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Notification and/or Concurrent Approval by BLM or SLO U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office [E] For all of the above, Proof of Notification or Publication is Attached, and/or, [F] Waivers are Attached [3] SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED ABOVE.

Offset Operators, Leaseholders or Surface Owner

Application is One Which Requires Published Legal Notice

CERTIFICATION: I hereby certify that the information submitted with this application for administrative

approval is accurate and complete to the best of my knowledge. I also understand that no action will be taken on this application until the required information and notifications are submitted to the Division. .d. ..

Note: States	nent must be completed by an individual with .	managerial and/or supervisory capa	city.
Pat Darden	2. Fataklah	Sr. Engineer	11/07/11
rint or Type Name	Signature	Title	Date
BEFORE TH	E OIL CONSERVATION DIVISION Santa Fe, New Mexico	palarden @ logac e-mail Address	ylp.com
	Exhibit No. 4	c-man Address	•

[2]

[B]

[C]

[D]

Exhibit No. 4 Submitted by:

LEGACY RESERVES OPERATING LP

Hearing Date: April 26, 2012

STATE OF NEW MEXICO ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, New Mexico 87505

FORM C-108 Revised June 10, 2003

APPLICATION FOR AUTHORIZATION TO INJECT

	PURPOSE: Secondary Recovery Pressure Maintenance X Disposal Storage Application qualifies for administrative approval? X Yes No
П.	OPERATOR: Legacy Reserves, Operating LP
	ADDRESS: Box 10848 Midland, TX 79702
	CONTACT PARTY: Pat Darden, P.E. PHONE: 432-689-5237
т.	WELL DATA: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.
IV.	Is this an expansion of an existing project? Yes X No If yes, give the Division order number authorizing the project:
V.	Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.
VI.	Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.
VII.	Attach data on the proposed operation, including:
,	 Proposed average and maximum daily rate and volume of fluids to be injected; Whether the system is open or closed; Proposed average and maximum injection pressure; Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and, If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).
*VIII	Attach appropriate geologic data on the injection zone including appropriate lithologic detail, geologic name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such sources known to be immediately underlying the injection interval.
IX.	Describe the proposed stimulation program, if any.
*X.	Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted).
*XI.	Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.
XII.	Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.
XIII.	Applicants must complete the "Proof of Notice" section on the reverse side of this form.
XIV.	Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.
<i>‡</i>	NAME: Pat Darden TITLE: Sr. Engineer SIGNATURE: DATE: 110711.
	E-MAIL ADDRESS:pdarden@legacylp.com If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be resubmitted. Please show the date and circumstances of the earlier submittal:
DISTE	UBUTION: Original and one copy to Santa Fe with one copy to the appropriate District Office

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ATTACHMENT TO APPLICATION C-108

Andrew Arnquist Estate #2 (API 30-015-21942) Unit A, Sect. 29, Tws. 18 S., Rng. 26 E. Eddy Co., NM

III. WELL DATA

- A. 1) See injection well data sheets and attached schematics.
 - 2) See injection well data sheets and attached schematics.
 - 3) 2 7/8" plastic coated tubing.
 - 4) Baker Tension Packer.
- B. 1) Injection formations is the Cisco Canyon.
 - 2) Injection interval perforations from 7750' to 8100'.
 - 3) Well was P & A, will re-enter and perforate.
 - 4) The next higher producing zone is the Abo at approximately 4440'.

 The next lower producing zone is the Strawn at approximately 8200'.
- IV. NO.
- V. MAP ATTACHED.
- VI. LIST OF WELLS AND DATA ATTACHED.
- VII. Legacy plans to re-enter the P & A Andrew Arnquist #2. Will drill out plug to original TD of 3000', squeeze old San Andres and Yeso perfs and deepen to 8200'. Legacy will run 5 ½" casing to TD and attempt to circulate cement. (run temp. survey)

We propose to perforate 5 ½" from 7750' to 8100', acidize as needed. Run in and set 2 7/8" IPC packer at 7700' and begin injecting into Cisco Canyon.

- 1) Plan to inject 5000 bpd with a maximum pressure of 1200# or whatever OCD allows.
- 2) Water will be from Legacy's own production from the Yeso.
- 3) Injection will be a closed system.
- 4) Produced water analysis attached.

VIII. The proposed disposal formation is interbedded shale and limestone. The primary geologic name is the Cisco Canyon found from 7100' to 8200'.

The fresh water formation in the area is the Ogallala which ranges in thickness from 100' to 160'. Analysis of water well attached.

