### Appendix E: Recompletion Plans and Specifications

- Drilling Plan Prognosis
- Emergency Contact Sheet
- Fluids Plan
- Cement Program
- Casing Program







P.O. Box 272 Midland, Texas 79702 Off: 432-620-9181 Fax: 432-570-0102

### **Emergency Sheet**

Well:Eunice Gas Plant SWD Well No. 1Location:2500' FSL 1200' FWL of Section 27, T22S, R37E,<br/>Lea County, New MexicoOperator:Targa Midstream Services, LPTD:4,950'

**Drilling Contractor:** 

### Lat. 32.362642" N / Long 103.155547" W

Sheriff and EMS Lea Co.	(575)396-3611
Lea Co. Hospital (Hobbs)	(575)396-8521
MedTrans Care Star Helicopter	(888) 624-3571

#### Directions to the Eunice Gas Plant SWD Well No. 1

From Eunice, NM go south on Loop 207 approximately 5 miles. Turn into Targa South Plant. Well is within plant facility.

#### **Cambrian Management (Operations)**

		Office	Cell
W. A. Baker	Drlg. Oper. Mgr.	(432) 620-9181	(432) 557-0120
Alan Means	Media Spokesman	(432) 620-9181	(432) 664-7052
Joe Goodrich	Wellsite Consultant		(575) 746 7082









P.O. Box 272 Midland, Texas 79702 Off: 432-620-9181 Fax: 432-570-0102

### Eunice Gas Plant SWD Well No. 1 Drilling Program Contact List

Company	Contact	Description	Contact No.	
Cambrian Management				
	W.A. Baker	Drilling Operations Manager	(432) 557-0120	Cell
	wbaker@cambri	anmgmt.com	(432) 620-9181	Office
Taroa	Jim Linenau		(432) 570-0102 (505) 631-2095	Fax
ι α Bu	, un Dispund			
BWC	Joe Goodrich	Wellsite Supervisor	(575) 746-7082	Cell
Key Energy Services		Drilling Rig - 115	•	
		Pusher		
		Pusher		
Ellison Fluid Calipers		Fluid Caliper	432-634-0500	
Closes Loop Specialty		<b>Closed Loop Pit System</b>	432-210-5754	
Halliburton		Cementers	800-65 <b>8-</b> 9607	Office
Catalyst		Corrosion Chemicals	432-664-8776	
Targa	Jim Lingnau	Casing/Tubing	(505) 631-7095	
T3 Energy Services		Wellheads/Supplies	(432)381-2354	Office
NMOCD		Spud/Cementing Notices	(575)393-6161	
NOV		Mud	(575)392-4932	Ceil
Knight Oil Tools		Rental Tools	(432) 684-8282	
Weatherford		Float Equipment	800-658-9607	Office
		Bits		
Halliburton		Packer		
Halliburton		SSSV		







#### Eunice Gas Plant #1

Foolane	2500 FSL & 1200 FMI
Section:	27
Survey:	T22S R37E
County:	Lea
Elevations:	
GR:	3345
TD:	4550
PBTD:	
Utolome	
HIStory	
	Snud
~	Complation
	Re-completion
1/1/1961	Well drilled and completed
	Tubing and packer ran into well as disposal
??	string.
	Metal in returns at 3985' to 4005' during
	workover. Returned to SWD w/ packer at
1/1/1978	3865',
	anew note in / " during compliance test. Detail
	jaketicity out casing was periorated at 550'.
******	In nume to pump in. Performed at 500". Unable
1/1/1991	no pumpin, Pendrated at 100. Hallo critici.
1/1/1995	Possible vvorkover. No records.
	Set GBF @ 3920 a dump 20 centent on it.
	(2 Inhe) Drillad compani (mm 201' to 255'
	Repaired 10 3/4 & 7" @ 4' from G) Doiled or
	cement and CIBP. Unable to c/o below 4d30
4/1/1997	Pkr @ 3847
1/1/99	Pkr found unset during w/o. No records
1/1/2000	Last time we pulled?
	**************************************
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	1
	Tubing Detail (top to bottom)
Joints	Description
125	3 1/2" IPC tbg
1	X-over
1	Halliburton R-4 packer @ 3814
	l
	1
	· · · · · · · · · · · · · · · · · · ·
v	Pod Talle
leinfe	Description
JUINS	Cescription
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### Eunice Gas Plant #1

1	Location:
Foolage:	2500 FSL & 1200 FWI
Section:	127
Survey	17225 R37F
County	lea
Elevations:	
GR	3345
TD:	4550
PBTD:	
······································	
History	
	Spud
	Comptation
	Re-completion
1/1/1961	Wall drilled and completed
	Tubing and packer ran into well as disposal
7	string.
	Mela) in returns at 3985' to 4005' during
	workover, Relumed to SWD w/ packer al
1/1/1978	3865'.
[	Blew hole in 7" during compliance test.
1	Delaits sketchy but casing was perforated at
	550°, Unable to pump in. Perforated at 300°.
1	Unable to pump in. Perforated at 100°, Hallib
1/1/1991	cmid.
1/1/1995	Possible Workover, No records,
	Set CIBP @ 3925' & dump 20' cament on IL
	Dowall squaazod down 7" w/ 400 sxs + 7 sxs
	(2 Jobs). Drilled cement from 291' to 355'.
	Repaired 10 3/4 & 7" @ 4" from GL, Drillad
	out cement and CIBP. Unable to do below
4/1/1997	4430'. Fkr @ 3847'.
1/1/99	Pkr found unset during w/o. No records,
1/1/2000	Last time we pulled?
······································	
······································	
	Tubing Detail (top to bottom)
Joints	Tubing Detail ((op to bottom) Description
Joinis	Tuluing Detail (lop to bottom) Description 2 7/8 FG lined lbg
Join!s	Tubing Detail (lop to bottom) Description 2 7/8 FG fined bg Heliburton SSSV
Join(s	Tubing Detail (lop to bottom) Description 27(8 FG lined log Haliburton SSSV 27 //8 FG lined bg
Joinis	Tubing Detail (lop to bottom) Description 27/8 FG lined by Heliburton SSSV 27/8 FG lined by Heliburton pkr @ 4200
Joints	Tubing Detail (lop to bottom) Description 27/8 FG lined bg Heliburton SSSV 27/8 FG lined bg Heliburton pkr @ 4200
Join(s	Tubing Detail (lop to bottom) Description 27/6 FG lined log Haliburton SSSV 27/8 FG lined log Haliburton pkr @ 4200
Joinis	Tubing Detail (lop to bottom) Description 27/8 FG lined by Heliburton SSSV 27/8 FG lined ibg Heliburton pkr @ 4200
Joints	Tubing Detail (lop to bottom) Description 27/8 FG lined lbg Haliburton SSSV 27/8 FG lined lbg Haliburton pkr @ 4200
Joints	Tubing Detail (lop to bottom) Description 27/6 FG lined lbg Haliburton SSV 27/8 FG lined lbg Haliburton pkr @ 4200 Root Tally
Joints Joints	Tubing Detail (lop to bottom) Description 27/8 FG lined by Heliburton SSSV 27/8 FG lined by Heliburton pkr @ 4200 Rod Tally Description
Joints Joints	Tubing Detail (lop to bottom) Description 27/8 FG lined lbg Haliburton SSSV 27/8 FG lined lbg Haliburton pkr @ 4200 Rod Taily Dascription
Joints Joints	Tubing Detail (lop to bottom) Description 27/6 FG lined ibg Haliburton SSV 27/8 FG lined ibg Haliburton pkr @ 4200 Rod Tally Description
Joints	Tubing Detail (lop to bottom) Description 27/8 FG lined by Haliburton SSSV 27/8 FG lined bg Haliburton pkr @ 4200 Rod Tally Dascription
Joints Joints	Tubing Detail (lop to bottom) Description 27/8 FG lined bg Heliburton SSSV 27/8 FG lined bg Heliburton pkr @ 4200 Rod Taily Description
Joints	Tubing Detail (lop to bottom) Description 27/6 FG lined ibg Haliburton SSV 27/8 FG lined ibg Haliburton pkr @ 4200 Rod Tally Dascription
Joints	Tubing Detail (lop to hottom) Description 27/8 FG lined log Heliburton SSSV 27/8 FG lined log Heliburton pkr @ 4200 Rod Tally Description
Joints Joints	Tubing Detail (lop to bottom) Description 27/8 FG lined bg Heliburton SSSV 27/8 FG lined bg Heliburton pkr @ 4200 Rod Yally Description
Joints	Tubing Detail (lop to bottom) Description 27/8 FG lined by Holiburton SSSV 77/8 FG lined ibg Heliburton pkr @ 4200 Rod Taily Description
Joints Joints	Tubing Detail (top to bottom) Description 27/6 FG lined bg Heliburton SSSV 27/8 FG lined bg Heliburton pkr @ 4200 Rod Tally Dascription
Joints	Tubing Detail (lop to bottom) Description 27/8 FG lined lbg Haliburton pkr @ 4200 Rod Yally Description
Joints	Tubing Detail (lop to bottom) Description 27/8 FG lined by Heliburton SSSV 27/8 FG lined by Heliburton pkr @ 4200 Rod Tally Description







P.O. Box 272 Midland, Texas 79702 Off: 432-620-9181 Fax: 432-570-0102

Well:Eunice Gas Plant SWD Well No. 1Location:2500' FSL & 1200' FWL, Section 27, T22S, R37E, Lea County, New MexicoBlevation:3345' GLAFE No.:Permit No.:API No.:30-025-21497Operator:Targa Midstream Services, LPTD:4950'

#### Drilling Contractor: Key Energy Services Rig No. 115 KB:

**Directions to the Eunice Gas Plant SWD Well No. 1:** From Eunice, New Mexico go south on Loop 207 approximately 5 miles. Turn into Targa South Plant. Well is within plant facility.

### RE-ENTRY & DRILLING PROGNOSIS (Steps 1-8 have been completed)

- 1. MI&RU Pulling unit.
- 2. NU BOP, set pipe racks and catwalk.
- 3. Unseat Halliburton R-4 packer and POH LD 3 1/2" tbg. Move tubing to edge of location.
- 4. RU wireline company. Run GR and junk basket to 3800'. Set CIBP @ 3800'.
- 5. Load hole with clean water.
- 6. ND BOP's. RDMO pulling unit.
- 7. Remove old wellhead. Prep to install new wellhead equipment.
- 8. Install new T3 Energy wellhead equipment. Test same.
- 9. NU and test BOP's with 250/3000 psi test.
- 10. Install cellar. Repair location for Key 24 hr rig.



11. MI & RU Key Rig No. 115 & closed loop pit system.

• Notify OCD of intent to spud well.

12. PU 6 ¼" bit, 4 ¾" DC's on 2 7/8" DP. TIH to CIBP @ 3800'.

- 13. Drill out CIBP.
- 14. TIH with bit to 4250'.
  - Mud up as necessary.
  - Circulate clean.
  - Run fluid caliper to determine cement volumes.
- 15. TIH to original TD of 4550'
  - Watch for junk on bottom.
- 16. Drill new 6 ¼" hole to 4950' utilizing closed loop system.
- 17. Circulate hole clean. Spot clean water from TD back to bottom of 7" casing.

18. TOH with bit. LDDC's.

19. TIH open ended with DP to bottom of casing.

20. Spot sand on bottom to PB to 4250'.

21. PUH to 3500' & wait for sand to settle out.

22. TIH & tag sand. Respot as necessary.

23. POH. LD DP.

24. Change BOP rams to 5 <sup>1</sup>/<sub>2</sub>".

25. Run casing as below.

• Notify OCD of upcoming cement job.

1.5'	Float Shoe
40'	1 jt. 5 1/2" 17# J-55 SJ-2 casing
1.5'	Float collar
20'	5 ½" 17# alloy SJ-2 casing
237'	5 1/2" 17# J-55 SJ-2 casing
1.5'	5 ½" LTC x 5 ½" SJ-2 crossover
5'	5 ½" Weatherford stage tool
3945'	5 ½" 17# J-55 LTC (turned down couplings) casing.

Install centralizers at 10' above shoe, middle of alloy casing, 5 on the steel casing above alloy in open hole, and 2 on casing just inside of 7" casing.



2

- Limit running speed to 1200 fph. Use cementing swedge to fill casing. KEEP PIPE MOVING IN THE OPEN HOLE – EVEN WHILE FILLING UP CASING.
- Make sure cementing company has proper swedge for casing. (Need 5 ½" LTC and 5 ½" SJ-2 swedges)
- Limit pipe tension at surface to 75,000 lbs. (Pipe Tension = Weight Indicator Traveling block/hook weight). Air weight of casing = 72,250 lbs. Do not exceed without discussing with engineer.
- > Use thread lock on casing shoe and on pin end of  $2^{nd}$  and  $3^{rd}$  joints.
- Use Best-O-Life 2000 pipe dope
- 26. Circulate 1.5 casing volumes. Mix and pump cement per attached 2 stage cementing proposal. Do not reciprocate casing. Catch wet and dry surface samples of both lead and tail slurries. Drop wiper plug. Flush cement lines.
- 27. Monitor returns throughout the job. Note estimated percentage of returns on the morning reports. Reduce displacement rate to 2 bpm for the last 10 bbls. Calculate exact displacement volume on location. Verify floats are holding. If floats do not hold, rock floats in an attempt to get them to hold. If floats still do not hold, shut-in casing for 6 hours while WOC to prevent U-tubing. Check surface samples prior to releasing pressure. Calculate U-tube pressure and apply to casing if float does not hold.

# Note the number of sacks of cement used, slurry recipe, slurry yield, slurry density, and number of centralizers on the morning report. If there is problem on cement job discuss running a temperature survey with operations coordinator.

- 28. Verify annulus is static. PU BOP. Set slips on 5 ½" casing. Hang off full string weight on slips. Record hanging weight on the morning report.
- 29. Cut off 5 1/2" casing. Install and test head.
- 30. RD&MO Key 115.
- 31. MI&RU completion unit.
  - WOC at least 72 hours prior to commencing completion work
- 32. NU BOP's with 2 7/8" and blind rams. Test with 1500 psi.
- 33. PU 4 3/4" bit and 3 1/8" DC's on 2 7/8" work string and TIH.
- 34. Tag cement on stage tool. Test casing with 1500 psi. Drill out cement and stage tool.
- 35. Circ clean and TIH to cement on float collar. Test casing with 1500 psi.
- 36. Drill out cement and float equipment. Continue in hole washing circulating out sand from open hole.
- 37. Circ hole clean. PUH into 5 1/2" casing. Trip back to TD to check for fill.
- 38. Circ hole clean. Spot 10% acetic acid cross open hole interval.
- 39. TOH LD workstring & DC's.
- 40. RU Halliburton wireline truck. Run GR/CCL/CBL from bottom of 5 1/2" casing to surface.
- 41. Run and set Halliburton packer approximately 5' from bottom of alloy casing.
  - Notifiy OCD of intent to set packer and run tubing.





