

REV. NO.	ITEM	QTY	DESCRIPTION	MATERIAL	NOTE	UNIT WEIGHT	TOTAL WEIGHT	WHSE	SUPPLIER	DEL'Y DATE	P.O. NUMBER	P.O. DATE	UNIT PRICE	TOTAL PRICE	REMARKS
	E-403	1	RAW CONDENSATE PRE-HEATER: 7-192 NEN TEMA 'C'; T.S.: 400 PSIG D.P. @ -20/300°F + 1/16" C.A. S.S.: 400 PSIG D.P. @ -20/300°F + 1/16" C.A. DESIGN DUTY: 101,926 BTU/HR			1,750	1,750								D-2011-8169-01-001
	V-113	1	HORIZONTAL CONDENSATE CONDITIONER: 48" O.D. x 16'-0" s/s; 400 PSIG D.P. @ -20/300°F; 1/16" C.A. c/w COALESCING PAD **(SHIPPED LOOSE, INSTALLED & DRESSED BY OTHERS)**			9,250	9,250								D-2011-8169-02-001
	E-401	1	FEED/BOTTOMS EXCHANGER: 7-336 NEN TEMA 'C'; T.S.: 400 PSIG D.P. @ -20/500°F + 1/16" C.A. S.S.: 400 PSIG D.P. @ -20/500°F + 1/16" C.A. DESIGN DUTY: 303,268 BTU/HR			2,670	2,670								D-2011-8169-03-001
	T-400	1	VERTICAL STABILIZER COLUMN: 16" O.D. x 34'-0" s/s; 400 PSIG D.P. @ -20/500°F; 1/16" C.A.; c/w (1) 21'-3" PACKED SECTION; 2-PHASE			TOP BOTTOM	2,490 1,600								D-2011-8169-04-001
	H-405	1	STABILIZER REBOILER: 42" O.D. x 22'-0" LG REBOILER; 30" O.D. x 8'-0" LG EXPANSION POT; 12 3/4" O.D. 5-PIECE MITERED FIRE TUBE; 12 3/4" O.D. x 15'-0" HIGH STACK; 1" FUEL GAS PRE-HEAT COIL; ATMOSPHERIC DESIGN			6,520	6,520								D-2011-8169-05-001
				ESTIMATED SHIPPING WEIGHT:	66,090 Lbs.		24,280								

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0	Mar. 15, 2011	RWM

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1. MATERIAL TO MEET THE NOTES AND REQUIREMENTS AS OUTLINED ON THE LAYOUT DRAWING.

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NOTE: ONE (1) UNIT REQUIRED.

BY: RWM
DATE: Feb. 25, 2011
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APP'D:

 	GAS & OIL PRODUCTION EQUIPMENT LTD. <small>*GP of the ALCO GAS & OIL PRODUCTION EQUIPMENT LIMITED PARTNERSHIP.</small>	<small>The information contained herein is the confidential property of ALCO Gas & Oil Production Equipment Ltd., and is not for publication. The information is issued on the understanding that no part thereof shall be copied or communicated to a third party without authorization in writing from ALCO Gas & Oil Production Equipment Ltd.</small>
	BILL OF MATERIALS CONDENSATE STABILIZER UNIT (TAG #: T-400)	
CUSTOMER: HUSKY OIL OPERATIONS LIMITED c/o EXCELSIOR ENGINEERING LTD.		LOCATION: MINEHEAD COMPRESSOR STATION
L.S.D.: 03-06-049-18 W5M		DWG/SHOP ORDER: B-2011-8169-50B-001/017
		REV. 0

REV. NO.	ITEM	QTY	DESCRIPTION	MATERIAL	NOTE	UNIT WEIGHT	TOTAL WEIGHT	WHSE	SUPPLIER	DEL'Y DATE	P.O. NUMBER	P.O. DATE	UNIT PRICE	TOTAL PRICE	REMARKS
	E-402	1	REMOVABLE STABILIZER REBOILER COIL: 6 PASSES OF NPS 3, SCH. STD (SPLIT 2/2/2); NPS 6-CL300 INLET/OUTLET HEADERS; 400 PSIG D.P. @ -20/500°F; 1/16" C.A.; BUILT TO ASME B31.3 2008 EDITION DESIGN DUTY: 547,522 BTU/HR			1,640	1,640								C-2011-8169-06-001
	B-405	1	ZIRCO FLAME ARRESTED GAS BURNER: 1,000,000 BTU/HR DUTY; ALUMINUM HOUSING; 2-PIECE O-TYPE BODY; RIGHT-HAND HINGE; SWEET NATURAL FUEL GAS APPLICATION, 1-NPT GAS CONN. @ 9:00 POSITION; 1/4-NPT PILOT CONN. @ 9:00 POSITION; 3/4" CONDUIT CONN. @ 6:00 POSITION FOR IGNITION SYSTEM; 12 3/4" O.D. FIREBOX CONN. c/w (20) 1" DIA. HOLES EQUALLY SPACED ON A 16 1/8" B.C.D. DESIGN BASED ON 12 3/4" O.D. x 19'-0" (40'-0" OAL) FIRE TUBE & 12 3/4" O.D. x 15'-0" HIGH EXHAUST STACK			250	250								MR'D 8169-50-02
	CP-405	1	ZIRCO ACL-5500 BURNER CONTROL PANEL: CSA-APPROVED FOR B149.3 & BE-400 FOR CL.1, DIV.2 AREA; FLAME ROD IGNITOR ASSEMBLY; NEMA 4X XE-400 ENCLOSURE; SPEED CONTROL VALVE FOR TV-400 & INSTALLATION KIT w/ SCV-400 PILOT ASSEMBLY; 24VDC POWER SUPPLY			20	20								MR'D 8169-50-02
						TOTAL PAGE WEIGHT (Lbs.):								1,910	

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BILL OF MATERIALS
CONDENSATE STABILIZER UNIT (TAG #: T-400)

