

KANSAS CORPORATION COMMISSION OIL & GAS CONSERVATION DIVISION

#### 1101944

Form ACO-1
June 2009
Form Must Be Typed
Form must be Signed
All blanks must be Filled

## WELL COMPLETION FORM WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # 3553	API No. 15 - 15-051-25220-00-02
Name: Citation Oil & Gas Corp.	Spot Description: C OF N2NE
Address 1: 14077 Cutten Rd	N2_NE_Sec13_Twp11_S. R18East
Address 2: PO BOX 690688	660 Feet from   North / □ South Line of Section
City: HOUSTON State: TX Zip: 77269 + 0688	1320 Feet from ▼ East / West Line of Section
Contact Person: Sandra Ochoa	Footages Calculated from Nearest Outside Section Corner:
Phone: ( 281 ) 891-1000	☑ NE □NW □SE □SW
CONTRACTOR: License # 5929	County: Ellis
Name: Duke Drilling Co., Inc.	Lease Name: HENDRICK Well #: 16
Wellsite Geologist: Unknown	Field Name: Bemis-Shutts
Purchaser: NCRA	Producing Formation: Arbuckle, LKC, C, F, G, I
Designate Type of Completion:	Elevation: Ground: 1884 Kelly Bushing:1888
New Wetl ☐ Re-Entry ✔ Workover	Total Depth: 3451 Plug Back Total Depth: 3384
✓ oil	Amount of Surface Pipe Set and Cemented at: 213 Fee
Gas D&A ENHR SIGW	Multiple Stage Cementing Collar Used? ☐ Yes ✓ No
☐ OG ☐ GSW ☐ Temp. Abd.	If yes, show depth set: Fee
CM (Coal Bed Methane)	If Alternate II completion, cement circulated from: 3439
Cathodic Other (Core, Expl., etc.):	feet depth to:w/_500 sx cm
If Workover/Re-entry: Old Well Info as follows:	ox dopti to.
Operator: Elysium Energy, LLC.	Dellin - Flyid Management Dies
Well Name: Hendrick 16	Drilling Fluid Management Plan (Data must be collected from the Reserve Pit)
Original Comp. Date: 05/19/2003 Original Total Depth: 3451	Chloride content:ppm Fluid volume:bbls
☐ Deepening ☑ Re-perf. ☐ Conv. to ENHR ☐ Conv. to SWD	
Conv. to GSW	Dewatering method used:
Plug Back: Plug Back Total Depth	Location of fluid disposal if hauled offsite:
Commingled Permit #:	Operator Name:
Dual Completion Permit #:	Lease Name: License #:
SWD Permit #:	Quarter Sec TwpS. R
ENHR Permit #:	
GSW Permit #:	County: Permit #:
10/29/2012 11/15/2012	
Spud Date or Date Reached TD Completion Date or Recompletion Date  Recompletion Date	

#### **AFFIDAVIT**

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

**Submitted Electronically** 

KCC Office Use ONLY
Letter of Confidentiality Received
Date:
Confidential Release Date:
Wireline Log Received
Geologist Report Received
UIC Distribution
ALT I III Approved by: Dearna Garrisor Date: 11/26/2012

