONTROL BY . . . . . USGS, NOS/NOAA
COMPILED FROM AERIAL PHOTOGRAPHS TAKEN 1977
FIELD CHECKED . . . . . 1978 MAP EDITED 1985
PROJECTION . . . . . TRANSVERSE MERCATOR
GRID: 1000-METER UNIVERSAL TRANSVERSE MERCATOR . . . . . ZONE 13
10,000-FOOT STATE GRID TICKS . . . . . NEW MEXICO, EAST ZONE
UTM GRID DECLINATION . . . . . 0°26′ EAST
1984 MAGNETIC NORTH DECLINATION . . . . . 10° EAST
VERTICAL DATUM . . . . . NATIONAL GEODETIC VERTICAL DATUM OF 1929
HORIZONTAL DATUM . . . . . 1927 NORTH AMERICAN DATUM

To place on the predicted North American Datum of 1983, move the projection lines as shown by dashed corner ticks (9 meters south and 46 meters east)

There may be private inholdings within the boundaries of any Federal and State Reservations shown on this map

Gray tint indicates area in which selected buildings are shown

All marginal data and lettering generated and positioned by automated type placement procedures

NORTH

SCALE 1:24 000

1 5 0 1 MILES
1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10 000 FEET
1 5 0 1 2 KILOMETERS
1000 0 METERS 1000 2000

CONTOUR INTERVAL 10 FEET

PROVISIONAL MAP
Produced from original manuscript drawings. Information shown as of date of field check. 3

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225
OR RESTON, VIRGINIA 22092

NEW MEXICO
QUADRANGLE LOCATION

1	2	3
4		5
6	7	8

1 Lake McGillan South
2 Angel Draw
3 Illinois Camp SE
4 Carlsbad West
5 Indian Flats
6 Kitchen Cove
7 Otis
8 Loving

ADJOINING 7.5′ QUADRANGLE NAMES

ROAD LEGEND

Improved Road . . . . . ═══
Unimproved Road . . . . . ═ ═ ═
Trail . . . . . - - - - - -

Interstate Route U.S. Route State Route

INTERIOR-GEOLOGICAL SURVEY, RESTON, VIRGINIA-1985

CARLSBAD EAST, NEW MEXICO
PROVISIONAL EDITION 1985

32104-D2-TF-024

W. 14+00 | W. 13+00 | W. 12+00 | W. 11+00 | W. 10+00 | W. 9+00 | W. 8+00 | W. 7+00 | W. 6+00 | W. 5+00 | W. 4+00 | W. 3+00 | W. 2+00 | W. 1+00 | W. 0+00 | E. 0+00

N. 5+00 | N. 4+00 | N. 3+00 | N. 2+00 | N. 1+00 | N. 0+00 | S. 1+00 | S. 2+00 | S. 3+00

1319.4'

671.9'

671.9'

1319.4'

N/W PROPERTY CORNER

S/W PROPERTY CORNER

S/W FENCE CORNER

S/E FENCE CORNER

ELEC. POLE

RAINS ROAD

EAST OF AVALON GAS STATION

PARALLEL

4" FLARE

WASTE OIL TANK 10' X 15'

VERT. DRIP TANK 10' O.D. X 15' TALL

HORIZ. DRIP TANK 7.3' O.D. X 36.6'

H20 BLOW-DOWN TANK 10.0' DIA. X 15.0' HIGH

H20 BLOW-DOWN TANK 10.0' DIA. X 15.0' HIGH

ELECTRIC POLE

WATER DE-HI

ELECTRIC POLE

POWER GENERATOR 21.0' X 11.4'

PIPEWAY

TRUCK LOADING STATION

GARAGE

OFFICE BUILDING

STORAGE

LEAN OIL TRANSFER PUMP

FLAMABLE PRODUCTS STOREAGE SHED 6.0' X 8.0'

LEAN OIL STORAGE TANK 10' DIA. X 15' HIGH

PRODUCT STORAGE 71.17' S/S X 8.79'O.D.

PRODUCT STORAGE 71.17' S/S X 8.79'O.D.

PROPANE STORAGE TANK 28.8' S/S X 9.08' O.D.

PRODUCT STORAGE 71.17' S/S X 8.79'O.D.

LEAN OIL STORAGE 45.5' S/S X 7.5' O.D.

WATER STORAGE TANK 10' DIA. x 15.0 HIGH

SCALE 1"=50'

NOTE: ALL FACILITIES INDICATED BY SLANTED LETTERING INDICATED FACILITIES NOT SURVEYED BUT WAS TRACED FROM A PREVIOUS DRAWING. ALL FACILITIES INDICATED BY UPRIGHT LETTERING WAS SURVEYED IN REFERENCE TO THE EXISTING PROPERTY CORNERS

I HEREBY CERTIFY THAT THIS PLAT WAS MADE FROM NOTES TAKEN IN THE FIELD IN A BONA FIDE SURVEY MADE UNDER MY SUPERVISION, AND THAT THE SAME IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

JOHN W. WEST, N.M. P.E. & L.S. No. 676
TEXAS R.P.S. No. 1138

REGISTERED PROFESSIONAL ENGINEER AND LAND SURVEYOR NO. 676 NEW MEXICO JOHN W. WEST

GAS COMPANY OF NEW MEXICO

TOPOGRAPHIC STUDY

EXISTING AND NEW STRUCTURES WITHIN THE AVALON GASOLINE PLANT LOCATED IN SECTION 9 TOWNSHIP 21 SOUTH, RANGE 27 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO

JOHN WEST ENGINEERING CO.
CONSULTANTS
HOBBS NEW MEXICO

Surveyed ByT. ASEL	Drawn By S.STANFIELD	Last Rev. Date	Drawing Number
Date Begin 4-10-1990	Date 4-17-1990	Disk	
Date End 4-10-1990	Checked By	Sheet 1 of 1	E-2481-2
Project Number: 90-04-021	File Name: GCNMAGP		

METHANOL PUMP
METHANOL STORAGE 16
INLET FILTER SEPARATOR
GAS METER BUILDING
WASTE OIL TANK 1
COMPRESSOR BUILDING
NO. 1
NO. 2
12
18
18
GAS SCRUBBER
PROPANE FIN FAN COOLERS
METHANOL & ANTI-FREEZE STORAGE
LEACH LINE
PROPANE DISCHARGE SCRUBBER
FUEL GAS SCRUBBER
PRODUCT SCRUBBER
VERT. DRIP TANK 2
PROPANE SCRUBBER
DE-ETHANIZER SCRUBBER
PROPANE SCRUBBER
HORIZ. DRIP TANK 3
PROPANE ECONOMIZER
PROPANE CONDENSER
GAS SCRUBBER
H20 BLOW-DOWN TANK 4
WATER PUMPS
GAS TO GAS EXCHANGER
H20 BLOW-DOWN TANK 5
GAS CHILLER
GAS-GLYCOL SEPARATOR
ELECTRIC POLE
LEAN OIL CHILLER
ABSORBER
NORTH LEAN OIL PUMP
LEAN OIL SURGE TANK
GLYCOL EXCHANGER
GLYCOL-CONDENSATE SEPARATOR
SOUTH LEAN OIL PUMP
RICH OIL FLASH TANK
RICH OIL-LEAN OIL EXCHANGER
RICH OIL FILTER
20
LEAN OIL FIN FAN
CHEMICAL PUMP
WATER STORAGE PIT
COOLING TOWER
PRODUCT ACCUMULATOR
PRODUCT PUMP
PRODUCT FIN FAN
STILL
STILL REFLUX PUMP
DE ETHANIZER BOTTOM
HOT OIL PUMPS
DE ETHANIZER
CAUSTIC SAND TRAP
DE ETHANIZER BOTTOM PUMPS
CAUSTIC SCRUBBER
SPENT CAUSTIC STORAGE 17
CAUSTIC PRODUCT SEPARATOR
PRODUCT CHILLER
13
CAUSTIC STORAGE
STILL BOTTOM FEED EXCHANGER
CAUSTIC PUMP
GLYCOL FILTERS
22
BLOW CASE
CAUSTIC PRODUCT MIXING CHAMBER
FLAMABLE PRODUCTS STORAGE SHED
GLYCOL STORAGE
PIPEWAY
POWER GENETATOR
GLYCOL REBOILER
GLYCOL SURGE TANK
ELECTRIC POLE
GLYCOL PUMPS
LEAN OIL HEATER
WATER DEHY
6
7
19
FLARE PIT
OFFICE BUILDING
11
SEPTIC TANK
GARAGE
STORAGE
TRUCK LOADING STATION
N
PRODUCT STORAGE
PRODUCT STORAGE
PRODUCT STORAGE
PROPANE STORAGE TANK
LEAN OIL STORAGE TANK 9
PRODUCT TANK BOTTOMS 10
LEAN OIL TRANSFER PUMP
8
15
15
15
14
LEAN OIL STORAGE
WATER STORAGE TANK 21

GAS COMPANY OF NEW MEXICO

AVALON GASOLINE PLANT

AVAPLT

DRAWN BY: KEITH TIDWELL	DATE: 8-29-94	REVISED

Avalon Natural Gasoline Plant

Tank Inventory and Secondary Containment Areas

Secondary Containment Area	Storage Tanks		Tank Cap. (gal)	Secondary Containment Cap.(gal)	Containment Construction	Oil?*	Direction of spill	Tank Const.	Compliance with OCD** (133 %)	Compliance with SPCC*** (110 %)	Notes
Waste oil storage	1	Waste oil	8,866[1]	18,086[1]	earthen	yes	NW	steel	yes	yes	
Pipeline liquids storage	2	Secondary drip\condensate	8,808[2]	0[3]		yes	NW	steel	see notes	no	Refer to GW-24 for OCD berm exemption for secondary tank.
	3	Primary drip/condensate	11,202[2]	0[3]		yes	NW	steel	no	no	Both tanks on concrete pads with angle iron. Silicon seal between concrete and angle iron.
Water blowdown storage	4	Secondary cooling tower waste water	8,808					steel			
	5	Primary cooling tower waste water	8,808					steel			
		total tank volume[4] = 17,616		see notes		no	NW		see notes	na	Refer to GW-24 for OCD berm exemption.
Effluent storage	6	Glycol system effluent	375			no	na	fiberglass	see notes	na	Open top tanks/sumps with grate over opening.
	7	Caustic system effluent	550			no	na	fiberglass	see notes	na	Double lined (tank within a tank). OCD regs.
Lean oil & product storage	8	Lean oil	10,987[1]	0[3]		yes	NW	steel	no	no	Tanks 8 & 9 on concrete pad with angle iron. Silicon seal between concrete and angle iron.
	9	Lean oil	8,808[1]	0[3]		yes	NW	steel	no	no	
	14	Propane	18,400	see notes		no	na	steel	see notes	see notes	Substances stored in 14 &15 are liquid under pressure. Volatilizes at ambient temperature
	15	Y-grade product	3@30,000	see notes		no	na	steel	see notes	see notes	and pressure.
Tank bottoms storage	10	Tank bottoms	500	see notes		yes	na	fiberglass	see notes	yes	Open top tank/sump with grate over opening. Double lined/tank within a tank. OCD regs.
Septic	11	Septic	na	na		no	na	concrete	na	na	Regulated by NMED.
Methanol storage	12	Methanol	527[1]	0		no	NW	steel	no	na	
Caustic solution storage	13	Caustic solution	8,820[2]	12,220[1]	earthen	no	NW	steel	yes	na	
Methanol & antifreeze storage	16	Methanol	554[1]	0		no	NW	steel	no	na	
	18	Ambitrol	2@527[1]	0		no	NW	steel	no	na	
Spent caustic storage	17	Spent caustic	8,808[2]	13,917[1]	earthen	no	NW	steel	yes	na	
Water blowdown	20	Cooling tower water storage	12,000	see notes		no	NW	concrete	see notes	na	Refer to GW-24 for OCD berm exemption. Open top tank.

Avalon Natural Gasoline Plant

Tank Inventory and Secondary Containment Areas

Secondary Containment Area	Storage Tanks	Tank Cap. (gal)	Secondary Containment Cap.(gal)	Containment Construction	Oil?*	Direction of spill	Tank Const.	Compliance with OCD** (133 %)	Compliance with SPCC*** (110 %)	Notes
Water storage	21 Fresh water	8,820	na		no	na	steel	na	na	
Glycol	22 Ethylene glycol	1,180[1]	0		no	NW	steel	no	na	
Engine oil storage	23 Engine oil	2@517[1]					steel	no	no	
	total tank volume[4] = 1,034		0[3]		yes	S				

[1] Volume calculated by field measurement

[2] Manufacturer's labeled volume rating

[3] Secondary containment will be installed within one year of certification of the plant SPCC plan.

[4] Tanks are interconnected.

na - not applicable

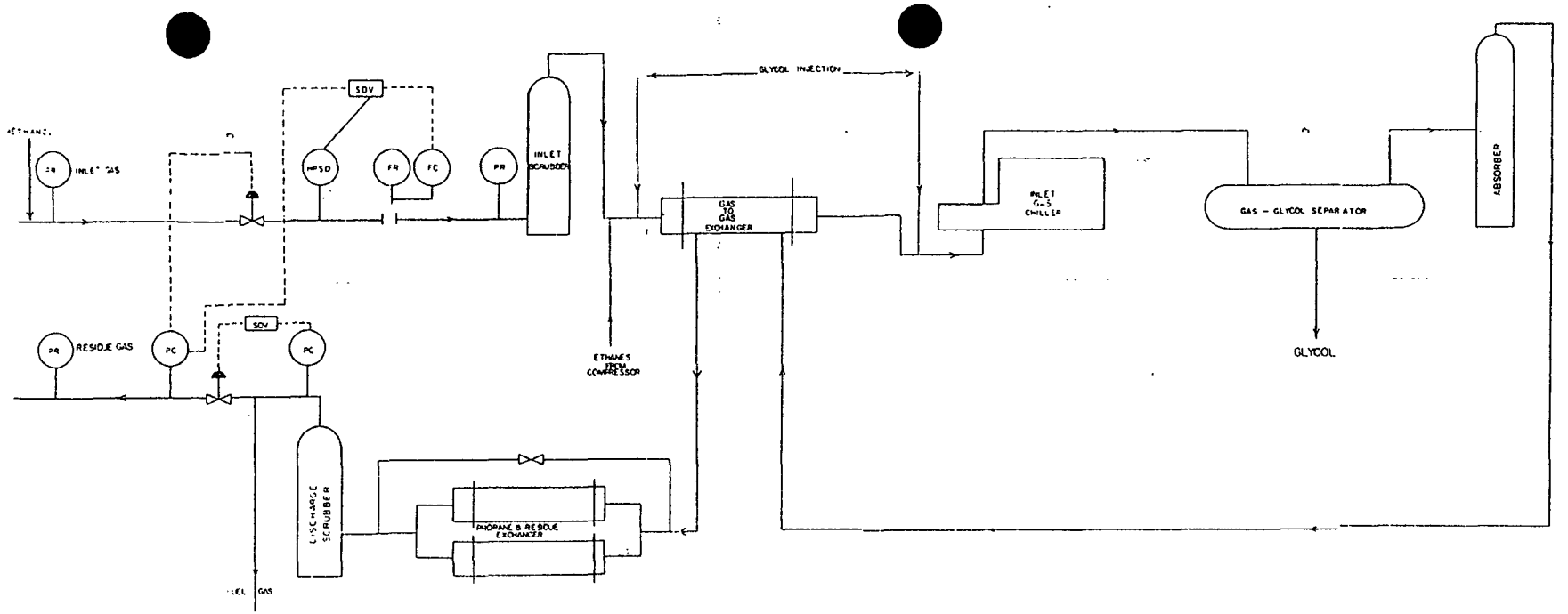
* As defined for purposes of SPCC regulations.

** Tanks which are regulated under the jurisdiction of the OCD. These tanks must be equipped with secondary containment capable of containing 1.3 times the volume of the largest tank or combined volume of interconnected tanks for which it is providing containment.
yes = secondary containment currently in compliance with OCD guidelines
no = secondary containment currently not in compliance with OCD guidelines, but are required to follow guidelines.
na = tanks and secondary containment not regulated by OCD

*** Tanks which fall under SPCC regulations. These tanks should be equipped with secondary containment capable of containing 1.1 times the volume of the largest tank or combined volume of interconnected tanks for which it is providing containment.
yes = secondary containment currently meets SPCC recommendations
no = secondary containment does not currently meet with SPCC recommendations
na = tanks and secondary containment not addressed by SPCC guidelines

**** The term "drip/condensate" is used to describe miscellaneous hydrocarbon-containing liquids from a variety of sources.