CUSTOMER: HUSKY OIL OPERATIONS LIMITED c/o EXCELSIOR ENGINEERING LTD. LOCATION: MINEHEAD COMPRESSOR STATION

L.S.D.: 03-06-049-18 W5M DWG/SHOP ORDER: **B-2011-8169-50B-002/017** REV. 0

REV. NO.	ITEM	QTY	DESCRIPTION	MATERIAL	NOTE	UNIT WEIGHT	TOTAL WEIGHT	WHSE	SUPPLIER	DEL'Y DATE	P.O. NUMBER	P.O. DATE	UNIT PRICE	TOTAL PRICE	REMARKS
	E-404	1	ACE MODEL E54-7 PRODUCT COOLER: MANUAL EXHAUST LOUVER; HAILGUARD; BUG SCREEN; ONE (1) 5 H.P. TEFC 480V/3 PH/60 Hz VFD COMPATABLE MOTOR, 1800 RPM; ONE (1) MURPHY VS2-EX VIBRATION SWITCH; CRN REGISTRATION IN ALBERTA; NPS 2-CL300 ANSI RF CONNECTIONS DESIGN: 400 PSIG D.P. @ -20/500°F + 1/16" C.A.; DESIGN DUTY: 1,218,800 BTU/HR			4,027	4,027								MR'D 8169-50-01
	UH-440	1	RUFFNECK FX5-480360-250 ELECTRIC BUILDING HEATER: 25kW (102,350 BTU/HR), 1/2 HP 480V/3PH/60Hz X.P. ELECTRIC MOTOR, c/w RUFFNECK XT-311 THERMOSTAT, CSA-XP (C1D1) RATING			252	252								
	SKID	1	15'-0" x 36'-0" x W12 @ 26# STRUCTURAL STEEL SKID: SIX (6) POINT LIFT; 1/4" THK. CHECKER PLATE & 1 1/4" THK. SERRATED GRATING FLOORING; (1) 12"x36" FLOOR DRAIN; 2" HIGH PERIMETER DRIP LIP			18,910	18,910								D-2011-8169-08-001
	BLDG EF-441	1	15'-0" WIDE x 20'-0" LG x 11'-0" HIGH MIN. EAVE SHED TYPE PRE-PAINTED BUILDING: (2) 3'-0"x7'-0" DOORS c/w 24" WINDOW; (2) 36" SLIDING WINDOWS; (3) 12"x12" LOUVERS; 22 Ga. PRE-PAINTED EXTERIOR; 24 Ga. FLUTED ALUMINUM WHITE INTERIOR; R12 (WALLS) & R20 (ROOF) INSULATION c/w 6 MIL VAPOUR BARRIER; ICE RAKE; EAVESTROUGH & DOWNSPOUT ON LOW SIDE; DOOR CANOPIES; ONE (1) EXHAUST FAN: 12 ACPH 1/4 H.P. 1/60/120 VAC X.P. MOTOR			6,500	6,500								B-2011-8169-50-001
						TOTAL PAGE WEIGHT (Lbs.):									
						29,689									

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L.S.D.: 03-06-049-18 W5M

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CONDENSATE STABILIZER UNIT (TAG #: T-400)

CUSTOMER: HUSKY OIL OPERATIONS LIMITED c/o EXCELSIOR ENGINEERING LTD. LOCATION: MINEHEAD COMPRESSOR STATION

DWG/SHOP ORDER: **B-2011-8169-50B-003/017** REV. 0

REV. NO.	ITEM	QTY	DESCRIPTION	MATERIAL	NOTE	UNIT WEIGHT	TOTAL WEIGHT	WHSE	SUPPLIER	DEL'Y DATE	P.O. NUMBER	P.O. DATE	UNIT PRICE	TOTAL PRICE	REMARKS
	147	1	NPS 4-CL300 ANSI RF FISHER DL3-249W VERTICAL LEVEL CONTROL CAGE: 4 1/2" O.D.; 400 PSIG D.P. @ -20/500°F + 1/16" C.A. (FOR LIT-400) c/w NPS 1 1/2-NPT VESSEL & NPS 3/4-NPT LEVEL GAUGE CONNECTIONS			95	95								C-2011-8169-07-001
	152	1	NPS 4-CL300 ANSI RF FISHER L2 VERTICAL LEVEL CONTROL CAGE: 4 1/2" O.D.; 400 PSIG D.P. @ -20/500°F + 1/16" C.A. (FOR LC-113) c/w NPS 2-CL300 VESSEL & NPS 3/4-NPT LEVEL GAUGE CONNECTIONS ** (SHIPPED LOOSE w/ V-113, INSTALLED BY OTHERS)**			140	140								C-2011-8169-09-001
	BDV-400	1	NPS 1-NPT FISHER D4 PRESSURE CONTROL VALVE AND ACTUATOR, 1/4" DIA. PORT, M-FORM TRIM, FAIL OPEN, BENCHSET AT 6-30 PSIG FOR 400 PSIG SHUTOFF, STANDARD MATERIALS			64	64								MR'D 8169-50-05
	DP-400	1	KIMRAY DP-30 LOW PRESSURE DRIP POT: 300 PSIG MWP, STD MATL'S			5	5								
	ESDV-400 ZSC-400 ESDY-400	1	NPS 1-NPT FOSSIL SERIES 88 GAS SAFETY SHUT-OFF VALVE ASSEMBLY c/w PNEUMATIC, SR ACTUATOR; 24VDC XP 3-WAY SOLENOID; 24VDC XP POC SWITCH; 3-PIECE SS BALL VALVE; CSA 6.5 C/I APP'L			10	10								MR'D 8169-50-05
	ESDV-401	1	NPS 1/4-NPT ASCO HV287776-002-24 GAS SAFETY SHUT-OFF VALVE: 24V DC, CLASS I, DIV. I, XP, UNIVERSAL 2-WAY OPERATION, 35 PSIG MWP, SS BODY			5	5								
						TOTAL PAGE WEIGHT (Lbs.):									
														319	