42. RU and run packer seal assembly on 2 7/8" fiberglass lined tubing.

• Run SSSV at 250'+

43. Space out seals in packer. Displace with packer fluid.

44. Set in packer. Test packer with 1500#. Remove BOP's and install tree.

45. RD & MO completion rig.

46. Clean and level location.

47. RU pump truck. Pump 200 bbl of water into well.

48. Stimulate additionally if required.

49. Notify OCD and run MIT.

50. Await installation of disposal lines.



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### PREPARED FOR:

### Mr. W.A. Baker TARGA MIDSTREAM SERVICES (CAMBRIAN MANAGEMENT) Midland, Texas

### Versado AGI #1 (Re-entry) Section 27 T-22-S R-37-E Lea County, New Mexico

Prepared by: Gary Brown April 7, 2010

### NOV NATIONAL OILWELL VARCO

Fluids Services 415 W. Wall, Suite 530 Midland TX 79701 Phone: 432-684-7446 Fax: 432-684-7473

April 7, 2010

Mr. W.A. Baker TARGA Midstream Services c/o Cambrian Management, LTD 303 W. Wall Street, Ste 500 Midland, Texas 79702-0272

Dear Mr. Baker,

Thank you for the opportunity to submit our drilling fluid recommendations for your Versado AGI #1 re-entry, in Lea County, New Mexico. These recommendations are based on information from your office, offset well data, and our knowledge of the area.

Of particular concern in this area is the potential for abnormal pressure, water flows and H<sub>2</sub>S in the disposal interval. However, it has been our experience on re-entries that almost anything can happen:

- Plugs can be at the wrong depth, or missing completely
- Casing can be compromised or collapsed
- Pressure can be from water flows or gas
- Pressure can be abnormally high or low
- High pressure can be low volume, or high volume,

Lost circulation can occur in the most unlikely zones as well as the expected ones

Therefore, we hope for the best but plan for the worst and recommend you have:

- an adequate sized pre-mix pit to mix re-entry fluid and/or kill mud
- a supply of fresh & brine water to kill the well with weights between 8.4 and 10.0ppg
- a supply of sack barite for kill weights above 10.0ppg
- a supply of Star Hib TSW in case there is the presence of H<sub>2</sub>S
- a supply of liquid Xanthan Gum and starch on location for viscosity and/or fluid loss control
- a supply of various sized lost circulation material

All support services, including warehousing and trucking for this well, are in Hobbs, New Mexico. Thank you for considering us to be a part of your drilling team, and we look forward to working with you in the future.

Sincerely,

Gary Brown NOV® Fluids Services Permian District



### **DRILLING FLUID SYNOPSIS**

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TARGA Midstream Services Versado AGI #1 (Re-entry) Section 27 T-22-S R-37-E Lea County, New Mexico

Recommended Casing					
		7" 5 ½"	at 4,000' at 4,500'		
DEPTH	MUD WEIGHT	VISCOSITY	FLUID LOSS	DRILL SOLIDS	COMMENTS
4,000'-5,000'	9.5 to 10.0	28 to 29	No Control	<1%	Cut Brine, Star NP-110, Paper, Lime





### **ESTIMATED FORMATION TOPS**

ANHYDRITE	1,122′
YATES	2,560'
SEVEN RIVERS	2,815'
QUEEN	3,320'
PENROSE	3,430'
GRAYBURG	3,590'
SAN ANDRES	3,816′
7 CASINGISE PATRA	4,000
GLORIETA	4,945'

TD 5,000'



### **RECOMMENDED DRILLING FLUID PROGRAM**

DEPTH	WEIGHT	VISCOSITY	FILTRATE
4,000'-5,000'	9.5-10.0	28-29	No Control

Drill out from under casing with cut brine, circulating the closed loop. Hopefully, the "rat hole" should be easily cleaned since the well has been used as a disposal well. However, if drilling is required, take care to not "walk out" of the original well bore. Lime should be used to control the pH at 9.0 to 10. Utilize Star NP-110 for hole sweeps and to control solids. Paper should be used to control seepage and for sweeps. If lost circulation is encountered in this interval, please refer to NOV® Fluids Services' Lost Circulation Procedures. There is a potential for H<sub>2</sub>S in this interval. If H<sub>2</sub>S is encountered, we recommend additions of an H<sub>2</sub>S scavenger for personnel safety and a filming amine to protect the drill pipe. We recommend sweeping the hole with a viscous, 50-60 sec/1,000cc's viscosity, Salt Gel pill and then spotting a viscous Salt Gel pill in the open hole prior to evaluation and running pipe. This should be sufficient for logging and casing operations.

John Hendrix Corp., Elliott B-15 #5, Section 15, T-22-S, R-37-E, reported moderate seepage @ 4,209'

John Hendrix Corp., Parks #13, Section 14, T-22-S, R-37-E, reported 60bbls/hour water flow @ 4,950'







### LOST CIRCULATION PROCEDURES

Loss of circulation is a possibility on this well. Although each well is different, there are some basic procedures and drilling practices that can aid in reducing the severity or, in some cases, prevent lost circulation. Below is a list, which may prove helpful.

- 1. Maintain viscosities as low as possible and still clean the hole.
- 2. Maintain mud weights as low as possible without jeopardizing safety.
- 3. Use slow trip speeds to prevent swabbing and surging.
- 4. Break circulation in stages with reduced pump strokes while tripping in the hole.
- 5. Rotate pipe prior to and while tripping in the hole.
- 6. Use an optimum hydraulics program.

Severe seepage to total loss of circulation may occur even when the above procedures are followed. For severe seepage, we recommend circulating pills (50-100bbls. depending on hole size) containing 10-30 ppb of various (fibrous and flake) lost circulation material. It would be helpful to reduce pump rates until full returns are established. Once full returns are regained, normal pump rates should be returned to in stages. The inclusion of lost circulation material in the entire system is recommended only if the above procedures do not adequately seal off the loss zone.

For total loss of circulation, we recommend pulling enough stands to place the bit above the loss zone. A viscous pill containing the appropriate type of loss circulation material should be spotted. The size of the pill should be determined by hole size and should contain at <u>least</u> 30 ppb lost circulation material. Several attempts should be made before considering other alternatives. After returns are regained, we recommend staging back to bottom using the procedure outlined above.

If returns are not fully re-established, consideration should be given to dry drilling while pumping periodic sweeps to ensure hole cleaning.





### PERMIAN DISTRICT PERSONNEL

### MIDLAND OFFICE

### 800-669-7146

Larry Wadzeck	Regional Manager Permian/MidCon
Gary Brown	District Engineering Manager
Gerald Huff	District Sales & Marketing Manager
Mike Mundy	District Sales & Marketing
Carlton Crownover	Technical Sales

### WEST TEXAS ENGINEERING

Josh Jones

#### 800-669-7146

Tony Martin	Senior Sales and Service Engineer
Chris Lee	Sales and Service Engineer
Mark Price	Senior Sales and Service Engineer
Tom O'Reilly	Senior Sales and Service Engineer
Steve Wilson	Senior Sales and Service Engineer
NEW MEXICO ENGINEERING	800-669-7146
Fred Flores	Senior Sales and Service Engineer

Senior Sales and Service Engineer



WEATHERFORD DRILLING AND WELL SERVICES 3000 WEST COUNTY RD HOBBS NM 88240 UNITED STATES

#### 76-0486916

TO: 1588331 TARGA RESOURCES INC 1000 LOUISIANA ST SUITE 4300 HOUSTON TX 77002-5050 UNITED STATES LOCATION: 1588331

TARGA RESOURCES INC 1000 LOUISIANA ST SUITE 4300 HOUSTON TX 77002-5050 UNITED STATES

76-0486916

### **QUOTATION**

Quote Number:	187114 SC
Order Date:	MAY 03 20
<b>Customer Reference:</b>	VERBAL
Location:	80026 HOE
Phone No.:	575.391 98
Fax No.:	575.393 12
FDC Number:	FDC # 407

Q **010** BBS B11 244 0 E10023

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	Net 30 days				SHIFFLET	T, BILL G
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	EXW Ex Works	price group 5				
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1.000	Legacy #: 30300518HDLPG SHOE, FLOAT 5-1/2 303 CON(	00170 Part #: 573253 CONCRETE P110 AB HDL BLANK 17.0	EA	1.00	677.1200	677.12
2.000	Legacy #: 4020051BHDLPG COLLAR, FLOAT 5-1/2 402 P1	00170 Part #: 576650 to STD AB HDL BLANK 17.0	EA	1.00	886.4400	886.44
3.000	Legacy #: 751E051ER00PG STAGE TOOL, MECHANICAL S	00123 Part #: 583095 5-1/2 751E P110 LTC 17.0-23.0	EA	1.00	4,716,1800	4,716.18
4,000	Legacy #: 823355 Machine charge to cul sj2 thre	Part #: 823355	EA	3.00	710.0000	2,130.00
5.000	Legacy #: 823355 Machine charge to mill dv Icol	Part #: 823355	EA	1.00	250.0000	250,00
6,000	Legacy #: B1102551 CENTRALIZER, BOW SPRING	Part #: 472228 5-1/2STR LO LPWLD B-SERIES 25B CS	EA	10.00	28,7000	287.00
7.000	Legacy #: 6020051 COLLAR, STOP 5-1/2 LO STD 5	Part #: 582379 STSCR 10 GA X 2 CS	EA	8.00	37.0500	296.40
8.000	Legacy #: 7010010 THREAD, COMPOUND TUBE-L	Part #: 472158 .OK 1/2LB KITS	EA	2.00	37.0500	74,10
9.000	Legacy #: 178173 DELIVERY CHARGES	Part #: 178173	EA	1,00	100,0000	100.00
Weatherford requested e filte curre greement, hall be app conditions v	d (such term shall include any subs quipment, materials or services to ni applicable master service agreen Weatherford's standard terms and plicable to the provision of such equ vill be provided to you upon your w	idiary, division or affiliate of Weatherford Intern Is customer. Such provision shall be governed nent between the parties. In the event that their conditions, a copy of which can be found at w ipmant, materials or services. [A paper copy o then request.]	ational, inc.) i by the term re is no such ww.weathen of these stand	will provide the s and conditions master service ford.com/t&c dard terms and	Tiehiy <u>Al</u> ((1):10).	9,417.24

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### Cambrian Management Ltd PO Box 272 Midland, Texas 79702

Eunice Plant AGD Well 1

Lea County, New Mexico United States of America API/UWI 3002521497

## **Cementing Cost Estimate**

4,

Prepared for: W. A. Baker April 9, 2010 Version: 3

Submitted by: Kyle Baros

Halliburton 4000 N. Big Spring, Ste 200 Midland, Texas 79705 432.202.6581

### HALLIBURTON

Proposal 232845 v.3



### Foreword

Halliburton is pleased to have this opportunity to present this proposal for your consideration. We earnestly request the service work to be performed on this well. These Service Coordinators can be reached in our District, at the following phone numbers:

#### MIDLAND SALES OFFICE 1-800-844-8451

ODESSA DISTRICT 1-800-417-5096

<u>CEMENTING</u>: Scott Kerby / Joe Briseno BJ Wheeler

STIMULATION: Larry Staples / Jerry Thurman Gary Pacheco

LOGGING & <u>PERFORATING</u> Mike Wood / Josh Stumpner

COILED TUBING <u>& NITROGEN</u> Larry Staples / Jerry Thurman Gary Pacheco

TOOLS & TESTING, PROD. SVCS., TCP, <u>COMPL. PRODUCTS</u> Steve Engleman / Kevin Warren

BAROID Fernando Arizpe

### HOBBS DISTRICT 1-800-416-6081

<u>CEMENTING</u> Jeremy Rey / Jaime Gonzales

STIMULATION: Larry Staples / Jerry Thurman Gary Pacheco

LOGGING & <u>PERFORATING</u> Josh Mount / Vernon Reever

DRILL BITS Jeff Tranum

TOOLS & TESTING, PROD. SVCS., TCP, COMPL. PRODUCTS John Breeden

BAROID Freddy Redmon

PREPARED BY: Bruce Day

We look forward to working with you to provide the very best quality services available in the Permian Basin.

Kyle Baros, Technical Professional



2/9

Proposal 232845 v.3

### Technical Discussion

### **Cementing Best Practices**

- 1. <u>Cement quality and weight</u>: You must choose cement slurry that is designed to solve the problems specific to each string of pipe.
- 2. <u>Waiting time:</u> You must hold the cement slurry in place and under pressure until it hardens. A cement slurry is a time-dependent liquid and must be allowed to undergo a hydration reaction to produce a competent cement sheath. A fresh cement slurry can be worked (thickening or pump time) as long as it is plastic, and the initial set of cement occurs during the rapid reaction stage. If the cement is not allowed to hydrate; it will be subject to changes in density, dilution, settling, water separation, and gas cutting that can lead to lack of zonal isolation with resultant bridging in the annulus.
- 3. <u>Pipe movement</u>: Pipe movement may be one of the single most influential factors in mud removal. Reciprocation and/or rotation mechanically breaks up gelled mud and constantly changes the flow patterns in the annulus for better cement bonding.
- 4. <u>Mud properties</u>: Plastic viscosity (PV) should be less than 15 centipoise (cp), and less than 10 cp, if possible, yield point (YP) should be less than 10 pound/100-square feet (lb/100ft<sup>2</sup>) decreasing down to about 5 lb/100 ft<sup>2</sup>.
- 5. <u>Mud gel strength</u>: A nonthixotropic mud is desirable for good mud removal. Mud left in the hole prior to running casing should have 10-second/10-minute/30-minute gel strength such that the 10-minute is less than double the 10-second and the 30-minute is less than 20 lb/100 ft<sup>2</sup>). Sufficient shear strength may not be achieved on a primary cement job to remove mud left in the hole should the mud develop more than 25 lb/100 ft<sup>2</sup>.
- 6. <u>Mud fluid loss</u>: Decreasing the filtrate loss into a permeable zone enhances the creation of a thin filter cake. This increases the fluid mud in the hole, which is more easily removed. Generally, an API fluid loss of 7 or 8 milliliter (ml) is sufficient with high-temperature/high-pressure fluid loss (HTHP) no more than double this amount.
- Circulation: Circulate bottoms up twice, or until well conditioned mud is being returned to the surface. There
  should be no cuttings in the mud returns. An annular velocity of 260 feet per minute is optimum (SPE/IADC
  18617), if possible.
- 8. <u>Flow rate:</u> Turbulent flow is more desirable flow regime for mud removal. If turbulence cannot be achieved, better mud removal is found when maximum flow energy is used. The maximum pump rate should be determined to obtain the best flow regime.
- Hole size: The optimum hole size recommended for good mud removal is 1.5 to 2 inches larger than the casing or liner size. Hole sizes larger than 2 inches annular space can be dealt with, but those that are smaller than 1.5 inches present difficult problems.
- 10. <u>Pipe Centralization</u>: This helps to create a uniform flow area perpendicular to flow direction. Cement will take the path of least resistance so that centralization is important in keeping the pipe off the walls of the hole. At least a 70 percent standoff should be achieved for centralization.
- 11. <u>Rat hole:</u> When applicable, a weighted viscous pill in the rat hole prevents cement from swapping with lighter weight mud when displacement stops.
- 12. <u>Shoe joint:</u> A shoe joint is recommended on all primary casings and liners. The length of the shoe joint will vary, although the absolute minimum length is one joint of pipe. If conditions exist, such as not running a bottom plug, two joints should be the minimum length.



