

HORIZONTAL AND VERTICAL SURVEY NOTES.

GSI AREA TUSHEKPUK STATE/COUNTY ALASKA BOOK NO. 2 PAGE 437A OF
 LINE/LOOP NO. 659-W TYPE SURVEY CLIENT Husky Oil Co. DATE 31 DY 5 MO 78 YR
 SURVEYOR STONE INSTRUMENT DESC/SERIAL NO. CREW NO. 1182

LINE	△ K SS ○	STATION	VERTICAL						HORIZONTAL		REMARKS		
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION			RIGHT TURNED HORIZONTAL ANGLE	
									SLOPE	HORIZ			INST
1													
2	△	T9160	0		90 00 00	5.0	15.0	11.0				2	SP-1-659-W = 79160
3	△		-		270 00 00	-						3	PIPE SET AT 79160
4		T51	880	5450	90 26 05	4.0	-10.7		0.3			4	
5		T52	1760	4400	90 14 34	4.0	-11.8		0.4			5	
6		T53	2640	3520	90 10 03	4.0	-11.6		0.6			6	
7		T54	3520	2090	90 07 32	4.0	-11.5		0.5			7	
8		T5-5	4400	1160	90 05 43	4.0	-10.9		0.1			8	
9		T5-6	5280	880	90 05 00	4.0	-11.1		0.1			9	
10	K	SP-1		0	90 00 00	5.0	-5.0		6.0			10	
11		SP-2		880	89 59 14	6.0	-4.5		6.5			11	
12		SP-3		1760	89 55 20	6.0	-3.6		7.4			12	
13		SP-4		2640	89 56 37	6.0	-3.1		7.9			13	
14		SP-5		3520	89 57 10	6.0	-2.8		8.2			14	
15	○	SP-6		4400	89 57 20	6.0	-2.1		8.9			15	
16	○			-	270 02 47	6.0						16	
17												17	

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SYMBOLS △ = BACKSIGHT K = INSTRUMENT SET-UP SS = SIDESHOT ○ = FORESIGHT

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA TUSHEKPUK STATE/COUNTY ALASKA BOOK NO. 2 PAGE 438 OF
 LINE/LOOP NO. 659N TYPE SURVEY CLIENT Husky oil co. DATE 31 DY 3 MO 78 YR
 SURVEYOR STONE INSTRUMENT DESC/SERIAL NO. CREW NO. 1102

LINE	<input type="checkbox"/> Δ <input type="checkbox"/> SS <input type="checkbox"/> ⊙	STATION	VERTICAL						HORIZONTAL		REMARKS	
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RODG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION			RIGHT TURNED HORIZONTAL ANGLE
				SLOPE					HORIZ	INST		
1												1
2	Δ	SP-6	✓		90 17 35	6.0	+23.7	+23.7	32.7			2
3	Δ		3520		269 42 27	6.0		✓				3
4		SP-7	2640		90 12 03	15.0		-24.1		8.6		4
5		SP-8	1760		90 16 00	15.0		-23.1		9.6		5
6		SP-9	880		90 06 58	6.0		-7.8		24.9		6
7	Δ	SP-10	0		90 00 00	5.0		-5.0		27.7		7
8		SP-11	880		90 12 16	6.0		-9.1		23.6		8
9		SP-12	1760		96 15 34	6.0		-13.9		18.8		9
10		SP-13	2640		90 08 25	6.0		-12.3		20.4		10
11		SP-14	3520		90 07 44	6.0		-13.7		19.0		11
12	⊙	SP-15	4400		90 07 03	6.0		-14.6		18.1		12
13	⊙		✓		269 52 57	6.0		✓				13
14												14
15												15
16												16
17												17

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SYMBOLS Δ = BACKSIGHT ⊕ = INSTRUMENT SET-UP SS = SIDESHOT ⊙ = FORESIGHT

HORIZONTAL AND VERTICAL SURVEY NOTES

3

GSI AREA TUSHENPAK STATE/COUNTY ALASKA BOOK NO. 2 PAGE 439 OF
 LINE/LOOP NO. 659-W TYPE SURVEY CLIENT HUSKY oil DATE 31 DY 3 MO 79 YR
 SURVEYOR STONE INSTRUMENT DESC/SERIAL NO. CREW NO. 1182

