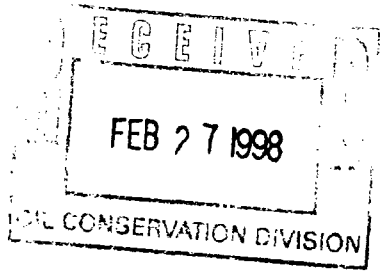
~~CTB~~ 3/9/98

CTB 507

PHILLIPS PETROLEUM COMPANY
FARMINGTON, NEW MEXICO 87401
5525 HWY. 64 NBU 3004

February 25, 1998

Re: Aztec CPD
Off-Lease Measurement of Gas



State of New Mexico
Energy, Minerals & Natural Resources Dept.
Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87505

Attn: David Catanach

Phillips Petroleum Company respectfully requests New Mexico Oil Conservation approval for off-lease measurement/commingling of gas through the subject central point of delivery (CPD) located in San Juan County, New Mexico. The original application was approved by the BLM on June 8, 1995 and the allocation method was approved by the OCD on February 13, 1998. A copy of the following documents are attached for your reference:

1) **Original application for the Aztec CPD dated May 26, 1995 and approved by the BLM on June 8, 1995.**
2) **Approval of the allocation method for the Aztec CPD by Frank Chavez of the OCD dated February 13, 1998.**

There are a total of 2 wells connected to this central delivery point.

As we discussed by phone last year, Phillips has several cases where off-lease measurement/commingling approval was obtained from the BLM without approval from the OCD in Santa Fe. This was unintentional. I will be forwarding for approval these additional applications in the coming weeks.

If you have any questions concerning this, please call me at (505) 599-3450.

Sincerely,
Phillips Petroleum Company

Doyle Pruden
Accounting Specialist

cc: Frank Chavez-OCD Aztec, NM
Danny Jaap

PHILLIPS PETROLEUM COMPANY
FARMINGTON, NEW MEXICO 87401
5525 HWY. 64 NBU 3004

May 26, 1995

Bureau of Land Management
ATTN: Mr. Mike Pool
1235 La Plata Highway
Farmington, NM 87401

Aztec CPD
Off-Lease Measurement of Gas

Dear Mr. Pool:

Phillips Petroleum Company requests approval for off-lease measurement/commingling of gas through the subject central point of delivery (CPD) located in San Juan County, New Mexico. The proposed method of allocation is exactly the same as the method that has been approved in earlier Phillips applications.

The required information for this application is attached. Phillips is the only operator participating in this CPD which contains only Fruitland Coal wells. If additional wells are proposed to be added to the system, prior approval will be obtained.

If you have any questions or if additional information is required, please contact me at 599-3460.

