

NOTES:

1. QUANTITIES IN B.O.M. ARE FOR ONE (1) UNIT.
2. ALL PIPING TO BE IN ACCORDANCE WITH THE LATEST EDITION OF ASME B31.3 PRESSURE PIPING CODE.
3. VESSEL TO BE FABRICATED TO THE LATEST EDITION OF ASME SECTION VIII, DIVISION 1 PRESSURE VESSELS.
4. ALL THREADED PIPING TO BE: SA-106B, SCH.80 LP; SCH.160 HP SMLS., THREADED FITTINGS TO BE 3000# SA-105-N WELDED PIPING TO BE SA-106-B, SCH.80 SMLS/ BUTT WELDED FITTINGS TO BE SA-234-WPB/ FLANGES TO BE SA-105N/ THREADOLETS & COUPLINGS TO BE SA-105N LOW TEMP PIPE TO BE SA-333 Gr.6 Sch.80 SMLS, LOW TEMP FLANGES TO BE SA-350 LF2
5. TUBING DETAILS: 316 STAINLESS STEEL TUBING 3/8"OD (0.035"WT) FOR INSTRUMENTS AND 1/2"OD (0.049WT) FOR PROCESS c/w 316 SS SWAGelok FITTINGS AND FERRULES. FITTINGS ON P-310 TUBING TO WELLHEAD TO BE RATED FOR 6000#.
6. PAINTING: PACKAGE TO BE CLEANED TO SSPC-SP3
1st COAT PRIMER: DEVCO GREY FAST DRY PRIMER
FINISH COAT: DEVCO GREY ENAMEL
7. PROTECT ALL OPENINGS FOR SHIPMENT
8. BUILDING: STYLE: GABLE, 12'-0" WIDE x 34'-0" LONG x 12'-0" LOW EAVE (4:12) - BLDG SIZE TO BE CONFIRMED UPON G.A. APPROVAL
EXTERIOR: 22 GAUGE PRE-PAINTED EXTERIOR (HARVEST GOLD WITH METRO BROWN TRIM)
INTERIOR: 24 GAUGE WHITE FLUTED ALUMINUM INTERIOR c/w R-12 INSULATION IN WALLS & R-20 INSULATION IN ROOF
DOORS: ONE SET OF DOUBLE DOORS 6'-0" WIDE x 7'-0" HIGH and ONE (1) 3'-0"x 7'-0" MAN DOOR c/w TWG WINDOW, HYDRAULIC CLOSURE, CHECK-CHAIN, PANIC-LOCK, WEATHER-STRIPPING, CANOPIES
WINDOWS: TWO (2) 36" x 38" DOUBLE GLAZED SLIDING WINDOWS c/w SCREENS
VENTILATION: TWO (2) 24" x 24" ADJUSTABLE LOUVERS AND EXHAUST FAN (120VAC/12 A.C.P.H.)
REMOVABLE PANEL: ONE (1) REMOVABLE PANEL, 3'-0" WIDE x 6'-0" HIGH (FOR PUMP ACCESS)
TWO FULL LENGTH METRO BROWN ICERAKES
9. HYDROTEST TO 1.5x DESIGN PRESSURE
10. ALL BUTT WELDED PIPING TO BE 15% X-RAY; VESSEL TO BE RT-1 AND P.W.H.T.
11. ALL STUDS ARE SA-193-B7M, NUTS ARE SA-193-2HM, GASKETS 316 S.S.
12. MAWP OF PIPE:
3" Sch.80 BUTTWELDED c/w 600# FLANGES @ 130°F IS 1440 PSIG c/w 1/8" C.A.
8" Sch.80 BUTTWELDED c/w 600# FLANGES @ 130°F IS 1440 PSIG c/w 1/8" C.A.
2" Sch.80 BUTTWELDED c/w 600# FLANGES @ 130°F IS 1440 PSIG c/w 1/16" C.A.
1" Sch.80 BUTTWELDED c/w 600# FLANGES @ 130°F IS 1440 PSIG c/w 1/16" C.A.
4" Sch.80 BUTTWELDED c/w 600# FLANGES @ 130°F IS 1440 PSIG c/w 1/8" C.A.
4" Sch.80 BUTTWELDED c/w 150# FLANGES @ 130°F IS 277 PSIG c/w 1/8" C.A.
3" Sch.80 BUTTWELDED c/w 150# FLANGES @ 130°F IS 277 PSIG c/w 1/8" C.A.
2" Sch.80 BUTTWELDED c/w 150# FLANGES @ 130°F IS 277 PSIG c/w 1/8" C.A.
6" Sch.80 BUTTWELDED c/w 150# FLANGES @ 130°F IS 277 PSIG c/w 1/8" C.A.
13. P210/220 (TRIPLEX PUMPS) c/w MURPHY VIBRATION/SHOCK SWITCHES (MODEL: VS-2-EX) & MURPHY LEVEL SWITCHGAUGE (MODEL: EL-150EX)
14. ELECTRICAL BY OTHERS
15. PID, BOM & BLDG TO BE STAMPED BY P.ENG.

