TCP Bottom Hole Assembly

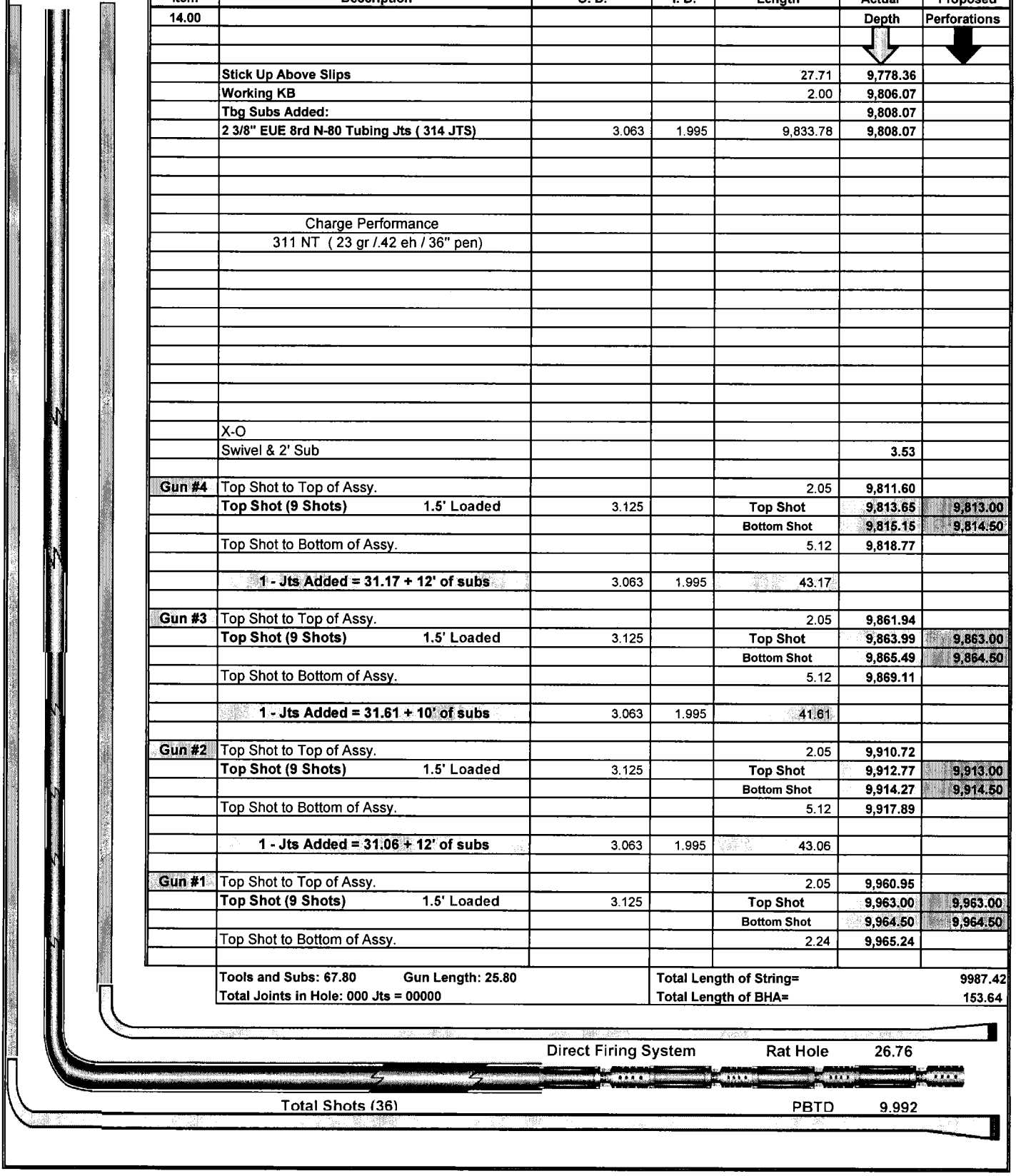
J-W WIRELINE COMPANY

Date:	Company:	Gun Size:	SPF:	Phasing:	Expl. Type:	J-W Specialist:
4/8/2011	Chesapeake Energy	3 1/8"	6	60°	RDX	Barrett Mauldin
Well Name: State 8-60 16-1H	Field:	Completion Interval: 9,813-14.5, 9,863-64.5,		Stage: =		
County: Weld	State: Colorado / Field Rep: Buck Ashmore	Temp: 170 °F	Casing Size/Wt.: 4 1/2		Fluid Type/Wt.: 2% KCL	

Item	Description	O. D.	I. D.	Length	Actual Depth	Proposed Perforations
14.00						
	Stick Up Above Slips			27.71	9,778.36	
	Working KB			2.00	9,806.07	
	Tbg Subs Added:				9,808.07	
	2 3/8" EUE 8rd N-80 Tubing Jts (314 JTS)	3.063	1.995	9,833.78	9,808.07	
	Charge Performance					
	311 NT (23 gr /.42 eh / 36" pen)					
	X-O					
	Swivel & 2' Sub				3.53	
Gun #4	Top Shot to Top of Assy.			2.05	9,811.60	
	Top Shot (9 Shots) 1.5' Loaded	3.125		Top Shot	9,813.65	9,813.00
				Bottom Shot	9,815.15	9,814.50
	Top Shot to Bottom of Assy.			5.12	9,818.77	
	1 - Jts Added = 31.17 + 12' of subs	3.063	1.995	43.17		
Gun #3	Top Shot to Top of Assy.			2.05	9,861.94	
	Top Shot (9 Shots) 1.5' Loaded	3.125		Top Shot	9,863.99	9,863.00
				Bottom Shot	9,865.49	9,864.50
	Top Shot to Bottom of Assy.			5.12	9,869.11	
	1 - Jts Added = 31.61 + 10' of subs	3.063	1.995	41.61		
Gun #2	Top Shot to Top of Assy.			2.05	9,910.72	
	Top Shot (9 Shots) 1.5' Loaded	3.125		Top Shot	9,912.77	9,913.00
				Bottom Shot	9,914.27	9,914.50
	Top Shot to Bottom of Assy.			5.12	9,917.89	
	1 - Jts Added = 31.06 + 12' of subs	3.063	1.995	43.06		
Gun #1	Top Shot to Top of Assy.			2.05	9,960.95	
	Top Shot (9 Shots) 1.5' Loaded	3.125		Top Shot	9,963.00	9,963.00
				Bottom Shot	9,964.50	9,964.50
	Top Shot to Bottom of Assy.			2.24	9,965.24	

Tools and Subs: 67.80 Gun Length: 25.80 — Total Length of String= 9987.42

Total Joints in Hole: 000 Jts = 00000 — Total Length of BHA= 153.64



J-W WIRELINE COMPANY

Perforation Schematic

Company	**CHESAPEAKE ENERGY**
Well Name	**State 8-60 16 1H**
Stage #	**2**
Run #	**1**
Supervisor	*Sam Hopper*
Date / Time	**4/12/11 6:00 AM**
Location	1
Weather	1
Wind Direc.	1