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Job Information	CorrosaCem - TL Production Cementing
Well Name: Eunice Plant AGD Well	Well #: 1
Surface Casing	0 - 300 ft (MD)
Outer Diameter	10.750 in
Long String	0 - 4010 ft (MD)
Outer Diameter	7.000 in
Inner Diameter	6.456 in
Linear Weight	20 lbm/ft
Job Excess	10 %
DV Tool	4000 ft (MD)
Existing 6-1/4" Open Hole	4010 - 4550 ft (MD)
Inner Diameter	6.250 in
Job Excess	35 %
6-1/4" Hole	4550 - 5000 ft (MD)
Inner Diameter	6.250 in
Job Excess	35 %
Production Casing	0 - 4550 ft (MD)
Outer Diameter	5.500 in
Inner Diameter	4.892 in
Linear Weight	17 lbm/ft
Thread	AB FL-4S
Casing Grade	J-55





### Technical Discussion CorrosaCem - TL Production Cementing

The CorrosaCem-TL volume is based on 450 feet of fill with 35% of the specified hole volume added. If more current data, such as an open hole volume caliper log, becomes available, then the volume should be modified to caliper plus 20% over gauge hole.

CorrosaCem-TL will require 0.4% (bwoc) FE-2 as a dispersant/retarder. The Fe-2 will need to be pre-mixed in the mix water, as well as the spacer water, prior to the job.

#### **Recommended procedure for CorrosaCem-TL:**

#### Prior to Job-

- 1. Blend Fe-2 with fresh water in a clean transport, mix thoroughly until all Fe-2 is dissolved.
- 2. The Fe-2 concentration will be based on laboratory pilot testing for desired cement slurry properties. (Estimated 0.09 ppg)
- 3. The Fe-2 water volume will include the required mix water volume, plus spacer volume, plus bottoms. (Estimated 50 bbl)
- 4. The mixture will be sampled, and used in the plant blend tests. Adjust Fe-2 concentration as required.
- 5. Load the CorrosaCem-TL bulk material into a clean, cement free, bulk truck. All cement residue **must be removed**, and the bulk tier inspected prior to loading the CorrosaCem-TL.

#### **On Location-**

- 1. Add the required Fe-2 mix water volume to the batchmixer. Add CorrosaCem-TL to batchmixer to obtain a 15.0 ppg slurry.
- 2. Pump the remaining Fe-2 water as a spacer.
- 3. Pump and displace the CorrosaCem-TL slurry.



Proposal 232845 v.3

### CorrosaCem - TL Production Cementing

.

### Stage 1

**Calculations** 

Cement: (550.00 ft fill)	
10.00 ft * 0.0623 ft <sup>3</sup> /ft * 10 %	$= 0.69  \text{ft}^3$
540.00 ft * 0.0481 ft <sup>3</sup> /ft * 35 %	$= 35.04 \text{ ft}^3$
First Stage Tail Cement	$= 35.72 \text{ ft}^3$
_	= 6.36 bbl
Shoe Joint Volume: (40.00 ft fill)	
40.00 ft * 0.1305 ft <sup>3</sup> /ft	$= 5.22  \text{ft}^3$
	= 0.93 bbl
Tail plus shoe joint	$= 40.95  \text{ft}^3$
• -	= 7.29 bbl
Total Tail	= 45 sks
Stage 2	
Cement : (3033.00 ft fill)	
3033.00 ft * 0.0623 ft <sup>3</sup> /ft * 10 %	$= 207.99  \text{ft}^3$
Total Second Stage Lead Cement	$= 207.99  \text{ft}^3$
u u	= 37.04 bbl
Sacks of Cement	= 81 sks
Cement : (967.00 ft fill)	
967 00 ft * 0.0623 ft <sup>3</sup> /ft * 10 %	$= 66.31 \text{ ft}^3$
Second Stage Tail Cement	$= 66.31 \text{ ft}^3$
Dooling Sigo Tan Comain	= 11.81  bb

Total Tail

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= 50 sks



#### Job Recommendation CorrosaCem - TL Production Cementing

Install floating equipment, run casing to bottom, and circulate a minimum of 2-3 hole volumes prior to cementing as follows:

Fluid Instructions

#### Stage 1

Fluid 1: Pump 20 bbl		
Dispersant Spacer	Fluid Density:	0 lbm/gal
0.09 lbm/bbl Fe-2 (Dispersant)	Fluid Volume:	20 bbl

Fluid 2: Mix and pump 50 sks CorrosaCem - TL 0.4 % Fe-2 (Dispersant)

.

Fluid Weight 15 lbm/gal 0.91 ft<sup>3</sup>/sk Slurry Yield: Total Mixing Fluid: 3.44 Gal/sk Top of Fluid: 4000 ft Calculated Fill: 550 ft Volume: 7.29 bbl Calculated Sacks: 45.09 sks Proposed Sacks: 50 sks

#### DV Tool @ 4000 ft (MD)

Stage 2

Fluid 1: Pump 20 bbl Fresh Water

Fluid 2: Lead with 85 sks EconoCem - C

20 bbl

Fluid Volume:

Fluid Weight 11.70 lbm/gal 2.57 ft<sup>3</sup>/sk Shurry Yield: Total Mixing Fluid: 14.93 Gal/sk Top of Fluid: 0 ft Calculated Fill: 3033 ft Volume: 37.05 bbl Calculated Sacks: 81.00 sks Proposed Sacks: 85 sks

Fluid Weight 14.80 lbm/gal Slurry Yield:  $1.33 \text{ ft}^3/\text{sk}$ Total Mixing Fluid: 6.34 Gal/sk Top of Fluid: 3033 ft Calculated Fill: 967 ft Volume: 11.81 bbl Calculated Sacks: 50 sks Proposed Sacks: 50 sks

Fluid 3: Tail-in with 50 sks HalCem - C

Proposal 232845 v.3

Cost Estimate

### CorrosaCem - TL Production Cementing

<u>Mtri Nbr</u>	Description	Qty	<u>U/M</u>	Unit Price	Gross Amt	Discount	Net Amt
1	MILEAGE FOR CEMENTING EQUIPMENT NUMBER OF UNITS	50 i	MI	9.79	489.50	332.86	156.64
2	MILEAGE FOR CEMENTING CREW NUMBER OF UNITS	50 1	MI	5.76	288.00	195.84	92.16
7	ENVIRONMENTAL SURCHARGE	1	JOB	134.00	134.00	0.00	134.00
372867	DOT VEHICLE CHARGE	3	EA	241.00	723,00	0.00	723.00
16093	MSC PUMP CHARGE (IST STAGE) DEPTH FEET/METERS (FT/M)	1 4550 FT	EA	5,392.00	5,392,00	3,666.56	1,725.44
16	MSC ADDITIONAL STAGES NUMBER OF UNITS	1	STG	4,635.00	4,635.00	3,151.80	1,483.20
141	RCM w/RA DENSOMETER NUMBER OF UNITS	1	JOB	1,990.00	1,990.00	1,353.20	636.80
116	BOOSTER PUMP-SKID,/DAY NUMBER OF DAYS	1 1	EA	1,362.00	1,362,00	926.16	435.84
74038	PLUG CONTAINER RENTAL-IST DAY DAYS OR FRACTION (MINI)	1	EA		1,322.00	898.96	423.04
100001615	FE-2	2	LB	11.92	23.84	17.40	6,44
452967	CORROSACEM (TM) SYSTEM	50	SK		16,360,00	11,942.80	4,417.20
100001615	FE-2	15	LB	11,92	178.80	130.52	48.28
452992	ECONOCEM (TM) SYSTEM	85	SK		3,391.50	2,475.80	915.70
452986	HALCEM (TM) SYSTEM	50	SK		2,087,50	1,523.88	563.62
76400	MILEAGE, CMT MTLS DEL/RET NUMBER OF TONS	25 8,45	MI	3.35	707,69	516.61	191.08
3965	SVC CHRG, CMT & ADDITIVES NUMBER OF EACH	206 1	CF	5.49	1,130.94	825.59	305.35
	Total	USD					40,215.77
	Discount 68/73	USD					27,957.98
······································	Discounted Total	USD					12,257.79

Primary Plant: Hobbs, NM, USA Secondary Plant: Hobbs, NM, USA Price Book Ref: 09 Permian Basin Price Date: 3/31/2010



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### **Conditions**

#### NOTE

The cost in this analysis is good for the materials and/or services outlined within and shall be valid for 30 days from the date of this proposal. In order to meet your needs under this proposal with a high quality of service and responsive timing, Halliburton will be allocating limited resources and committing valuable equipment and materials to your area of operations. Accordingly, the discounts reflected in this proposal are available only for materials and services awarded on a first-call basis. Alternate pricing may apply in the event that Halliburton is awarded work on any basis other than as a first-call provider.

The unit prices stated in the proposal are based on our current published prices. The projected equipment, personnel, and material needs are only estimates based on information about the work presently available to us. At the time the work is actually performed, conditions then existing may require an increase or decrease in the equipment, personnel, and/or material needs. Charges will be based upon unit prices in effect at the time the work is performed and the amount of equipment, personnel, and/or material actually utilized in the work. Taxes, if any, are not included. Applicable taxes, if any, will be added to the actual invoice.

It is understood and agreed between the parties that with the exception of the subject discounts, all services performed and equipment and materials sold are provided subject to Halliburton's General Terms and Conditions contained in our current price list, (which include LIMITATION OF LIABILITY and WARRANTY provisions), and pursuant to the applicable Halliburton Work Order Contract (whether or not executed by you), unless a Master Service and/or Sales Contract applicable to the services, equipment, or materials supplied exists between your company and Halliburton, in which case the negotiated Master Contract shall govern the relationship between the parties. A copy of the latest version of our General Terms and Conditions is available from your Halliburton representative or at:

<u>http://www.halliburton.com/terms</u> for your convenient review, and we would appreciate receiving any questions you may have about them. Should your company be interested in negotiating a Master Contract with Halliburton, our Law Department would be pleased to work with you to finalize a mutually agreeable contract. In this connection, it is also understood and agreed that Customer will continue to execute Halliburton usual field work orders and/or tickets customarily required by Halliburton in connection with the furnishing of said services, equipment, and materials.

Any terms and conditions contained in purchase orders or other documents issued by the customer shall be of no effect except to confirm the type and quantity of services, equipment, and materials to be supplied to the customer.

If customer does not have an approved open account with Halliburton or a mutually executed written contract with Halliburton, which dictates payment terms different than those set forth in this clause, all sums due are payable in cash at the time of performance of services or delivery of equipment, products, or materials. If customer has an approved open account, invoices are payable on the twentieth day after date of invoice.

Customer agrees to pay interest on any unpaid balance from the date payable until paid at the highest lawful contract rate applicable, but never to exceed 18% per annum. In the event Halliburton employs an attorney for collection of any account, customer agrees to pay attorney fees of 20% of the unpaid account, plus all collection and court costs.



Proposed Completion Data Guide





Page 1 of 2

			Pe	ermanent	Packer
	Prepared For: TARGA RESOURCES INC Field Name: Widcat Lease: Well Number: Versado "AGI" #1 Well Location: Lea County, New Mexico	HI Vers	BD File Ni 170658 ilon 6/ Op 170658V6	ame tion A iA	
		1. 100	OD I	MARICANIL SA	mountes 1
	A Production Tubing,2 7/8 6.5# Eue J-55 Duo-Lined W 2.44 ID	2.440	2.875	244.00	0,00
	1 <u>Safety Valve Assembly</u> a X over Pup W/Clp, 2 7/8°6.5# Eue x 2 7/8° 6.4# Vam-Top J-55 Dug-Lined	2.441	3.660	6.00	244.00
	Farga Resources b Haliborton "NE" Tubing Retrievable Safaty Valve, 10,000# Pressure Rating, Equalizing Type,Nickel Alloy 725, "X" Profile, 2 7/8" Vam-Top Box x Pin Ber (b): (761)HV523270.11 (198825)	2.336	4.650	4.00	250.00
	c Xover Pup with Clp, 2 7/8°6.4# Vam-top x 2 7/8° 6.5# Eue J-55 Targa Resources d Control Line, .065° Wall. Incoloy 825, 1/4° x 400' (22\$N\$54040) (101309359) Customer Stock	2.441	3.222	6.00	254.00
	B Production Tubing,2 7/8 6.5# Eue J-55 Duo-Lined W 2.44 ID	2.440	2.875	4,140.00	260.00
	2 <u>Seal Assempty</u> a Loc J-Siol 2 7/8 API-Eue x 2 11/16 12UNS B-P 725 Material	2.330	3.430	0.60	4,400.00
	b Seal Assy,3.00 X 2 11/16 12UNS ( 8h makeup) 725 maleda) Molded Alfas seal, Pressure ratingpsi Refuted to the pressure ratingpsi	2.330	3.000	1.33	4,400.50
	c MS Guida,2 11/16 12UNS 725 Material Ref:(212G30000-D)(188825)	2.330	2.970	0.50	4,401.83 4,402.33
	3 <u>Packer Assembly</u> a Halliburton "TWB" Perma-Series ™ Packer 5 1/2" 14-20#,3.00 ,2 7/8 Eue Pin 725 Material (AFLAS Elements) Pressure Rating 9,000psi	3.000	4.540	3.00	4,400.00
	REF:(21TW85501-0)(188825) b Coulding 27/8° 6,5# EueJ-55 Tamo Resources		3.660	0.44	4,403.00
	c Pup Jaint, 27/8*6.5# Eue J-55 Duo-Lined	2.440	2.875	6.00	4,403.44
	d Landing Nipple 2.313 X 2 7/8" Eue BXP 725 Material Ref: (711X23319) (188825)	2.313	4,645	1.50	4,409.44
	e Pup Joint, 27/8°6,5# Eve J-55 Duo-Lined Targa Resources	2.440	3,500	6.00	4,410.94
3	f WL-Rentry Guide, 2 7/82" Eue 6.5# 725 Material Ref:{ 212M895 } (188825)	2.970	3.700	0.50	4,416.94
					4,417.44



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#### **Proposed Completion Data Guide**

