

ORIGINAL

# VSP Preliminary Data Sheet

Date: 22 April 99 Type of Phones OYO 14Hz

1. Well Name C3 (URISP)

2. Location of Well

X= 16003.48 Y= 9993.83 Z= 850.16

Casing Elevation: 850.16m above  $\phi$

elev  
 $\nabla = +848.173m$

3. Depth to top of water table (measured from CE)  $\leftarrow (6.52 \text{ feet}) = 1.987 \text{ meters}$

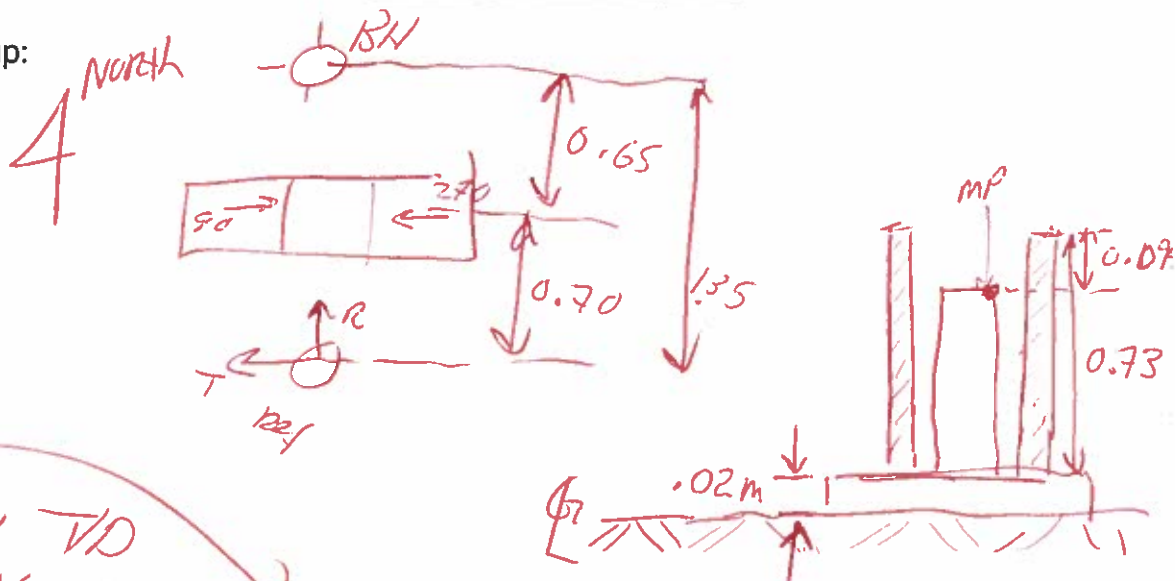
4. Casing Elevation, distance above ground level=  $(.73 - .094 + .02)m = 0.656m$

5. Reference phone offset from borehole= 1.35

6. Reference phone depth below ground level= .02

7. Source Offset from borehole= 0.65m South

8. Sketch of setup:



Tool VD  
at 20.25m

9. Blue Box switch settings:

Channel	Component
<u>1</u>	Vertical
<u>2</u>	Longitudinal (radial)
<u>3</u>	Transverse

# BSU GEOPHYSICS VSP OBSERVER'S LOG

Coordinate System Origin at Borehole  
Casing Elevation: ~~850~~ 656 m above G.L.  
Azimuth x-axis: EAST

Azimuth y-axis: NORTH

Well Coord: X = 10003.48 Y = 9993.83 Z = 850.16

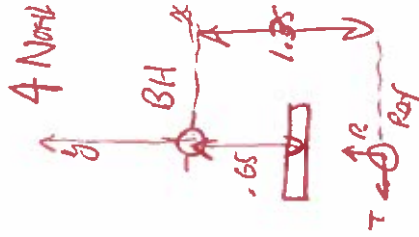
Channel Configuration:  
Borehole Phone  
V=Channel 1  
R=Channel 2  
T=Channel 3

Reference Phone  
V=Channel 4  
R=Channel 5  
T=Channel 6

Date: 22 April 99 Location: C3 well URSR  
High-Cut 1000 Low-Cut 4 Sample Int. .0002 Number Samples 2500