Tank capacities based on estimates or information provided by facility personnel unless otherwise noted.

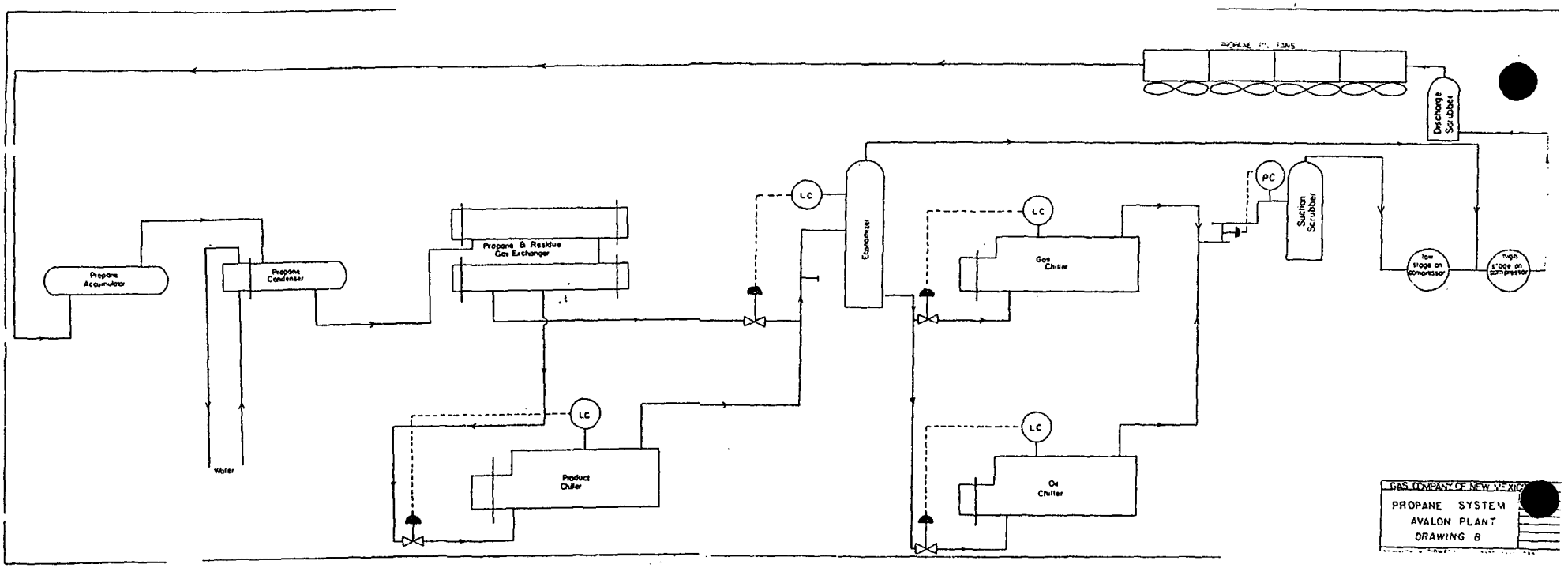


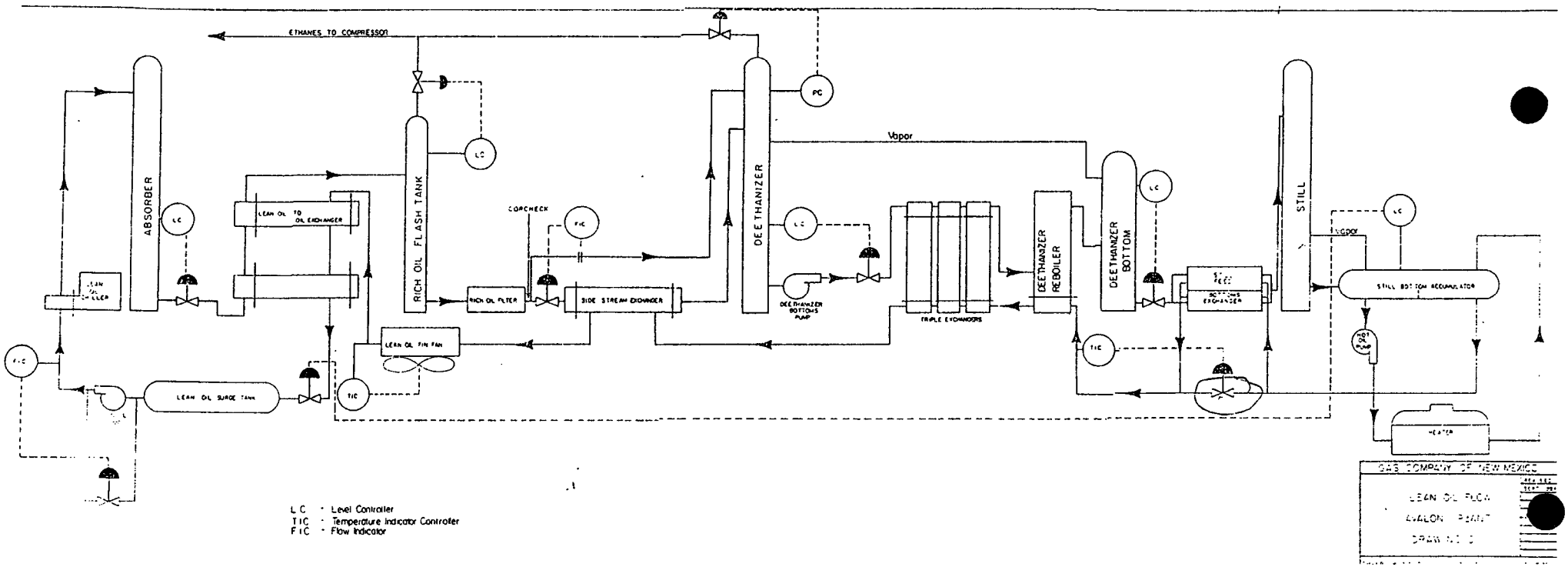
GAS COMPANY OF NEW MEXICO

NATURAL GAS FLOW
AVALON PLANT
DRAWING A

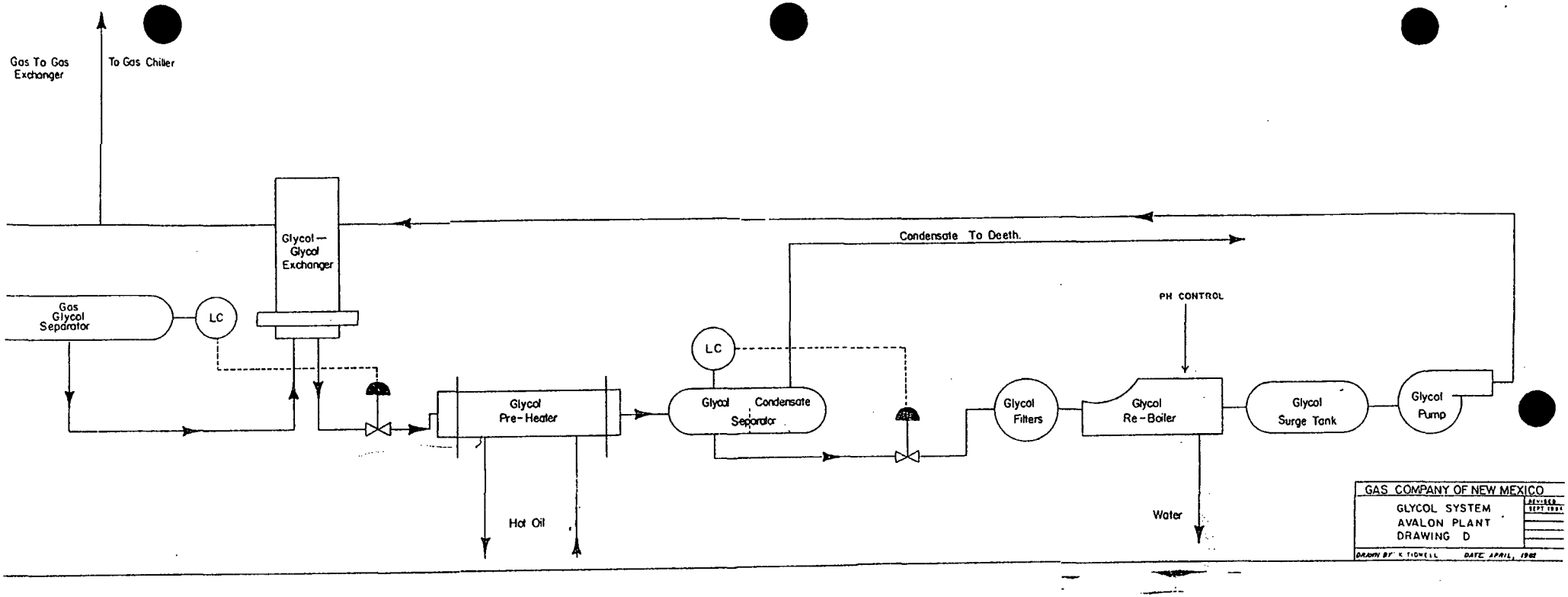
REVISED
SEPT 1969

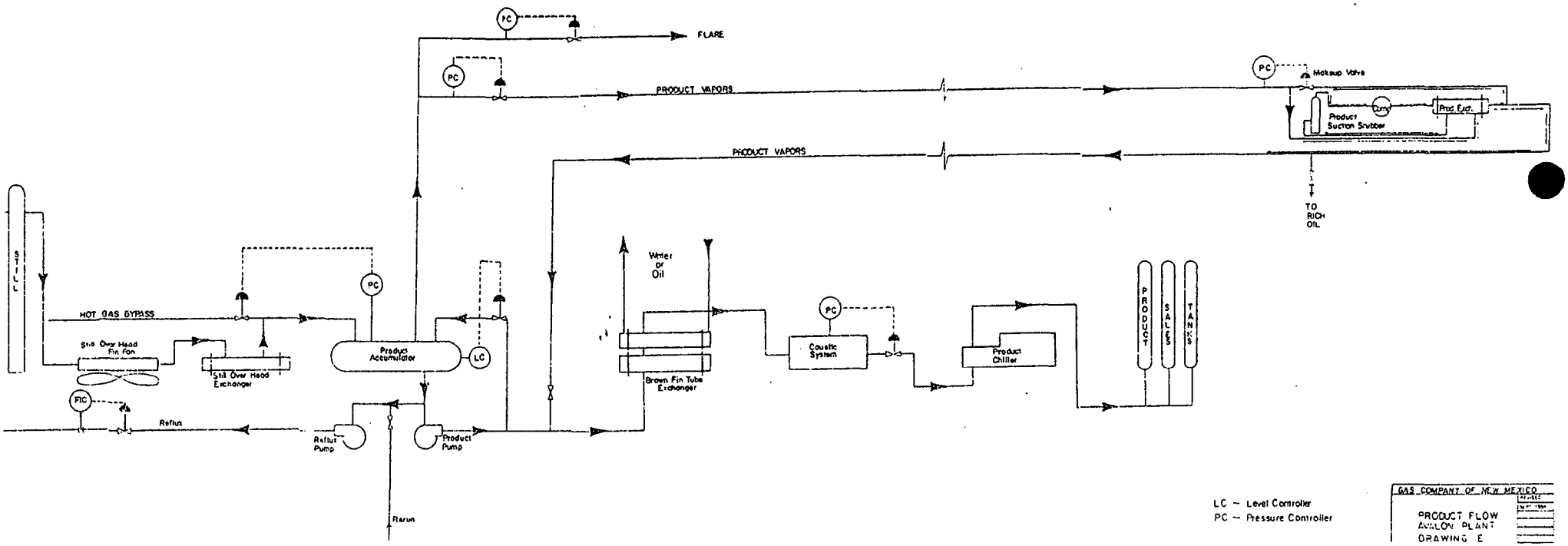
Date April, 1969


Propane Accumulator
Propane Condenser
Propane & Residue Gas Exchanger
Condenser
Gas Chiller
Suction Scrubber
Discharge Scrubber
low stage on compressor
high stage on compressor
Product Chiller
Oil Chiller
Water
LC
PC
GAS COMPANY OF NEW MEXICO
PROPANE SYSTEM
AVALON PLANT
DRAWING B



L C - Level Controller
TIC - Temperature Indicator Controller
F I C - Flow Indicator

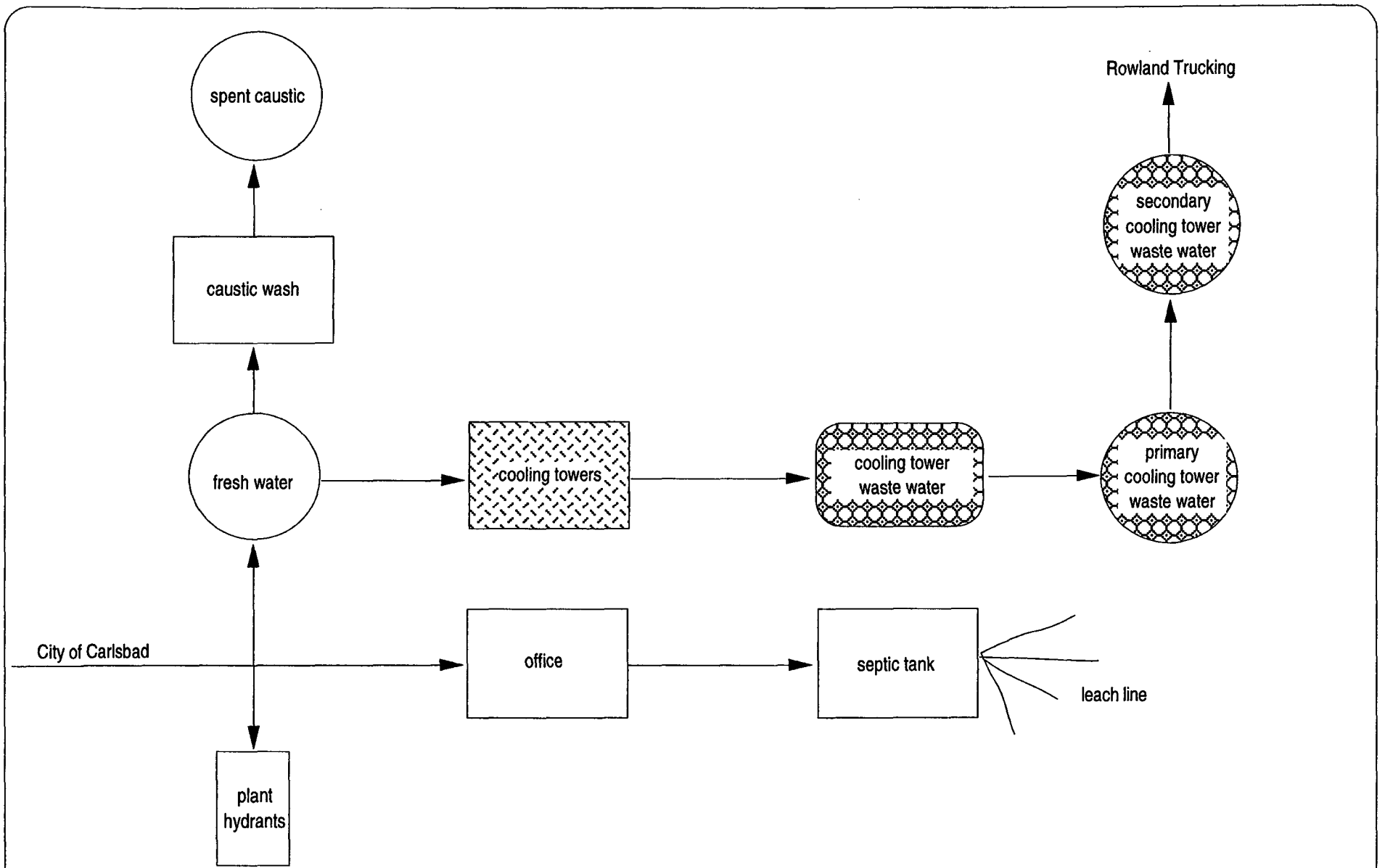

Gas To Gas Exchanger
To Gas Chiller
Glycol — Glycol Exchanger
Condensate To Deeth.
PH CONTROL
Gas Glycol Separator
LC
LC
Glycol Pre-Heater
Glycol Condensate Separator
Glycol Filters
Glycol Re-Boiler
Glycol Surge Tank
Glycol Pump
Hot Oil
Water
GAS COMPANY OF NEW MEXICO
GLYCOL SYSTEM
AVALON PLANT
DRAWING D
REVISED SEPT 1984
DRAWN BY: K. TIDWELL
DATE: APRIL, 1982



LC – Level Controller
PC – Pressure Controller

GAS COMPANY OF NEW MEXICO

PRODUCT FLOW
AVALON PLANT
DRAWING E



Water Flow
Avalon Plant

Environmental Services Inc • 4665 Indian School Road, NE • Suite 106 • Albuquerque NM 87110 • 505 266 6611

MATERIAL SAFETY DATA SHEET

A5

Continental Products of Texas

100 Industrial • P.O. Box 3627 • Odessa, Texas 79760 • (915) 337-4681

ANTIPOL 190

SECTION I - IDENTIFICATION

TRADE NAME	ANTIPOL 190
REVISED DATE	May 28, 1991
CHEMICAL NAME	Aqueous Mixture
CAS NUMBER	Not Appropriate
OSHA HAZARD CLASS	Health hazard - Eye hazard, Skin hazard
EMERGENCY PHONE NUMBER	1-800-592-4684 OR Chemtrec 1-800-424-9300

SECTION II - HAZARDOUS INGREDIENTS

HAZARDOUS COMPONENTS	HAZARDOUS %	HAZARDOUS COMPONENT DATA
Potassium Hydroxide (CAS# 1310-58-3)	<15	ACGIH (TLV): ceiling = 2 mg/m3.
Phosphoric Acid (CAS# 64-38-2)	<1	OSHA (PEL): TWA = 1 mg/m3. ACGIH (TLV): TWA = 1 mg/m3, STEL = 3 mg/m3.

