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 1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
 Energy, Minerals and Natural Resources

OIL CONSERVATION DIVISION  
 1220 South St. Francis Dr.  
 Santa Fe, NM 87505

Form C-103  
 Revised July 18, 2013

<b>SUNDRY NOTICES AND REPORTS ON WELLS</b> (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.) 1. Type of Well: Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other: Acid Gas Injection Well <input checked="" type="checkbox"/>		WELL API NO. 30-025-42208 ✓ 5. Indicate Type of Lease STATE <input checked="" type="checkbox"/> FEE <input type="checkbox"/> <b>FED</b> <input checked="" type="checkbox"/> 6. State Oil & Gas Lease No. NMLC065863
2. Name of Operator DCP Midstream LP		7. Lease Name or Unit Agreement Name Zia AGI ✓
3. Address of Operator 370 17 <sup>th</sup> Street, Suite 2500, Denver, CO 80202		8. Well Number #1 ✓
4. Well Location Unit Letter <u>L</u> : <u>2305</u> feet from the NORTH line and <u>750</u> feet from the WEST line Section <u>19</u> Township <u>19S</u> Range <u>32E</u> NMPM County <u>Lea</u>		9. OGRID Number 36785
11. Elevation (Show whether DR, RKB, RT, GR, etc.) 3,550 (GR)		10. Pool name or Wildcat AGI: Cherry Canyon/Brushy Canyon

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

**PROVIDE S.R.T. RESULTS  
 TO SANTA FE OCD FOR  
 APPROVAL**

**SUBSEQUENT REPORT OF:**  
 REMEDIAL WORK ☐ ALTERING CASING ☐  
 COMMENCE DRILLING OPNS. ☐ P AND A ☐  
 CASING/CEMENT JOB ☐

OTHER: ☒ Step-Rate Test of Injection Zone

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

On May 20, 2015 a step rate test (SRT) was successfully completed at the DCP Zia AGI #1 well. The BLM Carlsbad Office was notified prior to the test via the BLM Hotline and Mr. Paul Swartz was onsite to witness the testing. The NMOCD Hobbs District Office was also notified as a courtesy and elected to not observe. The five perforated zones between 5,682 and 6,260 feet below surface (measured depth – MD) were tested. Results of the testing are attached. The BLM-provided SRT data forms have been provided for both the surface pressure measurements, which were recorded by Cudd Energy Services (pages 1-3) and by Schlumberger (pages 4-6). The graph for these two sets of surface pressure measurements shows excellent agreement between both sets of data (Figure 1- Page 7). In addition, the bottom hole pressure graph from the Schlumberger down hole pressure sensor is also included (Figure 2 – Page 7).

The calculated surface parting pressure was 1,195 psig (Cudd data) and 1,218 (Schlumberger data) pumping at 0.23 barrels per minute using 9.3 lb/gal brine. A maximum surface pressure of 2,211 psig (Cudd data) and 2,121 psig (Schlumberger data) was observed in the eighth step at a target rate of 6 gpm (actual 6.14 bpm) with fluids filling the natural laminations in the sediments of the injection zone with no indication of vertical fracturing. Subsequent tracer testing revealed that only the three bottom zones took fluid with the lower most zone (6,162 – 6,260 feet) taking 10 % of the flow, the next higher zone (6,030 – 6,136 feet) taking 84% of the flow and the next upper zone (5,907 – 6,010 feet) taking 6% of the flow. The two upper zones (5,682 – 5,756 feet and 5,788 – 5,890 feet) did not take any flow during the tracer survey. These tracer tests are used by EPA to confirm the lack of vertical travel of the fluid and, in this case, they clearly confirm the lack of vertical fracturing and lack of upward flow within the investigation zone of the tool (up to 10 feet from the bore hole). The NMOCD-approved maximum allowable operating pressure (MAOP) for treated acid gas is 2,233 psig. The anticipated pressure required to inject the 2.5 barrels per minute of treated acid gas produced by the plant is estimated to be between 1,500 and 1,600 psig.

