



Home Office: Wichita, Kansas 67201  
P. O. Box 1599 (316) 838-0601

Company Graves Drilling Co., Inc. Lease & Well No. Crane #2  
 Elevation 1459 Kelly Bush. Formation Kansas City Effective Pay - Ft. Ticket No. 25349  
 Date 8-30-75 Sec. 10 Twp. 31S Range 6W County Harper State Kansas  
 Test Approved by Harold Steincamp Western Representative Darrell Zigler  
 Formation Test No. 1 O.K.  Misrun  Interval Tested From 3674' to 3695' Total Depth 3695'  
 Size Main Hole 7 7/8 Rat Hole - Conv.  B.T.  Damaged  Yes  No Conv.  B.T.  Damaged  Yes  No  
 Top Packer Depth 3669 Ft. Size 6 3/4 Bottom Packer Depth 3674 Ft. Size 6 3/4  
 Straddle  Conv.  B.T.  Damaged  Yes  No Packer Depth - Ft. Size -  
 Tool Size 5 1/2 OD Tool Joint Size 4 1/2 FH Anchor Length 21 Ft. Size 5 1/2 OD Surface Choke Size 3/4 In. Bottom Choke Size 3/4 In.  
 RECORDERS Depth 3687 Ft. Clock No. 6894 Depth 3690 Ft. Clock No. 8376  
 Top Make Kuster Cap. 4150 No. 2603 Inside Bottom Make Kuster Cap. 4150 No. 2606 Inside  
 Below Straddle: Depth - Rec. No. - Clock No. - Inside Depth - Ft. Rec. No. - Clock No. - Inside

Time Set Packer 9:05 A M  
 Tool Open I.F.P. From 9:10A M. to 9:25A M. - Hr. 15 Min. From (B) 46 P.S.I. To (C) 57 P.S.I.  
 Tool Closed I.C.I.P. From 9:25A M. to 10:10A M. - Hr. 45 Min (D) 1310 P.S.I.  
 Tool Open F.F.P. From 10:10A M. to 11:10A M. - Hr. 60 Min. From (E) 60 P.S.I. To (F) 84 P.S.I.  
 Tool Closed F.C.I.P. From 11:10A M. to 11:55A M. - Hr. 45 Min. (G) 900 P.S.I.  
 Initial Hydrostatic Pressure (A) 1892 P.S.I. Final Hydrostatic Pressure (H) 1888 P.S.I. Maximum Temp. 124

INFORMATION

BLOW Strong throughout test. Bottom of bucket in 1 minutes.

Did Well Flow  Yes  No Recovery Total Ft. 60' free oil, 110' oil cut mud, 3350' gas in drilled plug.

Reversed Out  Yes  No Mud Type Impermex Viscosity 31 Weight 9.4 Water Loss - cc. Chlorides 52, 700 PPM

EXTRA EQUIPMENT: Type Circ. Sub. pin Safety Joint - Jars: Size - In. Make - Ser. No. -

Dual Packer  Yes Did Packers Hold?  Yes Did Tool Plug?  No Where? -

DRILLING CONTRACTOR Graves Drilling Co., Inc. Length Drill Pipe? 3535 Ft. I.D. Drill Pipe 0.8 In. Tool Joint Size 4 1/2 FH In.  
 Length Weight Pipe - Ft. I.D. Weight Pipe - In. Tool Joint Size - In. Length Drill Collars 119 Ft. I.D. Drill Collars 2.7 In.  
 Tool Joint Size 4 1/2 FH-90 In. Length D.S.T. Tool 41 Ft.

Remarks:

**WESTERN TESTING CO., INC.**  
**Pressure Data**

Date 8-30-75 Test Ticket No. 25349  
 Recorder No. 2603 Capacity 4150 Location 3687 Ft.  
 Clock No. 6894 Elevation 1459 Kelly Bushing Well Temperature 124 °F

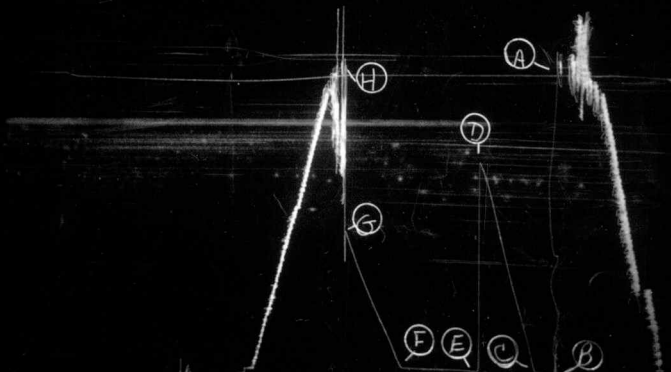
Point	Pressure		Time Given	Time Computed
A. Initial Hydrostatic Mud	<u>1892</u> P.S.I.	Open Tool	<u>9:05A</u> M	
B. First Initial Flow Pressure	<u>46</u> P.S.I.	First Flow Pressure	<u>15</u> Mins.	<u>15</u> Mins.
C. First Final Flow Pressure	<u>57</u> P.S.I.	Initial Closed-in Pressure	<u>45</u> Mins.	<u>42</u> Mins.
D. Initial Closed-in Pressure	<u>1310</u> P.S.I.	Second Flow Pressure	<u>60</u> Mins.	<u>60</u> Mins.
E. Second Initial Flow Pressure	<u>60</u> P.S.I.	Final Closed-in Pressure	<u>45</u> Mins.	<u>45</u> Mins.
F. Second Final Flow Pressure	<u>84</u> P.S.I.			
G. Final Closed-in Pressure	<u>900</u> P.S.I.			
H. Final Hydrostatic Mud	<u>1888</u> P.S.I.			