END CONNECTION:
FLANGED RF= 1
FLANGED RTJ=2
BUTTWELDED= 3
THREADED= 4
SOCKETWELD= 5
SW/SCRD= 6
TUBING= 7

VALVE LEGEND

VALVE SERVICE:

NORMAL TEMP, SWEET PROCESS=1
NORMAL TEMP, SOUR PROCESS=1S
LOW TEMP, SWEET PROCESS=2
LOW TEMP, SOUR PROCESS=2S

VALVE TYPE:
BALL (R.P.)=BA
BALL (F.P.)=BAF
NEEDLE=NE
FULL BODY CHECK=C
GATE=CA
GLOBE=GL
PISTON CHECK=CP
Y-STRAINER=Y

ANSI CLASS:

150#=A
300#=B
400#=C
600#=D
900#=E
1500#=F
2500#=G

THREADED/SOCKET WELDED CLASS:

API 602 WOG
CLASS 800=H 1000 WOG=L
CLASS 1500=J 2000 WOG=M
CLASS 2500=K 3600 WOG=N
6000 WOG=P
10000 WOG=Q
TUBING RATING=R
250 WOG=S

TAPPED & BLIND FLANGES

SIZE	QTY.	DESCRIPTION
2"	1	2"600#RF TAPPED 1/2" NPT
	1	2"600#RF TAPPED 3/4" NPT
	3	2"600#RF BLIND
3"	2	3"600#RF BLIND
18"	1	18"600#RF BLIND
3"	2	3"600#RF TAPPED 2" NPT
1"	1	1"150#RF TAPPED 1" NPT
1"	1	1"600#RF TAPPED 1" NPT
3"	1	3"600#RF TAPPED 1" NPT
8"	2	8"600# SPEC BLIND
3"	3	3"600# SPEC BLIND