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CUSTOMER: HUSKY OIL OPERATIONS LIMITED c/o EXCELSIOR ENGINEERING LTD.
L.S.D.: 03-06-049-18 W5M

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	BILL OF MATERIALS CONDENSATE STABILIZER UNIT (TAG #: T-400)	
CUSTOMER: HUSKY OIL OPERATIONS LIMITED c/o EXCELSIOR ENGINEERING LTD.		LOCATION: MINEHEAD COMPRESSOR STATION
DWG/SHOP ORDER:		B-2011-8169-50B-004/017
		REV. 0

REV. NO.	ITEM	QTY	DESCRIPTION	MATERIAL	NOTE	UNIT WEIGHT	TOTAL WEIGHT	WHSE	SUPPLIER	DEL'Y DATE	P.O. NUMBER	P.O. DATE	UNIT PRICE	TOTAL PRICE	REMARKS
	EY-400	1	NPS 1/4-NPT ASCO EF8314G301 SOLENOID VALVE: 24V DC, CLASS I, DIV. I, XP, UNIVERSAL 3-WAY OPERATION, 150 PSIG MWP, 1.4 WATTS LOW POWER, STD MATL'S			5	5								
	FE-400	1	NPS 1-MNPT BLANCETT MODEL B110-875 LIQUID TURBINE FLOW METER: 3-30 USGPM FLOW RANGE c/w MAGNETIC PICK-UP			5	5								
	FIT-400	1	BLANCETT B28ALX-CS FLOW MONITOR; XP ENCLOSURE; METER MOUNTED; LOOP POWERED w/ 4-20 mA OUTPUT; LCD DISPLAY			5	5								
	FQIT-401	1	NPS 1 1/2-NPT ROMET RM30 FUEL GAS METER; METRIC COUNTER; 175 PSIG MWP; VOLTAGE PULSE OUTPUT; STD MATL'S			2	2								
	220	1	MTL 5012 ELECTRICAL BARRIER (REQ'D FOR FQIT-401 VOLTAGE PULSE OUTPUT); C1D1 RATING			2	2								
	LIT-400	1	NPS 4-CL300 FISHER DL3-249 LEVEL TRANSMITTER: WAFER STYLE FLANGE, LEFT HAND MOUNT, 4-20 mA + HART OUTPUT, 24 VDC, CSA-XP (C1D1) RATING c/w 3" x 14" LONG 304SS DISPLACER, STD MATL'S			35	35								
	LC-113	1	NPS 2-NPT FISHER L2 SNAP ACTING LIQUID LEVEL CONTROLLER, 0-30 PSIG DIRECT OUTPUT, c/w 1 7/8" x 12" LG VERTICAL PVC DISPLACER, -20/175°F, STANDARD MATERIALS ** (SHIPPED LOOSE w/ V-113, INSTALLED BY OTHERS) **			17	17								
						TOTAL PAGE WEIGHT (Lbs.):									

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L.S.D.: 03-06-049-18 W5M

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	BILL OF MATERIALS CONDENSATE STABILIZER UNIT (TAG #: T-400)	
CUSTOMER: HUSKY OIL OPERATIONS LIMITED c/o EXCELSIOR ENGINEERING LTD.		LOCATION: MINEHEAD COMPRESSOR STATION
DWG/SHOP ORDER:		B-2011-8169-50B-005/017
L.S.D.: 03-06-049-18 W5M		REV. 0

REV. NO.	ITEM	QTY	DESCRIPTION	MATERIAL	NOTE	UNIT WEIGHT	TOTAL WEIGHT	WHSE	SUPPLIER	DEL'Y DATE	P.O. NUMBER	P.O. DATE	UNIT PRICE	TOTAL PRICE	REMARKS
	LG-400	1	PENBERTHY 1RL4 REFLEX LEVEL GAUGE: 2175 PSIG @ 100°F; 6 3/4" VISIBLE LENGTH; STD MATL'S			8.5	9								
	LG-113	1	PENBERTHY 1TL4 TRANSPARENT LEVEL GAUGE; 1440 PSIG @ 100°F; 6 3/4" VISIBLE LENGTH; STD MATL'S **(SHIPPED LOOSE w/ V-113, INSTALLED BY OTHERS)**			8.5	9								
	LG-401	1	5/8" TUBULAR RED-LINE GAUGE GLASS ASSEMBLY: STD MATL'S			2	2								
	256	2	SET OF (2) NPS 3/4-NPT PENBERTHY 330J GAUGE COCKS: 4000 PSIG @ 100°F; STD MATL'S **(ONE SET SHIPPED LOOSE w/ V-113, INSTALLED BY OTHERS)**			3	6								
	261	1	SET OF (2) NPS 1/2-NPT PENBERTHY N7A GAUGE COCKS: 200 PSIG @ 100°F; STD MATL'S			3	3								
	LSSL-400	1	NPS 2-NPT SOR 1510B-G2A-C-W9-ES-CS-CV ELECTRIC LEVEL SWITCH:			2	2								
	LSHH-400	1	1500 PSIG MWP, -40/400°F, S.S. BODY, 24VDC, X.P., CLASS I DIV I, CSA APPROVED, STD MATL'S												
	LV-400	1	NPS 2-CL300 FISHER D4 CONTROL VALVE AND ACTUATOR: 3/4" DIA PORT, M-FORM TRIM, FAIL CLOSED, BENCH SET @ 6-30 PSIG, 400 PSIG SHUTOFF, STD MATL'S			120	120								MR'D 8169-50-04
						TOTAL PAGE WEIGHT (Lbs.):		150							

