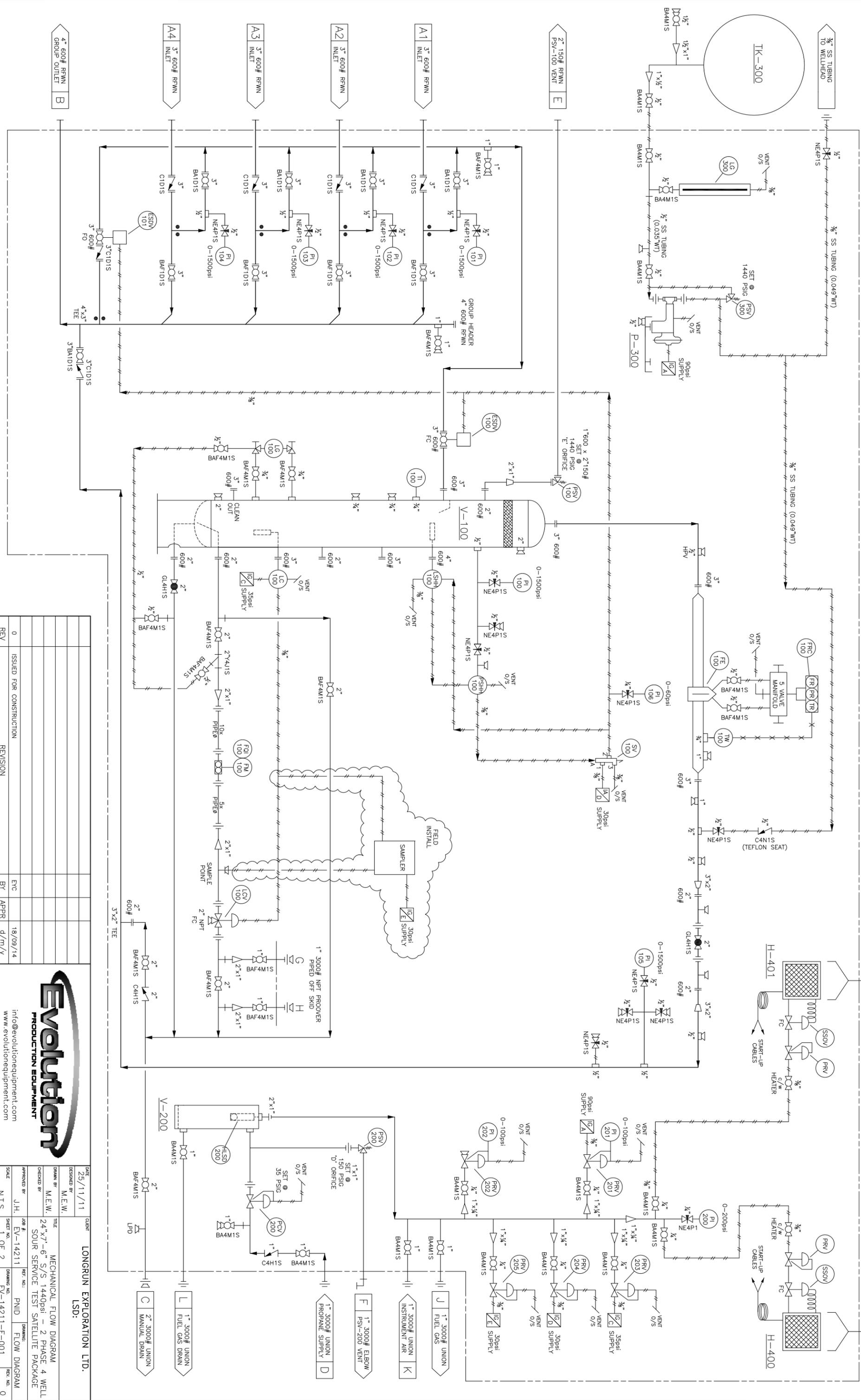


SEPARATOR BUILDING EDGE



REV	ISSUED FOR CONSTRUCTION	REVISION	BY	APPR	d/m/y
0	ISSUED FOR CONSTRUCTION		BY	APPR	18/09/14

**Evolution**  
PRODUCTION EQUIPMENT

info@evolutionequipment.com  
www.evolutionequipment.com

DATE: 25/11/11	DESIGNED BY: M.E.W.	DRAWN BY: M.E.W.	CHECKED BY: M.E.W.	APPROVED BY: J.H.
CLIENT: LONGRUN EXPLORATION LTD.	PROJECT: MECHANICAL FLOW DIAGRAM	TITLE: 24\"/>		
SHEET NO.: 1 OF 2	DRAWING NO.: EV-14211-F-001	SCALE: N.T.S.	JOB #.: EV-14211	REF. NO.: PNID

V-100

VERTICAL 3 PHASE TEST SEPARATOR

SIZE: 24" O.D. x 7'-6" S/S  
 MAMP: 1440psi @ 130°F  
 MDMT: -20°F @ 1440psi  
 CRN FOR ALBERTA, SASK & BC  
 INLET DEFLECTOR PLATE, 6" THK, 9lb/ft3 MISTEX  
 RADIOGRAPHY: RT-2  
 C.A.: 1/8"  
 PWHT  
 A/U - STAMPED  
 DWG NO.: 4088-4 Rev3

V-200

FUEL GAS SCRUBBER

SIZE: 6" x 36" S/S  
 MAMP: 285psi @ 100°F  