Sincerely,

PHILLIPS PETROLEUM COMPANY

Ed Hasely

Ed Hasely
Environmental/Regulatory Engineer

attachments
cc: Frank Chavez - OCD Aztec, NM
Sherry Richard

leh\azteccpd.mea

APPROVED

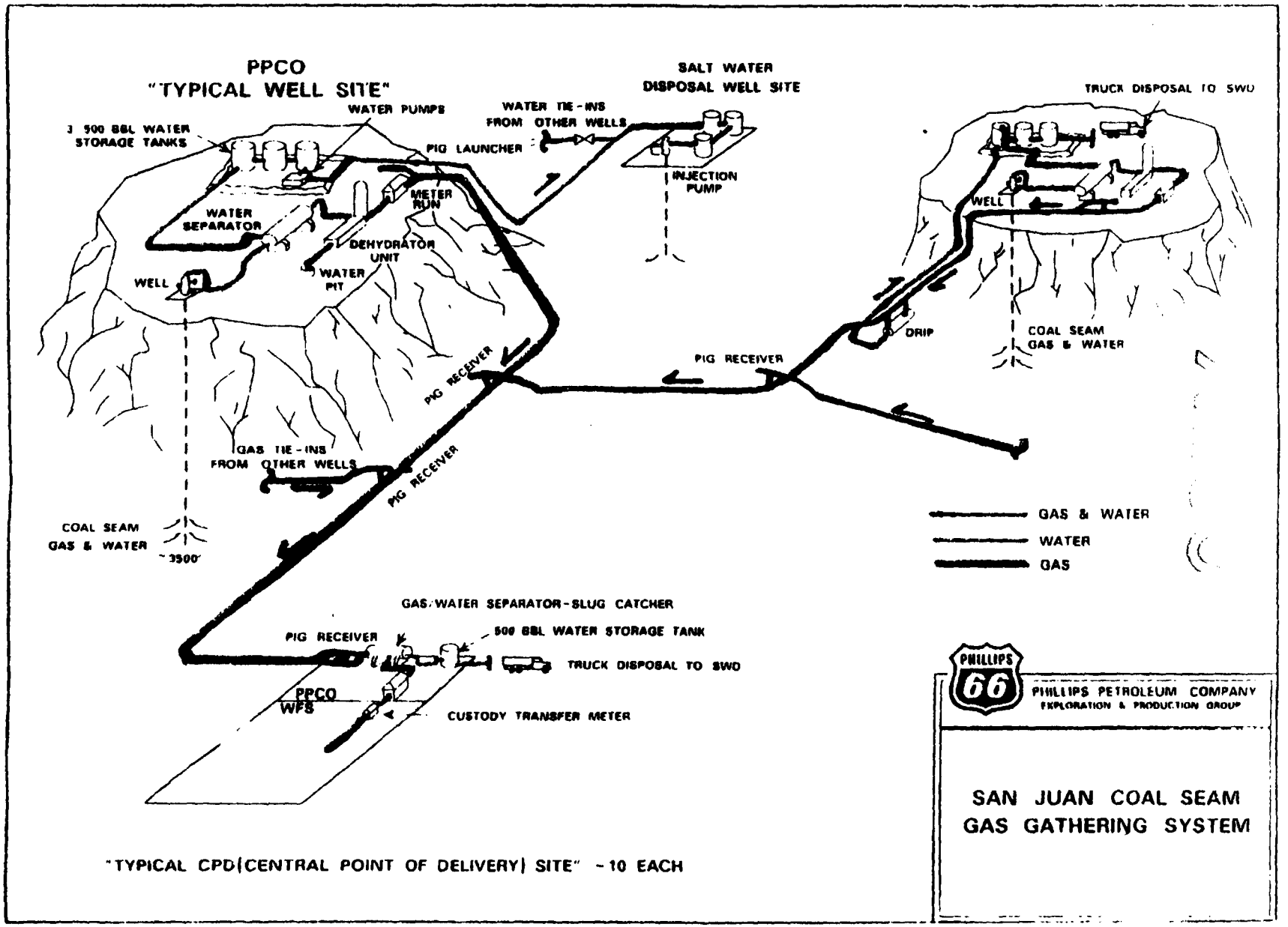
JUN 08 1995

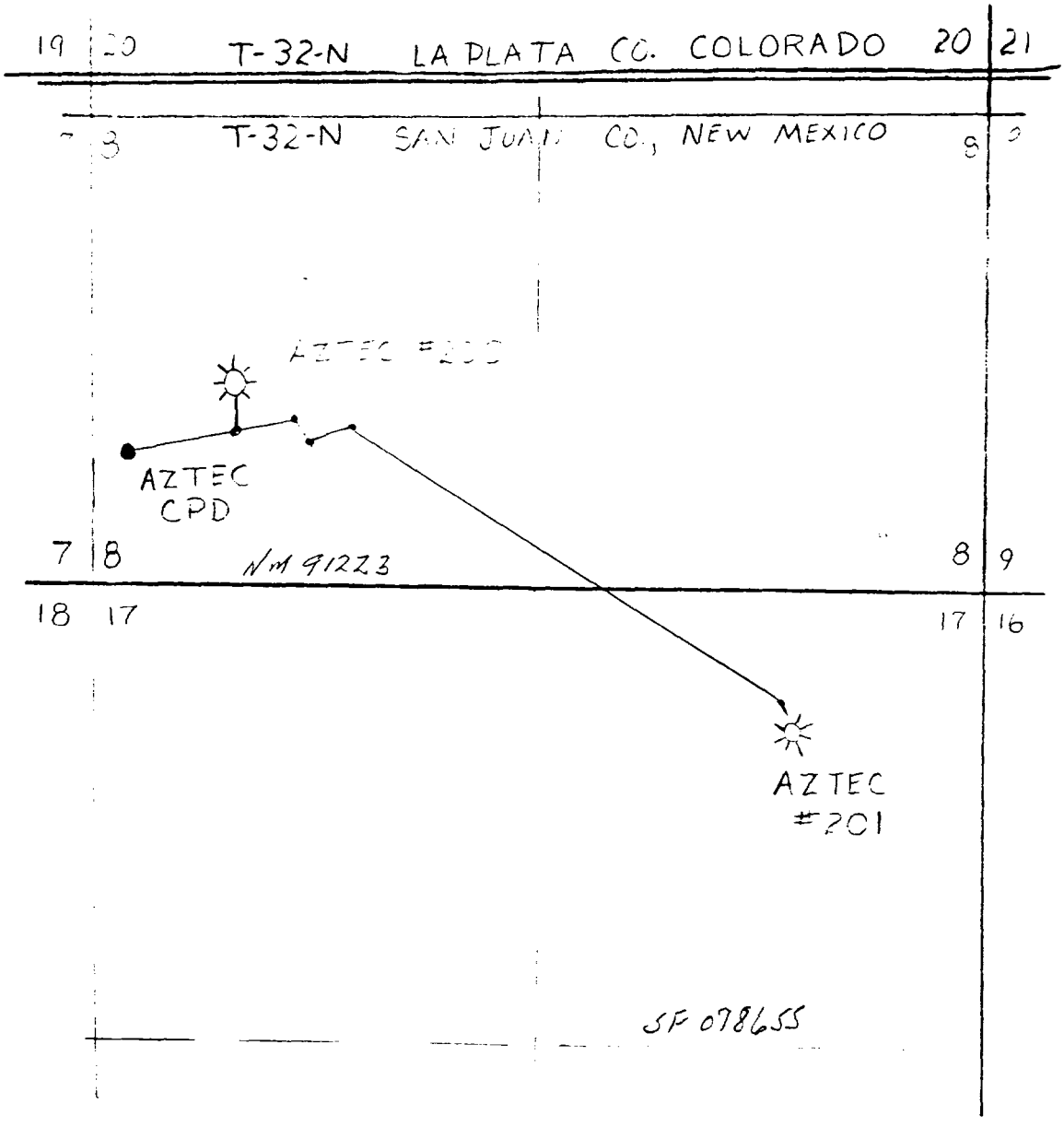
for DISTRICT MANAGER

OPERATOR

Off Lease Measurement/Commingling Application

Contents:


PPCO
"TYPICAL WELL SITE"
SALT WATER
DISPOSAL WELL SITE
TRUCK DISPOSAL TO SWD
WATER PUMPS
WATER TIE-INS
FROM OTHER WELLS
3 500 BBL WATER
STORAGE TANKS
PIG LAUNCHER
INJECTION
PUMP
METER
RUN
WATER
SEPARATOR
DEHYDRATOR
UNIT
WELL
WATER
PIT
WELL
DRIP
COAL SEAM
GAS & WATER
PIG RECEIVER
PIG RECEIVER
GAS TIE-INS
FROM OTHER WELLS
PIG RECEIVER
COAL SEAM
GAS & WATER
~3500'
GAS & WATER
WATER
GAS
GAS/WATER SEPARATOR-SLUG CATCHER
PIG RECEIVER
500 BBL WATER STORAGE TANK
TRUCK DISPOSAL TO SWD
PPCO
WFS
CUSTODY TRANSFER METER
"TYPICAL CPD(CENTRAL POINT OF DELIVERY) SITE" - 10 EACH
PHILLIPS
66
PHILLIPS PETROLEUM COMPANY
EXPLORATION & PRODUCTION GROUP
SAN JUAN COAL SEAM
GAS GATHERING SYSTEM