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	BILL OF MATERIALS CONDENSATE STABILIZER UNIT (TAG #: T-400)	
CUSTOMER: HUSKY OIL OPERATIONS LIMITED c/o EXCELSIOR ENGINEERING LTD.		LOCATION: MINEHEAD COMPRESSOR STATION
DWG/SHOP ORDER:		B-2011-8169-50B-006/017
		REV. 0

REV. NO.	ITEM	QTY	DESCRIPTION	MATERIAL	NOTE	UNIT WEIGHT	TOTAL WEIGHT	WHSE	SUPPLIER	DEL'Y DATE	P.O. NUMBER	P.O. DATE	UNIT PRICE	TOTAL PRICE	REMARKS
	PCV-67A	9	NPS 1/4-NPT FISHER 67 CFR REGULATOR: 0-35 PSIG SPRING RANGE; STD MATL'S			2	14								
	PCV-67B	1	NPS 1/4-NPT FISHER 67 CFR REGULATOR: 0-125 PSIG SPRING RANGE; STD MATL'S			2	2								
	PCV-400	1	NPS 1-NPT FISHER 627 REGULATOR: DUCTILE IRON BODY; 5-20 PSIG OUTLET PRESSURE RANGE, SET @ 15 PSIG; 1/4" DIA PORT, 500 PSIG MWP, STD MATL'S			5	5								
	PCV-401	1	NPS 1/4-NPT FISHER 912N REGULATOR; 2.7-5.0 PSIG SPRING; STD MATL'S			3	3								
	PDI-113	1	MIDWEST MODEL 120AA DIFFERENTIAL PRESSURE INDICATOR: 6000 PSIG MWP, 0-10 PSID, DUAL SCALE, STD MATL'S ** (SHIPPED LOOSE w/ V-113, INSTALLED BY OTHERS) **			1.5	2								
							TOTAL PAGE WEIGHT (Lbs.):	25							

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L.S.D.: 03-06-049-18 W5M		DWG/SHOP ORDER: B-2011-8169-50B-007/017
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	PI-401	12	WIKA 233.54 PRESSURE GAUGE: 4" DIAL, NPS 1/2-NPT LOWER MOUNT, LIQUID FILLED, 0-300 PSIG PRESSURE RANGE, STD MATL'S			1.5	18								
	PI-402		** (PI-440 & PI-441 SHIPPED LOOSE, INSTALLED BY OTHERS)**												
	PI-403		** (PI-113 SHIPPED LOOSE w/ V-113, INSTALLED BY OTHERS)**												
	PI-404														
	PI-405														
	PI-406														
	PI-407														
	PI-408														
	PI-409														
	PI-440														
	PI-441														
	PI-113														
	PI-410	2	WIKA 111.10 PRESSURE INDICATOR, 2 1/2" DIAL, NPS 1/4-NPT LOWER MOUNT, DRY, 0-30 PSIG PRESSURE RANGE, DUAL SCALE, STD MATL'S			1.5	3								
	PI-411														
	PIT-400	4	ROSEMOUNT PRESSURE TRANSMITTER: MODEL 3051S2TG3A2E11A1AD1E6M5, 0-800 PSIG RANGE, CALIBRATE 0-400 PSIG, 4-20 mA + HART OUTPUT, LCD DISPLAY, CSA-XP (C1D1) RATING, STD MATL'S			5	20								MR'D 8169-50-03
	PIT-401														
	PIT-402														
	PIT-403														
							TOTAL PAGE WEIGHT (Lbs.):	41							

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CONDENSATE STABILIZER UNIT (TAG #: T-400)

CUSTOMER: HUSKY OIL OPERATIONS LIMITED c/o EXCELSIOR ENGINEERING LTD. LOCATION: MINEHEAD COMPRESSOR STATION

DWG/SHOP ORDER: **B-2011-8169-50B-008/017** REV. 0

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	PSLL-400	1	NPS 1/4-NPT CCS DUAL SNAP 6900GE12 PRESSURE SWITCH: SET @ 5 PSIG FALLING, 3-20 PSIG DECREASE RANGE, 500 PSIG MWP, CLASS I DIV I, X.P., 24VDC, STD MATL'S			2	2								
	PSHH-400	1	NPS 1/4-NPT CCS DUAL SNAP 6900GE14 PRESSURE SWITCH: SET @ 31 PSIG RISING, 6-75 PSIG RISING RANGE, 500 PSIG MWP, CLASS I DIV I, X.P., 24VDC, STD MATL'S			2	2								
	PSV-400	1	NPS 1 1/2-CL300 RF x 2-CL150 RF CROSBY 1 1/2F2-JOS-E-35-J RELIEF VALVE: 0.307 sq.in. "F" ORIFICE, SET @ 230 PSIG, -20/650°F DESIGN TEMP, GAS SERVICE, STD MATL'S			50	50								
	PSV-401	4	NPS 1-MNPT x NPS 1-FNPT CROSBY 961102MA RELIEF VALVE: 0.110 sq.in. ORIFICE, SET @ 400 PSIG, GAS SERVICE, STD MATL'S			16	64								
	PSV-402														
	PSV-403														
	PSV-404														
	PV-400	2	NPS 2-CL300 FISHER D4 CONTROL VALVE AND ACTUATOR: 1 1/4" DIA PORT, M-FORM TRIM, FAIL CLOSED, BENCH SET @ 6-30 PSIG, 400 PSIG SHUTOFF, STD MATL'S			120	240								MR'D 8169-50-04
	PV-401														
	PV-402	1	NPS 1-NPT FISHER D4 CONTROL VALVE AND ACTUATOR, 3/4" DIA. PORT, M-FORM TRIM, FAIL OPEN, BENCHSET AT 6-30 PSIG, 400 PSIG SHUTOFF, STD MATL'S			64	64								MR'D 8169-50-05
						TOTAL PAGE WEIGHT (Lbs.):		422							
REVISIONS REV. DATE REV. BY 0 Mar. 15, 2011 RWM			NOTES: *** SEE NOTE COLUMN FOR APPLICATION NUMBERS *** 1. MATERIAL TO MEET THE NOTES AND REQUIREMENTS AS OUTLINED ON THE LAYOUT DRAWING.			BY:	RWM	 ALCO  GAS & OIL <small>The information contained herein is the confidential property of ALCO Gas & Oil Production Equipment Ltd., and is not for publication. The information is issued on the understanding that no part thereof shall be copied or communicated to a third party without authorization in writing from ALCO Gas & Oil Production Equipment Ltd.</small> PRODUCTION EQUIPMENT LTD. <small>*GP of the ALCO GAS & OIL PRODUCTION EQUIPMENT LIMITED PARTNERSHIP.</small> BILL OF MATERIALS CONDENSATE STABILIZER UNIT (TAG #: T-400)							
Printed: 17/03/2011, 2:44 PM						CUSTOMER:	HUSKY OIL OPERATIONS LIMITED c/o EXCELSIOR ENGINEERING LTD.	LOCATION:	MINEHEAD COMPRESSOR STATION						
						L.S.D.:	03-06-049-18 W5M	DWG/SHOP ORDER:	B-2011-8169-50B-009/017		REV.	0			