- IX. ACID AS NEEDED.
- X. WILL RE-LOG AND SEND UPON RE-ENTRY.
- XI. ATTACHED.
- XII. I, Pat Darden, have examined all available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zones and any underground source of drinking water pertaining to this well.
- XIII. ATTACHED.

Side 1	INJEC.	HON WELL DATA SHEET		,	
OPERATOR: Legac	y Reserves Operation	18		· .	
	R: Androw Arnquist				
WELL LOCATION: 32	, ,	A UNIT LETTER	29 SECTION	78 TOWNSHIP	. 36 RANGE
<u>WELLBOI</u>	RE SCHEMATIC		WELL CO	DNSTRUCTION DAT Casing	<u>'A</u>
COMPLETION SCHEMATIC SWD FORM DEPTH 13.34 3.44 5.44 5.44 700 g.F. San Andrea 875	APNUM, 30-014-21642 CREPATORILLEGACY RESERVES OPERATING, LP TEASPWEEL PARTIES WARROURS ESTATE WELL NO. 2 SWYLCO U.S. A SEC. 29 TWN: 183 RNG: 25E 330 FEL 194 BHDG. U.S. A SEC. 29 TWN: 183 RNG: 26E 330 FEL TO 1200 PSD KB 3438 DF FOOL, PRANSCO DRAW; SAN ANDRES-YESO Comp. 11/25/9178 POOL PENASCO DRAW; SAN ANDRES-YESO Comp. 14/25/9179 PERASCO DRAW; SAN ANDRES-YESO COMP. 14/25/9179 PENASCO DRAW; SAN ANDRE	Hole Size: 17.5 Cemented with: 360	SX.	Casing Size: 13	ft ³
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,	•		V.	et toHole; indicate which)	



Perforated or Open Hole; indicate which)

INJECTION WELL DATA SHEET

Γubi	ng Size: 27 Lining Material: <u>IPC</u>	
Турє	e of Packer: Baker Tension Type	
Pack	ter Setting Depth: 7700	
Othe	er Type of Tubing/Casing Seal (if applicable): NONE	_
	Additional Data	
1.	Is this a new well drilled for injection? Yes X No	
	If no, for what purpose was the well originally drilled? Producer	
2.	Name of the Injection Formation: Cisco Cangon	_
3.	Name of Field or Pool (if applicable): Penasco Draw	_
4.	Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i.e. sacks of cement or plug(s) used. See alached	
	Settematie.	
5.	Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area:	
•	Abo at 4440	_
•	Strawn at 8200	
	•	

DISPOSAL WELL

API# PROPERTY NAME #	OPERATOR PARTIES	数 TD ② TYPE!	STÁT CÓ 🌣 LÀND U/L	SEC	WN &	RNG	N/S	E/W 🔭
30-015-21942 LEGACY RESERVES OPERATI	2 ANDREW ARNQUIST ESTATE	3000	A	29	18 S	26 E	330 N	330 E

Wells within 1/2 mile of the proposed disposal well penatrating the proposed dispasal interval. 5280 5280 API# PROPERTY NAME # OPERATOR INS E/W < 1/2 mile 1 YATES PETROLEUM CORPORATION 30-015-00212 ETHEL V NOEL 9157 Gas Eddy P 20 18 S 26 E 990 S 990 E 1/2 mile 30-015-05926 LEN MAYER 1 YATES PETROLEUM CORPORATION 9225 Oil Eddy P 28 18 S 26 E D 990 W 1/2 mile 990 N

Wells within 1/2 mile which do not penatrate proposed disposal interval

API#	PROPERTY NAME	# 5%	OPERATOR			TD 💉	TYPE	STAT	(co	LAND	U/L	SEC	TWN 🅦	RNG	4.7	N/S →	E/W	1	<-1/2 mile
30-015-21741	DAYTON FT	1	YATES PETRO	LEUM COR	PORATION	1867	Oil	Α	Eddy	Р	М	21	18 S	26	Е	330 S	990	W	1/2 mile
30-015-21770	DAYTON FY	1	YATES PETRO	LEUM COR	PORATION	1775	Oil	Α	Eddy	F	L	21	18 S	26	Е	1650 S	990	W	1/2 mile
30-015-22040	ANDREW ARNQUIST ESTATE	4	LEGACY RESE	RVES OPER	RATING, LE	2825	Oil	P.	Eddy	Р	Н	29	18 S	26	Е	1650 N	430	E	1/2 mile
30-015-22041	ANDREW ARNOUIST ESTATE	3	LEGACY RESE	RVES OPE	RATING, LI	2763	Oil	Р	Eddy	Р	В	29	18 S	26	E	330 N	1650	E	1/2 mile
30-015-22306	YATES IQ	1	YATES PETRO	LEUM COR	PORATION	2900	Oil	Α	Eddy	Р	E	28	18 S	26	E	2310 N	990	W	1/2 mile
30-015-22331	DAYTON FO	2	YATES PETRO	LEUM COR	PORATION	2800	Oil	Α	Eddy	Р	F	28	18 S	26	E	1652 N	1650	W]1/2 mile
30-015-28878	DAYTON FN	2	YATES PETRO	DLEUM COR	PORATION	1885	Oil	Α	Eddy	Р	С	_ 28	18 S	26	Ε	330 N	1650	w	1/2 mile