LINE	<input type="checkbox"/> Δ <input type="checkbox"/> SS <input type="checkbox"/> ⊙	STATION	VERTICAL						HORIZONTAL		REMARKS	
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION			RIGHT TURNED HORIZONTAL ANGLE
				SLOPE					HORIZ	INST		
1											1	
2	A	SP-15	✓		89 59 10	6.0		15.2	23.3			2
3	A		2640		270 00 53	6.0		✓				3
4		SP-16	1760		89 58 20	6.0		-5.1		18.2		4
5		SP-17	880		89 56 00	6.0		-5.0		18.3		5
6	⊖	SP-18	0		90 00 00	5.0		-5.0		18.3		6
7		SP-19	880		89 54 16	6.0		-4.5		18.8		7
8	⊙	SP-20	1760		89 55 37	6.0		+6.6		29.9		8
9	⊙	SP	✓		270 24 38	6.0		✓				9
10												10
11	A	SP-20	✓		89 53 46	6.0		-2.6	27.4			11
12	A		4400		270 06 34	6.0		✓				12
13		SP-21	3520		89 47 08	6.0		-1.6		25.8		13
14		SP-22	2640		89 54 25	6.0		-1.6		25.8		14
15		SP-23	1760		89 45 25	6.0		+1.3		28.7		15
16		SP-24	880		89 47 35	6.0		-2.8		24.6		16
17	⊖	SP-25	0		90 00 00	5.0		-5.0		22.4		17

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HORIZONTAL AND VERTICAL SURVEY NOTES

4

GSI AREA TUSHKAPUK STATE/COUNTY ALASKA BOOK NO. 3 PAGE 440 OF
 LINE/LOOP NO. 659 W TYPE SURVEY CLIENT HUSKY OIL CO. DATE 31 DY 3 MO 79 YR
 SURVEYOR STONE INSTRUMENT DESC/SERIAL NO. CREW NO. 1182

LINE	<input type="checkbox"/> Δ <input type="checkbox"/> SS <input type="checkbox"/> ⊙	STATION	VERTICAL						HORIZONTAL		REMARKS	
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION			RIGHT TURNED HORIZONTAL ANGLE
				SLOPE					HORIZ	INST		
1									27.4			1
2		SP-26	880		89 57 23	6.0		-5.3		22.1		2
3		SP-27	1760		89 58 20	6.0		-5.1		22.3		3
4		SP-28	2640		89 59 56	6.0		-5.8		21.6		4
5	⊙	SP-29	3520		9000 00	6.0		-5.7		21.7		5
6	⊙		-		27000 00	6.0		-				6
7												7
8	Δ	SP-29	1850		9000 00	6.4		+6.3	28.0			8
9	Δ		-		270 00 00	6.4		-				9
10									E1133.4	BARR-79159		10
11	⊙	BARR 79159	1380		89 31 42	6.0		+5.4		E1133.2	79159-1182	11
12	⊙		-		270 28 20	6.0		-			Ver. TR = -0.2	12
13	Δ									33.4		13
14	Δ	BARR-79159	1380		89 31 42	6.0		-5.4	28.0			14
15	Δ		-		270 28 20	6.0		-				15
16	⊙	SP-29	1850		90 00 00	6.4		-6.3		21.7		16
17	⊙		-		270 00 00	6.4		-				17

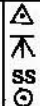


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HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA TUSHEKPUK STATE/COUNTY ALASKA BOOK NO. 2 PAGE 441 OF
 LINE/LOOP NO. 659-N TYPE SURVEY CLIENT Husky Oil Co. DATE 31 DY 3 MO 79 YR
 SURVEYOR STONE INSTRUMENT DESC/SERIAL NO. CREW NO. 1182

