

# SAPIENT ENERGY CORP.

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September 18, 2001

Mr. Tom Kellahin  
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**RE: Barber # 12**  
**Lea County, New Mexico**

Dear Mr. Kellahin,

Pursuant to your request, I am writing a brief summary of the work that was recently performed on the Barber 12 well and to explain why Sapient believes it would be a mistake to shut this well in at this time.

In August Sapient suspected that the Barber 12 well had developing a scale and possible sand fill problem. We moved in a rig in late August to perform a workover to alleviate the suspected problems. After determining that some of the perforations were covered with frac sand we cleaned out the wellbore and removed the sand. We next pumped 2000 gallons of scale treatment plus diverter (rock salt) in an attempt to remove the scale problem. Unfortunately the scale treatment created more problems than it corrected and the well locked up such that it was unable to sustain a flow rate into the gas sales line.

It was initially thought that the diverter may have plugged off the perforations and was not allowing the hydrocarbons to flow into the wellbore. Therefore, fifty barrels of 2% KCl water were pumped in an attempt to dissolve the diverter. This treatment was not successful in establishing production. After running acid solubility tests with the fluid swabbed from the well it was determined that acid should help dissolve the damage and enable the well to clean up. We then pumped a combination of nitrogen gas with 2000 gallons of acid into the formation. After swabbing, the well kicked off flowing again. Since that time, the flow rate of the well has improved each day. It flowed 766 mcf/d yesterday compared to 668 mcf/d only one week ago and is still cleaning up. The attached report shows the detail work that was performed on the well.

Sapient believes that it would be a mistake to shut the well in as long as it is cleaning up and showing improvement. This well has proven its susceptibility to damage by the way it reacted to the first treatment. Shutting the well in now would allow the fluids and precipitates that damaged the well in the first place (and are now gradually coming out of the well as it cleans up) to remain in place and possibly create irreparable harm to the well.

Yours very truly,



Kyle Travis  
President

Encl.

BEFORE THE  
OIL CONSERVATION DIVISION  
Case No. 12587 Exhibit No. 2  
Submitted By:  
*Sapient Energy Corp.*  
Hearing Date: October 4, 2001



**BJ Barber # 12**  
**Lea County, NM**  
**Sec. 7,T20S,R37E**

**Monument Field**  
**API# 30-025- 05978**

8/23/01-MIRU wireline to tag for fill (sand). Tag fill at 6383'. Perfs at 6364'-67', 6378'-89', 6410'-12, 6419'-25' (25 holes). Bottom 2 ½ sets of perfs covered. Will bail tomorrow. Rig down wire line. MIRU pulling unit. SDFN

|             |               |         |           |         |
|-------------|---------------|---------|-----------|---------|
| Daily Cost- | JSL Wire line | 850.00  |           |         |
|             | EWS           | 300.00  |           |         |
| Daily Total |               | 1150.00 | Cum. Cost | 1150.00 |

8/24/01-Open well. Rig up pump truck and pump 35bbls 2% KCL down tbg to kill well. Unflange well- install BOP- release pkr. Tally out of hole w/ tbg- lay pkr down. TIH w/ notch collar – check valve – 2 joints – check valve – 14 joints - pump – rest tbg. Tag at 6393' (10' deeper than wire line). Pump 20bbls water down csg and clean out to 6466'. The fill was very hard- the last 36' of bailing was easier. TOOH w/ tbg and bailer- lay all tools down (recovered 7 full joints sand.) TIH w/ half of tbg and secure well. SDFN  
BLWTR- 80bbls.

Note\*\* - found scale in tubing at 5200'. Scale was calcium sulfate- not calcium carbonate as expected from water analysis. Calcium sulfate also found in surface equipment. Changed acid job to deal with calcium sulfate.

|             |          |         |                      |         |
|-------------|----------|---------|----------------------|---------|
| Daily Cost- | EWS      | 2200.00 |                      |         |
|             | Pate     | 1100.00 |                      |         |
|             | Watson   | 1550.00 | bailer & redress pkr |         |
|             | Don- Nan | 350.00  | tbg                  |         |
|             | Sup.     | 500.00  |                      |         |
| Daily Total |          | 5700.00 | Cum Cost             | 6850.00 |

8/24/01-Well open to flow line 12hrs Tbg- 180psi , Csg- 200psi. Pump 30bbls down well- kill well. TIH w/ rest production string- NDBOP set pkr (model R). Flange well up. Rig up Petroplex- test lines to 4500psi-start job. Pump 1000 gallons X-25 – 500 pounds rock salt w/ 5bbls 10# brine – 1000 gallons X-25 – flushed w/ 20bbls 2% KCL. Tbg loaded after 25bbls- pump job with pressure increasing from 3500psi to 3760psi. and rate dropping from 4bpm to 1.6bpm. Very slight diversion action. ISIP 3520psi – 5min 3169psi – 10min 2794psi – 15min 2406psi. Rig down Petroplex. Leave well shut in. RDMO. BLWTR- 183

