

~~SECRET~~

ROBERT L. BAYLESS

P. O. BOX 168  
FARMINGTON, NM 87499

OIL CONSERVATION DIVISION  
RECEIVED

FAX NO.  
(505) 326-6911

1993 JUL 26 AM 10:27  
(505) 526-2659

July 22, 1993

William J. Lemay, Chairman  
New Mexico Oil Conservation Division  
P.O. Box 2088  
Santa Fe, New Mexico 87501

Case 10831

RE: Request for Administrative  
Approval to Downhole Commingle  
Robert L. Bayless  
Simms Com #1  
Unit J, Sec. 13, T30N R4W  
Cabresto Gallup and East Blanco  
Pictured Cliffs Fields  
Rio Arriba County, New Mexico

Dear Mr. Lemay:

By this letter, Robert L. Bayless requests administrative approval to commingle production from the Gallup and Pictured Cliffs formations within the wellbore of the Simms Com #1 well. This well was drilled by Southland Royalty Company in July of 1981. Production casing, (5-1/2") was set and cemented at 8731 feet, which is the total depth of the well. The Dakota interval, (8367-8683 ft.) was tested and abandoned by setting a cast iron bridge plug at 8300 feet.

The Gallup interval (7541-7634 ft.) was perforated and fracture stimulated with 87,630 gallons of 30# crosslinked gelled fluid containing 65,000 lbs. of 20-40 sand. Southland tested this zone in September of 1981 by conducting a 3 hour flow test which resulted in an AOF of 1251 MCFD. This AOF test is presented as Attachment #1.

Southland also tested the Pictured Cliffs potential in this well. In October of 1983, a drillable bridgeplug was set at 4150 feet (this is the current PBTD of this well). The interval 3709-3715 was perforated and fracture stimulated with 31,710 gallons of 30# crosslinked gelled fluid containing 25,000 lbs. of 20-40 sand. Bayless tested this zone in July of 1993 by conducting a 3 hour flow test which resulted in an AOF of 508 MCFD. This AOF test is presented as Attachment #2.

The flow test results from each zone indicate that both have marginal gas production capability. The actual gas sales rate from each zone will be substantially lower than the AOF test rates due to line pressure which averages over 300 psi in the vicinity of this well. It is quite possible that a compressor

will be needed for the Simms Com #1 to produce into the sales line at all. If commingling is granted in this wellbore, the combined rates from these two zones will have a better chance of producing against higher line pressure without compression.

The quality of the gas produced from the Gallup and Pictured Cliffs formations is very similar in this area. The average gas gravity for the Pictured Cliff zone in this area is .652 with an average BTU value of 1154, while the average gas gravity for the Gallup interval is .628, with an average BTU of 1072. The gas gravities used for each zone were taken from the closest offsetting wells having this data available. A summary of this data is presented in Attachment #3. The small differences seen in gas gravity and BTU content from these surrounding wells indicate that the gas produced from both zones is very similar and should not cause any damage should crossflow occur between zones.

From the AOF tests discussed previously, the 1065 psi surface shutin pressure taken on the Pictured Cliff zone corresponds to a calculated bottomhole pressure of 1176 psi at 3712 ft. (mid perf of the P.C. zone). The 2431 psi surface shutin pressure taken on the Gallup zone corresponds to a calculated bottomhole pressure of 2955 psi at 7588 ft. (mid perf of the Gallup interval). Even though the Pictured Cliffs bottomhole pressure is less than 50% of the Gallup bottomhole pressure, the gas from both zones is very similar, and any crossflow occurring between zones will cause no damage to the formation.

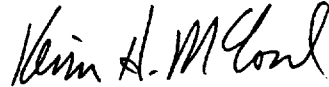
The production from the Pictured Cliffs and Gallup zones could be allocated using the ratios of the rate of flow calculated during the AOF tests performed by Bayless. Using these tests, 29% of the commingled gas production would be allocated to the Pictured Cliffs formation, while 71% would be allocated to the Gallup formation. This allocation formula is shown in Attachment #4. The value of the gas from each zone is approximately the same, so the commingling of this natural gas will not decrease its sales value.