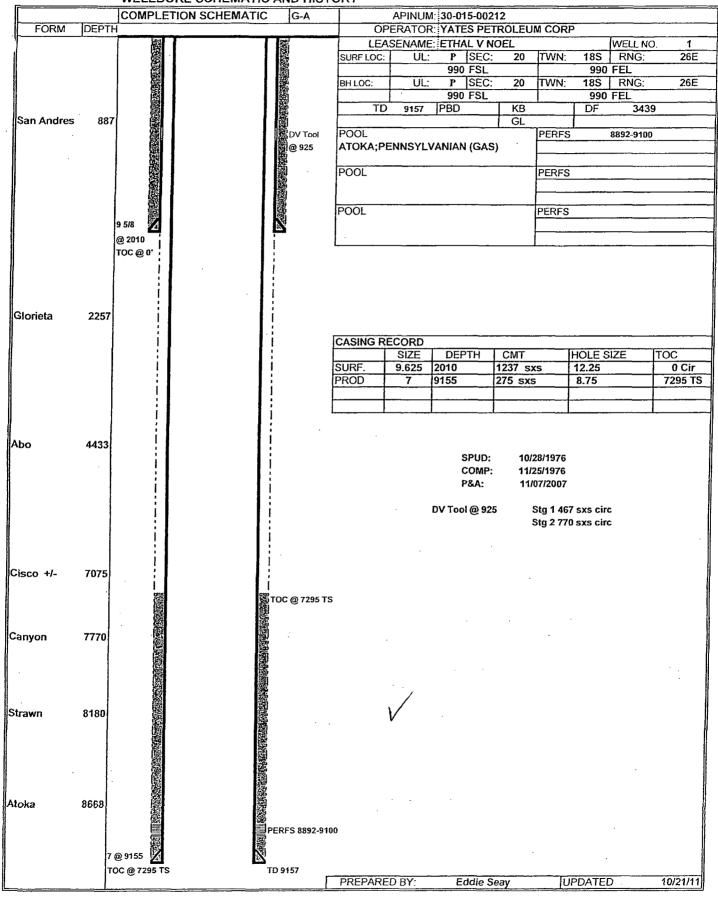
WELLBORE SCHEMATIC AND HISTORY

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Glorieta +/- 2300 Comparison of Compariso	l .			\mathcal{Q}_{i}		 	POOL				PERFS	<u> </u>		
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WELLBORE SCHEMATIC AFTER

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WELLBORE SCHEMATIC AND HISTORY



WELLBORE SCHEMATIC AND HISTORY

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TOC @ 6540 TS TD 9157 PREPARED BY: Eddie Seay UPDATED 10/2		•		2	3									
PREPARED OT: Eddle Seay [UPDATED 10/2		1	OC @ 6540 TS		TD 9157	DDEDADE	D BV	E -	idic C	0214	110	DDATE		10/21/11
						PKEPAKE	UBY:	EC	aale S	eay	ĮUI	PUALE	J	10/21/11



Water Analysis

Date: 2/24/2005

2401 Sivley, Artesia NM 88210 Phone (505) 746-3140 Fax (505) 746-2293

Analyzed For

Company	Well Name	County	State
Westall	State G#1	Eddy	New Mexico

Sample Source		Sample # 1					
Formation	Canyo	ọn	Depth				
Specific Gravity	1.050		SG @	1.051 Not Tested			
рH	6.30		ន				
Temperature (°F) 6			Reducing A	Not Tested			
Cations				•			
Sodium (Calc)		in Mg/L	9,518	In PPM	9,056		
Calcium		in Mg/L	5,600	in PPM	5,328		
Magnesium		in Mg/L	240	ia PPM	228		
Soluable Iron (FE2)		in Mg/L	300.0	in PPM	285		
Anions					-, <u></u> -		
Chlorides		in Mg/L	24,000	in PPM	22,835		
Sulfates ·		in Mg/L	2,000	in PPM	1,903		
Bicarbonales		in Mg/L	185	in PPM	176		
Total Hardness (as CaCO	3)	in Mg/L	15,000	in PPM	14,272		
Total Dissolved Solids (Cal	lc)	in Mg/L	41,844	in PPM	39,813		
Equivalent NaCl Concentra	tion .	in Mg∕L	38,410	in PPM	36,546		