Reference Phone: Offset: \_\_\_\_\_ m  
Azimuth  
Elev. .02 m below G.L.  
X = 0 m  
Y = -1.35 m

Ref. Polarization: Az 0 Vert. 0  
V 0  
R 0  
T 270



Shot		Borehole Phone			Source			Source Polarization		
Rec.	File	Depth	Elev.	Offset	Azimuth	Elev.	X	Y	Azimuth	Vertical
1		20.25					0	-1.65	270	90
2		20.25							90	
3		20.0							270	
4		20.0							90	
5		19.75							270	
6		19.75							90	
7		19.5							270	
8		19.5							90	
9		19.25							270	
10		19.25							90	

$$\frac{1017}{2} = 1.987 \text{ m sub CE} = +848.173$$

# BSU GEOPHYSICS VSP OBSERVER'S LOG

Coordinate System Origin at Borehole  
 Casing Elevation: 656 m above G.L.  
 Azimuth x-axis: 5057  
 Azimuth y-axis: NORTH  
 Well Coord: X = 10003.48 Y = 9993.83 Z = 850.16  
 Channel Borehole Phone Reference Phone  
 V=Channel 1 V=Channel 4  
 R=Channel 2 R=Channel 5  
 T=Channel 3 T=Channel 6  
 Configuration: Ref. Polarization: Az 0 Vert. 0  
 V 0 R 0 T 270

Date: 22 April 99 Location: C3 Well OBSP  
 High-Cut 1000 Low-Cut 4 Sample Int. .0002 Number Samples 2500

Shot		Borehole Phone			Source			Source Polarization		
Rec.	File	Depth	Elev.	Offset	Azimuth	Elev.	X	Y	Azimuth	Vertical
<u>11</u>		<u>19.0</u>					<u>0</u>	<u>-1.65</u>	<u>270</u>	<u>90</u>
<u>12</u>		<u>19.0</u>							<u>90</u>	
<u>13</u>		<u>18.75</u>							<u>270</u>	
<u>14</u>		<u>18.75</u>							<u>90</u>	
<u>15</u>		<u>18.5</u>							<u>270</u>	
<u>16</u>		<u>18.5</u>							<u>90</u>	
<u>17</u>		<u>18.25</u>							<u>270</u>	
<u>18</u>		<u>18.25</u>							<u>90</u>	
<u>19</u>		<u>18.0</u>							<u>270</u>	
<u>20</u>		<u>18.0</u>							<u>90</u>	

# BSU GEOPHYSICS VSP OBSERVER'S LOG

Coordinate System Origin at Borehole  
 Casing Elevation: 656 m above G.L.  
 Azimuth x-axis: 5057  
 Azimuth y-axis: NORTH  
 Well Coord: X = 10003.48 Y = 9993.83 Z = 850.16  
 Channel Borehole Phone Reference Phone  
 Configuration: V=Channel 1 V=Channel 4 Az 0  
 R=Channel 2 R=Channel 5 R 0  
 T=Channel 3 T=Channel 6 T 270  
 Ref. Polarization: V 0 R 0 T 270  
 Date: 22 April 99 Location: C3 Well OBSP  
 High-Cut 1600 Low-Cut 4 Sample Int. .0002 Number Samples 2500

Shot		Borehole Phone			Source			Source Polarization		
Rec.	File	Depth	Elev.	Offset	Azimuth	Elev.	X	Y	Azimuth	Vertical
21		17.75					0	-65	270	90
22		17.75							90	
23		17.5							270	
24		17.5							90	
25		17.25							270	
26		17.25							90	
27		17.0							270	
28		17.0							90	
29		16.75							270	
30		16.75							90	

10:28

# BSU GEOPHYSICS VSP OBSERVER'S LOG

Coordinate System Origin at Borehole  
 Casing Elevation: 656 m above G.L.  
 Azimuth x-axis: 5057  
 Azimuth y-axis: N027H  
 Well Coord: X = 10003.48 Y = 9993.83 Z = 850.16  
 Channel  
 Configuration: Borehole Phone  
 V=Channel 1 Reference Phone  
 R=Channel 2 V=Channel 4  
 T=Channel 3 R=Channel 5  
 T=Channel 6  
 Ref. Polarization: Az 0 Vert. 0  
 V 0 R 0 T 270