LINE	 △ SS ◎	STATION	VERTICAL						HORIZONTAL		REMARKS		
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION			RIGHT TURNED HORIZONTAL ANGLE	LINE
				SLOPE 					HORIZ 	INST			
1											1		
2	△	SP-29	✓		90 00 00	5.8	15.4	27.2			2		
3	△		4400		210 00 00	5.8	✓				3		
4		SP-30	3520		89 59 25	6.0	-5.2		22.0		4		
5		SP-31	2640		89 54 48	6.0	-1.9		25.3		5		
6		SP-32	1760		89 56 36	6.0	-4.2		23.0		6		
7		SP-33	880		89 50 04	6.0					7		
8	⊗	SP-34	0		90 00 00	5.6	-5.0		22.2		8		
9		SP-35	880		90 24 30	6.0	-3.4		23.8		9		
10		SP-36	1760		90 13 43	6.0	-13.0		14.2		10		
11		SP-37	2640		90 09 15	6.0	-13.0		14.2		11		
12		SP-38	3520		90 07 28	6.0	-13.4		13.8		12		
13	◎	SP-39	4400		90 06 30	6.0	-14.1		13.1		13		
14	◎		✓		269 53 26	6.0	✓				14		
15											15		
16											16		
17											17		

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SS = SIDESHOT

◎ = FORESIGHT

HORIZONTAL AND VERTICAL SURVEY NOTES

6

GSI AREA TUSHEKPOK STATE/COUNTY ALASKA BOOK NO. 2 PAGE 442 OF
 LINE/LOOP NO. 659-W TYPE SURVEY TI CLIENT Husky Oil Co. DATE 31 DY 3 MO 79 YR
 SURVEYOR STONE INSTRUMENT DESC/SERIAL NO. CREW NO.

LINE	<input type="checkbox"/> Δ <input type="checkbox"/> SS <input type="checkbox"/> ⊙	STATION	VERTICAL						HORIZONTAL		REMARKS	
			DISTANCE		VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION			RIGHT TURNED HORIZONTAL ANGLE
			SLOPE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS HORIZ					INST	ROD		
1											1	
2	Δ	SP39	✓		90 04 28	6.0		+8.9	22.0			2
3	Δ		2310		269 55 37	6.0		✓				3
4		SP40	1430		90 08 17	6.0		-9.4		12.6		4
5		SP41	550		90 20 50	6.0		-9.3		12.7		5
6	⊖	TP	0		90 00 00	5.0		-5.0		17.0		6
7		SP42	330		90 31 36	6.0		-9.1		12.9		7
8		SP43	1210		90 00 10	6.0		-6.0		16.0		8
9		SP44	2090		90 05 57	6.0		-9.5		12.5		9
10		SP45	2970		90 03 27	6.0		-8.8		13.2		10
11	⊙	SP46	3850		90 03 27	6.0		-9.5		12.5		11
12	⊙	✓	✓		269 56 37	6.0		✓				12
13												13
14												14
15												15
16												16
17												17

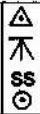







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HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA TUSHKOPUK STATE/COUNTY ALASKA BOOK NO. 2 PAGE 443 OF
 LINE/LOOP NO. 659 W TYPE SURVEY CLIENT HUSKY OIL/CO. DATE 31 BY 3 MO 79 YR
 SURVEYOR STONE INSTRUMENT DESC/SERIAL NO. CREW NO. 1182

LINE	 SS	STATION	VERTICAL						HORIZONTAL		REMARKS	
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION			RIGHT TURNED HORIZONTAL ANGLE
				SLOPE					HORIZ	INST		
1											1	
2		SP-46	✓		89 59 44	6.0	+5.2	17.9			2	
3			4400		270 00 20	6.0	✓				3	
4		SP-47	3520		89 59 50	6.0	-5.6		12.3		4	
5		SP-48	2640		89 58 56	6.0	-5.0		12.9		5	
6		SP-49	1760		89 59 11	6.0	-5.5		12.4		6	
7		SP-50	880		89 56 50	6.0	-5.2		12.7		7	
8		SP-51	0		90 00 00	5.0	-5.0		12.9		8	
9		SP-52	880		89 53 00	6.0	-4.2		13.7		9	
10		SP-53	1760		89 53 25	6.0	-2.6		15.3		10	
11		SP-54	2640		89 53 48	6.0	-1.1		16.8		11	
12		SP-55	3520		89 55 10	6.0	-0.8		18.1		12	
13		✓ SP-56	4400		89 55 46 270 04 36	6.0	-0.2		17.7		13	
14		SP-56+330	4930		89 48 14	6.0	+10.7		28.6		14	
15		✓	4930		270 11 53	6.0	✓				15	
16											16	
17											17	

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HORIZONTAL AND VERTICAL SURVEY NOTES

