

NATURAL RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

FOR DIVISION USE ONLY			
Bond	Forms		
	OGD114	OGD121	

NOTICE OF INTENTION TO REWORK / REDRILL WELL

Detailed instructions can be found at: www.conservation.ca.gov/dog/

In compliance with Section 3203, Division 3, Public Resources Code, notice is hereby given that it is our intention to rework / redrill well Porter 50C, API No. 037-24337,
(Check one)

Sec. 27, T. 3N, R. 16W, S.B. B.&M., Aliso Canyon Field, Los Angeles County.

The complete casing record of the well (present hole), including plugs and perforations, is as follows: (Attach wellbore schematics diagram also.)

- 13-3/8", 54.5#, K-55 BTC casing cemented at 1012'.
- 9-5/8", 47#, L-80 Hydril 563 casing cemented at 7307'.
- 5-1/2", 17#, L-80 SLHT wire wrapped screen hung at 8749', top at 7131'.
- 5-1/2" WWS 0.008". from 7315'-8744'.

The total depth is: 8751 feet. The effective depth is: 8749 feet.
Present completion zone(s): Sesnon Anticipated completion zone(s): Same
(Name) (Name)
Present zone pressure: <3500 psi. Anticipated/existing new zone pressure: Same psi.

Is this a critical well as defined in the California Code of Regulations, Title 14, Section 1720(a) (see next page)? Yes No

For redrilling or deepening only, is a California Environmental Quality Act (CEQA) document required by a local agency? Yes No If yes, see next page.

The proposed work is as follows: (A complete program is preferred and may be attached.)

See attached program.

If well is to be redrilled or deepened, show proposed coordinates (from surface location) and true vertical depth at total depth: _____ feet and _____ feet Estimated true vertical depth: _____
(Direction) (Direction)

Will the Field and/or Area change? Yes No If yes, specify New Field: _____ New Area: _____

The Division must be notified immediately of changes to the proposed operations. Failure to provide a true and accurate representation of the well and proposed operations may cause rescission of the permit.

Name of Operator Southern California Gas Company			
Address P. O. Box 2300		City/State Chatsworth	Zip Code 91313-2300
Name of Person Filing Notice Charles Jackle	Telephone Number: (310) 578-2693	Signature 	Date 3/7/16
Individual to contact for technical questions: Charles Jackle	Telephone Number: (310) 578-2693	E-Mail Address: cjackle@semprautilities.com	

This notice and an indemnity or cash bond must be filed, and approval given, before the workover begins. (See the reverse side for bonding information.) If operations have not commenced within one year of the Division's receipt of the notice, this notice will be considered cancelled.

INFORMATION FOR COMPLIANCE WITH THE CALIFORNIA ENVIRONMENTAL QUALITY ACT OF 1970 (CEQA)

If an environmental document has been prepared by the lead agency, submit a copy of the *Notice of Determination* or *Notice of Exemption* with this notice. Please note that a CEQA determination by a local jurisdiction, if required, must be complete, or the Division may not issue a permit.

CRITICAL WELL DEFINITION

As defined in the California Code of Regulations, Title 14, Section 1720 (a), "Critical well" means a well within:

- (1) 300 feet of the following:
 - (A) Any building intended for human occupancy that is not necessary to the operation of the well; or
 - (B) Any airport runway.
- (2) 100 feet of the following:
 - (A) Any dedicated public street, highway or the nearest rail of an operating railway that is in general use;
 - (B) Any navigable body of water or watercourse perennially covered by water;
 - (C) Any public recreational facility such as a golf course, amusement park, picnic ground, campground or any other area of periodic high-density population; or
 - (D) Any officially recognized wildlife preserve.

WELL OPERATIONS REQUIRING BONDING

1. Drilling, re-drilling, or deepening any well.
2. Milling out or removing a casing or liner.
3. Running and cementing casing or tubing.
4. Running and cementing liners and inner liners.
5. Perforating casing in a previously unperforated interval for production, injection, testing, observation, or cementing purposes.
6. Drilling out any type of permanent plug.
7. Reentering an abandoned well having no bond.