*Colcium Carbonate Index

1,038,464

Below 500,000 Remote / 500,000 - 1,000,000 Possible / Above 1,000,000 Probable

*Calcium Suifate (Gyp) Index

11,200,000

Below 500,000 Remote / 500,000 - 10,000,00 Possible / Abova 10,000,000 Probable

This Calculation is only an approximation and is only valid before treatment of a well or soveral weeks after treatment.

Remarks

FAX 677-2361

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	POOL				CHLORIDES
i i	Dean Permo Pennsylvanian				44,730
• -	Dean Devonian				19,525
• • •	Denton Wolfcamp			,	37,275
	[®] Denton Devonian .	:			37,062
	South Denton Wolfcamp			•	54,315
· .	South Denton Devonian			r	34,080
	Medicine Rock Devonian	:			39,760
	Little Lucky Lake Devonian				23,288
	Wantz Abo			;	132,770
	Crosby Devonian				58,220
	Scarborough Yates Seven Rivers				3,443 (Rerf)
: 1	Teagne Simpson	ę			114,665
	Teague Ellenburger			•	120,345
•	Rhodes Yates Seven Rivers			•	144,485
	House San Andres			٠	93,365
	House Drinkard	· :		•	49,700
	South Leonard Queen				115,875
	Elliott Abo				55,380
	Scharb Bone Springs	ži Ši			30,601
	EK Queen			•	41,890
	East EK Queen		•		179,630
	Maljamar Grayburg San Andres			•	•
•	Maljamar Paddock	·			46,079
	Maljamar Devonian				115,375
	Salt Lake Yates	:			25,418
· /	Teas Yates Seven Rivers				6,781 (Reef)
		·5	•	`. •	22,152 (Reef?)
		:	••	•	
	<u>:</u> :		•	,	•
	:				



Analytical Results For:

Eddie Seay Consulting Eddle Seay 601 W. Illinois Hobbs NM, 88242

Fax To:

(505) 392-6949

Received:

01/06/2011

Reported: 01/18/2011

Project Name:

Project Number:

Project Location:

ECS-1W

Sampling Date:

Sampling Type:

Sampling Condition:

Water Cool & Intact

01/05/2011

Sample Received By:

Jodi Henson

Sample ID: E'CS - 1 W (H100028-01)

Bicarbonate 310.1M	mg/L		Analyzed By: HM						·	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS.	% Recovery	True Value QC	RPD	Qualifier	
Alkalinity, Bicarbonate	185	5.00	01/07/2011	ND	964	96.4	1000	7.79		
Calcium SM3500Ca-D	m	g/L	Analyz	ed By: HM		· · · · · · · · · · · · · · · · · · ·			· · · · · · · · · · · · · · · · · · ·	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Calcium	70.5	1.60	01/13/2011	ND	52.1	104	50.0	4.83		
rbonate 310.1M	mg	g/L	. Analyz	ed By: HM				,		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
lkalinity, Carbonate	<0.00	0.00	01/07/2011	ND	ND		0.00			
hloride, SM4500Cl-B	mg	;/L	Anaiyzo	ed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	r,PD .	Qualifier	
hioride	48.0	4.00	01/10/2011	ND	104	104	100	3.77		
onductivity 120.1	u\$/	/cm	Analyze	d By: HM			·			
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
onductivity	600	1.00	01/07/2011	ND	1410	100	1410	0.333		
agnesium SM3500MgE	mg	/L	Analyze	d By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
agnesium	17.5	1.00	01/13/2011	ND	55.9	.112	50.0	0.00		
l	рΗ (Units	Anaiyze	1 Ву: НМ						
Analyte	Result	Reporting Urnit	Analyzed	Method Blank	· BS	% Recovery	True Value QC	RPD	Qualifier	
I.	7.88	0.100	01/07/2011		7.03	100	7.00	0.253		
tassium 8049	mg/	L.	Analyzed	Ву: НМ			•			
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD -	Qualifier	