8

GSI AREA TUSHERPUK STATE/COUNTY ALASKA BOOK NO. 2 PAGE 444 OF
 LINE/LOOP NO. 059-N TYPE SURVEY CLIENT Husky Oil Co. DATE 31 DY 3 MO 78 YR
 SURVEYOR STONE INSTRUMENT DESC/SERIAL NO. CREW NO. 1182

LINE	△ SS ◎	STATION	VERTICAL						HORIZONTAL		REMARKS		
			DISTANCE	□ FEET □ METERS		VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION		RIGHT TURNED HORIZONTAL ANGLE	
				SLOPE	HORIZ					INST			ROD
1												1	
2	△	SP56+330	✓		89 51 53	6.0	10.4	29.0				2	
3	△		2310		270 08 18	6.0	✓					3	
4		SP57	1760		89 56 40	6.0	-4.2		24.8			4	
5		SP58	880		89 54 51	6.0	-4.7		24.3			5	
6	⊥	SP59	0		90 00 00	5.0	-5.0		24.0			6	
7	◎	BARR 79005	1440		90 00 00	4.0	-4.0		ELL 25.0		BARR 79005	7	
8	◎		✓		270 00 00	4.0	✓		ELL 24.7		79005 - 1182	8	
9											✓ by TIC = 0.3	9	
10												10	
11	△	BARR 79005	1440		90 00 00	4.0	+3.9	28.8				11	
12	△		✓		270 00 00	4.0	+3.9	✓				12	
13		SP60	880		89 58 15	6.0	-5.4		23.4			13	
14		SP61	1760		89 57 42	6.0	-4.8		24.0			14	
15		SP62	2640		89 58 21	6.0	-4.6		24.2			15	
16	◎	SP63	3520		89 57 16	6.0	-2.9		25.9			16	
17	◎	✓	✓		270 02 45	6.0	✓					17	

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HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA TURNER POK STATE/COUNTY ALASKA BOOK NO. 2 PAGE 445 OF
 LINE/LOOP NO. 659-W TYPE SURVEY CLIENT HUSKY OIL CO. DATE 31 DY 3 MO 79 YR
 SURVEYOR STONE INSTRUMENT DESC/SERIAL NO. CREW NO. 1182

LINE	<input type="checkbox"/> Δ <input type="checkbox"/> SS <input type="checkbox"/> ⊙	STATION	VERTICAL						HORIZONTAL		REMARKS		
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION			RIGHT TURNED HORIZONTAL ANGLE	
				SLOPE					HORIZ	INST			ROD
1											1		
2	Δ	SP-63	✓		(90 04 51)	6.0		+10.7	36.4			2	
3	Δ		3520		(269 55 10)	6.0		✓				3	
4		SP-64	2640		90 04 46	6.0		-9.5		26.9		4	
5		SP-65	1760		90 02 52	6.0		-7.4		29.0		5	
6		SP-66	880		89 57 33	6.0		-5.4		31.0		6	
7	⊗	SP-67	0		90 00 00	5.0		-5.0		31.4		7	
8		SP-68	880		90 35 56	6.0		-15.2		21.2		8	
9		SP-69	1760		90 21 50	6.0		-17.1		19.3		9	
10		SP-70	2640		90 15 00	6.0		-17.4		19.0		10	
11		SP-71	3520		90 09 54	6.0		-15.9		20.5		11	
12	⊙	SP-72	4400		90 02 44	6.0		-9.0		27.4		12	
13	⊙	✓	✓		(269 57 28)	6.0		✓				13	
14												14	
15												15	
16												16	
17												17	







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HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA TUSHEKPOK STATE/COUNTY ALASKA BOOK NO. 2 PAGE 446 OF
 LINE/LOOP NO. 657-N TYPE SURVEY CLIENT Husky oil DATE 31 DY 1 MO 79 YR
 SURVEYOR STONE INSTRUMENT DESC/SERIAL NO. CREW NO. 1182