This form may be printed from the DOGGR website at www.conservation.ca.gov/dog/

WORKOVER PROGRAM

Porter 50C – Well Inspection

DATE: March 7, 2016
OPERATOR: SOUTHERN CALIFORNIA GAS COMPANY
FIELD: ALISO CANYON
WELL: PORTER 50C
API NUMBER: 037-24337
ELEVATION: All depths based on original KB, 22.05' above GL.
SURFACE LOCATION: SEC 27, T3N, R16W, S.B. B&M

OBJECTIVE

The intent of this program is to inspect the well integrity and remediate identified conditions as part of the Storage Integrity Management Program (SIMP). This program will include pulling 3-1/2" completion string, running gyro surveys, casing inspection logs, pressure testing casing and well laterals, installing a new completion string, converting well to tubing flow, and installing pressure monitors. Baseline assessment data will be gathered on vertical casing pipe and other well components.

WELL RECORD

Current Status:	Shut-in
ECOD:	8749' MD (Bottom of 5-1/2" Liner).
Special Conditions:	9/29/15, Wireline survey tagged down at 7158' (1591' above ECOD).
Casing Record:	13-3/8", 54.5#, K-55 BTC casing cemented at 1012'. 9-5/8", 47#, L-80 Hydril 563 casing cemented at 7307'. 5-1/2", 17#, L-80 SLHT wire wrapped hung at 8749', TOL at 7131'. 5-1/2" WWS 8 ga. from 7315'-8744'.
Tubing Record:	See Attached Tubing Detail.

GEOLOGIC MARKERS

M-P: 6869' MD, 4732' VSS
S-1: 7272' MD, 4996' VSS
S-2: 7333' MD, 5029' VSS
S-4: 7446' MD, 5089' VSS
S-6: 7491' MD, 5110' VSS
S-8: 7716' MD, 5198' VSS
S-10: 8400' MD, 5304' VSS

Estimated Field Pressure: 1034 psi on 3/7/2016 PSI (Variable)

Estimated Bottomhole Temperature: 167 DEG F

PROGRAM NOTES:

1. BOPE requirements in Gas Company Standard 224.05 shall be fully implemented at all times.
2. The storage reservoir pressures shall be monitored during the workover with a minimum 300 psi overbalance for well control fluids.
3. Prepare the location by removing all relevant landscaping/lighting fixtures as well as surface piping and electrical components as needed. Locate rig anchors, reinstall - if necessary.
4. DOGGR permit must be posted on site. Notify the DOGGR as required for BOPE testing as stated on permit.

PRE-RIG WORK

De-energize and remove all laterals. Install companion flanges for killing the well.

WELLWORK PROGRAM

1. MIRU production rig and associated equipment.
2. Spot 500 bbl Baker tank and fill with 8.6 ppg KCl brine.
 - 2.1 Connect pump to the tubing and vent the casing through the choke manifold to the SoCalGas system.
 - 2.2 Treat all brine fluids with Biocide, 5 gals/100 bbls
3. If the hole is not standing full of brine, then kill the well with an HEC polymer pill with approximately 8.6 ppg KCl brine. The liner volume is approximately 38 bbls. The tubing volume is approximately 62 bbls, and the casing volume is approximately 522 bbls.

NOTE: Verify field surface pressure to ensure the proper kill fluid density is used prior to killing well and for well control during workover operations.

4. Install a Class III 5M BOPE per Gas Company Standard 224.05 and in accordance with the DOGGR permit. All connections and valves must be flanged and at least 5000 psig rated.
 - a.) Pressure test the Class III 5M annular preventer to 3500 psig for 20 minutes. Test blind rams and the 2-7/8" pipe rams to 5000 psig for 20 minutes. Test all lines and connections to 5000 psig.
 - b.) Perform a 300 psig low pressure test on the annular preventer, blind rams and pipe rams for 20 minutes. Test all lines and connections to 300 psig.
 - c.) All tests are to be charted and witnessed by a DOGGR representative.

5. Unland 3-1/2", 9.3#, L-80 tubing string and POOH with the completion tubing and packer assembly.
6. Pick up 9-5/8", 47# casing scraper on tubing and scrape to 5-1/2" TLH at 7131'. Circulate well clean. POOH.
7. Rig up wireline unit and run gyro survey from ECOD (or deepest depth) to surface. RDMO wireline unit.
8. Make up and run 9-5/8" RBP and set at 7126'± (5' above 5-1/2" TLH). Place sand cap on top.
9. Rig up Schlumberger wireline unit and run high resolution USIT/Neutron/CBL/GR casing inspection survey in 9-5/8" casing from top of RBP to surface to evaluate casing integrity.
10. Rig up Baker wireline unit and run high resolution Vertilog casing inspection survey, followed by 60-arm real-time caliper survey. RDMO wireline unit.
11. Perform Pressure Integrity Test on 9-5/8" casing from RBP to surface as per pressure test schedule to a minimum pressure of 3625 psi.