Cardinal Laboratories

*=Accredited Analyte





Analytical Results For:

Eddie Seay Consulting Eddle Seay 601 W. Illinois Hobbs NM, 88242 (505) 392-6949 Fax To:

Received: Reported: 01/06/2011

01/18/2011

Project Name:

Project Number:

Project Location:

ECS-1W

Sampling Date:

Sampling Type:

Sampling Condition:

Sample Received By:

01/05/2011

Water

Cool & Intact

Jodi Henson

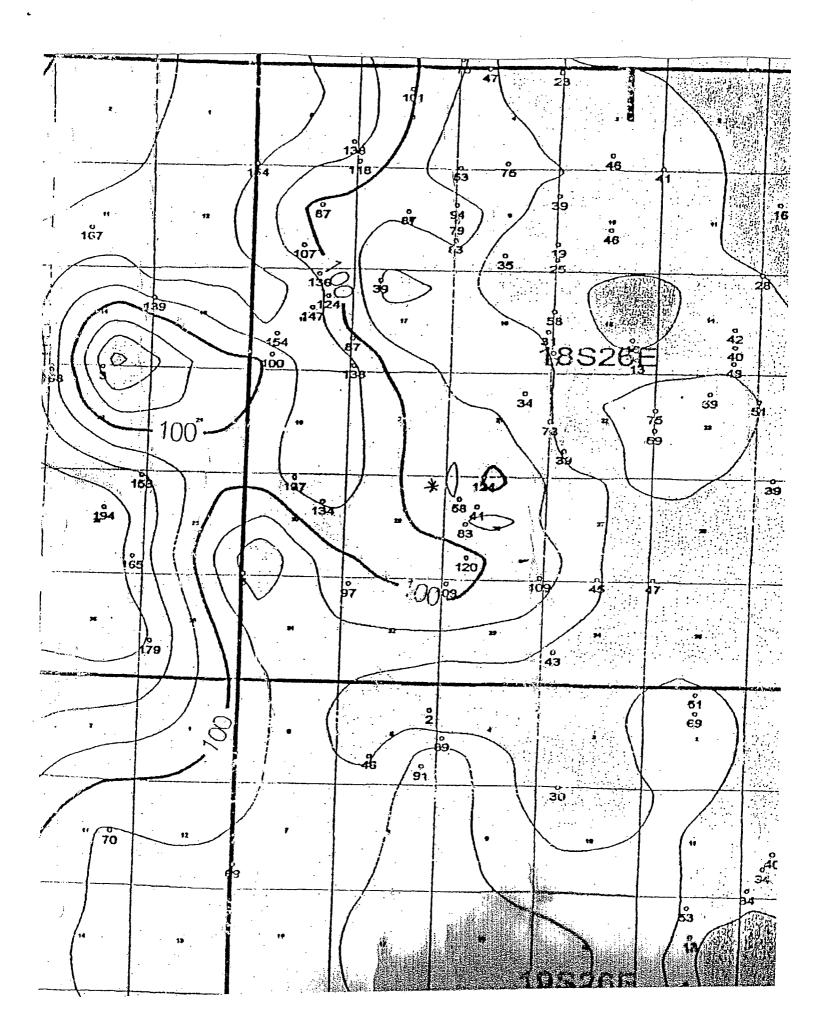
Sample ID: ECS-1W (H100028-01)

Potassium 8049	mg	mg/L		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Potassium	1.60	1.00	01/13/2011	ND	7.61 ·	95.1	8.00	9.11		
Sodium Calculated	· mg.	/L	Analyzed By: HM							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	rpd	Qualifier	
Sodium	18.0	1.00	01/13/2011	ND						
Yate 375.4	mg,	/L	Analyze	od By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Sulfate	67.5	10.0	01/11/2011	ND	40.4	101	40.0	7.90		
TDS 160.1	mg/	'L	Analyze	d By: HM		<u> </u>				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifler	
TDS .	407	5.00	01/06/2011	ND				0.00		
Total Alkalinity 310.1M	mg/	L .	Analyzo	d By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Alkalinity, Total	152	4.00	01/07/2011	ND	790	96.3	820	7.59		

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keine



LEGACY RESERVES, LP

RE: Andrew Arnquist Estate #2 (API 30-015-21942) Unit A, Section 29, Tws. 18 S., Rng. 26 E. Eddy Co. New Mexico

Dear Sir:

In accordance with the Rules and Regulations of the Oil Conservation Division of the State of New Mexico, you are being provided a copy of the C-108, Application for Authorization to Inject in to the above captioned well.