**PRESSURE BREAKDOWN**

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Breakdown: <u>3</u> Inc.		Breakdown: <u>14</u> Inc.		Breakdown: <u>12</u> Inc.		Breakdown: <u>15</u> Inc.	
of <u>5</u> mins. and a		of <u>3</u> mins. and a		of <u>5</u> mins. and a		of <u>3</u> mins. and a	
final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.	
Point Mins.	Press.	Point Minutes	Press.	Point Minutes	Press.	Point Minutes	Press.
P 1 <u>0</u>	<u>46</u>	<u>0</u>	<u>57</u>	<u>0</u>	<u>60</u>	<u>0</u>	<u>84</u>
P 2 <u>5</u>	<u>51</u>	<u>3</u>	<u>169</u>	<u>5</u>	<u>66</u>	<u>3</u>	<u>136</u>
P 3 <u>10</u>	<u>53</u>	<u>6</u>	<u>245</u>	<u>10</u>	<u>71</u>	<u>6</u>	<u>189</u>
P 4 <u>15</u>	<u>57</u>	<u>9</u>	<u>334</u>	<u>15</u>	<u>71</u>	<u>9</u>	<u>234</u>
P 5		<u>12</u>	<u>412</u>	<u>20</u>	<u>71</u>	<u>12</u>	<u>296</u>
P 6		<u>15</u>	<u>502</u>	<u>25</u>	<u>71</u>	<u>15</u>	<u>347</u>
P 7		<u>18</u>	<u>586</u>	<u>30</u>	<u>71</u>	<u>18</u>	<u>396</u>
P 8		<u>21</u>	<u>681</u>	<u>35</u>	<u>75</u>	<u>21</u>	<u>444</u>
P 9		<u>24</u>	<u>771</u>	<u>40</u>	<u>75</u>	<u>24</u>	<u>504</u>
P10		<u>27</u>	<u>862</u>	<u>45</u>	<u>75</u>	<u>27</u>	<u>561</u>
P11		<u>30</u>	<u>975</u>	<u>50</u>	<u>75</u>	<u>30</u>	<u>619</u>
P12		<u>33</u>	<u>1077</u>	<u>55</u>	<u>84</u>	<u>33</u>	<u>674</u>
P13		<u>36</u>	<u>1177</u>	<u>60</u>	<u>84</u>	<u>36</u>	<u>734</u>
P14		<u>39</u>	<u>1255</u>			<u>39</u>	<u>796</u>
P15		<u>42</u>	<u>1310</u>			<u>42</u>	<u>866</u>
P16						<u>45</u>	<u>900</u>
P17							
P18							
P19							
P20							

TKT # 25349

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Home Office: Wichita, Kansas 67201  
 P. O. Box 1599 (316) 838-0601

Company Graves Drilling Co., Inc. Lease & Well No. Crane #2  
 Elevation 1459 Kelly Bush Formation Kansas City Effective Pay - Ft. Ticket No. 25350  
 Date 8-31-75 Sec. 10 Twp. 31S Range 6W County Harper State Kansas  
 Test Approved by Harold Steincamp Western Representative Darrell Zigler  
 Formation Test No. 2 O.K.  Misrun  Interval Tested From 3796' to 3811' Total Depth 3811'  
 Size Main Hole 7 7/8 Rat Hole  Conv.  B.T.  Damaged  Yes  No Conv.  B.T.  Damaged  Yes  No  
 Top Packer Depth 3791 Ft. Size 6 3/4 Bottom Packer Depth 3796 Ft. Size 6 3/4  
 Straddle  Conv.  B.T.  Damaged  Yes  No Packer Depth - Ft. Size -  
 Tool Size 5 1/2 OD Tool Joint Size 4 1/2 FH Anchor Length 15 Ft. Size 5 1/2 OD Surface Choke Size 3/4 In. Bottom Choke Size 3/4  
 RECORDERS Depth 3803 Ft. Clock No. 6894 Depth 3806 Ft. Clock No. 8376  
 Top Make Kuster Cap. 4150 No. 2603 Inside Outside Bottom Make Kuster Cap. 4150 No. 2606 Inside Outside  
 Below Straddle: Depth - Rec. No. - Clock No. - Inside Outside Depth - Ft. Rec. No. - Clock No. - Inside Outside  
 Time Set Packer 2:05P M  
 Tool Open I.F.P. From 2:10P M. to 2:25P M. - Hr. 15 Min. From (B) 40 P.S.I. To (C) 84 P.S.I.  
 Tool Closed I.C.I.P. From 2:25P M. to 3:10P M. 1 Hr. 45 Min (D) 1564 P.S.I.  
 Tool Open F.F.P. From 3:10P M. to 4:10P M. - Hr. 60 Min. From (E) 100 P.S.I. To (F) 180 P.S.I.  
 Tool Closed F.C.I.P. From 4:10P M. to 4:55P M. - Hr. 45 Min. (G) 1531 P.S.I.  
 Initial Hydrostatic Pressure (A) 1979 P.S.I. Final Hydrostatic Pressure (H) 1971 P.S.I. Maximum Temp. 136

**INFORMATION**

BLOW Light to start, increased to 8" in bucket. Gas to surface after 45 minutes on second opening.

Did Well Flow  Yes  No Recovery Total Ft. 340' total fluid, 40' oil cut mud, 300' water.

Reversed Out  Yes  No Mud Typ Impermex Viscosity 38 Weight 9.7 Water Loss 9.2 cc. Chlorides 66,000 PPM

EXTRA EQUIPMENT: Type Circ. Sub. pin Safety Joint - Jars: Size - In. Make - Ser. No. -

Dual Packer  Yes Did Packers Hold?  Yes Did Tool Plug?  No Where? -

DRILLING CONTRACTOR Graves Drilling Co., Inc. Length Drill Pipe 3657 Ft. I.D. Drill Pipe 3.8 In. Tool Joint Size 4 1/2 FH In.

Length Weight Pipe - Ft. I.D. Weight Pipe - In. Tool Joint Size - In. Length Drill Collars 119 Ft. I.D. Drill Collars 2.7 In.

Tool Joint Size 4 1/2 H-90 In. Length D.S.T. Tool 35 Ft.

Remarks:

**WESTERN TESTING CO., INC.**  
**Pressure Data**

Date 8-31-75

Test Ticket No. 25350

Recorder No. 2603

Capacity 4150

Location 3803 Ft.

Clock No. 6894

Elevation 1459 Kelly Bushing

Well Temperature 136 °F

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	<u>1979</u>	P.S.I.	<u>2:05P</u>	M
B First Initial Flow Pressure	<u>40</u>	P.S.I.	<u>15</u>	Mins. <u>15</u> Mins.
C First Final Flow Pressure	<u>84</u>	P.S.I.	<u>45</u>	Mins. <u>42</u> Mins.
D Initial Closed-in Pressure	<u>1564</u>	P.S.I.	<u>60</u>	Mins. <u>60</u> Mins.
E Second Initial Flow Pressure	<u>100</u>	P.S.I.	<u>45</u>	Mins. <u>45</u> Mins.
F Second Final Flow Pressure	<u>180</u>	P.S.I.		
G Final Closed-in Pressure	<u>1531</u>	P.S.I.		
H Final Hydrostatic Mud	<u>1971</u>	P.S.I.		