BILL OF MATERIALS

TAG	QTY.	MAKE	DESCRIPTION	TAG	QTY.	MAKE	DESCRIPTION
PSV-210B/220B	2	FARRIS	PRESSURE RELIEF VALVE, MODEL 27EA34-M20, 1" NPT INLET x 1 1/2" NPT OUTLET, STD., WCB BODY, SET @ 1440 PSig	FE-102B	1	DANIEL REMAN.	DUAL CHAMBER METER RUN, 4" 600# RF SCH.80, SWEET, FLANGED OUTER ENDS, 15% X-RAY, AGA 14.3.2 2000 SPEC, 85" F/F, ONE (1) 1" 3000# TOL, TWO(2) 3/4" TOL D/S, c/w FLOW CONDITIONER, FX-102B
PCV-111A	1	FISHER	627 PRESSURE REGULATOR, 1" FNPT, STEEL BODY, NYLON DISC, 70 TO 150 PSig RANGE, 1/4" DRIFICE SST TRIM, SET @ 120 PSig	LSHH-100C2 LSLL-100C2 LSLL-100C1	3	SOR	ELECTRIC LEVEL SWITCHES, 2" NPT PROCESS CONN. MODEL 1510B-G2A-C-W9-ES-CS, 316SS FLOAT, 303SS BODY, SNAP, DIRECT ACTION, MAWP 1500 PSig, MOUNT IN LINC LEVEL CAGE(ELECTRICAL BY OTHERS)
PSV-110A	1	FARRIS	PRESSURE RELIEF VALVE, MODEL 26EA20, STD., WCB BODY, SET @ 150 PSig, 1"-150#RF x 2"-150#RF, 1/2" ORIFICE, SET @ 150 PSig	FQI-100C2 FE-100C2	1	HALIBURTON	FLOW TURBINE METER & TOTALIZER, 1"x2" 600 ANSI EZ-IN WATER STYLE TURBINE METER, 15 to 180 GPM CAPACITY, MAGNETIC PICKUP, MOUNTING HARDWARE, MCII PLUS TOTALIZER, PULSE OUTPUT
PG-110B	1	WIKA	PRESSURE GAUGE, 2 1/2" x 1/4" NPT END CONN. 0 to 200 PSig RANGE, DUAL SCALE	LC-100C1	1	FISHER	L2 LEVEL CONTROLLERS, 2" NPT, 1 7/8" x 12" Lg VERT PVC DISPLACER, STD., SNAP, DIRECT ACTING
FQI-110B FE-110B	1	ROOTS	FUEL GAS METER, MODEL 8C175, 1 1/2" NPT CONN., 175 PSig MAWP, CUBIC METER READ-OUT c/w PULSE OUTPUT X-MTR	LCV-100C1	1	FISHER	D4 LIQUID CONTROL VALVES, 2" 600#RF, STD. TRIM SIZE 3/4", 6 to 30 PSig INPUT, AIR TO OPEN/FAIL CLOSED
PST-210B/220B/210A/220A	4	ROSEMOUNT	PRESSURE TRANSMITTERS, MODEL 3051TG4, STD., SS DIAPHRAGM, 0 to 4000 PSig, 1/2" NPT, CSA APPROVED, XP, (ELECTRICAL BY OTHERS) c/w PULSATION DAMPENERS	LYV-100C1	1	ASCO	3-WAY SOLENOID VALVES, MODEL EF8314G301, LOW WATTAGE, SST, EXPLOSION PROOF, ENERGIZE TO OPEN NORMALLY CLOSED, 24 VDC, 150 PSig MAX
DD-210B/220B	2	COORSTEK	300 CU.IN,ST-14002-F STABILIZERS (DISCH. DAMPENERS) 2"600#RF CONN, C.S. BODY, BUNA BLADDER.	LG-100C1	1	PENBERTHY	LEVEL GAUGE, 2TM7 TRANSPARENT, 3/4" NPT c/w MODEL 330J GAUGE VALVES, STD SERVICE
PRV-300/310	2	FISHER	67CFR INSTRUMENT GAS REGULATOR, STD., 250PSig MAWP, 1/4" FNPT, 0 to 125 PSig SPRING RANGE	LG-100C2	1	PENBERTHY	LEVEL GAUGE, 3RM7 REFLEX, 3/4"NPT c/w MODEL 330J GAUGE VALVES, STD SERVICE
AS BUILT				FIT-102B TE-102B	1	ROSEMOUNT	MULTIVARIABLE TRANSMITTER, MODEL 3095FB, STD., SS FLANGE, 0-250" H2O DIFFERENTIAL PRESSURE RANGE 0-3626 PSI PRESSURE RANGE, 12" SHIELDED RTD CABLE 1.5" INSERTION WITH CONN. HEAD, -40 to 400°C CSA APPROVED, (ELECTRICAL BY OTHERS)
				PST-100B PIT-100B	2	ROSEMOUNT	PRESSURE TRANSMITTERS, MODEL 3051TG4, STD., SS DIAPHRAGM, 0 to 4000 PSig, 1/2" NPT, CSA APPROVED, (ELECTRICAL BY OTHERS)
				PG-100B	1	WIKA	PRESSURE GAUGE, 4" x 1/2" NPT BOTTOM MOUNT CONN., MODEL 233.54, 0 to 300 PSig, DUAL SCALE SS CASE & INTERNALS, MOUNTED IN 2" 600# HUB FLANGE TAPPED 1/2" NPT, LIQUID FILLED
				PSV-100B	1	FARRIS	PRESSURE RELIEF VALVE, MODEL 26JB10, BALANCED BELLOW, 2"150#RF x 3"150#RF, SIZED FOR 10 MMSCFD GAS, "J" ORIFICE, STD., WCB BODY, SET @ 250 PSig
				PCV-100A	1	FISHER	ET BODY CONTROL VALVE, 4"600#RF FLANGED, STD. EQUAL PERCENTAGE TRIM, 667,SIZE 45 ACTUATOR 6 to 30 PSig, AIR TO OPEN/FAIL CLOSED
				PYV-100A	1	ASCO	3-WAY SOLENOID VALVE, MODEL EF8314G301, LOW WATTAGE, SST, EXPLOSION PROOF, 24 VDC, 150 PSig MAX SUPPLY PRESSURE, ENERGIZE TO OPEN/ NORMALLY CLOSED
				TG-100B	1	TREND	TEMPERATURE INDICATOR, 3" DIAL, 6" STEM, 3/4" NPT BACK CONN., -40° TO 160°F RANGE, DUAL SCALE c/w 1/2" NPT x 3/4" NPT x 6" 316SS THERMOWELL
				PYV-100A LYV-208C2	2	FISHER	MODEL I2P-100 TRANSDUCERS, 4 to 20 mA INPUT, 6 to 30 PSig OUTPUT, EXPLOSION PROOF, CSA APPROVED, (ELECTRICAL HOOK-UP BY OTHERS)
				LIT-100C3	1	FISHER	DL3-249B LEVEL TRANSMITTER, MODEL 249B, 4" 600#RF WAFER STYLE SENSOR, MODEL DL3 TRANSMITTER, HART COMMUNICATION, 4-20 mA OUTPUT, NACE MR0175, CSA APPROVED, (GAS OVER CONDENSATE/WATER INTERFACE), (ELECTRICAL HOOK-UP BY OTHERS)
				LCV-208C2	1	FISHER	D4 LIQUID CONTROL VALVE(RECYCLE LINE), 2" 600# RF END CONN, STD., 6 to 30PSig INPUT, TRIM SIZE 1/4", AIR TO CLOSE/FAIL OPEN
				PRV-100A,100C1 100C2 208C2	4	FISHER	67CFR INSTRUMENT GAS REGULATOR, STD., 250PSig MAWP, 1/4" FNPT, 0 to 35 PSig SPRING RANGE
				PSV-300A PSV-310A	2	NUPRO	PROPORTIONAL RELIEF VALVE, MODEL SS-4R3A5-BU, SS BODY, BUNA-N PACKING AND SEALS, 1/4" NPT SET @ 1440 PSig, "C" SPRING, 1500-1500 PSig
				F-300/310	2	BALDWIN	METHANOL FILTERS, MODEL BT839-10, 3/4" NPT CONN. BUNA SEAL, 150 PSig MAWP
				PG-210A/220A 215A/225A	4	WIKA	PRESSURE GAUGE, 4" x 1/2" NPT BOTTOM MOUNT CONN., MODEL 233.54, 0 to 300 PSig, DUAL SCALE SS CASE & INTERNALS, LIQUID FILLED
				PG-210B/220B	2	WIKA	PRESSURE GAUGE, 4" x 1/2" NPT BOTTOM MOUNT CONN., MODEL 233.54, 0 to 1500 PSig, DUAL SCALE SS CASE & INTERNALS, LIQUID FILLED