 MDMT: -20°F @ 285psi  
 CRN FOR ALBERTA, BC & SASK  
 C.A.: 3/8"  
 c/w HUSD-200  
 ASME SECTION VIII, DIV 1  
 2013 EDITION  
 DWG NO.: 4249-1 Rev2

H-400

PROPANE HEATER

MAKE: CATADYNE - MK124X24  
 MK2424-171211  
 SIZE: 24" x 24" 24,000BTU/HR  
 12V PREHEAT ELEMENTS, CSA APPROVED,  
 11"wg LP GAS THERMOCOUPLE &  
 MERRIK SSOV, AC-R-2511 REG  
 c/w ASSEMBLED GAS TRAIN, 30' CABLES,  
 HOOD VENT, PROTECTION GRILL

P-300

CHEMICAL INJECTION PUMP

MAKE: LINC  
 MODEL: CC-LINC 2550-ECON-PK  
 8.7 LITERS/HOUR MAX  
 0-2200psi MAX DISCHARGE PRESSURE  
 90psi SUPPLY PRESSURE  
 1/2"ø CERAMIC PLUNGER  
 1/2" NPT SUCTION, DISCHARGE & INSTRUMENT  
 SUPPLY

TK-300

METHANOL TANK

MAKE: CLEMMER  
 SIZE: 500gal DUAL WALL  
 1" FNPT CONNECTIONS  
 3" CAP c/w VENT  
 MOUNTED ON STAND  
 SITE GLASS MOUNTED ON THE INSIDE  
 OF THE BUILDING

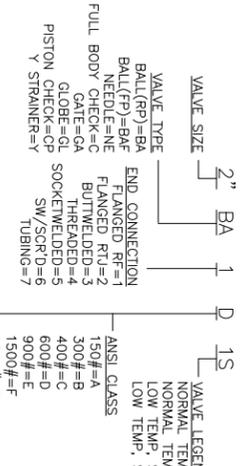
GENERAL NOTES:

- QUANTITIES IN B.O.M. ARE FOR (1) UNIT.
- ALL PIPING TO BE IN ACCORDANCE WITH THE LATEST EDITION OF ASME B31.3 PRESSURE PIPING CODE.
- VESSEL TO BE FABRICATED TO THE LATEST EDITION OF ASME SECTION VIII, DIVISION 1 PRESSURE VESSELS.
- THREADED PIPING SPEC:
  - 1/2"-1 1/2" = SCH XXS
  - 2" = SCH 160
  - 2 1/2"-1 1/2" = SCH 160 (min)
  - 2" = SCH 160 (min)
  - 3"-24" = SCH 80 (min)
- ALL FORGED STEEL FITTINGS TO BE: SA-105N, 3000# (min) RATING.
- ALL WELDED FITTINGS TO BE: SA-234-WPB NORMALIZED  
 1/2"-3/8" = 0.035" (min) ASTM A269 TP316/316L SMLS, FULLY ANNEALED  
 3/4"-2" = 0.049" (min) ASTM A269 TP316/316L SMLS, FULLY ANNEALED
- ALL TUBING FITTINGS: ASTM A182 F316/316L SWAGELOK
- PAINTING SPEC:  
 PACKAGE TO BE CLEANED TO 'SSPC-SP-6' COMMERCIAL SANDBLAST  
 1st COAT PRIMER: ONE (1) COAT OF CLOVERDALE FAST DRY PRIMER,  
 FINISH COAT: ONE (1) COAT OF CLOVERDALE 105 GREY ENAMEL,  
 SKID FLOOR: ONE (1) COAT OF CLOVERDALE 105 GREY ENAMEL.  
 8. PROTECT ALL OPENINGS FOR SHIPMENT.  
 9. BOLTING TO BE SA-193-B7M STUDS w/ SA-194-2HM NUTS c/w 316SS FLEXITALLIC GASKET.  
 10. BUILDING SIZE: 18'-0" LG x 11'-0" WIDE.  
 BUILDING TYPE: SELF FRAMER BUILDING  
 ROOF TYPE: SHED  
 WALL HEIGHTS: 7'-8" LOW EAVE TO 8'-9" HIGH EAVE  
 EXTERIOR: 22 GAUGE PRE-PAINTED: SURF WHITE WALLS, SAPPHIRE BLUE DOORS & TRIM  
 INTERIOR: 24 GAUGE WHITE FLUTED ALUMINUM  
 ROOF & WALLS R12, 4mil VAPOR BARRIER  
 INSULATION: ONE (1) 3'-0" x 7'-0" MAIN DOOR c/w PANIC HARDWARE,CHECK CHAIN,  
 WEATHER STRIPPING, 24"x24" WIG WINDOW, PRE-PAINTED SAPPHIRE BLUE DOORS & TRIM  
 VENTILATION: ONE (1) 36" x 36" DOUBLE GLAZED SLIDING WINDOW w/ SCREEN.  
 WINDOWS:  
 11. PACKAGE IS HYDRO TESTED @ 1.5 TIMES MAMP FOR 1/2 HOUR AT ROOM TEMPERATURE  
 12. INSURE ALL TEST FLUID IS DRAINED  
 13. PUMP INSTALLED ON PUMP TABLE, ADD SECOND PUMP BASE ON DUAL PUMP STAND FOR FUTURE PUMP INSTALL.  
 14. INSTRUMENTS TO BE VENTED TO ATMOSPHERE.  
 15. 2" POLYURETHANE SPRAY FOAM ON UNDERSIDE OF SKID  
 16. OPEN ORIFICE CHANGER AND DRAIN AFTER HYDRO.