Attachment #5 is an acreage plat showing the ownership of leases in the vicinity of the Simms Com #1 well. The ownership (working interest, royalty, and overriding royalty) of both the Pictured Cliffs and Gallup formations is common in the Simms Com #1 well. The leases surrounding this well are owned by Bayless, Meridian Oil, or Schalk Development. These companies have been contacted by certified mail of this commingling application. An example of the letter sent to them is provided as Attachment #6. Copies of the Return Receipt slips are presented as Attachment #7. By copy of this application, we have also advised the BLM of our plans to downhole commingle the Gallup and Pictured Cliffs formation in this well.

The production tests taken on the Pictured Cliffs and Gallup zones indicate that gas production from this well will be low,

resulting in marginal gas reserves and economics for the well. Further completion and operational costs on this well could be substantially reduced by approval of downhole commingling in this well. We would appreciate your administrative approval of this application.

Sincerely,

A handwritten signature in black ink, appearing to read "Kevin H. McCord". The signature is written in a cursive, flowing style.

Kevin H. McCord  
Petroleum Engineer

Attachments

## OIL CONSERVATION DIVISION

STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENTP. O. BOX 2088  
SANTA FE, NEW MEXICO 87501Form C-122  
Revised 10-1-78

## MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Type Test <input checked="" type="checkbox"/> Initial <input type="checkbox"/> Annual <input type="checkbox"/> Special				Test Date 9-22-81	
Company Southland Royalty Company				Connection Northwest Pipeline Corporation	
Pool Undesignated				Formation Gallup	
Completion Date 9-11-81		Total Depth 8720'		Plug Back TD 8300'	
Elevation 7023' GL		Farm or Lease Name Simms Federal			
Csq. Size 5.500	Wt. 15.5#	d 4.950	Set At 8731'	Perforations: From To	
Tub. Size 2.375	Wt. 4.7#	d 1.995	Set At 7588'	Perforations: From 7560' To 7634'	
Type Well - Single - Bradenhead - G.G. or G.O. Multiple Single				Packer Set At -----	
Producing Thru Tubing		Reservoir Temp. °F P		Baro. Press. - P <sub>a</sub> 12.2	
L		H		County Rio Arriba	
G <sub>g</sub> .700		% CO <sub>2</sub>		State New Mexico	
% N <sub>2</sub>		% H <sub>2</sub> S		Prover	
Meter Run		Taps			

FLOW DATA							TUBING DATA		CASING DATA		Duration of Flow
NO.	Prover Line Size	X	Orifice Size	Press. p.s.i.g.	Diff. h <sub>w</sub>	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	Temp. °F	
SI							2420		2431		
1.	2"	X	3/4"				354		758		1 hr
2.							209		750		2 hrs
3.							90		703		3 hrs
4.											
5.											

RATE OF FLOW CALCULATIONS							
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P <sub>m</sub>	Flow Temp. Factor F <sub>t</sub>	Gravity Factor F <sub>g</sub>	Super Compress. Factor, F <sub>pr</sub>	Rate of Flow Q, Mscf
1	12.365		102.2	1.0000	.9258	1.0000	1170
2.							
3.							
4.							
5.							

NO.	P <sub>r</sub>	Temp. °R	T <sub>r</sub>	Z	Gas Liquid Hydrocarbon Ratio	A.P.I. Gravity of Liquid Hydrocarbons	Specific Gravity Separator Gas	Specific Gravity Flowing Fluid	Critical Pressure P.S.I.A.	Critical Temperature °R
1.										
2.										
3.										
4.										
5.										

P <sub>c</sub> 2443.2		P <sub>c</sub> <sup>2</sup> 5969226.2		(1) $\frac{P_c^2}{P_r^2 - P_w^2} = 1.0937$		(2) $\left[ \frac{P_c^2}{P_r^2 - P_w^2} \right]^n = 1.0695$	
NO.	P <sub>r</sub> <sup>2</sup>	P <sub>w</sub>	P <sub>w</sub> <sup>2</sup>	P <sub>c</sub> <sup>2</sup> - P <sub>w</sub> <sup>2</sup>			
1		715.2	511511.0	5457715			
2							
3							
4							
5							

Absolute Open Flow 1251 Mcf @ 15.025 Angle of Slope  $\theta$  Slope, n .75

Remarks:

Approved By Division Conducted By: Calculated By: Checked By:

# ATTACHMENT # 2

Submit in duplicate to  
appropriate district office  
See Rule 401 & Rule 1122

State of New Mexico  
Energy, Minerals and Natural Resources Department

Form C-122  
Revised 4-1-91

## OIL CONSERVATION DIVISION

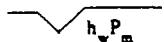
P.O. Box 2088  
Santa Fe, New Mexico 87504-2088

### MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Operator Robert L. Bayless				Lease or Unit Name Simms			
Type Test <input checked="" type="checkbox"/> Initial <input type="checkbox"/> Annual <input type="checkbox"/> Special				Test Date 7/20/93		Well No. 1	
Completion Date 10/23/83		Total Depth 8731		Plug Back TD 4150 (B.P.)		Elevation 7023' GL	
Csg. Size 5 1/2"		Wt. d 15.5#		Set At 4.950"		Perforations: From: 3709 To: 3715	
Tbg. Size 2 3/8"		Wt. d 4.7#		Set At 1.995"		Perforations: From: To:	
Type Well - Single - Bradenhead - G.G. or G.O. Multiple Single				Packer Set At None		Formation Pictured Cliffs	
Producing Thru Tubing		Reservoir Temp. °F 110		Mean Annual Temp. °F		Baro. Press. P 12.0 (est.)	
L		H		Gg est .65		% CO <sub>2</sub>	
				% N <sub>2</sub>		% H <sub>2</sub> S	
				Prover		Meter Run    Taps	

FLOW DATA						TUBING DATA		CASING DATA		Duration of Flow
NO.	Prover Line Size	Orifice Size	Press. p.s.i.g.	Diff. h <sub>w</sub>	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	Temp. °F	
SI	over 9 years!					1060		1065		
1.	2" x .750					20	60°	130		3 hrs.
2.										
3.										
4.										
5.										

#### RATE OF FLOW CALCULATIONS

NO.	COEFFICIENT (24 HOUR)		Pressure P <sub>m</sub>	Flow Temp. Factor Ft	Gravity Factor F <sub>g</sub>	Super Compress. Factor, F <sub>pv</sub>	Rate of Flow Q, Mcfd
1.	12.365		32	1.0000	1.240	1.020	500
2.							
3.							
4.							
5.							

NO.	P <sub>r</sub>	Temp. °R	T <sub>r</sub>	Z	Gas Liquid Hydrocarbon Ratio	Mcf/bbl.
1.	0.05		1.23	0.962	A.P. I. Gravity of Liquid Hydrocarbons	Deg.
2.					Specific Gravity Separator Gas	XXXXXXXXXX
3.					Specific Gravity Flowing Fluid	XXXXXX
4.					Critical Pressure	P.S.I.A.    P.S.I.A.
5.					Critical Temperature	R    R

P <sub>c</sub> 1077		P <sub>c</sub> <sup>2</sup> 1,159,929	
NO.	P <sub>i</sub> <sup>2</sup>	P <sub>w</sub>	P <sub>w</sub> <sup>2</sup>
1.		142	20,164
2.			
3.			
4.			
5.			

$$1) \frac{P_c^2}{P_c^2 - P_w^2} = 1.0177 \quad (2) \left[ \frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.0150$$

$$AOF = Q \left[ \frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 508$$

Absolute Open Flow	508	Mcf/d @ 15.025	Angle of Slope θ	Slope, n	.85
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Remarks:

Approved By Division	Conducted By: Cecil Bell	Calculated By: Kevin McCord	Checked By:
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ATTACHMENT #3

ROBERT L. BAYLESS  
SIMMS COM #1

SUMMARY OF GALLUP AND PICTURED CLIFFS GAS ANALYSIS

NOTE: Gas analysis were compared from closest offset well  
information found.

GALLUP FORMATION

<u>Well</u>	<u>Operator</u>	<u>Location (T-R-S-U)</u>	<u>Gas Specific Gravity</u>	<u>Gas BTU Content</u>
1. San Juan 29-4, Unit #24	Meridian	29-4- 8-B	.611	1055
2. Burns Ranch #1	Meridian	29-4-13-A	.683	1181
3. Chicosa Canyon #1	Meridian	31-4-35-M	<u>.591</u>	<u>981</u>
AVERAGE			.628	1072

PICTURED CLIFFS FORMATION

<u>Meter</u>	<u>Well Locations</u>	<u>Gas Specific Gravity</u>	<u>Gas BTU Content</u>
1. Bayless Meter #1	T30N R3W - All (20 wells)	.653	1156
2. Bayless Meter #2	T29N R3W - N1/2 (2 wells)	<u>.650</u>	<u>1152</u>
AVERAGE		.652	1154