NOTE: Engineering team to analyze casing inspection and pressure test results and may recommend additional remediation work.

12. Inspect wellhead and pressure test the wellhead seals to a minimum pressure of 3625 psi.
 - a.) If wellhead seals do not test, remove Class III 5M BOPE, crossover spool, and primary pack-off.
 - b.) Replace pack-off seals and reinstall a tubing head, refurbished as necessary.
 - c.) Pressure test all wellhead seals to 5000 psi.
 - d.) Reinstall Class III 5M BOPE and function test.
13. Cleanout sand cap on top of RBP and run retrieving tool assembly. Recover 9-5/8" RBP. POOH, laying down tubing.

14. PU and RIH with new completion string as follows:

- a. Full joint 2-7/8", N-80 EUE 8RD tubing with Bell Collar
- b. 2-7/8" Ball Seat Catcher
- c. 5-1/2" x 9-5/8" Hydraulic Packer to be set at 7090'±.
- d. Crossover Pup Joint
- e. Full joint 3-1/2", N-80 EUE 8RD tubing
- f. 3-1/2" XN No-Go nipple
- g. Full joint 3-1/2", N-80 tubing
- h. 3-1/2" EUE 8RD Sliding Sleeve (Closed Position)
- i. 3-1/2" x 5-1/2" Crossover Pup Joint
- j. 5-1/2", N-80 EUE 8RD tubing to surface
- k. Pup Joints: 5-1/2" N-80 EUE 8RD for space out
- l. Tubing Hanger and Fatigue Nipple

15. Set packer at 7090'± as per manufacturer's specifications.

16. Rig up slickline unit. RIH with slickline and set tubing plug in XN Nipple. POOH.

17. Pressure test the 5-1/2" x 9-5/8" casing annulus to 2250 psi and tubing 3625 psi.

NOTE: Notify the DOGGR to witness pressure test.

18. RIH with slickline and pull tubing plug from XN Nipple, POOH. RIH with slickline and shift sliding sleeve open, POOH.

19. Rig up nitrogen unit. Reverse circulate nitrogen, pumping down annulus and taking returns out of the tubing. RDMO nitrogen unit.

20. RIH with slickline and shift sliding sleeve closed. POOH. RDMO slickline unit.

21. Fill annulus with packer fluid treated with corrosion inhibitor.

NOTE: Vent nitrogen returns as needed and monitor annulus fluid level. Refill with packer fluid as needed.

22. Remove Class III 5M BOPE and install the wellhead tree - test to 5000 psig.

23. RDMO production rig.

WELL LATERAL HYDROTESTING

24. Per Gas Company Standard 182.0170, pressure test the tubing and casing kill laterals from the wellhead to the remote tie-in to 3625 psig. Pressure test the tubing and casing withdrawal/injection laterals from wellhead to operating valves to 3625 psig.
25. Reinstall the hydrotested laterals.
26. Install the well safety systems and instrumentation. Install pressure transmitters on tubing, casing, and surface casing.
27. Release well to operations.

EXTERNAL CORROSION PROTECTION

Per Gas Company Standard 167.30, remove any lead based paint and recoat wellhead, production tree, and laterals.