**TBG STRING**

|            |               |
|------------|---------------|
| 2joints    | 2-3/8 x 61'   |
| pkc        | 2-3/8 x 7'    |
| SN         | 2-3/8 x 1'    |
| 198 joints | 2-3/8 x 6261' |

|             |           |           |           |           |
|-------------|-----------|-----------|-----------|-----------|
| Daily Cost- | EWS       | 1100.00   |           |           |
|             | Petroplex | 8600.00   |           |           |
|             | Pate      | 350.00    |           |           |
|             | LFT       | 500.00    |           |           |
|             | Sup.      | 250.00    |           |           |
| Daily Total |           | 10,800.00 | Cum. Cost | 17,650.00 |

8/27/01- MIRU swab unit. Well shut in 38 hrs.-TBG vacuum- CSG- no pressure. IFL- 4400'

After 1 hr- Fluid level 4800' – recovered 14 barrels all water – vacuum after each run  
 After 2 hrs – Fluid level 5200'- 13 barrels all water- good gas blow- blackish and gray colored water.

After 3 hrs – fluid level 5700' – 10 barrels water – good gas blow- same type fluid

After 4 hrs – fluid level 6000'- scattered- 7 barrels water – kicked off flowing.

Well just barely flowing. Made one more swab run- fluid was scattered throughout the tubing - no fluid recovery. Shut in well for 45 minutes- pressure built up to 100 psi.

Opened up down line. Sent crew home. Left flowing.

At 9pm tbg had 50psi flow rate of 80 mcf no fluid

At 11pm tbg had 50psi flow rate of 80 mcf no fluid

At 4am tbg had 80psi flow rate of 100mcf no fluid

At 6am tbg had 85psi flow rate of 150 mcf fluid coming in heads

139 BLWTR

|             |     |         |           |          |
|-------------|-----|---------|-----------|----------|
| Daily Cost- | EWS | 1000.00 |           |          |
| Daily Total |     | 1000.00 | Cum. Cost | 18650.00 |

8/28/01- Tbg 85psi-flow rate of 155mcf at 7 am. Flowed 2bbls over night- by 9am well not making any fluid or gas. Pick up swab- make run- dry- no fluid in tbg. (Had discussion on possibility that salt diverter was blocking formation.) Wait on truck- hook up to tbg and pump 34bbls 2 % KCL water-hit pressure (tubing volume 24.5 bbls. – casing volume to top perf -.5 bbls – casing volume to bottom perf 1.5 bbls) Rate went from 3bpm to 1bpm at 900psi. After pumping 38bbls- rate 1bpm at 1000psi. With 40bbls gone- rate 1bpm at 1200psi. With 43bbls gone- rate .5bpm at 1500psi. Shut truck down. ISIP 1000psi- 2min on vacuum. Started pumping again- came back on at 1bpm 750psi. With 45bbls gone- rate 1bpm at 1500psi. With 47bbls gone- rate .5bpm at 1700psi. Shut truck down- ISIP 1400psi – 1min 900psi – 2min 500psi – 3min 200psi – 4min vacuum. Started pumping again -came back on at 1bpm 1500psi. With 50bbls gone -rate 1bpm at 1750psi. Shut truck down- ISIP 1600psi – 1min 1400psi – 2min 800psi – 3min 500psi – 4min 250psi – 5min vacuum. Rig truck down. Pick up swab IFL 200'

1<sup>st</sup> hour FL 3700' rec. 15bbls all water no gas  
 2<sup>nd</sup> hour FL 5000' rec. 11bbls all water no gas  
 3<sup>rd</sup> hour FL 5600' rec. 6bbls scattered fluid all water show gas

4<sup>th</sup> hour FL dry rec. 3bbls all water show of gas

1<sup>st</sup> hourly run 450' entry rec. 300' fluid all water

2<sup>nd</sup> hourly run 450' entry rec. 300' fluid all water

Leave well open down line SDFN

Note\*\*\* - we have damaged well bore. The damage seems to be about 8 barrels back in the formation. We are discussing issue with Petroplex and Champion Chemicals.

|             |      |         |           |           |
|-------------|------|---------|-----------|-----------|
| Daily Cost- | EWS  | 1500.00 |           |           |
|             | Pate | 400.00  |           |           |
| Daily Total |      | 1900.00 | Cum. Cost | 20,550.00 |

8/29/01-Tbg- 20psi, Csg- 0psi - IFL 5500' scattered. Recovered 300' fluid. Wait 1 hour-make run- 200' scattered fluid -recovered 60'. Shut well in for 1 hour -tbg built to 450psi- blow down in 20min. Did not bring any fluid. Shut well in for 2hours after 2hrs tubing pressure built up to 665psi. Leave well shut in- RDMO.