**PRESSURE BREAKDOWN**

**First Flow Pressure**  
Breakdown: 3 Inc.  
of 5 mins. and a  
final inc. of 0 Min.

**Initial Shut-In**  
Breakdown: 14 Inc.  
of 3 mins. and a  
final inc. of 0 Min.

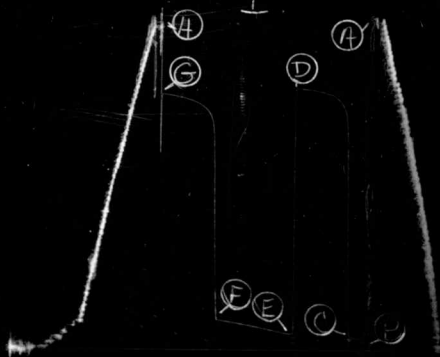
**Second Flow Pressure**  
Breakdown: 12 Inc.  
of 5 mins. and a  
final inc. of 0 Min.

**Final Shut-In**  
Breakdown: 15 Inc.  
of 3 mins. and a  
final inc. of 0 Min.

Point Mins.	Press.	Point Minutes	Press.	Point Minutes	Press.	Point Minutes	Press.
P 1 <u>0</u>	<u>40</u>	<u>0</u>	<u>84</u>	<u>0</u>	<u>100</u>	<u>0</u>	<u>180</u>
P 2 <u>5</u>	<u>55</u>	<u>3</u>	<u>1413</u>	<u>5</u>	<u>104</u>	<u>3</u>	<u>1217</u>
P 3 <u>10</u>	<u>73</u>	<u>6</u>	<u>1473</u>	<u>10</u>	<u>111</u>	<u>6</u>	<u>1415</u>
P 4 <u>15</u>	<u>84</u>	<u>9</u>	<u>1500</u>	<u>15</u>	<u>120</u>	<u>9</u>	<u>1446</u>
P 5		<u>12</u>	<u>1519</u>	<u>20</u>	<u>129</u>	<u>12</u>	<u>1464</u>
P 6		<u>15</u>	<u>1528</u>	<u>25</u>	<u>138</u>	<u>15</u>	<u>1479</u>
P 7		<u>18</u>	<u>1542</u>	<u>30</u>	<u>144</u>	<u>18</u>	<u>1488</u>
P 8		<u>21</u>	<u>1548</u>	<u>35</u>	<u>153</u>	<u>21</u>	<u>1497</u>
P 9		<u>24</u>	<u>1553</u>	<u>40</u>	<u>158</u>	<u>24</u>	<u>1506</u>
P10		<u>27</u>	<u>1555</u>	<u>45</u>	<u>165</u>	<u>27</u>	<u>1513</u>
P11		<u>30</u>	<u>1557</u>	<u>50</u>	<u>173</u>	<u>30</u>	<u>1519</u>
P12		<u>33</u>	<u>1564</u>	<u>55</u>	<u>180</u>	<u>33</u>	<u>1522</u>
P13		<u>36</u>	<u>1564</u>	<u>60</u>	<u>180</u>	<u>36</u>	<u>1528</u>
P14		<u>39</u>	<u>1584</u>			<u>39</u>	<u>1531</u>
P15		<u>42</u>	<u>1564</u>			<u>42</u>	<u>1531</u>
P16						<u>45</u>	<u>1531</u>
P17							
P18							
P19							
P20							

TKT # 25350

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Company Graves Drilling Co., Inc. Lease & Well No. Crane #2  
Elevation 1459 Kelly Bush. Formation Mississippi Effective Pay - Ft. Ticket No. 23851  
Date 9-2-75 Sec. 10 Twp. 31S Range 6W County Harper State Kansas  
Test Approved by Harold Steincamp Western Representative Darrell Zigler

Formation Test No. 3 O.K.  Misrun  Interval Tested From 4263' to 4280' Total Depth 4280'  
Size Main Hole 7 7/8 Rat Hole  Conv.  B.T.  Damaged  Yes  No Conv.  B.T.  Damaged  Yes  No  
Top Packer Depth 4258 Ft. Size 6 3/4 Bottom Packer Depth 4263 Ft. Size 6 3/4  
Straddle  Conv.  B.T.  Damaged  Yes  No Packer Depth - Ft. Size -  
Tool Size 5 1/2 OD Tool Joint Size 4 1/2 FH Anchor Length 17 Ft. Size 5 1/2 OD Surface Choke Size 3/4 In. Bottom Choke Size 3/4 In.

RECORDERS Depth 4272 Ft. Clock No. 6894 Depth 4275 Ft. Clock No. 8376  
Top Make Kuster Cap. 4150 No. 2603 Inside  Outside  Bottom Make Kuster Cap. 4150 No. 2606 Inside  Outside   
Below Straddle: Depth - Rec. No. - Clock No. - Inside  Outside  Depth - Ft. Rec. No. - Clock No. - Inside  Outside

Time Set Packer 12:15 A M  
Tool Open I.F.P. From 12:20A M. to 12:35A M. - Hr. 15 Min. From (B) 53 P.S.I. To (C) 53 P.S.I.  
Tool Closed I.C.I.P. From 12:35A M. to 1:20 A M. - Hr. 45 Min (D) 873 P.S.I.  
Tool Open F.F.P. From 1:20A M. to 2:20A M. - Hr. 60 Min. From (E) 55 P.S.I. To (F) 55 P.S.I.  
Tool Closed F.C.I.P. From 2:20A M. to 3:05A M. - Hr. 45 Min. (G) 681 P.S.I.  
Initial Hydrostatic Pressure (A) 2366 P.S.I. Final Hydrostatic Pressure (H) 2306 P.S.I. Maximum Temp. 134

**INFORMATION**

BLOW Light blow throughout test.

Did Well Flow  Yes  No Recovery Total Ft. 20' gas cut mud.

Reversed Out  Yes  No Mud Type Impermen Viscosity 35 Weight 9.6 Water Loss 8.0 cc. Chlorides 68,000 PPM

EXTRA EQUIPMENT: Type Circ. Sub. pin Safety Joint  Jars: Size - In. Make - Ser. No. -

Dual Packer  Yes Did Packers Hold?  Yes Did Tool Plug?  No Where? -

DRILLING CONTRACTOR Graves Drilling Co., Inc. Length Drill Pipe? 4130 Ft. I.D. Drill Pipe 3.8 In. Tool Joint Size 4 1/2 FH In.  
Length Weight Pipe - Ft. I.D. Weight Pipe - In. Tool Joint Size - In. Length Drill Collars 119 Ft. I.D. Drill Collars 2.7 In.  
Tool Joint Size 4 1/2 H-90 In. Length D.S.T. Tool 37 Ft.