Side Two



Operator Name: Citat	ion Oil & Gas Co	orp.		_ Lease	Name: _	HENDRICK		Weil #:10	<u> </u>	
Sec. 13 Twp. 11	s. R. <u>18</u>	East	✓ West	Coun	ty: Ellis					
INSTRUCTIONS: Sho time tool open and clos recovery, and flow rates line Logs surveyed. At	ed, flowing and shu if gas to surface te	t-in pressi st, along v	ures, whether si with final chart(s	hut-in pre	ssure read	ched static level,	hydrostatic pro	essures, bottom	hole tem	perature, fluid
Drill Stem Tests Taken (Attach Additional St	neets)	Y	es 🗸 No		<b>V</b> L	og Formatio	n (Top), Depth	and Datum		Sample
Samples Sent to Geolo Cores Taken Electric Log Run Electric Log Submitted (If no, Submit Copy) List All E. Logs Run:	Y	es 🗹 No		Topek	kle ng-Kansas City a		Datum			
				RECORD	_	_				
Purpose of String	Size Hole Drilled	Siz	ort all strings set-c ze Casing t (In O.D.)	W	surface, inte eight s. / Ft.	ermediate, producti Setting Depth	on, etc. Type of Cement	# Sacks Used		and Percent Additives
Surface	12.2500	8.6250		23		212	С	150		
Production	7.8750	5.5000		17		3439	c 500		11.2#	
		<u>.</u>	ADDITIONAL	CEMENT	ING / SQL	 JEEZE RECORD				
Purpose:  —— Perforate  —— Protect Casing  —— Plug Back TD  —— Plug Off Zone	Depth Top Bottom	Туре	of Cement	# Sac	ks Used		Type an	d Percent Additive	es	
Shots Per Foot			RD - Bridge Plug Each Interval Perl		•		cture, Shot, Cem	ent Squeeze Reco	ord	Depth
2	CIBP @ 3381', 33	364'-3369	)'			500 gal. 15%	HCL acid w	3% solvent		3364-3369
									_	
TUBING RECORD: 2.	Size: 8750	Set At: _3319		Packer	At:	Liner Run:	Yes 🗸	No .		
Date of First, Resumed F 11/15/2012	roduction, SWD or EN	HR.	Producing Meth	od: Pump	ing 🔲	Gas Lift 🔲 C	ther (Explain)			
Estimated Production Per 24 Hours	Oil 99.9	Bbis.	Gas	Mcf	Wate 3	er Bi 85.1	ols.	Gas-Oil Ratio		Gravity 32
DISPOSITIO  Vented Sold  (If vented, Subn	Used on Lease			METHOD (	DF COMPLE Dually (Submit )	Comp. Com	nmingled nit ACO-4)	PRODUCT		

**WELLBORE SCHEMATIC** Current Hendrick Well No. Lease: #16 15-051-25220 API No. Status PR NE Sec. 13, T11S-R18W Location Bemis-Shutts 5/12/2003 5/19/2003 County: Ellis State: Field 8-5/8 3451 1880 Spud Date: Comp Date: 5/19/2003 TOP, LKC C, F, G, I PBTD 3346 1888 23# 212 Current Perfs/OH: Current Zone: 150 sxs 2898-2986', 2938-44', 2975-79', 2993-99', 3113-18', 3164-67', 3174-79', 3239-45' Surface Equipment Unit Make: Unit Size Unit S/N: Unit Rotation: SPM: Stroke Length: Unit Sheave: Prime Mover: Motor Sheave: Motor S/N: Motor RPM: Casing Breakdown Grade / Wt Depth 212' Size Hole Size Cement 23# 17# Surface 150 sxs Production 5-1/2 3439 500 sxs **TOC Unknown?** Production Production CBL was run Liner Tubing Breakdown Qty Des Description Footage Topeka Perfs 2898-06 2938-44 2975-79 2993-99 TOTAL 0.00 LKC Perfs 3113-18 Rod Breakdown 3164-67 3174-79 3239-45 Qty Footage Description CIBP @ 3346' (6/04) TOTAL 0.00 Arbuckte Perfs 3364-69' (4 spf) Comments 5-1/2" CMT @ 3384 17# 500 sxs 3439 Arbuckle OH 3439-51"

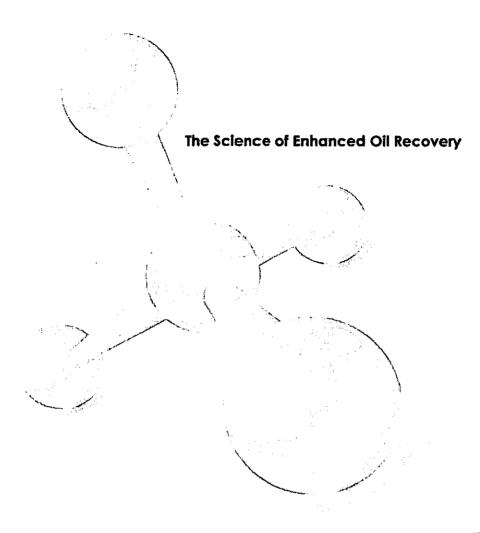
PREPARED BY:

JH

3,451' TD

10/25/2012

UPDATED:



**Treatment Summary For** 

# Citation Oil & Gas Corp.

MARCIT<sup>sm</sup> Gel Conformance Bemis-Shutts Hendrick #16 Ellis County, Kansas

November 13, 2012



#### TREATMENT SUMMARY

#### **PURPOSE**

Use MARCIT<sup>sm</sup> polymer gel technology to 1) decrease water production, 2) lower producing fluid level, 3) improve draw-down on oil-saturated reservoir matrix rock, 4) improve oil recovery and well economics.

