

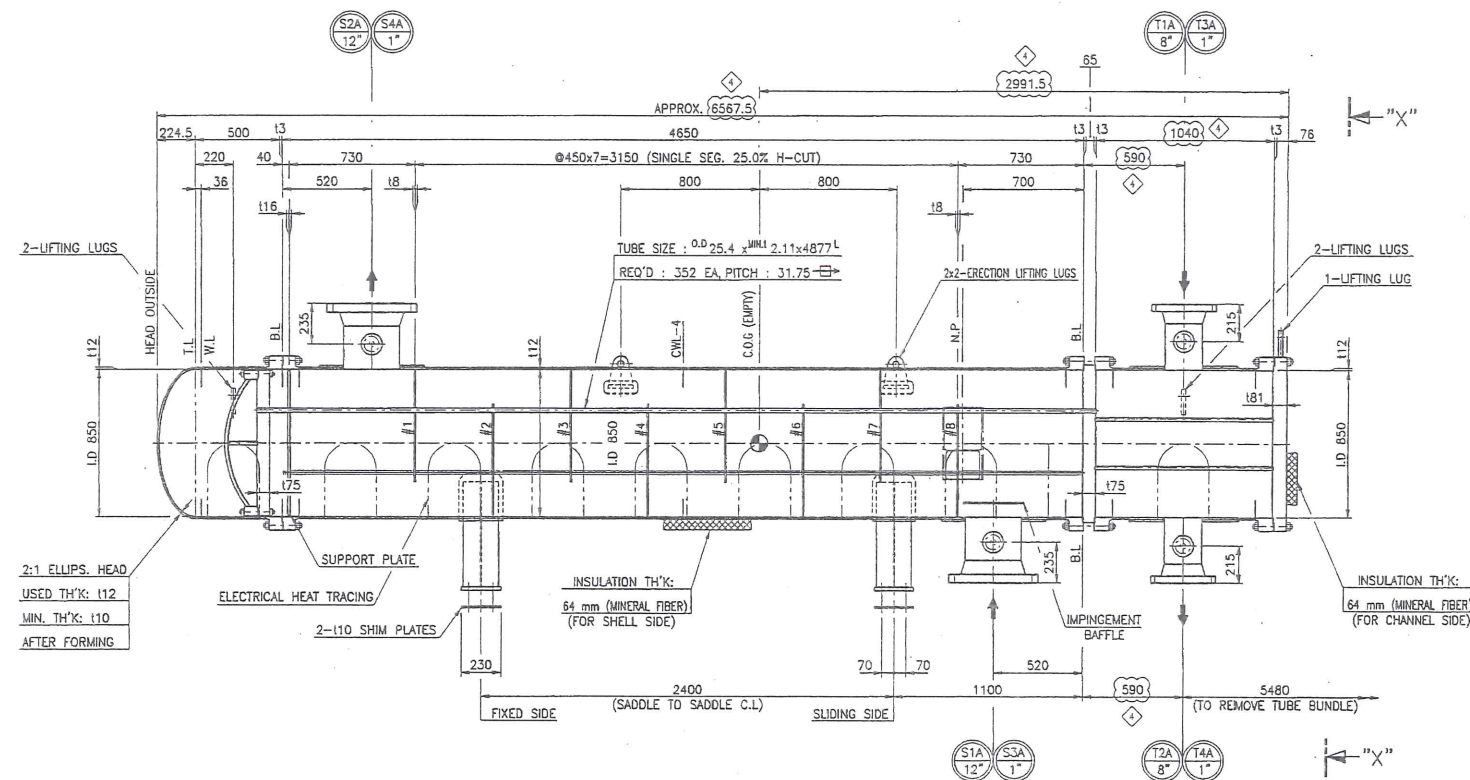
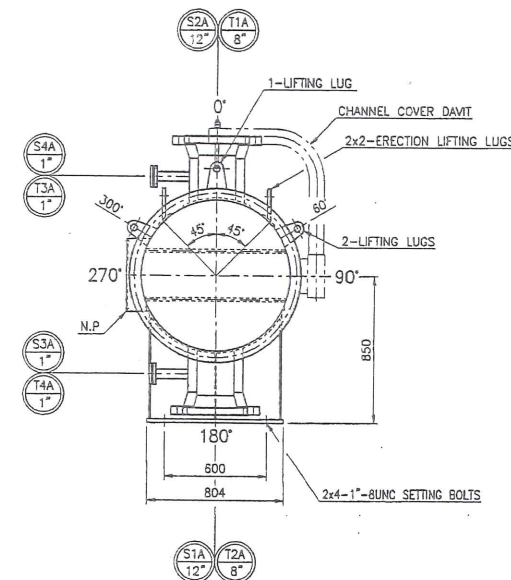
 <b>MEG ENERGY</b>	<b>CHRISTINA LAKE REGIONAL PROJECT</b> <b>Phase 3A EPC for Central Plant Facilities</b>	 <b>SNC-LAVALIN</b>
	<b>SLI Project No. 511036</b>	