Any questions about the permit can be directed to Pat Darden, (432)689-5237. Any objections or request for hearing must be filed with the Oil Conservation Division within fifteen (15) days from the date received. The OCD address is 1220 S. Saint Francis Drive, Santa Fe, NM 87504, (505)476-3440.

Thank You,

Pat Darden, P.E. Legacy Reserves

Box 10848

Midland, TX 79702

432-689-5237

LEASE OWNERS AND OFFSETS

LEASE OWNERS

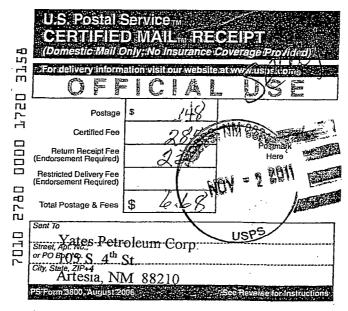
Arnquist Et Al 60 Corte Ortega #11 Greenbrae, CA 94904

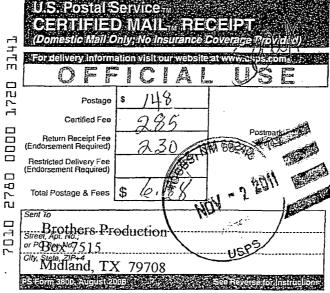
OFFSET OPERATORS OR LEASE OWNERS

Yates Petroleum Corp. 105 S. 4th St. Artesia, NM 88210

Brothers Production Box 7515 Midland, TX 79708







1,720

LEGAL NOTICE

Pursuant to the rules and regulations of the Oil Conservation Division of the State of New Mexico, Legacy Reserves Operating LP, Box 10848, Midland, TX 79702, is filing a C-108, Application for Salt Water Disposal. The well being applied for is the Andrew Arnquist Estate #2 (API 30-015-21942), located in Unit A, Section 29, Township 18 South, Range 26 East, Eddy Co., NM. The injection formation is the Cysco Canyon from 7700' to 8100' below surface. Expected maximum injection rate is 5000 bpd., and the expected maximum injection pressure is 1200 psi or what the OCD allows. Any questions about the application can be directed to Eddie W. Seay, (575)392-2236, or any objection or request for hearing must be directed to the Oil Conservation Division, (505)476-3440, 1220 South Saint Francis Drive, Santa Fe, NM 87504, within fifteen (15) days.

Affidavit of Publication

21899

TE OF NEW MEXICO
County of Eddy:
Danny Scott Warmy Scar
being duly sworn, says that he is the Publisher
of the Artesia Daily Press, a daily newspaper of general
circulation, published in English at Artesia, said county
and state, and that the hereto attached
Legal Notice
was published in a regular and entire issue of the said
Artesia Daily Press, a daily newspaper duly qualified
for that purpose within the meaning of Chapter 167 of
the 1937 Session Laws of the state of New Mexico for
1 Consecutive weeks/days on the same
as follows:
First Publication October 30, 2011
Second Publication
Third Publication
Fourth Publication
Fifth Publication
Subscribed and sworn to before me this
31st day of October 2011
OFFICIAL SEAL Latisha Romline NOTARY PUBLIC-STATE OF NEW MEXICO My commission expires: 5 112 2015

Notary Public, Eddy County, New Mexico

Copy of Publication:

LEGAL NOTICE

Pursuant to the rules and regulations of the Oil Conservation Division of the State of New Mexico, Legacy Reserves Operating LIP: Box 10848, Midland, TX 79702, is filing a C-1O8, Application for Salt-Water Disposal. The well being applied for is the Andrew Amquist Estate:::#2;; (API::/:30-015-21942), located in Unit A, Section 29, Township 18 South, Range 26 East, Eddy Co. NM. The injection formation is the Cysco Canyon from 7700 to 8100 below surface. Expected maximum injection rate is 5000 bpd., and the expected maximum injection pressure is 1200 psi, or what the OCD allows. Any questions about the application can be directed to Eddie, W. Seay, (575)392-2236, or any objection or request for hearing must be directed to the Oil Conservation Division, (505)476-3440, 1220 South Saint Francis Drive, Santa Fe, NM 87504 within fifteen (15) days: Published in the Artesia Daily Press, Artesia, N.M., Oct. 30, 2011. Legal No. 21899.