Note \*\* - Working on clean up procedure potential re-frac or nitrified acid.

|             |     |         |           |           |
|-------------|-----|---------|-----------|-----------|
| Daily Cost- | EWS | 1100.00 |           |           |
| Daily Total |     | 1100.00 | Cum. Cost | 21,650.00 |

8/30/01-SITP- after 26hrs 1100psi- Csg 0psi. Set test tank and lay flow line to tank. Open at 2pm- fast. Blew down in 5min to 10psi. Left open until 5pm- made 2bbls (caught sample-took to Champion) Shut well in.

|             |          |        |           |           |
|-------------|----------|--------|-----------|-----------|
| Daily Cost- | Pate     | 400.00 |           |           |
|             | Roberson | 200.00 |           |           |
| Daily Total |          | 600.00 | Cum. Cost | 22,250.00 |

8/31/01-SITP after 14hrs 1050psi- Csg 0psi. SITP after 20hrs -1060psi. Opened well - flowed 9bbls. After 2hrs went down to blow- shut well in.

9/1/01-SITP after 20hrs 1040psi. Blew down after 2hrs- flowed 4bbls. Pressure dropped to just blow- shut in.

9/2/01- SITP after 24hrs 1060psi. Open well -in 2.5hrs flowed 3bbls. Went down to just blow- shut well in.

9/3/01- SITP after 20hrs 1060psi. Open well -in 2hrs flowed 6bbls. Went down to just blow- shut well in. 118 BLWTR

9/4/01- SITP after 22hrs 1065psi. Open well down sales line on 20/64 choke. Well produced 8 hrs before it died. Produced 204 mcf. Shut well in at 5:30 pm. Well made no fluid. 118 BLWTR

<sup>5</sup>  
9/8/01 – SITP after 16 hrs –1070psi. Open well to blow down tank. Recovered 2 barrels of grayish black water with an 8-10% oil cut. Well died in 3 hours. Caught samples of fluid for testing. The water sample is grayish black in color with the same viscosity as water. There are no visible solids in the water. However after three hours settling minute fines settle out in the bottom and along the sides of the sample jar at the oil water contact point. The water sample was divided into equal portions and mixed with 7 ½% HCL acid with 10% methanol and iron control agents and 15 % HCL acid with the same additives. The samples were mixed vigorously and allowed to set 30 minutes. Both samples cleaned up the grayish black water to a clear water and an oil phase. The 7 ½% sample had a 1%to 4% inter-phase between the oil and water. The 15% sample was clean with a very distinct break between the oil and water phases. Both samples had no fines left on the bottoms or the sides of the sample bottles. After some discussion it was decided to go ahead with a 2000 gallon 15% nitrified acid clean up job tomorrow. 116 BLWTR

9/6/01-SITP after 17hrs-1050psi. Open to tank blow down while rigging acid and N2 trucks up. Build high pressure well head to flow back with. Test lines to 6000psi load csg w/ 40bbls -test to 1000psi (ok). Start down hole; Stage 1- pump 37,500scf n2; Stage 2- pump- 48bbls 15% acid NEFE BF1 with 10% methanol and iron control agents foamed w/ 37,000scf; Stage3- flush w/ 38,000scf. Average pressure 3200psi, average fluid rate 2.5, average N2 rate 2250scf. ISIP- 3700psi 5min- 3148psi- rig down trucks-hook well head up. After 20min tubing pressure -2500psi. Open up on 10/64 choke- after 45min tubing 1450psi. Open choke to 16/64, after 40 minutes tubing pressure –500psi- fluid hit. Open choke to 18/64 - over the next 30minutes the well brought fluid in surges then died. Total fluid flowed back- 7bbls. MIRU pulling unit-prep swab- IFL 3300'- went to 5000'. Recovered 1800' fluid- well kicked off flowing- tried to make 2<sup>nd</sup> run- got down to 2000' and well flowing harder. Pull swab out- open to tank on 16/64 choke- start flowing at 250psi. 1<sup>st</sup> hr recovered 12bbls- tbg 125psi. Leave open to tank SDFN 116 BLWTR (From before)+ 52 BLWTR (today)-26 bbls. swabbed and flowed =142 BLWTR

|             |             |         |           |           |
|-------------|-------------|---------|-----------|-----------|
| Daily Cost- | MWS         | 700.00  |           |           |
|             | Petro Plex  | n/c     |           |           |
|             | BJ Services | 3750.00 |           |           |
|             | Roberson    | 300.00  |           |           |
|             | Don-Nan     | 800.00  |           |           |
| Daily Total |             | 5550.00 | Cum. Cost | 27,800.00 |