#### **TREATMENT**

TIORCO equipment and personnel arrived on location on November 5, 2012. A tailgate safety meeting was held to discuss all potential hazards specific to the job. TIORCO's Portable Unit #17 was connected to frac tanks for treatment supply water and to the wellhead for polymer solution injection. The unit was then connected to an electrical source. The treatment consisted of 2,432 BBLS of gel. The treatment started on November 5, 2012 at 14:30 and ended on November 7, 2012 at 19:19. The gel was made-up of 3,740 lbs. of EOR204 (Medium molecular weight polymer) and 801 lbs. of EOR684 (crosslinker). Details for each stage of the treatment, job log, and injection charts are included.

#### MARCIT<sup>677</sup> GEL QA/QC

Representative samples of cross-linked polymer solution were collected during all treatment stages to ensure that the intended gels would ultimately form. Pre-gel samples were stored at a temperature of 120°F in an oven onboard the TIORCO portable polymer injection unit. All samples indicated that gels formed as intended.

Tiorco is very interested in monitoring and evaluating the results of this treatment with time. If you should have questions or comments regarding the job, please do not hesitate to contact Mike Lantz in our Denver office at (303) 923-6440. We greatly appreciate the opportunity to be of service to Citation Oil & Gas Corp. and look forward to working with you again in the future.

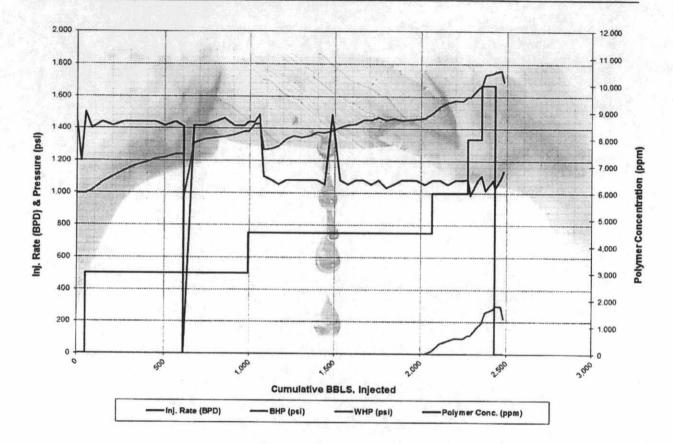
### TREATMENT STAGE LOG

Stage	Date	Time	Date	Time	Polymer	BBLS/	WHP	(psl)	внр	(psi)	Pump Ra	te (bpd)	Comments
	Bagin	Begin	End	End	ppm	Stage	Begin	End	Begin	End	Begin	End	oomilieins.
1	11/5/12	2:30 PM	11/5/12	3:24 PM	0	50	0	٥			1440	1440	Slage #1 Water Flush with CRO195 / X-Cide 102w
2_	11/5/12	3:24 PM	11/6/12	10:26 AM	3,000	945	0	0	995	1382	1440	1440	Stage #2 3,000 ppm, with X-Ckts 102w
3	11/6/12	10:28 AM	11/7/12	10:00 AM	4,500	1120	0	21	1382	1496	1440	1080	Stage #3 4,500 ppm with X-Cide 102w
4	11/7/12	10:00 AM	11/7/12	241 PM	6,000	210	21	115	1496	1598	1080	1080	Stage #4 6,000 ppm with X-Cide 102w
5	11/7/12	2:41 PM	11/7/12	4:26 PM	8,000	78	115	190	1598	1668	1080	1080	Stage #5 8,000 ppm with X-Cide 102w
6_	11/7/12	4:26 PM	11/7/12	6:14 PM	10,000	79	190	300	1668	1750	1080	1080	Stage #6 10,000 ppm with X-Cide 102w
7	11/7/12	6:14 PM	11/7/12	7:19 PM	0	50	360	220	1750	1691	1080	1080	Stage #7 Water Flush with CRO195 / X-Cide 102w
Totals						2532			_				