LINE		STATION	VERTICAL						HORIZONTAL		REMARKS	
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION			RIGHT TURNED HORIZONTAL ANGLE
				SLOPE					HORIZ	INST		
1											1	
2		SP-72	✓		89 58 27	6.0		+4.1	31.3			2
3			3520		270 01 45	6.0		✓				3
4		SP-73	2640		89 58 24	6.0		-4.6		26.7		4
5		SP-74	1760		89 58 45	6.0		-5.3		26.0		5
6		SP-75	880		89 59 15	6.0		-5.8		25.5		6
7		SP-76	0		90 00 00	6.0		-5.0		25.3		7
8		SP-77	880		90 06 35	6.0		-7.7		23.6		8
9		SP-78	1760		90 00 47	6.0		-6.3		25.0		9
10		SP-79	2640		89 59 54	6.0		-5.8		25.5		10
11		SP-80	3520		89 59 54	6.0		-5.6		25.7		11
12		SP-81	4400		89 59 14	6.0		-4.6		26.7		12
13		SP-81+616	5016		90 00 12	6.0		-5.7		25.6		13
14			✓		269 59 57	6.0		✓				14
15												15
16												16
17												17

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HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA TOSHEKPUK STATE/COUNTY ALASKA BOOK NO. 2 PAGE 447 OF
 LINE/LOOP NO. 659-W TYPE SURVEY CLIENT HUSKY OIL CO. DATE 31 / 1 / 79 YR
 SURVEYOR STONE INSTRUMENT DESC/SERIAL NO. CREW NO. 1182

LINE	 SS 	STATION	VERTICAL						HORIZONTAL		REMARKS		
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION			RIGHT TURNED HORIZONTAL ANGLE	LINE
				SLOPE 					HORIZ 	INST			
1											1		
2		SP81+616	✓		90 02 44	6.0		18.7	34.1			2	
3			3784		269 57 16	6.0		"				3	
4		SP82	3520		90 03 43	6.0		-9.6	24.5			4	
5		SP83	2640		90 01 52	6.0		-7.3	26.8			5	
6		SP84	1760		90 05 38	6.0		-8.8	25.3			6	
7		SP85	880		90 10 17	6.0		-8.6	25.5			7	
8		SP86	0		90 00 00	5.0		-5.0	29.1			8	
9		SP87	880		90 23 10	6.0		-11.9	22.2			9	
10		SP88	1760		90 16 55	6.0		-14.6	19.5			10	
11		SP89	2640		90 12 32	6.0		-15.5	18.6			11	
12		SP90	3520		90 08 43	6.0		-14.7	19.4			12	
13		SP91	4400		90 07 40	15.0		-24.4	9.7			13	
14		SP91+330	4730		90 01 33	15.0		-16.6	17.5			14	
15			-		269 58 35	15.0		✓	-			15	
16												16	
17												17	

WORKED BY CHECKED BY 1ST 2ND

SYMBOLS = BACKSIGHT = INSTRUMENT SET-UP = SIDESHOT = FORESIGHT

HORIZONTAL AND VERTICAL SURVEY NOTES

12

GSI AREA TUSHNETAK STATE/COUNTY ALASKA BOOK NO. 2 PAGE 44B OF
 LINE/LOOP NO. 659-W TYPE SURVEY CLIENT Husky Oil Co. DATE 1 DY 3 MO 79 YR
 SURVEYOR Stane INSTRUMENT DESC/SERIAL NO. CREW NO. 1182

LINE	△ ⊥ SS ⊙	STATION	VERTICAL						HORIZONTAL		REMARKS	
			DISTANCE	<input type="checkbox"/> FEET	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION			RIGHT TURNED HORIZONTAL ANGLE
				<input type="checkbox"/> METERS					INST	ROD		
		SLOPE	HORIZ							LINE		
1											1	
2	△	SP91+330	✓		89 57 04	15.0		+10.1	27.4			2
3	△		4750		270 03 10	15.0		✓				3
4		SP92	4400		89 59 00	6.0		-4.3	23.1			4
5		SP93	3520		90 04 40	6.0		-10.5	16.9			5
6		SP94	2640		89 59 45	6.0		-5.7	21.7			6
7		SP95	1760		90 01 50	6.0		-6.9	20.5			7
8		SP96	880		90 02 50	6.0		-6.7	20.7			8
9	⊥	SP97	0		90 00 00	5.0		-5.0	22.4			9
10		SP98	880		90 30 25	6.0		-13.8	23.6	13.6		10
11		SP99	1760		89 58 27	6.0		-5.1	22.3			11
12		SP-100	2640		89 55 24	15.0		-11.3	16.1			12
13		SP-101	3520		90 01 20	6.0		-7.1	20.3			13
14	⊙	SP-102	4400		89 59 40	6.0		-5.1	22.3			14
15	⊙	✓	✓		270 00 25	6.0		✓				15
16												16
17												17

