GW - 35

GENERAL CORRESPONDENCE

YEAR(S):

1989 - 1986

New Mexico Health and Environment Depa

May 11, 1989

Mr. Jim Moore
Director of Public Works
City of Bloomfield
P. O. Box 1839
Bloomfield, New Mexico 87413

Re: Salinity Requirements in NM0020770, Bloomfield WWTP

Dear Mr. Moore:

You had called me on May 2, 1988 regarding the compliance problems that the City of Bloomfield has been having with the salinity limit in its NPDES permit. You asked specifically if the City could apply for a variance to raise the salinity limit to 500 mg/l, what other permittees in New Mexico had similar problems with the salinity limit, and what treatment methods were available to remove salinity.

I have enclosed a copy of the February 28, 1977 "Policy for Implementation of Colorado River Salinity Standards Through t NPDES Permit Program" (Policy.) Part II, Municipal Discharge A, on page 7, allows for the permitting authority (USEPA) to

> "permit a discharge in excess of the 400 mg/l incremental increase at the time of issuance or reissuance of a NPDES discharge permit, upon satisfactory demonstration by the permittee that it is not practicable to attain the 400 m limit."

Part II, Municipal Discharges, B, starting on page 7, list information that the permittee must include for the demonstration.

Sent to Conoco
5/18/89
DJB

— ENVIRONMENTAL IMPROVEMENT DIVISION —
Harold Runnels Building
1190 St. Francis Dr.
Santa Fe, New Mexico 87503

I have also enclosed a copy of the latest "1988 Annual Progress Report, Water Quality Standards for Salinity, Colorado River System, January, 1989" for your information. The permittees in New Mexico that have salinity in their NPDES permit, and their current status, are listed in Appendix A. The Legend is at the start of Appendix A.

In my most current inspection report done under the NPDES permit on October 26-27, 1988 at the Bloomfield Wastewater Treatment Plant, I stated in my cover letter to the City of Bloomfield's Mayor Toliver:

> "The City submitted an incomplete salinity report, and never corrected it. According to the permittee's representatives, two major industrial contributors, El Paso Natural Gas and Conoco, contribute to the high concentrations of salinity being discharged from the City's wastewater treatment plant."

"Salinity" received an "Unsatisfactory" rating on the inspection report, and, under the Further Explanations portion of the report, the following description is given:

> "Two major contributing industries to the Bloomfield wastewater treatment plant are El Paso Natural Gas and Conoco. These two industries contribute 10% of the total flow, according to the permittee's representatives. They also contribute a significant amount of the Total Dissolved Solids (TDS). The contract between the City and Conoco allows Conoco to discharge 1,000 mg/l net TDS to the treatment plant. The City is allowed a net increase of 400 mg/l, according to the "Policy for Implementation of Colorado River Salinity Standards Through the NPDES Permit Program," February 28, 1977. The City exceeds this limit. The City needs to address this problem when it submits the Salinity Report required in the newly reissued NPDES permit NM0020770."

This report is due within 24 months of the effective date of the permit, which is November 15, 1988.

It is the City's responsibility under the "Policy" to demonstrate that it is not practicable to attain the 400 mg/l TDS limit. The City had apparently not assumed a very active role to control some of its sources of salinity at the time of my last inspection. This Division, which has to provide certification of the NPDES permit under Section 401 of the federal Clean Water Act, will be looking for the City's NPDES permit's salinity report (due November 15, 1990) documenting the City's implementation of its salinity control program during the duration of the newly reissued NPDES permit.

Your third request was for some information on the possibility of treating the wastewater to reduce the salinity. I mentioned the best control might be the implementation of the limits in the City's existing sewer use ordinance. Under Section 18-67. "Prohibitions and limitations on discharge into the publicly owned treatment works", (h), "Limitations on pollutant concentrations", the "Maximum Allowable Concentration" for TDS is 500 mg/l (page 1012 of Article III. SEWERS. City of Bloomfield)

In the WASTEWATER TREATMENT AGREEMENT, entered into on February 24, 1988, between the City and Conoco, EXHIBIT B, "Total Dissolved Solids: The difference of influent total dissolved solids and the effluent total dissolved solids will not be greater than 1,000." These discrepancies will have to be justified in the City's demonstration supporting its request for a relaxed salinity requirement in NM0020770, and also in the NPDES permit's required salinity report. The City could renegotiate the contract with Conoco (and any other similar contracts) to lower the salinity concentration limit that the City imposes for discharge into its collection system to make it track with its own sewer use ordinance.

Some other ways to meet the salinity limit in the NPDES permit include but are not limited to treating the wastewater by reverse osmosis, or, in some cases, by treating the wastewater with chemical addition followed by precipitation. I suggest you pose this question to the City's consulting engineer.

If I can answer any questions regarding this information, please call me at 827-2796.

Sincerely,

Ann M. Young

Ann M. Young
Surface Water Section

enclosures

cc: US Environmental Protection Agency, Bob Hiller, 6W-ET
NMHED-EID, Farmington Field Office
State Engineer's Office, Jay Groseclose
Colorado River Basin Salinity Control Forum, Jack A. Barnett, Executive Director

Conoco Inc.
P.O. Box 2197
Houston, TX 77252

January 19, 1989

Roger C. Anderson
Oil Conservation Division
Energy, Minerals and Natural Resources Department
State Land Office Building
P. O. Box 2088
Santa Fe, NM 87504

Re: Underground Tank Pressure Testing
Discharge Plan (GW-35)
Conoco Inc., Natural Gas & Gas Products Department
San Juan Gas Processing Plant, San Juan County

Dear Mr. Anderson:

Two underground tanks (V-806 and V-807) at the San Juan Plant were hydrostatically pressure tested on December 6 and 7, 1988, respectively. The testing was conducted in accordance with the requirements of the subject discharge plan.

Each tank was blinded, pressured to 24 psig, and monitored by pressure gauge for one hour. Neither vessel showed any signs of leakage during the test. The next pressure testing of the tanks is scheduled for late 1990, as required in the discharge plan.

If you have any questions or require additional information, please call me at (713) 293-1123.

Sincerely,

Rick McCalip

Rick McCalip
Coordinator

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

GARREY CARRUTHERS
GOVERNOR

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

December 14, 1988

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Rick McCalip
Conoco Inc.
Natural Gas & Gas Products Dept.
P. O. Box 2197
Number 3048
Houston, Texas 77252

RE: Discharge Plan GW-35, Modification, San Juan Gas Processing Plant

Dear Mr. McCalip:

Your requested modification of the previously approved ground water discharge plan GW-35, for the Conoco San Juan Gas PRocessing Plant located in the NW/4, NW/4, Section 14, Township 29 North, Range 11 West (NMPM), San Juan County, New Mexico, is hereby approved. The modification consists of the application dated October 17, 1988, and materials dated November 30, 1988, submitted as supplements. The discharge plan (GW-35) was approved October 27, 1986. The modification was mainly an update of existing materials and no changes were made to discharge streams. Therefore public notice was not issued.

The application for modification was submitted pursuant to WQCC Regulation 3-107.C and is approved pursuant to WQCC Regulation 3-109. Please be advised that the approval of this modification does not relieve you of liability should your operation result in actual pollution of surface or ground waters which may be actionable under other laws and/or regulations.

There will be no routine monitoring or reporting requirements other than those mentioned in the plan and modification.

Please note that Section 3-104 of the regulations requires that "When a plan has been approved, discharges must be consistent with the terms and conditions of the plan." Pursuant to Section 3-107.C you are required to notify the Director of any facility expansion, production increase or process modification that would result in any significant modification in the discharge of water contaminants.

Sincerely,

William J. LeMay, Director

WJL/RCA/sl

cc: OCD Aztec Office

Environmental & Energy Services
Natural Gas and Gas Products Department

Conoco Inc.
P.O. Box 2197
Houston, TX 77252

November 30, 1988

Roger C. Anderson
Oil Conservation Division
Energy, Minerals and Natural Resources Department
State Land Office Building
P. O. Box 2088
Santa Fe, NM 87504

Re: Discharge Plan (GW-35)
Conoco Inc., Natural Gas & Gas Products Department
San Juan Gas Processing Plant, San Juan County

Dear Mr. Anderson:

In response to your letter dated November 17, 1988, supplemental information for the subject plan is attached. Revisions to the plan were originally submitted for your approval on October 17, 1988.

1. Material Safety Data Sheets

MSD sheets for the following chemicals are attached:
Chlorine
Betz 25K Series 25176
Betz Slimicide C31
Exxon Corexit 7669

2. Sulfa-Check(TM)

Solids from the spent Sulfa-Check(TM) solution were analyzed prior to disposal. A copy of the analysis is attached for your review. The solids were disposed of at the Waste Control of New Mexico landfill, outside of Farmington. A copy of the waste analysis was provided to Waste Control at the time of disposal.

3. SPCC Plan

A copy of the SPCC Plan, originally submitted to your office on November 3, 1986, is attached. The plan was approved in October 1986 and will be reviewed and updated by October 1989.

4. Underground Tank Pressure Testing

The two underground vessels subject to the discharge plan are scheduled to be pressure tested on December 6, 1988. Results of the test will be forwarded to your office then.

If you require additional information or have any questions, please call me at (713) 293-1123.

Sincerely,

Rick McCalip

Rick McCalip
Coordinator

TLK/tk

Attachments

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

GARREY CARRUTHERS
GOVERNOR

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

November 17, 1988

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Rick McCalip
Conoco Inc.
Natural Gas & Gas Products Dept.
P. O. Box 2197
Number 3048
Houston, Texas 77252

RE: Discharge Plan GS-35, Modification
San Juan Gas Processing Plant

Dear Mr. McCalip:

The Oil Conservation Division (OCD) has received and reviewed your request dated October 17, 1988 for modification of the previously approved discharge plan for your San Juan Gas Processing Plant. Please submit the following information so review can continue.

1. Section 3C. is a listing of chemicals used at the plant, some of which are additions to those listed in the original plan. Please supply MSD sheets for the following:

   a. Chlorine
   b. Betz 25K series 25176
   c. Betz Slimicide C31
   d. Exxon corexit 7669

2. Section A.4 describes the "Sulfa-Check (TM)" system. The spent slurry is approximately 75 percent liquid and 25 percent solids, with the liquids disposed of at the Hicks disposal well. Where are the solids disposed?

3. Section C.1. states the San Juan Plant is operating in compliance with an SPCC plan. Please provide a copy of this plan for inclusion in your file.

4. Condition one (1) of the discharge plan approval dated October 27, 1986 required the pressure testing of underground tanks V-806 and V807 every two years. Has this been accomplished? Please supply the result of the test.

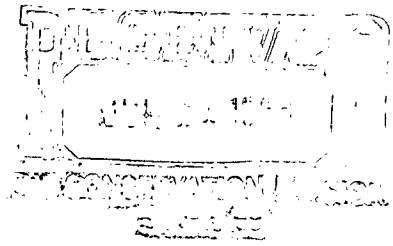
If there are any questions, please contact me at (505) 827-5885.

Sincerely,

Roger C. Anderson

RCA/sl

cc: OCD Aztec Office



DISCHARGE PLAN
FOR
CONOCO INC.
NATURAL GAS PRODUCTS DEPARTMENT'S
SAN JUAN BASIN GAS PLANT

SAN JUAN COUNTY
POST OFFICE BOX 3070
BLOOMFIELD, NEW MEXICO 87413

Prepared By

Conoco Inc.
Natural Gas Products Department
Post Office Box 2197, Humber 3048
Houston, Texas 77252
(713) 293-1123

TABLE OF CONTENTS

SECTION I

GENERAL INFORMATION

A. LOCATION AND CONTACT

1. Name

San Juan Basin Gas Plant
Conoco Inc., Natural Gas Products Department
P.O. Box 2197, Humber 3048
Houston, TX 77252
(713) 293-1123

2. Contact Person

W. V. Thompson, Plant Manager
P. O. Box 3070
Bloomfield, NM 87413
(505) 632-1831

3. Location

The San Juan Basin Gas Plant is located 1.5 miles North of Bloomfield off Highway 44, in NW ¼, NW ¼ Section 14, Township 29N, Range 11 W. An USGS topographical map and a facility plot plan are included in Appendices A and B, respectively.

B. TYPE OF OPERATION

Conoco Inc. and Tenneco Oil are constructing a 500 million (MM) standard cubic foot per day (SCFD) natural gas processing plant located on a 27 acre tract adjacent to El Paso Natural Gas Company's Blanco Plant. The new plant will be operated by Conoco and will process 500 MMCFD of natural gas which is currently processed by El Paso.

El Paso utilizes an ambient temperature lean oil absorption to process to recover natural gas liquids (NGL) from the natural gas. The Conoco San Juan Basin Gas Plant will use a cryogenic process (-150°F to -180°F) which will be much more efficient in the recovery of ethane and propane.

Upon startup of the Conoco plant, the natural gas will flow through the El Paso Blanco Plant where it will have entrained liquids (produced water, liquid hydrocarbons) removed and be compressed. The San Juan Basin Plant will receive two inlet streams: (1) 180 MMSCFD at 350 psi, and (2) 320 MMSCFD at 900 psi. The first stream will receive additional compression at the Conoco Plant to assure 900 psi inlet pressure to the 2 parallel 250 MMSCFD liquid extraction trains.

Because of the low temperatures in the cryogenic extraction units, all water must be removed from the gas stream. This is achieved by passing the gas through a bed of dessicant. These dehydration beds are regenerated by passing hot gases through the saturated dessicant, cooling the gases, and removing the water in the knock-out pot. This water flows through the oil-water separator (skim basin M1402) to the oily water storage tank (TK-1403). See Appendix C for a schematic of the wastewater system.

Dehydrated gas is fed to the two cryogenic process trains. The gas is first passed through a series of heat exchangers to reduce the temperature to approximately -100°F. The gas is then passed through a high pressure cold separator to remove any free liquefied hydrocarbons. The condensed liquids are fed to the demethanizer.

The vapor phase from the cold separator is fed to the turboexpander. A near isentropic expansion drops the feed pressure to the demethanizer pressure, cools the gas to -150°F to -180°F and delivers shaft work to the recompressor for partial recompression of the residue gas.

In the demethanizer, ethane, propane, butane and condensate (EPBC) are liquefied and recovered out of the bottom. This stream is fed to the deethanizer or is sent to the MAPCO product pipeline.

The cold methane residue stream is recovered off the top of the demethanizer and fed back to the cryogenic heat exchangers. The gas is warmed and fed to the recompressor. This gas is then sent to residue compression.

The EPBC stream from the demethanizer is fed to the deethanizer for product recovery. This feed can also be sent via the MAPCO Rockey Mountain line to Mt. Belvieu, Texas for fractionation.

In the deethanizer, ethane and some propane (EP) are recovered by distillation. The EP stream which vents off of the accumulator is mixed with the residue gas from the compressor. This combined gas is fed to one of the two 15,000 horsepower residue compressors. These compressors increase the pressure to the necessary pipeline pressure. The EP stream can also be condensed and combined with the EPBC stream to MAPCO's pipeline.

The bottoms from the deethanizer contain mainly propane, butane and condensate, (PBC). This stream will be fed via pipeline to the El Paso Wingate Plant.

A process flow diagram is included in Appendix D.

C. AFFIRMATION AND SIGNATURE

I hereby certify that I am familiar with the information contained in and submitted with this application and that such information is true, accurate and complete to the best of my knowledge.

Bob Walker
General Manager
Natural Gas Products Department

Bob Walker (Signature)

July 14, 1986 (Date)

C. AFFIRMATION AND SIGNATURE

I hereby certify that I am familiar with the information contained in and submitted with this application and that such information is true, accurate and complete to the best of my knowledge.

Bob Walker
General Manager
Natural Gas Products Department

_____ (Signature)

_____ (Date)

SECTION II

PLANT PROCESSES

A. SOURCES, QUANTITIES, AND COMPOSITION OF EFFLUENT AND PROCESS FLUIDS

1. Domestic Wastewater

A maximum of 35 persons are expected to occupy the plant's office/warehouse building and the control building. Assuming 35 gallons of wastewater per day per person, approximately 1,225 gallons per day of domestic wastewater will be discharged.

Domestic wastewater composition is estimated below. This data is based upon information found in Wastewater Engineering, Second Edition, Metcalf & Eddy, Inc.