This step rate test fulfills the requirement of the BLM Conditions of Approval for DCP Zia AGI #1 dated October 22, 2014 and NMOCC Order R-13809 and demonstrates the Zia AGI #1 well can be safely operated at pressures within the currently approved MAOP. DCP is not requesting an MAOP increase at this time for this well.

A report is attached providing all of the test data, graphs and supporting exhibits for the parting pressure calculations. Since this well is will be completed with continuous bottom hole pressure monitoring as required by the NMOCC Order (R-13809) DCP can assure that fracture pressure is never exceeded during injection operations.

All of the data associated with this C-103 was submitted to the BLM, the lead regulatory agency, via BLM Form 3160-5 to the BLM website <https://www.blm.gov/wispermits/wis/SP/login.do>. Geolex will provide any of those attachments to the NMOCD upon request as a separate subsequent C-103.

Spud Date:

December 23, 2014

Rig Release Date:

February 1, 2015

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Dale T. Littlejohn TITLE Consultant to DCP Midstream LP DATE 6-23-15

Type or print name Dale T Littlejohn E-mail address: dale@geolex.com PHONE: 505-842-8000  
**For State Use Only**

APPROVED BY: \_\_\_\_\_ TITLE \_\_\_\_\_ DATE \_\_\_\_\_  
Conditions of Approval (if any):

**Accepted for Record Only**  
*MSB 6/23/2015*

OCD for RECORD ONLY. All Federal  
forms require BLM APPROVAL.

## STEP RATE TEST DATA for BLM

Operator: DCP Midstream (Cudd Surface Pressure) Well: Zia AGI #1 (all perforation zones)  
 API#: 30-025-42208 Lease: NM0149956  
 Date collected: 5/20/15 Sfc Loc: T-19-S, R-32-E, Sec 19 (2100 FSL & 950 FWL)  
 Input cell

Packer set at: 5475.00 Inj Pipe I.D.: 2.44  
 Top Injection Depth: 5801 X 0.20psig/ft = Expected Surface Fracture psig: 1160.2  
 With Mud Wt Scale: 9.3 lbs/gal Beginning Formation psig: 2959 at Depth: 6096  
 Injection fluid lbs/gal: 9.3 Hydrostatic Pressure of fluid at top depth of injection: 2816  
 Beginning Wellhead psig: 0 Target Maximum Rate - bpd(barrels per day): 7200

1. Take a charted record of shut in psig for no less than 48 hours. If the shut in psig is above the expected fracture pressure, **the wellhead pressure will need to be bled off before beginning the Step Rate Test.**
2. Perform a minimum of seven steps, recording rate to  $\pm 0.1$  bpm and surface pressures to  $\pm 10$  psig in five minute intervals. The first two step rate pressures must be below 0.2psig/ft x depth at top of injection.
4. The last two five minute surface pressure readings of each (minimum 30 minute) step are to be within 15psig of each other. If not, hold that step injection rate past the 30 minute step until two consecutive pressure readings are within 15psig. Record the average of those two readings as the Data Point for that Step #.

Step 1		Target gpm = 10.50      0.23 bpm pmp'd for Step 1					
		Target Test Rate (5% of maximum bpd/1440 = 0.2500 bpm (barrels per minute) for Step 1					
Time:		5 min	10 min	15 min	20 min	25 min	30 min
Surface (psig):		1233.00	1221.00	1197.00	1186.00	1167.00	1166.00
Formation (psig):		4182.00	4167.00	4150.00	4141.00	4120.00	4120.00
gpm:		7.14	7.98	8.82	7.98	11.76	13.02
Time:		35 min	40 min	45 min	50 min	55 min	60 min
Surface (psig):							
Formation (psig):							
gpm:							
		Graph Data for Point #1					
		Sfc psig: 1195.00					
		F psig: 4146.67					
		gpm: 9.45					