SECTION III - PHYSICAL DATA

BOILING POINT	<200 Deg F
VAPOR PRESSURE (mm Hg)	20
SOLUBILITY IN H20	Completely soluble
APPEARANCE/ODOR	Dark Brown Liquid/Slight acrid odor
SPECIFIC GRAVITY (H20=1)	1.25
VOLATILITY/VOL(%)	75
PH OF SOLUTION	11-11.5

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT	None
FLAMMABLE LIMITS	None
EXTINGUISH MEDIA	Foam, CO2, Dry Chemical, Halon, Water Fog
FIRE FIGHTER PROTECTION	Self Contained Breathing Apparatus
DECOMPOSITION PRODUCTS	CO, CO2
UNUSUAL FIRE HAZARD	This material may be burned after evaporation of the water phase.

MATERIAL SAFETY DATA SHEET

HYDROCHEM

Continental Products of Texas

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ANTIPOL 190

SECTION V - HEALTH HAZARD DATA

ROUTES OF ENTRY..... This material may present a health hazard if it is inhaled or if the liquid contacts skin or eyes.

OVER EXPOSURE EFFECTS	INHALATION:	SKIN AND EYES	INGESTION:
	Severe Nasal and Respiratory damage.	Severe Eye and Skin burns, possible ulceration.	Nausea, Vomiting, Cramps, Throat and Stomach damage.

MEDICAL CONDITIONS
AGGRAVATED BY EXPOSURE.. None are known.

IS ANY COMPONENT LISTED AS A CARCINOGEN?	NTP?	IARC MONOGRAPHS?	OSHA?
	No	No	No

FIRST AID PROCEDURES..... INHALATION: Move victim to fresh air. If victim has stopped breathing, give artificial respiration. Get immediate medical attention.
INGESTION: DO NOT induce vomiting. Vomiting will cause further damage to throat. Give milk of magnesia. Get immediate medical attention.
EYE CONTACT: Immediately wash eyes with large amounts of water for 15 minutes, lifting eye lids to complete flushing. Get medical attention.
SKIN CONTACT: Wash skin with water for 15 minutes. If irritations persists, get medical att ention. Wash contaminated clothing before reuse.

SECTION VI - REACTIVITY DATA

CHEMICAL STABILITY..... Stable
CONDITIONS TO AVOID..... Will freeze at 0 Deg F
INCOMPATIBLE MATERIALS... Strong Acids
DECOMPOSITION PRODUCTS... CO, CO2
HAZARDOUS POLYMERIZATION. Will not occur

HYDROCHEM

Continental Products of Texas

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ANTIPOL 190

SECTION VII - SPILL OR LEAK PROCEDURE

IN CASE OF SPILL.....	CONTAIN SPILL. Wear suitable protective equipment. Pick up spill with adsorbent material.
WASTE DISPOSAL METHOD....	Send to an approved disposal site in accordance with Federal, State, and Local regulations.

SECTION VIII - SPECIAL PROTECTION

RESPIRATORY PROTECTION...	Wear a NIOSH approved respirator
VENTILATION.....	Avoid breathing vapors. Ventilate as needed.
SPECIAL.....	Alkali resistant slicker suit & rubber boots
PROTECTIVE GLOVES.....	Chemical resistant
EYE PROTECTION.....	Splash proof goggles and safety glasses
OTHER PROTECTIVE EQUIPMENT.....	Eyewash Station, Safety Shower

SECTION IX - SPECIAL PRECAUTIONS

HANDLING AND STORAGE.....	Do not store with Incompatible Materials. Do not get in eyes, on skin, or on clothing. Keep containers closed.
PRECAUTIONARY MEASURES...	The health and safety characteristics of this mixture are not fully known. We advise that it be handled and managed as a hazardous substance.

SECTION X - ADDITIONAL DATA

EPA HAZARD CATEGORY.....	Immediate (acute) health hazard - Corrosive
DOT LABEL REQUIRED.....	Corrosive
CERCLA REPORTABLE QUANTITY OF MIXTURE.....	5000 Gals

SARA TITLE III DATA

THRESHOLD PLANNING QUANTITY.....	Not applicable
OFFSITE RELEASE RQ.....	5000 Gals

SECTION 313 TOXIC COMPONENT/S

COMPONENT CHEMICAL NAME	AMOUNT IN MIXTURE
Potassium Hydroxide (CAS# 1310-58-3)	<1

HYDROCHEM

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ANTIPOL 190

All empty drums or containers should be sent to a certified reconditioner or certified disposal site for proper disposal. Empty containers should not be used in any other way. Misuse of 'empty' drums or containers has resulted in many serious accidents.

CPS 218223

Chevron U.S.A. Inc.

Material Information Bulletin

(Approved – "Essentially Similar" to Form OSHA 20, Material Safety Data Sheet)

CHEVRON Thinner 325 **CPS 218223**

DANGER! **HARMFUL OR FATAL IF SWALLOWED**
COMBUSTIBLE
KEEP OUT OF REACH OF CHILDREN

TYPICAL COMPOSITION

Paraffins (incl. naphthenes)	99%
Aromatics	
C_8^+	1%
Benzene	<0.02%

EXPOSURE STANDARD

The suggested Threshold Limit Value is 150 ppm (parts of vapor per million parts of air) for a daily 8-hour exposure.

PHYSIOLOGICAL & HEALTH DATA

Expected to cause no more than minor eye irritation. Application of a similar product into the eyes of rabbits produced slight membrane irritation.

Not a primary skin irritant but may cause skin irritation on prolonged or frequently repeated contact. Application onto the skin of rabbits produced moderate erythema and edema. See Additional Health Data.

Expected to have slight acute toxicity by inhalation. The inhalation LC_{50} (rat) of a similar product for a one-hour exposure was greater than 13.3 mg/liter. Breathing the vapors at concentrations above the exposure standard can cause central nervous system depressioin. See Additional Health Data.

Not expected to be acutely toxic by ingestion. The acute oral LD_{50} (rat) for a similar product was greater than 15.3 g/kg. **Note to Physician:** Ingestion of this product or subsequent vomiting can result in aspiration of light hydrocarbon liquid which can cause pneumonitis.

EMERGENCY & FIRST AID PROCEDURES

Eyes

Wash eyes with fresh water for at least 15 minutes. If irritation continues, see a doctor.

Skin

Wash thoroughly with soap and water following skin contact. Launder contaminated clothing.

Inhalation

If there are signs or symptoms, as described in this bulletin, due to breathing this material, move the person to fresh air. If breathing has stopped, apply artificial respiration. Call a doctor immediately.

Ingestion

If swallowed, DO NOT make person vomit. Call a doctor immediately.

ADDITIONAL HEALTH DATA

See Page 3.

SPECIAL PROTECTIVE INFORMATION

Eye Protection: Avoid contact with eyes. Eye contact can be avoided by wearing chemical safety goggles.
Skin Protection: Avoid prolonged or frequently repeated skin contact with this material. Skin contact can be minimized by wearing impervious protective clothing including rubber gloves.
Respiratory Protection: Wear approved respiratory protection such as an organic vapor cartridge respirator or an air-supplying respirator unless ventilation equipment is adequate to keep airborne concentrations below the exposure standard.
Ventilation: Use adequate ventilation to keep the airborne concentrations of this material below the exposure standard.

FIRE PROTECTION

Liquid evaporates and forms vapors (fumes) which can catch fire and burn with explosive violence. Invisible vapor spreads easily and can be set on fire by many sources such as pilot lights, welding equipment, and electrical motors and switches. Fire hazard is greater as liquid temperature rises above 85°F.

Flash Point: (TCC) 101°F, (TOC) 111°F
Autoignition Temp.: 500°F
Flammability Limits: 1.0-6.0%

Extinguishing Media: CO_2, Dry Chemical, Foam, Water Spray.

Special Fire Fighting Procedures: For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment. This may include self-contained breathing apparatus to protect against the hazardous effects of normal products of combustion or oxygen deficiency. Read the entire bulletin.

SPECIAL PRECAUTIONS

See Page 3.

ENVIRONMENTAL PROTECTION

Environmental Impact: Certain geographical areas have air pollution restrictions concerning the use of materials in work situations which may release volatile components to the atmosphere. Air pollution regulations should be studied to determine if this material is regulated in the area where it is to be used.
Precautions if Material is Released or Spilled: Eliminate all open flames in vicinity of spill or released vapor. Clean up spills as soon as possible, observing precautions in Special Protective Information and on product label. Absorb large spills with absorbent clay, diatomaceous earth, or other suitable material. A fire or vapor hazard may exist since these cleanup materials will only absorb liquid; they will not absorb vapor.
Waste Disposal Methods: Place contaminated materials in disposable containers and bury in an approved dumping area.

REACTIVITY DATA

Stability (Thermal, Light, etc.): Stable.
Incompatibility (Materials to Avoid): May react with strong oxidizing materials.
Hazardous Decomposition Products: Normal combustion forms carbon dioxide and water vapor; incomplete combustion can produce carbon monoxide.
Hazardous Polymerization: Will not occur.

PHYSICAL PROPERTIES

Solubility: Miscible with hydrocarbons; insoluble in water.

Appearance (Color, Odor, etc.): Colorless liquid.

Boiling Point: 310-370°F
Melting Point: n/a
Specific Gravity: 0.78 @ 60/60°F
Vapor Pressure: 5 mm Hg @ 77°F
Vapor Density (Air = 1): 4.8
Percent Volatile (Volume %): 99+%
Evaporation (Bu Ac = 1): 0.22
Molecular Weight: 138 (Avg.)
Viscosity: 0.96 cSt @ 100°F

n/a = Not Applicable

CRR-6745(B)(10M-9-79) Printed in U.S.A.

Material Information Bulletin

CHEVRON Thinner 325 **CPS 218223**

ADDITIONAL HEALTH DATA

Not expected to be acutely toxic by skin contact; the acute dermal LD_{50} (rabbit) for a similar product was greater than 19.1 g/kg. Signs and symptoms of central nervous system depression may include one or more of the following: headache, dizziness, loss of appetite, weakness and loss of coordination. Affected persons usually experience complete recovery when removed from the exposure area.

SPECIAL PRECAUTIONS

READ AND OBSERVE ALL PRECAUTIONS ON PRODUCT LABEL.

Contains Petroleum Naphtha.
DO NOT USE OR STORE near flame, sparks, or hot surfaces. USE ONLY IN WELL VENTILATED AREA.
DO NOT weld, heat or drill container.
Keep containter closed. Replace cap or bung.
Emptied container still contains hazardous or explosive vapor or liquid.

CAUTION! Do not use pressure to empty drum or explosion may result.

CRR-6745(C)(10M-4-81) Printed in U.S.A.
No. 47 - Rev. 11/83

MATERIAL SAFETY DATA SHEET

T3

Continental Products of Texas

100 Industrial • P.O. Box 3627 • Odessa, Texas 79760 • (915) 337-4681

Toxsene 37

SECTION I - IDENTIFICATION

TRADE NAME	Toxsene 37
REVISED DATE	May 28, 1991
CHEMICAL NAME	Solvent Mixture
CAS NUMBER	Not Appropriate
OSHA HAZARD CLASS	Physical Hazard- Corrosive, Health Hazard - Irritant, Toxic, Eye Hazard
EMERGENCY PHONE NUMBER	1-800-592-4684 or Chemtrec 1-800-424-9300

SECTION II - HAZARDOUS INGREDIENTS

HAZARDOUS COMPONENTS	HAZARDOUS %	HAZARDOUS COMPONENT DATA
Methylene bis(thiocyanate)CAS# 17-18-6	10	Acute Oral LD_{50}RAT=50mg/kg
Glycol Ethers (category)	<85	Not Available

SECTION III - PHYSICAL DATA

BOILING POINT	218°F
VAPOR PRESSURE (mm Hg)	Unknown
SOLUBILITY IN H2O	< 5%
APPEARANCE/ODOR	Amber colored liquid / Organic
SPECIFIC GRAVITY (H2O=1)	1.09
VOLATILITY/VOL(%)	90
PH OF SOLUTION	6.5 (1% soln. in water)

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT	198°F (TOC)
FLAMMABLE LIMITS	Unknown
EXTINGUISH MEDIA	Water, CO_2or dry chemical
FIRE FIGHTER PROTECTION	Wear self-contained breathing apparatus
DECOMPOSITION PRODUCTS	Thermal decomposition produces carbon dioxide, sulfur dioxide, nitrous oxide and water.
UNUSUAL FIRE HAZARD	None

MATERIAL SAFETY DATA SHEET

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Toxsene 37

SECTION V - HEALTH HAZARD DATA

ROUTES OF ENTRY..... This material presents a health hazard if its vapors are inhaled or if the liquid contact skin or eyes.

OVER EXPOSURE EFFECTS	INHALATION:	SKIN AND EYES	INGESTION:
	Exact effects unknown	Contact will cause skin irritation. Prolonged exposure may cause skin eruptions. Contact with eyes may cause irreversible damage.	Highly toxic. Prolonged absorbtion may produce runny nose, dizziness, cramps, nausea, vomiting and disturbances of the nervous system.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE.. None are known.

IS ANY COMPONENT LISTED AS A CARCINOGEN?	NTP?	IARC MONOGRAPHS?	OSHA?
	No	No	No

FIRST AID PROCEDURES..... EYES: Flush immediately with large amounts of water. Get medical attention immediately.
SKIN: Remove contaminated clothing and immediately wash skin with soap and water. If irritaion persists, get medical attention. Wash contaminated clothing before reuse.
INGESTION: Do not induce vomiting. Get medical attention(Note to Physician: Probable mucosal damage may contraindicate the use of gastric lavage. Measure against circulatory shock,respiratory depression and convulsions may be needed.)
INHALATION : Move to fresh air. If victim has stopped breathing five artificial respiration. Get medical attention immediately.

MATERIAL SAFETY DATA SHEET

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Toxsene 37

SECTION VI - REACTIVITY DATA

CHEMICAL STABILITY..... Material is stable.
CONDITIONS TO AVOID..... None
INCOMPATIBLE MATERIALS... Strong oxidizing agents and temperatures > 212° F.

DECOMPOSITION PRODUCTS... Thermal decomposition produces carbon dioxide, sulfur dioxide, nitrous oxide and water.
HAZARDOUS POLYMERIZATION. May occur. Avoid temperatures above 300° F.

HYDROCHEM

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Toxsene 37

SECTION VII - SPILL OR LEAK PROCEDURE

IN CASE OF SPILL.....	CONTAIN SPILL. Collect all spilled material. Do not flush directly to waste treatment facility or water courses.
WASTE DISPOSAL METHOD....	Send to an approved disposal site in accordance with Federal, State, and Local regulations. Material is a pesticide and must be disposed of in a manner approved by EPA Resource Conservation and Recovery Act (RCRA).

SECTION VIII - SPECIAL PROTECTION

RESPIRATORY PROTECTION...	None
VENTILATION.....	Provide local exhaust.
SPECIAL.....	Impervious clothing, rubber gloves and boots.
PROTECTIVE GLOVES.....	Rubber gloves
E PROTECTION.....	Chemical goggles which are dust- and splash-proof or face shield.
OTHER PROTECTIVE EQUIPMENT.....	Safety shower/eye wash located in immediate area.