Component	Average Concentration, mg/l
BOD_5, 20°C	220
COD	500
Grease	100
Total Dissolved Solids	500

2. Cooling Tower Blowdown

The cooling tower is designed to operate with a maximum circulation rate of 9950 gallons per minute (gpm). There will be a continuous blowdown of cooling water at a maximum rate of 50 gpm to be discharged to the city wastewater system. Blowdown temperature should not exceed 80°F.

Conoco intends to utilize the following water treatment chemicals:

- anti-scale phosphonates;
- sulfuric acid;
- chlorine (gas or pelletized); and
- biocide (non-phenol based)

Based upon this type of treatment, the composition of the blowdown is expected to approximate the following:

Component	Concentration *	
Bicarbonate	688 ppm (as $CaCO_3$)	840 ppm (as Ion)
Chloride		24 ppm
Sulfate		400 ppm
Total Hardness	816 ppm	
Calcium	616 ppm	248 ppm

Component	Concentration *	
Magnesium	200 ppm	48 ppm
Sodium		96 ppm
Total Dissolved Solids		1248 ppm
Total Settable Solids		0.5 mg/l
Total Suspended Solids		40 mg/l
Chlorine		0.5 ppm
Anti-Scale Phosporates		5 ppm
BOD		35 mg/l
COD		119 mg/l
pH		6.0-9.0

* Source: As calculated by the engineering firm, Pan West, and based upon a fresh water TDS concentration of 150 ppm.

Blowdown will be monitored for TDS and pH once per month.

3. Stormwater and Washwater

a. Collection System

All stormwater will run off the plant site to the surrounding areas and will not be diverted into the city sewer system. The only exceptions are as follows: (1) rainwater falling directly on the equipment foundations; and (2) stormwater from the curbed gas treating process area. Small amounts of stormwater and washwater from the equipment foundations will enter the open drain system. The open drain system will carry the liquids to the oil-water separator (i.e., skimmer basin).

At the skimmer basin, gravity separation will be used to segregate oils from the wastewater. Oils will be removed from the basin by a float-operated pump to a 500 barrel oil storage tank. After separation, wastewater will be pumped to a 500 barrel water storage tank.

Stormwater and washwater from the gas treating process area ("amine system") will drain separately to a 500 barrel tank designated for this wastewater (TK-803). The San Juan Basin Plant will utilize a diethanolamine treatment system to remove excess carbon dioxide from the plant products. As a precaution to prevent contamination of stormwater in the event of a plant upset, the amine system has been curbed to contain and collect all stormwater and washwater. Under normal plant conditions, this water will be suitable for discharge to the Bloomfield wastewater treatment plant.

b. Discharge of Washwater/Stormwater

The two 500 barrel tanks will need to be drained approximately once per month. At a rate of 7 gpm, it will take two days to drain each tank. Prior to any discharge into the city sewer system, samples will be pulled from each tank. The samples will be analyzed for pH, COD, and oil and grease content to insure that the wastewater quality is acceptable to the Bloomfield Engineer. The pH will be analyzed in the plant, and samples will be sent to an independent laboratory for COD and oil and grease analyses.

c. Potential for Contamination

The following liquid materials will be kept on the plant site:

- o diethanolamine
- o sulfuric acid
- o natural gasoline
- o diesel fuel
- o methanol
- o lubricating oils, including
  - Conoco ATF
  - Texaco Capella WF 68
  - Mobil Rarus 826
  - Conoco Turbine 32
  - Casteroil 3C
  - Mobil SHC 824
  - Conoco Fleet 30
  - Conoco Dector 150
  - Conoco Superhydraulic
  - Conoco Gear Lube 90
  - Conoco Rock Drill 32/
- o biodegradeable detergent cleaners

Adequate precautions and backups will prevent any of these materials from entering the city sewer system in significant quantities. For example, any oil that enters the open drain system must pass through the oil-water separator where it will be removed. Should the separator fail to operate properly, the oil-contaminated wastewater would be pumped to the water storage tank. A site glass on the tank would allow plant personnel to check for oil contamination prior to draining the tank. If oil is observed, the tank contents can be diverted back through the skimmer basin for removal of the oil, or can be hauled offsite for disposal.

Any losses of diethanolamine (DEA) would be collected in the designated wastewater tank. Sampling and analysis of the tank's content prior to draining would alert plant personnel to any problem. DEA-contaminated

wastewater not meeting the standards shown in Part (d) below. (Tank #2) would not be drained to the sewer system, but rather would be hauled offsite for proper disposal.

Sulfuric acid is controlled by pH sensors on the cooling water system. These will prevent wide swings in pH in the blowdown.

Methanol is used periodically to prevent freezeups. The methanol stays in the product stream and leaves the plant with the products.

Company-owned vehicles will not be serviced onsite, thereby eliminating any contamination of the plant wastewater with automotive fluids.

d. Composition

The quality of the process area washwater (Tank #1) and the amine system washwater/stormwater (Tank #2) is estimated below. These estimates are based upon experience at other Conoco-operated natural gas processing plants.

Component	Tank #1	Tank #2
BOD	150	-
COD	600	2000
Oil & Grease	15	5

Discharge from Tank #1 (oily water) will be monitored prior to discharge for oil and grease, and BOD. Tank #2 (amine) discharge will be monitored for pH and COD prior to discharge.

4. Backwash From Sand Filter

A sand filter will be used on the raw water stream to remove silt or other materials from the source. The filter will be backwashed every other day. Volumes are expected to be 1000 gallons total within 30 minutes when backwash occurs. The backwash will be discharged via piping into the main discharge line.

B. TRANSFER AND STORAGE OF PROCESS FLUIDS AND EFFLUENTS

Appendix C contains schematic diagrams of the plant's wastewater system. Estimated maximum flow rates are shown for each stream. Wastewater temperatures are not expected to exceed the ambient temperature.

The "Gas Treating Area Diagram" in Appendix C provides greater detail of the stormwater and washwater drainage system at the gas treating area. Discharge from the tank (TK-803) is expected to occur two days a month.

General process flow diagrams are attached in Appendix D. An overall site plot plan is included in Appendix B.

Only four tanks are installed underground. Table II.B.1 shows capacity and mechanical characteristics of each of these. Appropriate tanks have been rgistered with the New Mexico Environmental Improvement Division. Section II.C addresses drain systems, curbing, and spill prevention.

All in-plant piping was designed and tested in accordance with American National Standards Institute (ANSI) B31.3. All pipe except the 6-inch sanitary sewer line is carbon steel line pipe. Carbon steel pipe was wrapped and checked with a holiday detector prior to installation. Design corrosion allowance is 0.063 inches. The 6-inch sanitary sewer line (Line No. 6 DY16101) is standard PVC pipe. Appendix E lists all underground pipe line numbers with respective wall thickness (sch), operating pressure and temperature, and design pressure and temperature.

C. SPILL/LEAK PREVENTION AND HOUSEKEEPING PROCEDURES

1. Spill Prevention, Control and Countermeasure

As required by federal regulations at 40 CFR §112, the San Juan Basin Gas Plant will operate in compliance with an SPCC Plan. This SPCC Plan is currently being developed and will be fully implemented during the first year of plant operation. A sample table of contents is included on the following page.

The SPCC Plan will specify containment requirements for tanks and other equipment. All tanks which store hydrocarbons (which are liquid at standard temperature and pressure) or hazardous substances will be curbed to prevent releases in the event of tank failure. All equipment foundations are equipped with drains to collect dripped fluids and washwaters. The fluids collected within these drains are stored in above ground tanks prior to discharge to the City of Bloomfield or transportation for offsite disposal.
Appendix C contains schematic diagrams of the wastewater collection systems.

2. General Housekeeping Procedures

Plant personnel will receive annual training on spill prevention, containment, cleanup, and notification procedures. No truck washing or automotive service will be conducted at the plant site. Washwater from equipment cleaning and maintenance will be washed to the drain system for discharge to the Bloomfield sewer system. No solvents will be used for cleaning equipment. Detergent-based cleaners will be used for this purpose.

In the event of a spill of oil or other regulated materials, the Oil Conservation Division and the Environmental

SECTION II

SAMPLE TABLE OF CONTENTS

SPILL PREVENTION CONTROL AND COUNTERMEASURE PLAN

Improvement Division shall be notified as specified in Conoco's Spill Reporting Procedures Guide. A copy of these guidelines are included in Appendix F.

3. Leak Detection and Integrity Testing

All tanks and piping will be pressure-tested prior to being placed in service to insure the equipment's integrity. Leaks within the plant can be detected by numerous pressure monitors located on plant piping, tanks, and vessels.

Plant piping and equipment is designed to resist corrosion for the life of the facility. All underground steel piping is doped, wrapped, and cathodically protected. Tanks are tested for metal thickness approximately every two years. Additional testing will be performed on an as-needed basis. Section II.D contains additional information on underground piping specifications.

D. EFFLUENT SAMPLING

Compositions of effluent streams presented in Section II.B are best estimates and sources of each estimation are included. Streams will be analyzed after plant start-up for verification of compositions. Analytical results will be provided to the OCD. Effluent streams will be monitored (schedules in previous Sections) after start-up.

Figure II.D.1 is a recent analysis of the raw feed water source for the facility. After start-up, raw feed water will be sampled as needed.

E. FLOW RATE VARIABILITY

All flow rates presented in Section II.A and illustrated on schematics are anticipated maximum rates. No variations are expected for washwater and stormwater drainage (7, gpm, 2 days per month) or domestic wastewater. Filter backwash volumes may vary slightly depending upon the amount of silt in the raw feed stream. Cooling tower blowdown volumes (50 gpm) are maximum design values. Normal operations will result in approximately 30 gpm blowdown.

WESTERN TECHNOLOGIES INC.

400 South Lorena Avenue
Farmington, New Mexico 87401
(505) 327-4966

LABORATORY REPORT

Client: Conoco, Inc. 30859
P.O. Box 3070
Bloomfield, New Mexico 87413

Job No. --
Lab./Invoice No. 31460432
Date of Report 06/03/86
Reviewed By D.A. Medina

Project: Blanco Plant
Location: Bloomfield, New Mexico
Material/Specimen: Water — Sampled By: P. Dressen/WT — Date: 5/19/86
Source: Canal — Submitted By: P. Dressen/WT — Date: 5/19/86
Test Procedure: See Below — Authorized By: Client/Scarbrough — Date: 5/19/86

RESULTS

ANALYTE	ANALYTICAL RESULTS	NOMINAL DETECTION LIMITS
TDS	124 mg/l	1 mg/l
Hardness	37.2 mg/l	5 mg/l
Ca	7.5 mg/l	0.1 mg/l
Mg	4.5 mg/l	0.01 mg/l
Mn	<0.05 mg/l	0.05 mg/l
Fe	0.18 mg/l	0.05 mg/l
K	1.70 mg/l	0.1 mg/l
Na	11.0 mg/l	0.1 mg/l
CO 3	<5 mg/l	5 mg/l
HCO 3	72 mg/l	5 mg/l
Cl	12 mg/l	1.0 mg/l
SO 4	51 mg/l	1.0 mg/l
NO 3 as N	<0.01 mg/l	0.01 mg/l

REFERENCE: "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", USEPA, SW 846, EMSL-Cincinnati, 1982.

Copies to: Client (3)
/jl

SECTION III

EFFLUENT DISPOSAL

A. ON-SITE FACILITIES

There will be no on-site facilities for effluent disposal. All drains, tanks, and piping are for collection and transfer to off-site facilities.

B. OFF-SITE FACILITIES

The sources and estimated composition of the wastewater streams are described in Section II.A. The wastewater is discharged via pipeline into the City of Bloomfield's wastewater treatment system:

City of Bloomfield
P.O. Box 1839
Bloomfield, NM 87413

If at any time the stormwater and washwater from the gas treating process area tanks (Tanks #1 and #2) are unacceptable to the City of Bloomfield, the wastewater will be transported via truck to Basin Disposal:

Basin Disposal, Inc.
P.O. Box 100
Aztec, NM 87410

Chief Transport of Aztec, New Mexico will collect and transport the effluent from the two tanks to Basin Disposal's facility.

SECTION IV

SITE CHARACTERISTICS

A. HYDROLOGIC FEATURES

United States Geological Survey (USGS) map, Appendix A illustrates the area surrounding the facility. All bodies of water, rivers, and canals are labelled.

Appendix G lists water wells located within one mile of the plant perimeter. Only wells in Sections 10, 11, 12, 13, 14, 15, 22, 23, and 24 are within one mile; the other wells have been blocked from the list. The information was provided by the State Engineer's Office in Albuquerque.

A plot plan showing locations of ground water monitoring wells is included in Appendix H. Analyses by Western Technologies, Inc. of Farmington, New Mexico and Phoenix, Arizona for dissolved organic carbon showed a higher level than expected in Well #1, Appendix H. Subsequent testing for hydrocarbons was performed on Well #1 and a composite of Wells #2-6, Appendix H. No detectable hydrocarbons were found. A potential contributor to the high levels in Well #1 may be leaching from an existing nearby cemetery.

B. GEOLOGIC DESCRIPTION OF DISCHARGE SITE

A soil survey of the facility and surrounding area is given in Appendix I. The information is from a survey conducted jointly by the U.S. Department of Agriculture, U.S. Department of the Interior, and the New Mexico Agricultural Experiment Station. The soil is Fruitland sandy loam, 0 to 2 percent slopes. Appendix J provides hydrologic formation data for the area.

C. FLOOD PROTECTION

Site work including grading changes was conducted prior to commencement of construction. A contour map showing final elevations and plant orientation is included in Appendix K. The entire plant site is elevated to effectively eliminate any potential for flooding. Sources of potential stormwater contamination are curbed to prevent such contamination. Refer to Section II.D for additional information.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

BLOOMFIELD QUADRANGLE

NEW MEXICO–SAN JUAN CO.
15 MINUTE SERIES (TOPOGRAPHIC)

Mapped, edited, and published by the Geological Survey

Control by USGS and USC&GS

Topography by photogrammetric methods from aerial photographs taken 1955. Field checked 1960

Polyconic projection. 1927 North American Datum
10,000-foot grid based on New Mexico coordinate system, west zone
1000-meter Universal Transverse Mercator grid ticks, zone 13, shown in blue

To place on the predicted North American Datum 1983 move the projection lines 2 meters north and 55 meters east

SCALE 1:62500

CONTOUR INTERVAL 40 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

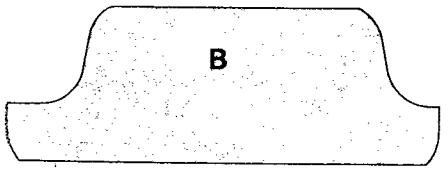
UTM GRID AND 1960 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

ROAD CLASSIFICATION
Medium-duty — Light-duty
Unimproved dirt
State Route

NEW MEXICO
QUADRANGLE LOCATION

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

BLOOMFIELD, N. MEX.
36107–E7–TF–062
1960
DMA 4457 III–SERIES V781


B

N.10000.00
E.10000.00

N.9963.00
E.9999.91

N.9711.70
E.9999.36

N.8974.38
E.9945.88

N.8884.61
E.9936

N

WIND DATA
SUMMER - 9MPH SOUTHEAST
WINTER - 8MPH NORTH

N.10+000

N.9+800

N.9+600

N.9+400

N.9+200

N.9+000

N.8+800

E.9+800

E.9+600

E.9+400

E.9+200

E.9+000

H.P. FIN GRADE
EL. 118'-0"

OFFICE & WHSE.

N. 9591.83
E. 9771.87

N.9591.81
E.9678.95

N.9545.16
E.9611.16

N.9722.2
E.9641.16

N.9855.32
E.8041.16

PIPE ALLEY

H.P. FIN GRADE
EL. 118'-0"

N.9876.8
E.9641.16

PRODUCT ALLEY

PRODUCT METERING AREA

N.9274.6
E.9567.6

N.8974.26
E.9514.41

TRUCK LOADING

H.P. FIN GRADE
EL. 116'-0"

TK-1403

BERM

TK-1402

M-1405

N.9032.52
M-1404
FLARE STACK

M-1410
EVAP. PT

H.P. FIN. GRADE EL. 100'-0"

N.9855.32
E.9376.86

N.9933.63
E.9376.86

E.9376.89

V-402

N.8683.16
E.9360.32

N.8890.76
E.9317.12

CONTROL BUILDING

E.9293.0
ACCESS

B-104
COMPR.
BLDG.