NOTE: ONE (1) UNIT REQUIRED.

REV. NO.	ITEM	QTY	DESCRIPTION	MATERIAL	NOTE	UNIT WEIGHT	TOTAL WEIGHT	WHSE	SUPPLIER	DEL'Y DATE	P.O. NUMBER	P.O. DATE	UNIT PRICE	TOTAL PRICE	REMARKS
	PVRV-400	1	SENTINEL 8-8A THIEF HATCH: 16 oz. PRESSURE, 0.40 oz. VACUUM RELIEF, c/w GASKETS AND BOLTING, STD MATL'S			25	25								
	PY-400	7	FISHER i2P-100 ELECTRO-PNEUMATIC TRANSDUCER: 4-20 mA INPUT SIGNAL, 6-30 PSIG OUTPUT SIGNAL, 24VDC, CLASS 1, DIV.1, XP, STD MATL'S			5.5	39								
	PY-401														
	PY-402														
	TY-408														
	TY-409A														
	TY-409B														
	LY-400														
	TC-400	1	KIMRAY T-12DAS TEMPERATURE CONTROLLER: SNAP ACTION, -30°F TO 400°F TEMPERATURE RANGE c/w KIMRAY 1"-SS-12 C.S SEPARABLE SOCKET, SWEET I/A SUPPLY			8	8								
	TE-408	1	RTD ASSEMBLY: 3-WIRE, 100 OHM Pt SENSOR, SPRING LOADED, 0.250" DIAMETER, 1/2" MNPT WELL CONN., 3" LG UNION-NIPPLE EXTENSION, 9" LG. SENSOR INSERTION LENGTH, ALUMINUM CONNECTION HEAD, C1D1-XP RATING			4	4								MR'D 8169-50-03
	TE-409	2	RTD ASSEMBLY: 3-WIRE, 100 OHM Pt SENSOR, SPRING LOADED, 0.250" DIAMETER, 1/2" MNPT WELL CONN., 3" LG UNION-NIPPLE EXTENSION, 4" LG. SENSOR INSERTION LENGTH, ALUMINUM CONNECTION HEAD, C1D1-XP RATING			4	8								MR'D 8169-50-03
	TE-414														
						TOTAL PAGE WEIGHT (Lbs.):		84							

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BY: RWM
DATE: Feb. 25, 2011
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APP'D:

 	GAS & OIL PRODUCTION EQUIPMENT LTD. <small>*GP of the ALCO GAS & OIL PRODUCTION EQUIPMENT LIMITED PARTNERSHIP.</small>	<small>The information contained herein is the confidential property of ALCO Gas & Oil Production Equipment Ltd., and is not for publication. The information is issued on the understanding that no part thereof shall be copied or communicated to a third party without authorization in writing from ALCO Gas & Oil Production Equipment Ltd.</small>
	BILL OF MATERIALS CONDENSATE STABILIZER UNIT (TAG #: T-400)	
CUSTOMER: HUSKY OIL OPERATIONS LIMITED c/o EXCELSIOR ENGINEERING LTD.		LOCATION: MINEHEAD COMPRESSOR STATION
L.S.D.: 03-06-049-18 W5M		DWG/SHOP ORDER: B-2011-8169-50B-010/017
		REV. 0

