WELL ANALYSIS CORPORATION

AUDIO DETECTION SURVEY

WELL TYPE: GS

COMPANY: SOUTHERN CALIF. GAS CO.
WELL: FERNANDO FEE 32G
FIELD: ALISO CANYON
COUNTY: LOS ANGELES
STATE: CALIFORNIA

LOCATION:
DISTRICT 2
OTHER SVC:

API NUMBER: 0403730374
SEC: 27 TWN: 3N RNG: 16W

-ELEVATIONS-
KB: 2021.50 Ft.
DF: Ft.
GL: 1999.00 Ft.

AJ

PERMANENT DATUM: GROUND LEVEL ELEV: 1999.00 FT.
LOG MEASURED FROM KB 22.50' ABOVE PERM DATUM
DRILLING MEASURED FROM

DATE LOG RAN	04-04-2016	PRESSURE	FLOWING	INJECTION	SHUT-IN
RUN NUMBER	ONE	TUBING PSI		1680	
EFFECTIVE DEPTH	7616'	CASING PSI		1680	
PICKUP DEPTH	7180'	INJECTION RATE		N|A	
BOT LOGGED INT	7180'	OBSERVED RATE		N|A	
TOP LOGGED INT	25'	R/A SOURCE		N|A	
TYPE OF INJECT	NONE	ACTIVITY		N|A	
FLUID IN WELL	WATER|GAS	HALF LIFE		N|A	
FLUID LEVEL	N|A				
WELL STATUS	STATIC			PRODUCTION DATA	
MAX TEMPERATURE	165.9 F	OIL Gr.		OIL =	
AT DEPTH	7180'	GAS Gr.		GAS=	
TEMPERATURE SENS	1 F/DIV.	MPP		BHP =	
LOGGING SPEED	100 FPM			WATER=	
RECORDED BY	C. FITZPATRICK				
WITNESSED BY	N|A				
EMAIL TO	A. KARGAR				
DEPTH CORRELATION	MANDREL				

Equipment Data

Collar Locator 1.375"		
Temperature Tool 1.375"		
Audio Detector 1.375"		