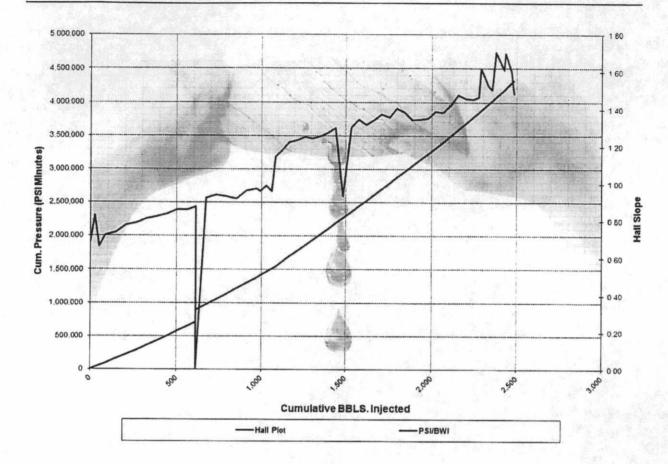
## MARCITSM GEL QA/QC

Sample No.	Treatment Stage	Sample Date	Sample Time	Cum. Bbls.	Polymer ppm	Polymer X- Linker Ratio	Comments
11	2	11/05/12	16:15	100	3,000	40:1	Graded 3g
2	2	11/06/12	00:00	563	3,000	40:1	Graded 3g
3	2	11/06/12	10:15	985	3,000	40:1	Graded 3g
4	3	11/06/12	11:15	1,045	4,500	40:1	Graded 4g
5	3	11/07/12	00:00	1,620	4,500	40:1	Graded 3g
6	3	11/07/12	09:00	2,020	4,500	40:1	Graded 4g
7	4	11/07/12	11:09	2,177	6,000	40:1	Graded 6g
8	4	11/07/12	14:00	2,244	6,000	40:1	Graded 6g
9	5	11/07/12	15:49	2,333	8,000	40:1	Graded 8e
10	6	11/07/12	17:00	2,377	10,000	40:1	Graded 9e