Depth (TVD)	85% of Burst Strength	External Casing Backup Pressure			Pressure Test									Tubing Leak Net Burst Pressure @ Depth	Test Pressure > 85% of Burst	Test Pressure < Tubing Leak - Net Burst (Gas-filled annulus)	
		Fluid / Formation Pressure Gradient	External Casing Backup Pressure	Internal Water Hydrostatic	Net Burst Pressure @ Depth												
					1	2	3	4	5	6	7	8	Final	Gas-Filled Annulus			
					Surface Test Pressure	3625								2250	3625		
					Test Packer Depth	3500											
					Bridge Plug Depth								7126				
0	5840	0.00	0	0	3625								2250	3625			
500	5840	0.00	0	221	3846								2471	3670			
1000	5840	0.00	0	442	4067								2692	3716			
1500	5840	0.00	0	663	4288								2913	3761			
2000	5840	0.00	0	884	4509								3134	3806			
2500	5840	0.00	0	1105	4730								3355	3852			
3000	5840	0.00	0	1326	4951								3576	3897			
3500	5840	0.00	0	1547	5172								3797	3942			
4000	5840	0.00	0	1768	-								4018	3988			
4500	5840	0.00	0	1989	-								4239	4033			
5000	5840	0.00	0	2210	-								4460	4078			
5500	5840	0.00	0	2431	-								4681	4123			
6000	5840	0.00	0	2652	-								4902	4169			
6500	5840	0.00	0	2873	-								5123	4214			
7000	5840	0.00	0	3094	-								5344	4259			
7126	5840	0.00	0	3150	-								5400	4271			

0.442
psi/ft
int. grad.

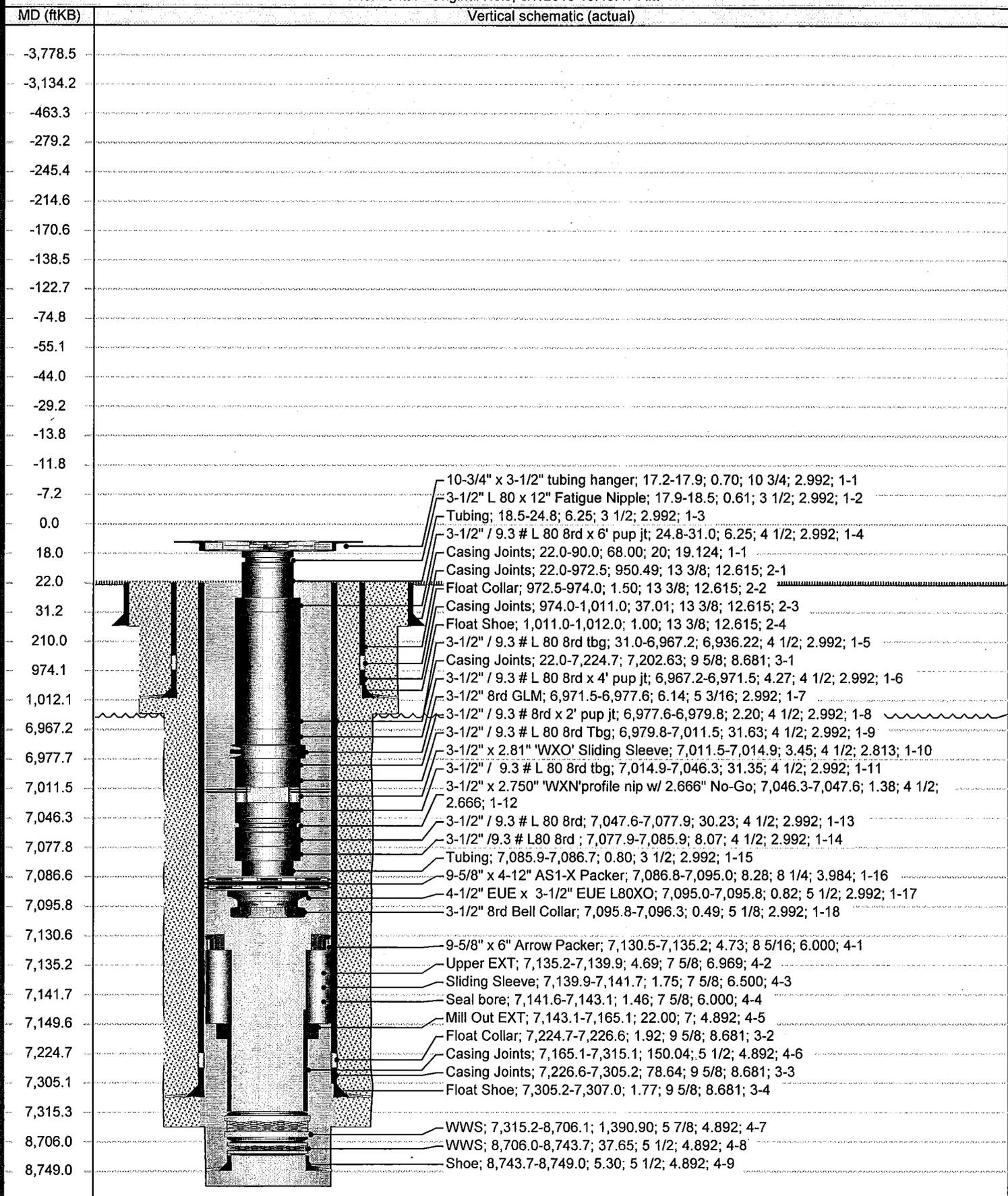
0.091
psi/ft
int. grad.

