

ORIGINAL

VSP Preliminary Data Sheet

Repeat Previous
Set up

Try For
0.53m South
Source

Ref 1.20m South

Date: 15 April 1999

Type of Phones OYO 14H2

1. Well Name X5, URISP || High Water || (0.723m Higher than 13606.98)

2. Location of Well

X= 9963.10 Y= 10023.25 Z= 849.93

Casing Elevation: +849.93 \pm Datum

3. Depth to top of water table (measured from CE)

5.04 feet

= 1.536 meters

4. Casing Elevation, distance above ground level= 0.766 m

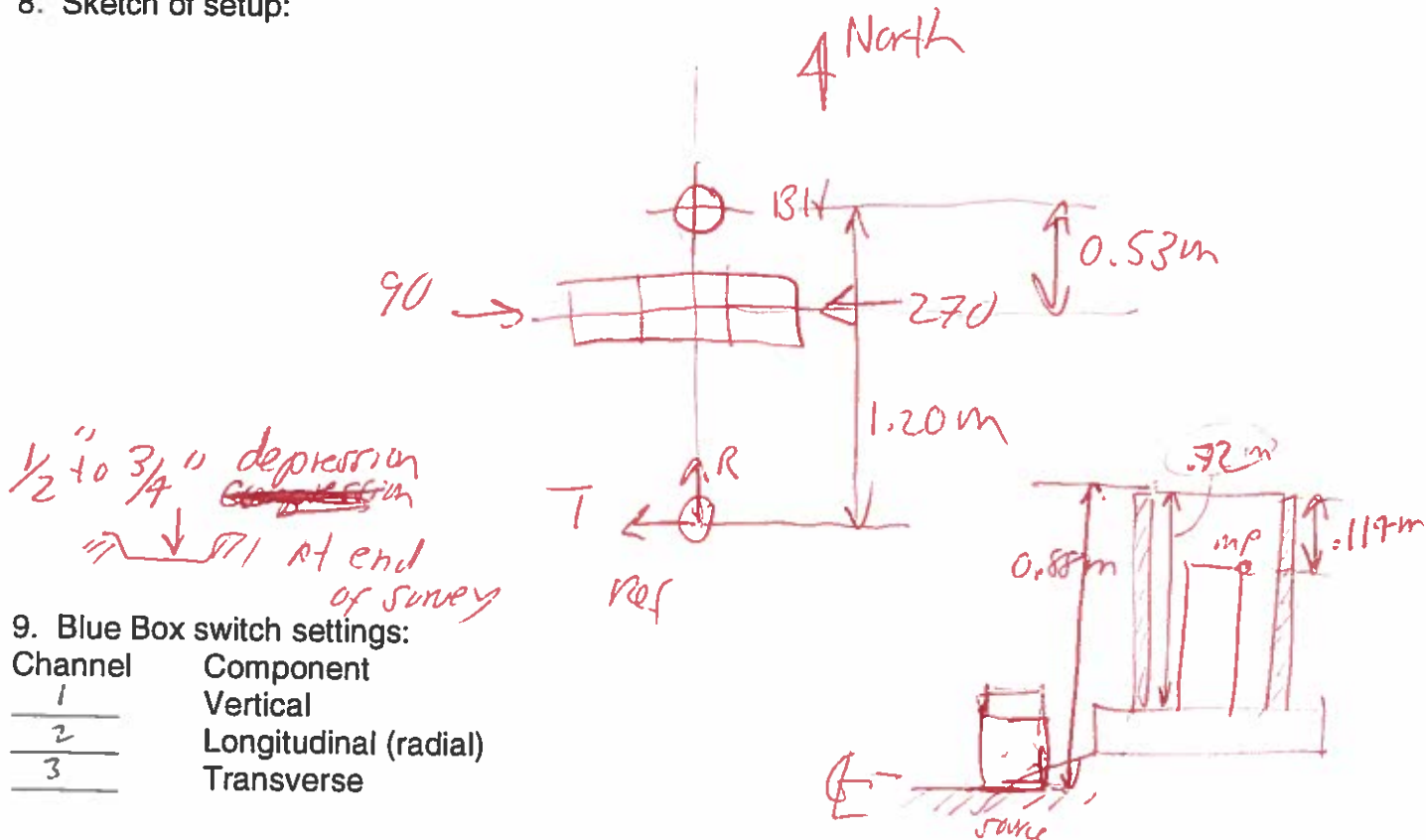
elev H₂O = 848.339

5. Reference phone offset from borehole= 1.20m

6. Reference phone depth below ground level= 0.20 m

7. Source Offset from borehole= 0.53m

8. Sketch of setup:



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: 766 m above G.L.