Date: 22 April 99 Location: C3 well URSR  
 High-Cut 1000 Low-Cut 4 Sample Int. .0002 Number Samples 2500

Shot		Borehole Phone			Source			Source Polarization		
Rec.	File	Depth	Elev.	Offset	Azimuth	Elev.	X	Y	Azimuth	Vertical
31		16.5					0	-65	270	90
32		16.5							90	
33		16.25							270	
34		16.25							90	
35		16.0							270	
36		16.0							90	
37		15.75							270	
38		15.75							90	
39		15.5							270	
40		15.5							90	

# BSU GEOPHYSICS VSP OBSERVER'S LOG

Coordinate System Origin at Borehole  
 Casing Elevation: 656 m above G.L.  
 Azimuth x-axis: 5057  
 Azimuth y-axis: NORTH  
 Well Coord: X = 10003.48 Y = 9993.83 Z = 850.16  
 Channel Configuration: Borehole Phone V=Channel 1 R=Channel 2 T=Channel 3  
 Reference Phone V=Channel 4 R=Channel 5 T=Channel 6  
 Ref. Polarization: V 0 R 0 T 270  
 Offset: 0 m  
 Azimuth Elev. .02 m below G.L.  
 X = 0 m  
 Y = -1.35 m  
 Vert. 0  
90  
90

Date: 22 April 99 Location: C3 well UGSP  
 High-Cut 1600 Low-Cut 4 Sample Int. .0002 Number Samples 2500

Shot		Borehole Phone			Source			Source Polarization		
Rec.	File	Depth	Elev.	Offset	Azimuth	Elev.	X	Y	Azimuth	Vertical
<u>41</u>		<u>15.25</u>					<u>0</u>	<u>-1.65</u>	<u>270</u>	<u>90</u>
<u>42</u>		<u>15.25</u>							<u>90</u>	
<u>43</u>		<u>15.0</u>							<u>270</u>	
<u>44</u>		<u>15.0</u>							<u>90</u>	
<u>45</u>		<u>14.75</u>							<u>270</u>	
<u>46</u>		<u>14.75</u>							<u>90</u>	
<u>47</u>		<u>14.5</u>							<u>270</u>	
<u>48</u>		<u>14.5</u>							<u>90</u>	
<u>49</u>		<u>14.25</u>							<u>270</u>	
<u>50</u>		<u>14.25</u>							<u>90</u>	<u>90</u>

# BSU GEOPHYSICS VSP OBSERVER'S LOG

Coordinate System Origin at Borehole  
 Casing Elevation: 656 m above G.L.  
 Azimuth x-axis: 5057  
 Azimuth y-axis: NORTH  
 Well Coord: X = 10003.48 Y = 9993.83 Z = 850.16  
 Channel  
 Configuration: Borehole Phone  
 V=Channel 1 V=Channel 4  
 R=Channel 2 R=Channel 5  
 T=Channel 3 T=Channel 6  
 Ref. Polarization: Az 0 Vert. 0  
 V 0 R 0 T 270

Date: 22 April 99 Location: C3 well URSIP  
 High-Cut 1600 Low-Cut 4 Sample Int. 0.002 Number Samples 2500

Shot		Borehole Phone			Source			Source Polarization		
Rec.	File	Depth	Elev.	Offset	Offset	Azimuth	Elev.	X	Y	Vertical
51		14.0						0	-65	90
52		14.0								
53		13.75								
54		13.75								
55		13.5								
56		13.5								
57		13.25								
58		13.25								
59		13.0								
60		13.0								



# BSU GEOPHYSICS VSP OBSERVER'S LOG

Coordinate System Origin at Borehole  
 Casing Elevation: -6.56 m above G.L.  
 Azimuth x-axis: 5057  
 Azimuth y-axis: NORTH  
 Well Coord: X = 10003.48 Y = 9993.83 Z = 850.16  
 Channel Borehole Phone  
 Configuration: V=Channel 1 Reference Phone V=Channel 4 Az 0 Vert. 0  
 R=Channel 2 R=Channel 5 R 0 90  
 T=Channel 3 T=Channel 6 T 270 90

Date: 22 April 99 Location: C3 well QRS  
 High-Cut 1600 Low-Cut 4 Sample Int. .0002 Number Samples 2500