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HORIZONTAL AND VERTICAL SURVEY NOTES

13

GSI AREA TUSKPAK STATE/COUNTY ALASKA BOOK NO. 2 PAGE 149 OF
 LINE/LOOP NO. 659W TYPE SURVEY CLIENT HUSKY oil co. DATE 1 DY 3 MO 19 YR
 SURVEYOR STONE INSTRUMENT DESC/SERIAL NO. CREW NO.

LINE	 	STATION	VERTICAL						HORIZONTAL		REMARKS							
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION			RIGHT TURNED HORIZONTAL ANGLE	LINE					
				SLOPE					HORIZ	INST				ROD				
1																		
2		SP-102	✓		89 53 37	6.0	-2.7	19.4										
3			4400		270 06 34	6.0	✓											
4		SP-103	3520		89 52 27	6.0	+2.0		21.4									
5		SP-104	2640		89 55 00	6.0	-2.0		17.4									
6		SP-105	1760		89 52 45	6.0	-2.2		17.2									
7		SP-106	880		89 52 45	6.0	-4.1		15.3									
8		SP-107	0		90 00 00	5.0	-5.0		14.4									
9		SP-108	880		90 06 20	6.0	-7.6		11.8									
10		SP-109	1760		90 02 50	6.0	-7.4		12.0									
11		SP-24 L-622	2157		90 03 09	6.0	-7.9		11.5									
12									Vert TIE = + 0.5									
13		L-659W L-622 SP-109+395-SP-24+88	2155		90 03 37	6.0	-8.2		11.2									
14																		
15		SP-110	2640		90 02 31	6.0	-7.8		11.6									
16		SP-111	3520		90 01 26	6.0	-7.2		12.2									
17																		

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HORIZONTAL AND VERTICAL SURVEY NOTES

14

GSI AREA TOSHEK PAK STATE/COUNTY ALASKA BOOK NO. 2 PAGE 450 OF
 LINE/LOOP NO. 659-N TYPE SURVEY CLIENT HUSKY OIL CO. DATE 1 BY 4 MO 79 YR
 SURVEYOR STONE INSTRUMENT DESC/SERIAL NO. CREW NO.

LINE	 SS 	STATION	VERTICAL						HORIZONTAL		REMARKS		
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION			RIGHT TURNED HORIZONTAL ANGLE	LINE
				SLOPE					HORIZ	INST			
1									19.4			1	
2	⊙	SP-112	4400		89 59 07	6.0		-4.4		15.0		2	
3	⊙	✓	✓		89 00 58	6.0		✓				3	
4												4	
5	△	SP-112	✓		89 59 25	6.0		+4.7	19.4			5	
6	△		4400		220 00 50	6.0		✓				6	
7		SP-113	3520		89 58 27	6.0		-4.7		14.7		7	
8		SP-114	2640		90 00 55	6.0		-6.6		12.8		8	
9		SP-115	1760		89 59 48	6.0		-5.8		13.6		9	
10		SP-116	880		89 59 04	6.0		-4.5		14.9		10	
11	⊗	SP-117	0		90 00 00	5.0		-5.0		14.4		11	
12		SP-118	880		89 56 36	6.0		3.1		14.3		12	
13		SP-119	1760		89 58 15	6.0		-5.0		14.4		13	
14		SP-120	2640		89 57 56	6.0		-4.3		15.1		14	
15		SP-121	3520		89 53 48	6.0		+0.6		20.0		15	
16		SP-122	4400		89 52 50	6.0		+3.6		23.0		16	
17												17	

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 △ = BACKSIGHT
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 SS = SIDESHOT
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HORIZONTAL AND VERTICAL SURVEY NOTES

15

GSI AREA TUSHEK PUK STATE/COUNTY ALASKA BOOK NO. 2 PAGE 451 OF
 LINE/LOOP NO. 659-W TYPE SURVEY CLIENT Husky Oil Co. DATE 1 DY 4 MO 79 YR
 SURVEYOR STONE INSTRUMENT DESC/SERIAL NO. CREW NO. 1182