REV. NO.	ITEM	QTY	DESCRIPTION	MATERIAL	NOTE	UNIT WEIGHT	TOTAL WEIGHT	WHSE	SUPPLIER	DEL'Y DATE	P.O. NUMBER	P.O. DATE	UNIT PRICE	TOTAL PRICE	REMARKS
	TI-400	2	GAUGETECH BIMETAL "GT-3 SERIES" THERMOMETER: 3" DIAL,			1.5	3								
	TI-411		CENTER BACK MOUNT, TYPE 304SS, DUAL SCALE, 50-500°F RANGE, NPS 1/2-NPT CONNECTION w/ 12" LG. STEM												
	TI-113	1	GAUGETECH BIMETAL "GT-3 SERIES" THERMOMETER: 3" DIAL, CENTER BACK MOUNT, TYPE 304SS, DUAL SCALE, 0-250°F RANGE, NPS 1/2-NPT CONNECTION w/ 12" LG. STEM ** (SHIPPED LOOSE w/ V-113, INSTALLED BY OTHERS)**			1.5	2								
	TI-407	2	GAUGETECH BIMETAL "GT-3 SERIES" THERMOMETER: 3" DIAL,			1.5	3								
	TI-413		CENTER BACK MOUNT, TYPE 304SS, DUAL SCALE, -40-160°F RANGE, NPS 1/2-NPT CONNECTION w/ 6" LG. STEM												
	TI-401	7	GAUGETECH BIMETAL "GT-3 SERIES" THERMOMETER: 3" DIAL,			1.5	11								
	TI-402		CENTER BACK MOUNT, TYPE 304SS, DUAL SCALE, 0-250°F RANGE,												
	TI-403		NPS 1/2-NPT CONNECTION w/ 4" LG. STEM												
	TI-404		** (TI-440 & TI-441 SHIPPED LOOSE, INSTALLED BY OTHERS)**												
	TI-410														
	TI-440														
	TI-441														
	TI-405	2	GAUGETECH BIMETAL "GT-3 SERIES" THERMOMETER: 3" DIAL,			1.5	3								
	TI-406		CENTER BACK MOUNT, TYPE 304SS, DUAL SCALE, -40-160°F RANGE, NPS 1/2-NPT CONNECTION w/ 4" LG. STEM												
	TIT-408	3	ROSEMOUNT TEMPERATURE TRANSMITTER: MODEL			4	12								MR'D 8169-50-03
	TIT-409		3144PD1A1K6M5, CALIBRATE 0-500°F, INPUT FROM 100 ohm Pt RTD,												
	TIT-414		LCD DISPLAY, 4-20 mA + HART OUTPUT, CSA-XP (C1D1) RATING, STD MATL'S												
	TSHH-412	1	NPS 1/2-NPT CCS DUAL SNAP 6900TUE20 ELECTRIC TEMPERATURE SWITCH: PROBE TYPE w/ 5'-0" CAPILLARY TUBE, 385-565°F (INCREASING) RANGE, SPDT, 24V DC, SET @ 400°F, MAX. PROBE TEMP 650°F, XP, CLASS I DIV I			2	2								
						TOTAL PAGE WEIGHT (Lbs.):									
						35									

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CUSTOMER: HUSKY OIL OPERATIONS LIMITED c/o EXCELSIOR ENGINEERING LTD.
L.S.D.: 03-06-049-18 W5M

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	BILL OF MATERIALS CONDENSATE STABILIZER UNIT (TAG #: T-400)	
CUSTOMER: HUSKY OIL OPERATIONS LIMITED c/o EXCELSIOR ENGINEERING LTD.		LOCATION: MINEHEAD COMPRESSOR STATION
DWG/SHOP ORDER:		B-2011-8169-50B-011/017
REV. 0		REV. 0

REV. NO.	ITEM	QTY	DESCRIPTION	MATERIAL	NOTE	UNIT WEIGHT	TOTAL WEIGHT	WHSE	SUPPLIER	DEL'Y DATE	P.O. NUMBER	P.O. DATE	UNIT PRICE	TOTAL PRICE	REMARKS
	TV-400	1	NPS 1-NPT FISHER D2 CONTROL VALVE AND ACTUATOR, 1/2" DIA. PORT, VARIABLE TRAVEL, FAIL CLOSED, 0-35 PSIG, STD MATL'S			17	17								MR'D 8169-50-05
	TV-408	1	NPS 2-CL300 FISHER D4 CONTROL VALVE AND ACTUATOR: 1 1/4" DIA PORT, M-FORM TRIM, FAIL OPEN, BENCH SET @ 6-30 PSIG, 400 PSIG SHUTOFF, STD MATL'S			120	120								MR'D 8169-50-04
	TV-409A	2	NPS 2-CL300 FISHER D4 CONTROL VALVE AND ACTUATOR: 1" DIA PORT, M-FORM TRIM, FAIL CLOSED, BENCH SET @ 6-30 PSIG, 400 PSIG SHUTOFF, STD MATL'S			120	240								MR'D 8169-50-04
	TV-409B														
							TOTAL PAGE WEIGHT (Lbs.):	377							

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L.S.D.: 03-06-049-18 W5M		DWG/SHOP ORDER: B-2011-8169-50B-012/017
		REV. 0

REV. NO.	ITEM	QTY	DESCRIPTION	MATERIAL	NOTE	UNIT WEIGHT	TOTAL WEIGHT	WHSE	SUPPLIER	DEL'Y DATE	P.O. NUMBER	P.O. DATE	UNIT PRICE	TOTAL PRICE	REMARKS
	TW-400	2	NPS 1/2-NPT-x NPS 3/4-NPT x 12" LG. THERMOWELL, 0.260" BORE,			2	4								
	TW-411		10 1/2"-U' LENGTH, AB CRN, 304SS MATL'S												
	TW-113	1	NPS 1/2-NPT-x NPS 3/4-NPT x 12" LG. THERMOWELL, 0.260" BORE,			2	2								
			10 1/2"-U' LENGTH, AB CRN, 304SS MATL'S												
			** (SHIPPED LOOSE w/ V-113, INSTALLED BY OTHERS)**												
	TW-408	1	NPS 1/2-NPT-x NPS 3/4-NPT x 9" LG. THERMOWELL, 0.260" BORE,			2	2								
			7 1/2"-U' LENGTH, AB CRN, 304SS MATL'S												
	TW-412	1	NPS 1/2-NPT x NPS 1-NPT x 9" LG. THERMOWELL, 0.385" BORE,			2	2								
			7 1/2"-U' LENGTH, AB CRN, 304SS MATL'S												
	TW-405	2	NPS 1/2-NPT-x NPS 3/4-NPT x 6" LG. THERMOWELL, 0.260" BORE,			2	4								
	TW-406		4 1/2"-U' LENGTH, AB CRN, 304SS MATL'S												
	TW-401	11	NPS 1/2-NPT-x NPS 3/4-NPT x 4" LG. THERMOWELL, 0.260" BORE,			2	22								
	TW-402		2 1/2"-U' LENGTH, AB CRN, 304SS MATL'S												
	TW-403		** (TW-440 & TW-441 SHIPPED LOOSE, INSTALLED BY OTHERS)**												
	TW-404														
	TW-407														
	TW-409														
	TW-410														
	TW-413														
	TW-414														
	TW-440														
	TW-441														
							TOTAL PAGE WEIGHT (Lbs.):	36							