Remarks:

**WESTERN TESTING CO., INC.**  
**Pressure Data**

Date 9-2-75 Test Ticket No. 23851  
 Recorder No. 2603 Capacity 4150 Location 4272 Ft.  
 Clock No. 6894 Elevation 1459 Kelly Bushing Well Temperature 134 °F

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	<u>2366</u> P.S.I.	Open Tool	<u>12:15 A</u>	<u>M</u>
B First Initial Flow Pressure	<u>53</u> P.S.I.	First Flow Pressure	<u>15</u> Mins.	<u>15</u> Mins.
C First Final Flow Pressure	<u>53</u> P.S.I.	Initial Closed-in Pressure	<u>45</u> Mins.	<u>45</u> Mins.
D Initial Closed-in Pressure	<u>873</u> P.S.I.	Second Flow Pressure	<u>60</u> Mins.	<u>60</u> Mins.
E Second Initial Flow Pressure	<u>55</u> P.S.I.	Final Closed-in Pressure	<u>45</u> Mins.	<u>45</u> Mins.
F Second Final Flow Pressure	<u>55</u> P.S.I.			
G Final Closed-in Pressure	<u>681</u> P.S.I.			
H Final Hydrostatic Mud	<u>2306</u> P.S.I.			

**PRESSURE BREAKDOWN**

Point Mins.	First Flow Pressure	Initial Shut-In	Second Flow Pressure	Final Shut-In			
	Breakdown: <u>3</u> Inc. of <u>5</u> mins. and a final inc. of <u>0</u> Min.	Breakdown: <u>15</u> Inc. of <u>3</u> mins. and a final inc. of <u>0</u> Min.	Breakdown: <u>12</u> Inc. of <u>5</u> mins. and a final inc. of <u>0</u> Min.	Breakdown: <u>15</u> Inc. of <u>3</u> mins. and a final inc. of <u>0</u> Min.			
	Press.	Point Minutes	Press.	Point Minutes	Press.	Point Minutes	Press.
P 1	<u>53</u>	<u>0</u>	<u>53</u>	<u>0</u>	<u>55</u>	<u>0</u>	<u>55</u>
P 2	<u>53</u>	<u>3</u>	<u>91</u>	<u>3</u>	<u>55</u>	<u>3</u>	<u>66</u>
P 3	<u>53</u>	<u>6</u>	<u>122</u>	<u>6</u>	<u>55</u>	<u>6</u>	<u>73</u>
P 4	<u>53</u>	<u>9</u>	<u>176</u>	<u>9</u>	<u>55</u>	<u>9</u>	<u>80</u>
P 5	<u>53</u>	<u>12</u>	<u>243</u>	<u>12</u>	<u>55</u>	<u>12</u>	<u>84</u>
P 6		<u>15</u>	<u>301</u>	<u>15</u>	<u>55</u>	<u>15</u>	<u>100</u>
P 7		<u>18</u>	<u>372</u>	<u>18</u>	<u>55</u>	<u>18</u>	<u>104</u>
P 8		<u>21</u>	<u>430</u>	<u>21</u>	<u>55</u>	<u>21</u>	<u>107</u>
P 9		<u>24</u>	<u>486</u>	<u>24</u>	<u>55</u>	<u>24</u>	<u>144</u>
P10		<u>27</u>	<u>555</u>	<u>27</u>	<u>55</u>	<u>27</u>	<u>214</u>
P11		<u>30</u>	<u>608</u>	<u>30</u>	<u>55</u>	<u>30</u>	<u>301</u>
P12		<u>33</u>	<u>667</u>	<u>33</u>	<u>55</u>	<u>33</u>	<u>381</u>
P13		<u>36</u>	<u>721</u>	<u>36</u>	<u>55</u>	<u>36</u>	<u>464</u>
P14		<u>39</u>	<u>780</u>	<u>39</u>		<u>39</u>	<u>546</u>
P15		<u>42</u>	<u>833</u>	<u>42</u>		<u>42</u>	<u>623</u>
P16		<u>45</u>	<u>873</u>	<u>45</u>		<u>45</u>	<u>681</u>
P17							
P18							
P19							
P20							

TKT # 23851

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Company Graves Drilling Co., Inc. Lease & Well No. Crane #2  
 Elevation 1459 Kelly Bush. Formation Mississippi Effective Pay - Ft. Ticket No. 23852  
 Date 9-3-75 Sec. 10 Twp. 31S Range 6W County Harper State Kansas  
 Test Approved by Harold Steincamp Western Representative Darrell Zigler

Formation Test No. 4 O.K.  Misrun  Interval Tested From 4280' to 4301' Total Depth 4301'  
 Size Main Hole 7 7/8 Rat Hole  Conv.  B.T.  Damaged  Yes  No Conv.  B.T.  Damaged  Yes  No  
 Top Packer Depth 4275 Ft. Size 6 3/4 Bottom Packer Depth 4280 Ft. Size 6 3/4  
 Straddle  Conv.  B.T.  Damaged  Yes  No Packer Depth - Ft. Size -  
 Tool Size 5 1/2 OD Tool Joint Size 4 1/2 FH Anchor Length 21 Ft. Size 5 1/2 OD Surface Choke Size 3/4 In. Bottom Choke Size 3/4 In.

RECORDERS Depth 4293 Ft. Clock No. 6894 Depth 4296 Ft. Clock No. 8376  
 Top Make Kuster Cap. 4150 No. 2603  Inside  Outside Bottom Make Kuster Cap. 4150 No. 2606  Inside  Outside  
 Below Straddle: Depth - Rec. No. - Clock No. -  Inside  Outside Depth - Ft. Rec. No. - Clock No. -  Inside  Outside

Time Set Packer 4:25 P M  
 Tool Open I.F.P. From 4:30P M. to 4:45P M. - Hr. 15 Min. From (B) 55 P.S.I. To (C) 55 P.S.I.  
 Tool Closed I.C.I.P. From 4:45P M. to 5:30P M. - Hr. 45 Min (D) 1410 P.S.I.  
 Tool Open F.F.P. From 5:30P M. to 6:30P M. - Hr. 60 Min. From (E) 71 P.S.I. To (F) 95 P.S.I.  
 Tool Closed F.C.I.P. From 6:30P M. to 7:15P M. - Hr. 45 Min. (G) 670 P.S.I.  
 Initial Hydrostatic Pressure (A) 2317 P.S.I. Final Hydrostatic Pressure (H) 2310 P.S.I. Maximum Temp. 140

**INFORMATION**

BLOW Good blow, gas to surface after 45 minutes on final flow period. Total of one hour open to gas.