Cert. #	4459
Pattern	60
EHD	0.40"
Penetration	38.7"
Total Lbs	
Max lbs/delay	
Method of Fire	Elec
Distance / Structure	N/A
Seismograph	No

CCL → CCL TO TOP SHOT OFFSETS 0 Ft

36	**Total Shots**
9	**Total Feet**

Short Joint @	6534-6560

POSITIVE

CCL @	9577.5		7.5 Ft
Perf From	9585	To 9586.5	
	9	Shots	

NEGATIVE

CCL @	9614.5		10.5 Ft
Perf From	9625	To 9626.5	
	9	Shots	

POSITIVE

CCL @	9661		14.0 Ft
Perf From	9675	To 9676.5	
	9	Shots	

NEGATIVE

CCL @	9692.5		17.5 Ft
Perf From	9710	To 9711.5	
	9	Shots	

POSITIVE

Plug

CCL at	9731	29 Ft
Top of Plug at	9760	

Depth	Degrees
5780	10
5900	20
6041	30
6137	40
6230	50
6359	60
6450	70
6525	80
6590	90

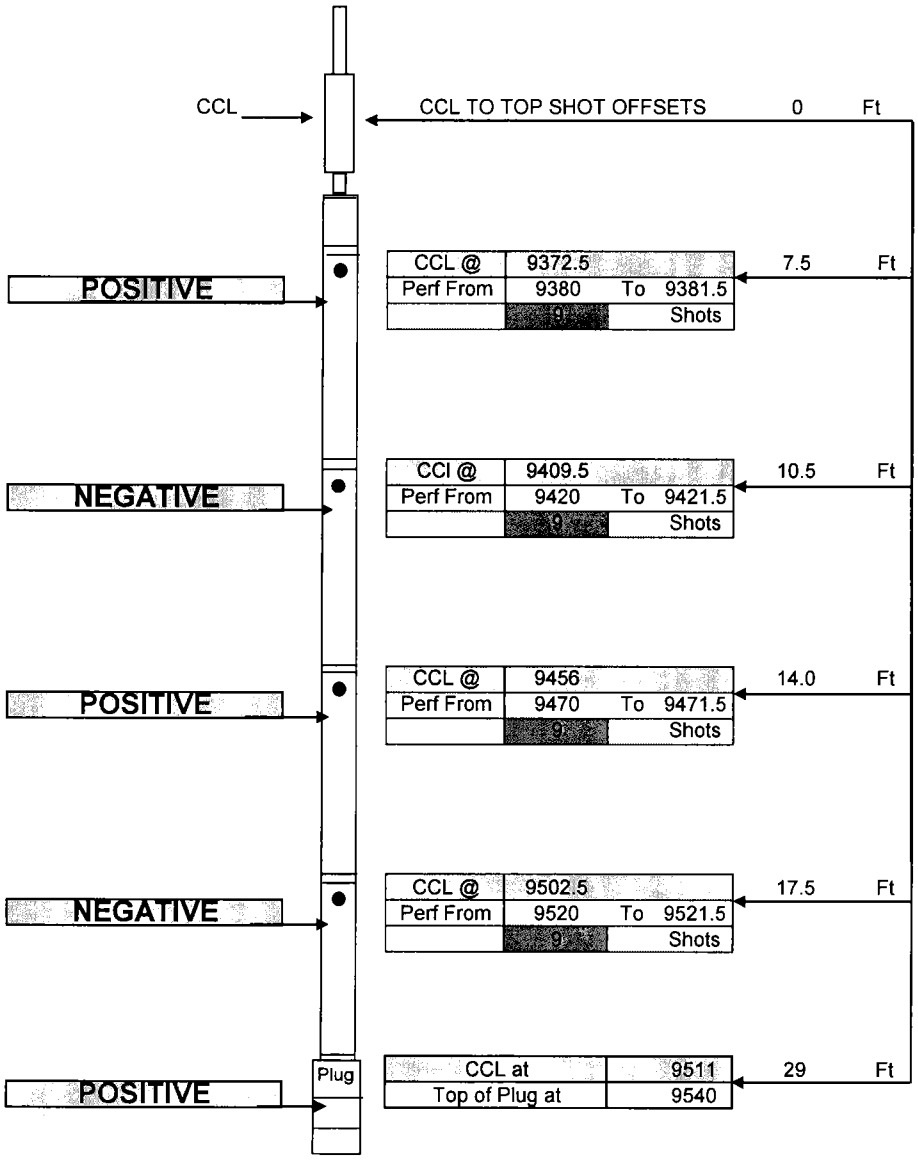
Top of bottom set of perforations at	9813

J-W WIRELINE COMPANY

Perforation Schematic

Company	**CHESAPEAKE ENERGY**
Well Name	**State 8-60 16 1H**
Stage #	**3**
Run #	**1**
Supervisor	*Sam Hopper*
Date / Time	**4/12/11 6:00 AM**
Location	1
Weather	1
Wind Direc.	1

Cert. #	4459
Pattern	60
EHD	0.40"
Penetration	38.7"
Total Lbs	
Max lbs/delay	
Method of Fire	Elec
Distance / Structure	N/A
Seismograph	No



36	**Total Shots**
9	**Total Feet**

Short Joint @	6534-6560

Depth	Degrees
5780	10
5900	20
6041	30
6137	40
6230	50
6359	60
6450	70
6525	80
6590	90