Azimuth x-axis: EAST

Azimuth y-axis: NORT

Well Coord: X = 9963.10

Channel Borehole Phone

Configuration:

V=Channel 1

R=Channel 2

T=Channel 3

Y = 10023.25

Reference Phone

V=Channel 4

R=Channel 5

T=Channel 6

Z = 849.93

Ref. Polarization:

V 0

R 0

T 270

Vert.

0

90

90

Date: 15 Apr. 199

Location: XS WSP High water

Number Samples 2500

Sample Int. .0002

Low-Cut 4

Shot		Borehole Phone			Source			Source Polarization		
Rec.	File	Depth	Elev.	Offset	Azimuth	Elev.	X	Y (m)	Azimuth	Vertical
1	<u>WLS0001</u>	<u>23.25</u>					<u>0</u>	<u>-0.53</u>	<u>270°</u>	<u>90</u>
2		<u>23.25</u>							<u>90°</u>	<u>90</u>
3		<u>23.0</u>							<u>270°</u>	
4		<u>23.0</u>							<u>90</u>	
5		<u>22.75</u>							<u>270°</u>	
6		<u>22.75</u>							<u>90°</u>	
7		<u>22.50</u>							<u>270°</u>	
8		<u>22.50</u>							<u>90°</u>	
9		<u>22.25</u>							<u>270°</u>	
10	<u>WLS0010</u>	<u>22.25</u>							<u>90°</u>	<u>90</u>

+848.394m elev

0 0 dB
L 20
M 90
H 60
1.2m
0.53m
3H
V - 4.2

BSU GEOPHYSICS VSP OBSERVER'S LOG

Coordinate System Origin at Borehole
 Casing Elevation: 266 m above G.L.
 Azimuth x-axis: E457
 Azimuth y-axis: N0274
 Well Coord: X = 9963.10 Y = 10023.25 Z = 899.93
 Channel Configuration: Borehole Phone V=Channel 1 Reference Phone V=Channel 4
 R=Channel 2 R=Channel 5
 T=Channel 3 T=Channel 6
 Date: 15 Apr 1999 Location: XS WESF [High water]
 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 (m)	Azimuth	Vertical
11	WLX50011	22.0					0	-0.53	270°	90°
12		22.0							90°	
13		21.75							270°	
14		21.75							90°	
15		21.50							270°	
16		21.50							90°	
17		21.25							270°	
18		21.25							90°	
19		21.0							270°	
20	WLX50020	21.0					N		90°	V

BSU GEOPHYSICS VSP OBSERVER'S LOG

Coordinate System Origin at Borehole
 Casing Elevation: 1766 m above G.L.
 Azimuth x-axis: E457
 Azimuth y-axis: N0274
 Well Coord: X = 9963.10 Y = 10023.25 Z = 849.93
 Channel Configuration: Borehole Phone V=Channel 1 Reference Phone V=Channel 4
 R=Channel 2 R=Channel 5
 T=Channel 3 T=Channel 6
 Date: 15 Apr. 199 Location: XS WSPF [High water]
 High-Cut 1000 Low-Cut 4 Sample Int. 1.0002 Number Samples 2500

Shot		Borehole Phone			Source			Source Polarization		
Rec.	File	Depth	Elev.	Offset	Azimuth	Elev.	X	Y	Azimuth	Vertical
<u>21</u>	<u>WLX50021</u>	<u>20.75</u>					<u>9</u>	<u>-53</u>	<u>270</u>	<u>90</u>
<u>22</u>		<u>20.75</u>							<u>90</u>	
<u>23</u>		<u>20.5</u>							<u>270</u>	
<u>24</u>		<u>20.5</u>							<u>90</u>	
<u>25</u>		<u>20.25</u>							<u>270</u>	
<u>26</u>		<u>20.25</u>							<u>90</u>	
<u>27</u>		<u>20.0</u>							<u>270</u>	
<u>28</u>		<u>20.0</u>							<u>90</u>	
<u>29</u>		<u>19.75</u>							<u>270</u>	
<u>30</u>	<u>WLX50030</u>	<u>19.75</u>							<u>90</u>	