Did Well Flow  Yes  No Recovery Total Ft. 15' oil & Gas cut mud., 120' slightly oil & gas cut mud, 60' slightly oil & gas cut watery mud.

Reversed Out  Yes  No Mud Type Impermea Viscosity 41 Weight 9.9 Water Loss 6.0 cc. Chlorides 42,000 PPM

EXTRA EQUIPMENT: Type Circ. Sub. pin Safety Joint - Jars: Size - In. Make - Ser. No. -

Dual Packer  Yes Did Packers Hold?  Yes Did Tool Plug?  No Where? -

DRILLING CONTRACTOR Graves Drilling Co., Inc. Length Drill Pipe? 4151 Ft. I.D. Drill Pipe 2.8 In. Tool Joint Size 4 1/2 FH In.

Length Weight Pipe - Ft. I.D. Weight Pipe - In. Tool Joint Size - In. Length Drill Collars 119 Ft. I.D. Drill Collars 2.7 In.

Tool Joint Size 4 1/2 H-90 In. Length D.S.T. Tool 41 Ft.

Remarks:

# WESTERN TESTING CO., INC.

## Pressure Data

Date 9-3-75 Test Ticket No. 23852  
 Recorder No. 2603 Capacity 4150 Location 4293 Ft.  
 Clock No. 6894 Elevation 1459 Kelly Bushing Well Temperature 140 °F

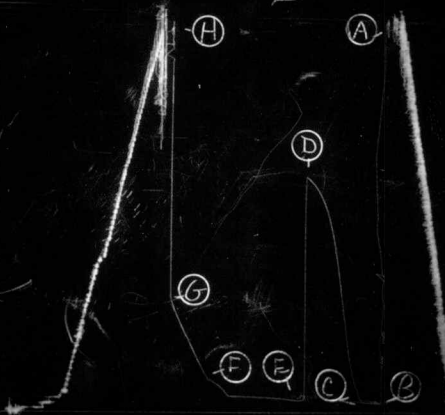
Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	<u>2317</u> P.S.I.	Open Tool	<u>4:25 P</u> M	
B First Initial Flow Pressure	<u>55</u> P.S.I.	First Flow Pressure	<u>15</u> Mins.	<u>15</u> Mins.
C First Final Flow Pressure	<u>55</u> P.S.I.	Initial Closed-in Pressure	<u>45</u> Mins.	<u>42</u> Mins.
D Initial Closed-in Pressure	<u>1410</u> P.S.I.	Second Flow Pressure	<u>60</u> Mins.	<u>60</u> Mins.
E Second Initial Flow Pressure	<u>71</u> P.S.I.	Final Closed-in Pressure	<u>45</u> Mins.	<u>45</u> Mins.
F Second Final Flow Pressure	<u>95</u> P.S.I.			
G Final Closed-in Pressure	<u>670</u> P.S.I.			
H Final Hydrostatic Mud	<u>2310</u> P.S.I.			

### PRESSURE BREAKDOWN

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Breakdown: <u>3</u> Inc.		Breakdown: <u>14</u> Inc.		Breakdown: <u>12</u> Inc.		Breakdown: <u>15</u> Inc.	
of <u>5</u> mins. and a		of <u>3</u> mins. and a		of <u>5</u> mins. and a		of <u>3</u> mins. and a	
final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.	
Point Mins.	Press.	Point Minutes	Press.	Point Minutes	Press.	Point Minutes	Press.
P 1	<u>0</u> <u>55</u>	<u>0</u> <u>55</u>	<u>0</u> <u>55</u>	<u>0</u> <u>71</u>	<u>0</u> <u>95</u>	<u>0</u> <u>95</u>	<u>95</u>
P 2	<u>5</u> <u>55</u>	<u>3</u> <u>133</u>	<u>3</u> <u>133</u>	<u>5</u> <u>71</u>	<u>3</u> <u>122</u>	<u>3</u> <u>122</u>	<u>122</u>
P 3	<u>10</u> <u>55</u>	<u>6</u> <u>194</u>	<u>6</u> <u>194</u>	<u>10</u> <u>75</u>	<u>6</u> <u>149</u>	<u>6</u> <u>149</u>	<u>149</u>
P 4	<u>15</u> <u>55</u>	<u>9</u> <u>296</u>	<u>9</u> <u>296</u>	<u>15</u> <u>82</u>	<u>9</u> <u>169</u>	<u>9</u> <u>169</u>	<u>169</u>
P 5	<u>    </u> <u>    </u>	<u>12</u> <u>441</u>	<u>12</u> <u>441</u>	<u>20</u> <u>86</u>	<u>12</u> <u>182</u>	<u>12</u> <u>182</u>	<u>182</u>
P 6	<u>    </u> <u>    </u>	<u>15</u> <u>623</u>	<u>15</u> <u>623</u>	<u>25</u> <u>86</u>	<u>15</u> <u>196</u>	<u>15</u> <u>196</u>	<u>196</u>
P 7	<u>    </u> <u>    </u>	<u>18</u> <u>824</u>	<u>18</u> <u>824</u>	<u>30</u> <u>86</u>	<u>18</u> <u>214</u>	<u>18</u> <u>214</u>	<u>214</u>
P 8	<u>    </u> <u>    </u>	<u>21</u> <u>993</u>	<u>21</u> <u>993</u>	<u>35</u> <u>86</u>	<u>21</u> <u>260</u>	<u>21</u> <u>260</u>	<u>260</u>
P 9	<u>    </u> <u>    </u>	<u>24</u> <u>1122</u>	<u>24</u> <u>1122</u>	<u>40</u> <u>95</u>	<u>24</u> <u>298</u>	<u>24</u> <u>298</u>	<u>298</u>
P10	<u>    </u> <u>    </u>	<u>27</u> <u>1210</u>	<u>27</u> <u>1210</u>	<u>45</u> <u>95</u>	<u>27</u> <u>345</u>	<u>27</u> <u>345</u>	<u>345</u>
P11	<u>    </u> <u>    </u>	<u>30</u> <u>1270</u>	<u>30</u> <u>1270</u>	<u>60</u> <u>95</u>	<u>30</u> <u>403</u>	<u>30</u> <u>403</u>	<u>403</u>
P12	<u>    </u> <u>    </u>	<u>33</u> <u>1317</u>	<u>33</u> <u>1317</u>	<u>55</u> <u>95</u>	<u>33</u> <u>450</u>	<u>33</u> <u>450</u>	<u>450</u>
P13	<u>    </u> <u>    </u>	<u>36</u> <u>1355</u>	<u>36</u> <u>1355</u>	<u>60</u> <u>95</u>	<u>36</u> <u>497</u>	<u>36</u> <u>497</u>	<u>497</u>
P14	<u>    </u> <u>    </u>	<u>39</u> <u>1386</u>	<u>39</u> <u>1386</u>	<u>    </u> <u>    </u>	<u>39</u> <u>553</u>	<u>39</u> <u>553</u>	<u>553</u>
P15	<u>    </u> <u>    </u>	<u>42</u> <u>1410</u>	<u>42</u> <u>1410</u>	<u>    </u> <u>    </u>	<u>42</u> <u>606</u>	<u>42</u> <u>606</u>	<u>606</u>
P16	<u>    </u> <u>    </u>	<u>    </u> <u>    </u>	<u>    </u> <u>    </u>	<u>    </u> <u>    </u>	<u>45</u> <u>670</u>	<u>45</u> <u>670</u>	<u>670</u>
P17	<u>    </u> <u>    </u>	<u>    </u> <u>    </u>	<u>    </u> <u>    </u>	<u>    </u> <u>    </u>	<u>    </u> <u>    </u>	<u>    </u> <u>    </u>	<u>    </u>
P18	<u>    </u> <u>    </u>	<u>    </u> <u>    </u>	<u>    </u> <u>    </u>	<u>    </u> <u>    </u>	<u>    </u> <u>    </u>	<u>    </u> <u>    </u>	<u>    </u>
P19	<u>    </u> <u>    </u>	<u>    </u> <u>    </u>	<u>    </u> <u>    </u>	<u>    </u> <u>    </u>	<u>    </u> <u>    </u>	<u>    </u> <u>    </u>	<u>    </u>
P20	<u>    </u> <u>    </u>	<u>    </u> <u>    </u>	<u>    </u> <u>    </u>	<u>    </u> <u>    </u>	<u>    </u> <u>    </u>	<u>    </u> <u>    </u>	<u>    </u>