Remarks/Survey Results

```
12:45PM ON LOCATION
1:00PM RAN IN HOLE
1:10PM BEGIN SURVEY
4:30PM PULL OUT OF HOLE
5:00PM OFF LOCATION
SAND TAG MARKERS: 7008' M-P
                  7346' S-21
                  7396' S-2
                  7463' S-4
                  7486' S-6
                  7535' S-8
                  7577' S-10
                  7608' S-12
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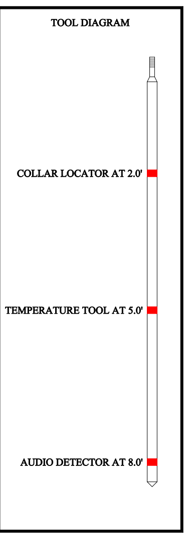
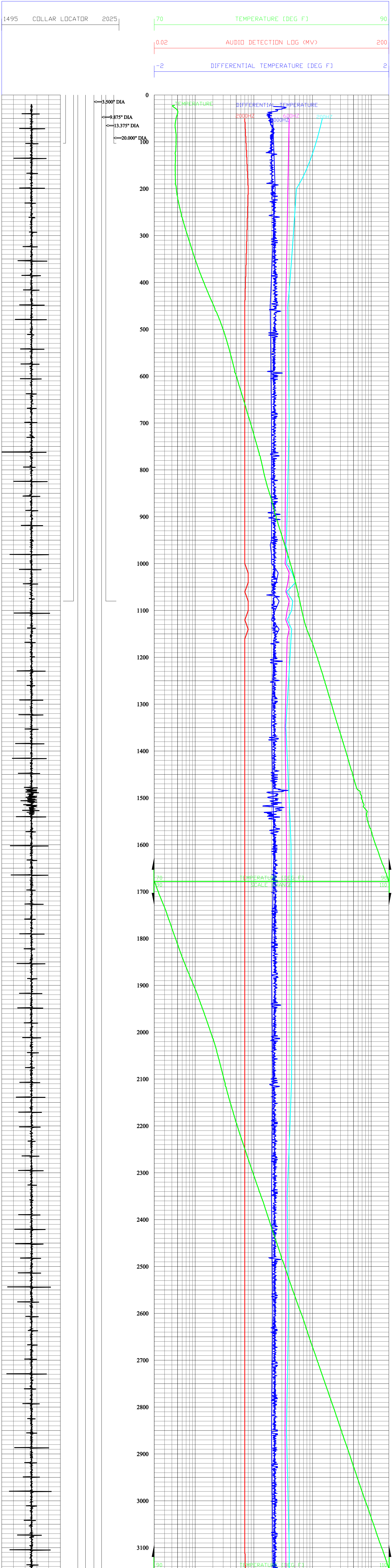
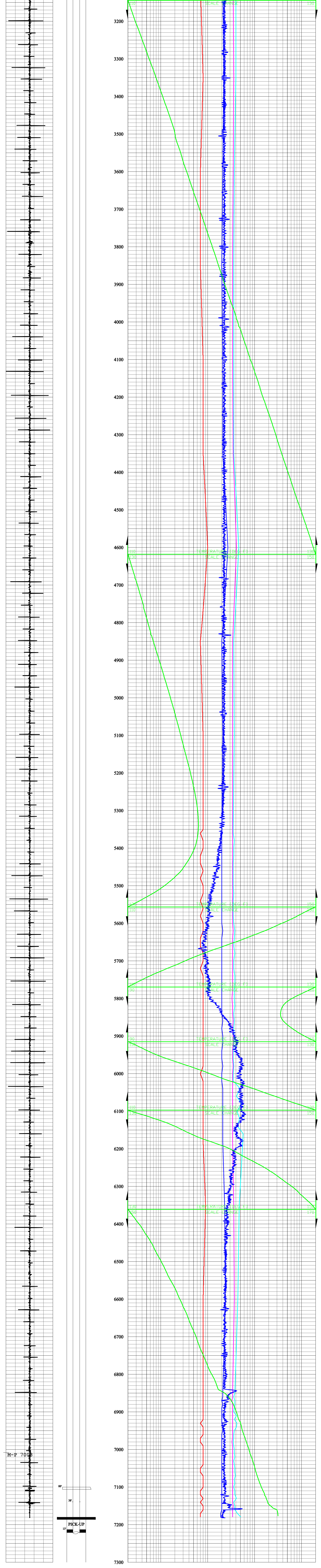
CASING AND TUBING RECORD

SIZE	WT(#)	FROM	TO	SIZE	WT(#)	FROM	TO
20.000"	94	SURFACE	103'	3.5"	9.3	SURFACE	7222'
13.375"	54	SURFACE	1076'				
9.875"	47	SURFACE	7364'				
5.5"	17	7253'	7616'				

STR.	PIPE DIA.	PERFORATIONS
A	5.5"	7496'-7106'.
		PACKERS: 7213'-7221'.
		GAS LIFT MANDRELS: 7099.6'-7105.73'.
		SLIDING SLEEVES: 7138'-7141'.
		NO-GO: 7171'.

TOOL DIAGRAM