ATTACHMENT #4

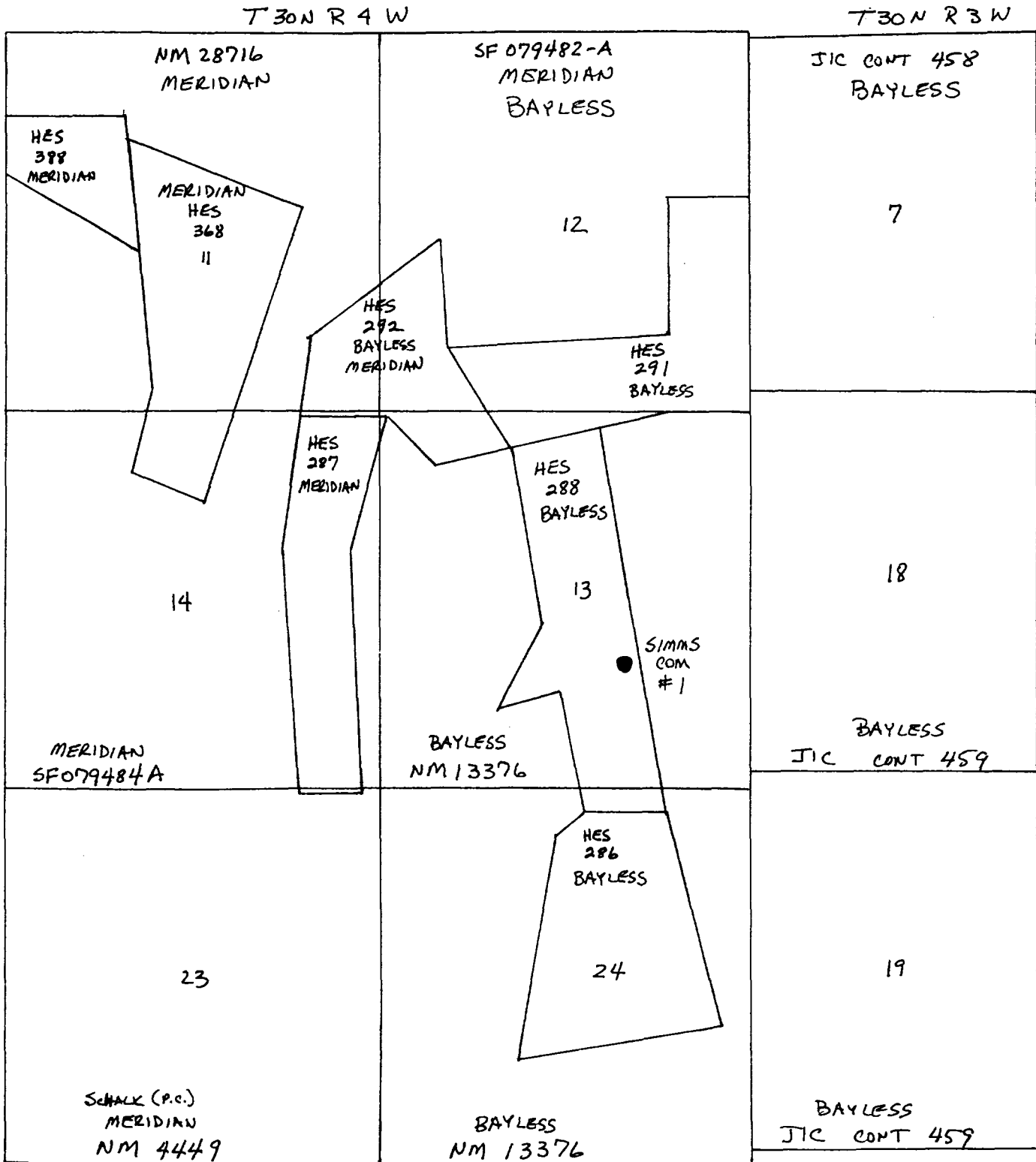
ROBERT L. BAYLESS  
SIMMS COM #1

PROPOSED ALLOCATION FORMULA

NOTE: Rates calculated after 3 hour flow through a 3/4" choke - one point backpressure test.