Step 1 has a target bpd rate of: 360

Step 2		Target gpm = 21.00      0.47 bpm pmp'd for Step 2					
		Target Test Rate (10% of maximum bpd/1440 = 0.5000 bpm for Step 2					
Time:		5 min	10 min	15 min	20 min	25 min	30 min
Surface (psig):		1175.00	1177.00	1181.00	1177.00	1183.00	1183.00
Formation (psig):		4126.00	4128.00	4130.00	4132.00	4134.00	4135.00
gpm:		21.00	20.16	18.48	19.32	20.58	19.32
Time:		35 min	40 min	45 min	50 min	55 min	60 min
Surface (psig):							
Formation (psig):							
gpm:							
		Graph Data for Point #2					
		Sfc psig: 1179.33					
		F psig: 4130.83					
		gpm: 19.81					

Step 2 has a target bpd rate of: 720

Step 3		Target gpm = 42.00      1.06 bpm pmp'd for Step 3					
		Target Test Rate (20% of maximum bpd/1440 = 1.0000 bpm for Step 3					
Time:		5 min	10 min	15 min	20 min	25 min	30 min
Surface (psig):		1198.00	1204.00	1207.00	1201.00	1209.00	1198.00
Formation (psig):		4139.00	4142.00	4143.00	4143.00	4143.00	4143.00
gpm:		44.52	44.52	44.52	44.52	44.52	44.52
Time:		35 min	40 min	45 min	50 min	55 min	60 min
Surface (psig):							
Formation (psig):							
gpm:							
		Graph Data for Point #3					
		Sfc psig: 1202.83					
		F psig: 4142.17					
		gpm: 44.52					

Step 3 has a target bpd rate of: 1440

## STEP RATE TEST DATA for BLM

Operator: DCP Midstream (Cudd Surface Pressure)

Well: Zia AGI #1 (all perforation zones)

API#: 30-025-42208

Lease: NM0149956

Date collected: 5/20/15

Sfc Loc: T-19-S, R-32-E, Sec 19 (2100 FSL & 950 FWL)

Step 4							
Target gpm = 84.00				2.03 bpm pmp'd for Step 4			
Target Test Rate (40% of maximum bpd/1440 =				2.0000 bpm for Step 4			
Time:	5 min	10 min	15 min	20 min	25 min	30 min	Start Time: 12:42
Surface (psig):	1315.00	1295.00	1281.00	1252.00	1240.00	1237.00	End Time: 13:12
Formation (psig):	4155.00	4119.00	4110.00	4107.00	4103.00	4100.00	Graph Data for Point #4
Rate gal/min:	85.68	86.10	91.98	83.16	82.32	82.32	
Time:	35 min	40 min	45 min	50 min	25 min	60 min	
Surface (psig):							Sfc psig: 1270.00
Formation (psig):							F psig: 4115.67
gpm:							gpm: 85.26

Step 4 has a target bpd rate of: 2880

Step 5							
Target gpm = 126.00				3.07 bpm pmp'd for Step 5			
Target Test Rate (60% of maximum bpd/1440 =				3.0000 bpm for Step 5			
Time:	5 min	10 min	15 min	20 min	25 min	30 min	Start Time: 13:12
Surface (psig):	1404.00	1409.00	1407.00	1408.00	1399.00	1401.00	End Time: 13:42
Formation (psig):	4103.00	4101.00	4100.00	4100.00	4100.00	4099.00	Graph Data for Point #5
gpm:	129.36	128.10	128.94	130.20	128.10	128.52	
Time:	35 min	40 min	45 min	50 min	25 min	60 min	
Surface (psig):							Sfc psig: 1404.67
Formation (psig):							F psig: 4100.50
gpm:							gpm: 128.87