```
     Audio Data:  c:\data\NOISE.txt
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    DEPTH |   200HZ |   600HZ |  1000HZ |  2000HZ |
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       50 |   14.70 |    4.00 |    2.10 |    0.70 |
      200 |    5.30 |    3.80 |    2.30 |    0.80 |
      450 |    3.80 |    3.50 |    1.90 |    0.70 |
      700 |    4.00 |    3.50 |    2.00 |    0.70 |
      950 |    3.60 |    3.40 |    2.00 |    0.70 |
      960 |    3.50 |    3.40 |    1.90 |    0.70 |
      980 |    3.80 |    3.50 |    2.00 |    0.70 |
     1000 |    3.60 |    3.40 |    2.00 |    0.70 |
     1020 |    4.50 |    4.00 |    2.60 |    0.80 |
     1040 |    5.10 |    3.80 |    2.40 |    0.80 |
     1060 |    3.60 |    3.50 |    2.00 |    0.70 |
     1080 |    4.60 |    4.00 |    2.70 |    0.80 |
     1100 |    4.40 |    3.70 |    2.30 |    0.80 |
     1120 |    3.70 |    3.50 |    2.00 |    0.70 |
     1140 |    4.40 |    4.00 |    2.70 |    0.80 |
     1160 |    4.30 |    3.70 |    2.20 |    0.70 |
     1347 |    3.50 |    3.40 |    2.00 |    0.70 |
     1600 |    4.30 |    3.60 |    2.20 |    0.70 |
     1850 |    4.40 |    3.60 |    2.00 |    0.70 |
     2100 |    4.40 |    3.60 |    2.10 |    0.70 |
     2350 |    3.70 |    3.50 |    2.00 |    0.70 |
     2600 |    3.90 |    3.50 |    2.10 |    0.70 |
     2850 |    3.60 |    3.40 |    2.00 |    0.70 |
     3100 |    4.00 |    3.50 |    2.10 |    0.70 |
     3350 |    4.00 |    3.60 |    2.20 |    0.80 |
     3600 |    3.70 |    3.50 |    2.10 |    0.70 |
     3850 |    3.60 |    3.40 |    2.00 |    0.70 |
     4100 |    3.60 |    3.40 |    2.10 |    0.80 |
     4350 |    3.60 |    3.50 |    2.10 |    0.80 |
     4600 |    4.60 |    4.10 |    2.70 |    1.00 |
     4850 |    3.60 |    3.40 |    2.00 |    0.70 |
     5100 |    3.70 |    3.40 |    2.10 |    0.80 |
     5350 |    3.50 |    3.40 |    2.00 |    0.80 |
     5360 |    3.50 |    3.40 |    2.00 |    0.70 |
     5380 |    3.70 |    3.40 |    2.00 |    0.80 |
     5400 |    3.60 |    3.40 |    2.00 |    0.80 |
     5420 |    3.60 |    3.40 |    2.00 |    0.70 |
     5440 |    3.50 |    3.40 |    2.00 |    0.70 |
     5460 |    3.50 |    3.40 |    2.00 |    0.80 |
     5480 |    3.50 |    3.40 |    2.00 |    0.70 |
     5500 |    3.50 |    3.40 |    2.00 |    0.80 |
     5520 |    3.60 |    3.40 |    2.00 |    0.80 |
     5540 |    3.50 |    3.40 |    2.00 |    0.70 |
     5560 |    3.50 |    3.40 |    2.00 |    0.80 |
     5580 |    3.50 |    3.40 |    2.00 |    0.70 |
     5600 |    3.60 |    3.40 |    2.00 |    0.80 |
     5620 |    3.80 |    3.50 |    2.10 |    0.80 |
     5640 |    3.70 |    3.40 |    2.00 |    0.70 |
     5660 |    3.60 |    3.40 |    2.00 |    0.70 |
     5680 |    3.80 |    3.40 |    2.00 |    0.80 |
     5700 |    3.60 |    3.40 |    2.00 |    0.80 |
     5720 |    3.60 |    3.40 |    2.00 |    0.70 |
     5740 |    3.80 |    3.40 |    2.00 |    0.80 |
     5760 |    3.80 |    3.40 |    2.00 |    0.80 |