Sections 8 & 17 - T32N - R10W

COPY

PHILLIPS PETROLEUM COMPANY
FARMINGTON AREA

UNIT	CPD LOCATION SEC	TWN	RNG	Q/Q	WELL #	CONNECT DATE	LEASE OR AGREEMENT NUMBER	CPD OWNER
CPD AZTEC	8	32 N	10 W	SW / SW				WILLIAMS FIELD SERVICE
AZTEC	8	32N	10W	SW/SW	200	05/05/95	NMNM91223	30-045-28724
AZTEC	17	32N	10W	NE/NE	201	01/10/95	NMSF078655	30-045-28725

COPY

Description of System

Fruitland Coal wells, operated by Phillips Petroleum, are tied into a Phillips gathering system. The gathering system delivers gas to the Central Point of Delivery (CPD) which is operated by Williams Field Service (WFS). The CPD is the point of interconnection on WFS's Manzanares System where WFS receives Phillips Petroleum's gas for gathering. (See Attached Map)

Each of the wells are equipped with a separator, a dehydrator and an electronic flow gas meter. Some wells may also have a small compressor on location. The gas is produced through the separator to remove excess water. The water is stored in water storage tanks on location prior to disposal. The gas is further dried by the dehydrator prior to measurement. Fuel gas required to operate the well equipment (separator, dehydrator, compressors and tank heaters) is taken from the dehydrator prior to measurement. The gas leaving the well location is measured through Phillips Petroleum's electronic flow meter.

After the gas is measured at the individual well locations, the combined gas enters the gathering system which is operated by Phillips Petroleum. The gathering system delivers the gas to the CPD.

At the CPD, the gas enters a gas/water separator which separates any free water that drops out in the pipeline. Since all the gas flows through dehydrators on individual well locations prior to entering the gathering system, this water volume is normally negligible. The gas then goes directly through WFS's CPD meter. Williams compresses the gas downstream of the CPD meter. No gas is removed for fuel between Phillips Petroleum's allocation gas meters on the individual wells and the CPD meter.

Mechanical Integrity

All lines downstream of the meter runs on the individual well locations to the CPDs have been pressure tested with water. The lines were pressured to 900-1080 psi and held for 4 hours.

Equipment Specifications

A sheet is attached that lists the size and make of all fuel burning equipment on each well location. A separate sheet details the burner size for each type of equipment. The equipment list is subject to change as operational needs vary over time. Equipment changes will be reflected in our fuel gas calculations.

PHILLIPS PETROLEUM COMPANY

WELL NUMBER	PROD SEP MFG	SIZE	DEHY MFG	SIZE	TANK #1 MFG	TANK #2 MFG	TANK #3 MFG	RENTAI COMP. HP
CPD AZTEC								
Aztec #200	PESCO	6 MM	PESCO	6 MM	PESCO	PESCO	PESCO	
Aztec #201	PESCO	6 MM	PESCO	6 MM	PESCO	PESCO	PESCO	

BURNER SIZES

	Size (MMCF/D)	Manufacturer	Burner Size (BTU/HR)
Separators			
	2	P&A	250,000
	2	Pesco	250,000
	2	Enertek	250,000
	4	P&A	400,000
	4	Pesco	400,000
	4	Enertek	400,000
	4	American Tank	400,000
	6	P&A	450,000
	6	Pesco	450,000
Dehydrators			
	2	P&A	150,000
	2	Pesco	125,000
	4	P&A	250,000
	4	Pesco	125,000
	4	Enertek	250,000
	6	P&A	350,000
	6	Pesco	200,000
Tank Heaters			
	N/A	All	350,000

ALLOCATION DETAILS

Basically, the gas sales volume (mcf) will be allocated on a volume basis and the gas sales MMBTUs will be allocated on an MMBTU basis.

The gas sales volume (mcf) from an individual well is determined by first calculating a ratio by dividing its metered volume (mcf) by the sum of the metered volumes (mcf) of all wells connected to the CPD. This ratio is then multiplied by the total CPD volume (mcf). The gas production volume for an individual well is determined by adding the well's estimated fuel gas volume and the "Flared or Vented" gas volume to the well's allocated sales volume.

The fuel gas volumes are based upon the type and size of equipment on each well location and the number of producing days for each well. The fuel gas usage for the equipment was detailed in Phillips Petroleum's August 17, 1994 letter addressed to Mr. Mike Pool (attached).