Step 5 has a target bpd rate of: 4320

Step 6							
Target gpm = 168.00				4.08 bpm pmp'd for Step 6			
Target Test Rate (80% of maximum bpd/1440 =				4.0000 bpm for Step 6			
Time:	5 min	10 min	15 min	20 min	25 min	30 min	Start Time: 13:42
Surface (psig):	1648.00	1611.00	1610.00	1624.00	1604.00	1610.00	End Time: 14:12
Formation (psig):	4104.00	4104.00	4105.00	4105.00	4105.00	4106.00	Graph Data for Point #6
Rate gal/min:	176.82	169.68	170.52	170.94	170.10	170.52	
Time:	35 min	40 min	45 min	50 min	25 min	60 min	
Surface (psig):							Sfc psig: 1617.83
Formation (psig):							F psig: 4104.83
gpm:							gpm: 171.43

Step 6 has a target bpd rate of: 5760

Step 7							
Target gpm = 210.00				5.03 bpm pmp'd for Step 7			
Target Test Rate (100% of maximum bpd/1440 =				5.0000 bpm for Step 7			
Time:	5 min	10 min	15 min	20 min	25 min	30 min	Start Time: 14:12
Surface (psig):	1859.00	1871.00	1856.00	1865.00	1866.00	1877.00	End Time: 14:42
Formation (psig):	4109.00	4110.00	4112.00	4114.00	4115.00	4113.00	Graph Data for Point #7
gpm:	208.74	211.68	212.94	212.10	210.84	211.26	
Time:	35 min	40 min	45 min	50 min	25 min	60 min	
Surface (psig):							Sfc psig: 1865.67
Formation (psig):							F psig: 4112.17
gpm:							gpm: 211.26

Step 7 has a target bpd rate of: 7200

## STEP RATE TEST DATA for BLM

Operator: DCP Midstream (Cudd Surface Pressure)

Well: Zia AGI #1 (all perforation zones)

API#: 30-025-42208

Lease: NM0149956

Date collected: 5/20/15

Sfc Loc: T-19-S, R-32-E, Sec 19 (2100 FSL & 950 FWL)

Step 8		Target gpm = 252.00				6.14 bpm pmp'd for Step 8		
		Target Test Rate (120% of maximum bpd/1440 =				6.0000 bpm for Step 8		
Time:	5 min	10 min	15 min	20 min	25 min	30 min	Start Time:	14:42
Surface (psig):	2217.00	2201.00	2210.00	2210.00	2220.00	2210.00	End Time:	15:12
Formation (psig):	4116.00	4117.00	4118.00	4120.00	4121.00	4121.00	<div>Graph Data for Point #8</div> <div>Sfc psig: 2211.33</div> <div>F psig: 4118.83</div> <div>gpm: 257.81</div>	
Rate gal/min:	257.04	258.72	258.30	258.30	258.72	255.78		
Time:	35 min	40 min	45 min	50 min	25 min	60 min		
Surface (psig):								
Formation (psig):								
gpm:								

Step 8 has a target bpd rate of: 8640

## STEP RATE TEST DATA for BLM

Operator: DCP Midstream (Schlumberger Surface Press) Well: Zia AGI #1 (all perforation zones)  
 API#: 30-025-42208 Lease: NM0149956  
 Date collected: 5/20/15 Sfc Loc: T-19-S, R-32-E, Sec 19 (2100 FSL & 950 FWL)  
 Input cell

Packer set at: 5475.00 Inj Pipe I.D.: 2.44  
 Top Injection Depth: 5801 X 0.20psig/ft = Expected Surface Fracture psig: 1160.2  
 With Mud Wt Scale: 9.3 lbs/gal Beginning Formation psig: 2959 at Depth: 6096  
 Injection fluid lbs/gal: 9.3 Hydrostatic Pressure of fluid at top depth of injection: 2800  
 Beginning Wellhead psig: 17 Target Maximum Rate - bpd(barrels per day): 7200

1. Take a charted record of shut in psig for no less than 48 hours. If the shut in psig is above the expected fracture pressure, **the wellhead pressure will need to be bled off before beginning the Step Rate Test.**
2. Perform a minimum of seven steps, recording rate to  $\pm 0.1$  bpm and surface pressures to  $\pm 10$  psig in five minute intervals. The first two step rate pressures must be below  $0.2 \text{ psig/ft} \times \text{depth at top of injection}$ .
4. The last two five minute surface pressure readings of each (minimum 30 minute) step are to be within 15 psig of each other. If not, hold that step injection rate past the 30 minute step until two consecutive pressure readings are within 15 psig. Record the average of those two readings as the Data Point for that Step #.