### Original Date Prepared: July 16, 2008 Date Revised: April 13, 2010

	Permanent	Packer
Prepared For: TARGA RESOURCES INC Field Name: Widcat Lease: Well Number: Versado "AGI" #1 Well Location: Lea County, New Mexico	HBD File Name 170658 Version 6/ Option A 170658V6A	
, fan Griene an Angelein an	and the state of the second	
1 <u>Safety Valve Assembly</u> 2 <u>Seal Assembly</u>		\$99,400.00 \$ 24,512.03

Packer Assembly 3

47,376.88 \$

Personnel and Mileage:			
CPS-Retrievable Packer - BOM -20474 / Land Alternate	•		
Completion Serviceman (Land) - 8 Hr. Min. / Per Day (16328)	\$	1,096.20	1
Completion Serviceman (Land) - Add'l. Hours, after 8 hr min (16328)	\$	137,20	1
Serviceman Mileage - Per Mile/Round Trip, from nearest Halliburton camp (3327)	\$	4.03	1
Fuel Surcharge - Per Mile (87098)	\$	0.11	1
Use of Hydraulic Setting Tool - Per Packer - 5 Day (16320)	\$	1,468,60	1
Assembly Make Up - Per Unit (21097)	\$	1,108.80	11
Completion Assy, Test /Unit (18701)	\$	378.00	3
Test Plug Use - Minimum charge (1 Day) (16323)	\$	210.00	1
Environmental Clean-Up (2311) \$ 250.00 Max	\$	100,00	1
Brass Ball (1.312") (93B108) (101014253)	\$	244.30	1
Test Plug Use - (Add Day) (16323)	\$	35,21	1
Steel Ball (.875") (93B4) (100006745)	\$	68,60	2
Control Line Test - Per Test (72113)	\$	74.90	1
Hydraulic Hand Pump and Manifold - Use / First Day (3539)	\$	132,30	1
Completion Tool Box - Per Job (3438)	\$	281.40	1
Safety Valve Toolbox - Use / 3 Days (72118) Over 10K Valves	\$	1,488.20	1
Nylon Tie Wraps (50761)	\$	266.00	100
9/16-18UNF Autoclave Fitting with Anti-Vibration Gland (78Q6329) (101365954)	\$	1,162.00	2
TRSV Fitting Kit - 374431	\$	315.70	1
Buckles - Min. 1 Box (100 Each Buckles) (94S102) (101087308)	\$	497.00	1
Bands per 1200 In. Roll (94598) (101087320)	\$	144.20	1

Estimated Sub Suface Safety Total		\$99,400.00
Estimated Packer and Seal Assembly Total	\$	71,888.91
Estimated Service and Rental Total	<u>\$</u>	9,071.41
Estimated Mercandise Total for Job		171,288.91

Note added Hours after 8 will be charged at 137.20 per hour

Note added Hours after 8 will be charged at 137.20 per hour And Mileage from Nearset Camp will be charged at 4.14 per mile round trip (Fuel Surcharge Included)



**Quote Response Form** Energy Services Printed on 9/16/2010 9:01:37AM Estimate No. BE00000165 Wellhead & Production Systems Warehouse ID: ODES - ODESSA Houston, TX 7311 Andrews Highway Odessa, TX 79765 Phone: 432-552-0695 Fax: 432-362-4363 Customer: Ship to: Customer Info: Targa Midstream Phone: Thank you for the opportunity to quote your equipment needs. If you have any questions, Please call, 4.1 . . . Estimate Terms Quote Date **Expiration** Date Salesperson Customer Currency Fikes, Gerald BE00000165 5/11/2010 USD **Casing Head Assembly** Line UM Quantity Item Unit Price **Extended** Price 10 1.00 EΛ 20353625 1,725.00 1,725.00 CASING HEAD BODY, C-22, 11" 3K FLANGED TOP X 10-3/4" SOW (W/ ORING GROOVE) BTM, W/TWO 2" LPO OUTLETS, U, DD, PSL 1, PR1 20 1.00 EA 20365450 25.00 25.00 NIPPLE, PIPE, 2" LP X 6" LONG XXH 20364831 1,00 EA 25,00 25.00 30 BULL PLUG, 2" LP, SOLID, XXH ĒΛ 20391949 120.00 120.00 1.00 40 BALL VALVE, 3K, 2" LP, SE, NACE TRIM 213 1,00 EΛ 20384272 395,00 395.00 COLLAR~CASING 10-3/4 SOW X 10-3/4 SOW J-55 **Casing Read Assembly Total:** Z.290.00 **Casing Spool Assembly** Line Quantity UM Item Unit Price Extended Price 201 1.00 EA 20365360 5,330.00 5,330.00 CASING SPOOL ASSEMBLY, C-22-BG, 11" 3K FLANGE BTM X 11" 3K FLANGED TOP, W/TWO 2-1/16" 5K SSO OUTLETS, L-U, DD, PSL 1, PR1 240.00 202 2.00 ĒΑ 20365431 120.00 BALL VALVE, 3K, 2" LP, SE, STANDARD TRIM 50.00 2.00 EΛ 20365450 25.00 203 NIPPLE, PIPE, 2" LP X 6" LONG XXII 700.00 700.00 20391954 204 1,00 E٨ SECONDARY SEAL ASSEMBLY, BG-PE, 9" NOM X 7" ID, W/PEROXIDE CURED RUBBER, U, AA, PSL 1, PR 1 95.00 95,00 ĒΑ 205 1.00 20365793 RING GASKET, R-53, S316-4, OVAL, API 6A

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1	8753	Completion	
	السيبية الا	Services	ŝ

	'] Ser⊎	rices	Printed on 9/16/2010 9:01:37AM	Estimate N	lo. BE00000165
206	16.00	EA	20366131 STUD ASSEMBLY ALL TUDEAD 1.375 PUDI 24 X 10.00 L	13.13	210.08
•			B7 STUD, W/ TWO ASTM A194 2H NUTS, BLACK	UND, ASTMA 193 GK	
207	2.00	EΛ	20366688 FLANGE COMPANION BODY 2-1/16" SK X 2" I P 11 FE	115.00	230,00
208	2.00	EA	20358839 RING GASKET R-24 S316-4 OVAL API 64	35.00	70.00
209	1.00	EA	20391952	1,000.00	1,000.00
			CASING HANGER ASSEMBLY, C-21 SLIP, 11" C-21 BOWL, W/PEROXIDE CURED RUBBER GOODS, U, AA, PSL 1, PR 1	7" OD CASING,	
			Casing S	pool Assembly Total:	7,925.08

Extended Price	Item Unit Price	UM	Quantity	Line
3,291.6	20365368 TUBING HEAD ASSEMBLY, TCM, 11" 3K FLANGE BTM X 7-1/16" 3K FLANGED TOP, W/ TWO 2-1/16" 5K SSO OUTLETS, L-1/, DD, PSL 1, PR1	EA	1.00	50
	· · · · · · · · · · · · · · · · · · ·			
105.0	20358839 35.00 RING GASKET R-24 S316-4 OVAL API 64	EA	3.00	60
75.0	20365472 75.00 VALVE REMOVAL PLUG, 1-1/2 LP	ЕΛ	1.00	70
1,100.0	20366688 \$50.00 FLANGE COMPANION, BODY, 2-1/16" 5K X 2" LP, U, FF	ЕΛ	2.00	80
2,400.0	20367048 2,400.00 GATE VALVE ASSEMBLY, JMP-WS, M, 2-1/16" SK WEDGE FE HWO, L-U, FF, PSL 2, PR 1	ΕΛ	1.00	90 <sub>.</sub>
25.00	20391950 25.00 BULL PLUG, 2" LP, SOLID, NICKEL PLATED	EΛ	1.00	100
1,000.00	20391951 CASING HANGER ASSEMBLY, C-22 SLIP, 11° C-22 BOWL, 5-1/2° OD CASING, W/PEROVIDE CURED RUBBER GOODS, 11 AA, PSI, 1, PR1	EΛ	1.00	110
700.00	20391953 SECONDARY SEAL ASSEMBLY, BG-PE, 9" NOM X 5-1/2" ID, W/PEROXIDE CIRED BURDER 11 AA BY 1 PD 1	EA	1.00	120
95.00	20365793 95.00 RING OASKET, R-53, S316-4, OVAL, API 6A	EA	1.00	130
210.08	20366131 STUD ASSEMBLY, ALL-THREAD, 1.375-8UN-2A X 10.00 LONG, ASTM A193 GR	EA	16.00	140
25.00	B7 STUD, W7 TWO ASTM A194 2R NUTS, BLACK 20391950 25.00 BULL PLUG, 2" LP, SOLID, NICKEL PLATED	ЕЛ	1.00	211
9,026.75	Tubing Spool Assembly Total:			

_	TICCA	Sacinory				
-	Linc	Quantity	UM	ltem	Unit Price	Extended Price
-	150	1.00	EA	20373199	16,780.00	16,780.00
				TUBING HEAD ADAPTER ASSEMBLY, ASP, 7-1/16" 3K STUDDED H	зтм Х	
				3-1/8" 5K STUDDED, W/ ONE 1/4" CCL PORT, U, HH, PSL 2, PR 1		

Email: zjennings@13energy.com

### All Items Subject to Availability



	] Serv	ices	Printed on 9/16/2010 9:01:37AM	Estimate No.	BE00000165
160	2.00	EA	20376136	36,000,00	72,000.00
			GATE VALVE, 3-1/8 ",5K, 11PT, MANUAL ,R-35 FLG X FLG INCONEL,	625 ALL	
			WETTED SURFACES ,HH TRIM, API ,6A ,TEMP, CLASS, P+U, 112S SER	VICE	
			PER NACE , MR-01-75 C, AW HANDWHEEL (EEC DRAWING AL-0121)		
170	3.00	EA	20362703	57.00	171.00
			RING GASKLIT, R-35, \$316-4, OVAL, API 6A "		
180	8.00	EA	20366128	6.67	53,36
			STUD ASSEMBLY, ALL-THREAD, 1.125-8UN-2A X 8.50 LONG, ASTM A	193 OR	
			B7 STUD, W/ TWO ASTM A 194 2H NUTS, BLACK		
190	1.00	EA	20362707	80.00	80.00
			RING GASKET, R-45, S316-4, OVAL, API 6A		
200	1.00	EA	20373406	26,760.00	26,760,00
			TUBING HANGER ASSEMBLY, 7-1/16" BOWL X 3-1/2" EUE, W/ 3" HBP	v	
			INCONEL, U, DD, PSL-2, PRI		
212	1.00	EA	20388385	3,675.00	3,675.00
			CROSSOVER SUB BODY, 3-1/2 EUE MALE THREAD X 2-7/8 EUE FEMA THREAD, 718 INCONEL	LE	
			Tree Assembl	v Total:	119.519.36

#### NOTES:

1. All equipment is FOB T3 Energy, Inc. Houston, Texas USA.

2. Freight and crating expenses are not included as part of this quotation,

3. All pricing, as indicated in this quotation, is based on standard equipment deliveries; an expediting fee will be applied if the equipment is required prior to the date (s) indicated above,

4. T3 Energy will not be liable for penalties due to late deliveries that are not agreed upon and authorized by T3 Energy prior to acceptance of the purchase order.

5. This quotation is valid for your acceptance for a period of 30 days.

6. Disclaimer - this is a general terms and conditions for the purpose of advancing to a commercial request.

7. Rental - Rental is charged in complete days from shipment from the T3 Energy facility until returned to the T3 Energy facility. The

renter is responsible for returning the equipment to original condition after use. This includes repair labor and parts as required.

Section Summary:	Section Casing Head Assembly	Total:	2,290.00
	Section Casing Spool Assembly	Fotal:	7,925.08
	Section Tubing Spool Assembly	Total:	9,026.75
	Section Tree Assembly	Total:	119,519.36
	Order	Total:	138,761,19



Printed on 9/16/2010 9:01:37AM

Estimate No. BE00000165

THANK YOU FOR THE OPPORTUNITY TO QUOTE YOUR EQUIPMENT NEEDS.

THIS QUOTE DOES NOT INCLUDE PRO-RATED FREIGHT, SERVICE, OR TAXES

IF YOU HAVE ANY QUESTION PLEASE CALL.

TOMMY MILLER BRANCH MANGER 432-661-5810

TMILLER@T3ENERGY.COM

The estimated delivery schedule below is ARO and after T3 Energy's acceptance of the purchase order.

Casing Head Assembly - 6-8 weeks, ARO Tubing Spool Assembly - 6-8 weeks, ARO Tree Assembly - 6-8 weeks, ARO

Sale Amount:	138,761.19
Søles Tax:	0.00
Misc Charges:	0.00
Total Amount;	138,761.19

Email: : : jennings@t3energy.com



Estimate No. BE00000165

Printed on 9/16/2010 9:01:37AM

#### Limited Warranty and Limitation of Liability

T3 Energy Services warmans the products it manufactures and/or remanufactures and the services it performs to be free from defects in materials and workmanship which materially and adversaly impact performance or safety under normal use and services for a period of:

- One year after initial installation, or 18 months from involce date for manufactured or remanufactured products, whichever comes first;
- One year after the date services are provided (the "Work") as described in a T3 Energy Services service ticket or services invoice.
   Products found to be defective will be repaired or teplaced, at T3 Energy Services option, in a timuly faction at no charge to the customer for such repair or replaced, at T3 Energy Services option.

T3 Energy Services will not be responsible for product damage caused by the process service conditions or damage caused by customer misapplication or improper maintenance. T3 Energy Services also shall not be responsible for normal wear and tear.

T3 Energy Services warrants that the services when performed will be of good quality, will be free from defects in material and workmanship, shall have been properly performed in accordance with applicable industry standards and, and shall be in (coordance with any written specifications which were provided by the customer to T3 Energy Services and accepted by T3 Energy Services prior to the commencement of the Work. If customer notifies T3 Energy Services within 12 months after the date of service that it has discovered that any portion of the Work does not conform to the foregoing warranty T3 Energy Services shall, at its option:

- · promptly repair any such non-conforming work, or
- · promptly replace any such non-conforming work, or
- provide customer with a refund or any equitable portion of the price paid for the work after an allowance for reasonable wear and tear.

The performance by T3 Energy Services of the repair or replacement Work or the equitable refund, described in the previous paragraph shall constitute customer's solo remedy for any defect in the Work. T3 ENERGY SERVICES HEREBY EXPRESSLY DISCLAIMS ALL OTHER WARRANTIES, EITHER EXPRESS, IMPLIED, OR STATUTORY, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE.

If customer fails to properly operate and maintain the product in accordance with the instructions of T3 linengy Services, or the original equipment supplier or manufacturer, as applicable, or if customer otherwise fails to adhere to applicable industry standards in operating and maintaining the product, customer's failure shall void the foregoing warranty.

In the event T3 Energy Services does not receive payment as agreed, T3 Energy Services may impase a 1.5% per month finance charge to any unpaid past due balance on all open accounts.