The MMBTUs assigned to an individual well is determined by first calculating a ratio by dividing its metered MMBTUs by the sum of the metered MMBTUs of all wells connected to the CPD. This ratio is then multiplied by the total CPD MMBTUs. The individual well BTU value (MMBTU/mcf) will be calculated by dividing the allocated MMBTUs by the allocated volume (mcf).

If a section of line is blown down, the calculated volume of blowdown gas will be allocated to the affected wells. This allocated blowdown volume will be reported as "Flared or Vented" gas.

Since all the gas flows through dehydrators on individual well locations prior to entering the gathering system, water volumes at the CPD are normally negligible. If these water volumes become significant, they will be allocated to the wells.

PHILLIPS PETROLEUM COMPANY
FARMINGTON, NEW MEXICO 87401
5525 HWY 64 NBU 3004

August 17, 1994

Bureau of Land Management
1235 La Plata Hwy.
Farmington, NM 87041
Attn: Mike Pool

Gas Used on Lease As Reported
On Form MMS-3160 (Monthly
Report of Operations)

Dear Mr. Pool:

It has been brought to our attention that there are volume discrepancies between gas used on lease as reported by Phillips Petroleum Company on Form MMS-3160 and gas used on lease as calculated by Mike Wade of your office. This was found during the recent Production Accountability Inspections conducted by Mike Wade. The most notable volume discrepancy is the gas used by water tank heaters on our coal seam wells. We have not been calculating or reporting any gas used on lease volumes for these tank heaters.

I am proposing that effective with August 1994 production, Phillips Petroleum Company report gas used on lease based on the attached table for all leases that we operate in the area that your office administers. I would also like to recommend for your approval that we not be required to make retroactive corrections prior to August 1994 for gas used on lease as reported on the Form MMS-3160. The reasoning behind this request is the manpower involved for both Phillips Petroleum Company and the federal agencies to process these corrections, the relatively small gas volumes as compared to the produced volumes, and the fact that volumes are not royalty bearing.

Please let me know your decision concerning this as early as possible to allow our Production Accounting personnel time to make adjustments prior to August's production reports. My phone number is 599-3460 if you would like to discuss.

Sincerely,

PHILLIPS PETROLEUM COMPANY

Ed Hasely
Environmental/Regulatory Engineer

cc: J. W. Taylor
E. D. Pruden

lch\mms3160.gas

COPY

FUEL USE EQUIPMENT

(All factors at 15.025 Pressure Base)

SEPARATORS	≤ 2 MM	-	4.3	mcf/producing day
	4 MM	-	6.9	mcf/producing day
	6 MM	-	7.7	mcf/producing day
DEHYDRATORS	≤ 2 MM	-	2.4	mcf/producing day
	4 MM	-	3.2	mcf/producing day
	6 MM	-	4.7	mcf/producing day
	10 MM	-	6.0	mcf/producing day
TANK HEATERS		-	1.8	mcf/producing day/tank

Note: Anticipate tank heaters to operate from November through March, but this may vary year to year.

COMPRESSORS	50 HP	-	8	mcf/producing day
	80 HP	-	13	mcf/producing day
	100 HP	-	16	mcf/producing day
	120 HP	-	19	mcf/producing day
	165 HP	-	26	mcf/producing day

BLOWDOWN GAS

Fruitland Sand & Mesaverde	-	0.7	mcf/minute of blowdown
Dakota	-	1.0	mcf/minute of blowdown

Estimate of Blowdown Volume

Dakota Formation

Assumptions: Ideal Gas Law (Z = 1)
$2\frac{3}{8}$" Tubing at 7200 ft
Pressure = 350 psig
Temperature = Constant 60°
Two Tubing Volumes for Blowdown
Average Blowdown = 8 minutes

$P_1 V_1 = P_{sc} V_{sc}$

$P_1 = 364$ psia
$P_{sc} = 14.7$ psia
$V_1 = 2(7200')(.0217\ ft^3/ft)$
$= 312\ ft^3$