E.9177.0
ACCESS

E.9161.80
ACCESS

ACCESS

H-601

N-501

TK-803

TRUCK SPOT

TK-801

H.P. FIN. GRADE EL. 114'0"

PIPERACK

N.9676.6
E.9269.6

N. 9252.52
E.9233.48

M-1402
SKIM PIT

N.9000.16
E.9154.11

B-105
ELECTRICAL
SUBSTATION

PIPERACK

H.P. FIN. GRADE
EL. 102'-0"

B-101
MAIN
ELECTRICAL
SUBSTATION

N.9160.63
E.9091.01

PIPERACK

NOTE: PLANT EL. 100'-0" = MSL EL. 5572'-0"

N.9933.63
E.8995.96

N.9696.70
E.8991.34

N.9741.80
E.8955.04

N.9369.60
E.8959.65

4 CELL

COOLING
TOWER
CT-12.01

B-106
CHLORINATOR
SHED

V-12.01
ACID STORER

B-107
INHIBITOR

TK-802

B-102 GENERATOR BLDG.

N.9325.02
E.8925.60

N.9160.63
E.8925.60

N.9056.54
E.8950.50

N.9696.70
E.8847.25

TRUCK SPOT
METHANOL
ACID

N.9659.16
E.8847.25

NOTES:

REV.	DATE	DESCRIPTION	APP'D.

REVISIONS

REV.	DATE	DESCRIPTION	APP'D.

REVISIONS

REV.	DATE	DESCRIPTION	APP'D.
0	9-27-86	A.F.C.	RPG
F	9-11-86	ISSUE FOR APPROVAL	
E	8-22-86	ISSUE	

REVISIONS

DRAWN BY: S.G.
CHECKED BY: TEL
APPROVAL:
CLIENT APPROVAL
DATE: 9-27-86
SCALE: 1"=80'

PAN WEST CONSTRUCTORS, INC.

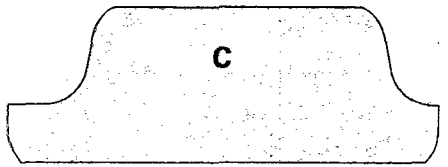
CLIENT: CONOCO INC.

PLOT PLAN

SAN JUAN BASIN GAS PLANT

BLOOMFIELD NEW MEXICO

JOB: 8410 DWG: NSP-8000 1000 REV: 0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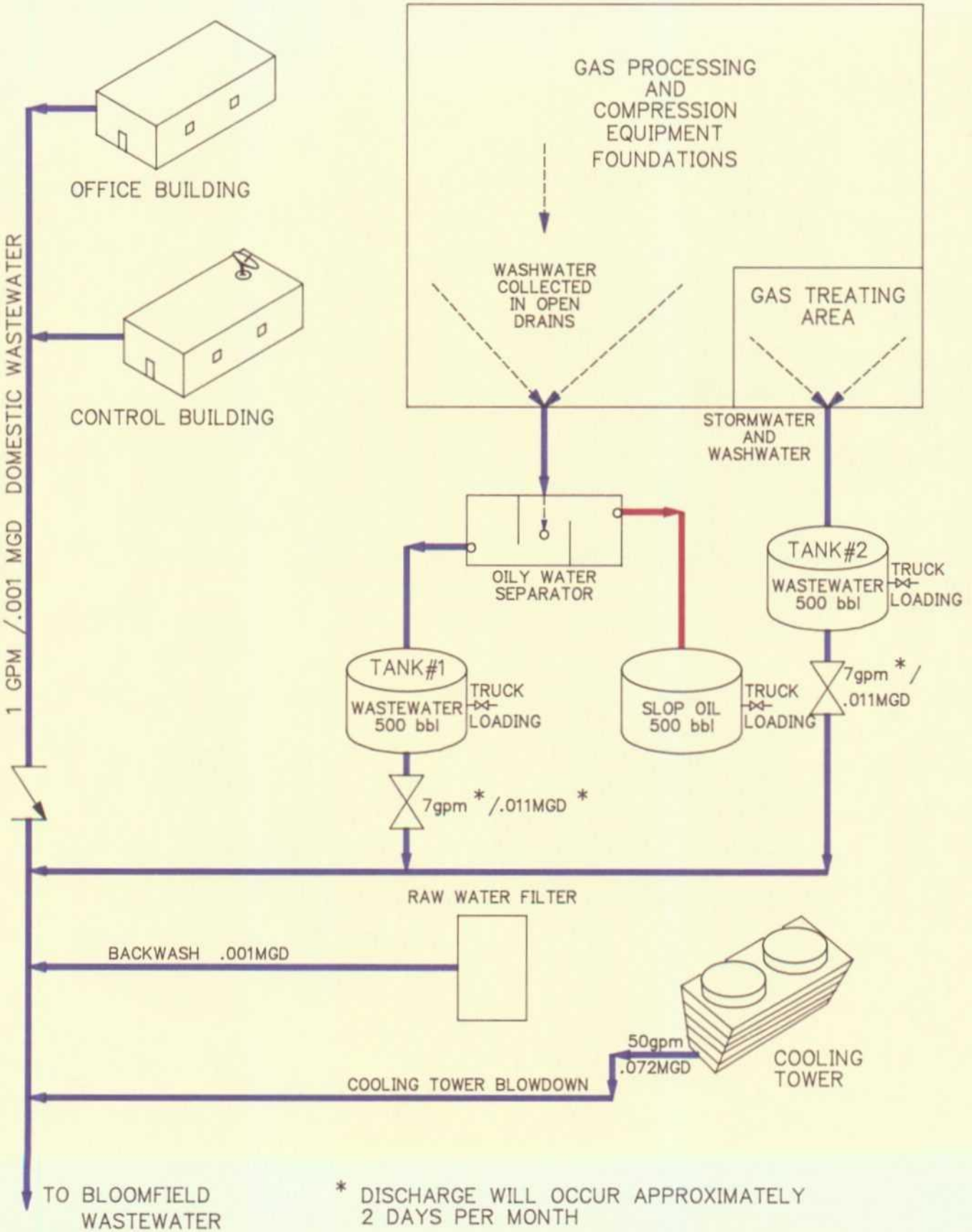
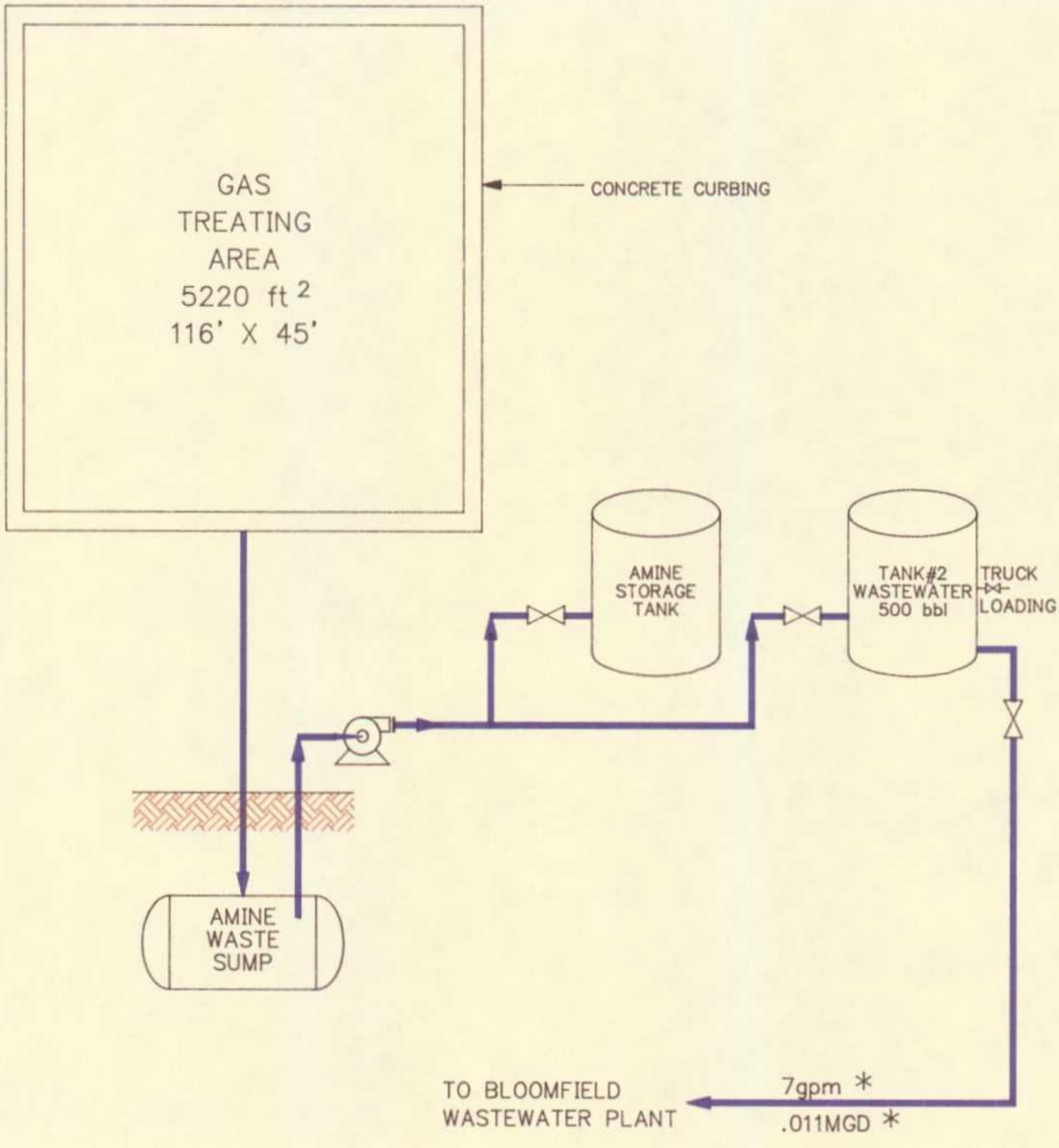
SCHEMATIC DIAGRAM
WASTEWATER DRAINAGE SYSTEM
CONOCO, INC.
SAN JUAN BASIN PLANT