Shot		Borehole Phone			Source			Source Polarization		
Rec.	File	Depth	Elev.	Offset	Azimuth	Elev.	X	Y	Azimuth	Vertical
<u>61</u>		<u>12.75</u>					<u>0</u>	<u>-65</u>	<u>270</u>	<u>90</u>
<u>62</u>		<u>12.75</u>							<u>90</u>	
<u>63</u>		<u>12.5</u>							<u>270</u>	
<u>64</u>		<u>12.5</u>							<u>90</u>	
<u>65</u>		<u>12.25</u>							<u>270</u>	
<u>66</u>		<u>12.25</u>							<u>90</u>	
<u>67</u>		<u>12.0</u>							<u>270</u>	
<u>68</u>		<u>12.0</u>							<u>90</u>	
<u>69</u>		<u>11.75</u>							<u>270</u>	
<u>70</u>		<u>11.75</u>							<u>90</u>	

11.02



Coordinate System Origin at Borehole  
Casing Elevation: 1656 m above G.L.  
Azimuth x-axis: 5057  
Azimuth y-axis: NORTH  
Well Coord: X = 10003.48 Y = 9993.83 Z = 850.16  
Channel Borehole Phone  
Configuration: V = Channel 1  
R = Channel 2  
T = Channel 3  
Reference Phone  
V = Channel 4  
R = Channel 5  
T = Channel 6  
Reference Phone:  
Azimuth             
Elev. -02 m below G.L.  
X = 0 m  
Y = -1.35 m  
Ref. Polarization: V 0 R 0 T 270  
Verit. 0  
90  
90

Date: 22 Apr 99 Location: C3 Well URSR  
 High-Cut 1600 Low-Cut 4 Sample Int. .0002 Number Samples 2500

Shot		Borehole Phone			Source					Source Polarization		
Rec.	File	Depth	Elev.	Offset	Azimuth	Elev.	X	Y	Azimuth	Vertical		
71		11.5					0	- .65	270	90		
72		11.5							90			
73		11.25							270			
74		11.25							90			
75		11.0							270			
76		11.0							90			
77		10.75							270			
78		10.75							90			
79		10.5							270			
80		10.5							90	NV		

# BSU GEOPHYSICS VSP OBSERVER'S LOG

Coordinate System Origin at Borehole  
 Casing Elevation: 656 m above G.L.  
 Azimuth x-axis: 5057  
 Azimuth y-axis: NORTH  
 Well Coord: X = 10003.48 Y = 9993.83 Z = 850.16  
 Channel  
 Configuration: Borehole Phone  
 V=Channel 1 Reference Phone  
 R=Channel 2 V=Channel 4  
 T=Channel 3 R=Channel 5  
 T=Channel 6  
 Ref. Polarization: Az 0 Vert. 0  
 V 0  
 R 0  
 T 270

Date: 22 April 99 Location: C3 well OBS  
 High-Cut 1600 Low-Cut 4 Sample Int. .0002 Number Samples 2500

Shot		Borehole Phone			Source			Source Polarization		
Rec.	File	Depth	Elev.	Offset	Azimuth	Elev.	X	Y	Azimuth	Vertical
81		10.75					0	-65	270	90
82		10.25							90	
83		10.0							270	
84		10.0							90	
85		9.75							270	
86		9.75							90	
87		9.5							270	
88		9.5							90	
89		9.25							270	
90		9.25							90	

# BSU GEOPHYSICS VSP OBSERVER'S LOG

Coordinate System Origin at Borehole  
 Casing Elevation: 656 m above G.L.  
 Azimuth x-axis: 5057  
 Azimuth y-axis: NORTH  
 Well Coord: X= 10003.48 Y= 9993.83 Z= 850.16  
 Channel Configuration: V=Channel 1 R=Channel 2 T=Channel 3  
 Reference Phone V=Channel 4 R=Channel 5 T=Channel 6  
 Ref. Polarization: V 0 R 0 T 270  
 Offset: 0 m  
 Azimuth Elev. 02 m below G.L.  
 X= 0 m  
 Y= -1.35 m  
 Vert. 0  
90  
90