SECTION IX - SPECIAL PRECAUTIONS

HANDLING AND STORAGE.....	Combustible liquid. Keep away from ignition souces such as sparks and flame. Do not get in eyes, on skin, or on clothing. keep containers closed. Keep from freezing and temperatures >140deg F. Store in a cool, well ventilated area.
PRECAUTIONARY MEASURES...	The health and safety characteristics of, this mixture are not fully known. We advise that it be handled and managed as a hazardous substance.

SECTION X - ADDITIONAL DATA

EPA HAZARD CATEGORY.....	Immediate (Acute) Health Hazard - Toxic, Corrosive.
DOT LABEL REQUIRED.....	Corrosive material
CERCLA REPORTABLE QUANTITY OF MIXTURE.....	Not established for components of this product.

SARA TITLE III DATA

THRESHOLD PLANNING QUANTITY.....	Not Applicable
OFFSITE RELEASE RQ.....	Not Applicable

MATERIAL SAFETY DATA SHEET

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Toxsene 37

SECTION 313 TOXIC COMPONENT/S

COMPONENT CHEMICAL NAME	AMOUNT IN MIXTURE
Glycol Ethers(category)	<85%

All empty drums or containers should be sent to a certified reconditioner or certified disposal site for proper disposal. Empty containers shoud not be used in any other way. Misuse of 'empty' drums or containers has resulted in many serious accidents.

CONTINENTAL PRODUCTS OF TEXAS

MATERIAL SAFETY DATA

TOXSENE 72

CONTINENTAL PRODUCTS OF TEXAS
100 Industrial Ave.
Odessa, TX 79761

EMERGENCY TELEPHONE NUMBERS
915-337-4681 - CONTINENTAL PRODUCTS OF TEXAS (weekdays)
800-424-9300 - CHEMTREC (24 hours)

Date: August 14, 1991

PRODUCT IDENTIFICATION

Trade Name: TOXSENE 72
Formula: $C_9H_{16}ClN_5$
Chemical Names/Synonyms: 2-(Tert-butylamino)-4-chloro-6-(ethylamino)-S-triazine; Terbuthylazine.
DOT Shipping Name: Non-hazardous (not regulated)
DOT Hazard Class: Non-hazardous

PHYSICAL DATA (TYPICAL)

Appearance: Off white dispersion
Odor: Musty
Gravity (H_2O=1): 0.95 - 1.05
Freezing Point: 30 - 35°F
pH: 6.0 - 9.0
Solubility In Water: Complete at use Specific concentration
Viscosity: 400 - 1,000 cps @ 25°C

HAZARDOUS INGREDIENTS

Components	%	TLV
1,3,5-Triazine-2,4-diamine, 6-chloro-N-(1,1-dimethylethyl)-N'-ethyl- CAS No. 5915-41-3	4	Not established

FIRE AND EXPLOSION DATA

Flash Point (method): Not flammable
Extinguishing Media: Not applicable
Special Fire Fighting Procedures: None
Unusual Fire And Explosion Hazards: Thermal decomposition products may be toxic.

HEALTH HAZARD DATA

Threshold Limit Value: Not established
Effects Of Overexposure: Product may be harmful if swallowed or absorbed through the skin. Do not taste. Avoid contact with skin or eyes.
Emergency First Aid Procedures:

Eyes: Flush eyes with plenty of water for at least 15 minutes. Get medical attention.
Skin: Wash thoroughly with soap and water.
Ingestion: If conscious, give plenty of water and induce vomiting by placing finger in back of throat. See a physician.
Inhalation: Move to fresh air.

REACTIVITY DATA

Stability: Material is stable.

Incompatibility: Strong oxidizing agents, strong alkalies, strong acids.

Hazardous Decomposition Products: Burning may produce oxides of carbon and nitrogen and chlorine compounds.

Hazardous Polymerization: Will not occur.

SPILL OR LEAK PROCEDURES

Steps To Be Taken In Event Material Is Released Or Spilled: Dike spills for recovery. Do not flush directly to waste treatment facility or water courses.

Waste Disposal Method: Dispose of as a pesticide waste, in accordance with state and local regulations.

SPECIAL PROTECTION INFORMATION

Specific Personal Protective Equipment:

Eyes: Chemical goggles.

Skin: Rubber gloves.

Other: Safety shower/eye wash located in immediate area.

Ventilation Requirements: Provide local exhaust.

SPECIAL PRECAUTIONS

Precautions To Be Taken In Handling And Storing: Do not freeze.

Other Precautions: Keep containers closed when not in use.

REGULATORY STATUS INFORMATION

TOXIC SUBSTANCES CONTROL ACT (TSCA): All components of this product are listed in the Toxic Substances Control Act inventory.

COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION AND LIABILITY ACT (CERCLA): Reportable Quantity - Not established for components of this product.

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT (SARA Title III) - Section 311 Hazard Categories:

Acute Health:	Yes
Chronic Health:	Yes
Fire:	No
Sudden Release of Pressure:	No
Reactive:	No

Chronic health: Based on long term animal studies, a potential exists for lymphatic toxicity.

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT (SARA Title III) - Section 313: Components of this product subject to reporting: None.

:stn

A1—0 to 17 inches, yellowish-red (5YR 4/6) fine sand, yellowish red (5YR 3/6) when moist; single grain; loose when dry or moist, nonsticky and nonplastic when wet; noncalcareous; neutral; abrupt, smooth boundary.

B21t—17 to 23 inches, yellowish-red (5YR 4/6) fine sandy loam, dark red (2.5YR 3/6) when moist; weak, coarse, prismatic structure; very hard when dry, friable when moist, slightly sticky and nonplastic when wet; thin, continuous clay films on all ped surfaces; noncalcareous; neutral; clear, smooth boundary.

B22t—23 to 36 inches, red (2.5YR 4/6) sandy clay loam, dark red (2.5YR 3/6) when moist; moderate, coarse, prismatic structure breaking to weak, medium and coarse, subangular blocky; extremely hard when dry, firm when moist, sticky and plastic when wet; thin, continuous clay films on all ped surfaces; noncalcareous; neutral; clear, wavy boundary.

B3t—36 to 50 inches, dark-red (2.5YR 3/6) light sandy clay loam, dark red (2.5YR 2/6) when moist; weak, coarse, prismatic structure; extremely hard when dry, firm when moist, sticky and plastic when wet; thin, continuous clay films on all ped surfaces; few distinct splotches of lime; noncalcareous; neutral to mildly alkaline; abrupt, wavy boundary.

Cca—50 to 58 inches, pink (5YR 7/3) clay loam (soft caliche), light reddish brown (2.5YR 6/4) when moist; massive; extremely hard when dry, firm when moist, sticky and plastic when wet; strongly calcareous; moderately alkaline.

The thickness of the A1 horizon ranges from 8 to 36 inches, and the texture, from fine sand to loamy sand. The color ranges from 5YR to 7.5YR in hue, from 4 to 5 in value, and from 4 to 6 in chroma. The color of the B2t and B3t horizons ranges from 2.5YR to 5YR in hue, from 3 to 5 in value, and from 4 to 8 in chroma. The depth to the Cca horizon ranges from 36 to 60 inches. In some places indurated caliche occurs at a depth of 36 to 60 inches and the Cca horizon is very thin or is lacking entirely.

Berino soils are associated with Cacique, Pajarito, Wink, Kermit, and Tonuco soils.

Berino loamy fine sand, 0 to 3 percent slopes (BA).—Except for the texture and thickness of the surface layer, this soil has a profile similar to that described as typical of the Berino series. It occurs on long, smooth slopes in the uplands in the eastern part of the survey Area. Included in mapping were areas of Berino complex, 0 to 3 percent slopes, eroded, and Pajarito loamy fine sand, 0 to 3 percent slopes, eroded. The included areas make up less than 15 percent of the acreage.

The surface layer is noncalcareous, yellowish-red loamy fine sand about 12 inches thick. In some areas the surface layer is fine sandy loam or fine sand. The subsoil consists of noncalcareous clay loam 22 to 45 inches thick. The depth to a distinct layer of lime accumulation ranges from 36 to about 60 inches. Permeability is moderately slow in the subsoil.

This soil is slightly to moderately eroded, and the hazard of further erosion is severe if the vegetative cover is seriously depleted. It is well suited to pasture if there is enough moisture. (Dryland capability unit VIIe–2; Sandy range site)

Berino complex, 0 to 3 percent slopes, eroded (BB).—This complex consists mostly of the Berino soil described as having the profile typical of the series. It occurs, in association with Pajarito soils, as the smoother areas in dunes and depressions between the dunes of Kermit land. Included in mapping were small areas of each of the following soils: Cacique loamy sand, 0 to 3 percent slopes, eroded; Pajarito loamy fine sand, 0 to 3 percent slopes, eroded; Wink loamy fine sand, 0 to 3 percent slopes, eroded; and Kermit fine sand. In places the included soils occur in association with each other, but in other places they occur individually. They make up less than 20 percent of the acreage.

The soils in this complex have been altered by wind erosion. Their surface layer, 9 to 36 inches thick, is hummocky to billowy. The hummocks range from 1 to 3 feet in height. A few areas are barren, and in these places the subsoil of sandy clay loam is exposed or is near the surface.

These soils are generally stabilized by Havard oak, mesquite, and other vegetation. They are used for grassland and are productive if there is enough moisture. The hazard of wind erosion is severe if the plant cover is seriously depleted. (Dryland capability unit VIIe–1; Deep Sand range site)

Berino-Dune land complex, 0 to 3 percent slopes (BD).—This complex consists of deep, sandy soils and of Dune land (fig. 11). Berino soils make up about 40 to 50 percent of the acreage, and Dune land makes up 35 to 50 percent. Except that the surface layer has been severely eroded by wind, the Berino soil in this complex has a profile similar to that described as typical of the series. In places the subsoil of sandy clay loam is exposed. Included in mapping were small areas of Kermit fine sand; Cacique loamy sand, hummocky, 0 to 3 percent slopes, eroded; and Active dune land. The included areas make up less than 15 percent of the acreage.

Rounded dunes of fine sand, 3 to 8 feet high and generally 8 to 30 feet wide at the base, are characteristic of this complex. These dunes have formed around woody plants, such as mesquite, and each windstorm either adds sand or takes some away. The surface layer of the soil is thicker in areas adjacent to the dunes.

This complex is used mainly for range. Wind erosion has damaged the soils so seriously that the yield of desirable vegetation is limited. There is little or no vegetation in areas where the subsoil is exposed or where the surface layer is thin. (Dryland capability unit VIIe–1; Deep Sand range site)

Berino-Pajarito complex, 0 to 3 percent slopes, eroded (BP).—This complex is made up of the same soils as Berino complex, 0 to 3 percent slopes, eroded, but in different proportions. Berino soils make up about 40 to 50 percent of the acreage, and Pajarito soils, a like amount. Included in mapping were areas of Kermit fine sand; Wink loamy fine sand, hummocky, 0 to 3 percent slopes, eroded; and Active dune land. The included soils make up less than 15 percent of the acreage.

The soils of this complex are highly susceptible to wind erosion. Good management is needed to maintain enough vegetation to check erosion.

Nearly all of the acreage is used for native pasture and wildlife habitat. The soils are productive if there is enough moisture. (Dryland capability unit VIIe–1; Deep Sand range site)

Bippus Series

The Bippus series consists of deep, moderately dark colored, well-drained, calcareous soils that developed in

Figure 11.—An area of Berino-Dune land complex, 0 to 3 percent slopes.

alluvium. These soils occur mainly on flood plains of intermittent streams in the southeastern part of the survey Area, but smaller areas are scattered throughout the eastern part. In the Eddy Area, Bippus soils are mapped only with Simona soils.

Soils of the Bippus series typically have a surface layer that is about 21 inches thick. The uppermost few inches consists of grayish-brown sandy loam. This material overlies dark grayish-brown silty clay loam. Beneath the surface layer is a transitional layer of dark-brown to brown silty clay loam about 16 inches thick. The substratum, about 11 inches thick, is brown clay loam enriched by calcium carbonate. It rests on weakly cemented caliche at a depth of about 4 feet. The surface layer is thinner near the center of wide potholes or drainageways, and the texture is silty clay loam.

Bippus soils are uneroded or are only slightly eroded. They are subject to periodic flooding, and there is some deposition of sandy material at the edges of the flood plain. Runoff is medium. Permeability is moderately slow, and the water-holding capacity is high. Rainfall amounts to 10 to 14 inches annually, and the mean annual temperature is 60° to 64° F. The frost-free season is 200 to 217 days. Elevations range from 3,100 to 3,500 feet.

Bippus soils are used for range and wildlife habitat. They are among the most productive soils in the Area if there is enough moisture. The vegetation consists mainly of sacaton, alkali sacaton, vine-mesquite, tobosa, blue grama, buffalograss, burrograss, and mesquite. Good management is needed to maintain desirable forage species and to lessen the hazard of water erosion. Revegetation is difficult because of the high temperatures and the low, erratic rainfall.

A typical profile of Bippus silty clay loam in a drainageway on the west side of State Route 31, about 990 feet west and 1,650 feet south of the NE. corner of sec. 3, T. 21 S., R. 30 E.

A11—0 to 3 inches, grayish-brown (10YR 5/2) sandy loam, very dark grayish brown (10YR 3/2) when moist; weak, fine, subangular blocky structure; hard when dry, friable when moist, slightly sticky and slightly plastic when wet; abundant fine and very fine roots; many very fine pores; slightly calcareous; mildly alkaline; abrupt boundary.

A12—3 to 21 inches, dark grayish-brown (10YR 4/2) silty clay loam, very dark grayish brown (10YR 3/2) when moist; weak, coarse, prismatic structure breaking to moderate, medium, subangular blocky; very hard when dry, firm when moist, sticky and plastic when wet; plentiful fine, medium, and coarse roots; common fine, very fine, and coarse pores; slightly calcareous; mildly alkaline; gradual boundary.

AC—21 to 37 inches, dark-brown to brown (7.5YR 4/2) silty clay loam, dark brown (7.5YR 3/2) when moist; weak, coarse, prismatic structure breaking to coarse, subangular blocky; very hard when dry, firm when moist, sticky and plastic when wet; many fine and very fine roots; common very fine pores; strongly calcareous; moderately alkaline; gradual boundary.

C1ca—37 to 48 inches, brown (7.5 YR 5/3) clay loam, dark brown (7.5YR 4/3) when moist; massive; hard when dry, firm when moist, sticky and plastic when wet; few fine and very fine roots; common fine and

very fine pores; many, fine to medium, soft, distinct, lime concretions; strongly calcareous; moderately alkaline; gradual boundary.

C2ca—48 to 60 inches, weakly cemented caliche.

The A11 horizon ranges from 1 to 8 inches in thickness. The color ranges from 10YR to 7.5YR in hue and from 4 to 5 in value. The A12 horizon ranges from 12 to 24 inches in thickness. The color ranges from 10YR to 7.5YR in hue and from 3 to 5 in value. The AC horizon ranges from 12 to 20 inches in thickness. The color ranges from 7.5YR to 5YR in hue, from 3 to 4 in value, and from 2 to 4 in chroma. The C1ca horizon ranges from 8 to 11 inches in thickness. The color ranges from 10YR to 7.5YR in hue, from 4 to 5 in value, and from 2 to 3 in chroma. The texture is silty clay loam or clay loam. The depth to weakly cemented caliche is more than 36 inches.

Bippus soils are associated with Simona soils.

Cacique Series

The Cacique series consists of yellowish-red to red, noncalcareous soils that are shallow to moderately deep over indurated caliche. These soils developed in a thin mantle of eolian sand of mixed origin. They occur as scattered areas on plains along the western edge of the "Deep Sand Country" in the eastern part of the Eddy Area. They are nearly level to gently sloping.

Soils of the Cacique series (fig. 12) typically have a surface layer of yellowish-red loamy sand about 5 inches thick. The subsoil, about 19 inches thick, is noncalcareous. The upper part consists of yellowish-red sandy loam, and the lower part of red sandy clay loam. Indurated caliche underlies the subsoil at a depth of about 24 inches.

Permeability is rapid in the surface layer and moderate in the subsoil. The water-holding capacity is moderately low. The soils are subject to severe wind erosion if the vegetative cover is seriously depleted. Rainfall amounts to 10 to 14 inches annually, and the mean annual temperature is 60° to 64° F. The frost-free season is 208 to 220 days. Elevations range from 3,100 to 4,200 feet.