* DISCHARGE WILL OCCUR APPROXIMATELY 2 DAYS PER MONTH

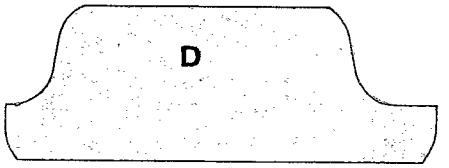
NGP FILE: 86C0134

SCHEMATIC DIAGRAM
GAS TREATING AREA
WASHWATER AND STORMWATER DRAINAGE
CONOCO, INC.
SAN JUAN BASIN PLANT

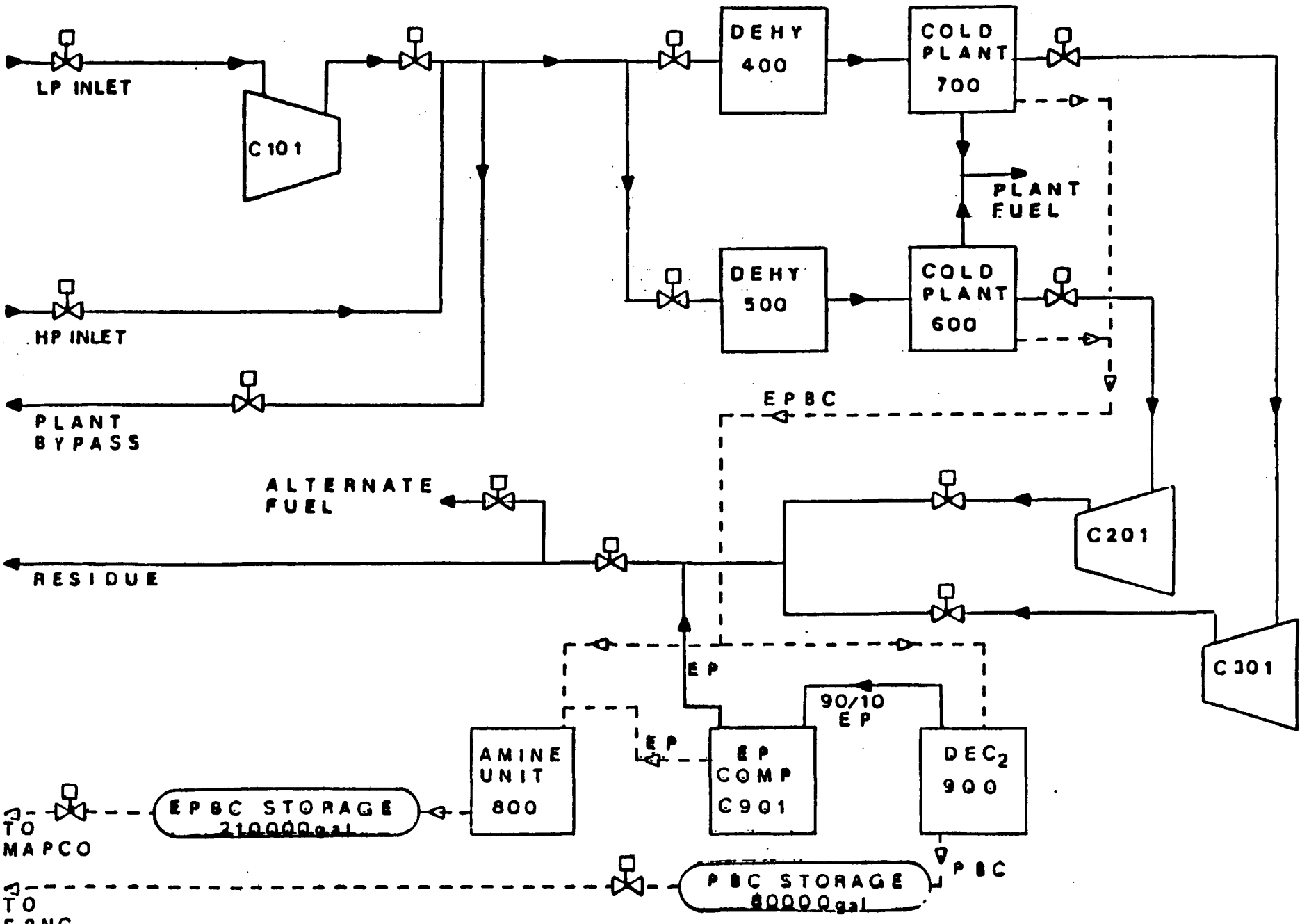


* DISCHARGE WILL OCCUR APPROXIMATELY
2 DAYS PER MONTH

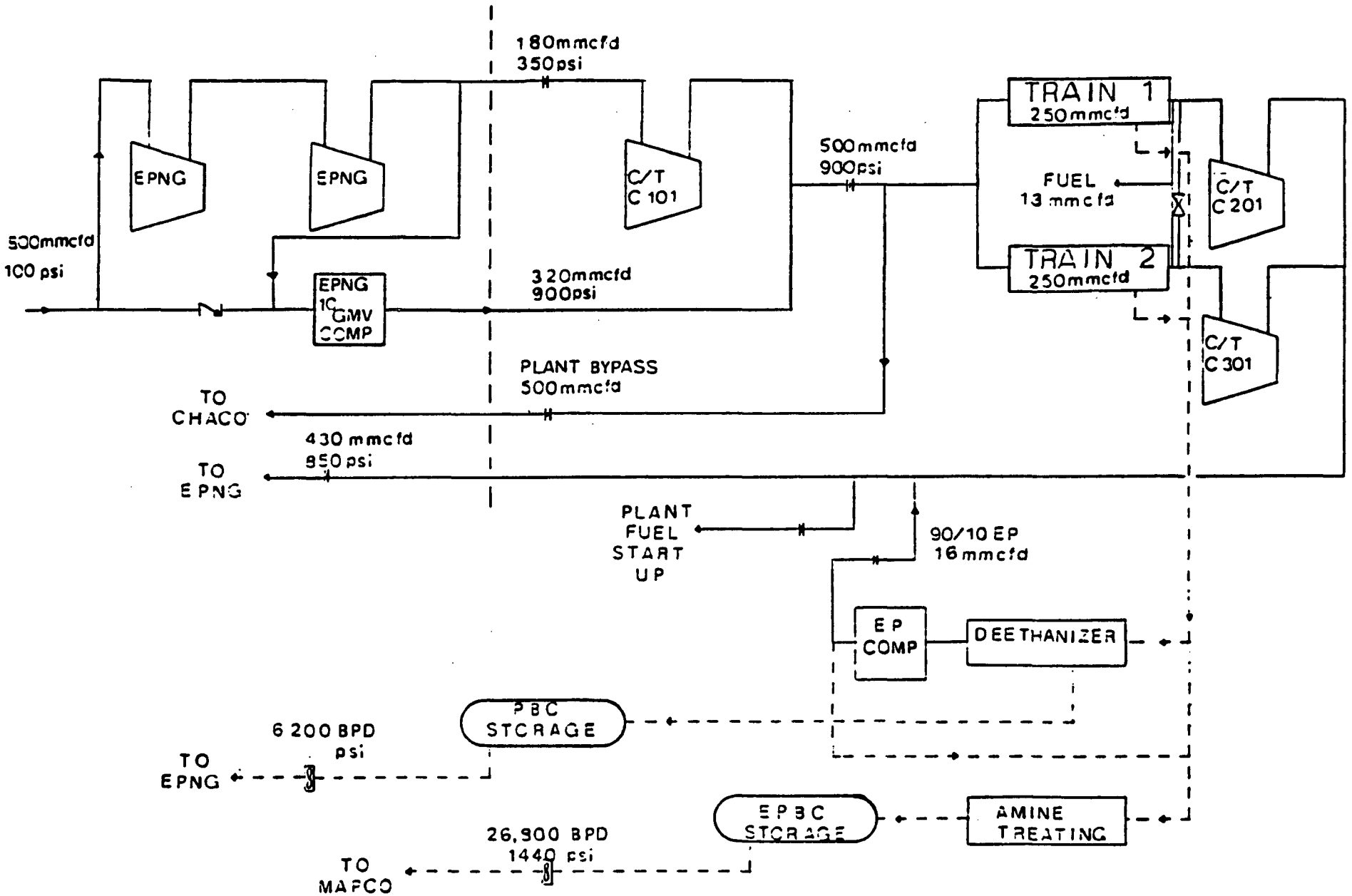
NGP FILE: 86C0148


D

SAN JUAN BASIN PLANT
BLOCK DIAGRAM



SAN JUAN BASIN PLANT
MATERIAL BALANCE



E

PIPING SPECIFICATIONS

LINE NUMBER	SCH OR WT	OPER. PRES.	OPER. TEMP.	DESIGN PRES.	DESIGN TEMP.
Cooling Water					
1.5" WC 12 135	80	70	80	100	150
1.5" WC 12 136					
1.5" WC 12 141					
1.5" WC 12 142					
2" WC 12 115	80	70	71	100	150
2" WC 12 116					
2" WC 12 134					
3" WC 12 108	STD	70	71	100	150
3" WC 12 109					
3" WC 12 124	STD	50	81	100	150
3" WC 12 125					
6" WC 12 101	STD	50	81	100	150
6" WC 12 117					
6" WC 12 120					
8" WC 12 104	STD	70	71	100	150
8" WC 12 139					
8" WC 12 140	STD	50	81	100	150
10" WC 12 101	STD	70	71	100	150
10" WC 12 103					
10" WC 12 106					
10" WC 12 107					
10" WC 12 119	STD	50	81	100	150
10" WC 12 122					
10" WC 12 123					
10" WC 12 131					
12" WC 12 118	STD	50	81	100	150
14" WC 12 101	STD	50	81	100	150
14" WC 12 131					
16" WC 12 131	STD	50	81	100	150
24" WC 12 101	STD	70	71	100	150
24" WC 12 132					
Firewater					
8" WF 14 104	STD	ATM	AMB	NA	NA
8" WF 14 105					
8" WF 14 107					
8" WF 14 109					
8" WF 14 110					
8" WF 14 111					
8" WF 14 112					
8" WF 14 113					
12" WF 14 100	STD	ATM	AMB	NA	NA
12" WF 14 102					
12" WF 14 109					

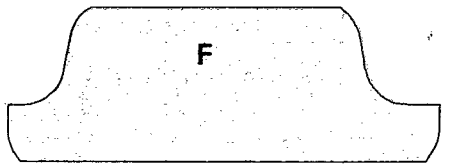
PIPING SPECIFICATIONS - (Continued)

LINE NUMBER	SCH OR WT	OPER. PRES.	OPER. TEMP.	DESIGN PRES.	DESIGN TEMP.
Utility Water					
1" WU 14 109 1" WU 14 110 1" WU 14 111 1" WU 14 112 1" WU 14 113 1" WU 14 114 1" WU 14 115 1" WU 14 116 1" WU 14 118 1" WU 14 119	80			200	150
3" WU 14 101	10S	ATM	AMB	100	150
4" WU 14 102	STD			200	150
6" WU 14 101	0.280			200	150
Treated Water					
1.5" WT 14 111	40S	50	AMB	100	150
2" WT 14 104	40S	50	AMB	100	150
3" WT 14 101	10S	ATM	AMB	100	150
Drinking Water					
1.5" WD 14 104 1.5" WD 14 106 1.5" WD 14 107 1.5" WD 14 108	STD	60	70	100	150
2" WD 14 101	STD	60	70	100	150
3" WD 14 101	STD	60	70	100	150
Process Hydrocarbon Liquids					
3" HL 14 106	STD	ATM	AMB	50	150
4" HL 9 180	80	820	110	1415	150
6" HL 9 159 6" HL 9 182	80	1687	83	1815	150
8" HL 9 161	0.322	1687	83	1815	150
Process Hydrocarbon Gas					
20" HG 1 101	STD	345	110	596	150
20" HG 1 112	0.750	845	110	940	150
24" HG 1 111	0.750	845	80	940	150
24" HG 2 110	0.750	850	120	940	150

PIPING SPECIFICATIONS - (Continued)

LINE NUMBER	SCH OR WT	OPER. PRES.	OPER. TEMP.	DESIGN PRES.	DESIGN TEMP.
Amine					
2" XA 8 125 2" XA 8 132 2" XA 8 144	80	36	70	272	200
2" XA 8 145 2" XA 8 146	80	ATM	AMB	100	150
2" XA 8 150 2" XA 8 151 2" XA 8 153 2" XA 8 160	80	22	AMB	200	150
3" XA 8 129	STD	ATM	AMB	100	150
3" XA 8 142	STD	12	248	100	300
6" XA 8 100 6" XA 8 148	STD	ATM	AMB	100	150
Refrigerant					
1.5" RF 10 140	80	200	100	250	150
2" RF 10 113	80	70	44	250	150
3" RF 10 141	STD	200	100	250	150
Fuel Gas					
2" FG 14 112	80	60	42	110	175
Flare					
2" FL 14 240 2" FL 14 241	80	ATM	AMB	50	-20/260
Methanol					
2" XX 14 101	80	50	110	100	150
Sanitary Sewer					
6" DY 14 101	Standard PVC pipe				
Closed Drain System					
1" DC 14 135	80	300	80	350	275
2" DC 14 102	80	300	80	350	275
2" DC 14 107 2" DC 14 110 2" DC 14 116	40S	40	-200	50	-220/350
3" DC 14 101	STD	300	80	350	275
3" DC 14 122 3" DC 14 127	10S	40	-200	50	-220/350
4" DC 14 109 4" DC 14 112	10S	40	-200	50	-220/350
6" DC 14 123	10S	40	-200	50	-220/350

LINE NUMBER	SCH OR WT	OPER. PRES.	OPER. TEMP.	DESIGN PRES.	DESIGN TEMP.
Open Drain System					
2" DO 14 102	80	ATM	AMB	50	150
2" DO 14 103					
2" DO 14 109					
2" DO 14 110					
2" DO 14 114					
2" DO 14 119					
2" DO 14 120					
2" DO 14 121					
2" DO 14 124					
2" DO 14 125					
2" DO 14 129					
2" DO 14 131					
2" DO 14 132					
2" DO 14 133					
2" DO 14 134					
2" DO 14 135					
2" DO 14 136					
2" DO 14 137					
2" DO 14 142					
2" DO 14 143					
2" DO 14 144					
2" DO 14 145					
2" DO 14 146					
2" DO 14 147					
2" DO 14 149					
2" DO 14 153					
2" DO 14 157					
2" DO 14 158					
2" DO 14 173					
2" DO 14 183					
2" DO 14 202					
3" DO 14 104	STD	ATM	AMB	50	150
3" DO 14 112					
3" DO 14 126					
3" DO 14 150					
3" DO 14 151					
4" DO 14 107	STD	ATM	AMB	50	200
4" DO 14 155					
6" DO 14 138	STD	ATM	AMB	50	150
6" DO 14 140					
Instrument Air					
1" AI 14 118	STD	125	120	150	300
1" AI 14 119					
Utility Air					
2" AU 14 109	STD	125	120	150	300


F

Oil:

Report spills (discharges) into **"water"** to:

New Mexico Health and Environment Department, Santa Fe
Environmental Improvement Division
Emergency Response Team
(24-hour) (505) 827-9329

Notes:

1. **"Water"** includes surface or subsurface waters within or bordering upon the state.
2. State police answer the above number in off-hours.
3. Spill reports shall include:
   a. Nature of the spill (discharge).
   b. Quantity and location.

Report any fire, break, leak, spill, or blowout at any injection or disposal facility or at any oil and gas drilling, producing, transporting, or processing facility into a "watercourse" to:

New Mexico Energy and Minerals Department, Santa Fe
Oil Conservation Division
(8 to 5) (505) 827-5800

Note: **"Watercourse"** includes any lake bed or gulley, draw, stream bed, wash, arroyo, or natural or man-made channel through which water flows or has flowed.

In addition, make **"immediate"** and/or **"subsequent"** notifications for any fire, break, leak, spill, or blowout into a watercourse to (refer to notes for details and map for nearest district offices):

District	City	Numbers	Home
I	Hobbs	(505) 393-6161	(505) 392-5874
II	Artesia	(505) 748-1283	(505) 748-2353
III	Aztec	(505) 334-6178	(505) 334-2709
IV	Santa Fe	(505) 827-5800	(505) 982-8985

Notes:

1. **"Immediate notification"** shall be as soon as possible after discovery to the nearest district office.
2. **"Subsequent notification"** shall be a complete written report of the incident in duplicate to the nearest district office within 10 days after discovery of the incident.
3. Verbal or written reports shall include:
   a. Location of the incident by quarter-quarter, section, township, and range.
   b. Location by distance and direction from the nearest town or prominent landmark so that the exact site of the incident can be readily located on the ground.
   c. Nature and quantity of the loss.
   d. General conditions prevailing in the area to include precipitation, temperature, and soil conditions.

e. Measures that have been taken and are being taken to remedy the situation.

4. Notifications shall be in accordance with the following:

a. Well blowout—immediate notification.

b. Major and minor breaks, spills or leaks; gas leaks and line breaks; tank fires; drilling pits, slush pits, storage pits and ponds:

Material	Quantity (bbls unless otherwise noted)	Water-course	Notification
Crude Oil or Condensate	≥25	No	Immediate
	5<25	No	Subsequent
	≥1	Yes	Immediate
(Tank Fires)	≥25	—	Immediate
(Tank Fires)	5<25	—	Subsequent
(Endanger Life or Property)	Any Quantity	—	Immediate
Salt Water	≥100	No	Immediate
	≥25	Yes	Immediate
	25<100	No	Subsequent
(Endanger Life or Property)	Any Quantity	—	Immediate
Gas			
(Endanger Life or Property)	Any Quantity	—	Immediate
(No Danger)	≥1000 MCF	—	Subsequent
Related Materials[1]			
(Endanger Life or Property) —Drilling pits, slush pits, storage pits and ponds (Endanger Life or Property)	Any Quantity	—	Immediate
(No Danger)	Any Quantity	—	Subsequent

[1]Related materials include hydrocarbons, hydrocarbon waste or residue, strong caustics, strong acids or other deleterious chemicals or harmful contaminants.

Report leaks from natural gas and other gas pipelines within 2 hours of discovery to:

New Mexico State Corporation Commission, Santa Fe
Pipeline Division

Office Numbers (8 to 5)	Home Numbers
(505) 827-4501 or 4497	(505) 344-9515
(505) 827-4521 (Alternate)	(505) 473-1923
(505) 827-4522 (Alternate)	(505) 473-0717
(505) 827-4498 (Alternate)	(505) 983-6884

Hazardous Substances: Same as Oil.

NEW MEXICO

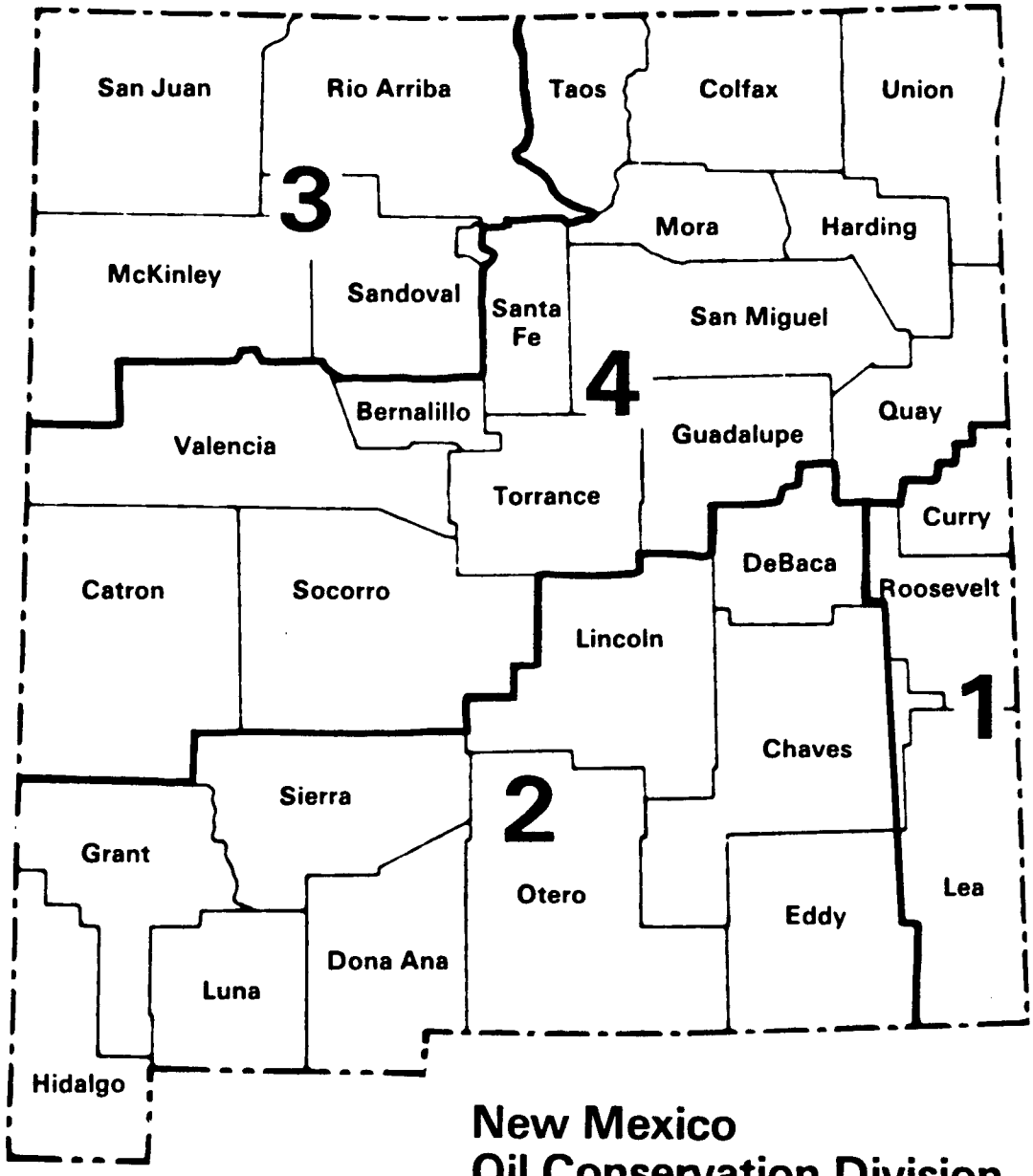
Hazardous Wastes: Same as Oil.

Hazardous Materials: Same as Oil.

Excess Air Emissions: Report excess emissions within 24 hours or no later than the next working day to:

New Mexico Health and Environment Department, Santa Fe
Environmental Improvement Division
Air Quality Section
(8 to 4:30) (505) 984-0020

Water Discharge Excursions: Same as Oil.