LINE	<input type="checkbox"/> Δ <input type="checkbox"/> SS <input type="checkbox"/> ⊙	STATION	VERTICAL						HORIZONTAL		REMARKS	
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION			RIGHT TURNED HORIZONTAL ANGLE
				SLOPE					HORIZ	INST		
1								19.4			1	
2	⊙	SP-122+550	4950		89 50 00	6.0	+7.8		27.2		2	
3	⊙		✓		270 09 00	6.0	✓				3	
4											4	
5	Δ	SP-122+550	✓		89 53 14	6.0	-4.0	23.0			5	
6	Δ		4730		270 07 05	6.0	✓				6	
7		SP-123	4400		89 51 30	6.0	+5.3		28.3		7	
8		SP-124	3520		89 52 58	6.0	+1.5		24.5		8	
9		SP-125	2640		89 55 53	6.0	-2.7		20.3		9	
10		SP-126	1760		89 54 13	6.0	-3.0		20.0		10	
11		SP-127	880		89 47 34	6.0	-2.8		20.2		11	
12	⊗	SP-128	0		90 00 00	5.0	-5.0		18.0		12	
13		SP-129	880		89 48 11	6.0	-3.0		20.0		13	
14		SP-130	1760		89 53 09	6.0	-2.4		20.6		14	
15		SP-131	2640		89 52 20	6.0	0.0		23.0		15	
16	⊙	SP-132	3520		89 42 10	6.0	+3.7		26.7		16	
17	⊙	✓	✓		270 18 07	6.0	✓				17	

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HORIZONTAL AND VERTICAL SURVEY NOTES

16

GSI AREA TUSHARPOK STATE/COUNTY ALASKA BOOK NO. 2 PAGE 452 OF
 LINE/LOOP NO. 659-N TYPE SURVEY CLIENT MUSKEY OIL CO. DATE 1 DY 4 MO 79 YR
 SURVEYOR STONE INSTRUMENT DESC/SERIAL NO. CREW NO.

LINE	<input type="checkbox"/> Δ <input type="checkbox"/> SS <input type="checkbox"/> \odot	STATION	VERTICAL						HORIZONTAL		REMARKS	
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION			RIGHT TURNED HORIZONTAL ANGLE
				SLOPE					HORIZ	INST		
1											1	
2	Δ	SP-132	2530		89 54 38	6.0	+1.9	28.6			2	
3	Δ		v		270 05 30	6.0	v				3	
4											4	
5	\odot	BARR-79600	0		90 00 00	5.0	-5.0	E11.23.6		BARR-79600	5	
6	\odot		0		270 00 00	v		25.2		7966-1182	6	
7										VER. TIE = -1.6	7	
8											8	
9											9	
10	Δ	79600	0		90 00 00	5.0	+5.0	28.6			10	
11	Δ		0		v						11	
12											12	
13	\odot	SP-132-L659	2530		89 54 38	6.0					13	
14	\odot				270 05 30	6.0	-1.9	26.7			14	
15											15	
16											16	
17											17	

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SYMBOLS

Δ = BACKSIGHT

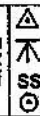





∇ = INSTRUMENT SET-UP

SS = SIDESHOT

\odot = FORESIGHT

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA _____ STATE/COUNTY ALASKA BOOK NO. 2 PAGE 453 OF _____
 LINE/LOOP NO. 659-W TYPE SURVEY _____ CLIENT HUSKY OIL CO. DATE 1 DY 4 MO 79 YR
 SURVEYOR Stoale INSTRUMENT DESC/SERIAL NO. _____ CREW NO. _____

LINE		STATION	VERTICAL						HORIZONTAL		REMARKS	
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION			RIGHT TURNED HORIZONTAL ANGLE
				SLOPE					HORIZ	INST		
1									26.7		1	
2		SP-132	✓		89 51 30	15.0		13.6	30.3		2	
3			4400		270 08 41	15.0		✓			3	
4		SP-133	3520		89 59 50	6.0		-5.6		24.7	4	
5		SP-134	2640		89 58 20	6.0		-4.6		25.7	5	
6		SP-135	1760		89 59 25	6.0		-5.6		24.7	6	
7		SP-136	880		89 56 20	6.0		-5.1		25.2	7	
8		SP-137	0		90 00 00	5.0		-5.0		25.3	8	
9		SP-138	880		90 00 30	6.0		-6.1		24.2	9	
10		SP-139	1760		90 05 07	6.0		-8.6		21.7	10	
11		SP-140	2640		90 02 54	6.0		-8.1		22.2	11	
12		SP-141	3520		89 55 53	6.0		-1.4		28.9	12	
13		✓	✓		270 04 20	6.0		✓			13	
14											14	
15											15	
16											16	
17											17	