Wind erosion has severely altered the surface layer of these soils. Hummocks of fine sand, 1 to 3 feet high, have formed around woody plants. The soils between the hummocks are mostly barren. They have a thin surface layer of loamy fine sand or fine sand. In places the subsoil of sandy loam or sandy clay loam is exposed.

Cacique soils are used for native pasture. The vegetation consists of grama and other short grasses and of mesquite and other woody plants.

Typical profile of Cacique loamy sand that has a slope of about 1 percent; 2,190 feet south and 660 feet west of the northeast corner of sec. 25, T. 21 S., R. 29 E.

A1—0 to 5 inches, yellowish-red (5YR 5/6) loamy sand, yellowish red (5YR 4/6) when moist; weak, coarse, subangular blocky structure; soft when dry, very friable when moist, nonsticky and nonplastic when wet; noncalcareous; neutral; clear, wavy boundary.

B1t—5 to 17 inches, yellowish-red (5YR 5/6) sandy loam, yellowish red (5YR 4/6) when moist; weak, coarse, subangular blocky structure; soft when dry, very friable when moist, slightly sticky and nonplastic when wet; few medium pores; thin, patchy clay films on vertical ped surfaces; noncalcareous; neutral; clear, wavy boundary.

B2t—17 to 24 inches, red (2.5YR 4/6) sandy clay loam, dark red (2.5YR 3/6) when moist; weak to moderate, coarse, prismatic structure breaking to weak, coarse, subangular blocky; very hard when dry, firm when moist, sticky and plastic when wet; many fine and medium pores; thin, patchy clay films on the vertical sides of peds and thin, continuous clay films in the pores; noncalcareous; neutral; abrupt, wavy boundary.

Ccam—24 inches, indurated caliche, fractured and platy.

The color of the A and B horizons ranges from 5YR to 2.5YR in hue, from 3 to 5 in value, and from 5 to 6 in chroma. The B2t horizon ranges from 6 to 19 inches in thickness. The texture of that horizon ranges from sandy loam and light sandy clay loam in the upper part to sandy clay loam in the lower part. In places a thin B3ca horizon occurs above the indurated caliche. The depth to fractured, platy, indurated caliche ranges from 12 to 36 inches.

Cacique soils are associated with Berino and Tonuco soils.

Cacique loamy sand, 0 to 3 percent slopes, eroded (CA).—This soil occurs as patches 40 to 320 acres in size along the western edge of the "Deep Sand Country" east of the Pecos River. Included in mapping were small areas of Berino complex, 0 to 3 percent slopes, eroded, and Berino loamy fine sand, 0 to 3 percent slopes. Also included were small sand dunes that are somewhat stabilized by mesquite and severely eroded areas where caliche is exposed. The included areas make up less than 15 percent of the acreage.

This soil is susceptible to severe wind erosion if the vegetative cover is seriously depleted. Water erosion is

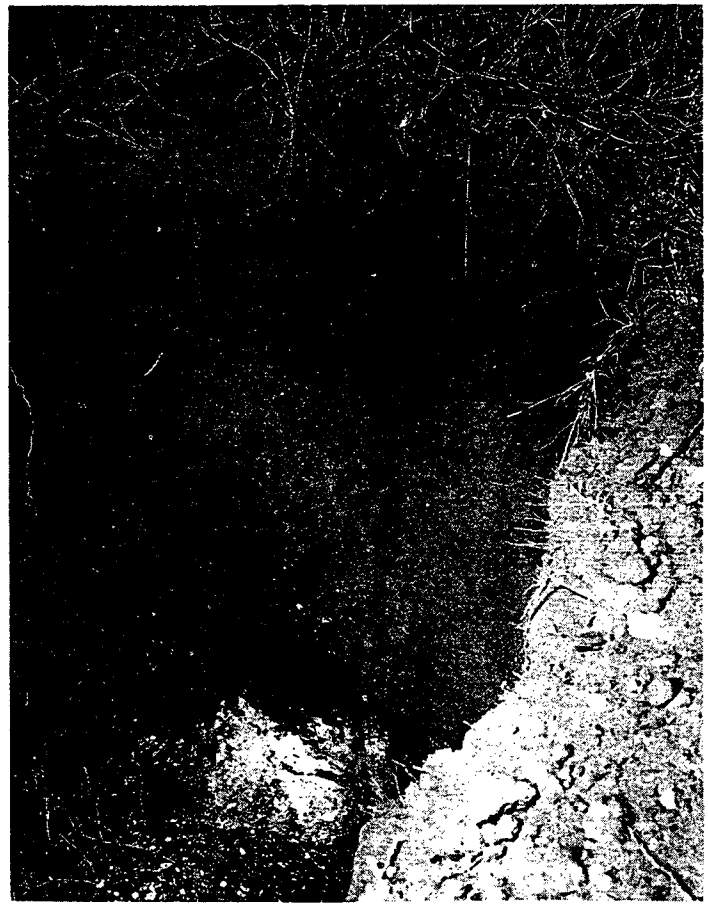


Figure 12.—**Profile of Cacique loamy sand. Note the indurated caliche that underlies the subsoil.**

smooth ped surfaces; lime is less prominent than in the B22ca horizon; strongly calcareous; mildly alkaline; gradual boundary.

IIC1cs—45 to 52 inches, reddish-brown (5YR 5/3) gypsiferous earths, reddish brown (5YR 4/4) when moist; medium, angular blocky structure; hard when dry, friable to firm when moist, sticky when wet; many very fine and fine pores; smooth ped surfaces; prominent, finely divided crystals of gypsum; strongly calcareous; mildly alkaline; gradual boundary.

IIC2cs—52 inches, segregated gypsum crystals and gypsiferous earths in separate clumps, but mixed throughout; strongly calcareous; mildly alkaline; gradual boundary.

An A1 horizon, 3 to 5 inches thick, occurs in undisturbed areas. The color ranges from 5YR to 10YR in hue, from 5 to 6 in value, and from 2 to 4 in chroma. A layer of fine sand or fine sandy loam, ¼ inch to 3 inches thick, is commonly at the surface in noncultivated areas. In areas that have been plowed, the texture of the surface layer includes sandy clay loam. The color of the A horizon darkens under irrigated cultivation. The texture is typically loam, but it is sandy clay loam or clay loam in places.

The B21ca horizon is 6 to 12 inches thick. The color is as much as one unit lower in value and as much as one unit higher in chroma than that of the A1 horizon. The texture is heavy loam or clay loam. The B22ca horizon ranges from 7 to 24 inches in thickness. The color ranges from 2.5YR to 7.5YR in hue, from 4 to 6 in value, and from 2 to 4 in chroma. The texture is clay loam or silty clay loam. In most places finely divided crystals of gypsum occur in the B23ca horizon. This horizon is as much as 25 inches thick, but it does not occur in all profiles. The IIC horizon is generally soft, gypsiferous rock that contains finely divided crystals of gypsum. The depth to this horizon ranges from 16 to 48 inches.

Russler soils are associated with Cottonwood, Karro, and Reeves soils.

Russler loam, 1 to 3 percent slopes (RS, Rv).—This soil the profile described as typical of the series. It occurs attered areas on gently undulating uplands north outh of Malaga. Included in mapping were areas ottonwood, Reeves, and Reagan soils. Some areas ithin the high-intensity survey, and some are within ow-intensity survey. The acreage is about equally d. The principal difference between the areas map- high intensity and those mapped at low intensity t the included soils make up more of the acreage low-intensity survey. As much as 15 percent of the e in the low-intensity survey consists of the d soils.

soil is unstable and is susceptible to wind and rosion, especially when the seedbed is being pre- and the soil is bare. The surface crusts readily, crust impedes seedling emergence. Seedlings are d by high winds.

soil is used for irrigated crops, native pasture, ldlife habitat. The irrigated acreage has been veled to grades of 0.2 to 0.3 percent. The depth psiferous substratum varies widely from place nd care is needed in leveling to avoid exposing erous material. Special designs or treatments ary for all surface or subsurface structures. tolerant crops are suitable. Roots are restricted wness to the underlying gypsum. Chlorosis is (Irrigated capability unit IIIs–14; dryland unit VIs–3; Clayey range site)

Russler-Ector association, 0 to 9 percent slopes (RU).—This soil association occurs in a regular pattern in the south-central part of the survey Area, near the Texas State line. It occupies a gently undulating plain where small limestone knobs and hills dot the landscape. Russler loam makes up about 60 percent of the acreage, and Ector stony loam, about 25 percent. Included in mapping were small areas of unclassified, deep, moderately dark colored silt loams in small depressions or on flood plains along narrow drainageways. Also included were areas of Gypsum land-Cottonwood complex, 0 to 3 percent slopes. The included soils make up less than 15 percent of the acreage.

The Russler soil, which is nearly level to gently sloping, occurs on uplands. It is slightly eroded and is susceptible to further erosion if the plant cover is seriously depleted. It has a high content of gypsum in the substratum, which makes necessary special treatment or design of surface and subsurface structures.

The Ector soil, which has the profile described as typical of the series, occurs on small knobs or hills. It is uneroded or only slightly eroded.

This association is used for native pasture and wildlife habitat. Reestablishment of vegetation is difficult once the plant cover is lost, because temperatures are high and rainfall is undependable. Good management of the range is needed to maintain a cover of desirable forage. Surface water is lacking, except for short periods after heavy rainfall. Ground water is hard to locate and is usually scanty and of poor quality. (Russler soil is in dryland capability unit VIs–3 and Clayey range site; Ector soil is in dryland capability unit VIIs–5 and Limestone Hills range site)

Simona Series

The Simona series consists of well-drained, moderately dark colored soils that are calcareous and moderately coarse textured. These soils are shallow over indurated caliche. They occur on uplands scattered throughout the eastern part of the survey Area. They have been worked by wind and are nearly level to gently sloping.

Soils of the Simona series typically have a surface layer of brown fine sandy loam about 2 inches thick. The next layer is light-brown gravelly fine sandy loam about 17 inches thick. Below this is fractured, platy, indurated caliche.

These soils are subject to severe wind erosion if the plant cover is seriously depleted. Runoff is slow. Permeability is moderately rapid, and the water-holding capacity is low. Nearly all the precipitation that falls soaks into the soil. Rainfall amounts to 10 to 14 inches annually, and the mean annual temperature is 60° to 64° F. The frost-free season is 210 to 220 days. Elevations range from 3,000 to 4,200 feet.

All the acreage is used for native pasture and wildlife habitat. The soils are productive if there is enough moisture. Surface water is lacking except for brief periods after the infrequent heavy rains, when water collects in the few potholes, or dry lakes. The vegetation consists mainly of black grama, side-oats grama, little bluestem, blue grama, Javelina, sand muhly, sand dropseed, threeawn, sand sagebrush, broom snakeweed, and mesquite.

Typical profile of Simona gravelly fine sandy loam, 2,200 feet west and 1,400 feet north of the SE. corner of sec. 15, T. 22 S., R. 28 E.

A1—0 to 2 inches, brown (7.5YR 5/3) gravelly fine sandy loam, dark brown (7.5YR 4/3) when moist; weak, thin, platy structure; soft when dry, very friable when moist, nonsticky and nonplastic when wet; very porous; strongly calcareous; mildly alkaline; abrupt, smooth boundary.

AC—2 to 11 inches, light-brown (7.5YR 6/3) gravelly fine sandy loam, dark brown (7.5YR 4/2) when moist; weak, coarse, subangular blocky structure; slightly hard when dry, friable when moist, slightly sticky and nonplastic when wet; very porous; strongly calcareous; mildly alkaline; clear, wavy boundary.

C1—11 to 19 inches, light-brown (7.5YR 6/3) gravelly fine sandy loam, brown (7.5YR 5/3) when moist; massive; slightly hard when dry, very friable when moist, slightly sticky and nonplastic when wet; very porous; strongly calcareous; mildly alkaline; abrupt, wavy boundary.

IIC2cam—19 inches, fractured, platy, indurated caliche.

The combined thickness of the A1 and AC horizons ranges from 10 to 24 inches. The color ranges from 10YR to 7.5YR in hue, from 4 to 6 in value, and from 2 to 3 in chroma. The texture of these horizons includes fine sandy loam to loamy sand. Numerous coarse fragments of caliche occur in some, but not all, profiles. The color of the AC horizon is as much as one unit higher in value than that of the A1 horizon. The C1 horizon does not occur in all profiles. The depth to caliche ranges from 10 to 24 inches.

Simona soils are associated with Bippus, Wink, Potter, and Upton soils.

Simona sandy loam, 0 to 3 percent slopes (SA).—This soil occurs in slight depressions on uplands east of the Pecos River.

This soil has a surface layer of brown sandy loam about 6 inches thick, which is underlain by a layer of brown fine sandy loam, about 10 inches thick. Below this is a layer, about 4 inches thick, of brown fine sandy loam that has been enriched by calcium carbonate. The underlying caliche is fractured and platy.

This soil is slightly eroded. It is highly susceptible to wind erosion if the vegetative cover is seriously depleted.

All the acreage is used for native pasture and wildlife habitat. It is productive if there is enough moisture. Surface water is lacking, except for brief periods when runoff collects in the few playas. Good management of the range is needed to maintain a cover of desirable forage and to control erosion. Revegetation is difficult because temperatures are high and rainfall is undependable. (Dryland capability unit VIIe–2; Sandy range site)

Simona gravelly fine sandy loam, 0 to 3 percent slopes (SG).—This soil has the profile described as typical of the series. It occurs on plains east of the Pecos River. Included in mapping were small areas of Simona sandy loam, 0 to 3 percent slopes, in pockets and swales, and unclassified soils in small playas. The included soils make up less than 15 percent of the acreage.

This soil has been slightly eroded by wind. Hummocks, 6 to 12 inches high, have formed. They are somewhat stabilized by woody plants.

Runoff is slow; it occurs only when the soil is saturated by prolonged rainfall. At such times, which are infrequent, water collects and stands in small playas for brief periods.

This soil is used for native pasture and wildlife habitat. It is productive if there is enough moisture. Roots are restricted by the underlying caliche. (Dryland capability unit VIIe–2; Sandy range site)

Simona-Bippus complex, 0 to 5 percent slopes (SM).—The Simona and Bippus soils of this complex have the profile described as typical of their respective series. Simona gravelly fine sandy loam, 0 to 3 percent slopes, makes up about 40 to 50 percent of the acreage, and Bippus silty clay loam, about 15 to 25 percent. Unclassified soils that have a strong zone of lime below a depth of 30 inches make up the rest. This complex occurs in drainageways and depressions and on sloping uplands throughout the eastern part of the survey Area.

The Simona soil is nearly level to gently sloping. It occurs on uplands above the Bippus soil. The Bippus soil occurs on flood plains along intermittent drainageways and in depressions. It is subject to periodic flooding.

All of this complex is used for native pasture and wildlife habitat. Good management is needed to control wind and water erosion. If there is enough moisture, the Bippus soil is among the most productive of the range soils of the survey Area. (Simona soil is in dryland capability unit VIIe–2 and Sandy range site; Bippus soil is in dryland capability unit VIe–1 and Bottomland range site)

Simona and Wink fine sandy loams, 0 to 3 percent slopes, eroded (SN).—This undifferentiated unit occurs as widely scattered areas east of the Pecos River. It occupies narrow, intermittent drainageways and dry lakes. Simona and Wink soils occur in about equal proportions. Except that the surface layer of the Simona soil has been eroded by wind, these soils have the profile described as typical of their respective series. Included in mapping were areas of Dune land and of deep, sandy, alluvial soils. The included areas make up less than 15 percent of the acreage.

The Simona soil is nearly level to gently sloping. It occurs in a slightly higher position on the landscape than the Wink soil. Runoff occurs at times, after the soil has become saturated from prolonged rainfall, which is infrequent.

The Wink soil occurs along drainageways leading to small playas and in broad depressions. All the precipitation that falls soaks in. If there is enough moisture, this soil is productive.

These soils are subject to continued wind erosion. Hummocks of sand, 1 to 3 feet high, are somewhat stabilized by woody plants. The areas between hummocks are nearly barren or are only sparsely vegetated.

All the acreage is used for native pasture and wildlife habitat. Good management is needed to maintain a cover of desirable forage and to control wind erosion. Reestablishment of vegetation is difficult once the plant cover is lost, because temperatures are high and rainfall is undependable. The range is generally in poor condition. Surface water is lacking, except for infrequent, very brief periods after prolonged rainfall, when the Simona soil becomes saturated and runoff occurs. (Simona soil is in dryland capability unit VIIe–2 and Sandy range site; Wink soil is in dryland capability unit VIIe–1 and Deep Sand range site)

portant to engineers are permeability, shear strength, compaction, shrink-swell characteristics, water-holding capacity, grain size, plasticity, and soil reaction. Also important are topography, depth to bedrock or caliche, and depth to the water table.