New Mexico
Oil Conservation Division
District Offices

District	City	Numbers
1	Hobbs	(505) 393-6161
2	Artesia	(505) 748-1283
3	Aztec	(505) 334-6178
4	Santa Fe	(505) 827-5800


G

San Juan list sorted by LOCATION - NAME - WELL NUMBER

LOCATION	NAME	WELL NUMBER	USE	DEPTH	PERFORATIONS	AQUIFER
[illegible].18.42	Valencia, Ernest D.	SJ-0095	irr	16		
29.0[illegible].18.42	Valencia, Ernest D.	SJ-0096	irr	16		
29.09.1[illegible]13	Baca, Robert & Patr.	SJ-0094	irr, stk	15		
29.09.18.4[illegible]	Baca, Robert & Patr.	SJ-0093	dom	155		
29.10.13.22	Robbins, Clyde R.	SJ-0680	dom, stk	40		
29.10.13.42	H[illegible]ris, Michael	SJ-1105	dom, stk			no log
29.10.19.12	Well[illegible] Ralph	SJ-0137	dom, stk	450		
29.10.19.33	Dix[illegible], Ph[illegible]	SJ-0303	dom	20		
29.10.19.44	Current, E[illegible]ie	SJ-1124	dom, stk			no log
29.10.20.321	Florez, Kenne[illegible] D.	SJ-1769	dom			
29.10.20.322	Page, Gary	SJ-1140	dom			
29.10.21.4	Abeyta, Ralph	SJ-1853	dom			
29.10.21.4	Gallegos, Marlin	SJ-1854	dom			
29.10.21.4	Gallegos, Simon Jr.	SJ-[illegible]0	dom			no log
29.10.21.4	Mo[illegible]t, Ernie	SJ-185[illegible]	do[illegible]			
29.10.21.423	Phillips, Roger D.	SJ-1678	[illegible]om			
29.10.21.44	Jaramillo, Ralph A.	SJ-1474	dom	25		
29.10.22.234	Thomas, George E.	SJ-1262	dom			no log
29.10.22.234	Thomas, George E.	SJ-1262[illegible]1)	do[illegible]			no log
29.10.22.33	Markle, David K.	SJ-0[illegible]4	dom			no log
29.10.24.21	Ismay, John R.	SJ-0370	dom, stk			no log
29.10.24.2423	Chavez, Sabino	SJ-0092	dom	33		
29.10.26.4334	Vaughn, Hollis	SJ-1019	dom	[illegible]0		
29.10.27.32	Brown, Jimmy [illegible]	SJ-1056	dom	50		
29.10.28.4	Alsup, Art[illegible] Kim	SJ-0999	dom			no log
29.10.28.43	Wright, [illegible]avid R.	SJ-0506	dom, stk	78		
29.10.28.44	Gary[illegible] Tommy W.	SJ-0951	dom			no log
29.10.28.443	M[illegible]nnes, Loren E.	SJ-0662	dom	93	73-93	
29.10.29.323	Moore, Jack M.	SJ-0497	dom,stk	85	73-83	
29.10.30.24	Evans, T. L.	SJ-0473	dom, stk	58		
29.10.35.[illegible]22	Stock, Robert E.	SJ-1051	dom	90		
29.10.[illegible]6.14	McCarthy, Daniel F.	SJ-1050	stk	85		
29.[illegible]1.07.4	Brannin, Stanton L.	SJ-0867	dom	77		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
29.11.10.44	Bosse', Joe	SJ-1851	dom, stk			

San Juan list sorted by LOCATION - NAME - WELL NUMBER

LOCATION	NAME	WELL NUMBER	USE	DEPTH	PERFORATIONS	AQUIFER
29.11.14.11	Armenta, Ernest G.	SJ-1743	dom			
29.11.14.14	Goebel, George	SJ-1426	dom, stk	155	115-155	
29.11.14.223	El Paso Natural Gas	SJ-0007	ind	752		
29.11.14.33	DeYapp, Steve A.	SJ-0702	dom		no log	
29.11.14.3423	Heron, Celsa (Lobato	SJ-1774	dom	82	78-82	
29.11.15.44	Fleming, Lindon	SJ-0409	dom		no log	
29.11.15.441	DeLeon, N. S.	SJ-0395	dom, stk		no log	
29.11.15.441	DeLeon, N. S.	SJ-0909	dom, stk		no log	
29.11.15.441	McGuire, Alfred Jame	SJ-0670	dom		no log	
29.11.15.443	Sorrell, Kenneth	SJ-0229	dom			
29.11.15.443	Sorrell, Kenneth	SJ-0229	dom		no log	
29.11.16.442	Yokan, Vance	SJ-1648	dom		no log	
29.11.17.24	Harris, Larry D.	SJ-0977	dom		no log	
29.11.17.2[illegible]	Seiferle, Rebecca	SJ-1410	dom		no log	
29.11.17.24	Seiferle, Rebecca	SJ-1410 (2)	dom			
29.11.17.24	Seiferle, Rebecca	SJ-1410	dom		no log	
29.11.17.42	Proctor, Floyd E.	SJ-1654	dom		no log	
29.11.17.44	Rogers, Gerald	SJ-0487	dom	60		
29.11.19.223	Henry, Bruce	SJ-1641	dom	120	80-120	
29.11.19.431	Baxter, Doyle E.	SJ-0707	dom		no log	
29.11.19.44	Francisco, Eddie	SJ-1250	dom	60		
29.11.20.31	Basinger, Oliver C.	SJ-[illegible]	dom		no log	
29.11.20.32	Saiz, Fermin Jacob	SJ-[illegible]	dom		no log	
29.11.20.332	Larby, Jack	SJ-0583	dom, stk		no log	
29.11.20.332	Larby, Jack	SJ-0583 (1)	dom	150	110-150	
29.11.20.44	Perez, Toney J.	SJ-1355	irrigation	36	6-30	
29.11.21.	Norman, William	SJ-0452	dom	42		
29.11.21.	Osborn, Manning	SJ-0160	dom			
29.11.21.21	Hu[illegible], Harold	SJ-0515	dom		no log	
29.11.21.22	Rodriquez, Gerald T.	SJ-0701	dom	70		
29.11.21.24	Bingham, Larry	SJ-1090	dom	31		
29.11.21.24	Toliver, R. T.	SJ-1054	dom	43		
29.11.21.41	DeVilbiss, Glen A.	SJ-1532	dom		no log	
[illegible]	[illegible]	[illegible]	[illegible]			
29.11.22.12	Cassiday, Robert	SJ-1698	dom			
29.11.22.12	Hutton, Edward W. Jr	SJ-1557	dom	70		

San Juan list sorted by LOCATION - NAME - WELL NUMBER

LOCATION	NAME	WELL NUMBER	USE	DEPTH	PERFORATIONS	AQUIFER
29.11.22.12	Jaramillo, Carlos W.	SJ-0704	dom	55		
29.11.22.12	Johnson, T. P.	SJ-0796	dom	50		
29.11.22.12	West, James R.	SJ-1703	dom	68		
29.11.22.13	Lafferton, Henry I.	SJ-1214	dom	49		
29.11.22.131	Wileman, Melvin W.	SJ-0320	dom	38		
29.11.22.133	Chacon, Gilbert A.	SJ-0484	dom	37		
29.11.22.133	Williams, Windell	SJ-1280	dom		no log	
29.11.22.134	Tomlinson, Clay	SJ-0151	dom	45	42-45	
29.11.22.23	Brothers, Thomas T.	SJ-0476	dom		no log	
29.11.22.314	Edge, Ben	SJ-0623	dom		no log	
29.11.22.32	Birnette, Fred E.	SJ-1320	dom		no log	
29.11.22.43	Wampler, Walter N.	SJ-0696	dom	34		
29.11.22.434	Lopez, Albert	SJ-1732	dom			
29.11.23.14	McCoy, Edward E.	SJ-0812	dom	44		
29.11.23.22	Bowles, C. M.	SJ-1610	dom	52		
29.11.23.23	Crabtree, T. V.	SJ-1573	dom	41		
29.11.23.43	Smith, Jonnie L.	SJ-1844	dom, stk			
29.11.24.142	Schrantz, Bela A.	SJ-1826	dom			
29.11.24.22	Rinaman, William J.	SJ-1833	dom			
29.11.24.23	Dees, Savoy & Grace	SJ-0420	dom, irr, st			
[illegible]						
[illegible] 27.11	Quintana, Pablo D.	SJ-0394	dom, stk		no log	
29.11.27.14	Schlinger, John	SJ-1845	dom			
29.11.27.133	Brown, Edd H.	SJ-0700	dom	[illegible]		
29.11.27.3	Plat[illegible] Inc.	SJ-1808 thru-O-6	explore			
29.11.27.333	Larsen, K[illegible]neth W.	SJ-1804	dom			
29.11.28.	Lopez, Edward[illegible]	SJ-0598	dom		no log	
29.11.28.122	Weatherford, James A	SJ-1159	dom		no log	
29.11.28.21	Baisley, Gerald R.	SJ-[illegible]	dom, stk			
29.11.28.21	Chapman, Autry T.	SJ-1555	dom		no log	
29.11.28.22	McDonald, Eldean	SJ-1606	dom	35		
29.11.28.31	Haston, Tra[illegible] O.	SJ-1086	dom, stk		no log	
29.11.29.1234	Merri[illegible], Earl L.	SJ-0306	dom			
29.11.29.2143	Hengst, Arthur W.	SJ-0292	dom			
29.11.29.2[illegible]	Davis, W. R.	SJ-1554	dom	35		
29.11.29.43	Williams, Patricia	SJ-0822	dom	34		
[illegible]						

SUBJECT

LOCATION	NAME	WELL NUMBER	USE	DEPTH
29.11.15	Ray, Brad	SJ-1889	dom	60
29.11.22	Hinson, Samuel	SJ-2020	dom	30
29.11.22	Martinez, Richard Garcia, Juan	SJ-1984	dom	NA
29.11.23	Jordan, Jimmy	SJ-2027	dom	25
29.11.23	Walters, David	SJ-1870	dom	60
29.11.24	Hunt, Glen	SJ-2015	dom	NA


H

ATTACHMENT 1

WESTERN TECHNOLOGIES INC.
400 South Lorena Avenue
Farmington, New Mexico 87401
(505) 327-4966

LABORATORY REPORT

Client Conoco, Inc. 30917
P.O. Box 1267
Ponca City, Oklahoma 74603

Job No. _____
Lab/Invoice No. 31750028
Date of Report 1/30/85

Project San Juan Gas Plant
Location Bloomfield, New Mexico
Material/Specimen Well Water Sampled By S. Wood Date 1/10/85
Source Wells #1 thru #6 Submitted By J. Weaver Date 1/14/85
Test Procedure Std. Methods 15th Ed. #505* Authorized By R. Lauritsen/Client Date 1/11/85

RESULTS

TOTAL ORGANIC CARBON

(Mg/Liter)

Well/Sample No.	1	2	3	4	5	6
	130	36	27	21	27	24

*Water filtered through a 0.45 micro mesh filter prior to testing.

Copies to Mr. Michael J. Morgan, P. E.
Conoco, Inc.
P.O. Box 2197
Houston, Texas 77252

/cb

WESTERN TECHNOLOGIES INC.

3737 East Broadway Road
P.O. Box 21387
Phoenix, Arizona 85036
(602) 437-3737

LABORATORY REPORT

REVISED 5/6/85

Client: Conoco Incorporated
P.O. Box 2197
HU 2020
Houston, Texas 77252
Attn: Randy Majors

RECEIVED
MAY 09 1985
OPERATIONS
ENGINEERING & ECONOMICS

Job No. 851597, 1598
Lab./Invoice No. 3125W025
Date of Report 4/24/85
Reviewed By Steven P. Hoppe

Project: San Juan Gas Plant
Location:
Material/Specimen: Water — Sampled By: CI/Personnel — Date: --
Source: — Submitted By: WT/Weaver — Date: 4/4/85
Test Procedure: GC/MS — Authorized By: CI/Majors — Date: --

RESULTS

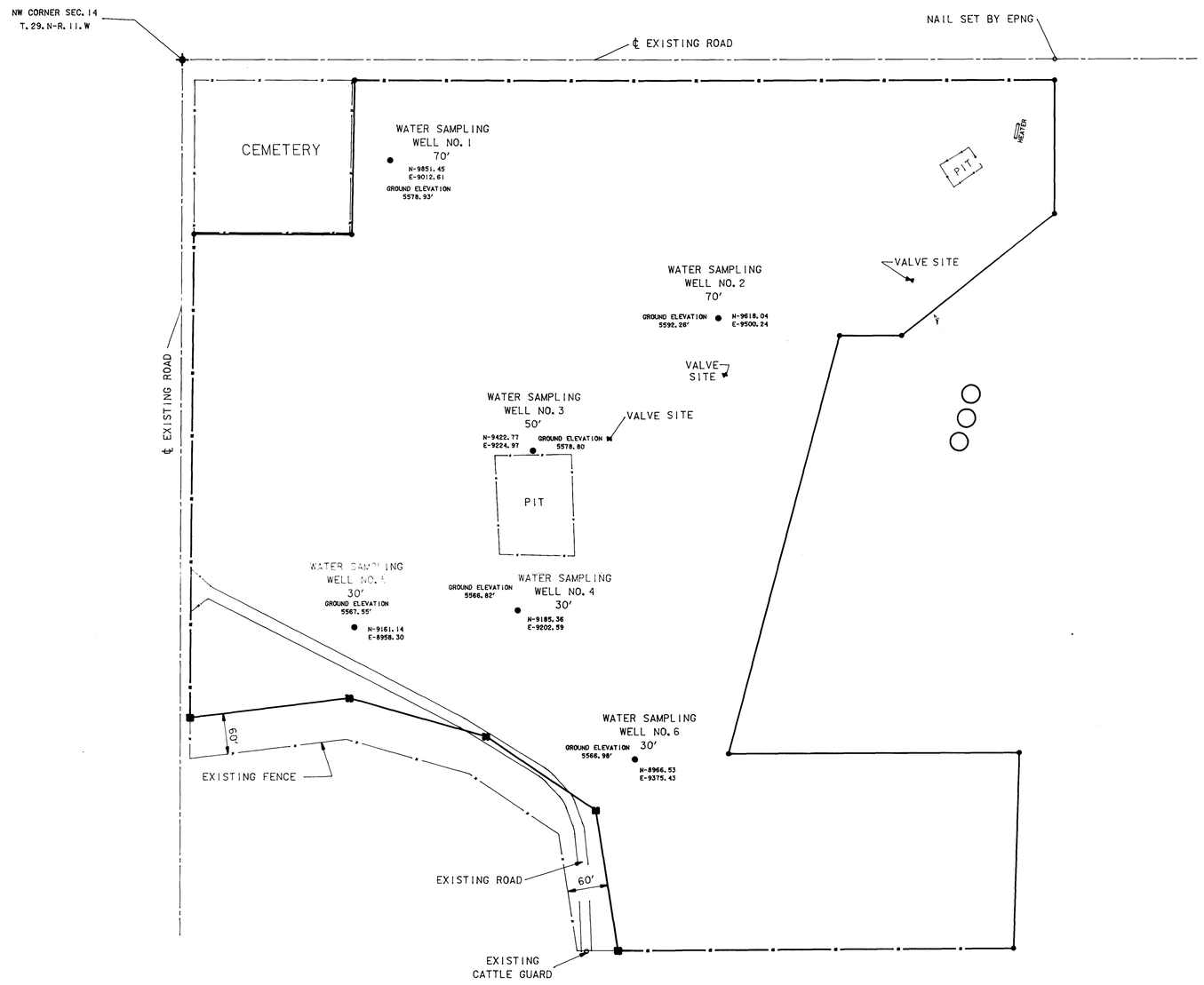
Two water samples were received for analysis of hydrocarbon contamination using gas chromatography mass spectrometry followed extraction into methylene chloride. No compounds were detected and identified using this analysis.

Sample Identification	Hydrocarbons mg/L
Well 2-6 (851597)	<10.
Well 1 (851598)	<10.

Analysis was consistent with EPA method 625 for semi-volatile extractable compounds and verified using our standard library search of approximately 70,000 compounds.