BSU GEOPHYSICS VSP OBSERVER'S LOG

Coordinate System Origin at Borehole
 Casing Elevation: 766 m above G.L.
 Azimuth x-axis: E457
 Azimuth y-axis: N274
 Well Coord: X = 9963.10 Y = 10023.25 Z = 849.93
 Channel Configuration: Borehole Phone Reference Phone
 V=Channel 1 V=Channel 4
 R=Channel 2 R=Channel 5
 T=Channel 3 T=Channel 6
 Date: 15 Apr. 199 Location: XS WSPF [High water]
 High-Cut 1000 Low-Cut 4 Sample Int. 1.0002 Number Samples 2500

Shot		Borehole Phone			Source			Source Polarization		
Rec.	File	Depth	Elev.	Offset	Azimuth	Elev.	X	Y	Azimuth	Vertical
31	WLX50081	19.5					0	-1.53	270	90
32		19.5							90	
33		19.25							270	
34		19.25							90	
35		19.0							270	
36		19.0							90	
37		18.75							270	
38		18.75							90	
39		18.5							270	
40	WLX50090	18.5						N	90	

BSU GEOPHYSICS VSP OBSERVER'S LOG

Coordinate System Origin at Borehole
 Casing Elevation: 1766 m above G.L.
 Azimuth x-axis: E457
 Azimuth y-axis: N0274
 Well Coord: X= 9963.10 Y= 10023.25 Z= 849.93
 Channel Configuration: Borehole Phone Reference Phone
 V=Channel 1 V=Channel 4
 R=Channel 2 R=Channel 5
 T=Channel 3 T=Channel 6
 Date: 15 Apr. 199 Location: XS WSPF [High water]
 High-Cut 1000 Low-Cut 4 Sample Int. .0002 Number Samples 2500

Shot		Borehole Phone			Source			Source Polarization		
Rec.	File	Depth	Elev.	Offset	Offset	Azimuth	Elev.	X	Y	Vertical
<u>41</u>		<u>18.25</u>						<u>0</u>	<u>-53</u>	<u>270</u>
<u>42</u>		<u>18.25</u>								<u>90</u>
<u>43</u>		<u>18.0</u>								<u>270</u>
<u>44</u>		<u>18.0</u>								<u>90</u>
<u>45</u>		<u>17.75</u>								<u>270</u>
<u>46</u>		<u>17.75</u>								<u>90</u>
<u>47</u>		<u>17.5</u>								<u>270</u>
<u>48</u>		<u>17.5</u>								<u>90</u>
<u>49</u>		<u>17.25</u>								<u>270</u>
<u>50</u>	<u>WLX50080</u>	<u>17.25</u>								<u>90</u>

BSU GEOPHYSICS VSP OBSERVER'S LOG

Coordinate System Origin at Borehole
 Casing Elevation: 1766 m above G.L.
 Azimuth x-axis: E457
 Azimuth y-axis: N074
 Well Coord: X= 9963.16 Y= 10023.25 Z= 849.93
 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
 V 0
 R 90
 T 90
 Date: 15 Apr 199 Location: XS WSPF [High water]
 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.	Vertical
<u>51</u>		<u>17.0</u>					
<u>52</u>		<u>17.0</u>					
<u>53</u>		<u>16.75</u>					
<u>54</u>		<u>16.75</u>					
<u>55</u>		<u>16.5</u>					
<u>56</u>		<u>16.5</u>					
<u>57</u>		<u>16.25</u>					
<u>58</u>		<u>16.25</u>					
<u>59</u>		<u>16.0</u>					
<u>60</u>	<u>WLX50060</u>	<u>16.0</u>					

serigraph
west
off!