Date: 22 April 99 Location: C3 Well URS  
 High-Cut 1000 Low-Cut 4 Sample Int. 0002 Number Samples 2500

Shot		Borehole Phone			Source				Source Polarization			
Rec.	File	Depth	Elev.	Offset	Azimuth	Elev.	X	Y	Azimuth	Vertical		
91		9.0					0	-0.65	270	90		
92		9.0							90			
93		8.75							270			
94		8.75							90			
95		8.5							270			
96		8.5							90			
97		8.25							270			
98		8.25							90			
99		8.0							270			
100		8.0							90			

# BSU GEOPHYSICS VSP OBSERVER'S LOG

Coordinate System Origin at Borehole  
 Casing Elevation: .656 m above G.L.  
 Azimuth x-axis: 5087  
 Azimuth y-axis: NORTH  
 Well Coord: X = 10003.48 Y = 9993.83 Z = 850.16  
 Channel Configuration: V=Channel 1 R=Channel 2 T=Channel 3  
 Borehole Phone Reference Phone  
 V=Channel 4 R=Channel 5 T=Channel 6  
 Ref. Polarization: V 0 R 0 T 270  
 Az 0 Vert. 0

Date: 22 April 99 Location: C3 Well UGISP  
 High-Cut 1600 Low-Cut 4 Sample Int. .0002 Number Samples 2500

Shot		Borehole Phone			Source			Source Polarization		
Rec.	File	Depth	Elev.	Offset	Azimuth	Elev.	X	Y	Azimuth	Vertical
101		7.75					0	- .65	270	90
102		7.75							90	
103		7.5							270	
104		7.5							90	
105		7.25							270	
106		7.25							90	
107		7.0							270	
108		7.0							90	
109		6.75							270	
110		6.75							90	

# BSU GEOPHYSICS VSP OBSERVER'S LOG

Coordinate System Origin at Borehole  
 Casing Elevation: 656 m above G.L.  
 Azimuth x-axis: 5087  
 Azimuth y-axis: NORTH  
 Well Coord: X = 10003.48 Y = 9993.83 Z = 850.16  
 Channel Configuration: V=Channel 1 R=Channel 2 T=Channel 3  
 Reference Phone: V=Channel 4 R=Channel 5 T=Channel 6  
 Ref. Polarization: Az 0 V 0 R 0 T 270  
 Offset: 0 m  
 Azimuth: 102 m below G.L.  
 Elev: 0 m  
 X = -1.35 m  
 Y = -1.35 m  
 Verit. 0  
90  
90

Date: 22 Apr: 199 Location: C3 Well URSIP  
 High-Cut 1600 Low-Cut 4 Sample Int. 0.002 Number Samples 2500

Shot		Borehole Phone			Source			Source Polarization		
Rec.	File	Depth	Elev.	Offset	Azimuth	Elev.	X	Y	Azimuth	Vertical
111		6.5					0	-0.65	270	90
112		6.5							90	
113		6.25							270	
114		6.25							90	
115		6.0							270	
116		6.0							90	
117		5.75							270	
118		5.75							90	
119		5.5							270	
120		5.5							90	

11:33

# BSU GEOPHYSICS VSP OBSERVER'S LOG

Coordinate System Origin at Borehole  
 Casing Elevation: .656 m above G.L.  
 Azimuth x-axis: 5087  
 Azimuth y-axis: NORTH  
 Well Coord: X = 10003.48 Y = 9993.83 Z = 850.16  
 Channel Configuration: V=Channel 1 R=Channel 2 T=Channel 3  
 Reference Phone: V=Channel 4 R=Channel 5 T=Channel 6  
 Ref. Polarization: V 0 R 0 T 270  
 Offset: 0 m  
 Azimuth .02 m below G.L.  
 Elev. .02 m  
 X = 0 m  
 Y = -1.35 m  
 Verit. 0  
90  
90

Date: 22 April 99 Location: C3 Well OBSP  
 High-Cut 1000 Low-Cut 4 Sample Int. .0002 Number Samples 2500

Shot		Borehole Phone		Source				Source Polarization			
Rec.	File	Depth	Elev.	Offset	Azimuth	Elev.	X	Y	Azimuth	Vertical	
121		5.25					0	-.65	270	90	
122		5.25							90		
123		5.0							270		
124		5.0							90		
125		4.75							270		
126		4.75							90		
127		4.5							270		
128		4.5							90		
129		4.25							270		
130		4.25					0	0	90	0	