<u>Formation</u>	<u>AOF (Mcf/d)</u>	<u>% of Total Flow</u>
East Blanco Pictured Cliffs	508	29%
Cabresto Gallup	<u>1251</u>	<u>71%</u>
Total	1759	100%

ROBERT L. BAYLESS  
SIMMS AREA  
LEASES AND OWNERSHIP





ROBERT L. BAYLESS

P. O. BOX 168  
FARMINGTON, NM 87499

FAX NO  
(505) 326-6911

OFFICE NO  
(505) 326-2659

July 22, 1993

Meridian Oil Company  
P.O. Box 4289  
Farmington, N.M. 87499

RE: Proposed Downhole Commingling  
Robert L. Bayless  
Simms Com #1  
Unit J, Sec. 13, T30N, R4W  
Rio Arriba County, New Mexico

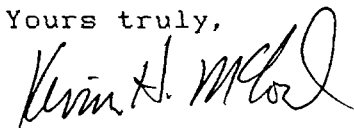
Gentlemen:

Our records indicate your company owns offset acreage to our Simms Com #1 well. We plan to downhole commingle the Gallup and Pictured Cliffs formations in this well and have requested the New Mexico Oil Conservation Division to administratively approve this commingling of production. A copy of this application is enclosed.

In order to obtain approval from the Oil Conservation Division Director, we must obtain waivers of objection from offset lease holders. If you have no objection to our plans, please execute the waiver portion of this letter and return one copy to us at the above address and another copy to the Division Director, Oil Conservation Division, P.O. Box 2088, Santa Fe, NM 87501.

If you require additional information, please advise.

Yours truly,



Kevin H. McCord

I have no objection to the above stated plans.

Meridian Oil Company

By: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

Is your RETURN ADDRESS completed on the reverse side?

**SENDER:** Complete items 1 and 2 when additional services are desired, and complete items 3 and 4. Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1. ☐ Show to whom delivered, date, and addressee's address. (Extra charge) 2. ☐ Restricted Delivery (Extra charge)

3. Article Addressed to:  Meridian Oil company PO Box 4289 Farmington NM 87499	4. Article Number P 081 445 770 Type of Service: <input type="checkbox"/> Registered <input type="checkbox"/> Insured <input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD <input type="checkbox"/> Express Mail <input checked="" type="checkbox"/> Return Receipt for Merchandise Always obtain signature of addressee or agent and <u>DATE DELIVERED</u> .
5. Signature — Addressee X	8. Addressee's Address (ONLY if requested and fee paid)
6. Signature — Agent X	
7. Date of Delivery	

PS Form 3811, Apr. 1989

\* U.S.G.P.O. 1989-238-815

DOMESTIC RETURN RECEIPT

Thank you for using  
Return Receipt Service.

Your RETURN ADDRESS  
printed on the reverse side?

**PS Form 3800, June 1991**

Sent to  
Meridian Oil Company  
Street and No  
P.O. Box 4289  
P.O. State and ZIP Code  
Farmington NM 87499

Postage \$

Certified Fee

Special Delivery Fee

Restricted Delivery Fee

Return Receipt Showing to Whom & Date Delivered 1.00

Return Receipt Showing to Whom, Date, and Addressee's Address

TOTAL Postage & Fees \$

Postmark or Date

**Receipt for Certified Mail**  
No Insurance Coverage Provided  
Do not use for International Mail  
(See Reverse)

P 081 445 770

**PS Form 3800, June 1991**

Sent to  
Schalk Development Company  
Street and No  
P.O. Box 25825  
P.O. State and ZIP Code  
Albuquerque NM 87125

Postage \$

Certified Fee

Special Delivery Fee

Restricted Delivery Fee

Return Receipt Showing to Whom & Date Delivered 1.00

Return Receipt Showing to Whom, Date, and Addressee's Address

TOTAL Postage & Fees \$

Postmark or Date

**Receipt for Certified Mail**  
No Insurance Coverage Provided  
Do not use for International Mail  
(See Reverse)

P 081 445 771

**SENDER:** Complete items 1 and 2 when additional services are desired, and complete items 3 and 4. Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1. ☐ Show to whom delivered, date, and addressee's address. (Extra charge) 2. ☐ Restricted Delivery (Extra charge)

3. Article Addressed to:  Schalk Development Company PO Box 25825 Albuquerque NM 87125	4. Article Number P 081 445 771 Type of Service: <input type="checkbox"/> Registered <input type="checkbox"/> Insured <input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD <input type="checkbox"/> Express Mail <input checked="" type="checkbox"/> Return Receipt for Merchandise Always obtain signature of addressee or agent and <u>DATE DELIVERED</u> .
5. Signature — Addressee	8. Addressee's Address (ONLY if requested and fee paid)

Thank you for using  
Return Receipt Service