11:04

BSU GEOPHYSICS VSP OBSERVER'S LOG

Coordinate System Origin at Borehole
 Casing Elevation: 0.766 m above G.L.
 Azimuth x-axis: EAST
 Azimuth y-axis: NORTHERN
 Well Coord: X = 9963.10 Y = 10023.25 Z = 849.93
 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
 V 0
 R 90
 T 90
 Date: 15 Apr. 1999 Location: XS CRISP [High water]
 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>61</u>		<u>15.75</u>					<u>0</u>	<u>-.53</u>	<u>270</u>	<u>90</u>
<u>62</u>		<u>15.75</u>					<u>1</u>	<u>1</u>	<u>90</u>	<u>1</u>
<u>63</u>		<u>15.5</u>					<u>1</u>	<u>1</u>	<u>270</u>	<u>1</u>
<u>64</u>		<u>15.5</u>					<u>1</u>	<u>1</u>	<u>90</u>	<u>1</u>
<u>65</u>		<u>15.25</u>					<u>1</u>	<u>1</u>	<u>270</u>	<u>1</u>
<u>66</u>		<u>15.25</u>					<u>1</u>	<u>1</u>	<u>90</u>	<u>1</u>
<u>67</u>		<u>15.0</u>					<u>1</u>	<u>1</u>	<u>270</u>	<u>1</u>
<u>68</u>		<u>15.0</u>					<u>1</u>	<u>1</u>	<u>90</u>	<u>1</u>
<u>69</u>		<u>14.75</u>					<u>1</u>	<u>1</u>	<u>270</u>	<u>1</u>
<u>70</u>	<u>CULXSG070</u>	<u>14.75</u>					<u>1</u>	<u>1</u>	<u>90</u>	<u>1</u>

(1-1)

BSU GEOPHYSICS VSP OBSERVER'S LOG

Coordinate System Origin at Borehole
 Casing Elevation: 766 m above G.L.
 Azimuth x-axis: EAST
 Azimuth y-axis: NORTHERLY
 Well Coord: X = 9963.10 Y = 10023.25 Z = 849.93
 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
 V 0 R 0 T 270
 X = 0 m Y = -1.20 m
 Elev. 120 m below G.L.
 Offset: _____ m
 Azimuth _____ m
 Date: 15 Apr. 1999 Location: XS WEST [High water]
 High-Cut 1000 Low-Cut 4 Sample Int. .0002 Number Samples 2500

Shot		Borehole Phone			Source			Source Polarization		
Rec.	File	Depth	Elev.	Offset	Offset	Azimuth	Elev.	X	Y	Vertical
<u>71</u>		<u>14.5</u>						<u>0</u>	<u>+0.53</u>	<u>270</u>
<u>72</u>		<u>14.5</u>								<u>90</u>
<u>73</u>		<u>14.25</u>								<u>270</u>
<u>74</u>		<u>14.25</u>								<u>90</u>
<u>75</u>		<u>14.0</u>								<u>270</u>
<u>76</u>		<u>14.0</u>								<u>90</u>
<u>77</u>		<u>13.75</u>								<u>270</u>
<u>78</u>		<u>13.75</u>								<u>90</u>
<u>79</u>		<u>13.5</u>								<u>270</u>
<u>80</u>		<u>13.5</u>								<u>90</u>

11-21

BSU GEOPHYSICS VSP OBSERVER'S LOG

Coordinate System Origin at Borehole
 Casing Elevation: 766 m above G.L.
 Azimuth x-axis: EAST
 Azimuth y-axis: NORTHERLY
 Well Coord: X = 9963.10 Y = 10023.25 Z = 849.93
 Channel Configuration: Borehole Phone Reference Phone
 V=Channel 1 V=Channel 4
 R=Channel 2 R=Channel 5
 T=Channel 3 T=Channel 6
 Date: 15 Apr. 1999 Location: XS WEST [High water]
 High-Cut 1000 Low-Cut 4 Sample Int. .0002 Number Samples 2500

Reference Phone: Offset: _____ m
 Azimuth _____
 Elev. 120 m below G.L.
 X = 0 m
 Y = -1.20 m
 Ref. Polarization: Az _____
 V 0
 R 90
 T 90