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SYMBOLS  = BACKSIGHT  = INSTRUMENT SET-UP  = SIDESHOT  = FORESIGHT

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA _____ STATE/COUNTY ALASKA BOOK NO. 2 PAGE 454 OF _____
 LINE/LOOP NO. 659 TYPE SURVEY _____ CLIENT Husky Oil Co. DATE 1 DY 4 MO 79 YR
 SURVEYOR STONE INSTRUMENT DESC/SERIAL NO. _____ CREW NO. 1182

LINE	<input type="checkbox"/> Δ <input type="checkbox"/> SS <input type="checkbox"/> ○	STATION	VERTICAL						HORIZONTAL		REMARKS		
			DISTANCE		VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION			RIGHT TURNED HORIZONTAL ANGLE	LINE
			SLOPE	HORIZ					INST	ROD			
1									28.9		1		
2	Δ	SP141	✓		89 56 20	6.0		+1.9	30.8		2		
3	Δ		3520		270 03 56	6.0					3		
4		SP142	2640		89 59 32	6.0		-5.5		25.3	4		
5		SP143	1760		89 58 10	6.0		-5.0		25.8	5		
6		SP144	880		89 54 07	6.0		-4.5		26.3	6		
7	⊥	SP145	0		90 00 00	5.0		-5.0		25.8	7		
8		SP146	880		89 54 38	6.0		-4.6		26.2	8		
9		SP147	1760		89 45 24	6.0		+1.5		32.3	9		
10	○	SP148	2640		89 40 00	6.0		+9.6		40.4	10		
11	○	✓	✓		270 20 15	6.0					11		
12											12		
13											13		
14											14		
15											15		
16											16		
17											17		

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SYMBOLS Δ = BACKSIGHT ⊥ = INSTRUMENT SET-UP SS = SIDESHOT ○ = FORESIGHT

HORIZONTAL AND VERTICAL SURVEY NOTES

19

GSI AREA TU STATE/COUNTY ALASKA BOOK NO. 2 PAGE 455 OF
 LINE/LOOP NO. 659-W TYPE SURVEY CLIENT HUSKY 011 DATE 1 DY 4 MO 79 YR
 SURVEYOR STONE INSTRUMENT DESC/SERIAL NO. CREW NO. 1182

LINE	△ SS ◎	STATION	VERTICAL						HORIZONTAL		REMARKS	
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION			RIGHT TURNED HORIZONTAL ANGLE
									SLOPE	HORIZ		
1												
2	△	SP-148	✓		89 51 26	6.0	-3.2	37.2				
3	△		3520		270 08 50	6.0	✓					
4	SS	SP-53 + 230 L-655	3240		89 57 55	6.0	-3.8		33.4	Var. Thr = -0.4		
5												
6		^{L-659-W} SP-148+208 = SP-53+230	3232		89 56 30	6.0	-2.5		34.7			
7												
8		SP-149	2640		90 00 28	6.0	-6.1		31.1			
9		SP-150	1760		90 04 16	6.0	-8.1		29.1			
10		SP-151	880		90 08 00	6.0	-8.0		29.2			
11	△	SP-152	0		90 00 00	5.0	-5.0		32.2			
12		TS-1	880		90 12 43	4.0	-7.2		30.0			
13		2	1760		90 05 18	4.0	-6.7		30.5			
14		3	2640		90 03 37	4.0	-6.6		30.6			
15		4	3520		90 00 50	4.0	-4.6		32.6			
16		5	AA00		89 59 27	4.0	-2.9		34.3			
17	◎	6	5280		89 57 43	4.0	+0.1		37.3			

Ell. SP-53+230
 (33.8)
 Ref. Page #5
 Line #2

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◎ = FORESIGHT