9-7-01 – Well flowed all night to tank. Recovered 31 barrels of load water. Tubing pressure was 95psi on a 26/64 choke. Shut well in for ½ hr to disconnect from frac tank and hook into flow line. Pressure built up to 600 psi. Switched down sales line at 10:00 am. Started on open choke making 2bbls hour with the flow rate of 615mcf- after 2hrs pressure falling- choke back to 28/64. Pressure came back to 125psi still 2bbls hour. 111 BLWTR

Daily Cost- MWS 750.00

Daily Total 750.00 Cum. Cost 28550.00

9/10/01- Well still flowing. RDMO

Daily Cost- MWS 400.00

Daily Total 400.00 Cum. Cost 28,950.00

| Date    | Oil | H2O | MCF | BLWTR | Comments   |
|---------|-----|-----|-----|-------|--|
|         |     |     |     |       |  |
| 9/8/01  | 1   | 15  | 364 | 96    | 14 hrs gas sales tbg-110 psi 28/64 choke             |
| 9/9/01  | 1   | 8   | 642 | 88    | Tbg-100psi 28/64 choke – opened to 32/64 at 10:00 am |
| 9/10/01 | 0   | 5   | 668 | 83    | Tbg-95 psi 32/64 spot rate 695 mcf/d                 |
| 9/11/01 | 1   | 5   | 692 | 78    | Tbg-80 psi 32/64 spot rate 721 mcf/d                 |
| 9/12/01 | 1   | 4   | 714 | 74    | Tbg-80 psi 32/64 spot rate 721 mcf/d                 |
| 9/13/01 | 1   | 4   | 724 | 70    | Tbg-85psi 32/64 spot rate 720 mcf/d                  |
| 9/14/01 | 1   | 4   | 729 | 66    | Tbg-95 psi 32/64 spot rate 764 mcf/d                 |
| 9/15/01 | 1   | 4   | 740 | 62    | Tbg-90 psi 32/64 spot rate 750 mcf/d                 |
| 9/16/01 | 2   | 4   | 752 | 58    | Tbg-95psi 32/64 spot rate 765 mcf/d                  |
| 9/17/01 | 1   | 4   | 758 | 54    | Tbg 90psi 32/64 spot rate 767 mcf/d                  |
| 9/18/01 | 1   | 4   | 766 | 50    | Tbg 90psi 32/64 spot rate 785 mcf/d                  |
| 9/19/01 | 1   | 4   | 775 | 46    | Tbg 90psi 32/64 spot rate 787 mcf/d                  |
| 9/20/01 | 0   | 4   | 781 | 42    | Tbg 90psi 32/64 spot rate 775 mcf/d                  |

|         |   |   |     |    |                                      |
|---------|---|---|-----|----|--------------------------------------|
| 9/21/01 | 1 | 3 | 785 | 39 | Tbg 90psi 32/64 spot rate 785 mcf/d  |
| 9/22/01 | 1 | 3 | 791 | 36 | Tbg 90psi 32/64 spot rate 789 mcf/d  |
| 9/23/01 | 1 | 3 | 796 | 33 | Tbg 95psi 32/64 spot rate 810 mcf/d  |
| 9/24/01 | 1 | 3 | 801 | 30 | Tbg 95psi 32/64 spot rate 805 mcf/d  |
| 9/25/01 | 1 | 3 | 805 | 27 | Tbg 95psi 32/64 spot rate 814 mcf/d  |
| 9/26/01 | 1 | 3 | 810 | 24 | Tbg 95psi 32/64 spot rate 817 mcf/d  |
| 9/27/01 | 1 | 3 | 813 | 21 | Tbg 95psi 32/64 spot rate 807 mcf/d  |
| 9/28/01 | 1 | 3 | 817 | 18 | Tbg 95psi 32/64 spot rate 819 mcf/d  |
| 9/29/01 | 1 | 3 | 821 | 15 | Tbg 95 psi 32/64 spot rate 837 mcf/d |
| 9/30/01 | 1 | 3 | 823 | 12 | Tbg 95 psi 32/64 spot rate 834 mcf/d |
| 10/1/01 | 1 | 3 | 826 | 9  | Tbg 95psi 32/64 spot rate 847 mcf/d  |
| 10/2/01 | 1 | 3 | 832 | 6  | Tbg 95psi 32/64 spot rate 830 mcf/d  |