Shot		Borehole Phone			Source			Source Polarization		
Rec.	File	Depth	Elev.	Offset	Azimuth	Elev.	X	Y	Azimuth	Vertical
<u>81</u>		<u>13.25</u>					<u>0</u>	<u>-.53</u>	<u>270</u>	<u>90</u>
<u>82</u>		<u>13.25</u>							<u>90</u>	
<u>83</u>		<u>13.0</u>							<u>270</u>	
<u>84</u>		<u>13.0</u>							<u>90</u>	
<u>85</u>		<u>12.75</u>							<u>270</u>	
<u>86</u>		<u>12.75</u>							<u>90</u>	
<u>87</u>		<u>12.5</u>							<u>270</u>	
<u>88</u>		<u>12.5</u>							<u>90</u>	
<u>89</u>		<u>12.25</u>							<u>270</u>	
<u>90</u>	<u>WLX50090</u>	<u>12.25</u>					<u>N</u>		<u>90</u>	<u>V</u>

BSU GEOPHYSICS VSP OBSERVER'S LOG

Coordinate System Origin at Borehole
 Casing Elevation: 766 m above G.L.
 Azimuth x-axis: EAST
 Azimuth y-axis: NORTHERN
 Well Coord: X = 9963.10 Y = 10023.25 Z = 849.93
 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 0 T 270
 Offset: 0 m
 Azimuth 0 m below G.L.
 Elev. 0 m
 X = 0 m
 Y = -1.2 m
 Date: 15 Apr. 1999 Location: XS WEST [High water]
 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		12.0					0	-1.53	270	90
92		12.0							90	
93		11.75							270	
94		11.75							90	
95		11.5							270	
96		11.5							90	
97		11.25							270	
98		11.25							90	
99		11.0							270	
100	60X50100	11.0							90	

BSU GEOPHYSICS VSP OBSERVER'S LOG

Coordinate System Origin at Borehole
 Casing Elevation: 766 m above G.L.
 Azimuth x-axis: EAS7
 Azimuth y-axis: Nor74
 Well Coord: X = 9963.10 Y = 10023.25 Z = 849.93
 Channel Borehole Phone Reference Phone
 Configuration: V=Channel 1 V=Channel 4
 R=Channel 2 R=Channel 5
 T=Channel 3 T=Channel 6
 Date: 15 Apr. 1999 Location: XS WESP [High water]
 High-Cut 1000 Low-Cut 4 Sample Int. 0.002 Number Samples 2500

Offset: _____ m
 Azimuth _____
 Elev. 20 m below G.L.
 X = 0 m
 Y = -1.20 m
 Ref. Polarization: Az 0
 V 0
 R 90
 T 90

Shot		Borehole Phone			Source			Source Polarization		
Rec.	File	Depth	Elev.	Offset	Azimuth	Elev.	X	Y	Azimuth	Vertical
<u>101</u>		<u>10.75</u>					<u>0</u>	<u>-53</u>	<u>270</u>	<u>90</u>
<u>102</u>		<u>10.75</u>							<u>90</u>	
<u>103</u>		<u>10.5</u>							<u>270</u>	
<u>104</u>		<u>10.5</u>							<u>90</u>	
<u>105</u>		<u>10.25</u>							<u>270</u>	
<u>106</u>		<u>10.25</u>							<u>90</u>	
<u>107</u>		<u>10.0</u>							<u>270</u>	
<u>108</u>		<u>10.0</u>							<u>90</u>	
<u>109</u>		<u>9.75</u>							<u>270</u>	
<u>110</u>	<u>WXSalle</u>	<u>9.75</u>					<u>2</u>	<u>0</u>	<u>90</u>	<u>✓</u>

BSU GEOPHYSICS VSP OBSERVER'S LOG

Coordinate System Origin at Borehole
 Casing Elevation: 0.766 m above G.L.
 Azimuth x-axis: East
 Azimuth y-axis: North
 Well Coord: X = 9963.10 Y = 10023.25 Z = 849.93
 Channel Configuration: Borehole Phone Reference Phone
 V=Channel 1 V=Channel 4
 R=Channel 2 R=Channel 5
 T=Channel 3 T=Channel 6
 Date: 15 Apr. 199 Location: XS West [High water]
 High-Cut 1000 Low-Cut 4 Sample Int. 0.002 Number Samples 2500