TKT# 23852

I



2603



Home Office: Wichita, Kansas 67201  
 P. O. Box 1599 (316) 838-0601

Company Graves Drilling Co., Inc. Lease & Well No. Crane #2  
 Elevation 1459 Kelly Bush. Formation Mississippi Effective Pay - Ft. Ticket No. 23853  
 Date 9-4-75 Sec. 10 Twp. 31S Range 6W County Harper State Kansas  
 Test Approved by Harold Steincamp Western Representative Darrell Zigler

Formation Test No. 5 O.K.  Misrun  Interval Tested From 4300' to 4310' Total Depth 4310'  
 Size Main Hole 7 7/8 Rat Hole  Conv.  B.T.  Damaged  Yes  No Conv.  B.T.  Damaged  Yes  No  
 Top Packer Depth 4295 Ft. Size 6 3/4 Bottom Packer Depth 4300 Ft. Size 6 3/4  
 Straddle  Conv.  B.T.  Damaged  Yes  No Packer Depth - Ft. Size -  
 Tool Size 5 1/2 OD Tool Joint Size 4 1/2 FH Anchor Length 10 Ft. Size 5 1/2 OD Surface Choke Size 3/4 In. Bottom Choke Size 3/4 In.

RECORDERS Depth 4303 Ft. Clock No. 6894 Depth 4306 Ft. Clock No. 8376  
 Top Make Kuster Cap. 4150 No. 2603 Inside Outside Bottom Make Kuster Cap. 4150 No. 2606 Inside Outside  
 Below Straddle: Depth - Rec. No. - Clock No. - Inside Outside Depth - Ft. Rec. No. - Clock No. - Inside Outside

Time Set Packer 6:05 A M  
 Tool Open I.F.P. From 6:10A M. to 6:25A M. - Hr. 15 Min. From (B) 66 P.S.I. To (C) 86 P.S.I.  
 Tool Closed I.C.I.P. From 6:25A M. to 7:10A M. - Hr. 45 Min (D) 1542 P.S.I.  
 Tool Open F.F.P. From 7:10A M. to 8:10A M. - Hr. 60 Min. From (E) 78 P.S.I. To (F) 120 P.S.I.  
 Tool Closed F.C.I.P. From 8:10A M. to 8:55A M. - Hr. 45 Min. (G) 1462 P.S.I.  
 Initial Hydrostatic Pressure (A) 2301 P.S.I. Final Hydrostatic Pressure (H) 2299 P.S.I. Maximum Temp. 141

**INFORMATION**

BLOW Fair start, increasing throughout test to good.  
 Did Well Flow - Yes  No  Recovery Total Ft. 30' oil & gas cut mud, 60' oil cut watery mud, 120' water. 1500' gas in pipe.

Reversed Out - Yes  No  Mud Type Impermex Viscosity 41 Weight 9.9 Water Loss 6.0 cc. Chlorides 42,000 PPM

EXTRA EQUIPMENT: Type Circ. Sub. Pin Safety Joint - Jars: Size - In. Make - Ser. No. -

Dual Packer Yes Did Packers Hold? Yes Did Tool Plug? No Where? -

DRILLING CONTRACTOR Graves Drilling Co., Inc. Length Drill Pipe 4161 Ft. I.D. Drill Pipe 3.8 In. Tool Joint Size 4 1/2 FH In.

Length Weight Pipe - Ft. I.D. Weight Pipe - In. Tool Joint Size - In. Length Drill Collars 119 Ft. I.D. Drill Collars 2.7 In.

Tool Joint Size 4 1/2 FH In. Length D.S.T. Tool 30 Ft.

Remarks:

**WESTERN TESTING CO., INC.**  
**Pressure Data**

Date 9-4-75

Test Ticket No. 23853

Recorder No. 2603

Capacity 4150

Location 4303 Ft.