 <b>SNC-LAVALIN</b>	<input type="checkbox"/> A1 Not suitable to initiate fabrication. modify as noted, resubmit for review <input type="checkbox"/> B1 Suitable to initiate fabrication as noted. modify as noted, resubmit for review <input type="checkbox"/> C1 Suitable to fabricate to completion as noted. submit final documents including as-builts as required <input checked="" type="checkbox"/> D1 Suitable to fabricate to completion. submit final documents including as-built documents as required <input type="checkbox"/> E1 Not suitable as final documents as noted. modify as noted and resubmit. <input type="checkbox"/> F1 Suitable as final documents. no further resubmittal required (unless revised by vendor) <input type="checkbox"/> VX Vendor document cancelled.		
	Vendor's drawing review for conformity with specifications and design drawing.  This review does not relieve the vendor of his responsibility for errors in design and detailing as detailed in his contract.		
Vendor: Sewon Cellontech Co. Ltd. - P00007		No.: E0351-3AE324-D-01	Rev: 4
Doc. Title:	H00.01 - GENERAL ASSEMBLY (1/3) - Tag:3A-E-324A/B		
Client Code:		Project No: 511036	Date Rec'd: 2014/05/30
Reviewed by: <i>SS</i> Date: <i>11-June-2014</i>		Document No: P-5310-01-0020	Submittal: 05





SIDE ELEVATION  
(SCALE = 1 : 20)



NOZZLE ORIENTATION  
(VIEW "X" - "X")  
(SCALE = 1 : 20)

ASME STAMP

DESIGN & TEST DATA

QTY TO BE MANUFACTURED	1 (ONE)
CODE	ASME SEC. VIII DIV.1 2010 ED. + 2011 ADD. & TEMA CLASS "R" 9TH ED. - 2007 + API 660 8TH ED.
ASME CODE STAMP	YES
CRN. NO.	TBD
NATIONAL BOARD REGISTRATION	YES
TYPE	H-AET
EFFECTIVE SURFACE AREA (PER SHELL) (m <sup>2</sup> )	129.4
SPECIAL SERVICE	NO
FLUID CIRCULATED	100% WATER (60% / 40% WT) MP BLWDOWN
DENSITY (LIQ./VAP.) kg/m <sup>3</sup> (W./V.)	1078/- / 1026/- 864/- / 962/-
NO. OF PASS	1 (ONE) 4 (FOUR)
PRESSURE (Kpa/g)	DESIGN (MIL/EXT.) 1500/F.V. 1950/F.V.
OPERATING	900 1461
TEMPERATURE (°C)	DESIGN 214 214
OPERATING (W./V.)	40/105 200/95
TEST PRESS. (Kpa/g)	HYDRO. 2040 2639
PNEUM.	- -
M.A.W.P. (HOT&CORRODED) (Kpa/g)	1569 2030
M.A.W.P. LIFTING COMPONENT	SHELL ORTH FLANGE CHANNEL COVER
M.A.P. (NEW&COLD) (Kpa/g)	1596 2098
M.A.E.W.P. (Kpa/g)	F.V. F.V.
P.W.H.T.	NO YES (DURING HEAD ONLY)
STRESS RELIEVE AFTER FORMING (SEE NOTE 31.)	YES NO
RADIOGRAPHY (S/H)	SPOT/FULL SPOT/FULL
JOINT EFFICIENCY	SHELL 0.85 0.85
HEAD	1.0 1.0
CORR. ALLOW. (MM)	3.2 3.2
M.D.M.T (°C)	-29 -29
IMPACT TEST	SEE NOTE 14. SEE NOTE 14.
INSULATION (MM)	64 64
FIRE PROOFING (MM)	NONE
PAINTING SPECIFICATION	SEE NOTE 26.
TOLERANCE	SEE NOTE 13.
TUBE TO TUBE SHEET JOINT	ROLLED (TWO GROOVES) AND EXPANDED
WIND CODE	NBC 2005, IMPORTANCE FACTOR = 1.15
SEISMIC CODE	NBC 2005, IMPORTANCE FACTOR = 1.3
FABRICATION	6870
ERECTOR	7150
EMPTY	7150
OPERATING	10180
TEST (SHOP/FIELD)	10300/13140
BUNDLE	3050