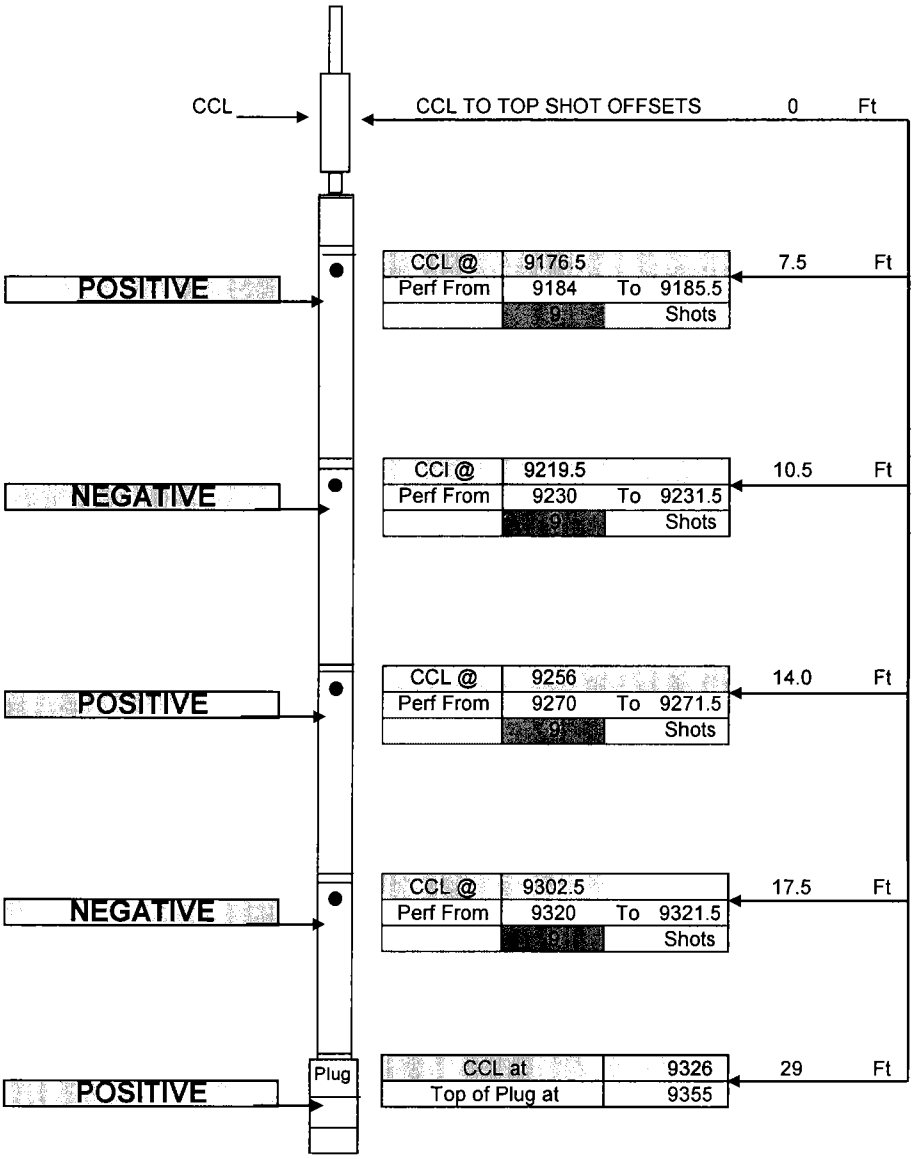
Top of bottom set of perforations at 9585

J-W WIRELINE COMPANY

Perforation Schematic

Company	**CHESAPEAKE ENERGY**
Well Name	**State 8-60 16 1H**
Stage #	**4**
Run #	**1**
Supervisor	*Sam Hopper*
Date / Time	**4/12/11 6:00 AM**
Location	1
Weather	1
Wind Direc.	1

Cert. #	4459
Pattern	60
EHD	0.40"
Penetration	38.7"
Total Lbs	
Max lbs/delay	
Method of Fire	Elec
Distance / Structure	N/A
Seismograph	No



36	**Total Shots**
9	**Total Feet**

Short Joint @	6534-6560

Depth	Degrees
5780	10
5900	20
6041	30
6137	40
6230	50
6359	60
6450	70
6525	80
6590	90

Top of bottom set of perforations at	9380

J-W WIRELINE COMPANY

Perforation Schematic

Company	**CHESAPEAKE ENERGY**
Well Name	**State 8-60 16 1H**
Stage #	**5**
Run #	**1**
Supervisor	*Sam Hopper*
Date / Time	**4/13/11 6:00 AM**
Location	1
Weather	1
Wind Direc.	1

Cert. #	4459
Pattern	60
EHD	0.40"
Penetration	38.7"
Total Lbs	
Max lbs/delay	
Method of Fire	Elec
Distance / Structure	N/A
Seismograph	No

CCL

CCL TO TOP SHOT OFFSETS 0 Ft

36	**Total Shots**
9	**Total Feet**

Short Joint @	6534-6560

POSITIVE

CCL @	8972.5		7.5 Ft
Perf From	8980	To 8981.5	
	9	Shots	

NEGATIVE

CCl @	9019.5		10.5 Ft
Perf From	9030	To 9031.5	
	9	Shots	

POSITIVE

CCL @	9056		14.0 Ft
Perf From	9070	To 9071.5	
	9	Shots	

NEGATIVE

CCL @	9102.5		17.5 Ft
Perf From	9120	To 9121.5	
	9	Shots	

POSITIVE

Plug

CCL at	9121	29 Ft
Top of Plug at	9150	

Depth	Degrees
5780	10
5900	20
6041	30
6137	40
6230	50
6359	60
6450	70
6525	80
6590	90

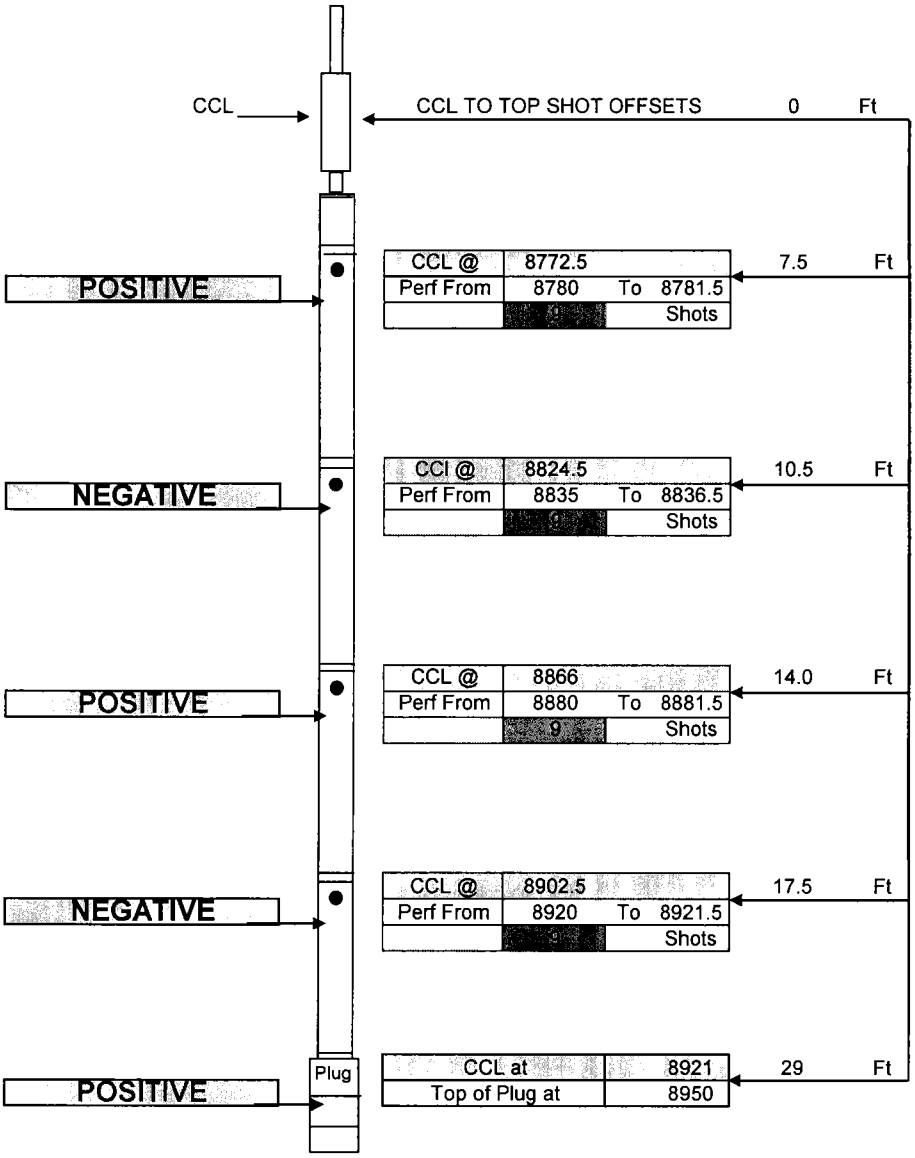
Top of bottom set of perforations at	9180