3	AS BUILT	CP	06-08-31
2	REVISED PER CUSTOMER REQUEST	CP	06-06-23
1	REVISED PER CUSTOMER REQUEST	CP	06-06-16
0	ISSUED FOR CONSTRUCTION	LG	06-05-19
D	REV. VALVE COUNT PER CUSTOMER MARKUPS	PP	06-05-09
C	REV. VALVE COUNT PER CUSTOMER VERBAL REV.	CP	06-05-01
B	REV. AS PER CUSTOMER	CMP	06-04-26
A	ISSUED FOR APPROVAL	PP	06-04-12
NO.	REVISIONS	DWN APPR	DATE



DATE 06-04-12	CUSTOMER HUSKY ENERGY LIMITED
DESIGNED BY IPS	c/o TARTAN ENGINEERING LTD. LSD: ANSELL 03-06-049-18 W5M
DRAWN BY P.PIOT	TITLE BILL OF MATERIALS & NOTES FOR 48" HORIZONTAL SWEET SEPARATOR PACKAGE
CHECKED BY Cmp	
APPROVED BY	PROJECT NO. 5325-001
SCALE N.T.S.	FILENAME 5325-001BOM
	REFERENCE NO.
	DRAWING NO. CCL-5325-001BOM
	SHEET NO. 1 OF 1
	REV. NO.