In no event shall any TJ Energy Services or any of its respective affiliates be lieble for any loss of use, revenue, at anticipatory profit, or for any direct, indirect, or incidental or consentential damages arising out of, or connected with, any parties of the Work.

The foregoing is the only obligation of T3 Energy Services with respect to the Work and customer's exclusive remedy for breach of warranty, and is \_ customer's exclusive remedy becounder by way of breach of contract, tart, strict liability or otherwise.

Any action or breach of this limited warranty or otherwise with respect to the Work must be commenced one (1) year after the cause of action has accrued.

THIS LIMITED WARRANTY SHALL BE GOVERNED BY AND CONSTRUED IN ACCORDANCE WITH THE LAWS OF THE STATE OF TEXAS WITHOUT REGARD TO ANY PRINCIPLES OF TEXAS LAW WHICH WOULD REQUIRE THE APPLICATION OF THE LAW OF ANOTHER JURISDICTION.

**Confirming Signature** 

Date

### RECEIVED

State of New Mexico

District 1 1625, N. French Dr., Hobbs, NM 88240 MAR 2 3 201 Energy Minerals and Natural Resources Department 1301 W. Grand Avenue, Artesia, BBSOCD Oil Conservation Division 1000 Rio Brazos Road, Aztec, NM 87410 1220 South St. Francis Dr. Santa Fe, NM 87505

Form C-144 CLEZ July 21, 2008

For closed-loop systems that only use above ground steel tanks or hanl-off bins and propose to implement waste removal for closure, submit to the appropriate NMOCD District Office.

District IV 12201S: St. Francis Dr., Santa Fc, NM 87505

District III

3

Closed-Loop System Permit or Closure Plan Application

(that only use above ground steel tanks or haul-off bins and propose to implement waste removal for closure)

Type of action: X Permit Closure

Instructions: Please submit one application (Form C-144 CLEZ) per individual closed-loop system request. For any application request other than for a closed-loop system that only use above ground steel tanks or haul-off bins and propose to implement waste removal for closure, please submit a Form C-144. Please be advised that approval of this request does not relieve the operator of liability should operations result in pollution of surface water, ground water or the environment. Nor does approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rules, regulations or ordinances.

Operator: Targa Midstream Services Limited Partnership OGRID #: 24650
Address: 1000 Louisiana, Suite 4300, Houston, TX 77002-5036
Facility or well name: Eunice Gas Plant SWD #1
API Number: 30-035-21497 OCD Permit Number: PI-D3D41
U/1. or Qtr/Qtr L Section 27 Township 205 Range 37 E County: Lea
Center of Proposed Design: Latitude Longitude NAD: 1927 ] 1983
Surface Owner: 🔲 Federal 🗋 State 🔀 Private 🗋 Tribal Trust or Indian Allotment
2. XI Clused Loan System: Subsection H of 19 15 17 11 NMAC
Operation: Diffiling a new well Workover or Drilling (Applies to activities which require prior approval of a permit or police of intent) P&A
Above Ground Steel Tanks or Haul-off Bins
3.
Signis: Subsection C of 19.15.17.11 NMAC
12 x 24 , 2 lettering, providing Operator's name, site location, and emergency telephone numbers
Closed-loop Systems Permit Application Attachment Checklist: Subsection B of 19.15.17.9 NMAC
Instructions: Each of the following dems must be attached to the application. Please indicate, by a check mark in the box, that the documents are
Sign Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
X Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
Previously Approved Design (attach copy of design) API Number:
Previously Approved Operating and Maintenance Plan API Number:
S Weste Removal Closure For Closed-Joon Systems That Utilize Above Ground Steel Tanks or Haul-off Rins Only: (191517131) NMA()
Instructions: Please indentify the facilities of the disposal of liquids, drilling fluids and drill cuttings. Use attachment if more than two
facilities are required.
Disposal Facility Name: <u>UN1</u> Disposal Facility Permit Number: <u>N1166</u>
Disposal Facility Name
Yes (If yes, please provide the information below) No
Required for impacted areas which will not be used for future service and operations:
Consider the second and cover Design Specifications based upon the appropriate requirements of Subsection H of 19.13.17.13 NMAC
Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC
6. Operator Application Certification:
I hereby certify that the information submitted with this application is true, accurate and complete to the best of my knowledge and belief.
Name (Print): WA Baker II Title: Drilling Engineer
Signature: UTRalate Date: 9-16-10
c-mail address: wbaker@cambrianmant.com Telephone: 432-620-9181



OCD Representativ	e Signature:	Approval Date: 03/ -1///
Title	Geologist	OCD Permit Number: P(-0304)
t. Closure Report (req Instructions: Opera The closure report is section of the form u	uired within 60 days of closure com tors are required to obtain an approve required to be submitted to the division until an approved closure plan has be	npletion): Subsection K of 19.15.17.13 NMAC ved closure plan prior to implementing any closure activities and submitting the closure re- sion within 60 days of the completion of the closure activities. Please do not complete this een obtained and the closure activities have been completed.
; ;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;		[] Closure Completion Date:
9. <u>Closure Report Reg</u> Instructions: Please two facilities were ut	arding Waste Removal Closure For indentify the facility or facilities for ilized.	r Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only: where the liquids, drilling fluids and drill cuttings were disposed. Use attachment if mor
Disposal Facility N	ame:	Disposal Facility Permit Number:
Disposal Facility N	ame:	Disposal Facility Permit Number:
Site Reclamation	on (Photo Documentation) g and Cover Installation	
Derator Closure C.	Application Rates and Seeding Techn ertification: he information and attachments submi	nique
Derator Closure C. J hereby certify that the belief. 1 also certify the Name (Print):	Application Rates and Seeding Techn ertification: he information and attachments submi hat the closure complies with all appli	nique nitted with this closure report is true, accurate and complete to the best of my knowledge and licable closure requirements and conditions specified in the approved closure plan. Title:
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**e**.

#### Form C-144 C1.):Z

#### Oil Conservation Devision

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DESIGN PLAN



This will be maintained by 24 hour solids control personnel that stay on location.



Office: 575.746.1689

Cell: 575.748.6367

### **OPERATING AND MAINTENANCE PLAN**

Three (3) 20 yard roll off containers will be on location. As one is filled it will be hauled off to an approved disposal site and another will begin to fill.

All closed loop equipment will be maintained by 24 hour solids control personnel that will stay on location.

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### CLOSURE PLAN

1

CLOSED LOOP SPECIALITIES P.O. Box 1479 CARLSBAD, NM 88220 (575)748-6367

July 1, 2008

CRI Permit #R9166

CRI Phone # 575-393-1079

Contact Person 575-6319829

Sundance Landfill Permit #NM-01-003

Contact Person 575-390-7838



### Hallburton

### 30-025-21497

### Cambrian Management Ltd PO Box 272 Midland, Texas 79702

Eunice Plant AGD Well 1

Lea County, New Mexico United States of America API/UWI 3002521497

## **Cementing Cost Estimate**

Prepared for: W. A. Baker April 9, 2010 Version: 3

Submitted by: Kyle Baros

Halliburton 4000 N. Big Spring, Ste 200 Midland, Texas 79705 432.202.6581

#### HALLIBURTON



Proposal 232845 v.3



#### Foreword

Halliburton is pleased to have this opportunity to present this proposal for your consideration. We earnestly request the service work to be performed on this well. These Service Coordinators can be reached in our District, at the following phone numbers:

### MIDLAND SALES OFFICE 1-800-844-8451

#### ODESSA DISTRICT 1-800-417-5096

<u>CEMENTING</u>: Scott Kerby / Joe Briseno BJ Wheeler

STIMULATION: Larry Staples / Jerry Thurman Gary Pacheco

LOGGING & <u>PERFORATING</u> Mike Wood / Josh Stumpner

COILED TUBING <u>& NITROGEN</u> Larry Staples / Jerry Thurman Gary Pacheco

TOOLS & TESTING, PROD. SVCS., TCP, <u>COMPL. PRODUCTS</u> Steve Engleman / Kevin Warren

BAROID Fernando Arizpe

PREPARED BY: Bruce Day

HOBBS DISTRICT 1-800-416-6081

<u>CEMENTING</u> Jeremy Rey / Jaime Gonzales

STIMULATION: Larry Staples / Jerry Thurman Gary Pacheco

LOGGING & <u>PERFORATING</u> Josh Mount / Vernon Reever

DRILL BITS Jeff Tranum

TOOLS & TESTING, PROD. SVCS., TCP, <u>COMPL. PRODUCTS</u> John Breeden

BAROID Freddy Redmon

We look forward to working with you to provide the very best quality services available in the Permian Basin.

Kyle Baros, Technical Professional



**Technical Discussion** 

### Cementing Best Practices

- 1. <u>Cement quality and weight</u>: You must choose cement slurry that is designed to solve the problems specific to each string of pipe.
- 2. <u>Waiting time:</u> You must hold the cement slurry in place and under pressure until it hardens. A cement slurry is a time-dependent liquid and must be allowed to undergo a hydration reaction to produce a competent cement sheath. A fresh cement slurry can be worked (thickening or pump time) as long as it is plastic, and the initial set of cement occurs during the rapid reaction stage. If the cement is not allowed to hydrate; it will be subject to changes in density, dilution, settling, water separation, and gas cutting that can lead to lack of zonal isolation with resultant bridging in the annulus.
- 3. <u>Pipe movement</u>: Pipe movement may be one of the single most influential factors in mud removal. Reciprocation and/or rotation mechanically breaks up gelled mud and constantly changes the flow patterns in the annulus for better cement bonding.
- 4. <u>Mud properties</u>: Plastic viscosity (PV) should be less than 15 centipoise (cp), and less than 10 cp, if possible, yield point (YP) should be less than 10 pound/100-square feet (lb/100ft<sup>2</sup>) decreasing down to about 5 lb/100 ft<sup>2</sup>.
- 5. <u>Mud gel strength</u>: A nonthixotropic mud is desirable for good mud removal. Mud left in the hole prior to running casing should have 10-second/10-minute/30-minute gel strength such that the 10-minute is less than double the 10-second and the 30-minute is less than 20 lb/100 ft<sup>2</sup>). Sufficient shear strength may not be achieved on a primary cement job to remove mud left in the hole should the mud develop more than 25 lb/100 ft<sup>2</sup>.
- 6. <u>Mud fluid loss</u>: Decreasing the filtrate loss into a permeable zone enhances the creation of a thin filter cake. This increases the fluid mud in the hole, which is more easily removed. Generally, an API fluid loss of 7 or 8 milliliter (ml) is sufficient with high-temperature/high-pressure fluid loss (HTHP) no more than double this amount.
- Circulation: Circulate bottoms up twice, or until well conditioned mud is being returned to the surface. There should be no cuttings in the mud returns. An annular velocity of 260 feet per minute is optimum (SPE/IADC 18617), if possible.
- 8. <u>Flow rate:</u> Turbulent flow is more desirable flow regime for mud removal. If turbulence cannot be achieved, better mud removal is found when maximum flow energy is used. The maximum pump rate should be determined to obtain the best flow regime.
- 9. <u>Hole size:</u> The optimum hole size recommended for good mud removal is 1.5 to 2 inches larger than the casing or liner size. Hole sizes larger than 2 inches annular space can be dealt with, but those that are smaller than 1.5 inches present difficult problems.
- 10. <u>Pipe Centralization</u>: This helps to create a uniform flow area perpendicular to flow direction. Cement will take the path of least resistance so that centralization is important in keeping the pipe off the walls of the hole. At least a 70 percent standoff should be achieved for centralization.
- 11. <u>Rat hole</u>: When applicable, a weighted viscous pill in the rat hole prevents cement from swapping with lighter weight mud when displacement stops.
- 12. <u>Shoe joint</u>: A shoe joint is recommended on all primary casings and liners. The length of the shoe joint will vary, although the absolute minimum length is one joint of pipe. If conditions exist, such as not running a bottom plug, two joints should be the minimum length.



3/9

Casing Grade



#### Job Information CorrosaCem - TL Production Cementing Well Name: Eunice Plant AGD Well Well #: 1 Surface Casing 0 - 300 ft (MD) Outer Diameter 10.750 in Long String 0-4010 ft (MD) Outer Diameter 7.000 in Inner Diameter 6.456 in Linear Weight 20 lbm/ft Job Excess 10 % DV Tool 4000 ft (MD) Existing 6-1/4" Open Hole 4010 - 4550 ft (MD) Inner Diameter 6.250 in Job Excess 35 % 6-1/4" Hole 4550 - 5000 ft (MD) Inner Diameter 6.250 in Job Excess 35 % **Production Casing** 0-4550 ft (MD) Outer Diameter 5.500 in . Inner Diameter 4.892 in Linear Weight 17 lbm/ft Thread AB FL-4S

J-55







### Technical Discussion CorrosaCem - TL Production Cementing

The CorrosaCem-TL volume is based on 450 feet of fill with 35% of the specified hole volume added. If more current data, such as an open hole volume caliper log, becomes available, then the volume should be modified to caliper plus 20% over gauge hole.

CorrosaCem-TL will require 0.4% (bwoc) FE-2 as a dispersant/retarder. The Fe-2 will need to be pre-mixed in the mix water, as well as the spacer water, prior to the job.

#### **Recommended procedure for CorrosaCem-TL:**

#### Prior to Job-

- 1. Blend Fe-2 with fresh water in a clean transport, mix thoroughly until all Fe-2 is dissolved.
- 2. The Fe-2 concentration will be based on laboratory pilot testing for desired cement slurry properties. (Estimated 0.09 ppg)
- 3. The Fe-2 water volume will include the required mix water volume, plus spacer volume, plus bottoms. (Estimated 50 bbl)
- 4. The mixture will be sampled, and used in the plant blend tests. Adjust Fe-2 concentration as required.
- 5. Load the CorrosaCem-TL bulk material into a clean, cement free, bulk truck. All cement residue **must be removed**, and the bulk tier inspected prior to loading the CorrosaCem-TL.

#### **On Location-**

- 1. Add the required Fe-2 mix water volume to the batchmixer. Add CorrosaCem-TL to batchmixer to obtain a 15.0 ppg slurry.
- 2. Pump the remaining Fe-2 water as a spacer.
- 3. Pump and displace the CorrosaCem-TL slurry.