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CUSTOMER: HUSKY OIL OPERATIONS LIMITED c/o EXCELSIOR ENGINEERING LTD.
L.S.D.: 03-06-049-18 W5M

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	BILL OF MATERIALS CONDENSATE STABILIZER UNIT (TAG #: T-400)	
CUSTOMER: HUSKY OIL OPERATIONS LIMITED c/o EXCELSIOR ENGINEERING LTD.		LOCATION: MINEHEAD COMPRESSOR STATION
DWG/SHOP ORDER:		B-2011-8169-50B-013/017
		REV. 0

REV. NO.	ITEM	QTY	DESCRIPTION	MATERIAL	NOTE	UNIT WEIGHT	TOTAL WEIGHT	WHSE	SUPPLIER	DEL'Y DATE	P.O. NUMBER	P.O. DATE	UNIT PRICE	TOTAL PRICE	REMARKS
	BA-2008	2	NPS 1/4-NPT BALON LM-02362 BALL VALVE: 2000 PSIG @ 100°F, REGULAR PORT; STD MATL'S			1.8	4								MR'D 8169-50-06
	BA-2008	1	NPS 1/2-NPT BALON LM-05361 BALL VALVE: 2000 PSIG @ 100°F, REGULAR PORT; STD MATL'S			2.2	2								MR'D 8169-50-06
	BA-2008	11	NPS 1-NPT BALON LM-10361 BALL VALVE: 2000 PSIG @ 100°F, REGULAR PORT; STD MATL'S			4.4	48								MR'D 8169-50-06
	BA-2008	1	NPS 2-NPT BALON 2R-F03-SE BALL VALVE: 2000 PSIG @ 100°F, REGULAR PORT; STD MATL'S			17.5	18								MR'D 8169-50-06
	BA-300	26	NPS 2-CL300 RF BALON 2R-F33-RF BALL VALVE; 740 PSIG @ 100°F; REGULAR PORT; STD MATL'S **TWO VALVES SHIPPED LOOSE w/ V-113, INSTALLED BY OTHERS**			32	832								MR'D 8169-50-06
	BA-300	3	NPS 4-CL300 RF BALON 4R-F33-RF BALL VALVE; 740 PSIG @ 100°F; REGULAR PORT; STD MATL'S			102	306								MR'D 8169-50-06
	GA-808	4	NPS 1/2-NPT GATE VALVE: CLASS 800; 1975 PSIG @ 100°F REGULAR PORT; STD MATL'S			4	16								
	GA-808	2	NPS 3/4-NPT GATE VALVE: CLASS 800; 1975 PSIG @ 100°F REGULAR PORT; STD MATL'S			4.4	9								
	GA-808	3	NPS 1-NPT GATE VALVE: CLASS 800; 1975 PSIG @ 100°F REGULAR PORT; STD MATL'S			8.4	25								
						TOTAL PAGE WEIGHT (Lbs.):									
							1,260								

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	BILL OF MATERIALS CONDENSATE STABILIZER UNIT (TAG #: T-400)	
CUSTOMER: HUSKY OIL OPERATIONS LIMITED c/o EXCELSIOR ENGINEERING LTD.		LOCATION: MINEHEAD COMPRESSOR STATION
L.S.D.: 03-06-049-18 W5M		DWG/SHOP ORDER: B-2011-8169-50B-014/017
		REV. 0

REV. NO.	ITEM	QTY	DESCRIPTION	MATERIAL	NOTE	UNIT WEIGHT	TOTAL WEIGHT	WHSE	SUPPLIER	DEL'Y DATE	P.O. NUMBER	P.O. DATE	UNIT PRICE	TOTAL PRICE	REMARKS
	GA-808	2	NPS 1 1/2-NPT GATE VALVE: CLASS 800; 1975 PSIG @ 100°F REGULAR PORT; STD MATL'S			15.2	30								
	GA-808	2	NPS 2-NPT GATE VALVE: CLASS 800; 1975 PSIG @ 100°F REGULAR PORT; STD MATL'S			23.3	47								
	GL-808	4	NPS 1-NPT GLOBE VALVE: CLASS 800; 1975 PSIG @ 100°F REGULAR PORT; STD MATL'S			8.6	34								
	GL-300	4	NPS 2-CL300 RF GLOBE VALVE; 740 PSIG @ 100°F; REGULAR PORT; STD MATL'S			83	332								
	GL-300	1	NPS 4-CL300 RF GLOBE VALVE; 740 PSIG @ 100°F; REGULAR PORT; STD MATL'S			220	220								
	CH-300S	2	NPS 2-CL300 RF SWING CHECK VALVE; 740 PSIG @ 100°F; REGULAR PORT; STD MATL'S			35	70								
							TOTAL PAGE WEIGHT (Lbs.):	733							

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CUSTOMER: HUSKY OIL OPERATIONS LIMITED c/o EXCELSIOR ENGINEERING LTD.		LOCATION: MINEHEAD COMPRESSOR STATION
DWG/SHOP ORDER:		B-2011-8169-50B-015/017
		REV. 0