Copies to: Client (1)

bm



LEGEND

- ● PROPERTY PIN (INSTALLED)
- ■ PROPERTY PIN (NOT INSTALLED)

AFE: AG-000-025C

ISU	DATE	DESCRIPTION	BY	CKD	APD
2	1-2-85	REV. PER PROP. SURVEY	DLP	CP	
1	6-5-84	ORIGINAL	DLP	CP	

CONOCO INC.
ENGINEERING CENTER
PONCA CITY, OKLAHOMA

FARMINGTON, N. MEX NGP

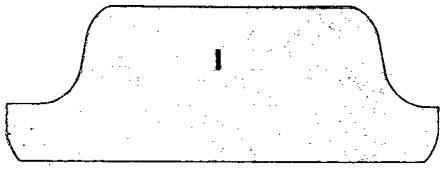
WATER WELL LAYOUT
SAN JUAN GAS PLANT

SCALE: 1"=100'

APPD / DATE	SHT. NO.	UNIT	AREA
1-2-85			

NO. NG-000-8401-CV-2-D ISSUE 2

305-AG000002C.001



SAN JUAN COUNTY, NEW MEXICO, EASTERN PART — SHEET NUMBER 43

Drafted by James Brannan

Base from U.S. Geological Survey

Geology modified from Dane and Bachman (1965) by W. J. Stone

GEOLOGIC UNITS

(see text for descriptions)

Quaternary

Qal **Alluvium;** includes landslide deposits (east side of Chuska Mountains), terrace deposits (San Juan River valley)

Qb **Basalt**

Quaternary/Tertiary

Qts **Santa Fe Group and younger alluvium, undifferentiated** (Rio Grande valley)

Tertiary

Ti **Intrusions, dikes**

Tb **Basalt**

Tv **Volcanics other than basalt**

Tc **Chuska Sandstone**

Tsj **San Jose Formation**

Tn **Nacimiento Formation**

Toa **Ojo Alamo Sandstone**

Tertiary/Cretaceous

Tka **Animas Formation**

Cretaceous

Kkf **Fruitland Formation–Kirtland Shale, undifferentiated**

Kpc **Pictured Cliffs Sandstone**

Kl **Lewis Shale**

Kmv **Mesaverde Group, undifferentiated**

*Kch **Cliff House Sandstone**

*Klv **La Ventana Tongue, Cliff House Sandstone**

*Kmf **Menefee Formation**

*Kpl **Point Lookout Sandstone**

Kms **Satan Tongue, Mancos Shale**

*Kph **Hosta Tongue, Point Lookout Sandstone**

*Kcc **Crevasse Canyon Formation**

Kmm **Mulatto Tongue, Mancos Shale**

*Kg **Gallup Sandstone**

Km **Mancos Shale, undifferentiated**

Kd **Dakota Sandstone;** includes Burro Canyon Formation (northeast)

*in Mesaverde Group

Jurassic

Jm **Morrison Formation**

Jsr **San Rafael Group,** undifferentiated; includes Entrada Sandstone, Todilto Limestone, Summerville Formation, Cow Springs Sandstone/Bluff Sandstone, in ascending order

Triassic

TR **Triassic rocks, undifferentiated;** includes Chinle Formation and overlying Glen Canyon Group

Paleozoic

P **Permian rocks, undifferentiated;** includes Abo Formation (south), lower Cutler Formation (north), DeChelly Sandstone, Yeso Formation, Glorieta Sandstone, San Andres Limestone, in ascending order

IP **Pennsylvanian rocks, undifferentiated;** includes Molas Formation, Pinkerton Trail Formation, Paradox Formation (northwest), Honaker Trail Formation, in ascending order

Precambrian

pC **Precambrian rocks, undifferentiated**

WATER-YIELDING CHARACTERISTICS*

Aquifer

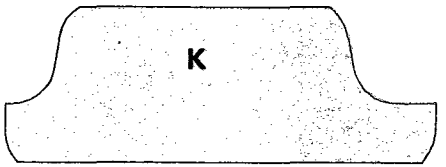
Locally an aquifer or contains aquifer

Aquitard

Poorly known or outside study area

*See table 14 (inside front cover) for summary of aquifer characteristics

Hydrogeologic map of the San Juan Basin, New Mexico


K

Drafted by James Brannan

Base from U.S. Geological Survey

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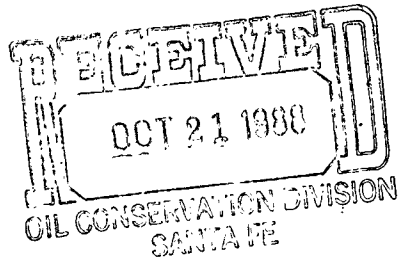
*See table 14 (inside front cover) for summary of aquifer characteristics

Hydrogeologic map of the San Juan Basin, New Mexico

DISCHARGE PLAN

CONOCO INC.
SAN JUAN GAS PROCESSING PLANT

SAN JUAN COUNTY
P. O. BOX 217
BLOOMFIELD, NEW MEXICO 87413



Prepared By

Conoco Inc.
Natural Gas & Gas Products Department
P. O. Box 2197 - HU 3048
Houston, Texas 77252

TABLE OF CONTENTS

SECTION I

GENERAL INFORMATION

A. LOCATION AND CONTACT

1. Name

Conoco Inc., Natural Gas & Gas Products Department
P.O. Box 2197, Humber 3048
Houston, TX 77252
Contact: Rick McCalip
(713) 293-1123

2. Facility Contact

San Juan Gas Processing Plant
W. V. Thompson, Plant Manager
P. O. Box 217
Bloomfield, NM 87413
(505) 632-1831

3. Location

The San Juan Plant is located 1.5 miles north of Bloomfield off Highway 44, in the NW 1/4, NW 1/4 Section 14, Township 29N, Range 11W. A USGS topographical map and a facility plot plan are included in Appendices A and B, respectively.

B. TYPE OF OPERATION

In 1986, Conoco Inc. and Tenneco Oil constructed a 500 million (MM) standard cubic foot per day (SCFD) natural gas processing plant on a 27 acre tract adjacent to El Paso Natural Gas Company's Blanco Plant. The plant is operated by Conoco and processes natural gas that was processed by El Paso prior to the plant's construction.

The Blanco Plant utilized an ambient temperature lean oil absorption process to recover natural gas liquids (NGL) from natural gas. The San Juan Plant uses a cryogenic process ($-150^{o}F$) which is more efficient in recovering ethane and propane.

Raw natural gas flows through the Blanco Plant where it is compressed prior to delivery to the San Juan Plant. The San Juan Plant receives two inlet streams: (1) 180 MMSCFD at 350 psi, and (2) 320 MMSCFD at 900 psi. The first stream undergoes additional compression at the San Juan Plant, assuring 900 psi inlet pressure to the two parallel 250 MMSCFD liquid extraction trains.

All water must be removed from the gas stream due to low temperatures in the cryogenic process. To remove the water, the gas passes through dessicant dehydration beds. The beds are regenerated by passing hot gases through the saturated dessicant, cooling the gases, and removing the water in the knock-out vessel. The water from the knock-out vessel flows into the closed drain, the oil-water separator (skim basin M1402) and then into the oily water storage tank (TK-1403). See Appendix C for a schematic of the wastewater system.

Dehydrated gas is fed to the two cryogenic process trains. The gas passes through a series of heat exchangers to reduce the temperature to approximately -100°F. The gas then passes through a high pressure cold separator to remove any free liquefied hydrocarbons. The condensed liquids are fed to the demethanizer.

The vapor phase from the cold separator is fed to the turboexpander. A near isentropic expansion drops the vapor phase pressure to the demethanizer pressure, both cooling the gas to -150°F and delivering shaft work to the turboexpander recompressor. The turboexpander recompressor provides partial compression of the residue gas.

In the demethanizer, ethane, propane, butane and condensate (EPBC) are liquefied and recovered from the bottom. This stream is either fed to the deethanizer or sent to the MAPCO product pipeline.

The cold methane residue stream, recovered off the top of the demethanizer, is fed back to the cryogenic heat exchangers. The gas is warmed and fed to the recompressor. This gas is then sent to residue compression.

A portion of the EPBC stream from the demethanizer is fed to the deethanizer for PBC recovery while the remaining EPBC is sent via the MAPCO Rocky Mountain line to Mt. Belvieu, Texas for fractionation.

In the deethanizer, ethane and some propane (EP) are recovered by distillation. The EP stream from the deethanizer overhead can be either recompressed with the residue gas or condensed and sent to MAPCO's pipeline. The combined gas is fed to two parallel 15,000 horsepower residue compressors. These compressors increase the pressure to that necessary for pipeline transportation.

The bottoms from the deethanizer contain mainly propane, butane and condensate (PBC). This stream is fed via pipeline to the El Paso Wingate Plant.

A process flow diagram is included in Appendix D.

C. AFFIRMATION AND SIGNATURE

I hereby certify that I am familiar with the information contained in and submitted with this application and that such information is true, accurate and complete to the best of my knowledge.

Rick McCalip
Coordinator, Environmental & Energy Services
Natural Gas & Gas Products Department

Rick McCalip
(Signature)

10/17/88
(Date)

SECTION II

PLANT PROCESSES

A. SOURCES, QUANTITIES, AND COMPOSITION OF EFFLUENT AND PROCESS FLUIDS

1. Domestic Wastewater

Domestic wastewater is discharged to the City of Bloomfield Municipal Treatment Facility under terms outlined in a Wastewater Treatment Agreement between the City and Conoco, Appendix L. As indicated in the Agreement, the maximum volume of domestic wastewater discharged to the City is 1440 gallons per day.

2. Cooling Tower Blowdown

The cooling tower is designed to operate at a maximum circulation rate of 9950 gallons per minute (gpm). There is a continuous blowdown of cooling water which is discharged to the City at an average rate of 50 gallons per minute, maximum 180000 gallons per day, as allowed by the Wastewater Treatment Agreement. Blowdown temperature typically should not exceed 80°F.

Conoco utilizes the following water treatment chemicals:

- anti-scale phosphonates
- sulfuric acid
- chlorine (gas or pelletized)
- biocide (non-phenol based)

Domestic wastewater and the cooling tower blowdown are combined prior to discharge from the plant. The combined stream is delivered via pipeline to the City treatment facility. The Wastewater Treatment Agreement defines the quality limitations for the combined wastewater stream discharged from the plant to the City. (Exhibit B of Appendix L.)

Parameter	Maximum Concentration (mg/l)
Biochemical Oxygen Demand	200
Chemical Oxygen Demand	500
Oil & Grease	35
Total Suspended Solids	200
Phosphates	15
Nitrates	20
pH	8.6 (max) 6.6 (min)

Total Dissolved Solids: The difference between influent and effluent total dissolved solids will be less than 1000.

The combined stream is analyzed monthly by the City of Bloomfield for BOD, COD, Total Dissolved Solids, and Total Suspended Solids. Supplemental analyses are conducted by Conoco on a quarterly or annual basis. The schedule for analyses is outlined in Exhibits C and D of the Wastewater Treatment Agreement, Appendix L.

3. Stormwater and Washwater

a. Collection System

By agreement, no stormwater or washwater is diverted into the City's wastewater system. The majority of stormwater is non-contaminated and is not collected for disposal. The only cases of stormwater collection for discharge are as follows: (1) rainwater falling directly on the equipment foundations, and (2) stormwater from the curbed gas treating area.

All equipment foundations are connected to an open drain system which leads to the oil/water separator (i.e., skimmer basin). At the skimmer, gravity separation segregates oil from wastewater. The oils are removed by a float-operated pump to a storage tank. The wastewater (stormwater and washwater) is diverted to one of two 500-barrel tanks (TK-1403).

The San Juan Plant utilizes a diethanolamine treatment system to remove carbon dioxide from plant product. The gas treating area is curbed, providing secondary containment of potentially contaminated stormwater and/or washwater and any spills. The curbed area drains to the second 500-barrel tank (TK-803).

A 2-3 foot earthen dike was constructed inside the fence at the south edge of the property. The dike contains all other stormwater, preventing any runoff to surrounding areas. A field road, outside the fence and on El Paso Natural Gas property, provides secondary containment before any stormwater reaches Citizen's Ditch.

Precautions to eliminate runoff contamination have been taken. If for any reason contamination should occur, a third party will be contacted immediately to provide whatever services are necessary to remedy the situation.

b. Discharge of Washwater/Stormwater

The two 500-barrel tanks are drained each month. Once each month prior to disposal, samples are taken from each tank. The samples are analyzed for pH, BOD, COD, TDS, and oil and grease to insure that the wastewater

quality is acceptable. Analysis for phenols and heavy metals is conducted quarterly. The tank contents are transported for disposal at either Basin Disposal Inc. in Aztec, New Mexico or Hicks Oil and Gas, Inc.'s saltwater disposal well in San Juan County (Section 15, Township 28N, Range 13W).

c. Potential for Contamination

The following liquid materials will be kept on the plant site:

- diethanolamine
- sulfuric acid
- natural gasoline
- diesel fuel
- methanol
- lubricating oils, including
  - Conoco ATF
  - Texaco Capella WF 68
  - Mobil Rarus 826
  - Conoco Turbine 32
  - Mobil SHC 824
  - Conoco Fleet 30
  - Conoco Dector 150
  - Conoco Superhydraulic
  - Conoco Gear Lube 90
- biodegradeable detergent cleaners
- water treatment chemicals
  - chlorine
  - Betz 25K Series 25122
  - Betz 25K Series 25176
  - Betz Slimicide C31
  - Exxon Corexit 7669

Material Safety Data Sheets for on-site chemicals and products are kept at the plant. Adequate precautions and backups will prevent any of these materials in significant quantities from entering the City wastewater system. Precautions have also been taken to prevent contamination of the storage tanks. For example, any oil that enters the open drain system must pass through the oil-water separator where it will be removed. Should the separator fail to operate properly, the oil-contaminated wastewater will be pumped to the water storage tank.

Any losses of diethanolamine (DEA) are collected in the designated wastewater tank. Sampling and analysis of the tank's contents prior to draining alerts plant personnel to any problem.

Sulfuric acid is controlled by pH sensors on the cooling water system. These will prevent wide swings in pH in the blowdown.

Methanol is used periodically to prevent freezeups in the plant process. The methanol stays in the product stream and leaves the plant with the products.

d. Composition

The quality of the process area washwater (TK-1403) and the amine system washwater/stormwater (TK-803) is analyzed monthly. Typical values for the analyses follow:

Component	TK-1403	TK-803
BOD (mg/l)	10000	10000
COD (mg/l)	10000	10000
Oil & Grease (mg/l)	5-60	5-170
pH	6-7	8-9

4. "Sulfa-Check("TM) System

A "Sulfa-Check"(TM) absorption system was installed in late 1987, with initial operation in January 1988. The system is designed to extract hydrogen sulfide (H_2S) from the amine unit vent gas which is predominantly carbon dioxide (CO_2).

The amine unit removes CO_2 from the EPBC product stream. Although inlet and residue gas H_2S concentrations meet pipeline quality standards, trace amounts of H_2S remain in the EPBC stream and are subsequently removed with the CO_2 from the product stream. The amine unit vent gas is bubbled through a tank filled with a proprietary alkaline aqueous solution.

The H_2S is removed and converted to elemental sulfur by the solution. The non-hazardous spent slurry solution is approximately 75 percent liquid and 25 percent solids. The majority of solids is elemental sulfur with sodium bicarbonate, sodium carbonate, and traces of silica also present. The liquid is predominantly water with trace amounts of sulfur, sodium, and sodium compounds (nitrate, nitrite, carbonate, bicarbonate, and sulfate).

The "Sulfa-Check" solution is changed every six to twelve months depending upon gas volumes, hydrogen sulfide content, and solution efficiency. The spent solution is allowed to settle. The liquid and solids are separated. The liquids are analyzed prior to disposal at the Hicks disposal well. No liquids are discharged to the City wastewater treatment facility.

B. TRANSFER AND STORAGE OF PROCESS FLUIDS AND EFFLUENTS

Appendix C contains schematic diagrams of the plant's wastewater system. Estimated maximum flow rates are shown for each stream. Wastewater temperatures are not expected to exceed the ambient temperature.

The "Gas Treating Area Diagram" in Appendix C provides greater detail of the stormwater and washwater drainage system at the gas treating area.

General process flow diagrams are attached in Appendix D. An overall site plot plan is included in Appendix B.