### Calculations

### CorrosaCem - TL Production Cementing

### Stage 1

Cement: (550.00 ft fill)	
10.00 ft * 0.0623 ft <sup>3</sup> /ft * 10 %	$= 0.69 \text{ ft}^3$
540.00 ft * 0.0481 ft <sup>3</sup> /ft * 35 %	$= 35.04 \text{ ft}^3$
First Stage Tail Cement	$= 35.72 \text{ ft}^3$
	= 6.36 bbl
Shoe Joint Volume: (40.00 ft fill)	
40.00 ft * 0.1305 ft <sup>3</sup> /ft	$= 5.22  \text{ft}^3$
	= 0.93  bbl
Tail plus shoe joint	$= 40.95  \text{ft}^3$
	= 7.29 bbl
Total Tail	= 45 sks
Stage 2	
Cement : (3033.00 ft fill)	
3033.00 ft * 0.0623 ft <sup>3</sup> /ft * 10 %	$= 207.99  \text{ft}^3$
Total Second Stage Lead Cement	$= 207.99  \text{ft}^3$
	= 37.04 bbl
Sacks of Cement	= 81 sks



967.00 ft	* 0.0623	ft3/ft *	10 %
Second St	tage Tail	Cemen	t

Cement: (967.00 ft fill)

Total Tail

	66.31 ft <sup>3</sup>
=	66.31 ft <sup>3</sup>
=	11.81 bbl
=	50 sks



### Job Recommendation CorrosaCem - TL Production Cementing

Install floating equipment, run casing to bottom, and circulate a minimum of 2-3 hole volumes prior to cementing as follows:

Fluid Instructions

Stage 1

Fluid 1: Pump 20	bbl
<b>Dispersant Space</b>	r
0.09 lbm/bbl	Fe-2 (Dispersant)

Fluid 2: Mix and pump 50 sks CorrosaCem - TL 0.4 % Fe-2 (Dispersant) Fluid Density: 0 lbm/gal Fluid Volume: 20 bbl

Fluid Weight 15 lbm/gal Slurry Yield:  $0.91 \text{ ft}^3/\text{sk}$ Total Mixing Fluid: 3.44 Gal/sk Top of Fluid: 4000 ft Calculated Fill: 550 ft Volume: 7.29 bbl Calculated Sacks: 45.09 sks Proposed Sacks: 50 sks

#### DV Tool @ 4000 ft (MD)

Stage 2

Fluid 1: Pump 20 bbl Fresh Water

Fluid 2: Lead with 85 sks EconoCem - C Fluid Weight 11.70 lbm/gal Slurry Yield: 2.57 ft<sup>3</sup>/sk Total Mixing Fluid: 14.93 Gal/sk Top of Fluid: 0 fl Calculated Fill: 3033 ft Volume: 37.05 bbl

20 bbl

81.00 sks

85 sks

Fluid Volume:

Calculated Sacks:

Proposed Sacks:

Fluid 3: Tail-in with 50 sks HalCem - C

Fluid Weight	14.80 lbm/gal
Slurry Yield:	1.33 ft <sup>3</sup> /sk
Total Mixing Fluid:	6.34 Gal/sk
Top of Fluid:	3033 ft
Calculated Fill:	967 ft
Volume:	11.81 bbl
Calculated Sacks:	50 sks
Proposed Sacks:	50 sks



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Proposal 232845 v.3



### Cost Estimate

### CorrosaCem - TL Production Cementing

<u>Mtrl Nbr</u>	Description	Qty	<u>U/M</u>	Unit Price	Gross Amt	Discount	Net Amt
1	MILEAGE FOR CEMENTING EQUIPMENT	50	MI	9.79	489.50	332.86	156.64
	NUMBER OF UNITS	1				ļ	. •
2	MILEAGE FOR CEMENTING CREW	50	MI	5.76	288.00	195.84	92.16
	NUMBER OF UNITS	1	1				
7	ENVIRONMENTAL SURCHARGE	1	JOB	134.00	134.00	0.00	134.00
372867	DOT VEHICLE CHARGE	3	EA	241.00	723.00	0.00	723.00
16093	MSC PUMP CHARGE (1ST STAGE)	1	EA	5,392.00	5,392.00	3,666.56	1,725.44
	DEPTH	4550	-				
	FEET/METERS (FT/M)	FT					}
16	MSC ADDITIONAL STAGES	1	STG	4,635.00	4,635.00	3,151.80	1,483.20
	NUMBER OF UNITS	1					
141	RCM w/RA DENSOMETER	1	JOB	1,990.00	1,990.00	1,353.20	636.80
•	NUMBER OF UNITS	1					
116	BOOSTER PUMP-SKID,/DAY	1	EA	1,362.00	1,362.00	926.16	435.84
	NUMBER OF DAYS	1					
74038	PLUG CONTAINER RENTAL-1ST DAY	1	EA		1,322.00	898.96	423.04
	DAYS OR FRACTION (MIN1)	1					
100001615	FE-2	2	LB	11.92	23.84	17.40	6.44
452967	CORROSACEM (TM) SYSTEM	50	SK		16,360.00	11,942.80	4,417.20
100001615	FE-2	15	LB	11.92	178.80	130.52	48.28
452992	ECONOCEM (TM) SYSTEM	85	SK		3,391.50	2,475.80	915.70
452986	HALCEM (TM) SYSTEM	50	SK		2,087.50	1,523.88	563.62
76400	MILEAGE,CMT MTLS DEL/RET	25	MI	3.35	707.69	516.61	191.08
	NUMBER OF TONS	8.45					
3965	SVC CHRG, CMT & ADDITIVES	206	CF	5.49	1,130.94	825.59	305.35
	NUMBER OF EACH						
	Total	USD					40.215.77
	Discount 68/73	USD					27.957.98
	Discounted Total	USD					12,257.79
			f	1			

Primary Plant: Hobbs, NM, USA Secondary Plant: Hobbs, NM, USA Price Book Ref: 09 Permian Basin Price Date: 3/31/2010



8/9



### Conditions

#### **NOTE**

The cost in this analysis is good for the materials and/or services outlined within and shall be valid for 30 days from the date of this proposal. In order to meet your needs under this proposal with a high quality of service and responsive timing, Halliburton will be allocating limited resources and committing valuable equipment and materials to your area of operations. Accordingly, the discounts reflected in this proposal are available only for materials and services awarded on a first-call basis. Alternate pricing may apply in the event that Halliburton is awarded work on any basis other than as a first-call provider.

The unit prices stated in the proposal are based on our current published prices. The projected equipment, personnel, and material needs are only estimates based on information about the work presently available to us. At the time the work is actually performed, conditions then existing may require an increase or decrease in the equipment, personnel, and/or material needs. Charges will be based upon unit prices in effect at the time the work is performed and the amount of equipment, personnel, and/or material actually utilized in the work. Taxes, if any, are not included. Applicable taxes, if any, will be added to the actual invoice.

It is understood and agreed between the parties that with the exception of the subject discounts, all services performed and equipment and materials sold are provided subject to Halliburton's General Terms and Conditions contained in our current price list, (which include LIMITATION OF LIABILITY and WARRANTY provisions), and pursuant to the applicable Halliburton Work Order Contract (whether or not executed by you), unless a Master Service and/or Sales Contract applicable to the services, equipment, or materials supplied exists between your company and Halliburton, in which case the negotiated Master Contract shall govern the relationship between the parties. A copy of the latest version of our General Terms and Conditions is available from your Halliburton representative or at:

<u>http://www.halliburton.com/terms</u> for your convenient review, and we would appreciate receiving any questions you may have about them. Should your company be interested in negotiating a Master Contract with Halliburton, our Law Department would be pleased to work with you to finalize a mutually agreeable contract. In this connection, it is also understood and agreed that Customer will continue to execute Halliburton usual field work orders and/or tickets customarily required by Halliburton in connection with the furnishing of said services, equipment, and materials.

Any terms and conditions contained in purchase orders or other documents issued by the customer shall be of no effect except to confirm the type and quantity of services, equipment, and materials to be supplied to the customer.

If customer does not have an approved open account with Halliburton or a mutually executed written contract with Halliburton, which dictates payment terms different than those set forth in this clause, all sums due are payable in cash at the time of performance of services or delivery of equipment, products, or materials. If customer has an approved open account, invoices are payable on the twentieth day after date of invoice.

Customer agrees to pay interest on any unpaid balance from the date payable until paid at the highest lawful contract rate applicable, but never to exceed 18% per annum. In the event Halliburton employs an attorney for collection of any account, customer agrees to pay attorney fees of 20% of the unpaid account, plus all collection and court costs.





### TARGA MIDSTREAM

QUOTE BE 165 8/30/2010 CASING PROGAM 10-3/4X 7 X 5-1/2 X2-7/8



**Quote Response Form** Energy Services Printed on 9/16/2010 9:01:37AM Estimate No. BE00000165 Warehouse ID: ODES - ODESSA Wellhead & Production Systems 7311 Andrews Highway Houston, TX Odcssa, TX 79765 Phone: 432-552-0695 Fax: 432-362-4363 Customer: Ship to: Customer Info: Targa Midstream **Phone:** Thank you for the opportunity to quote your equipment needs. If you have any questions. Please call. Estimate Quote Date piration Dates Customer Currency Salesperson Fikes, Gerald 5/11/2010 BE00000165 USD **Casing Head Assembly** UМ Line Quantity Item Unit Price Extended Price 10 1.00 EΛ 20353625 1,725.00 1,725.00 CASING HEAD BODY, C-22, 11" 3K FLANGED TOP X 10-3/4" SOW (W/ ORING GROOVE) BTM, W/ TWO 2" LPO OUTLETS, U, DD, PSL 1, PR1 20 1.00 ËΑ 20365450 25.00 25.00 NIPPLE, PIPE, 2" LP X 6" LONG XXH EA 20364831 30 1.00 25.00 25.00 BULL PLUG, 2" LP, SOLID, XXH 40 1.00 ĒΑ 20391949 120.00 120.00 BALL VALVE, 3K, 2" LP, SE, NACE TRIM 1.00 ĒΛ 20384272 395.00 395.00 213 COLLAR-CASING 10-3/4 SOW X 10-3/4 SOW J-55 Casing Head Assembly Total: 2,290.00 **Casing Spool Assembly** Line Quantity UM ftem Unit Price **Extended** Price 20365360 201 1.00 ĒΛ 5,330.00 5,330.00 CASING SPOOL ASSEMBLY, C-22-BG, 11" 3K FLANGE BTM X 11" 3K FLANGED TOP, W/ TWO 2-1/16" 5K SSO OUTLETS, L-U, DD, PSL 1, PR1 202 2.00 EA 20365431 120,00 240.00 BALL VALVE, 3K, 2" LP, SE, STANDARD TRIM 203 2.00 EΛ 20365450 25.00 50.00 NIPPLE, PIPE, 2" LP X 6" LONG XXII EΛ 20391954 700.00 204 1.00 700.00 SECONDARY SEAL ASSEMBLY, BG-PE, 9" NOM X 7" ID, W/PEROXIDE CURED RUBBER, U, AA, PSL I, PR I 205 1.00 ĒΑ 95.00 20365793 95.00 RING GASKET, R-53, S316-4, OVAL, API 6A

	Servi	ces	Printed on 9/16/2010 9:01:37AM	Estimate	No. BE00000165
206	16.00	EA	20366131	13.13	210.08
			STUD ASSEMBLY, ALL-THREAD, 1.375-8UN-2A X 10.00 LONG, /	STM A 193 GR	
		•	B7 STUD, W/ TWO ASTM A194 2H NUTS, BLACK		
207	2.00	EΛ	20366688	115.00	230.00
			FLANGE COMPANION, BODY, 2-1/16" 5K X 2" LP, U, FF		
208	2.00	EA	20358839	35.00	70.00
		•	RING GASKET, R-24, S316-4, OVAL , API 6A		
209	1.00	EA	20391952	1,000.00	1,000.00
			CASING HANGER ASSEMBLY, C-21 SLIP, 11" C-21 BOWL, 7" OD	CASING,	
			W/PEROXIDE CURED RUBBER GOODS, U, AA, PSL 1, PRI		
			Casing Snool A	ssembly Total:	7,925,08

197

-

Tubing Spool Assembly						
Line	Quantity	UM	Item	Unit Price	Extended Price	
50	1.00	EA	20365368	3,291.67	3,291.67	
			TUBING HEAD ASSEMBLY, TCM, 11" 3K FLANGE B	TM X 7-1/16" 3K FLANGED		
			TOP, W/ TWO 2-1/16" 5K SSO OUTLETS, L-U, DD, PSI	, PRI		

105.00	20358839 35.00	3.00 F.A	60	60
	RING GASKET, R-24, S316-4, OVAL, API 6A			
75.00	20365472 75.00	1.00 EA	0	70
	VALVE REMOVAL PLUG, I-1/2 LP			
1,100.00	20366688 550.00	2.00 EA	0	80
	FLANGE COMPANION, BODY, 2-1/16" 5K X 2" LP, U, FF			
2,400.00	20367048 2,400.00	1.00 EA	0	90
	GATE VALVE ASSEMBLY, JMP-W5, M, 2-1/16" SK WEDGE FE HWO, L-U, FF,			
	PSL 2, PRI			
25.00	20391950 25.00 25.00	1.00 EA	0	100
	BULL FLOU, 2 LF, SULLY, MICKEL FLATED		_	
. 1,000.00		1.00 EA	0	110
	W/PEROXIDE CURED RUBBER GOODS, U. AA, PSL J. PRI			
700.00	20391953 700.00	1.00 EA	0	120
	SECONDARY SEAL ASSEMBLY, BG-PE, 9" NOM X 5-1/2" ID, W/PEROXIDE			
	CURED RUBBER, U, AA, PSL 1, PR 1			
95.00	20365793 95.00	1.00 EA	)	130
	RING GASKET, R-53, S316-4, OVAL, API 6A			
210.09	" 2014(12)	16.00 EA		1.00
210.00	20300131 13.13 STUD ASSEMBLY ALL THREAD 1.375-811N-24 Y 10:00 LONG ASTM A 103 GP	10.00 EA	,	140
	B7 STUD W/ TWO ASTM A194 2H NUTS, BLACK			
25.00	20391950 25.00	1.00 EA		211
	BULL PLUG, 2" LP, SOLID, NICKEL PLATED			
9.026.75	Tubing Spool Assembly Total:			

	Tree A	ssembly				
	Linc	Quantity	UM	ltem	Unit Price	Extended Price
	150	1.00	EA	20373199 TUBING HEAD ADAPTER ASSEMBLY, A5P, 7-1/16" 3K STUDDED BT 3-1/8" 5K STUDDED, W/ ONE 1/4" CCL PORT, U, HH, PSL 2, PR1	16,780.00 M X	16,780.00
) <sup>^</sup>	Email:	zjennings@13	lenergy.co	m All Items Subject to Availability		Page 2 of 5

	Service	Printed on 9/16/2010 9:01:37AM	Estimate No.	BE00000165
160	2.00 E	20376136	36,000.00	72,000.00
		GATE VALVE, 3-1/8 ", 5K, HPT, MANUAL, R-35 FLG X FLG INCONEL; WETTED SURFACES, HH TRIM, API, 6A, TEMP, CLASS, P+U, H2S SER'	625 ALL VICE	
170	3.00 E	PER INCE, MIR-01-73 C, /W MAIND WHEEL (EFC DRAWING AL-0121)	57.00	171.00
170	3,00 E	RING GASKET, R-35, S316-4, OVAL, ΛΡΙ 6Α	37.00	171.00
180	8.00 E <i>i</i>	20366128	6.67	53.36
190	1.00 E4	STUD ASSEMBLY, ALL-THREAD, 1.125-8UN-2A X 8.50 LONG, ASTM A B7 STUD, W/ TWO ASTM A 194 2H NUTS, BLACK 20362707 RING GASKET, R-45, S316-4, QVAL, API 6A	193 GR 80.00	80.00
200	1.00 E/	20373406 TUBING HANGER ASSEMBLY, 7-1/16" BOWL X 3-1/2" EUE, W/ 3" HBPV INCONEL, U, DD, PSL-2, PR1	26,760.00 /	26,760.00
212	1.00 . EA	20388385 CROSSOVER SUB BODY, 3-1/2 EUE MALE THREAD X 2-7/8 EUE FEMA THREAD, 718 INCONEL	3,675.00 LE	3,675.00
		Tree Assembly	y Total:	119,519.36

#### NOTES:

1. All equipment is FOB T3 Energy, Inc. Houston, Texas USA.

2. Freight and crating expenses are not included as part of this quotation.

3. All pricing, as indicated in this quotation, is based on standard equipment deliveries; an expediting fee will be applied if the equipment is required prior to the date (s) indicated above.