Step 1						
Target gpm = 10.50			0.23 bpm pmp'd for Step 1			
Target Test Rate (5% of maximum bpd/1440 =			0.2500 bpm (barrels per minute) for Step 1			
Time:	5 min	10 min	15 min	20 min	25 min	30 min
Surface (psig):	1247.00	1223.00	1227.00	1219.00	1199.00	1195.00
Formation (psig):	4182.00	4167.00	4150.00	4141.00	4120.00	4120.00
gpm:	7.14	7.98	8.82	7.98	11.76	13.02
Time:	35 min	40 min	45 min	50 min	55 min	60 min
Surface (psig):						
Formation (psig):						
gpm:						

**Graph Data  
for  
Point #1**

Sfc psig: 1218.33  
 F psig: 4146.67  
 gpm: 9.45

Step 1 has a target bpd rate of: 360

Step 2						
Target gpm = 21.00			0.47 bpm pmp'd for Step 2			
Target Test Rate (10% of maximum bpd/1440 =			0.5000 bpm for Step 2			
Time:	5 min	10 min	15 min	20 min	25 min	30 min
Surface (psig):	1204.00	1209.00	1214.00	1215.00	1214.00	1214.00
Formation (psig):	4126.00	4128.00	4130.00	4132.00	4134.00	4135.00
gpm:	21.00	20.16	18.48	19.32	20.58	19.32
Time:	35 min	40 min	45 min	50 min	55 min	60 min
Surface (psig):						
Formation (psig):						
gpm:						

**Graph Data  
for  
Point #2**

Sfc psig: 1211.67  
 F psig: 4130.83  
 gpm: 19.81

Step 2 has a target bpd rate of: 720

Step 3						
Target gpm = 42.00			1.06 bpm pmp'd for Step 3			
Target Test Rate (20% of maximum bpd/1440 =			1.0000 bpm for Step 3			
Time:	5 min	10 min	15 min	20 min	25 min	30 min
Surface (psig):	1235.00	1240.00	1238.00	1240.00	1239.00	1242.00
Formation (psig):	4139.00	4142.00	4143.00	4143.00	4143.00	4143.00
gpm:	44.52	44.52	44.52	44.52	44.52	44.52
Time:	35 min	40 min	45 min	50 min	55 min	60 min
Surface (psig):						
Formation (psig):						
gpm:						

**Graph Data  
for  
Point #3**

Sfc psig: 1239.00  
 F psig: 4142.17  
 gpm: 44.52

Step 3 has a target bpd rate of: 1440

## STEP RATE TEST DATA for BLM

Operator: DCP Midstream (Schlumberger Surface Press)      Well: Zia AGI #1 (all perforation zones)  
 API#: 30-025-42208      Lease: NM0149956  
 Date collected: 5/20/15      Sfc Loc: T-19-S, R-32-E, Sec 19 (2100 FSL & 950 FWL)

Step 4						
Target gpm = 84.00			2.03 bpm pmp'd for Step 4			
Target Test Rate (40% of maximum bpd/1440 =			2.0000 bpm for Step 4			
Time:	5 min	10 min	15 min	20 min	25 min	30 min
Surface (psig):	1334.00	1290.00	1282.00	1282.00	1263.00	1265.00
Formation (psig):	4155.00	4119.00	4110.00	4107.00	4103.00	4100.00
Rate gal/min:	85.68	86.10	91.98	83.16	82.32	82.32
Time:	35 min	40 min	45 min	50 min	55 min	60 min
Surface (psig):						
Formation (psig):						
gpm:						