Reference Phone: Offset: _____ m
 Azimuth _____
 Elev. 1.20 m below G.L.
 X = 0 m
 Y = -1.20 m
 Ref. Polarization: Az
 V 0
 R 0
 T 270
 Vert.
0
90
90

Shot		Borehole Phone			Source			Source Polarization		
Rec.	File	Depth	Elev.	Offset	Azimuth	Elev.	X	Y	Azimuth	Vertical
<u>111</u>		<u>9.50</u>					<u>0</u>	<u>-53</u>	<u>270</u>	<u>90</u>
<u>112</u>		<u>9.50</u>							<u>90</u>	
<u>113</u>		<u>9.25</u>							<u>270</u>	
<u>114</u>		<u>9.25</u>							<u>90</u>	
<u>115</u>		<u>9.0</u>							<u>270</u>	
<u>116</u>		<u>9.0</u>							<u>90</u>	
<u>117</u>		<u>8.75</u>							<u>270</u>	
<u>118</u>		<u>8.75</u>							<u>90</u>	
<u>119</u>		<u>8.5</u>							<u>270</u>	
<u>120</u>	<u>WXS0120</u>	<u>8.5</u>							<u>90</u>	

BSU GEOPHYSICS VSP OBSERVER'S LOG

Coordinate System Origin at Borehole
 Casing Elevation: 766 m above G.L.
 Azimuth x-axis: Eas7
 Azimuth y-axis: Nor74
 Well Coord: X = 9963.10 Y = 10023.25 Z = 849.93
 Channel Borehole Phone Reference Phone
 Configuration: V=Channel 1 V=Channel 4
 R=Channel 2 R=Channel 5
 T=Channel 3 T=Channel 6
 Date: 15 Apr. 199 Location: X5 CRSP [High water]
 High-Cut 1000 Low-Cut 4 Sample Int. .0002 Number Samples 2500

Shot		Borehole Phone			Source			Source Polarization		
Rec.	File	Depth	Elev.	Offset	Offset	Azimuth	Elev.	X	Y	Vertical
121		8.25						0	-1.53	270
122		8.25								90
123		8.0								270
124		8.0								90
125		7.75								270
126		7.75								90
127		7.5								270
128		7.5								90
129		7.25								270
130	012X50130	7.25								90

BSU GEOPHYSICS VSP OBSERVER'S LOG

Coordinate System Origin at Borehole
 Casing Elevation: 766 m above G.L.
 Azimuth x-axis: E457
 Azimuth y-axis: N0274
 Well Coord: X = 9963.10 Y = 10023.25 Z = 849.93
 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
 V 0
 R 90
 T 90
 Date: 15 Apr. 1999 Location: XS WESP [High water]
 High-Cut 1000 Low-Cut 4 Sample Int. .0002 Number Samples 2500

Shot		Borehole Phone			Source			Source Polarization		
Rec.	File	Depth	Elev.	Offset	Offset	Azimuth	Elev.	X	Y	Vertical
131		7.0						0	-1.53	90
132		7.0								
133		6.75								
134		6.75								
135		6.5								
136		6.5								
137		6.25								
138		6.25								
139		6.0								
140	02x0140	6.0								

BSU GEOPHYSICS VSP OBSERVER'S LOG

Coordinate System Origin at Borehole
 Casing Elevation: 766 m above G.L.
 Azimuth x-axis: E457
 Azimuth y-axis: N0714
 Well Coord: X= 9963.16 Y= 10023.25 Z= 899.93
 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
 V 0
 R 90
 T 90
 Date: 15 Apr 1999 Location: XS WESP [High water]
 High-Cut 1000 Low-Cut 4 Sample Int. .0002 Number Samples 2500

Shot		Borehole Phone			Source			Source Polarization		
Rec.	File	Depth	Elev.	Offset	Offset	Azimuth	Elev.	X	Y	Vertical
141		5.75						0	-53	90
142		5.75								
143		5.5								
144		5.5								
145		5.25								
146		5.25								
147		5.0								
148		5.0								
149		4.75								
150	WDX50150	4.75								