Clock No. 6894

Elevation 1459 Kelly Bushing

Well Temperature 141 °F

Point	Pressure		Time Given	Time Computed	
				Mins.	Mins.
A Initial Hydrostatic Mud	<u>2301</u>	P.S.I.	<u>6:05 A</u>		
B First Initial Flow Pressure	<u>66</u>	P.S.I.	<u>15</u>	Mins. <u>15</u>	Mins.
C First Final Flow Pressure	<u>86</u>	P.S.I.	<u>45</u>	Mins. <u>42</u>	Mins.
D Initial Closed-in Pressure	<u>1542</u>	P.S.I.	<u>60</u>	Mins. <u>60</u>	Mins.
E Second Initial Flow Pressure	<u>78</u>	P.S.I.	<u>45</u>	Mins. <u>45</u>	Mins.
F Second Final Flow Pressure	<u>120</u>	P.S.I.			
G Final Closed-in Pressure	<u>1462</u>	P.S.I.			
H Final Hydrostatic Mud	<u>2299</u>	P.S.I.			

**PRESSURE BREAKDOWN**

**First Flow Pressure**  
Breakdown: 3 Inc.  
of 5 mins. and a  
final inc. of 0 Min.

**Initial Shut-In**  
Breakdown: 14 Inc.  
of 3 mins. and a  
final inc. of 0 Min.

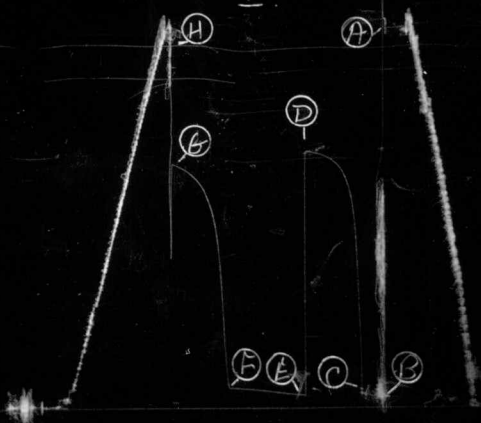
**Second Flow Pressure**  
Breakdown: 12 Inc.  
of 5 mins. and a  
final inc. of 0 Min.

**Final Shut-In**  
Breakdown: 15 Inc.  
of 3 mins. and a  
final inc. of 0 Min.

Point Mins.	First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
	Point Minutes	Press.	Point Minutes	Press.	Point Minutes	Press.	Point Minutes	Press.
P 1	<u>0</u>	<u>66</u>	<u>0</u>	<u>86</u>	<u>0</u>	<u>78</u>	<u>0</u>	<u>120</u>
P 2	<u>5</u>	<u>73</u>	<u>3</u>	<u>864</u>	<u>5</u>	<u>82</u>	<u>3</u>	<u>363</u>
P 3	<u>10</u>	<u>78</u>	<u>6</u>	<u>1168</u>	<u>10</u>	<u>84</u>	<u>6</u>	<u>765</u>
P 4	<u>15</u>	<u>86</u>	<u>9</u>	<u>1299</u>	<u>15</u>	<u>89</u>	<u>9</u>	<u>971</u>
P 5	<u>20</u>		<u>12</u>	<u>1379</u>	<u>20</u>	<u>95</u>	<u>12</u>	<u>1128</u>
P 6	<u>25</u>		<u>15</u>	<u>1419</u>	<u>25</u>	<u>100</u>	<u>15</u>	<u>1222</u>
P 7	<u>30</u>		<u>18</u>	<u>1453</u>	<u>30</u>	<u>104</u>	<u>18</u>	<u>1268</u>
P 8			<u>21</u>	<u>1477</u>	<u>35</u>	<u>109</u>	<u>21</u>	<u>1328</u>
P 9			<u>24</u>	<u>1497</u>	<u>40</u>	<u>113</u>	<u>24</u>	<u>1361</u>
P10			<u>27</u>	<u>1506</u>	<u>45</u>	<u>120</u>	<u>27</u>	<u>1384</u>
P11			<u>30</u>	<u>1517</u>	<u>50</u>	<u>120</u>	<u>30</u>	<u>1404</u>
P12			<u>33</u>	<u>1526</u>	<u>55</u>	<u>120</u>	<u>33</u>	<u>1419</u>
P13			<u>36</u>	<u>1531</u>	<u>60</u>	<u>120</u>	<u>36</u>	<u>1437</u>
P14			<u>39</u>	<u>1533</u>			<u>39</u>	<u>1448</u>
P15			<u>42</u>	<u>1542</u>			<u>42</u>	<u>1455</u>
P16							<u>45</u>	<u>1462</u>
P17								
P18								
P19								
P20								

TAT # 23853

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603



Home Office: Wichita, Kansas 67201  
P. O. Box 1599 (316) 838-0601

Company Graves Drilling Co., Inc. Lease & Well No. Crane #2  
Elevation 1459 Kelly Bush. Formation Kansas City Effective Pay - Ft. Ticket No. 24250  
Date 9-5-75 Sec. 10 Twp. 31S Range 6W County Harper State Kansas  
Test Approved by Harold Steincamp Western Representative Forrest Purnell

Formation Test No. 6 O.K.  Misrun  Interval Tested From 3670' to 3694' Total Depth 4316'  
Size Main Hole 7 7/8 Rat Hole  Conv.  B.T.  Damaged  Yes  No Conv.  B.T.  Damaged  Yes  No  
Top Packer Depth 3673 Ft. Size 6 3/4 Bottom Packer Depth 3698 Ft. Size 6 3/4  
Straddle  Conv.  B.T.  Damaged  Yes  No Packer Depth 3698 Ft. Size 6 3/4  
Tool Size 5 1/2 OD Tool Joint Size 4 1/2 FH Anchor Length 20 Ft. Size 5 1/2 OD Surface Choke Size 3/4 In. Bottom Choke Size 3/4 In.

RECORDERS Depth 3686 Ft. Clock No. 6800 Depth 3699 Ft. Clock No. 6859  
Top Make Kuster Cap. 4200 No. 1559 Inside Outside Bottom Make Kuster Cap. 3150 No. 1565 Inside Outside  
Below Straddle: Depth - Rec. No. - Clock No. - Inside Outside Depth - Ft. Rec. No. - Clock No. - Inside Outside

Time Set Packer 2:25 A M  
Tool Open I.F.P. From 2:30A M. to 2:45A M. - Hr. 15 Min. From (B) 30 P.S.I. To (C) 30 P.S.I.  
Tool Closed I.C.I.P. From 2:45A M. to 4:15A M. - Hr. 90 Min (D) 1443 P.S.I.  
Tool Open F.F.P. From 4:15A M. to 5:15A M. - Hr. 60 Min. From (E) 41 P.S.I. To (F) 41 P.S.I.  
Tool Closed F.C.I.P. From 5:15A M. to 6:45A M. - Hr. 90 Min. (G) 1248 P.S.I.  
Initial Hydrostatic Pressure (A) 1968 P.S.I. Final Hydrostatic Pressure (H) 1936 P.S.I. Maximum Temp. 128

INFORMATION

BLOW Weak blow, increased to strong blow throughout test.