VALVE LIST

VALVE NUMBER	QTY.	MANUFACTURER	DESCRIPTION
3"BAF1D1S	4	WKM	3" 600# RF F.P. BALL VALVE, NACE
3"BAID1S	5	WKM	3" 600# RF R.P. BALL VALVE, NACE
3"C1D1S	6	WHEATLEY	3" 600# RF SWING CHECK VALVE, NACE
2"BAF4M1S	5	MERIDIAN	2" NPT WOG (MAC2CF) F.P. BALL VALVE, NACE
1"BAF4M1S	4	MERIDIAN	1" NPT WOG (MAC2CF) F.P. BALL VALVE, NACE
3/4"BAF4M1S	2	MERIDIAN	3/4" NPT WOG (MAC2CF) F.P. BALL VALVE, NACE
1/2"BAF4M1S	5	MERIDIAN	1/2" NPT WOG (MAC2CF) F.P. BALL VALVE, NACE
1 1/2"BA4M1S	1	MERIDIAN	1 1/2" NPT BAR STOCK R.P. BALL VALVE, NACE
1"BA4M1S	5	MERIDIAN	1" NPT BAR STOCK R.P. BALL VALVE, NACE
1/2"BA4M1S	4	MERIDIAN	1/2" NPT BAR STOCK R.P. BALL VALVE, NACE
1/4"BA4M1S	7	MERIDIAN	1/4" NPT BAR STOCK R.P. BALL VALVE, NACE
1/2"NE4P1S	13	MDI	1/2" NPT 6000# S.S. FxF NEEDLE VALVE, NACE
1/4"NE4P1S	1	MDI	1/4" NPT 6000# S.S. FxF NEEDLE VALVE, NACE
1/4"NE4P1	1	MDI	1/4" NPT 6000# C.S. FxF NEEDLE VALVE
2"C4H1S	1	STREAM-FLO	2" NPT CL.800# SWING CHECK VALVE, NACE
1"C4H1S	1	STREAM-FLO	1" NPT CL.800# SWING CHECK VALVE, NACE
1/2"C4N1S	1	MDI	1/2" NPT 6000# SS INLINE CHECK VALVE, TEFLO
2"YA1S	1	AB. STRAINER	2" NPT CL.600# NYS 600 Y-STRAINER, NACE
2"GL4H1S	2	OMB	2" NPT CL.800# GLOBE VALVE, NACE