4. T3 Energy will not be liable for penalties due to late deliveries that are not agreed upon and authorized by T3 Energy prior to acceptance of the purchase order.

5. This quotation is valid for your acceptance for a period of 30 days.

6. Disclaimer - this is a general terms and conditions for the purpose of advancing to a commercial request.

7. Rental - Rental is charged in complete days from shipment from the T3 Energy facility until returned to the T3 Energy facility. The renter is responsible for returning the equipment to original condition after use. This includes repair labor and parts as required.

Section Summary:	Section Casing Head Assembly Total:	2,290.00
	Section Casing Spool Assembly Total:	7,925.08
,	Section Tubing Spool Assembly Total:	9,026.75
	Section Tree Assembly Total:	119,519.36
	Order Total:	138,761.19



Printed on 9/16/2010 9:01:37AM

### **Quote Response Form**

Estimate No. BE00000165

THANK YOU FOR THE OPPORTUNITY TO QUOTE YOUR EQUIPMENT NEEDS.

THIS QUOTE DOES NOT INCLUDE PRO-RATED FREIGHT, SERVICE, OR TAXES

IF YOU HAVE ANY QUESTION PLEASE CALL.

TOMMY MILLER BRANCH MANGER 432-661-5810

TMILLER@T3ENERGY.COM

The estimated delivery schedule below is ARO and after T3 Energy's acceptance of the purchase order.

Casing Head Assembly - 6-8 weeks, ARO Tubing Spool Assembly - 6-8 weeks, ARO Tree Assembly - 6-8 weeks, ARO

,	Sale Amount:	138.761.19
	Sales Tax:	0.00
	Mise Charges:	0.00
	Total Amount:	138,761.19

Email: =jennings@t3energy.com



#### Printed on 9/16/2010 9:01:37AM

#### Estimate No. BE00000165

#### Limited Warranty and Limitation of Liability

T3 Energy Services warrants the products it manufactures and/or remanufactures and the services it performs to be free from defects in materials and workmanship which materially and adversely impact performance or safety under nonnal use and services for a period of:

- One year after initial installation, or 18 months from invoice date for manufactured or remanufactured products, whichever comes first;
- One year after the date services are provided (the "Work") as described in a T3 Energy Services service ticket or services invoice.
   Products found to be defective will be repaired or replaced, at T3 Energy Services option, in a timely fashion at no charge to the customer for such repair or replacement by T3 Energy Services.

T3 Energy Services will not be responsible for product damage caused by the process service conditions or damage caused by customer misapplication or improper maintenance. T3 Energy Services also shall not be responsible for normal wear and tear.

T3 Energy Services warrants that the services when performed will be of good quality, will be free from defects in material and workmanship, shall have been properly performed in accordance with applicable industry standards and, and shall be in accordance with any written specifications which were provided by the customer to T3 Energy Services and accepted by T3 Energy Services prior to the commencement of the Work. If customer notifies T3 Energy Services within 12 months after the date of service that it has discovered that any portion of the Work does not conform to the foregoing warranty T3 Energy Services shall, at its option:

- promptly repair any such non-conforming work, or
- · promptly replace any such non-conforming work, or

 provide customer with a refand or any equitable portion of the price paid for the work after an allowance for reasonable wear and tear.

The performance by T3 Energy Services of the repair or replacement Work or the equitable refund, described in the previous paragraph shall constitute customer's sole remedy for any defect in the Work. T3 ENERGY SERVICES HEREBY EXPRESSLY DISCLAIMS ALL OTHER WARRANTIES, EITHER EXPRESS, IMPLIED, OR STATUTORY, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE.

If customer fails to properly operate and maintain the product in accordance with the instructions of T3 Energy Services, or the original equipment supplier or manufacturer, as applicable, or if customer otherwise fails to adhere to applicable industry standards in operating and maintaining the product, customer 's failure shall youd the foregoing warranty.

In the event T3 Energy Services does not receive payment as agreed, T3 Energy Services may impose a 1.5% per month finance charge to any unpaid past due balance on all open accounts.

In no event shall any T3 Energy Services or any of its respective affiliates be liable for any loss of use, revenue, or anticipatory profit, or for any direct, indirect, or incidental or consequential damages arising out of, or connected with, any portion of the Work.

The foregoing is the only obligation of T3 Energy Services with respect to the Work and customer's exclusive remedy for breach of warranty, and is customer's exclusive remedy hercunder by way of breach of contract. tort, strict liability or otherwise.

Any action or breach of this limited warranty or otherwise with respect to the Work must be commenced one (1) year after the cause of action has accrued.

THIS LIMITED WARRANTY SHALL BE GOVERNED BY AND CONSTRUED IN ACCORDANCE WITH THE LAWS OF THE STATE OF TEXAS WITHOUT REGARD TO ANY PRINCIPLES OF TEXAS LAW WHICH WOULD REQUIRE THE APPLICATION OF THE LAW OF ANOTHER JURISDICTION.

**Confirming Signature** 

Date

Page 5 of 5

• .			
Form 3000-4 (June 1988)	DEPART BUREAU	UNITED STATES MENT OF THE INTERIOR OF LAND MANAGEMENT	Bond Number
	OIL AND GAS OF	R GEOTHERMAL LEASE BOND	RL80013711
	Act of February Act of Augus Department of the Interior A Act of Decembe Other Oil and Gas and Ge	25, 1920 (30 U.S.C. 181 et seq.) 17, 1947 (30 U.S.C. 351-359) Appropriations Act, FY 1981 (42 U.S.C. 650) 17 24, 1970 (30 U.S.C. 1001-1025) sothermal Leasing Authorities as Applicable	Lease Serial Number (For Individual Bond Only) 871184
CHECK ONE	OIL AND GAS	GEOTHERMAL RESOURCES	
CHECK ONE		· ·	
[7] SURETY BOND KNOW ALL BY THESE P	RESENTS, THAT Targa Mi	dstream Services Limited Partnership	
of 1000 Louisiana, Suit	e 4300, Houston, TX 77002	(na.	
e animainal and RLI Ins	urance Company	(address)	
is principat and		(name)	
of 8 Greenway Plaza, S	uite 400, Houston, TX 77046	(	, as su
are held and firmly bound :	into the United States of America	(accress) a in the sum of Ten Thousand and No/100	
in non and in my boons i			
		dollars (\$ 10,000.00	
swith money of the Onneo	States, which may be increased (	or decreased by a rider hereto executed in the sa	me maoner as this bond.
NOW ALL BY THESE PI	RESENTS, That		·
NOW ALL BY THESE PL	RESENTS, That	(nam	) , as principal, is held and firm
NOW ALL BY THESE P	RESENTS, That	(name	) , as principal, is held and firm
NOW ALL BY THESE P	RESENTS, That	(name (address)	) , as principal, is held and firm
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NOW ALL BY THESE P f ound unto the United State creased or decreased by a	RESENTS, That s of America in the sum of dollars (\$ rider hereto executed in the same	(address) e manner as this bond.	) , as principal, is held and firm ), lawful money of the United States which sum may
NOW ALL BY THESE Pl f	RESENTS, That	(address) e manner as this bond. syment of the aforessid sum, hereby pledges as security red by Section 1 of the Act of September 13, 1982 (3 d States securities deposited, in the absence of any defa dedard lands, must be paid to the principal. The princip tever the Secretary shall do by virtue of these presents	) , as principal, is held and firm ), lawful money of the United States which sum may therefore United States negotiable securities of a par value eq I U.S.C. 9303), does hereby constitute and appoint the Secret all is the performance of any of the conditions, or stipulations I hereby for himsel/herself, any heirs, executors, administrate
NOW ALL BY THESE P f	RESENTS, That	(address) e manner as this bond. e manner as this bond. e manner as this bond. e manner as this bond. avment of the aforesaid sum, hereby plodges as scenarily red by Section 1 of the Act of September 13, 1982 (3 d States securities deposited, in the absence of any defa detatal lands, must be paid to the principal. The princip lever the Secretary shall do by virtue of these presents r this deposit as security for the faithful performance of In the cast of any default in the performance of the co on thereof, (2) for a Personal Bond, the Secretary shall is, late payment charges, penalties, or deficiencies arisin	), lawful money of the United States which sum may therefore United States negotiable securities of a par value eq U.S.C. 9303, does hereby constitute and appoint the Secret all in the performance of any of the conditions, or stipulations I hereby for himself/herself, any heirs, executors, administrate rany and all of the conditions and stipulations as set forth in a ditions and stipulations of such undertaking, it is agreed that: are full power to assign, appropriate, apply or transfer the dept g by reason of such default.
NOW ALL BY THESE Pl number of the United State creased or decreased by a c principal, in order to more f the amount specified. The prin the latterior to det as bis attorne the interior sector shall apply if and and the instruments granting a Surety Both, the surety/prina any portion thereof, to the sai is bond is required for the uso as the United States covering the i be paid to the United States. Fe	RESENTS, That	(address) e manner as this bond. syment of the aforesaid sum, hereby plodges as security red by Section 1 of the Act of September (1, 1982 (3 States securities deposited, in the absence of any defa Pederal lands, must be paid to the principal. The princip rever the Secretary shall do by virtue of these presents or this deposit as security for the faithful performance of In the cast of any default in the performance of the co- In thereof, (2) for a Personal Boad, the Secretary shall is, late payment charges, penalties, or deficiencies arisin the owner of any of the land subject to the coverage of ed States; (3) my lessee, permittee, or contractor, unde g the use of the surface or the prospecting for, or the or made, we bind ourselves and each of our heirs, execut	), lawful money of the United States which sum may therefore United States negotiable securities of a par value eq U.S.C. 9303), does hereby constitute and appoint the Secret all in the performance of any of the conditions, or signalations it near the performance of any of the conditions or subulations if hereby for himself/herself, any heirs, executors, administratu fany and all of the conditions and stipulations as set forth in a dilitons and stipulations of such undertaking, it is agreed that: ave full power to assign, appropriate, apply or transfer the deput g by reason of such default. his bond, who has a statutory right to compensation in connect a leaso, permit, or resource sale contract issued, or to be issue velocoment of other maineral deposits in any periton of such la ray, administrators, successors, and assigns, jointly and several
NOW ALL BY THESE Pl f	RESENTS, That	(address) e manner as this bond. syment of the aforesaid sum, hereby pledges as security red by Section 1 of the Act of September 13, 1982 (3 d States Socurities deposited, in the absence of any defa Federal lands, must be paid to the principal. The princip rever the Secterary shall do by virtue of these presents or this deposit as security for the faithful performance of In the case of any default in the performance of the co- In the case of any default in the performance of the co- In the case of any default in the performance of the co- In the case of any default in the performance of the co- In the case of any default in the performance of the co- In the case of any default in the performance of the co- In the case of any default in the performance of the co- In the cost, (2) for a Personal Boad, the Secretary shall i s, late payment charges, penalties, or deficiencies arisin of the use of the surface of the prospecting for, or the co- made, we bind ourselves and each of our heirs, execut s operations on a Federal leasehold(s) in accordance w	) , as principal, is held and firm ), lawful money of the United States which sum may therefore United States negotiable securities of a par value eq U.S.C. 9303), does hereby constitute and appoint the Secret all in the performance of any of the conditions, or sipulations il hereby for himself/herself, any heirs, executors, administrator rany and all of the conditions and stipulations as set forth in r ditions and subulations of such undertaking, it is agreed that: ave full power to assign, appropriate, apply or transfer the dept g by reason of such default. his bond, who has a statutory right to comprassion in connection a lease, permit, or resource sale contract issued, or to be issue evolopment of other mineral deposits in any perion of such law rs, administrators, successors, and assigns, jointly and several th authorization(s) granted under the Acts cited above for;
NOW ALL BY THESE P f	RESENTS, That	(address) e manner as this bond. syment of the aforesaid sum, hereby plodges as security red by Section 1 of the Act of September (1, 1982 (3 d States securities deposited, in the absence of any defa address lands, must be paid to the principal. The princip tever the Secretary shall do by virtue of these presents withis deposit as security for the faithful performance of In the cast of any default in the performance of the co- In thereof, (2) for a Personal Boad, the Secretary shall is, late payment charges, penalties, or deficiencies arisin of the owner of any of the land subject to the coverage of ed States; (3) my lessee, permittee, or contractor, unde g the use of the surface or the prospecting for, or the or made, we bind ourselves and each of our heirs, execut g operations on a Federal leasehold(s) in accordance w of the principal(s) or on the leasehold(s) of the principal tient to bring the amount in conformance owith 43 CFR	) , as principal, is held and firm , as principal, is held and firm ), lawful money of the United States which sum may therefore United States negotiable securities of a par value eq U.S. C. 9303), does hereby constitute and appoint the Secret il is the performance of any of the conditions, or sipulations il hereby for himself/herself, any heirs, executors, administrator rany and all of the conditions and stipulations as set forth in tr ditions and sipulations of such undertaking, it is agreed that: are full power to assign, appropriate, apply or transfer the deput g by reason of such default. his bond, who has a statutory right to compensation in connect a lease, permit, or resource sale contract issued, or to be issue velopment of other maineral deposits in any perition of such have the authorization(s) granted under the Acts cited above for; (s) in the United States including the National Peroleum Reser \$134 is provided, and provided a rider is obtained, also covern
NOW ALL BY THESE P f	RESENTS, That	(address) (address) e manner as this bond. syment of the aforesaid sum, hereby plodges as security rred by Section 1 of the Act of September 13, 1982 (3 d States securities deposited, in the absence of any defa federal lands, must be paid to the principal. The princip lever the Secretary shall do by virtue of these presents withis deposit as security for the faithful performance of In the case of any default in the performance of the co- in thereof, (2) for a Personal Boad, the Secretary shall is, late payment charges, penalties, or deficiencies arisin the owner of any of the land subject to the coverage of ed States; (3) any lessee, permittee, or contractor, under g the use of the surface or the prospecting for, or the or- made, we bind ourselves and each of our heirs, execut g operations on a Federal leasehold(s) in accordance w of the principal(s) or on the leasehold(s) of the principa- tient to bring the amount in conformance with 43 CFR of the principal(s) or on the leasehold(s) of the principa- tions within the single state of	), lawful money of the United States which sum may therefore United States negotiable scourifies of a par value eq U.S.C. 9303), does hereby constitute and appoint the Secret all in the performance of any of the conditions, or stipulations it in the performance of any of the conditions, or stipulations if hereby for himself/herself, any heirs, executors, administrate rany and all of the conditions and stipulations as set farth in r ditions and stipulations of such underaking, it is agreed that: ave full power to assign, appropriate, apply or transfer the dept g by reason of such default. This bond, who has a statutory right to compensation in connect a leaso, permit, or resource sale contract issued, or to be issue evolopment of other maineral deposits in any periton of such al- nors, administrators, successors, and assigns, jointly and several th authorization(s) granted under the Acts cited above for: (s) in the United States including the National Petroleum Rescention 13/34 is provided, and provided a rider is obtained, also covern al(s), except the NPR-A, and, provided a rider is obtained, also
SNOW ALL BY THESE P	RESENTS, That	(address) (address) e manner as this bond. syment of the oforessid sum, hereby pledges as security red by Section 1 of the Act of September 13, 1982 (3 d States stourides deposited, in the absence of any defa decaral lands, must be paid to the principal. The princip tever the Secretary shall do by virtue of these presents r this deposit as security for the faithful performance of In the case of any default in the performance of the co- on thercoof; (2) for a Personal Boad, the Secretary shall i , the owner of any of the land subject to the coverage of ed States; (3) any lessee, permittee, or contractor, under g the use of the surface or the prospecting for, or the of g dre use of the surface or the prospecting for, or the of g operations an a Federal leasehold(s) in accordance w of the principal(s) or on the leasehold(s) of the principal istient to bring the amount in conformance with 43 CFR of the principal(s) or on the leasehold(s) of the principal tions within the single state of	) , as principal, is held and firm ), lawful money of the United States which sum may therefore United States negotiable securities of a par value eq U.S.C. 9303), does hereby constitute and appoint the Serreb and the performance of any of the conditions, or stipulations it the performance of any of the conditions, or stipulations it hereby for himself/herself, any heirs, executors, administrate rany and all of the conditions and stipulations as set forth in to dilitons and stipulations of such undertaking, it is agreed that: are full power to assign, appropriate, apply or transfer the dept g by reason of such default. his bond, who has a statutory right to compensation in connect a lease, permit, or resource sale contract issued, or to be issue evologement of other maineral deposits in any periton of such la rs, administrators, successors, and assigns, jointly and several th authorization(s) granted under the Acts cited above for; (s) in the United States including the National Petroleum Reser- Sil34 is provided, and provided a rider is obtained, also covern al(s), except the NPR-A, and, provided a rider is obtained, also
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SNOW ALL BY THESE P  f	RESENTS, That	(address) (address) e manner as this bond. syment of the aforessid sum, hereby pledges as security red by Section 1 of the Act of September 13, 1982 (3 d States securities deposited, in the absence of any defi- federal lands, must be paid to the principal. The princip tever the Sectetary shall do by virtue of these presents r this deposit as security for the faithful performance of In the case of any default in the performance of the co- in thereof; (2) for a Personal Bond, the Secretary shall the owner of any of the land subject to the coverage of ed States; (3) my lessee, permittee, or contractor, under g the use of the surface or the prospecting for, or the of made, we bind ourselves and each of our heirs, execut g operations on a Federal leasehold(s) of the principal scient to bring the amount in conformance with 43 CFR of the principal(s) or on the leasehold(s) of the principal to the principal(s) or on the leasehold(s) of the principal to make within the single state of OND — This bond shall cover: tease. and provided a rider is obtained, coverage of multipl	), lawful money of the United States which sum may therefore United States negotiable securities of a par value eq U.S.C. 9303), does hereby constitute and appoint the Secret alt is the performance of any of the conditions, or stipulations it hereby for himself/herself, any heirs, executors, administrate dilitions and stipulations of such undertaking, it is agreed that: are full power to assign, appropriate, apply or transfer the dept g by reason of such default. This bond, who has a statutory right to compensation in connect a lease, permit, or resource sale contract issued, or to be issue evolopment of other mineral deposits in any portion of such la- rer, administrators, successors, and assigns, jointly and several th authorization(s) granted under the Acts cited above for; (s) in the United States including the National Petroleum Reser- 3134 is provided, and provided a rider is obtained, also cover al(s), except the NPR-A, and, provided a rider is obtained, also the single lease identified by the serial number above.