JW WIRELINE COMPANY

Perforation Schematic

Company	**CHESAPEAKE ENERGY**
Well Name	**State 8-60 16 1H**
Stage #	**6**
Run #	**1**
Supervisor	*Sam Hopper*
Date / Time	**4/13/11 6:00 AM**
Location	1
Weather	1
Wind Direc.	1

Cert. #	4459
Pattern	60
EHD	0.40"
Penetration	38.7"
Total Lbs	
Max lbs/delay	
Method of Fire	Elec
Distance / Structure	N/A
Seismograph	No



36	**Total Shots**
9	**Total Feet**

Short Joint @	6534-6560

Depth	Degrees
5780	10
5900	20
6041	30
6137	40
6230	50
6359	60
6450	70
6525	80
6590	90

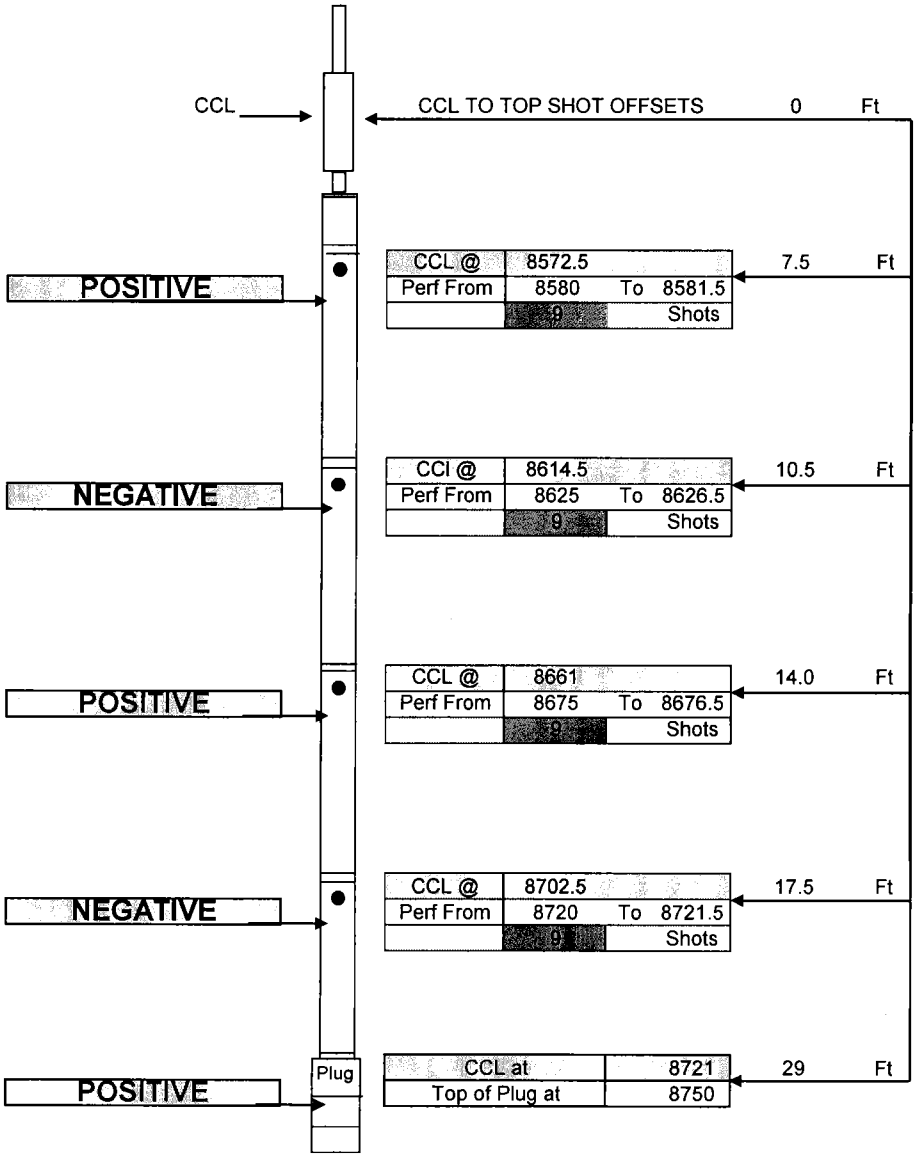
Top of bottom set of perforations at	8980

J-W WIRELINE COMPANY

Perforation Schematic

Company	**CHESAPEAKE ENERGY**
Well Name	**State 8-60 16 1H**
Stage #	**7**
Run #	**1**
Supervisor	*Sam Hopper*
Date / Time	**4/13/11 6:00 AM**
Location	1
Weather	1
Wind Direc.	1

Cert. #	4459
Pattern	60
EHD	0.40"
Penetration	38.7"
Total Lbs	
Max lbs/delay	
Method of Fire	Elec
Distance / Structure	N/A
Seismograph	No



36	**Total Shots**
9	**Total Feet**

Short Joint @	6534-6560

Depth	Degrees
5780	10
5900	20
6041	30
6137	40
6230	50
6359	60
6450	70
6525	80
6590	90

Top of bottom set of perforations at	8780

J-W WIRELINE COMPANY

Perforation Schematic

Company	**CHESAPEAKE ENERGY**
Well Name	**State 8-60 16 1H**
Stage #	**8**
Run #	**1**
Supervisor	*Sam Hopper*
Date / Time	**4/13/11 6:00 AM**
Location	1
Weather	1
Wind Direc.	1

Cert. #	4459
Pattern	60
EHD	0.40"
Penetration	38.7"
Total Lbs	
Max lbs/delay	
Method of Fire	Elec
Distance / Structure	N/A
Seismograph	No