## RATE, PRESSURE, & CONCENTRATION



#### HALL SLOPE



## TREATMENT JOB LOG

DATE	TIME	INJEC RA		CUM. INJ BBLS	WHP	BHP	HALL	Polymer PPM	POLYMER LBS	COMMENTS	
		BPD	ВРМ								
5-Nov-12	14:30	1,440	1.00	0	0	995	0.69	0	0	Begin Well Treatment Stage # 1 50 BBL Water Flush With CRO 195 and XC102W	
5-Nov-12	15:00	1,200	0.83	25	0	995	0.83	0	0		
5-Nov-12	15:24	1,500	1.04	50	0	995	0.66	0	0	End Stage # 1	
5-Nov-12	15:24	1,500	1.04	50	0	995	0.66	3,000	Ó	Begin Stage # 2 @ 3000 PPM With EOR 204 and 684 Cont. XC102W	
5-Nov-12	16:00	1,400	0.97	85	0	1,012	0.72	3,000	37	16:15 Polymer Sample From Unit @100 BBL: Graded 3g	
5-Nov-12	17:00	1,440	1.00	145	0	1,063	0.74	3,000	100		
5-Nov-12 5-Nov-12	18:00	1,416	0.98	204	0	1,101	0.78	3,000	162		
5-Nov-12	20:00	1,440	1.00	264	0	1,137	0.79	3,000	224		
5-Nov-12	21:00	1,440	1.00	324	0	1,168	0.81	3,000	287		
5-Nov-12	22:00	1,440	1.00	384	0	1,185	0.82	3,000	350		
5-Nov-12	23:00	1,416	0.98	444 503	0	1,208	0.84	3,000	413	Section of the sectio	
6-Nov-12	0:00	1,440	1.00	563	0	1,219	0.86	3,000	475		
6-Nov-12	0:50	1,411	0.98			1,238	0.86	3,000	538	Took sample of 3,000 ppm 563 BBLS: Graded 3g	
6-Nov-12	4:00			612	0	1,238	0.88	3,000	590	Rental generator stopped running. Unit shutdown.	
6-Nov-12	5:00	1,416	0.00	612	0	972	0.00	3,000	590	Restart unit with backup generator.	
6-Nov-12	6:00	1,416	0.98	671	0	1,309	0.92	3,000	651		
6-Nov-12	7:00	1,440	1.00	730	0	1,333	0.94	3,000	713		
6-Nov-12	8:00	1,464	1.02	790 851	0	1,340	0.93	3,000	776		
6-Nov-12	9:00	1,416	0.98	910	0	1,349	0.92	3,000	840	Date of the second seco	
6-Nov-12	10:00	1,416	0.98	969	0	1,362	0.96	3,000 3,000	902 964	10:15 Took sample of 3,000 ppm 985	
6-Nov-12	10.26	1,440	1.00	995	0	1202	0.00	2.000		BBLS: Graded 3g	
6-Nov-12	10:26	1,440	1.00	995	0	1,382	0.96	3,000 4,500	991 991	End Stage #2.  Begin Stage #3, 4,500 PPM with	
6-Nov-12	11:00	1,440	1.00	1,029	0	1,428	0.99	4,500	1,045	EOR204 and 684 Cont. XC102W 11:15 Took sample of 4500 ppm @	
6-Nov-12	11:30	1,488	1.03	1,060	0	1,430	0.96	4,500	1,094	1,045 BBLS: Graded 4g Slowed rate to 1,080 BWIPD	
6-Nov-12	12:00	1,104	0.77	1,083	0	1,269	1.15	4,500	1,130	Clowed late to 1,000 BVVIFD	
6-Nov-12	13:00	1,080	0.75	1,128	0	1,276	1.18	4,500	1,201		
6-Nov-12	14:00	1,056	0.73	1,172	0	1,293	1.22	4,500	1,270		
6-Nov-12	15:00	1,080	0.75	1,217	0	1,335	1.24	4,500	1,341	Marco Control Control	
6-Nov-12	16:00	1,080	0.75	1,262	0	1,354	1.25	4,500	1,411	S. A. Company of the	
6-Nov-12	17:00	1,080	0.75	1,307	0	1,345	1.25	4,500	1,482		
6-Nov-12	18:00	1,080	0.75	1,352	0	1,356	1.26	4,500	1,553		
6-Nov-12	19:00	1,080	0.75	1,397	0	1,377	1.28	4,500	1,624		
6-Nov-12	20:00	1,056	0.73	1,441	0	1,376	1.30	4,500	1,693		
6-Nov-12	21:00	1,486	1.03	1,486	0	1,389	0.93	4,500	1,764		
6-Nov-12	22:00	1,080	0.75	1,531	0	1,408	1.30	4,500	1,835		
6-Nov-12	23:00	1,056	0.73	1,575	0	1,424	1,35	4,500	1,904		
7-Nov-12	0:00	1,080	0.75	1,620	0	1,426	1.32	4,500	1,975	Took sample of 4,500 ppm @ 1,620 BBLS: Graded 3g	
7-Nov-12	1:00	1,080	0.75	1,665	0	1,453	1.35	4,500	2,045		
7-Nov-12	2:00	1,056	0.73	1,709	0	1,453	1.38	4,500	2,115		
7-Nov-12	3:00	1,080	0.75	1,754	0	1,469	1.36	4,500	2,185	No. of the second second	
7-Nov-12		1,032	0.72	1,797	0	1,453	1.41	4,500	2,253		
7-Nov-12	5:00	1,056	0.73	1,841	0	1,462	1.38	4,500	2,322	TEXAS DE LA COMPANION DE LA CO	
7-Nov-12	6:00	1,080	0.75	1,886	0	1,453	1.35	4,500	2,393		
7-Nov-12	7:00	1,080	0.75	1,931	0	1,456	1.35	4,500	2,464	BEST OF EARLY ALLEY AND THE THE STATE	
7-Nov-12 7-Nov-12	9:00	1,080	0.75	1,976 2,020	0	1,461	1.35	4,500 4,500	2,535 2,604	Took sample #6 at 09:00 4500 ppm:	
7-Nov-12	10:00	1,080	0.75	2005	24	4.400	4.00	1.50-		Graded 4g	
7-Nov-12	10:00	1,080	0.75	2,065	21	1,496	1.39	4,500 6,000	2,675 2,675	End Stage #3 at 4500 ppm Begin Stage #4 at 6000 ppm: Graded	
7-Nov-12	11:00	1,080	0.75	2,110	65	1.540	1.40	0.000		6g	
7-Nov-12 7-Nov-12	12:00	1,056	0.73	2,110	82	1,540	1.43	6,000	2,769		
7-Nov-12 7-Nov-12	13:00	1,080	0.75	2,199	98	1,561	1.48	6,000	2,862		
7-Nov-12	14:00	1,080	0.75	2,244	96	1,575	1.46	6,000 6,000	2,956 3,050	14:00 took sample #7 6000 ppm:	
7-Nov-12	14:41	1,089	0.76	2,275	115	1,598	1.47	6,000	0.445	Graded 6g	
7-Nov-12	14:41	1,089	0.76	2,275	115		1.47	6,000	3,115	End stage #4 at 6000 ppm	
, 1404-12	17.71	1,009	0,70	2,210	110	1,598	1.47	8,000	3,115	Begin stage #5 at 8000 ppm	