Much of the information in this section is presented in tables. Only the data in table 6 are from actual laboratory tests. The estimates in table 4 and the interpretations in table 5 are based on comparisons of soils with those tested. At many construction sites, major variations in soil characteristics occur within the depth of the proposed excavation, and several kinds of soil occur within short distances. Specific laboratory data on engineering properties of the soil at the site should be obtained before planning detailed engineering work.

The characteristics of the soils in the Eddy Area are described in detail in the section "Descriptions of the Soils." Those characteristics that affect engineering are interpreted in this section for engineers and others concerned with use of soil as a construction material.

Information in this survey can be used to—

1. Make preliminary estimates of the engineering properties of soils for use in planning irrigation systems and other agricultural systems.
2. Make preliminary evaluations that will aid in selecting locations for highways, pipelines, underground cables, railroads, and airports, and in planning detailed investigations of the soils at the selected locations.
3. Make studies that will aid in selecting and developing sites for industrial, business, residential, and recreational uses.
4. Determine the suitability of the soils for cross-country movement of vehicles and construction equipment.
5. Supplement information obtained from published maps, reports, and aerial photographs, for the purpose of making maps and reports that can be used readily by engineers.

With the use of the soil map for identification, the engineering interpretations reported here can be useful for many purposes. It should be emphasized that they do not eliminate the need for sampling and testing at the site of specific engineering works involving heavy loads or excavations deeper than the depths of layers here reported. Even in these situations, the soil map is useful for planning more detailed field investigations and for suggesting the kinds of problems that may be expected.

Some of the terms used in this publication have a special meaning to soil scientists and a different meaning to engineers. The Glossary defines many such terms as they are used in soil science.

Estimated properties of the soils

Table 4 gives some of the characteristics of the soils of the Eddy Area that are significant in engineering. The information in the table was based on data compiled for the survey and on test data shown in table 6.

The three columns under the heading "Classification" show soil texture as it is classified both by soil scientists and by engineers.

The estimated percentages of soil material passing sieves No. 4, No. 10, and No. 200 reflect the normal range for the series. As the grain-size distribution of any soil varies considerably, it should not be assumed that the range shown in the table will be applicable to all samples of a specified soil, nor that the engineering classification will invariably be as shown.

The rates of permeability given in table 4 are based on the movement of water through the soil in its undisturbed state. They were estimated by comparison with soils of known permeability. Permeability is expressed in terms of inches per hour.

Available moisture capacity, measured in inches per inch of soil depth, is the approximate amount of capillary water in the soil available for plant growth after all free water has drained away.

Reaction refers to the degree of acidity or alkalinity of a soil, expressed in pH values. A soil having a pH value of 7 is neutral in reaction. The pH value gives an indication of the corrosiveness of the soils and the protection needed for pipelines and other engineering structures.

Salinity affects not only the suitability of a soil for crops, but also its stability when used as a construction material and its corrosiveness to other materials. Estimates of salinity are based on estimates of electrical conductivity of saturated soil extract.

Shrink-swell potential is an indication of the volume change to be expected when the moisture content of soil material changes. In general, soils that have a high shrink-swell potential present hazards to the maintenance of engineering structures.

Some of the nearly level to gently sloping soils of the Arno, Cottonwood, Harkey, Reeves, and Pima series have a seasonal high water table. In some areas of these soils, the water table fluctuates between depths of about 1 foot and 3 feet during the irrigation season or in years when rainfall is above normal.

Periodic flooding occurs in swales and on the lower parts of flood plains of soils of the Arno, Bippus, Cottonwood, Dev, Harkey, Largo, Reeves, and Stegall series. On soils other than those of the Arno, Pima, and Reeves series, floodwaters seldom stand more than a few hours. Flooded areas of these soils are sometimes under water 1 or 2 days, but serious damage is infrequent.

Engineering interpretations

Table 5 gives estimates of the suitability of the soils for specified uses and lists soil properties that might present hazards for such use. Generally, the soils of the Eddy Area are not suitable as sources of sand and gravel, but some areas of Dev and Ector soils yield gravelly material suitable for crushing. Grassed or sodded waterways are not common in this Area, because rainfall is too low to maintain a good plant cover and use of irrigation water for this purpose is not economical.

The ratings of the soils as a source of topsoil are based on use of the soil as topdressing on road slopes and dams.

A good rating is given to a soil, such as Reagan loam, that is fertile and tillable and generally not subject to erosion.

The suitability of a soil for road fill depends largely on the texture of the material and on its natural water content. Compaction characteristics, erodibility, depth to bedrock, and presence of coarse fragments within the normal depth of road excavation are features that should be considered. Highly plastic soil material with high natural water content is rated as poor. Soils that have a high proportion of silt and fine sand are rated poor to fair because they are difficult to compact, slow to revegetate, and easily eroded on steep embankments.

Suitability of the soils for disposal fields for septic tanks and tile systems is shown in the table in terms of the degree of limitation for such use. A rating of slight indicates no unfavorable features. Characteristics and qualities considered are permeability, ground-water level, slope, overflow hazard, depth to impervious material, and the possibility of polluting the water supply.

The entire profile was evaluated in making interpretations of the soils for use as highway locations. The ratings are for undisturbed soil without artificial drainage. It was assumed that the surface soil would be removed in construction for use as topsoil wherever feasible. Significant factors considered are the content of organic matter, salts, stones, and rock outcrops; the depth to hard rock or caliche; the suitability of the soil for embankments; the stability of the soil and the ease of handling; the hazards of flooding and erosion; the plasticity of the soils; and topography. Frost heave was not considered, because the soils seldom freeze.

Significant factors considered in rating the soils for use in constructing dikes and levees are stability of the soils when wet and their workability when used in construction.

The characteristics of the soils that affect suitability for constructing farm ponds and irrigation reservoirs are the amount of seepage to be expected and the depth to an inhibiting layer, such as bedrock, caliche, or gypsiferous material. The characteristics and qualities considered in determining suitability of the soils for embankments are the same as those for dikes and levees.

The factors that affect irrigation are depth of tillable soil, texture, intake rate, permeability, water-holding capacity, soil reaction, and topography. The availability of suitable irrigation water is not considered. The characteristics and qualities considered in determining suitability of the soils for leveling and benching are the same as those for irrigation.

The properties considered in rating the soils as to their suitability for building foundations are bearing capacity, shrink-swell potential, and shear strength.

The ratings of suitability of the soils for pipelines is based mainly on soil depth and rockiness and on the content of salts.

The soils are classified in the table according to their hydrologic group. These are groups of soils having similar rates of infiltration by water, even when wetted, and similar rates of water transmission within the soil. There are four hydrologic groups:

GROUP A consists of soils that have a high infiltration rate even when thoroughly wetted, chiefly deep, well-drained to excessively drained sand, gravel, or both. These soils have a high rate of water transmission and a low runoff potential.

GROUP B consists of soils that have a moderate infiltration rate when thoroughly wetted and that are chiefly moderately deep to deep, moderately well drained to well drained, and moderately fine textured to moderately coarse textured. These soils have a moderate rate of water transmission.

GROUP C consists of soils that have a slow rate of infiltration when thoroughly wetted, chiefly soils that have a layer that impedes downward movement of water and soils that are moderately fine textured to fine textured. These soils have a slow rate of transmission.

GROUP D consists of soils that have a very slow rate of infiltration when thoroughly wetted, chiefly clay soils that have a high swelling potential, soils that have a permanently high water table, soils that have a claypan or clay layer at or near the surface, and shallow soils over nearly impervious materials. These soils have a very slow rate of water transmission.

Engineering test data

Table 6 gives data obtained by laboratory testing of samples of selected soils of the Area. The soils tested were sampled at several locations. The engineering characteristics of a soil at a specific location are indicated by these test data, but variations in properties can be expected at other locations. Even for those soils sampled in more than one location, the test data probably do not show the maximum range in characteristics that affect engineering.

Engineering classification systems

Two systems of classifying soils for engineering purposes are in general use. Classification of the soils of the Eddy Area according to both of these systems is given in this survey.

The Unified system of soil classification was developed by the Waterways Experiment Station, Corps of Engineers (*15*). In this system, soil classification is based on the identification of soils according to texture and plasticity and their performance as construction material. In the Unified system SW and SP are clean sands, SM and SC are sands with fines of silt and clay, ML and CL are silts and clays with low liquid limit, and MH and CH are silts and clays with high liquid limit. If soils are on the borderline between two classifications, a joint classification symbol is used, for example, ML–CL.

The system used by the American Association of State Highway Officials (AASHO) (*2*) is based on field performance of soils in highways. In this system, soil materials are classified into seven principal groups, designated A–1 through A–7. The best materials for use in highway subgrades (gravelly soils of high bearing capacity) are classified as A–1, and the poorest (clayey soils having low strength when wet) are classified A–7. The relative engineering values of the soils within each group are indicated by group index numbers. Group indexes range from 0 for the best material to 20 for the poorest.

TABLE 5.—*Engineer*

Soil series and map symbols	Suitability as a source of—		Degree of limitation for disposal fields for septic tanks and tile systems	Highway location	Dikes and levees
	Topsoil	Road fill			
Active dune land: AD--	Poor: erodible; low fertility.	Good if soil binder is used.	Slight: drifting sand.	Loose sand hinders hauling; drifting sand.	Not applicable---
Anthony: AE, Aa, Ah--	Poor: sandy-----	Good----------	Slight: features favorable.	Loose sand hinders hauling; exposed embankments are highly erodible.	Unstable; erodible
Arno: AH, Ak, An----- (For Harkey part of AH and Ak, see Harkey series.)	Poor: salty; high clay content.	Poor to very poor-	Severe: slow permeability; subject to flooding; fluctuating water table in places.	Subject to flooding; unstable when wet; high shrink-swell potential.	Unstable embankment; subject t cracking; difficu to work.
Atoka: Ao, At---------	Fair if fertilized---	Poor to a depth of 33 inches, good below 33 inches; hard caliche.	Severe: caliche at a depth of 33 inches.	Caliche at a depth of 33 inches.	Caliche at a deptl of 33 inches.
Berino: BA, BB, BD, BP. (For Pajarito part of BP, see Pajarito series; for Dune land part of BD, see Dune land.)	Poor----------	Poor to fair------	Severe: moderately slow permeability; soft caliche at a depth of 50 inches.	Features favorable---	Sandiness of surfa material necessi tates mixing wi subsoil material
Bippus----------	Fair----------	Poor----------	Severe: periodic flooding; moderately slow permeability.	Unstable; subject to periodic flooding.	Subject to crackii wide embankment necessary
Cacique: CA----------	Poor----------	Good: hard caliche at a depth of 24 inches.	Severe: hard caliche at a depth of 24 inches.	Sand dunes hinder hauling; hard caliche at a depth of 24 inches.	Unstable, sandy surface; shallow to moderately deep soils; undi lating topograp
Cottonwood: CR----- (For Reeves part of CR, see Reeves series.)	Poor: very shallow to gypsiferous material.	Poor: gypsiferous material at a depth of 4 to 10 inches.	Severe: creviced material that may allow pollution of water supply.	Gypsiferous material at a depth of 4 to 10 inches.	Not applicable--
Dev: DP---------- (For Pima part of DP, see Pima series.)	Poor: gravel and cobblestones intermixed with soil material.	Fair: careful selection of site required.	Severe: periodic flooding.	Subject to periodic flooding; shifting stream channels.	Features favorabl
Dune land----------	Poor: sandy-----	Very good--------	Slight: moderate permeability in soil material below the dune sand.	Loose, sandy material that hinders hauling.	Not applicable--
Ector: EC, EE, ER---- (For Reagan part of ER, see Reagan series.)	Poor: rock outcrops.	Very good: limestone bedrock at a depth of 1 to 18 inches.	Severe: blasting required below a depth of 20 inches; danger of contaminating water supply through crevices.	Limestone bedrock at a depth of 1 to 18 inches.	Not applicable--

See footnote at end of table.

interpretations

Farm ponds and embankments	Irrigation	Leveling and benching	Foundations for low buildings [1]	Pipelines	Hydrologic group
Not applicable	Not applicable	Not applicable	Good suitability if soil is confined.	Deep, loose sand; blowouts and drifting sand.	A
Erodible; moderately rapid permeability.	Rapid intake rate; susceptible to wind erosion; sprinkler system desirable.	Susceptible to wind erosion; dunes.	Good suitability if confined.	Features favorable	A
High water table in places; subject to flooding; highly compressible; poor stability.	Slow intake rate; saline; level grade necessary; subject to periodic flooding.	Features favorable	Poor bearing capacity; high shrink-swell potential; poor to fair shear strength; susceptible to periodic flooding.	Special treatment needed for salts.	C–D
Caliche substratum; limited fill material.	Moderately deep soil; smoothing necessary.	Slope as much as 3 percent; caliche at a depth of 33 inches.	Fair to poor shear strength; moderate shrink-swell potential; poor to fair bearing strength; hard caliche at a depth of 33 inches.	Caliche at a depth of 33 inches.	C
Susceptible to piping; moderate seepage; sandy, porous surface.	Rapid intake rate; smoothing necessary; susceptible to wind erosion.	Soft caliche at a depth of 50 inches; highly susceptible to wind erosion.	Good bearing capacity	Features favorable	A
ject to cracking	Slow intake rate; level grade necessary; subject to periodic flooding.	Not applicable	Poor suitability; moderate shrink-swell potential.	Periodic flooding	C
Pervious material; susceptible to piping; slopes unstable unless protected.	Rapid intake rate; moderately low water-holding capacity; shallow to moderately deep soil.	Sandy; subject to blowing; shallow to moderately deep.	Good suitability; hard caliche at a depth of 24 inches.	Hard caliche at a depth of 24 inches.	C
Not applicable	Not applicable	Not applicable	Poor shear strength and bearing capacity.	Special treatment needed for gypsum salts; varying hardness of gypsiferous rocks.	C
Gravel and cobblestones mixed with soil material.	Not applicable	Not applicable	Poor suitability; susceptible to periodic flooding.	Periodic flooding; shifting stream channels.	B
Not applicable	Not applicable	Not applicable	Good suitability if soil is confined.	Loose sand; hazard of blowouts and drifting sand.	A
Not applicable	Not applicable	Not applicable	Good suitability; limestone bedrock.	Limestone bedrock at a depth of 1 to 18 inches.	C

TABLE 5.—*Engineering*

Soil series and map symbols	Suitability as a source of—		Degree of limitation for disposal fields for septic tanks and tile systems	Highway location	Dikes and levees
	Topsoil	Road fill			
Pima: PM, Pe, Pn, Pv	Fair to poor: slow intake rate; erodible.	Poor	Severe: periodic flooding; moderately slow permeability.	Unstable material; subject to periodic flooding.	Subject to cracking; wide embankment is necessary.
Potter: PS (For Simona part of PS, see Simona series.)	Poor: gravelly	Good: hard caliche at a depth of 10 inches.	Severe: fractured caliche below a depth of 10 inches; danger of well pollution.	Hard caliche at a depth of 10 inches.	Not applicable
Reagan: RA, RE, Rc Rd (For Upton part of RE, see Upton series.)	Fair if fertilized	Fair	Slight to moderate: moderate permeability.	Features favorable	Features favorable
Rf	Poor: salty	Poor	Severe: subject to saturation because of seepage.	Subject to periodic saturation because of seepage.	Unstable; subject to cracking.
Reeves: RG, RM, Rl, Rn (For Reagan part of RM, see Reagan series; for Gypsum land part of RG, see Gypsum land.)	Fair if fertilized	Poor	Severe: gypsiferous material at a depth of 20 to 36 inches; crevices and solution holes; danger of pollution.	Gypsiferous material at a depth of 20 to 36 inches.	Gypsiferous material at a depth of 20 to 36 inches.
Rr	Poor: salty	Poor	Severe: gypsum at a depth of 20 to 36 inches; danger of pollution of water supply.	Gypsum below a depth of 20 to 36 inches.	Unstable; subject to cracking.
Rt	Fair if fertilized: 10 to 20 inches thick.	Poor	Severe: gypsiferous material at a depth of 10 to 20 inches.	Gypsum at a depth of 10 to 20 inches.	Gypsum at a depth of 10 to 20 inches.
Rock land: RO	Unsuitable	Poor	Not applicable	Bedrock at or near the surface; rough broken topography.	Not applicable
Russler: RS, RU, Rv (For Ector part of RU, see Ector series.)	Poor: gypsiferous soil.	Poor to very poor	Severe: moderately slow permeability; gypsum below a depth of 16 to 48 inches; crystalline gypsum; danger of pollution of water supply.	Unstable material; gypsiferous soil material with gypsiferous, interbedded clays at a depth of 16 to 48 inches.	Unstable; level grades and wide embankments necessary.
Simona: SA, SG, SM, SN. (For Bippus part of SM, see Bippus series; for Wink part of SN, see Wink series.)	Poor: sandy	Fair in surface layer; good at a depth of 10 to 24 inches because material is hard caliche.	Severe: hard caliche below a depth of 10 to 24 inches.	Hard caliche below a depth of 10 to 24 inches.	Not applicable