**Graph Data  
for  
Point #4**

Sfc psig: 1286.00  
 F psig: 4115.67  
 gpm: 85.26

Step 4 has a target bpd rate of: 2880

Step 5						
Target gpm = 126.00			3.07 bpm pmp'd for Step 5			
Target Test Rate (60% of maximum bpd/1440 =			3.0000 bpm for Step 5			
Time:	5 min	10 min	15 min	20 min	25 min	30 min
Surface (psig):	1424.00	1435.00	1411.00	1411.00	1412.00	1408.00
Formation (psig):	4103.00	4101.00	4100.00	4100.00	4100.00	4099.00
gpm:	129.36	128.10	128.94	130.20	128.10	128.52
Time:	35 min	40 min	45 min	50 min	55 min	60 min
Surface (psig):						
Formation (psig):						
gpm:						

**Graph Data  
for  
Point #5**

Sfc psig: 1416.83  
 F psig: 4100.50  
 gpm: 128.87

Step 5 has a target bpd rate of: 4320

Step 6						
Target gpm = 168.00			4.08 bpm pmp'd for Step 6			
Target Test Rate (80% of maximum bpd/1440 =			4.0000 bpm for Step 6			
Time:	5 min	10 min	15 min	20 min	25 min	30 min
Surface (psig):	1633.00	1594.00	1599.00	1595.00	1604.00	1585.00
Formation (psig):	4104.00	4104.00	4105.00	4105.00	4105.00	4106.00
Rate gal/min:	176.82	169.68	170.52	170.94	170.10	170.52
Time:	35 min	40 min	45 min	50 min	55 min	60 min
Surface (psig):						
Formation (psig):						
gpm:						

**Graph Data  
for  
Point #6**

Sfc psig: 1601.67  
 F psig: 4104.83  
 gpm: 171.43

Step 6 has a target bpd rate of: 5760

Step 7						
Target gpm = 210.00			5.03 bpm pmp'd for Step 7			
Target Test Rate (100% of maximum bpd/1440 =			5.0000 bpm for Step 7			
Time:	5 min	10 min	15 min	20 min	25 min	30 min
Surface (psig):	1813.00	1816.00	1812.00	1815.00	1820.00	1809.00
Formation (psig):	4109.00	4110.00	4112.00	4114.00	4115.00	4113.00
gpm:	208.74	211.68	212.94	212.10	210.84	211.26
Time:	35 min	40 min	45 min	50 min	55 min	60 min
Surface (psig):						
Formation (psig):						
gpm:						

**Graph Data  
for  
Point #7**

Sfc psig: 1814.17  
 F psig: 4112.17  
 gpm: 211.26

Step 7 has a target bpd rate of: 7200

## STEP RATE TEST DATA for BLM

Operator: DCP Midstream (Schlumberger Surface Press)      Well: Zia AGI #1 (all perforation zones)  
 API#: 30-025-42208      Lease: NM0149956  
 Date collected: 5/20/15      Sfc Loc: T-19-S, R-32-E, Sec 19 (2100 FSL & 950 FWL)

<b>Step 8</b>		Target gpm = 252.00      6.14 bpm pmp'd for Step 8					
Target Test Rate (120% of maximum bpd/1440 =		<b>6.0000 bpm for Step 8</b>					
Time:	5 min	10 min	15 min	20 min	25 min	30 min	Start Time: 14:42
Surface (psig):	2131.00	2096.00	2119.00	2122.00	2125.00	2131.00	End Time: 15:12
Formation (psig):	4116.00	4117.00	4118.00	4120.00	4121.00	4121.00	<b>Graph Data for Point #8</b> Sfc psig: 2120.67 F psig: 4118.83 gpm: 257.81
Rate gal/min:	257.04	258.72	258.30	258.30	258.72	255.78	
Time:	35 min	40 min	45 min	50 min	55 min	60 min	
Surface (psig):							
Formation (psig):							
gpm:							