# BSU GEOPHYSICS VSP OBSERVER'S LOG

Coordinate System Origin at Borehole  
 Casing Elevation: 656 m above G.L.  
 Azimuth x-axis: 5087  
 Azimuth y-axis: North  
 Well Coord: X = 10003.48 Y = 9993.83 Z = 850.16  
 Channel Configuration: V=Channel 1 R=Channel 2 T=Channel 3  
 Reference Phone V=Channel 4 R=Channel 5 T=Channel 6  
 Ref. Polarization: V 0 R 0 T 270  
 Offset: 0 m  
 Azimuth -02 m below G.L.  
 Elev. -1.35 m  
 X = 0 m  
 Y = -1.35 m  
 Vert. 0  
90  
90

Date: 22 April 99 Location: C3 Well URSIP  
 High-Cut 1600 Low-Cut 4 Sample Int. 0002 Number Samples 2500

Shot		Borehole Phone			Source			Source Polarization		
Rec.	File	Depth	Elev.	Offset	Azimuth	Elev.	X	Y	Azimuth	Vertical
131		4.0					0	-0.65	270	90
132		4.0							90	
133		3.75							270	
134		3.75							90	
135		3.5							270	
136		3.5							90	
137		3.25							270	
138		3.25							90	
139		3.0							270	
140		3.0					N	✓	90	✓



# BSU GEOPHYSICS VSP OBSERVER'S LOG

Coordinate System Origin at Borehole  
 Casing Elevation: 1656 m above G.L.  
 Azimuth x-axis: 5057  
 Azimuth y-axis: NORTH  
 Well Coord: X = 10003.48 Y = 9993.83 Z = 850.16  
 Channel  
 Configuration: Borehole Phone  
 V=Channel 1  
 R=Channel 2  
 T=Channel 3  
 Reference Phone  
 V=Channel 4  
 R=Channel 5  
 T=Channel 6  
 Ref. Polarization: Az 0  
 V 0  
 R 90  
 T 90  
 Offset: 0 m  
 Azimuth 0  
 Elev. -0.02 m below G.L.  
 X = 0 m  
 Y = -1.35 m

Date: 22 April 99 Location: C3 Well OBS  
 High-Cut 1000 Low-Cut 4 Sample Int. 0.002 Number Samples 2500

Shot		Borehole Phone			Source			Source Polarization		
Rec.	File	Depth	Elev.	Offset	Azimuth	Elev.	X	Y	Azimuth	Vertical
141		2.75					0	-0.65	270	90
142		2.75							90	
143		2.5							270	
144		2.5							90	
145		2.25							270	
146		2.25							90	
147		2.0							270	
148		2.0							90	
149		1.75							270	
150		1.75							90	

11:58



Project: URISP CB VSP Check List

Date: 22 April

Odometer Start: 18071 Finish: 18090  
Time Out: 8:40 Time In: 13:06

Item	Out	In	Comment
BHG-2 Borehole Geophone	✓	✓	
BHGC-1 Control Box (Blue)	✓	✓	
Cable: Spool to BHGC-1	✓	✓	
Cable: BHGC-1 to Bison	✓	✓	
Ban/Alligator Power Cables BHGC-1	✓	✓	Need repair
OYO 3-c Reference Phone (Blue)	✓	✓	
Dummy tool	✓	✓	Ring missing!
Snatch Block and Come-a-long	✓	✓	
Bison Seismograph	✓	✓	
90° Hammer Source + Sand Bags			
Vertical Hammer Source + Sand Bags			
135° Hammer Source	✓	✓	
Tripod and Tripod Head	✓	✓	
WD-40 and Black Tape	✓	✓	
Observer's Sheets/Note Book	✓	✓	
Rope	✓	✓	
Claw Hammer and Large Nails	✓	✓	
Tape measure (50m)	✓	✓	
Gloves	✓	✓	
Compass and Maps	✓	✓	
24Volt Clamp Battery	✓	✓	
Gas Card & Keys	✓	✓	
Water Table Logging Probe	✓	✓	

Yellow & Red Tool Boxes ✓