See footnote at end of table.

interpretations—Continued

Farm ponds and embankments	Irrigation	Leveling and benching	Foundations for low buildings [1]	Pipelines	Hydrologic group
Subject to cracking; some areas are subject to a high water table.	Slow intake rate; level grade needed; subject to accumulation of salt.	Features favorable	Fair to poor bearing capacity and shear strength; moderate to high shrink-swell potential.	Periodic flooding; occasional high water table in the gray variant type; special treatment for salts needed in saline phase.	C
Not applicable	Not applicable	Not applicable	Caliche at a depth of 10 inches.	Caliche at a depth of 10 inches.	C
Gypsum or soft caliche below a depth of 40 inches in places.	Susceptible to accumulation of salt.	Features favorable	Fair bearing capacity and shear strength; low to high shrink-swell potential.	Gypsum salts below a depth of 40 inches in places; special treatment needed.	C
Unstable; dispersed	Susceptible to accumulation of salt.	Features favorable	Poor bearing capacity and shear strength; moderate shrink-swell potential.	Special treatment needed for salts.	C
Gypsiferous substratum.	Susceptible to accumulation of salt; gypsiferous material at a depth of 20 to 36 inches.	Limitation on depth of cuts.	Poor to fair bearing capacity and shear strength; moderate shrink-swell potential.	Special treatment needed for salts.	C
Gypsum below a depth of 20 to 36 inches.	Susceptible to accumulation of salt; gypsum at a depth of 20 to 36 inches.	Limitation on depth of cuts.	Poor bearing capacity and shear strength; moderate shrink-swell potential; periodic overflow or shrinkage.	Special treatment needed for salts.	C
Gypsum at a depth of 10 to 20 inches.	Susceptible to accumulation of salt; gypsum at a depth of 10 to 20 inches.	Soil smoothing only; gypsum at a depth of 10 to 20 inches.	Poor bearing capacity and shear strength.	Special treatment needed for salts.	C
Not applicable	Not applicable	Not applicable	Good suitability; blasting required for excavations.	Blasting required to bury exposed bedrock.	D
Not applicable	Slow intake rate; crusts easily; susceptible to water erosion.	Limitation on depth of cuts; gypsiferous soil.	Poor bearing capacity and shear strength; moderate to high shrink-swell potential.	Special treatment needed for salt below a depth of 16 to 48 inches.	B
Not applicable	Not applicable	Not applicable	Good suitability if confined.	Hard caliche below a depth of 10 to 24 inches.	B

348-766—71——6

1. TANK SELECTION

A. The tank capacity shall be selected in such a manner that sufficient volume is available to contain all the water produced during periods of inclement weather when it is not possible to drain the tank on a regular schedule. If the proposed plan submitted for OCD approval is to be used at a number of sites, a list of those sites and the estimated daily discharge of produced water from each site shall be submitted with the plans and specifications.

B. The materials of construction selected for the tank shall exhibit strong corrosion resistance to those fluids the tank will store. If fiber reinforced plastic tanks are to be used, the material shall be resistant to sunlight and its design shall allow for expansion and contraction due to wide temperature shifts. If ferrous tanks are to be used, protective coatings and/or cathodic protection should be used to inhibit corrosion. The plans and specifications submitted for approval shall include the type of material selected and its thickness.

2. INSTALLATION

A. The surface upon which the liner and tank rests shall be free of rocks and shall be level to prevent puncturing, cracking, or indentation of the liner or tank bottom.

B. All below grade tanks shall have a leak detection system which may consist of a drainage and sump system. If a drainage and sump system is to be used, the design shall include the following criteria listed below and illustrated by Figure 1.:

1) A synthetic impermeable liner of at least 20 mil thickness shall first be placed upon the surface that will support the tank and will extend to above the ground surface.

2) Slotted or perforated drainage pipe (lateral) shall be placed upon the impermeable layer at a slope of at least 1 inch per 10 feet. The drainage pipe shall be a minimum of one inch in diameter.

3) The drainage pipe shall then be covered with sand, gravel, or other material with sufficient permeability to convey fluids to the drainage pipe.

4) The tank shall then be placed upon this surface and a riser pipe (sump) connected to the drainage pipe. The riser pipe shall be a minimum of 2 inches in diameter.

5) The secondary liner shall then be strapped to the tank above the ground surface and in a manner to prevent rain water from entering the space between the tank and liner.

C. A tank and liner resting within the ground water shall be adequately anchored to prevent floating.

D. For tanks located below the ground surface in an open pit, no secondary containment is required. The tank shall rest on a gravel pad one inch thick (1" minimum), and the entire tank shall be exposed to visually detect leaks (see Figure 1).

3. MAINTENANCE

A. The leak detection sumps shall be inspected on a routine basis at a minimum of once every thirty (30) days. The proposed frequency shall be included with the plans and specifications submitted for approval.

B. The detection of fluid within the sump will require reporting the detection to the appropriate OCD District Office within 24 hours of discovery, obtaining a sample of the fluid, and having the sample analyzed for major cations/anions, benzene, toluene, ethylbenzene, total xylenes (BTEX), and conductivity. A copy of the analysis shall be sent to the appropriate OCD District Office. An analysis of the fluids in the tank may be required for comparison with the above analysis. If the presence of fluid in the leak detection system is due to a tank leak, the contingency plan shall be implemented.

4. CONTINGENCY PLAN

A contingency plan in the event of a tank leak shall be submitted for approval along with the details for tank selection, installation, and maintenance. The contingency plan shall outline a procedure for making repairs to the tank in the most expeditious manner possible.

PREFACE

The following specifications shall be used as a guide to the preparation of plans and specifications for the selection and installation of below-grade tanks and sumps to be used to contain those discharged or stored liquids regulated by the New Mexico Oil Conservation Division (OCD). Existing tanks and sumps installed need not comply with the following guidelines if the mechanical integrity of such installations can be shown in a manner acceptable to the OCD. All plans and specifications shall be submitted to the OCD for approval prior to installation. Designs may deviate from the following specifications if it can be shown that the design integrity is such that the installation will not affect any present or future sources of fresh ground water. If a number of tanks are to be installed in the same manner, only one set of plans and specifications need to be submitted provided that a list of all locations to be involved is included.

GUIDELINES FOR THE SELECTION AND INSTALLATION OF BELOW-GRADE PRODUCED WATER TANKS

(revised 10/91)

NEW MEXICO OIL CONSERVATION DIVISION
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO

1. The flooding potential at the discharge site with respect to major precipitation and/or run-off events; and

2. Flood protection measures (berms, channels, etc.), if applicable.

XII. ADDITIONAL INFORMATION

Provide any additional information necessary to demonstrate that approval of the discharge plan will not result in concentrations in excess of the standards of Section 3-103 or the presence of any toxic pollutant at any place of withdrawal of water for present or reasonably foreseeable future use. Depending on the method and location of discharge, detailed technical information on site hydrologic and geologic conditions may be required to be submitted for discharge plan evaluation. This could include but not be limited to:

1. Stratigraphic information including formation and member names, thickness, lithologies, lateral extent, etc.

2. Generalized maps and cross-sections;

3. Potentiometric maps for aquifers potentially affected;

4. Porosity, hydraulic conductivity, storativity and other hydrologic parameters of the aquifer;

5. Specific information on the water quality of the receiving aquifer; and

6. Information on expected alteration of contaminants due to sorption, precipitation or chemical reaction in the unsaturated zone, and expected reactions and/or dilution in the aquifer.

DISCHARGE PLAN GUIDELINES

I. TYPE OF OPERATION

Indicate the major purpose(s) of the facility (e.g. gas processing, oil refining, gas compression) and briefly describe the processes occurring at the facility.

II. OPERATOR/LEGALLY RESPONSIBLE PARTY & LOCAL REPRESENTATIVE

Include the name, address and telephone number for both.

III. LOCATION OF DISCHARGE/FACILITY

Give a legal description of the location (i.e. 1/4 1/4, Section, Township, Range, and County). Use state coordinates or latitude/longitude on unsurveyed land. Submit a large scale topographic map, facility site plan, or detailed aerial photograph for use in conjunction with the written material. It should depict highways and roads giving access to the facility site.

IV. LANDOWNERS

Attach the name and address of the landowner(s) of record of the facility site.

V. FACILITY DESCRIPTION

Attach a description of the facility with a diagram indicating location of fences, pits, berms, and tanks on the facility. The diagrams of the facility should depict the locations of discharges, storage facilities, disposal facilities, processing facilities and other relevant areas including drum storage. Show the facility/property boundaries on the diagram.

VI. SOURCES, QUANTITIES & QUALITY OF EFFLUENT & WASTE SOLIDS

A. For each source include types of major effluent (e.g. salt water, hydrocarbons, sewage, etc.), estimated quantities in barrels or gallons per month, and types and volumes of major additives (e.g. acids, biocides, detergents, degreasers, etc.):

1. Separators (produced water);

2. Boilers;

3. Engine Cooling Waters;

4. Cooling Tower;

5. Sewage (Indicate if completely separate from other effluents with no commingling. If no commingling, domestic sewage is under the jurisdiction of NM Environment Department);

6. Waste lubrication and motor oils;

7. Waste and slop oil;

8. Used filters;

9. Solids and sludges from tanks (provide description of materials; e.g. crude oil tank bottoms, sump sludge);

10. Cleaning operations using solvents/degreasers;

11. Truck, tank and drum washing; and

12. Other liquid and solid wastes (e.g. plant floor drains) described in detail.

B. Quality Characteristics

Provide the following information for each source listed above:

1. Provide concentration analyses for Total Dissolved Solids (TDS) and Major Cations/Anions (eg. Na, K, Ca, Mg, Cl, So4, HCO3. CO3) in milligrams per liter (mg/l), and pH.

2. Provide hydrocarbon analyses for benzene, ethylbenzene, toluene, and meta-, ortho-, and para-xylenes (BTEX).

3. Provide analyses for WQCC Section 3-103 standards not included within above analyses. Exceptions can be approved upon request for certain constituents if not used in processing or not expected to be present in the waste water effluent (e.g. uranium, combined Radium 226+228, PCB's, silver, chlorinated hydrocarbons).

4. Discuss the presence or absence of toxic pollutants (WQCC 1-101.UU definition and listing) in each process. If present, provide volumes and concentrations. Estimates may be used pending Director evaluation of discharge plan submittal and proposed discharge methods. Contaminants listed in 1-101.UU may be constituents of hydrocarbon liquids, solvents, pesticides, etc.

5. Discuss sampling locations, methods, and procedures used to obtain values for #1, 2 and 3 above. Include information as to whether sample was "grab" or time-composite, filtering and preservation techniques, laboratory used for analysis, etc. Sources for sampling and analytical techniques to be used are listed in WQCC 3-107.B.

6. Discuss variability in flow rates that could produce values higher or lower than values shown above. If major variations in concentrations are inherent or expected in the process, provide ranges and expected average.

C. Commingled Waste Streams

1. If produced and process fluids are commingled within the facility, and if individual rates, volumes and concentrations do not vary beyond a set range, and if process units are entirely self-contained to prevent intentional discharges and spills or inadvertent discharges (see B.3,4 below), then chemical characterization of commingled effluent or process streams may be sufficient to satisfy discharge plan requirements.

2. If the discharger wishes to submit information on commingled streams in lieu of submittal of individual stream characteristics, adequate information should be provided to justify the request.

VII. TRANSFER & STORAGE OF PROCESS FLUIDS & EFFLUENTS

A. Provide summary information about on site collection and storage systems for each source listed in Part VI. Indicate whether collection and storage location is tank or drums, floor drain or sump, lined or unlined pit, etc.

B. Provide water and wastewater flow schematics with sufficient detail to show individual treatment and process units. If necessary, provide larger scale diagrams for complex processes.

C. To determine what water contaminants may be discharged to the surface and subsurface within the facility, indicate on diagrams the status of transfer and storage collection units with regard to present or potential discharges to ground water. Provide the following information:

1. Specify which tanks, separators and pipelines are pressurized, and above ground or buried.

2. Indicate if fluids (e.g. machinery fluids) are drained to surface impoundments, oil skimmer pits, emergency pits, floor drains, sumps, flare pits, etc. for further transfer and processing.

3. For item b) provide size and indicate if these collection units are lined or unlined. If lined describe lining material (e.g. concrete, steel tank, etc.). Provide effluent disposal description in Section VIII.

D. To prevent both unintentional and inadvertent discharges from reaching the ground surface and polluting surface or ground waters or the environment, the OCD requires that the following designs be incorporated at the facility:

1. Storage tanks for fluids other than fresh water must be bermed to contain a volume one-third more than the largest tank. If tanks are interconnected, the berm must be designed to contain a volume one-third more than the total volume of the interconnected tanks.

2. Chemical and drum storage areas must be paved, curbed and drained such that spills or leaks from drums are contained on the pads or in lined sumps. Process areas are also required to be paved and curbed unless the discharger can demonstrate that leaks and spills will not reach the ground surface.

3. All new sumps and below-grade tanks must be approved by the OCD prior to installation and must incorporate secondary containment and leak detection in their designs. A below- grade tank is any tank in which a portion of the tank is below the ground surface. All pre-existing sumps and below-grade tanks must be cleaned out and visually inspected on an annual basis.

4. All above ground tanks must be placed on a gravel pad so that leaks can be identified. Leak detection is not required for above ground tanks. If the tank is not located on a gravel pad it must be cleaned out and visually inspected every 5 years.

E. Underground Pipelines

If the plant contains underground process or wastewater pipelines, the age and specification (e.g. wall thickness, fabrication material, etc.) of said pipelines should be submitted. All underground wastewater pipelines over 25 years of age must be tested to demonstrate their mechanical integrity at present and then every 5 years thereafter. If said pipelines are at least 25 years of age submit a plan and timetable for testing their mechanical integrity. If such testing (e.g. hydrostatic tests) is already conducted, details of the program should be submitted.

F. Proposed Modifications

If transfer and storage systems do not meet the criteria of Section B.4. above, or if protection of ground water cannot be demonstrated, describe

what modification of that particular method (including closure), or what new facility, is proposed to meet the requirements of the Regulations. Describe in detail the proposed changes and submit a proposed time schedule for construction and completion. (Note: OCD has developed specific guidelines for construction of lined surface impoundments and below-grade tanks, and for closure of surface impoundments available on request.)

VIII. EFFLUENT DISPOSAL

A. On-site Operations

1. Describe existing on-site facilities used for effluent disposal of process/produced water, sludges, waste oils, solvents, etc., including surface impoundments, disposal pits, leach fields, floor drains, injection wells, land application, etc. (if effluents are shipped off-site, see B. below; see C.2 if unit is to be closed as part of this discharge plan). Locate the various disposal areas on the facility site plan or topographic map. Provide the following technical data on the design elements of each disposal method:

   a. Surface impoundments (pits & ponds) - Dates of use; type and volume of effluents stored; area, volume, depth, slope of pond sides; sub-grade description; liner type and thickness; compatibility of liner and effluents; installation methods; leak detection methods; freeboard; runoff/runon protection.

   b. Leach fields - Type and volume of effluents, leach field area, and design layout. If non-sewage or mixed flow from any process units or internal drains is, or has been, sent to the leach fields, include dates of use and disposition of septic tank sludges.

   c. Injection wells - Describe effluent injected, volume, depth, formation, OCD order number and approval date. Provide information as to whether the effluent is classified as a hazardous waste at the time of injection. Class II injection wells are required to have an approved OCD permit to operate. Except for Class II wells, any hole deeper than wide used for subsurface emplacement of fluids is an injection well and subject to the notification requirement of Section 5-300 of the WQCC Regulations. Part 5 WQCC discharge plan approval will be required if the injection well is used to dispose of effluents classified as a hazardous waste (Class I well permitted by the NMED) or non-exempt, non-hazardous waste (Class I well permitted by the OCD).

d. Drying beds or other pits - Types and volumes of waste, area, capacity, liner, clean-out schedule and method, and ultimate disposal location.

e. Other on-site disposal (e.g. land application etc.) - Describe.