Step 8 has a target bpd rate of: 8640



Figure 1 Graph of Cudd Energy Services and Schlumberger Surface Pressure Data

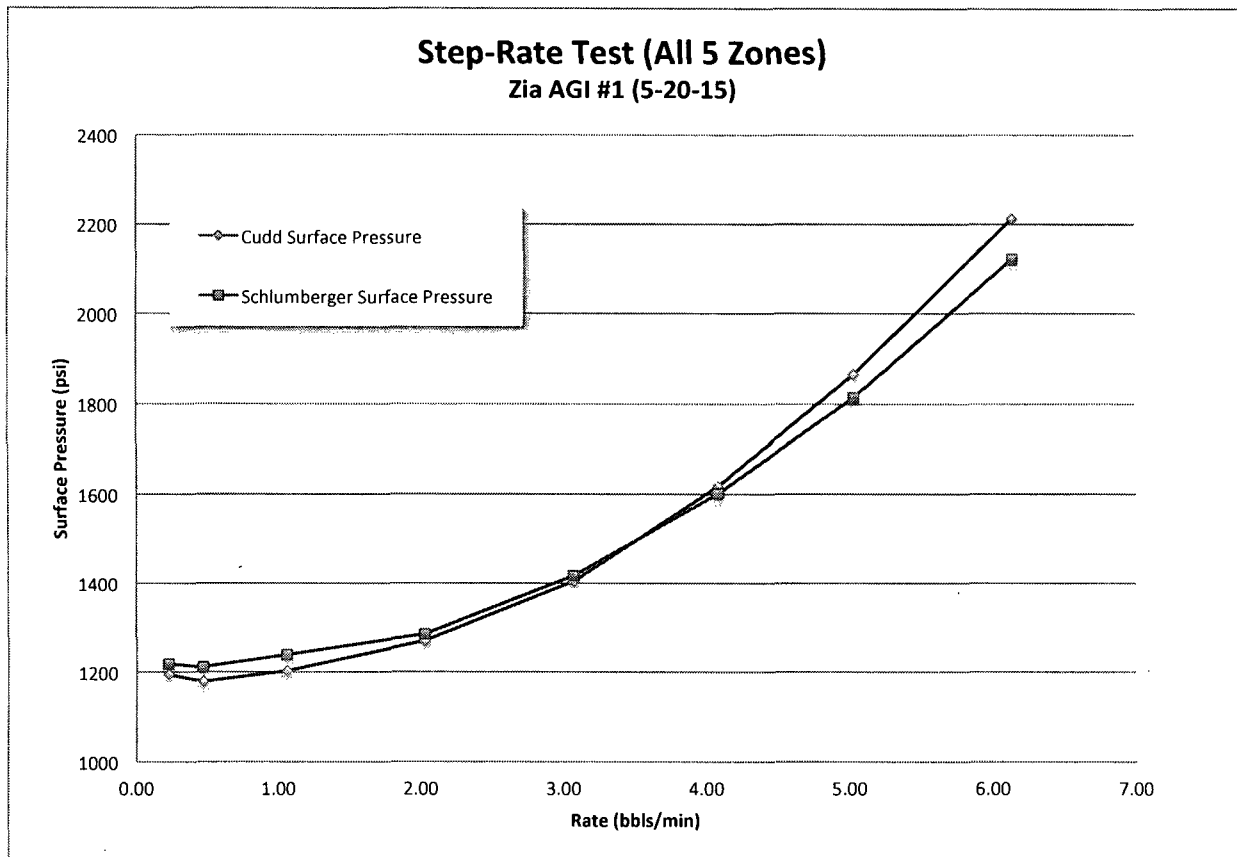


Figure 2 Graph of Schlumberger Bottom Hole Pressure Data