#### BOND CONDITIONS

The conditions of the foregoing obligations are such that:

1. WHEREAS the principal has an interest in a lease(s) and/or responsibility for operations on a lease(s) issued under the Acts cited in this bond; and

2. WHEREAS the principal and surely agree(s) that with notice to the surety the coverage of this bond, in addition to the present holding(s) of and/or authorization(s) granted to the principal, shall extend to and include:

a. Any less(s) hereafter issued to or acquired by the obligor/principal, except under individual lease bonds, the coverage is to be confined to the principal's holding(s) and/or authorization(s) granted under the Acts cited in this bond, and to become effective immediately upon such authorization, approval or issuance of a transfer in favor of the principal; and

b. Any transfer(s) of operating rights hereafter entered into or acquired by the principal affecting lease(s); and

 c. Any activity subsequent hereto of the principal as operator under a lease(s) issued pursuant to the Acts cited in this bond; and

Provided, That the surety may elect to terminate the additional coverage authorized under this paragraph. Such termination will become effective 30 days after the BLM receives notice of the election to terminate. After the termination becomes effective, the additional interest(s) identified in this paragraph will not be covered by this bond; and

3. WHEREAS the principal and surety agree(s) that with notice to the surety that this bond shall remain in full force and effect notwithstanding: Any assignment(s) of an undivided interest in any part or all of the lands in the lease(s) in which event the assigner(s) shall be considered to be coprincipal(s) on an individual or NPR-A bond as fully and to the same extent as though his/her or their duly, authenticated signatures appeared thereon; and

4. WHEREAS the obligor/surety hereby waives any right to notice of, and agrees that this bond shall remain in full force and effect notwithstanding:

a. Any assignment(s) of 100% of some of the lands described in the lease(s), the ... bond to remain in full force and effect only as to the lands retained in the lease(s); and

b. Any transfer(s) either in whole or in part, of any or all of the operating rights and further agrees to remain bound under this bond as to the interests in the operating rights retained by the principal; and

c. Any modification of a lease or operating right, or obligation thereunder, whether made or effected by commitment of lease or operating right to unit, cooperative, communitization or storage agreements, or development contracts, suspensions of operations or production, waivers, suspensions or changes in rental, minimum royalty and royalties, compensatory royalty payments, or otherwise; and

d. Any extension of a lease(s) covered by this bond, such coverage to continue without any interruption due to the expiration of the term set forth in the lease(s); and

5. WHEREAS the principal and surety hereby agree(s) that notwithstanding the termination, expiration, cancellation or relinquishment of any lease(s), whether by operation of law or otherwise, the bond shall remain in full force and effect as to the terms and conditions of all remaining leases and obligations covered by the bond; and

6. WHEREAS the principal, as to any lease or part of a lease for land on which he/she is the operator, in consideration of being permitted to furnish this bond in lieu of the lessee(s) or operating rights owner(s), agrees and by these presents does hereby bind himself/herself to fulfill on behalf of each lessee or operating rights owner all obligations of such for the entire leasehold in the same manner and to the same extent as though he/she were lessee or operating rights owner; and

7. WHEREAS the obligor/principal and surety agree(s) that the neglect or forbearance of said lessor in enforcing, as against any responsible party, the payment of rentals or royalites or the performance of any other term or condition of the lease(s) shall not, in any way, release the principal and surety, or either of them from any liability under this bond; and

8. WHEREAS the principal and surety agree(s) that in the event of any default under the lease(s) the lessor may commence and prosecute any claim, suit, or other proceeding against the principal and surety or either of them, without the necessity of joining the lesse(s); and

9. WHEREAS if the principal fails to comply with any provisions of an oil and gas lease, and the noncompliance continues for thirty (30) days after written notice thereof, such lease shall be subject to cancellation and the principal shall also be subject to applicable provisions and penalties of the Federal Oil and Gas Royalty Management Act (30 U.S.C. 1701 et seq.) or the Federal Onshore Oil and Gas Leasing Reform Act. This provision shall not be construed to prevent the exercise by the United States of any other legal and equitable remedy, including waiver of the default.

10. NOW, THEREFORE If said principal, his/her heirs, executors, administrators, successors, or assigns shall in all respects faithfully comply with all of the provisions of the instrument(s) granting rights and interests in Federal lands referred to above, then the obligations are to be void; otherwise to remain in full force and effect.

Signed this 22nd day of February	, 20 <u>11</u> , in the presence of:
NAMES AND ADDRESSES OF WITNESSES By: HILLE ALLAN HOUSTMAN JOHN TO TOOZ	Targa Midstream Services Limited Partnership
By: Alura De Leon- 1000 Louisiana, Ste 4300, Apicton, Tx7700	1000 Louisiana, Suite 4300, Houston, TX 77002 RLI (Insurance (Business Address) Company
By: Nave Bigger Suite 400, Houston, TX 77045	Greg E. Chilson, (Surety) Attorney-in-Fact (I.S.)
By: Roulie Duly	8 Greenway Plaza, Suite 400, Houston, TX 77046
8 Greenway Plaza, Suite 400, Youston, TX 77046	(Business Address)
If this bond is executed by a corporation, it must bear the seal of that corporation.	q#r

(Form 3000-4, page 2)







#### **Know All Men by These Presents:**

#### RLB0013711

### POWER OF ATTORNEY **RLI Insurance Company**

That the RLI INSURANCE COMPANY, a corporation organized and existing under the laws of the State of Illinois, and authorized and licensed GREG E. CHILSON to do business in all states and the District of Columbia does hereby make, constitute and appoint: in the City of HOUSTON, State of TEXAS, as Attorney-in-Fact, with full power and authority hereby conferred upon him to sign. execute, acknowledge and deliver for and on its behalf as Surety and as its act and deed, all of the following classes of documents to-wit:

#### \$10,000.00

Indemnity Surety and Undertakings that may be desired by contract, or may be given in any action or proceeding in any court of law or equity, policies indemnifying employers against loss of damage caused by the misconduct of their employees; official, bail and surety and fidelity bonds. Indemnify in all cases where indemnify may be lawfully given, and with full power and authority to execute consents and waivers to modify or change or extend any bond or document executed for this Company, and to compromise and settle any and all claims or demands made or existing against said Company.

The RLI INSURANCE COMPANY further certifies that the following is a true and exact copy of a Resolution adopted by the Board of Directors of RLI Insurance Company, and now in force to-wit:

"All bonds: policies, undertakings, Powers of Attorney, or other obligations of the corporation shall be executed in the corporate name of the Company by the President, Secretary, any Assistant Secretary, Treasurer, or any Vice President, or by such other officers as the Board of Directors may authorize. The President, any Vice President, Secretary, any Assistant Secretary, or the Treasurer may appoint Attorneys in Fact or Agents who shall have authority to issue bonds, policies; or undertakings in the name of the Company. The corporate seal is not necessary for the validity of any bonds, policies, undertakings, Powers of Attorney, or other obligations of the corporation. The signature of any such officer and the corporate seal may be printed by facsimile

(Blue shaded areas above indicate authenticity)

sed these provident of the set of IN WITNESS WHEREOF, the RLI Insurance Company has caused these presents to be executed by its \_\_\_\_\_PRESIDENT with its corporate seal affixed this

CORPORATE SECRETARY

State of Illinois

**County of Peoria** 

On this 22day of Feb. 2011 before me, a Notary Public, personally appeared Michael J. Stone and Jean M. Stephenson, who being by me duly sworn, acknowledged that they signed the above Power of Attorney as President and Corporate Secretary, respectively, of the said RLI INSURANCE COMPANY, and acknowledged said instrument to be the voluntary act and deed of said corporation.

Minnen Mark

Notary Public

SS

	* "OFFICIAL SEAL"
PUBLIC	CHERIE L. MONTGOMERY
ILLINOIS	COMMISSION EXPIRES 02/02/12
TITIT	

RUUNSURANCE COMPAND PRESIDENT

SPA026 (02/08)

RLI Insurance Company Peoria, Illinois 61615

### TEXAS POLICYHOLDER NOTICE

#### TEXAS IMPORTANT NOTICE

To obtain information or make a complaint:

You may call RLI Insurance Company's toll-free telephone number for information or to make a complaint at:

#### 1-800-444-0406

You may also write to RLI Insurance Company at:

RLI Insurance Company 9025 N. Lindbergh Drive Peoria, Illinois 61615

You may contact the Texas Department of Insurance to obtain information on companies, coverages, rights or complaints at:

1-800-252-3439

You may also write the Texas Department of Insurance:

P.O. Box 149104 Austin, Texas 78714-9104 Fax Number: (512) 475-1771

Web: http://www.tdi.state.tx.us E-mail: ConsumerProtection@tdi.state.tx.us

#### PREMIUM OR CLAIM DISPUTES:

Should you have a dispute concerning your premium or about a claim you should contact the agent first. If the dispute is not resolved, you may contact the Texas Department of Insurance.

#### ATTACH THIS NOTICE TO YOUR POLICY:

This notice is for information only and does not become a part or condition of the attached document.

#### TEXAS AVISO IMPORTANTE

Para obtener informacion o para someter una queja:

Usted puede llamar al numero de telefono gratis de RLI Insurance Company's para informacion o para someter una queja al:

#### 1-800-444-0406

Usted tambien puede escribir a RLI Insurance Company:

#### RLI Insurance Company 9025 N. Lindbergh Drive Peoria, Illinois 61615

Puede comunicarse con el Departamento de Seguros de Texas para obtener informacion acerca de companias, coberturas, derechos o quejas al:

#### 1-800-252-3439

Puede escribir al Departamento de Seguros de Texas:

#### P.O. Box 149104 Austin, Texas 78714-9104 Fax Number: (512) 475-1771

Web: http://www.tdi.state.tx.us E-mail: ConsumerProtection@tdi.state.tx.us

#### DISPUTAS SOBRE PRIMAS O RECLAMOS:

Si tiene una disputa concerniente a su prima o a un reclamo, debe comunicarse con el agente primero. Si no se resuelve la disputa, puede entonces comunicarse con el departamento (TDI).

#### UNA ESTE AVISO A SU POLIZA:

Este aviso es solo para proposito de informacion y no se convierte en parte o condicion del documento adjunto.