2. For each of the disposal methods listed above (except OCD permitted Class II wells):

a. describe the existing and proposed measures to prevent or retard seepage such that ground water at any place of present or future use will meet the WQCC Standards of Section 3-103, and not contain any toxic pollutant as defined in Section 1-101.UU. If a facility is located at a site where ground water contamination has occurred (from whatever source) and discharges to the subsurface by any of the methods listed above (except Class II wells) are proposed to continue, then the operator must demonstrate that the continued discharge will cause neither increased movement of contaminants to an area of present or future use of ground water, nor elevated levels of contaminants beyond what would occur through natural processes if the discharge had ceased.

b. Provide the location and design of sites(s) and the method(s) used for sampling, and for measurement or calculation of flow.

c. Describe the monitoring system existing or proposed in the plan to detect leakage or failure of the discharge system. If ground water monitoring exists or is proposed, provide information on the number, location, design, and installation of monitoring wells; the frequency of sampling; and the constituents to be analyzed.

d. Describe the proposed periodic reporting of the results of the monitoring and sampling.

e. Describe the proposed actions and procedures (including OCD notification) to be undertaken by the discharger in the event of detecting leaks or failure of the discharge system.

f. If operations at this facility are expected to be discontinued during the period that this discharge plan is in effect, describe the measures proposed to prevent ground water contamination after the cessation of operation, including possible post-operational monitoring.

B. Off-site Disposal

If process/produced waters, sludges, etc. are pumped or shipped off-site, indicate general composition (e.g. cooling tower blowdown, waste oils, etc.), method of shipment (e.g. pipeline, trucked), shipping agent (name, address), and final disposition (e.g. recycling plant, Class II disposal well). Include name, address, and location of receiving facility. If receiving facility is a sanitary or modified landfill show operator approval for disposal of the shipped wastes.

C. Proposed Modifications

1. If protection of ground water cannot be demonstrated pursuant to 2.a. above, describe what modification of that particular method of disposal (including closure), or new treatment facility, is proposed to meet the requirements of the Regulations. Describe in detail the proposed changes. Provide the information requested in A.1. and A.2. above for the modified and proposed discharge methods.

2. For ponds, pits, leach fields, etc. where protection of ground water cannot be demonstrated, describe the proposed closure of such units so that existing fluids are removed, and emplacement of additional fluids and runoff/runon of precipitation are prevented. Provide a proposed time schedule for closure.

IX. INSPECTION, MAINTENANCE AND REPORTING

A. Describe proposed routine inspection procedures collection, storage, and disposal units having leak detection systems. Include frequencey of inspection, how records are to be maintained and OCD notification in the event of leak detection.

B. Discuss general procedures for containment of precipitation and runoff such that water in contact with process areas does not leave the facility, or is released only after testing for hazardous constituents. Include information on curbings, drainage, disposition, notification, etc.

X. SPILL/LEAK PREVENTION & REPORTING (CONTINGENCY PLANS)

A. The discharge plan submittal must contain a contingency plan that anticipates where any leaks/spills might occur. It must describe how the discharger proposes to guard against such accidents and detect them when they have occurred.

B. The contingency plan also must describe the steps proposed to contain and remove the spilled substance or mitigate the damage caused by the discharge such that ground water is protected, or movement into surface waters is prevented.

C. The discharger is required to notify the OCD Director of significant leaks and spills, and this commitment and proposed notification threshold levels must be included in the contingency plan.

XI. SITE CHARACTERISTICS
(See also Section V)

A. Hydrologic Features

1. Provide the name, description, and location of any bodies of water, streams (indicate perennial or intermittent), or other watercourses (arroyos, canals, drains, etc.); and ground water discharge sites (water wells, seeps, springs, marshes, swamps) within one mile of the outside perimeter of the facility. For water wells, specify use of water (eg. public supply, domestic stock, etc.).

2. Provide the depth to and total dissolved solids (TDS) concentration (in mg/l) of the ground water most likely to be affected by the discharge. Include the source of the information and how it was determined. Provide a recent water quality analysis of the ground water, if available, including name of analyzing laboratory and sample date.

3. If known, provide the flow direction of the ground water most likely to be affected by the discharge. Include the source of the information and how it was it determined.

B. Geologic Description of Discharge Site

Provide the following information and attach or reference source of the information as available:

1. Soil type(s) (sand, clay, loam, caliche);

2. Name of aquifer(s);

3. Composition of aquifer material (eg. alluvium, sandstone, basalt, etc.); and

4. Depth to rock at base of alluvium if available.

C. Flood Protection

Provide information on:

GUIDELINES FOR THE PREPARATION OF GROUND WATER DISCHARGE PLANS AT NATURAL GAS PROCESSING PLANTS, OIL REFINERIES, AND GAS COMPRESSOR STATIONS

(Revised 05-92)

Introduction

The New Mexico Oil Conservation Division (OCD) regulates disposal of non-domestic wastes resulting from activities at oil refineries, natural gas processing plants, geothermal installations, carbon dioxide facilities, and natural gas transmission lines and compressor stations pursuant to authority granted in the New Mexico Oil and Gas Act and the Water Quality Act. The OCD administers, through delegation by the New Mexico Water Quality Control Commission (WQCC), all Water Quality Act regulations pertaining to surface and ground water except sewage. However, if the sewage is in a combined wasted stream, the OCD will have jurisdiction.

Sections 3-104 and 3-106 of the WQCC Regulations stipulate that, unless otherwise provided for by the regulations, no person shall cause or allow effluent or leachate to discharge so that it may move directly or indirectly into the ground water unless such discharge is pursuant to a discharge plan approved by the director. The Oil and Gas Act (Section 70-2-12.B(22)) authorizes the OCD to regulate the disposition of non-domestic, non-hazardous wastes at oil field facilities to protect public health and the environment. The OCD has combined these requirements into one document, (a "discharge plan") that will provide protection to ground water, surface water and the environment through proper regulation of the transfer and storage of fluids at the facility, and disposal of waste liquids and solids.

A proposed discharge plan shall set forth in detail the methods of techniques the discharger proposes to use which will ensure compliance with WQCC regulations and the Oil and Gas Act. The proposed discharge plan must provide the technical staff and the director of the regulating agency (in this case, the OCD) with sufficient information about the operation to demonstrate that the discharger's activities will not cause state regulations or ground water standards (WQCC Section 3-1-3) to be violated.

A facility having no intentional liquid discharges still is required to have a discharge plan. Inadvertent discharges of liquids (ie. leaks and spills, or any type of accidental discharge of contaminants) or improper disposal of waste solids still have a potential to cause ground water contamination or threaten public health and the environment. The discharge plan must address surface facility operations including storage pits, tankage and loading areas.

For new or proposed facilities, WQCC Regulation 3-106.B requires the submittal and approval of a discharge plan prior to the start of discharges. The regulation further specifies that "for good cause shown, the director may allow such a person to discharge without an approved discharge plan for a period not to exceed 120 days."

For existing facilities, WQCC Regulation 3-106.A. provides for submittal of a ground water discharge plan within "120 days of receipt of written notice that a discharge plan is required, or such longer time as the director shall for good cause allow." Dischargers not having an approved discharge plan may continue discharging "without an approved discharge plan until 240 days after written notification by the director that a discharge plan is required or such longer time as the director shall for good cause allow".

After a discharge application plan has been received, the OCD must publish a public notice pursuant to Section 3-108 of the regulations, and allow 30 days for public comment before a discharge plan may be approved or otherwise resolved. If significant public interest is indicated, a public hearing will be held which will delay a decision on plan approval.

Once a plan has been approved, discharges must be consistent with the terms and conditions of the plan. Similarly, if there is any facility expansion, production increase, or process change that would result in any significant modification to the approved discharge of water contaminants, the discharger is required to notify this agency, and have the modification approved prior to its implementation. Approval of a discharge plan application by OCD will not relieve the operator of the necessity to become familiar with other applicable state and federal regulations.

The review of a proposed discharge plan often requires several months depending on complexity. This includes time for requests to the discharger for additional information and clarification, in-house information gathering and analysis, and field investigations of the discharge site, and a public notice and comment period. Review time will, to a large extent, be dependent on the extent to which a facility has generally self-contained processes to prevent movement of fluids and leaching of solids from the work area into the environment.

For example, the review process will be expedited when effluent, process, or other fluids are routed to tanks, Class II injection wells, or lined ponds with underdrains for leak detection; when accurate monitoring of fluid volumes and pressure and/or integrity testing is performed for leak detection in below grade or underground tanks and plant pipelines; and when the possibility of accidental spills and leaks is addressed by adequate contingency plans (e.g. containment by curbing and drainage to properly constructed sumps). Other examples allowing faster review include recycling of waste oils, proper disposal of dried sludges to minimize potential ground water contamination, and closure of previously used ponds. The more rapid review of discharge plans for such facilities is possible because much less geologic and hydrologic study of the site is required in order to delineate impact.

Similarly, longer review times will be required for operators seeking to continue to use unlined ponds or to utilize other plants procedures that have a high probability of allowing infiltration and movement of effluent and leachate to the subsurface. For these instances large amounts of technical data generally will be required including: 1) detailed information on site hydrogeology, natural and current water quality, and movement of contaminants; 2) processes expected to occur in the vadose and saturated zones to attenuate constituents to meet WQCC standards at a place of present or reasonable foreseeable future use of ground water; and 3) monitoring of ground water (including post operational monitoring as necessary).

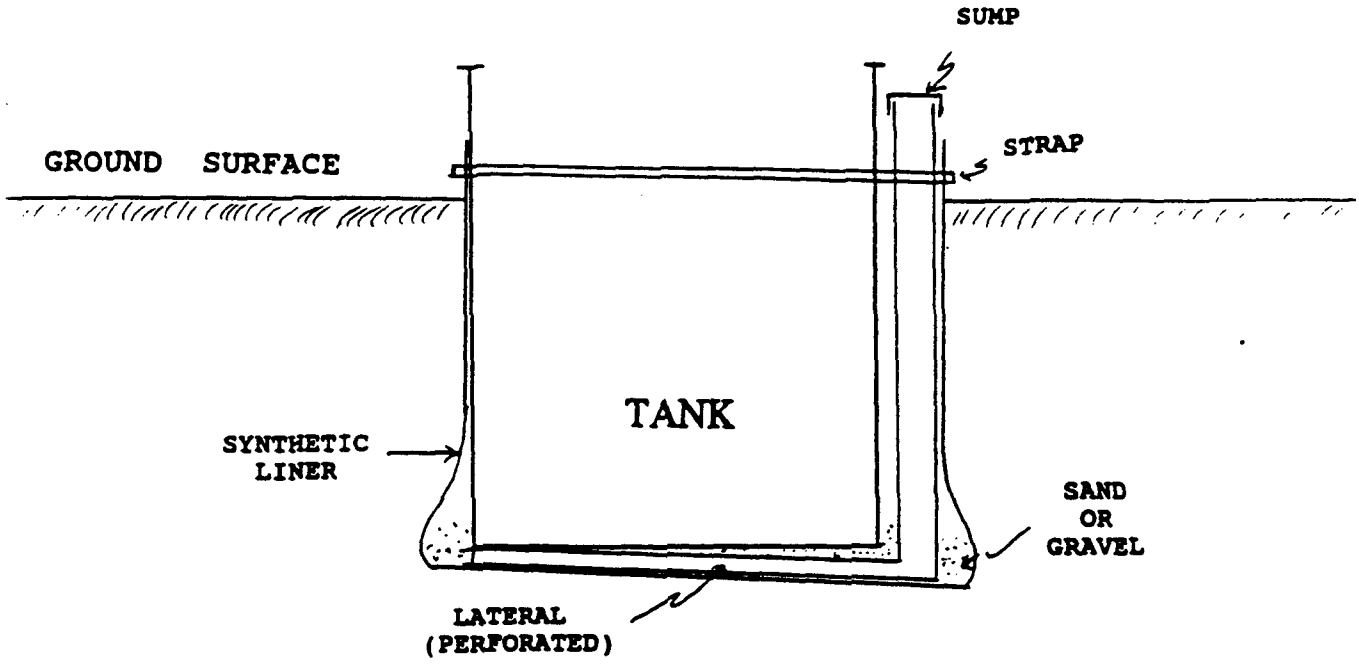
The following discharge plan application guidelines have been prepared for use by the discharger to aid in fulfilling the requirements of Sections 3-106 and 3-107 of the WQCC regulations and to expedite the review process by minimizing OCD requests for additional information. It sets up a logical sequence in which to present the information required in a discharge plan for this type of facility. It is suggested that you read the entire document before preparing your application. Not all information discussed may be applicable to your facility. However, all sections of the application must be completed.

If there are any questions on the preparation of a discharge plan, please contact the OCD's Environmental Bureau. (P.O. Box 2088, Santa Fe, New Mexico 87504-2088 or by telephone at (505) 827-5812).

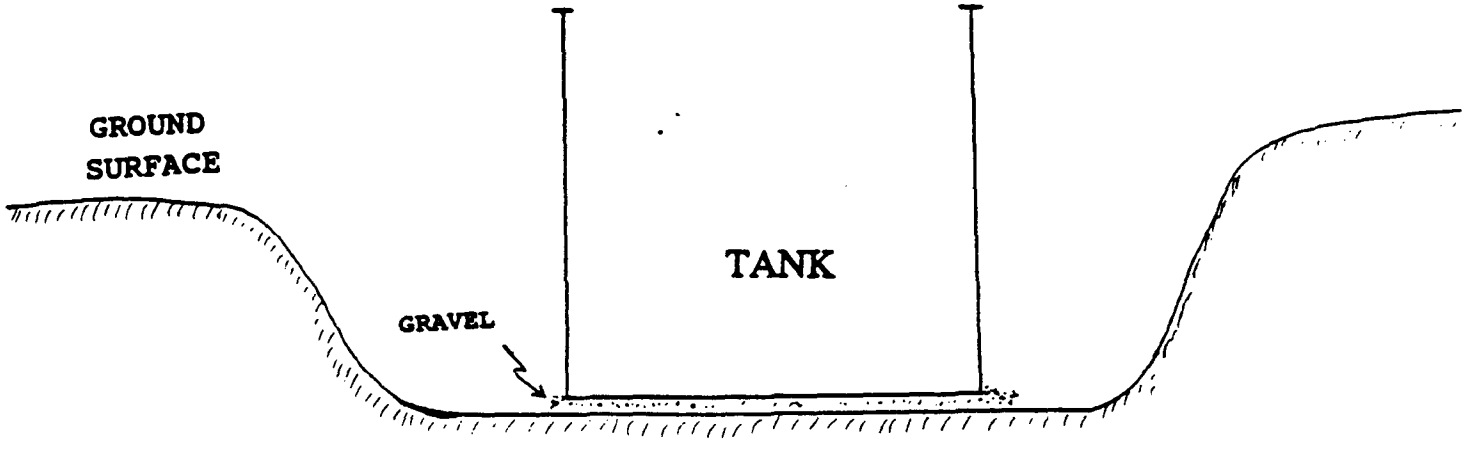
Pursuant to the New Mexico WQCC Regulation 3-114 "every billable facility submitting a discharge plan for approval, modification or renewal shall pay the fees specified in this section to the Water Quality Management Fund". The fee consists of a fifty (50) dollar filing fee which must be submitted with the discharge plan application and is nonrefundable; and a flat fee which is based on the type of facility and application (e.g. approval, modification, renewal) and is due at the time of approval.

FIGURE I: TANK INSTALLATION

1. BACKFILLED



2. OPEN PIT OR ABOVE GROUND



GAS COMPANY OF NEW MEXICO

November 25, 1991

New Mexico State Land Office
P. O. Box 2088
Santa Fe, NM 87504-2088
Attn: Roger C. Anderson

Re: 1990 Waste Water Discharge Plan Ammend

Dear Roger:

I proposed to make several site modifications by the end of December, 1991 and December, 1992. However, most of the projects were delayed because Gas Company was researching whether the plant would be shut down and replaced.

It has been determined that the plant will continue operation. Authority for appropriation is being generated to begin site modifications but it might be early 1992 before work actually begins.

I still plan to have all site modifications completed by the end of December, 1992.

Sincerely,

GTO-Permian

Robert Bogan

Robert D. Bogan
Plant Supervisor

RDB:VR

cc: Gary Howard
file