REV. NO.	ITEM	QTY	DESCRIPTION	MATERIAL	NOTE	UNIT WEIGHT	TOTAL WEIGHT	WHSE	SUPPLIER	DEL'Y DATE	P.O. NUMBER	P.O. DATE	UNIT PRICE	TOTAL PRICE	REMARKS
	NE-6008	12	NPS 1/4-NPT PANAM PNV-H-S-4-FF NEEDLE VALVE: SS BODY; STD TRIM			1.3	16								
	NE-6008	11	NPS 1/2-NPT PANAM PNV-H-S-8-FF NEEDLE VALVE: SS BODY; STD TRIM **(TWO (2) SHIPPED LOOSE, INSTALLED BY OTHERS)**			1.3	14								
	BB-6009	4	NPS 1/2-MNPT x NPS 1/2-FNPT PANAM 2VM-SS-8-RM BLOCK & BLEED VALVE: SS BODY; STD TRIM			3	12								
	BB-6009	2	NPS 3/4-MNPT x NPS 1/2-FNPT PANAM PGRV-H-S-128-MF MULTI-PORT GAUGE VALVE: SS BODY; STD TRIM **(TWO VALVES SHIPPED LOOSE w/ V-113, INSTALLED BY OTHERS)**			3	6								
	STR-400	1	NPS 2-CL300 ANSI RF Y-STRAINER: 740 PSIG @ 100°F; 1/8" PERFORATED SCREEN; STD MATL'S			35	35								
	STR-401	1	NPS 1-NPT Y-STRAINER: 300 PSIG @ 100°F; 1/32" PERFORATED SCREEN; C.I. BODY; STD MATL'S			4.5	5								
							TOTAL PAGE WEIGHT (Lbs.):	87							

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DWG/SHOP ORDER:		B-2011-8169-50B-016/017
		REV. 0

REV. NO.	ITEM	QTY	DESCRIPTION	MATERIAL	NOTE	UNIT WEIGHT	TOTAL WEIGHT	WHSE	SUPPLIER	DEL'Y DATE	P.O. NUMBER	P.O. DATE	UNIT PRICE	TOTAL PRICE	REMARKS	
			*** ADDITIONAL ITEMS TO COMPLETE ASSEMBLY ***													
	774	1 LOT	NPS 2 & UNDER SCH. XS SML'S PIPE TO COMPLETE ASSEMBLY	SA-106-B		250	250									
	775	1 LOT	NPS 1 1/2 & UNDER NPT/SW CL3000 FITTINGS TO COMPLETE ASSEMBLY	SA-105N		250	250									
	778	1 LOT	1/4" & 3/8" O.D. TUBING TO COMPLETE ASSEMBLY	316SS		100	100									
	779	1 LOT	PARKER A-LOK (DOUBLE FERRULE) FITTINGS TO COMPLETE ASSEMBLY	316SS		100	100									
			*** PIPING ISOMETRICS TO COMPLETE ASSEMBLY ***													
	ISO #1	1	RAW CONDENSATE FROM SKID EDGE TO E-403 (S.S.)			515	515								B-2011-8169-50S-001	
	ISO #2	1	RAW CONDENSATE FROM E-403 (S.S.) TO SKID EDGE			685	685								B-2011-8169-50S-002	
	ISO #3	1	CONDENSATE FROM SKID EDGE TO E-401 (S.S.)			245	245								B-2011-8169-50S-003	
	ISO #4	1	CONDENSATE FROM E-401 (S.S.) TO T-400			330	330								B-2011-8169-50S-004	
	ISO #5	1	CONDENSATE FROM E-401 (S.S.) TO T-400 CONT'D			205	205								B-2011-8169-50S-005	
	ISO #6	1	PRODUCT FROM T-400 TO E-401 (T.S.)			145	145								B-2011-8169-50S-006	
	ISO #7	1	PRODUCT FROM T-400 TO E-403 (T.S.)			210	210								B-2011-8169-50S-007	
	ISO #8	1	PRODUCT FROM T-400 TO E-403 (T.S.) CONT'D			150	150								B-2011-8169-50S-008	
	ISO #9	1	PRODUCT FROM E-401 (T.S.) TO E-403 (T.S.)			155	155								B-2011-8169-50S-009	
	ISO #10	1	PRODUCT FROM E-403 (T.S.) TO E-404			130	130								B-2011-8169-50S-010	
	ISO #11	1	PRODUCT FROM E-403 (T.S.) TO E-404 CONT'D			125	125								B-2011-8169-50S-011	
	ISO #12	1	PRODUCT FROM E-404 TO SKID EDGE			180	180								B-2011-8169-50S-012	
	ISO #13	1	PRODUCT FROM E-404 TO SKID EDGE CONT'D			255	255								B-2011-8169-50S-013	
	ISO #14	1	OVERHEADS FROM T-400 TO SKID EDGE			135	135								B-2011-8169-50S-014	
	ISO #15	1	OVERHEADS FROM T-400 TO SKID EDGE CONT'D			260	260								B-2011-8169-50S-015	
	ISO #16	1	CONDENSATE FROM T-400 TO E-402			240	240								B-2011-8169-50S-016	
	ISO #17	1	VAPOUR / LIQUID FROM E-402 TO T-400			230	230								B-2011-8169-50S-017	
	ISO #18	1	TV-408 BYPASS			185	185								B-2011-8169-50S-018	
	ISO #19	1	FLARE HEADER			125	125								B-2011-8169-50S-019	
	ISO #20	1	DRAIN HEADER & TW BOTTLE			25	25								B-2011-8169-50S-020	
	ISO #21	1	RELIEF FROM T-400 TO PSV-400			45	45								B-2011-8169-50S-021	
			TOTAL PAGE WEIGHT (Lbs.):					5,275								

REVISIONS		
REV.	DATE	REV. BY
0	Mar. 15, 2011	RWM

NOTES: *** SEE NOTE COLUMN FOR APPLICATION NUMBERS ***
1. MATERIAL TO MEET THE NOTES AND REQUIREMENTS AS OUTLINED ON THE LAYOUT DRAWING.

NOTE: ONE (1) UNIT REQUIRED.

BY: RWM
DATE: Feb. 25, 2011
CHK'D
CHK'D
APP'D:
CUSTOMER: HUSKY OIL OPERATIONS LIMITED c/o EXCELSIOR ENGINEERING LTD.
L.S.D.: 03-06-049-18 W5M

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		PRODUCTION EQUIPMENT LTD.	
BILL OF MATERIALS			
CONDENSATE STABILIZER UNIT (TAG #: T-400)			
LOCATION: MINEHEAD COMPRESSOR STATION			
DWG/SHOP ORDER: B-2011-8169-50B-017/017			
REV. 0			