MARK	NOM SIZE	RATING	TYPE	FACING	THICK	PROJ.	1x@ORD	SERVICE & REMARKS
T3A,T4A	1"	2	ASME 300F	L.W.N	R.F	-	315	FIELD HYDROTEST (W/B.F)
S3A,S4A	1"	2	ASME 300F	L.W.N	R.F	-	365	FIELD HYDROTEST (W/B.F)
T2A	8"	1	ASME 300F	W.N	R.F	SCH 80	805	(12x#640) TUBE SIDE OUTLET
T1A	8"	1	ASME 300F	W.N	R.F	SCH 80	805	(12x#640) TUBE SIDE INLET
S2A	12"	1	ASME 300F	W.N	R.F	SCH 80	805	(12x#610) SHELL SIDE OUTLET
S1A	12"	1	ASME 300F	W.N	R.F	SCH 80	805	(12x#610) SHELL SIDE INLET
MARK	NOM SIZE	RATING	TYPE	FACING	THICK	PROJ.	1x@ORD	SERVICE & REMARKS
FLANGE								NOZZLE REINF.PAD

NOZZLE SCHEDULE

REFERENCE DRAWINGS

1. GENERAL ASSEMBLY (2/3) (FOR 3A-E-324B)	E0351-3AE324-D-02
2. GENERAL ASSEMBLY (3/3)	E0351-3AE324-D-03
3. DETAIL OF BODY (1/2)	E0351-3AE324-D-04
4. DETAIL OF BODY (2/2)	E0351-3AE324-D-05
5. DETAIL OF TUBE BUNDLE (1/2)	E0351-3AE324-D-06
6. DETAIL OF TUBE BUNDLE (2/2)	E0351-3AE324-D-07
7. DETAIL OF SUP'T SADDLE	E0351-3AE324-D-08
8. DETAIL OF INSUL. SUP'T (1/2)	E0351-3AE324-D-09
9. DETAIL OF CHANNEL COVER DAVIT	E0351-3AE324-D-10
10. NOZZLE DETAIL "S1A,S1B,S2A"	E0351-3AE324-D-11
11. NOZZLE DETAIL "S2B"	E0351-3AE324-D-12
12. NOZZLE DETAIL "T1A,T2A,T2B"	E0351-3AE324-D-13
13. NOZZLE DETAIL "T1B"	E0351-3AE324-D-14
14. NOZZLE DETAIL "S3A/B,S4A/B & T3A/B,T4A/B"	E0351-3AE324-D-15
15. DETAIL OF TEST RING	E0351-3AE324-D-16
16. DETAIL OF EHT GENERAL ASSEMBLY (1/2)	E0351-3AE324-D-17
17. DETAIL OF NAME PLATE	E0351-3AE324-D-18
18. DETAIL OF EHT GENERAL ASSEMBLY (2/2)	E0351-3AE324-D-19
19. DETAIL OF EHT WIRING (1/2)	E0351-3AE324-D-20
20. DETAIL OF EHT WIRING (2/2)	E0351-3AE324-D-21
21. DETAIL OF INSUL. SUP'T (2/2)	E0351-3AE324-D-22