CCL → CCL TO TOP SHOT OFFSETS 0 Ft

36	**Total Shots**
9	**Total Feet**

Short Joint @	6534-6560

POSITIVE

CCL @	8372.5		7.5 Ft
Perf From	8380	To 8381.5	
	9	Shots	

NEGATIVE

CCl @	8414.5		10.5 Ft
Perf From	8425	To 8426.5	
	9	Shots	

POSITIVE

CCL @	8451		14.0 Ft
Perf From	8465	To 8466.5	
	9	Shots	

NEGATIVE

CCL @	8506.5		17.5 Ft
Perf From	8524	To 8525.5	
	9	Shots	

POSITIVE

Plug

CCL at	8521	29 Ft
Top of Plug at	8550	

Depth	Degrees
5780	10
5900	20
6041	30
6137	40
6230	50
6359	60
6450	70
6525	80
6590	90

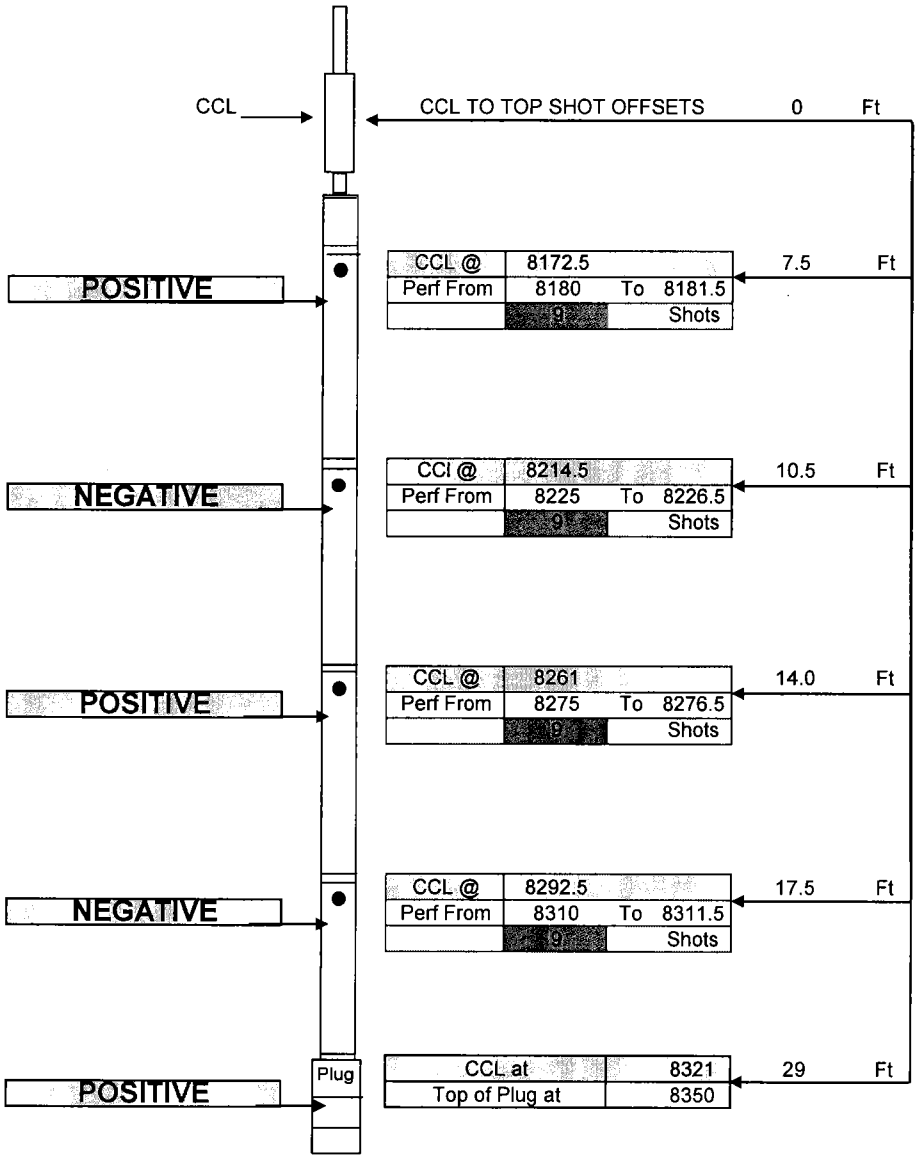
Top of bottom set of perforations at	8580

J-W WIRELINE COMPANY

Perforation Schematic

Company	**CHESAPEAKE ENERGY**
Well Name	**State 8-60 16 1H**
Stage #	**9**
Run #	**1**
Supervisor	*Sam Hopper*
Date / Time	**4/14/11 6:00 AM**
Location	1
Weather	1
Wind Direc.	1

Cert. #	4459
Pattern	60
EHD	0.40"
Penetration	38.7"
Total Lbs	
Max lbs/delay	
Method of Fire	Elec
Distance / Structure	N/A
Seismograph	No



36	**Total Shots**
9	**Total Feet**

Short Joint @	6534-6560

Depth	Degrees
5780	10
5900	20
6041	30
6137	40
6230	50
6359	60
6450	70
6525	80
6590	90

Top of bottom set of perforations at	8380

J-W WIRELINE COMPANY

Perforation Schematic

Company	**CHESAPEAKE ENERGY**
Well Name	**State 8-60 16 1H**
Stage #	**10**
Run #	**1**
Supervisor	*Sam Hopper*
Date / Time	**4/12/11 6:00 AM**
Location	1
Weather	1
Wind Direc.	1

Cert. #	4459
Pattern	60
EHD	0.40"
Penetration	38.7"
Total Lbs	
Max lbs/delay	
Method of Fire	Elec
Distance / Structure	N/A
Seismograph	No

CCL

CCL TO TOP SHOT OFFSETS 0 Ft

36	**Total Shots**
9	**Total Feet**

Short Joint @	6534-6560

POSITIVE

CCL @	7967.5		
Perf From	7975	To	7976.5
	9		Shots

7.5 Ft

NEGATIVE

CCl @	8009.5		
Perf From	8020	To	8021.5
	9		Shots

10.5 Ft

POSITIVE

CCL @	8046		
Perf From	8060	To	8061.5
	9		Shots

14.0 Ft

NEGATIVE

CCL @	8102.5		
Perf From	8120	To	8121.5
	9		Shots

17.5 Ft

POSITIVE

Plug

CCL at	8121
Top of Plug at	8150

29 Ft

Depth	Degrees
5780	10
5900	20
6041	30
6137	40
6230	50
6359	60
6450	70
6525	80
6590	90