VALVE LEGEND



BILL OF MATERIALS

TAG	QTY	MAKE	DESCRIPTION
PSV-100	1	MERCER	PRESSURE SAFETY VALVE, P/N: 91-29-E1117N1, 1" 600# x 2" 150#, SOUR PRESSURE SERVICE TRIM, WCB BODY, SET @ 1440psig, 'E' ORIFICE
PSV-200	1	MERCER	PRESSURE SAFETY VALVE, MODEL 9100, 1" NPT INLET x 1" NPT OUTLET, STD. PRESSURE SAFETY TRIM, WCB BODY, SET @ 150psig, 'D' ORIFICE
PSV-300	1	SWAGelok	PRESSURE SAFETY VALVE, SS4R-3A5, 1/2" TUBING INLET x 1/2" TUBING OUTLET, 316SS BODY, SET @ 1440psig, MOUNTED ON METHANOL PUMP
LSHH-100	1	PATHWAY	P120-21-30 HIGH LEVEL SHUTDOWN, 2" MNPT CONNECTIONS, SOUR SERVICE, SNAP ACTING NON-BLEED PNEUMATIC, 0-1000psig SUPPLY, MWP:1500psi c/w MANUAL OVERRIDE
PSHH-100	1	CVS	CVS 7970 PRESSURE SENSING RELAY, 1/2" NPT CONNECTIONS, 125psi MAX SUPPLY SIGNAL, 290-1440psi SET RANGE
ESDV-100	1	MERIDIAN	BALL VALVE, 3" 600# RF, FLOATING BALL, RP, WCB, LONG PATTERN BODY, 316SS BALL&STEM, R-PTE SEAT, GRAPHITE PACKING, P/N: FB2-R30R06NH ACTUATOR, PNEUMATIC, RAKE & PINION DESIGN, SPRING RETURN, 30psi SWEET SUPPLY, STD. PROCESS, FAIL OPEN, P/N: AC190SRUN
ESDV-101	1	MERIDIAN	BALL VALVE, 3" 600# RF, FLOATING BALL, RP, WCB, LONG PATTERN BODY, 316SS BALL&STEM, R-PTE SEAT, GRAPHITE PACKING, P/N: FB2-R30R06NH ACTUATOR, PNEUMATIC, RAKE & PINION DESIGN, SPRING RETURN, 30psi SWEET SUPPLY, STD. PROCESS, FAIL OPEN, P/N: AC190SRUN
SV-100	1	AMOT	3 WAY VALVE, 4057D025H2 "CP" 1/2" FNPT CONNECTIONS, PNEUMATIC LATCH, MANUAL RESET, SPRING RETURN WHEN RELEASED, 125psi MAX SUPPLY
PCV-200	1	FISHER	627 PRESSURE REDUCING REGULATOR, 1" FNPT, WCB STEEL BODY, SST TRIM, ALUMINUM SPRING CASE, 35-80psig S.R., 1/4" ORIFICE, 1750psig MAX INLET
PRV-203	3	FISHER	67CFR-362SC INSTRUMENT GAS REGULATOR w/ TAPPED BONNET, 1/2" FNPT CONNECTIONS, STANDARD SERVICE TRIM, 0 TO 35psig SPRING RANGE, 250psig MAMP
PRV-204	1	FISHER	67CFR-362SC INSTRUMENT GAS REGULATOR w/ TAPPED BONNET, 1/2" FNPT CONNECTIONS, STANDARD SERVICE TRIM, 0 TO 35psig SPRING RANGE, 250psig MAMP
PRV-205	1	FISHER	67CFR-362SC INSTRUMENT GAS REGULATOR w/ TAPPED BONNET, 1/2" FNPT CONNECTIONS, STANDARD SERVICE TRIM, 0 TO 35psig SPRING RANGE, 250psig MAMP
PRV-201	2	FISHER	67CFR-601SC INSTRUMENT GAS REGULATOR w/ TAPPED BONNET, 1/2" FNPT CONNECTIONS, STANDARD SERVICE TRIM, 0 TO 125psig SPRING RANGE, 250psig MAMP
LCV-100	1	NORRISSEAL	2200 MOTOR VALVE, 2" FNPT END CONNECTIONS, SOUR SERVICE, 1 1/2" SST QUICK OPEN TRIM c/w SIZE 9 ATO/FFC ACTUATOR
LC-100	1	KIMRAY	GEN II BACK MOUNT FLOAT OPERATED LEVEL CONTROLLER, CAT # CMM, 4000psi MAMP, 2" MNPT, 2" GEN II LLC PILOT, SS6 STEEL BODY
FE-100	1	NUFLO	3" 600# SCH. 80 SENIOR METER RUN, SOUR PROCESS TRIM, 64" OAL, PIN TYPE FLOW STRAIGHTENER, BUILT TO AGA 2000, ONE - (REMANUFACTURED)