Only two underground tanks are subject to this plan. Table II.B.1 details characteristics of each tank. Both tanks are installed in the gas treating (amine system) area at an approximate depth of eight (8) feet. To install the tanks below grade, an outside contractor was hired to drill through the rock which is present at that location. Both sites were packed with fresh dirt prior to installing the tanks. No groundwater was encountered during the installation procedure. Section II.C addresses drain systems, curbing, and spill prevention.

All in-plant piping was designed and tested in accordance with American National Standards Institute (ANSI) B31.3. All pipe except the 6-inch sanitary sewer line is carbon steel line pipe. Carbon steel pipe was wrapped and checked with a holiday detector prior to installation. Design corrosion allowance is 0.063 inches. The 6-inch sanitary sewer line (Line No. 6 DY16101) is standard PVC pipe. Appendix E lists all underground pipe line numbers with respective wall thickness (sch), operating pressure and temperature, and design pressure and temperature.

C. SPILL/LEAK PREVENTION AND HOUSEKEEPING PROCEDURES

1. Spill Prevention, Control and Countermeasure

As required by Federal Regulations (40 CFR 112), the San Juan Gas Plant operates in compliance with an SPCC Plan. This SPCC Plan has been fully implemented. The table of contents is shown in Table II.C.

The SPCC Plan specifies containment requirements for tanks and other equipment. All tanks which store hydrocarbons (which are liquid at standard temperature and pressure) or hazardous substances are diked or curbed to prevent releases in the event of tank failure. All equipment foundations are equipped with drains to collect dripped fluids and washwaters. The fluids collected within these drains are stored in above ground tanks prior to discharge to the City of Bloomfield or transportation for offsite disposal.

Appendix C contains schematic diagrams of the wastewater collection systems.

2. General Housekeeping Procedures

Plant personnel receive annual training on spill prevention, containment, cleanup, and notification procedures. Washwater from equipment cleaning and maintenance is sent via the drain system to the wastewater tanks for proper discharge. No solvents, only detergent-based cleaners, are used for cleaning equipment.

In the event of a spill of oil or other regulated materials, the Oil Conservation Division and the Environmental Improvement Division shall be notified as specified in Conoco's Spill Reporting Procedures Guide. A copy of this guide is included in Appendix F.

3. Leak Detection and Integrity Testing

All tanks and piping were pressure-tested prior to being placed in service in order to insure the equipment's integrity. Leaks within the plant can be detected by numerous pressure monitors located on plant piping, tanks, and vessels.

Plant piping and equipment are designed to resist corrosion for the life of the facility. All underground steel piping is doped and wrapped. Tanks are tested for metal thickness approximately every two years. The two underground tanks from the gas treating area (V-806 and V-807) will be pressure tested every two years. Additional testing will be performed on an as-needed basis. Section II.B contains additional information on underground piping specifications.

D. EFFLUENT SAMPLING

Compositions of effluent streams presented in Section II.A are best estimates and sources of each estimation are included.

Effluent streams are monitored (schedules in previous Sections) on a regular basis for discharge to the City wastewater system and prior to disposal off-site.

Figure II.D.1 is an analysis of the raw feed water source for the facility. Raw feed water is sampled as needed.

TABLE II.B.1

UNDERGROUND STORAGE TANKS

Tank No.	V-806	V-807
Vessel Name	Amine Drain Tank	Amine Waste Sump
Commodity Stored	30% Diethanolamine(1)	Stormwater(2)
Capacity (gal)	950	4200
Construction Material	Carbon Steel	Carbon Steel
Dimensions	48" OD x 10' T/T	72" OD x 20' T/T
Wall Thickness(3)	0.25"	0.25"
External Protection:	Epoxy Coating	Epoxy Coating
Design Pressure(4)	14.9 psig @ 150° F	12.9 psig @ 150° F

(1) DEA solution from system blowdown.

(2) Stormwater from curbed gas-treating area; stormwater through drain to TK-803 via V-807

(3) Wall thickness includes 0.125" corrosion allowance

(4) Both vessels were pressure tested prior to installation.

TABLE II.C

SPILL PREVENTION CONTROL AND COUNTERMEASURE PLAN
TABLE OF CONTENTS

E. FLOW RATE VARIABILITY

All flow rates presented in Section II.A and illustrated on schematics are anticipated maximum rates. No major variations are expected in rates of discharge for washwater and stormwater drainage or domestic wastewater. Cooling tower blowdown volumes (125 gpm) are maximum design values. Normal operations will result in approximately 50 gpm blowdown.

SECTION III

EFFLUENT DISPOSAL

A. ON-SITE FACILITIES

There are no on-site facilities for effluent disposal. All drains, tanks, and piping are for collection and transfer to off-site facilities.

B. OFF-SITE FACILITIES

The sources and estimated composition of the wastewater streams are described in Section II.A. Domestic wastewater and cooling tower blowdown are discharged via pipeline into the City of Bloomfield's wastewater treatment system:

City of Bloomfield
P.O. Box 1839 (Office) — 1076 South Church (Site)
Bloomfield, NM 87413 — Bloomfield, NM 87413

Stormwater and washwater from the gas treating process area tanks (Tanks #1 and #2) are transported via truck to one of the following two facilities:

Basin Disposal, Inc.
P.O. Box 100 (Office) — 15847 NM Hwy 44 (Site)
Aztec, NM 87410 — Aztec, NM 87410

Hicks Oil and Gas, Inc.
Unit Well No. 37 (Site)
Secton 15, Township 28N, Range 13W
San Juan County, NM

Conoco Transportation collects and transports the effluent from the two tanks.

SECTION IV

SITE CHARACTERISTICS

A. HYDROLOGIC FEATURES

United States Geological Survey (USGS) map, Appendix A illustrates the area surrounding the facility. All bodies of water, rivers, and canals are labelled.

Appendix G lists water wells located within one mile of the plant perimeter. Only wells in Sections 10, 11, 12, 13, 14, 15, 22, 23, and 24 are within one mile; the other wells have been blocked from the list. The information was provided by the State Engineer's Office in Albuquerque.

A plot plan showing locations of ground water monitoring wells is included in Appendix H. Analyses by Western Technologies, Inc. of Farmington, New Mexico and Phoenix, Arizona for dissolved organic carbon showed a higher level than expected in Well #1, Appendix H. Subsequent testing for hydrocarbons was performed on Well #1 and a composite of Wells #2-6, Appendix H. No detectable hydrocarbons were found. A potential contributor to the high levels in Well #1 may be leaching from an existing nearby cemetery.

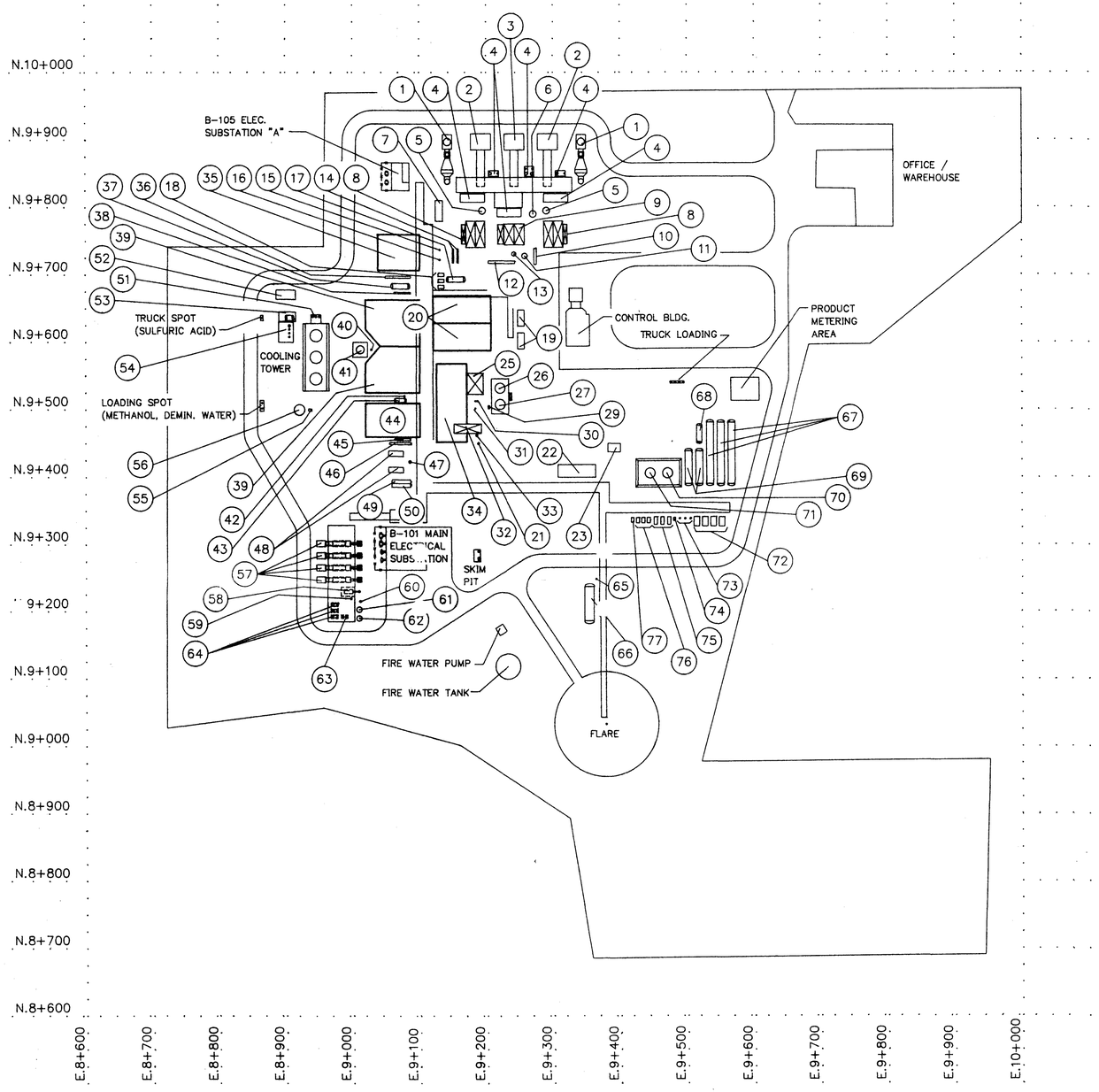
B. GEOLOGIC DESCRIPTION OF DISCHARGE SITE

A soil survey of the facility and surrounding area is given in Appendix I. The information is from a survey conducted jointly by the U.S. Department of Agriculture, U.S. Department of the Interior, and the New Mexico Agricultural Experiment Station. The soil is Fruitland sandy loam, 0 to 2 percent slopes. Appendix J provides hydrologic formation data for the area.

C. FLOOD PROTECTION

Site work including grading changes was conducted prior to commencement of construction. A contour map showing final elevations and plant orientation is included in Appendix K. The entire plant site is elevated to effectively eliminate any potential for flooding. Sources of potential stormwater contamination are curbed to prevent such contamination. Refer to Section II.D for additional information.

The following section should be placed in Attachment B.



ITEM	EQUIPMENT
1	HOT OIL HEATERS (2)
2	RESIDUE COMPRESSORS (2)
3	INLET COMPRESSOR
4	LUBRICATING OIL SKIDS (6)
5	RESIDUE COMPRESSOR SUCTION SCRUBBERS (2)
6	LOW PRESSURE INLET GAS SEPARATOR
7	HOT OIL TRIM COOLER
8	RESIDUE COMPRESSOR AFTERCOOLERS (2)
9	INLET COMPRESSOR AFTERCOOLER
10	HIGH PRESSURE INLET COOLER
11	HIGH PRESSURE INLET GAS SEPARATOR
12	INLET COMPRESSOR TRIM COOLER
13	INLET COMPRESSOR DISCHARGE SCRUBBER
14	RECYCLE COOLERS (2)
15	HIGH PRESSURE FUEL GAS SCRUBBER
16	LOW PRESSURE FUEL GAS SCRUBBER
17	HOT OIL EXPANSION VESSEL
18	HOT OIL PUMPS (3)
19	REGEN GAS HEATERS (2)
20	INLET GAS DEHYDRATION (see detail) (2)
21	SULFACHECK SYSTEM
22	EP PRODUCT DEHY. SKID
23	EP TREATER REGEN HEATER
26	WASTEWATER AND AMINE STORAGE TANK
27	AMINE STORAGE TANK
28	AMINE COOLER
29	AMINE MAKEUP PUMP
30	AMINE SUMP PUMPS (2)
31	AMINE DRAIN TANK PUMP
32	AMINE STILL CONDENSER
33	AMINE STILL REFLUX ACCUMULATOR
34	AMINE TREATING AREA (see detail)
35	REFRIGERANT COMPRESSOR AREA (see detail)
36	REFRIGERANT CONDENSER
37	REFRIGERANT ACCUMUMLATOR
38	REFRIGERANT SUBCOOLER
39	CRYO TRAIN AREA (see detail) (2)
40	METHANOL INJECTION PUMP
41	METHANOL STORAGE TANK
42	CLOSED DRAIN PUMP
43	CLOSED DRAIN VESSEL
44	DEETHANIZER AREA (see detail)
45	EP PRODUCT CHILLER
46	EP PRODUCT TRIM COOLER
47	EP COMPRESSOR SUCTION SCRUBBER
48	EP PRODUCT COMPRESSORS (2)
49	PBC COOLER
50	EP COMPRESSOR AFTERCOOLER
51	COOLING WATER CIRCULATING PUMPS (3)
52	WATER TREATING CH[illegible]INATOR
53	ACID STORAGE TANK
54	WATER TREATING PACKAGE
55	DEMINERALIZED WATER PUMP
56	DEMINERALIZED WATER STORAGE TANK
57	POWER GENERATORS (3)
58	EMERGENCY GENERATOR
59	DIESEL TRANSFER PUMP
60	WASTE LUBE OIL DRAIN TANK PUMP
61	INSTRUMENT AIR RECEIVER
62	UTILITY AIR RECEIVER
63	INSTRUMENT AIR DRIER
64	INSTRUMENT/UTILITY AIR COMPRESSOR (3)
65	FLARE KNOCKOUT DRUM PUMP
66	FLARE KNOCKOUT DRUM
67	EPBC PRODUCT SURGE TANKS (3)
68	PROPANE STORAGE TANK
69	PBC PRODUCT SURGE TANKS (2)
70	WASTEWATER STORAGE TANK
71	SLOP OIL STORAGE TANK
72	EPBC PRODUCT PIPELINE PUMPS (4)
73	EPBC PRODUCT BOOSTER PUMPS (3)
74	PROPANE MAKEUP PUMP
75	PBC PRODUCT PIPELINE PUMPS (3)
76	PBC PRODUCT BOOSTER PUMPS (3)
77	PBC PRODUCT RERUN PUMP

ISSUE	DATE	DRAWN	DESIGNED	CHECKED	APPROVED
A	ISSUE FOR APPROVAL				
	12/17/87	BKJ	T KILLIAN		

CONOCO INC.
NATURAL GAS & GAS PRODUCTS DEPARTMENT
AFE:

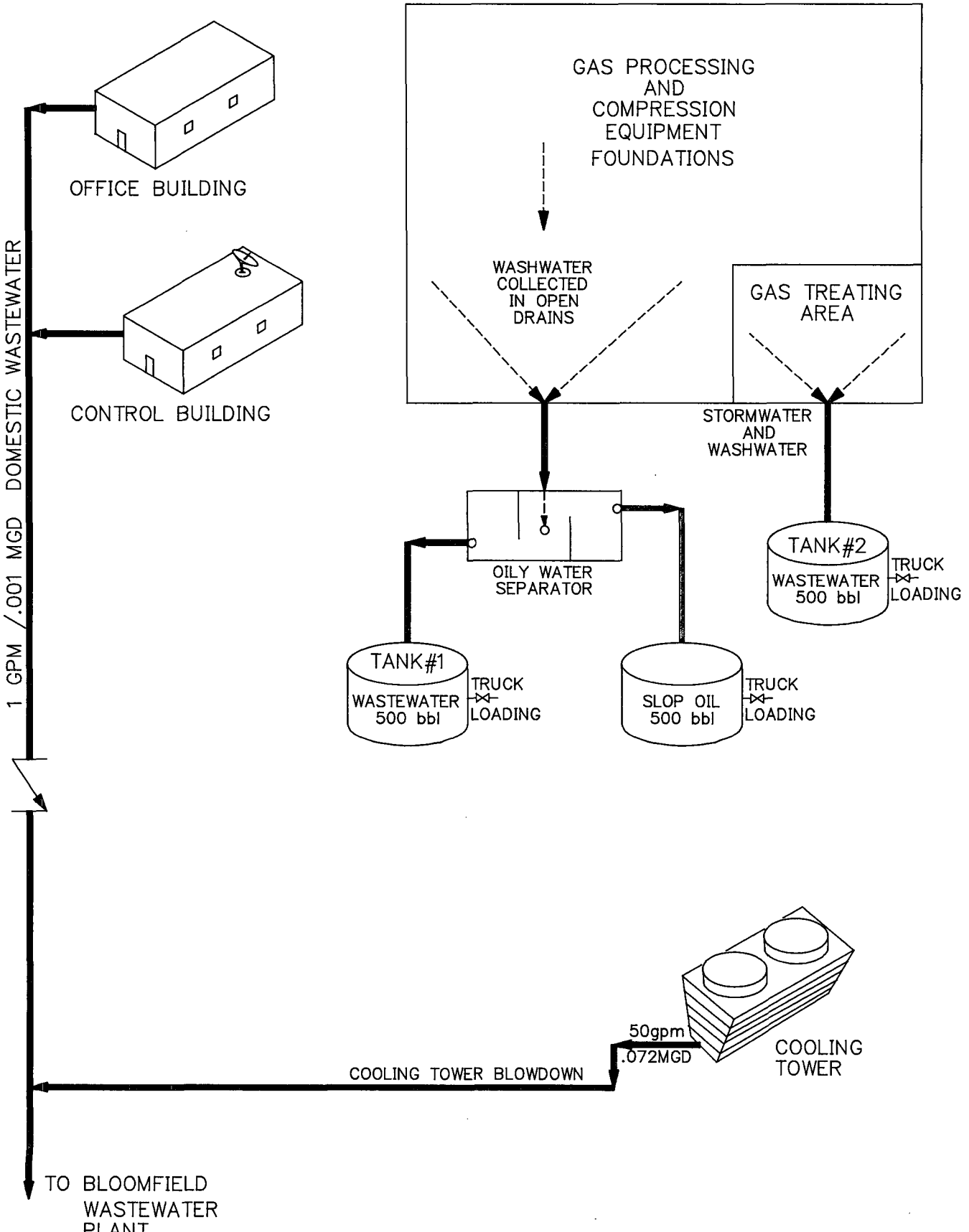
SAN JUAN BASIN GAS PLANT

PLOT PLAN

SCALE: 1" = 100'-0"
LOCATION: BLOOMFIELD, NM
FILE NO: SJPLOTPL
NG&GP-4-SJPLOTPL
REV NO A

The following section should be placed in Attachment C.

SCHEMATIC DIAGRAM
WASTEWATER DRAINAGE SYSTEM
CONOCO, INC.
SAN JUAN BASIN PLANT



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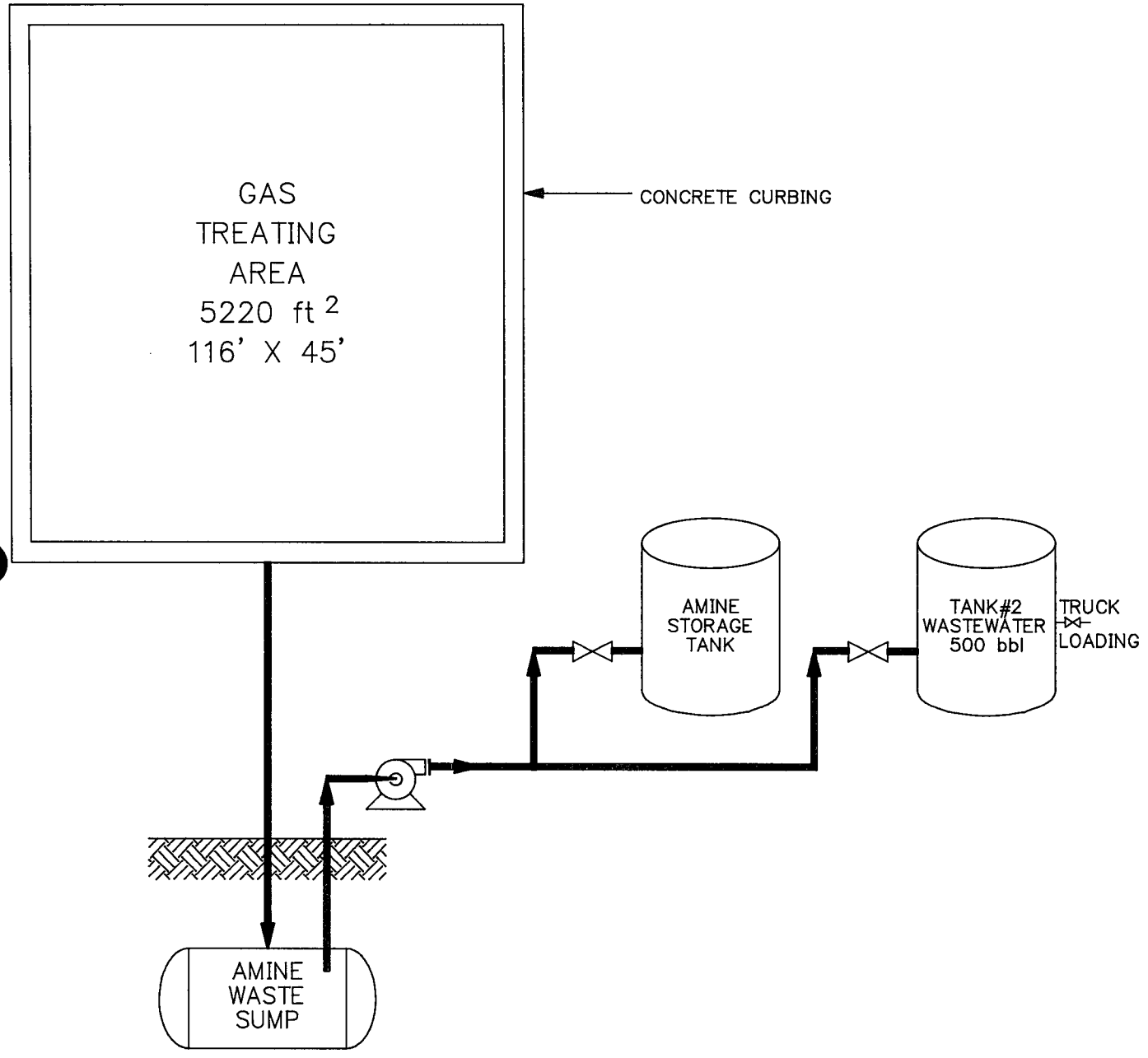
SCHEMATIC DIAGRAM
GAS TREATING AREA
WASHWATER AND STORMWATER DRAINAGE
CONOCO, INC.
SAN JUAN BASIN PLANT



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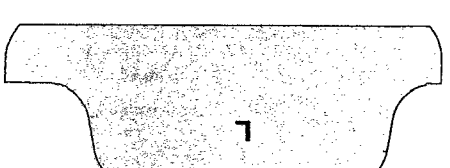
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WASTEWATER TREATMENT AGREEMENT

This Wastewater Treatment Agreement is made and entered into as of the 24th day of FEBRUARY, 1988, (the "Agreement"), between the Conoco, Inc., San Juan Gas Processing Plant ("Conoco"), and the City of Bloomfield, New Mexico ("the City").

ARTICLE I

EFFECTIVE DATES

This Agreement shall be effective as of this 24th. day of FEBRUARY, 1988, and, except as provided by Article V herein, shall remain effective for a period of three years ending therefore on the 24 day of FEBRUARY, 1991.

ARTICLE II

DEFINITIONS

As used in this Agreement, the following terms shall have the following meanings (such meanings to be equally applicable to both the singular and plural forms of the terms defined):

Section 2.1 "Agreement" means this Wastewater Treatment Agreement between Conoco and the City, dated the date written above, and all Exhibits attached hereto.

Section 2.2 "Cooling Tower Blowdown" means the stream of purged wastewater from the operation of the circulating cooling water system at the San Juan Gas Processing Plant.

Section 2.3 "Domestic Wastewater" means sanitary sewage wastes collected from the rest rooms, kitchen, and office areas

of the San Juan Gas Processing Plant.

Section 2.4 "Parties" means both Conoco and the City.

Section 2.5 "Party" means either Conoco or the City, depending upon the context in which the term is used.

Section 2.6 "Stormwater" means the water resulting from rainfall runoff from the processing and storage areas of the San Juan Gas Processing Plant.

Section 2.7 "Washwater" means water collected from the processing and storage areas of the San Juan Gas Processing Plant resulting from maintenance and cleaning activities.

Section 2.8 "Wastewater" means the combined streams of all wastewaters discharged from the San Juan Gas Processing Plant to the City of Bloomfiled, New Mexico, Wastewater Treatment System. The streams to be combined include Cooling Tower Blowdown, Domestic Wastewater, Stormwater, and Washwater.

Section 2.9 "Wastewater Treatment" means the receipt, treatment, and proper discharge of treated wastewaters by the City of Bloomfield, New Mexico, Wastewater Treatment System, in accordance with applicable regulations and permits.

Section 2.10 "Wastewater Treatment System" means the piping and treatment equipment operated by the City of Bloomfield, New Mexico for the receipt, treatment, and discharge of municipal and industrial wastewaters.

ARTICLE III

PERFORMANCE

Section 3.1 The City will provide Wastewater Treatment for Wastewater from the Conoco, Inc., San Juan Gas Processing Plant.

Section 3.2 Conoco Will discharge Wastewater to the City in accordance with the quantity limitations listed in Exhibit A and the quality limitations listed in Exhibit B.

Section 3.3 The City will provide analytical testing of wastewaters after Wastewater Treatment to assure compliance with all regulations, permit conditions, and limitations imposed upon the City. The City will provide analytical testing of Wastewater prior to treatment, according to the list of tests, and at such frequency, as shown in Exhibit C.

Section 3.4 Conoco will provide analytical testing of Wastewater discharged to the City by Conoco, according to the list of tests, and at such frequency, as shown in Exhibit D.

Section 3.5 The City of Bloomfield at the Superintendent's discretion will collect 24-Hours time Proportional Sample of water discharged from Conoco Plant to the City of Bloomfield collection system.

Sampling will be determined by past performance.

Section 3.6 Conoco will install and maintain in good working order an effluent flow meter for use by the City in determining the quantity of Wastewater discharged to the Wastewater Treatment System.

ARTICLE IV

REPORTING

Section 4.1 Conoco will provide the results of analyses perfomed under Section 3.4, above, to the City within 10 days of their receipt by Conoco. A report shall be made at least once each calendar quarter, ending on the last day of March, June, September and December of each year.

Section 4.2 The City will provide the results of analyses performed under Section 3.3, above, on the Wastewater received by the City from Conoco prior to treatment, within 30 days of the completion of analysis.

Section 4.3 Conoco will, as soon as possible after recognition, report any upset, abnormal operation, emergency, or other condition that could reasonably be expected to result in adverse impact upon the operation of the City Wastewater Treatment System.

ARTICLE V

COST REIMBURSEMENT

Section 5.1 Conoco will pay for the treatment of the Wastewater at a rate of fifteen hundred dollars ($1,500.00) per month. Quantities of Wastewater shall be measured by a flow meter installed according to Section 3.6, above, and in accordance with Section 18.54-(4) of the City Code of the City of Bloomfield (as amended).

Section 5.2 Conoco will provide sampling and analytical services as described in Sections 3.4 and 3.5, above, for

Wastewater discharged to the City free of charge.

Section 5.3 For analytical testing of Wastewater prior to treatment, as described in Section 3.3, above, Conoco shall reimburse the City according to the charges shown in Exhibit C. The City will invoice Conoco for the costs incurred as a result of such testing, and Conoco shall provide appropriate payment within 30 days of the date of receipt of the invoice.

Section 5.4 Conoco and the City shall review the monthly rate being charged on a semi-annual basis. At such time, the parties may change the rate by mutual agreement in writing. If, upon review, the parties cannot agree upon the monthly rate to be charged, either party may terminate this agreement to be effective in thirty (30) days upon written notice to the other party.

ARTICLE VI

DAMAGES

In the event Conoco discharges or causes to discharge any substance or material which results in an adverse impact upon the operation of the City Wastewater System, Conoco shall promptly pay the City all actual and consequential damages as a result of said discharge.

ARTICLE VII

ATTORNEY'S FEES

In the event the City incurs attorney's fees or costs to

enforce the terms of this Agreement or attorney's fees, costs, fines or penalties as a result of a third-party action due to the non-compliance of the terms of this Agreement by Conoco, the City shall be paid any such attorney's fees, costs, fines and penalties by Conoco.

ARTICLE VIII

ASSIGNMENT

Neither Party may assign this Agreement without prior written consent of the other Party. Neither Party shall unreasonably withhold its consent to the assignment of this Agreement.

ARTICLE IX

GOVERNING LAW

All provisions of this Agreement shall be governed by and construed in accordance with the Federal Regulations and the laws of the State of New Mexico, excluding any conflicts-of-law rule or principle that might apply the laws of another jurisdiction.

ARTICLE X

MISCELLANEOUS PROVISIONS

Section 10.1 The Section headings contained in this Agreement are for the convenience of the Parties only and shall not be interpreted as part of this Agreement.

Section 10.2 This Agreement shall not be modified except by written instrument executed by duly authorized representatives

of the respective parties.

Section 10.3 Waiver by one Party of the other's breach of any provision of this Agreement shall not be deemed a waiver of any subsequent or continuing breach of such provision or of the breach of any other provision or provisions hereof.

Section 10.4 This Agreement may be renewed or extended upon the mutual agreement and written verification of both parties.

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be duly executed as of the day and year first above written.

CITY OF BLOOMFIELD

By: R.T. Toliver
R.T. Toliver
Mayor

ATTEST:

By: Patsy Milligan
Patsy Milligan
City Clerk

CONOCO, INC.

By: William Thompson
William Thompson
Plant Supervisor

ATTEST:

By: Patsy Milligan - Notary
Comm. exp - 9-28-90

EXHIBIT A

QUANTITY LIMITATIONS
WASTEWATER DISCHARGED BY THE
SAN JUAN GAS PROCESSING PLANT
TO THE CITY OF BLOOMFIELD

	TYPICAL AVERAGE GPM*	MAXIMUM GPD*
Domestic Wastewater	1	1440
Cooling Tower Blowdown	125	180000
TOTAL	126	181440

Conoco agrees not to discharge stormwater and washwater into the City of Bloomfield collection system.

*GPM means gallons per minute
*GPD means gallons per day

EXHIBIT B

QUALITY LIMITATIONS
WASTEWATER DISCHARGED BY THE
SAN JUAN GAS PROCESSING PLANT
TO THE CITY OF BLOOMFIELD

PARAMETER		MAXIMUM CONCENTRATION mg/l
Biochemical Oxygen Demand (5-day)		200
Chemical Oxygen Demand		500
Oil and Grease (Freon Ext.)		35
Total Suspended Solids		200
Phosphates		15
Nitrates		20
pH (Standard Units)	Max.	8.6
	Min.	6.6

Total Dissolved Solids: The difference of influent total dissolved solids and the effluent total dissolved solids will not be greater than 1,000.

EXHIBIT C

ANALYTICAL TESTS TO BE DONE
BY THE CITY OF BLOOMFIELD
ON WASTEWATER FROM CONOCO
PRIOR TO TREATMENT

PARAMETERS

Analyses to be done monthly:

Biochemical Oxygen Demand
Chemical Oxygen Demand
Total Dissolved Solids
Total Suspended Solids

For the above tests, Conoco will reimburse the City $60.00 for each set of tests performed.

EXHIBIT D

ANALYTICAL TESTS
TO BE DONE BY CONOCO
ON WASTEWATER DISCHARGED
TO THE CITY OF BLOOMFIELD

	PARAMETERS
Analyses to be performed quarterly for three quarters, then annually thereafter:	Aluminum, dissolved Antimony Arsenic Barium Boron Cadmium Chromium, total Chromium, hexavalent Cobalt Copper Cyanide, total Fluoride Lead Manganese Mercury Nickel Selenium Silver Titanium, dissolved Zinc
Analyses to be performed quarterly:	Iron Phenols Total Kjeldahl Nitrogen (TKN) Oil and Grease Phosphates Nitrates Biochemical Oxygen Demand Chemical Oxygen Demand Total Dissolved Solids Total Suspended Solids