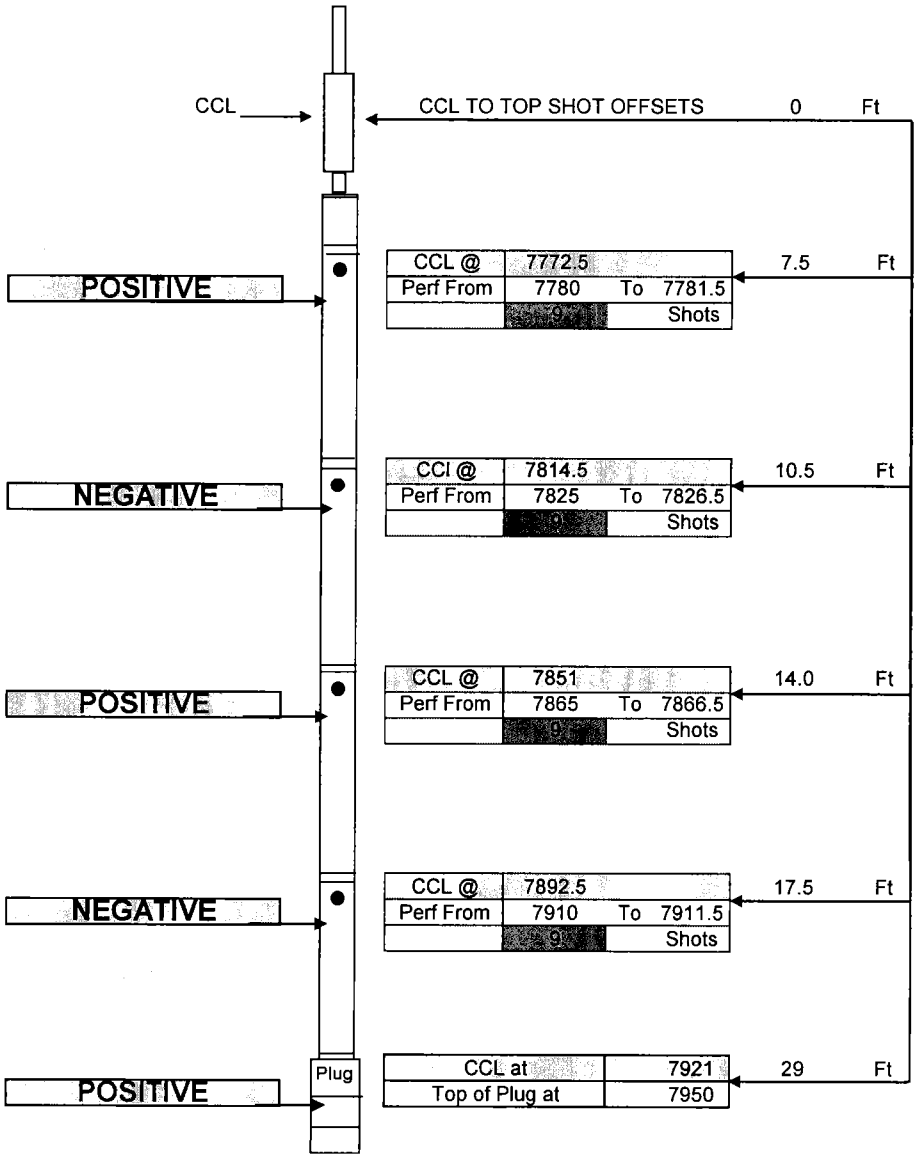
Top of bottom set of perforations at	8180

J-W WIRELINE COMPANY

Perforation Schematic

Company	**CHESAPEAKE ENERGY**
Well Name	**State 8-60 16 1H**
Stage #	**11**
Run #	**1**
Supervisor	*Sam Hopper*
Date / Time	**4/14/11 6:00 AM**
Location	1
Weather	1
Wind Direc.	1

Cert. #	4459
Pattern	60
EHD	0.40"
Penetration	38.7"
Total Lbs	
Max lbs/delay	
Method of Fire	Elec
Distance / Structure	N/A
Seismograph	No



36	**Total Shots**
9	**Total Feet**

Short Joint @	6534-6560

Depth	Degrees
5780	10
5900	20
6041	30
6137	40
6230	50
6359	60
6450	70
6525	80
6590	90

Top of bottom set of perforations at	7975

J-W WIRELINE COMPANY

Perforation Schematic

Company	**CHESAPEAKE ENERGY**
Well Name	**State 8-60 16 1H**
Stage #	**12**
Run #	**1**
Supervisor	*Sam Hopper*
Date / Time	**4/14/11 6:00 AM**
Location	1
Weather	1
Wind Direc.	1

Cert. #	4459
Pattern	60
EHD	0.40"
Penetration	38.7"
Total Lbs	
Max lbs/delay	
Method of Fire	Elec
Distance / Structure	N/A
Seismograph	No

CCL → CCL TO TOP SHOT OFFSETS 0 Ft

36	**Total Shots**
9	**Total Feet**

Short Joint @	6534-6560

POSITIVE

CCL @	7596.5		7.5 Ft
Perf From	7604	To 7605.5	
	9	Shots	

NEGATIVE

CCl @	7625.5		10.5 Ft
Perf From	7636	To 7637.5	
	9	Shots	

POSITIVE

CCL @	7661		14.0 Ft
Perf From	7675	To 7676.5	
	9	Shots	

NEGATIVE

CCL @	7700.5		17.5 Ft
Perf From	7718	To 7719.5	
	9	Shots	

POSITIVE

Plug

CCL at	7721	29 Ft
Top of Plug at	7750	

Depth	Degrees
5780	10
5900	20
6041	30
6137	40
6230	50
6359	60
6450	70
6525	80
6590	90

Top of bottom set of perforations at	7780

JW WIRELINE COMPANY

Perforation Schematic

Company	**CHESAPEAKE ENERGY**
Well Name	**State 8-60 16 1H**
Stage #	**13**
Run #	**1**
Supervisor	*Sam Hopper*
Date / Time	**4/15/11 6:00 AM**
Location	1
Weather	1
Wind Direc.	1

Cert. #	4459
Pattern	60
EHD	0.40"
Penetration	38.7"
Total Lbs	
Max lbs/delay	
Method of Fire	Elec
Distance / Structure	N/A
Seismograph	No

CCL → CCL TO TOP SHOT OFFSETS 0 Ft

36	**Total Shots**
9	**Total Feet**

Short Joint @	6534-6560

POSITIVE

CCL @	7402.5		7.5 Ft
Perf From	7410	To 7411.5	
	9	Shots	

NEGATIVE

CCL @	7444.5		10.5 Ft
Perf From	7455	To 7456.5	
	9	Shots	

POSITIVE

CCL @	7486		14.0 Ft
Perf From	7500	To 7501.5	
	9	Shots	

NEGATIVE

CCL @	7522.5		17.5 Ft
Perf From	7540	To 7541.5	
	9	Shots	

POSITIVE

Plug

CCL at	7541	29 Ft
Top of Plug at	7570	

Depth	Degrees
5780	10
5900	20
6041	30
6137	40
6230	50
6359	60
6450	70
6525	80
6590	90

Top of bottom set of perforations at	7600

J-W WIRELINE COMPANY

Perforation Schematic

Company	**CHESAPEAKE ENERGY**
Well Name	**State 8-60 16 1H**
Stage #	**14**
Run #	**1**
Supervisor	*Sam Hopper*
Date / Time	**4/15/11 6:00 AM**
Location	1
Weather	1
Wind Direc.	1