DATE	TIME	INJECTION RATE		GUM, INJ BBLS	VVHP	BHP PSI	HALL	Polymer PPM	POLYMER LBS	COMMENTS
		BPD	BPM							
7-Nov-12	15:00	985	0.68	2,288	114	1,596	1.62	8,000	3,152	
7-Nov-12	16:00	1,080	0.75	2,333	170	1,648	1.53	8,000	3,278	took sample at 2325 BBLS @ 15:49 8000 ppm #9 sample: Graded 8e
7-Nov-12	16:26	1,108	0.77	2,353	190	1,668	1.51	8,000	3,334	End stage #5 of 8,000 ppm
7-Nov-12	16:26	1,108	0.77	2,353	190	1,668	1.51	10,000	3,334	Begin stage #6 @ 10,000 ppm
7-Nov-12	17:00	1,016	0.71	2,377	260	1,735	1.71	10,000	3,417	Took sample of 10,000 ppm #10 sample; Graded 9e
7-Nov-12	18:00	1,080	0.75	2,422	280	1,743	1.61	10,000	3,575	
7-Nov-12	18:14	1,029	0.71	2,432	300	1,750	1.70	10,000	3,610	End stage #6 of 10,000 ppm
7-Nov-12	18:14	1,029	0.71	2,432	300	1,750	1.70	0	3,610	Begin stage #7 50 bbl. water flush with CRO 195
7-Nov-12	19:00	1,096	0.76	2,467	295	1,760	1.61	0	3,610	
7-Nov-12	19:19	1,137	0.79	2,482	220	1,691	1.49	0	3,610	End Stage #7. Completed Treatment



2452 South Trenton Way • Suite M • Denver, CO 80231 • 303.923.6440

Company Name: Citation Oil & Gas Corp.

Field Name: Bemis - Shutts Well Name: Hendrick #16

**MARCIT Polymer Gel Treatment** 

Well Type: Injection County and State: Ellis County, Kansas

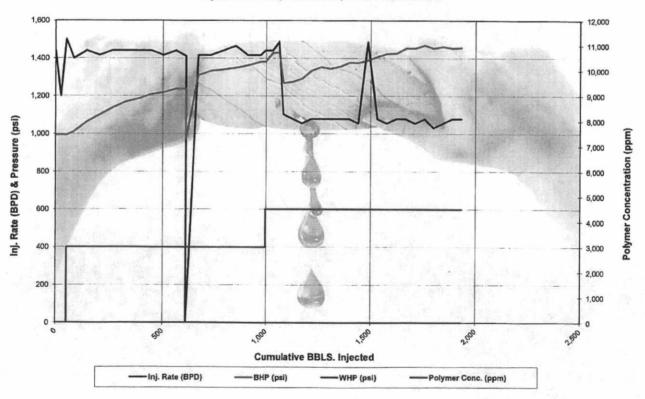
**Treatment Summary and Charts** 

Portable Unit #: 17

Report Date: November 7, 2012

Stage	Date	Time	Date	Time	Polymer	BBLS/	WHP	(psi)	BHP (	psi)	Pump Rate (bpd)		6
Grade	Begin	Begin	End	End	ppm	Stage	Begin	End	Begin	End	Begin	End	Comments
1	11/5/12	2:30 PM	11/5/12	3:24 PM	0	50	0	0			1440	1440	Stage #1 Water Flush
2	11/5/12	3:24 PM	11/6/12	10:26 AM	3,000	945	0	0	995	1382	1440	1440	Stage #2 3,000 ppm.
2	11/6/12	10:26 AM	188 199		4,500	PR. LIED	0		1382	7. 19.	1440		Stage #3 4,500 ppm
-			8 5 1 1	2 - /-			MES !						
							-					-	
200	F 80	3.7		t=1					132 13		U		
									100				
				Land Market								200	
					154		4-4-17			1		3.01.0	
				25					7. 31.	10%		1.1	
-	+	-	3109										
otals						995							

#### Injection Rate, Pressure, & Concentration



### Hall Slope and Psi/BWI