FRC-100	1	BARTON (REMAN.)	ITT MODEL 202E, 3 PEN FLOW CHART RECORDER, 0 TO 100" W.C. DIFF. P.R., 0 TO 1500psig STATIC ELEMENT, 0-150°F, SOUR, c/w 5 VALVE SST. MANIFOLD
FW-100	1	SUR-FLO	TURBINE METER, 1" MNPT BODY SCH.80 TURBINE ASSEMBLY SST, 3/4" PORT 40 TO 290 M3/DAY, P/N: 2080-0750-000SH
EQ-100	1	KIMRAY	TOTALIZER ADAPTER: 1" ALUMINUM TOTALIZER ADAPTER TM, P/N: T2101-AL PICKUP: MAGNETIC PICKUP COIL TM, P/N: 2000-MAGPKUP NO HUB EXTENSION REQUIRED
PI-100	6	WESTERN GAUGE (WG)	TOTALIZER: KIMRAY B2800, 1" MNPT, P/N: 309-285SM-B2800
PI-101	1	WESTERN GAUGE (WG)	ELITE PRESSURE GAUGE, LF, 1/2" NPT BITM x 4" FACE, 0-1500psig RANGE, DUAL SCALE, MOUNTED ON INLET VESSEL, STD. SERVICE
PI-102	1	WESTERN GAUGE (WG)	ELITE PRESSURE GAUGE, LF, 1/2" NPT BITM x 2 1/2" FACE, 0-60psig RANGE, DUAL SCALE, STD. SERVICE
PI-103	1	WESTERN GAUGE (WG)	ELITE PRESSURE GAUGE, LF, 1/2" NPT BITM x 2 1/2" FACE, 0-60psig RANGE, DUAL SCALE, STD. SERVICE
PI-104	1	WESTERN GAUGE (WG)	ELITE PRESSURE GAUGE, LF, 1/2" NPT BITM x 2 1/2" FACE, 0-60psig RANGE, DUAL SCALE, STD. SERVICE
PI-105	1	WESTERN GAUGE (WG)	ELITE PRESSURE GAUGE, LF, 1/2" NPT BITM x 2 1/2" FACE, 0-60psig RANGE, DUAL SCALE, STD. SERVICE
PI-106	1	WESTERN GAUGE (WG)	ELITE PRESSURE GAUGE, LF, 1/2" NPT BITM x 2 1/2" FACE, 0-60psig RANGE, DUAL SCALE, STD. SERVICE
PI-200	1	WESTERN GAUGE (WG)	ELITE PRESSURE GAUGE, LF, 1/2" NPT BITM x 2 1/2" FACE, 0-2000psig RANGE, DUAL SCALE, MOUNTED ON FUEL GAS SCRUBBER, STD. SERVICE
PI-201	2	WESTERN GAUGE (WG)	ELITE PRESSURE GAUGE, LF, 1/2" NPT BITM x 2 1/2" FACE, 0-1000psig RANGE, DUAL SCALE, PRV-201 & PRV-202, STD. SERVICE
PI-202	1	WESTERN GAUGE (WG)	ELITE PRESSURE GAUGE, LF, 1/2" NPT BITM x 2 1/2" FACE, 0-1000psig RANGE, DUAL SCALE, PRV-201 & PRV-202, STD. SERVICE
TI-100	1	WESTERN GAUGE (WG)	MASTER TEMP. TEMPERATURE INDICATOR, 1/2" BCM x 3" FACE x 6" STEM, -40 TO 160°F TEMP. RANGE, DUAL SCALE, MOUNTED ON INLET VESSEL, c/w 1/2" FNPT x 3/4" MNPT x 6" "U" DIMENSION LENGTH, 316SSST THERMOWELL
LG-100	1	QUALITY	LEVEL GAUGE, 015R20 RELEX SIGHT GLASS, MAMP: 2500psig @ 100°F, MOUNTED IN LIQUID/GAS INTERFACE, 7/8" VISIBLE GLASS
LG-300	1	PLAINSMAN	TANK LEVEL GAUGE, P5700-52-48-CTM, MAMP: 140psig, 1/2" NPT CONNECTIONS, 4'-0" LONG, METRIC HEIGHT/RATE.

REV	ISSUED FOR CONSTRUCTION	REVISION	BY	APPR	d/m/y
0	ISSUED FOR CONSTRUCTION		ETC		18/09/14

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 PRODUCTION EQUIPMENT

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DATE: 25/11/11  
 DESIGNED BY: M.E.W.  
 DRAWN BY: M.E.W.  
 CHECKED BY: M.E.W.  
 APPROVED BY: J.H.

JOB # EV-14211  
 SHEET NO. 2 OF 2

LONGRUN EXPLORATION LTD.  
 LSD:

BILL OF MATERIALS - FLOW DIAGRAM  
 24"x7'-6" S/S 1440psi - 2 PHASE 4 WELL  
 SOUR SERVICE TEST SATELLITE PACKAGE

REF. NO. PNID  
 DRAWING NO. EV-14211-F-002  
 REV. NO. 0