Cert. #	4459
Pattern	60
EHD	0.40"
Penetration	38.7"
Total Lbs	
Max lbs/delay	
Method of Fire	Elec
Distance / Structure	N/A
Seismograph	No

CCL → CCL TO TOP SHOT OFFSETS 0 Ft

36	**Total Shots**
9	**Total Feet**

Short Joint @	6534-6560

POSITIVE

CCL @	7197.5		7.5 Ft
Perf From	7205	To 7206.5	
	9	Shots	

NEGATIVE

CCl @	7239.5		10.5 Ft
Perf From	7250	To 7251.5	
	9	Shots	

POSITIVE

CCL @	7281		14.0 Ft
Perf From	7295	To 7296.5	
	9	Shots	

NEGATIVE

CCL @	7317.5		17.5 Ft
Perf From	7335	To 7336.5	
	9	Shots	

POSITIVE

Plug

CCL at	7356	29 Ft
Top of Plug at	7385	

Depth	Degrees
5780	10
5900	20
6041	30
6137	40
6230	50
6359	60
6450	70
6525	80
6590	90

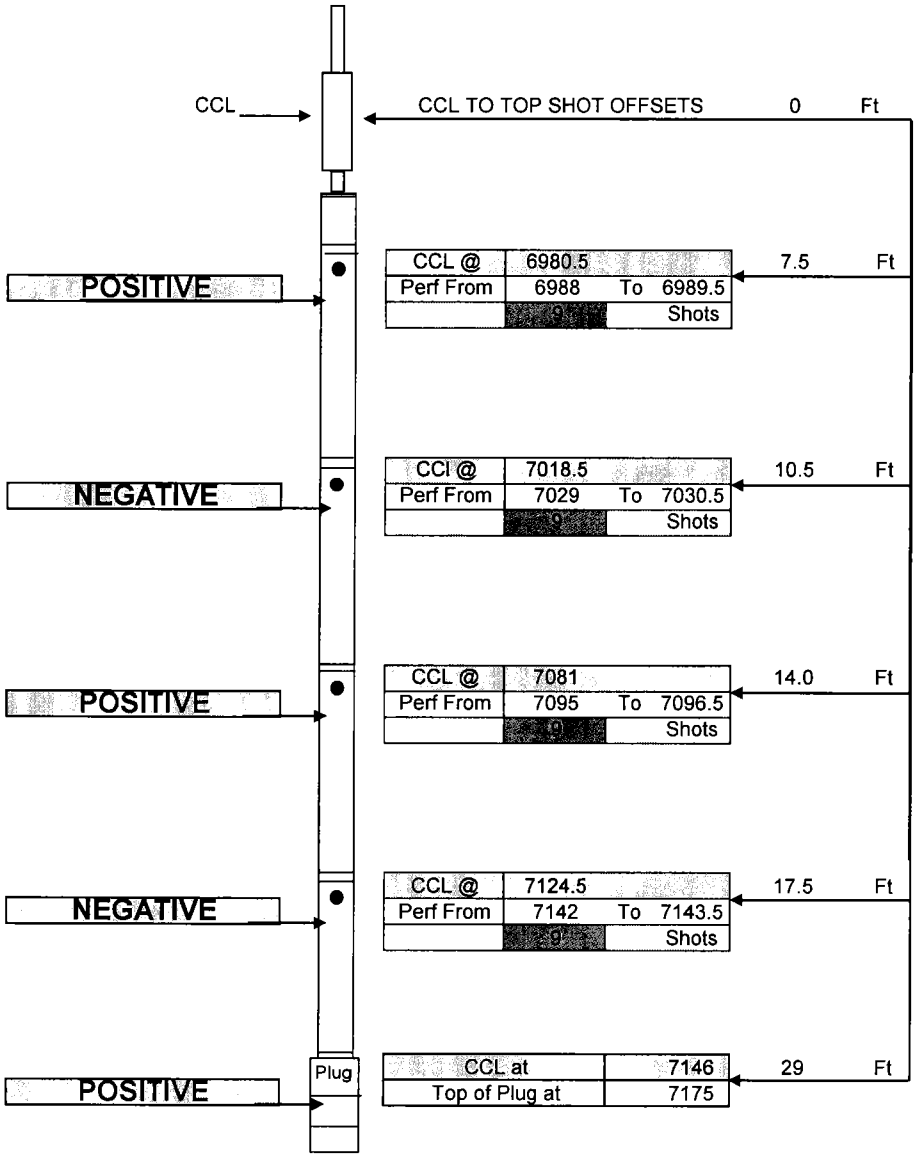
Top of bottom set of perforations at	7410

J-W WIRELINE COMPANY

Perforation Schematic

Company	**CHESAPEAKE ENERGY**
Well Name	**State 8-60 16 1H**
Stage #	**15**
Run #	**1**
Supervisor	*Sam Hopper*
Date / Time	**4/15/11 6:00 AM**
Location	1
Weather	1
Wind Direc.	1

Cert. #	4459
Pattern	60
EHD	0.40"
Penetration	38.7"
Total Lbs	
Max lbs/delay	
Method of Fire	Elec
Distance / Structure	N/A
Seismograph	No



36	**Total Shots**
9	**Total Feet**

Short Joint @	6534-6560

Depth	Degrees
5780	10
5900	20
6041	30
6137	40
6230	50
6359	60
6450	70
6525	80
6590	90