PETER SOG

Basic Schematic (Full Scale)

Horizontal - Original Hole, 3/7/2016 10:45:47 AM

Vertical schematic (actual)



Gas Company Tubing Detail



API 03724337	Field Name Aliso Canyon	KB-Grd (ft) 22.50	Area Southern California	Operator Southern California Gas Company	County Los Angeles	State California
Original KB Elevation (ft) 1,975.50	Ground Elevation (ft) 1,953.00	Casing Flange Elevation (ft)	KB-Ground Distance (ft) 22.50	KB-Casing Flange Distance (ft)	Spud Date 6/7/2014	

Other In Hole							
Des	OD (in)	ID (in)	Make	Model	Typ	Top (ftKB)	Btn (ftKB)
6" tieback seal section	8 1/2	4.892				7,133.5	7,149.5

Production Tubing set at 7,096.3ftKB on 1/6/2015 00:00

Tubing Description				Set Depth (ftKB)	Run Date	Pull Date		
Production Tubing				7,096.3	1/6/2015			
Jts	Item Des	OD (in)	ID (in)	Wt (lb/ft)	Grade	Len (ft)	Top (ftKB)	Btn (ftKB)
	10-3/4" x 3-1/2" tubing hanger	10 3/4	2.992	9.30	L-80	0.70	17.2	17.9
	3-1/2" L 80 x 12" Fatigue Nipple	3 1/2	2.992	9.30	L-80	0.61	17.9	18.5
	Tubing	3 1/2	2.992	9.30	L-80	6.25	18.5	24.8
	3-1/2" / 9.3 # L 80 8rd x 6' pup jt	4 1/2	2.992	9.30	L-80	6.25	24.8	31.0
221	3-1/2" / 9.3 # L 80 8rd tbg	4 1/2	2.992	9.30	L-80	6,936.22	31.0	6,967.2
	3-1/2" / 9.3 # L 80 8rd x 4' pup jt	4 1/2	2.992	9.30	L-80	4.27	6,967.2	6,971.5
	3-1/2" 8rd GLM	5 3/16	2.992		L-80	6.14	6,971.5	6,977.6
	3-1/2" / 9.3 # 8rd x 2' pup jt	4 1/2	2.992	9.30	L-80	2.20	6,977.6	6,979.8
1	3-1/2" / 9.3 # L 80 8rd Tbg	4 1/2	2.992	9.30	L-80	31.63	6,979.8	7,011.5
	3-1/2" x 2.81" 'WYO' Sliding Sleeve	4 1/2	2.813		L-80	3.45	7,011.5	7,014.9
1	3-1/2" / 9.3 # L 80 8rd tbg	4 1/2	2.992	9.30	L-80	31.35	7,014.9	7,046.3
	3-1/2" x 2.750" 'WXN' profile nip w/ 2.666" No-Go	4 1/2	2.666		L-80	1.38	7,046.3	7,047.7
1	3-1/2" / 9.3 # L 80 8rd	4 1/2	2.992	9.30	L-80	30.23	7,047.7	7,077.9
	3-1/2" / 9.3 # L 80 8rd	4 1/2	2.992	9.30	L-80	8.07	7,077.9	7,086.0
	Tubing	3 1/2	2.992	9.30	L-80	0.80	7,086.0	7,086.8
	9-5/8" x 4-12" AS1-X Packer	8 1/4	3.984		L-80	8.28	7,086.8	7,095.0
	4-1/2" EUE x 3-1/2" EUE L80XO	5 1/2	2.992	9.30	L-80	0.82	7,095.0	7,095.9
	3-1/2" 8rd Bell Collar	5 1/8	2.992		L-80	0.49	7,095.9	7,096.3