$V_{sc} = \left(\frac{364}{14.7}\right)(312) = 7726\ ft^3 \approx 7.7$ MCF

7.7 MCF in 8 minutes $\approx$ **1 MCF/Min**

Dakota Formation = 1.0 MCF/Min

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3/16/

Estimate of Blowdown Volumes
Mesa Verde & Fruitland Sand Formations

Assumptions: Ideal Gas Laws ($Z = 1$)
$2\frac{3}{8}$" Tubing at 6000 ft.
Pressure: 300 psig
Temperature: Constant 60°
Two Tubing Volumes for Blowdown
Averge Blowdown: 8 minutes

$P_i V_i = P_{sc} V_{sc}$ $\quad P_i = 314$ psia

$P_{sc} = 14.7$ psia

$V_i = 2(6000')(.0217\ ^{ft^3}/_{ft}) = 260\ ft^3$

$V_{sc} = \left(\frac{314}{14.7}\right)(260) = 5554\ ft^3 \approx 5.6$ MCF

5.6 MCF in 8 minutes = **0.7 MCF/Min**

Mesa Verde & Fruitland Sand = 0.7 MCF/Min

PY

LEH
3/16/9.

Monthly Production

Sheets are attached that show the estimated 1995 production and BTU content of the gas for each of the wells connected to the CPD. Since all the gas is produced from wells completed in the same formation and in the same general area, the BTU contents of the gas does not vary substantially.

Evidence on Federal Royalties

Gas volumes and MMBTU quantities are allocated to the wells from the CPD because the most accurate volumes and MMBTU quantities available are from the CPD. The reasons for this, such as measurement errors, stable flow rates, BTU content, etc., have been discussed on numerous occasions. The inherently greater accuracy of the CPD volume, as compared to the sum of the individual well metered volumes, warrants the acceptance of the CPD volume as representative of the total sales volume from the individual wells. It is then necessary only to reduce the total sales volume to its individual components through the proposed allocation method.

As described under the "Allocation Details" section, allocation of gas sales (MMBTUs) to individual wells is performed on an MMBTU basis. In this manner, any slight BTU difference in gas from individual wells is accounted for. Following this method allows Federal royalties to be calculated from the most accurate volumes.

Economic Justification

The CPD system utilizing off-lease gas measurement will extend the economic life of all affected wells due to the reduction of back pressure on the wells. Without the system, the gas would have been produced into a conventional gas pipeline operated at a substantially higher pressure. The higher pipeline pressure would decrease the recoverable reserves from each well or force Phillips to install compressors on each well location. Either scenario will reduce the economic life of the wells.

1995 PROJECTED CPD VOLUMES

cpd95pjt.wk3

CPD NUMBER	UNIT	WELL	YEARLY MMCF	WELL BTU VALUE
AZTEC CPD	Aztec	200	* 1900	0.9310
	Aztec	201	1460	0.9320
		TOTAL	3,360	

Note: * Volume is from 5/5/95 through yearend 1995.

PHILLIPS PETROLEUM COMPANY
FARMINGTON AREA

UNIT	WELL #	PIPELINE WATER	TRUCKED WATER	SWD LOCATION
CPD AZTEC				
AZTEC	200		X	COMMERCIAL DISPOSAL
AZTEC	201		X	COMMERCIAL DISPOSAL

PY

October 19, 1994

PHILLIPS PETROLEUM COMPANY
San Juan Basin, New Mexico
Off-Lease Measurement of Gas Applications

STATEMENT: The allocation meters are calibrated and gas samples are collected in accordance with Onshore Oil and Gas Order No. 5.

NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
AZTEC DISTRICT OFFICE
AZTEC NM 87410
(505) 334-6178 FAX: (505) 334-6170
http:\\emnrd.state.nm.us\ocd\District III\3distric.htm

GARY E. JOHNSON
GOVERNOR

Jennifer A. Salisbury
CABINET SECRETARY

February 13, 1998

Doyle Pruden
Phillips Pet Co
5525 Hwy 64 NBU 3004
Farmington NM 87401

Re: Aztec CPD
San Juan 29-6 CPD #1 and #2
32-8 CPD #1, #2, and #3

Dear Doyle:

Your recommended allocation procedures for the listed CPD's are hereby approved.

Sincerely,

Frank T. Chavez
District Supervisor

FTC\sh

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