Did Well Flow  Yes  No Recovery Total Ft. 1240' gas, 85' slightly oil & gas cut drilling mud, (oil cut mud).

Reversed Out  Yes  No Mud Type Impernex -011 Viscosity 41 Weight 9.9 Water Loss 6.-0 cc. Chlorides -

EXTRA EQUIPMENT: Type Circ. Sub. pin Safety Joint - Jars: Size - In. Make - Ser. No. -

Dual Packer  No Did Packers Hold?  Yes Did Tool Plug?  No Where? -

DRILLING CONTRACTOR Graves Drilling Co., Inc. Length Drill Pipe 4251 Ft. I.D. Drill Pipe 3.8 In. Tool Joint Size 4 1/2 FH In.  
Length Weight Pipe - Ft. I.D. Weight Pipe - In. Tool Joint Size - In. Length Drill Collars - Ft. I.D. Drill Collars - In.  
Tool Joint Size - In. Length D.S.T. Tool 65 Ft.

Remarks:

**WESTERN TESTING CO., INC.**  
**Pressure Data**

Date 9-5-75 Test Ticket No. 24250  
 Recorder No. 1559 Capacity 4200 Location 3686 Ft.  
 Clock No. 6800 Elevation 1459 Kelly Bushing Well Temperature 128 °F

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	<u>1968</u> P.S.I.	Open Tool	<u>2:25A</u> M	
B First Initial Flow Pressure	<u>30</u> P.S.I.	First Flow Pressure	<u>15</u> Mins.	<u>15</u> Mins.
C First Final Flow Pressure	<u>30</u> P.S.I.	Initial Closed-in Pressure	<u>90</u> Mins.	<u>87</u> Mins.
D Initial Closed-in Pressure	<u>1443</u> P.S.I.	Second Flow Pressure	<u>60</u> Mins.	<u>60</u> Mins.
E Second Initial Flow Pressure	<u>41</u> P.S.I.	Final Closed-in Pressure	<u>90</u> Mins.	<u>87</u> Mins.
F Second Final Flow Pressure	<u>41</u> P.S.I.			
G Final Closed-in Pressure	<u>1248</u> P.S.I.			
H Final Hydrostatic Mud	<u>1936</u> P.S.I.			

**PRESSURE BREAKDOWN**

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Breakdown: <u>3</u> Inc.		Breakdown: <u>29</u> Inc.		Breakdown: <u>12</u> Inc.		Breakdown: <u>29</u> Inc.	
of <u>5</u> mins. and a		of <u>3</u> mins. and a		of <u>5</u> mins. and a		of <u>3</u> mins. and a	
final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.	
Point Mins.	Press.	Point Minutes	Press.	Point Minutes	Press.	Point Minutes	Press.
P 1 <u>0</u>	<u>30</u>	<u>0</u>	<u>30</u>	<u>0</u>	<u>41</u>	<u>0</u>	<u>41</u>
P 2 <u>5</u>	<u>30</u>	<u>3</u>	<u>41</u>	<u>5</u>	<u>41</u>	<u>3</u>	<u>52</u>
P 3 <u>10</u>	<u>30</u>	<u>6</u>	<u>66</u>	<u>10</u>	<u>41</u>	<u>6</u>	<u>64</u>
P 4 <u>15</u>	<u>30</u>	<u>9</u>	<u>91</u>	<u>15</u>	<u>41</u>	<u>9</u>	<u>81</u>
P 5		<u>12</u>	<u>125</u>	<u>20</u>	<u>41</u>	<u>12</u>	<u>94</u>
P 6		<u>15</u>	<u>163</u>	<u>25</u>	<u>41</u>	<u>15</u>	<u>108</u>
P 7		<u>18</u>	<u>215</u>	<u>30</u>	<u>41</u>	<u>18</u>	<u>131</u>
P 8		<u>21</u>	<u>280</u>	<u>35</u>	<u>41</u>	<u>21</u>	<u>152</u>
P 9		<u>24</u>	<u>340</u>	<u>40</u>	<u>41</u>	<u>24</u>	<u>175</u>
P 10		<u>27</u>	<u>434</u>	<u>45</u>	<u>41</u>	<u>27</u>	<u>206</u>
P 11		<u>30</u>	<u>508</u>	<u>50</u>	<u>41</u>	<u>30</u>	<u>250</u>
P 12		<u>33</u>	<u>591</u>	<u>55</u>	<u>41</u>	<u>33</u>	<u>286</u>
P 13		<u>36</u>	<u>672</u>	<u>60</u>	<u>41</u>	<u>36'</u>	<u>340</u>
P 14		<u>39</u>	<u>751</u>			<u>39</u>	<u>388</u>
P 15		<u>42</u>	<u>832</u>			<u>42</u>	<u>411</u>
P 16		<u>45</u>	<u>912</u>			<u>45</u>	<u>512</u>
P 17		<u>48</u>	<u>1000</u>			<u>48</u>	<u>562</u>
P 18		<u>51</u>	<u>1073</u>			<u>51</u>	<u>632</u>
P 19		<u>54</u>	<u>1135</u>			<u>54</u>	<u>672</u>
P 20		<u>57</u>	<u>1192</u>			<u>57</u>	<u>732</u>
		<u>60</u>	<u>1250</u>			<u>60</u>	<u>791</u>
		<u>63</u>	<u>1298</u>			<u>63</u>	<u>845</u>
		<u>66</u>	<u>1336</u>			<u>66</u>	<u>908</u>
		<u>69</u>	<u>1359</u>			<u>69</u>	<u>964</u>
		<u>72</u>	<u>1384</u>			<u>72</u>	<u>1066</u>
		<u>75</u>	<u>1403</u>			<u>75</u>	<u>1127</u>
		<u>78</u>	<u>1416</u>			<u>78</u>	<u>1173</u>
		<u>81</u>	<u>1426</u>			<u>81</u>	<u>1209</u>
		<u>84</u>	<u>1437</u>			<u>84</u>	<u>1248</u>
		<u>87</u>	<u>1443</u>			<u>87</u>	