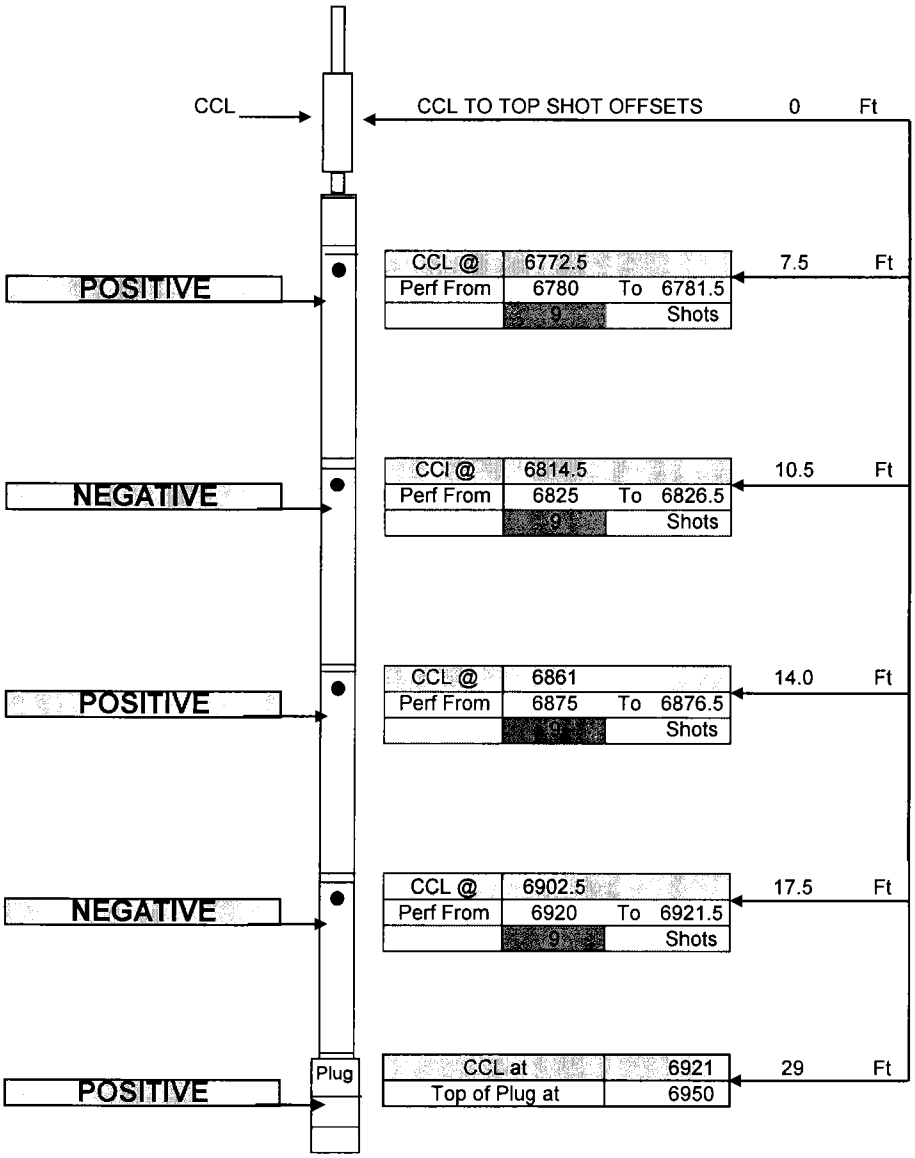
Top of bottom set of perforations at	7205

J-W WIRELINE COMPANY

Perforation Schematic

Company	**CHESAPEAKE ENERGY**
Well Name	**State 8-60 16 1H**
Stage #	**16**
Run #	**1**
Supervisor	*Sam Hopper*
Date / Time	**4/15/11 6:00 AM**
Location	1
Weather	1
Wind Direc.	1

Cert. #	4459
Pattern	60
EHD	0.40"
Penetration	38.7"
Total Lbs	
Max lbs/delay	
Method of Fire	Elec
Distance / Structure	N/A
Seismograph	No



36	**Total Shots**
9	**Total Feet**

Short Joint @	6534-6560

Depth	Degrees
5780	10
5900	20
6041	30
6137	40
6230	50
6359	60
6450	70
6525	80
6590	90

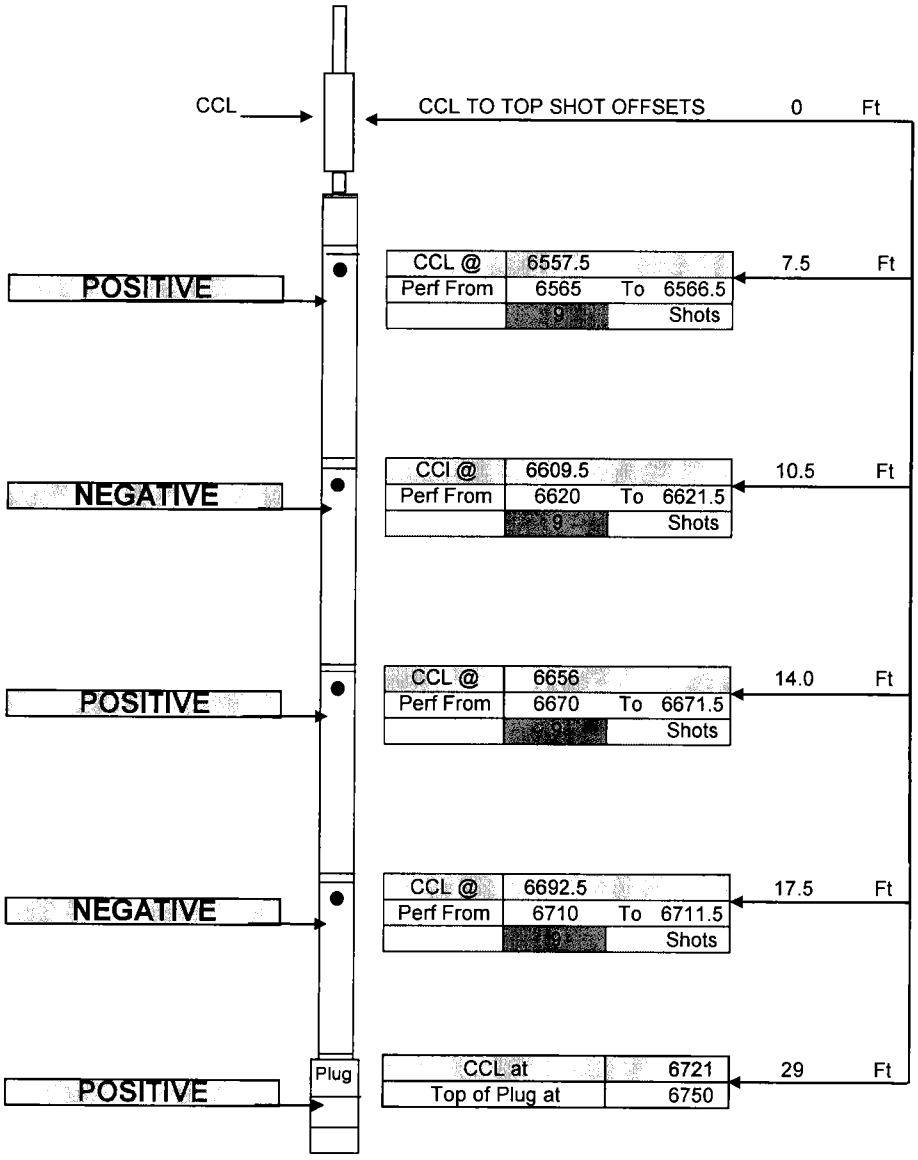
Top of bottom set of perforations at	6980

J-W WIRELINE COMPANY

Perforation Schematic

Company	**CHESAPEAKE ENERGY**
Well Name	**State 8-60 16 1H**
Stage #	**17**
Run #	**1**
Supervisor	*Sam Hopper*
Date / Time	**4/16/11 6:00 AM**
Location	1
Weather	1
Wind Direc.	1

Cert. #	4459
Pattern	60
EHD	0.40"
Penetration	38.7"
Total Lbs	
Max lbs/delay	
Method of Fire	Elec
Distance / Structure	N/A
Seismograph	No



36	**Total Shots**
9	**Total Feet**

Short Joint @	6534-6560

Depth	Degrees
5780	10
5900	20
6041	30
6137	40
6230	50
6359	60
6450	70
6525	80
6590	90

Top of bottom set of perforations at	6780