BSU GEOPHYSICS VSP OBSERVER'S LOG

Coordinate System Origin at Borehole
 Casing Elevation: 766 m above G.L.
 Azimuth x-axis: Eas7
 Azimuth y-axis: Nor74
 Well Coord: X= 9963.10 Y= 10023.25 Z= 849.93
 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
 V 0 R 0 T 270
 X= 0 m Y= -1.20 m
 Elev. -20 m below G.L.
 Offset: m
 Azimuth m
 Date: 15 Apr. 199 Location: X5 WESP [High water]
 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	
151		4.5					0	-53	270	90	
152		4.5							90		
153		4.25							270		
154		4.25							90		
155		4.0							270		
156		4.0							90		
157		3.75							270		
158		3.75							90		
159		3.5							270		
160	WLX50160	3.5							90		

BSU GEOPHYSICS VSP OBSERVER'S LOG

Coordinate System Origin at Borehole
 Casing Elevation: 766 m above G.L.
 Azimuth x-axis: EAST
 Azimuth y-axis: NORTHERLY
 Well Coord: X = 9963.10 Y = 10023.25 Z = 849.93
 Channel Borehole Phone Reference Phone
 Configuration: V=Channel 1 V=Channel 4
 R=Channel 2 R=Channel 5
 T=Channel 3 T=Channel 6
 Date: 15 Apr 199 Location: XS CRESF [High water]
 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
<u>161</u>		<u>3.25</u>					<u>0</u>	<u>-1.53</u>	<u>270</u>	<u>90</u>
<u>162</u>		<u>3.25</u>							<u>90</u>	
<u>163</u>		<u>3.0</u>							<u>270</u>	
<u>164</u>		<u>3.0</u>							<u>90</u>	
<u>165</u>		<u>2.75</u>							<u>270</u>	
<u>166</u>		<u>2.75</u>							<u>90</u>	
<u>167</u>		<u>2.5</u>							<u>270</u>	
<u>168</u>		<u>2.5</u>							<u>90</u>	
<u>169</u>		<u>2.25</u>							<u>270</u>	
<u>170</u>	<u>WLX50470</u>	<u>2.25</u>							<u>90</u>	

BSU GEOPHYSICS VSP OBSERVER'S LOG

Coordinate System Origin at Borehole
Casing Elevation: 1766 m above G.L.

Azimuth x-axis: EAST

Azimuth y-axis: NORTH

Well Coord: X= 9963.10 Y= 10023.25 Z= 849.93

Channel Borehole Phone

Configuration: V=Channel 1 Reference Phone

R=Channel 2 V=Channel 4

T=Channel 3 R=Channel 5

Location: XS CRSP [High water]

Date: 15 Apr. 199

High-Cut 1000 Low-Cut 4 Sample Int. 1000

Number Samples 2500

Reference Phone: Offset: _____ m

Azimuth _____

Elev. 170 m below G.L.

X= 0 m

Y= -120 m

Ref. Polarization: Az _____

V _____

R _____

T 270

Vert. _____

O _____

90 _____

90 _____

Shot		Borehole Phone			Source			Source Polarization		
Rec.	File	Depth	Elev.	Offset	Azimuth	Elev.	X	Y	Azimuth	Vertical
171		2.0					0	-1.53	270	90
172		2.0							90	
173		1.75							270	
174		1.75							90	
175		1.5							270	
176		1.5							90	
177		1.25							270	
178		1.25							90	
179		1.0							270	
180		1.0							90	

page 18 of 18



12.16

VSP Check List

Project: URISP

Date: 15 April 99

Odometer Start: 18050 Finish: 18069
Time Out: 8:30 Time In: 13:30

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	✓	✓	Fix Bonnard Plug
OYO 3-c Reference Phone (Blue)	✓	✓	
Dummy tool	✓	✓	
Snatch Block and Come-a-long	✓	✓	
Bison Seismograph	✓	✓	
90° Hammer Source + Sand Bags			
Vertical Hammer Source + Sand Bags			
135° Hammer Source	✓	✓	
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	—	—	borrow from Warren

TRIPOD Head 13/leg

Yellow Tool Box

Red Tool Box