     5780 |    3.70 |    3.40 |    2.00 |    0.80 |
     5800 |    3.70 |    3.30 |    2.00 |    0.80 |
     5820 |    3.80 |    3.40 |    2.00 |    0.80 |
     5840 |    3.60 |    3.40 |    2.00 |    0.80 |
     5860 |    3.70 |    3.50 |    2.10 |    0.80 |
     5880 |    3.60 |    3.40 |    2.00 |    0.80 |
     5900 |    3.60 |    3.50 |    2.10 |    0.80 |
     5920 |    3.60 |    3.50 |    2.10 |    0.80 |
     5940 |    3.50 |    3.40 |    2.00 |    0.80 |
     5960 |    3.50 |    3.40 |    2.00 |    0.80 |
     5980 |    3.60 |    3.50 |    2.10 |    0.80 |
     6000 |    3.50 |    3.40 |    2.00 |    0.70 |
     6020 |    3.50 |    3.40 |    2.00 |    0.80 |
     6040 |    4.90 |    3.40 |    2.10 |    0.80 |
     6060 |    4.10 |    3.40 |    2.10 |    0.80 |
     6080 |    5.30 |    3.40 |    2.10 |    0.80 |
     6100 |    4.20 |    3.40 |    2.10 |    0.80 |
     6119 |    4.80 |    3.40 |    2.10 |    0.80 |
     6140 |    4.30 |    3.40 |    2.10 |    0.80 |
     6160 |    5.70 |    3.40 |    2.10 |    0.80 |
     6180 |    5.60 |    3.40 |    2.10 |    0.80 |
     6350 |    4.70 |    3.60 |    2.30 |    0.90 |
     6600 |    4.40 |    3.70 |    2.40 |    0.80 |
     6850 |    3.80 |    3.40 |    2.10 |    0.80 |
     6860 |    3.60 |    3.40 |    2.10 |    0.80 |
     6870 |    3.80 |    3.30 |    2.00 |    0.80 |
     6880 |    3.80 |    3.40 |    2.10 |    0.80 |
     6890 |    3.70 |    3.40 |    2.00 |    0.80 |
     6900 |    3.60 |    3.40 |    2.00 |    0.80 |
     6910 |    4.10 |    3.40 |    2.00 |    0.80 |
     6920 |    3.70 |    3.40 |    2.00 |    0.80 |
     6930 |    4.20 |    3.40 |    2.00 |    0.70 |
     6940 |    4.10 |    3.40 |    2.10 |    0.80 |
     6950 |    3.70 |    3.40 |    2.10 |    0.80 |
     6960 |    3.60 |    3.40 |    2.00 |    0.80 |
     6970 |    3.60 |    3.40 |    2.00 |    0.70 |
     6980 |    3.50 |    3.30 |    2.00 |    0.70 |
     6990 |    3.60 |    3.40 |    2.00 |    0.80 |
     7000 |    3.70 |    3.40 |    2.00 |    0.80 |
     7010 |    3.70 |    3.40 |    2.00 |    0.80 |
     7020 |    3.80 |    3.40 |    2.00 |    0.80 |
     7030 |    3.60 |    3.40 |    2.00 |    0.80 |
     7040 |    3.70 |    3.40 |    2.00 |    0.80 |
     7050 |    3.80 |    3.40 |    2.00 |    0.70 |
     7060 |    3.80 |    3.40 |    2.00 |    0.70 |
     7070 |    3.90 |    3.40 |    2.00 |    0.80 |
     7080 |    3.70 |    3.40 |    2.00 |    0.80 |
     7090 |    3.80 |    3.40 |    2.00 |    0.80 |
     7100 |    3.60 |    3.40 |    2.00 |    0.80 |
     7110 |    3.80 |    3.40 |    2.00 |    0.70 |
     7120 |    3.80 |    3.40 |    2.00 |    0.70 |
     7130 |    4.10 |    3.40 |    2.00 |    0.80 |
     7140 |    3.60 |    3.40 |    2.00 |    0.70 |
     7150 |    3.80 |    3.50 |    2.00 |    0.80 |
     7160 |    3.80 |    3.40 |    2.00 |    0.80 |
     7170 |    4.30 |    3.40 |    1.90 |    0.70 |
     7180 |    5.10 |    3.40 |    1.90 |    0.70 |
```