MATERIAL SPECIFICATION

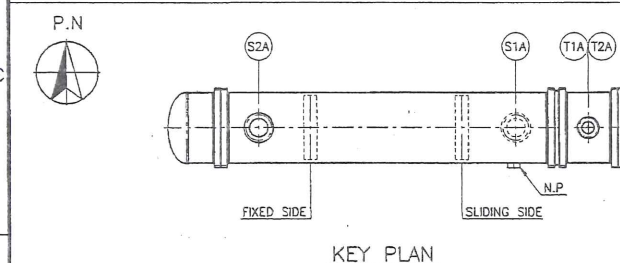
	SAS16-70N	STUD BOLTS AND NUTS	
SHELL HEAD	SAS16-70N	-SHELL COVER	SA193-B7/SA194-2H
CHANNEL HEAD	SAS16-70N	-STATIONARY	SA193-B7/SA194-2H
COVER FLANGE	-	-CHANNEL COVER	-
CHANNEL FLANGE	SA266-2N	-FLOATING	SA193-B7/SA194-2H
TUBE SHEET	SA266-2N	-SHELL SIDE NOZZ.	SA193-B7/SA194-2H
FLOATING HEAD COVER	SA266-2N	-TUBE SIDE NOZZ.	SA193-B7/SA194-2H
BACKING DEVICE	-	GASKETS	-
TUBES	SA179 (SEAMLESS)	-SHELL COVER	SEE *1)
BAFFLES or SUPPORT	SA516-70	-SHELL CHANNEL END	SEE *1)
IMPINGEMENT BAFFLE	SA516-70	-CHANNEL SHELL END	SEE *1)
TIE ROD / SPACER	SA36 / SA53-B	-CHANNEL COVER	-
PASS PARTITION PLATE	SA516-70N	-FLOATING	SEE *1)
SHELL NOZZLE -NECK	SA106-B	-SHELL SIDE NOZZ.	SEE *2)
-FLANGE	SA105N	-TUBE SIDE NOZZ.	SEE *2)
CHANNEL NOZZLE -NECK	SA106-B	SUPPORT SADDLES / PAD	SA516-70N/SA516-70N
-FLANGE	SA105N	EARTH LUG & NAME PLATE	SA240-304
EXPANSION JOINT	-	SETTING BOLT/NUT	SA325

\*1) GASKET: METAL - DOUBLE METAL JACKET - GASKET  
 - FILLER: GRAPHITE  
 - JACKET: L  
 \*2) SPIRAL WOUND (14.5) : FILLER: GRAPHITE  
 HOOP: 316 S.S. OUTER RING: C.S.

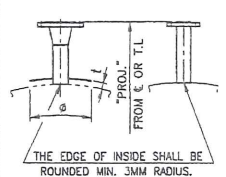
REV.	DATE	DESCRIPTIONS FOR REVISION	DRWN	CHK'D	REV'D	APP'D
2014.03.05		REVISED AS MARKED	B.C.CHIN			
2013.11.18		REVISED AS MARKED	B.C.CHIN			
2013.10.17		REVISED AS MARKED	B.C.CHIN			
2013.08.21		REVISED AS MARKED	B.C.CHIN			
2013.07.08		FOR APPROVAL	B.C.CHIN			

CLRP PHASE 3A CENTRAL PLANT FACILITY: EPC

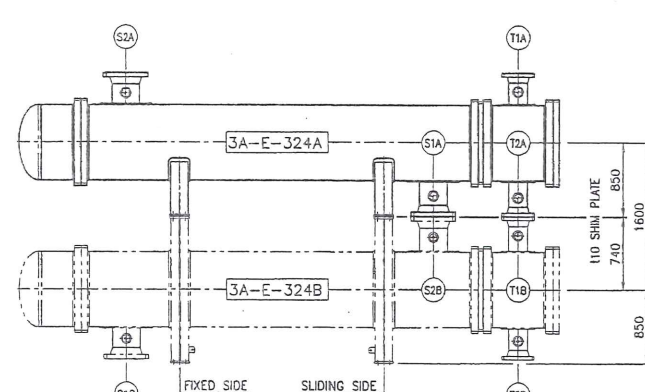
CUSTOMER	MEG ENERGY CORP.
CLIENT	SNC • LAVALIN INC.
TITLE	MP BLOWDOWN/GLYCOL EXCHANGER
PROJECT	3A-E-324A/B GENERAL ASSEMBLY (1/3) (FOR 3A-E-324A/B)
OWNER JOB NO.	511036
PROJECTION METHOD	THIRD ANGLE PROJECTION
P/O NO.	P-5310-01
SEWON JOB NO.	E-0351
SEWON DWG. NO.	E0351-3AE324-D-01
SCALE	SEE DWG.
WORKS	C



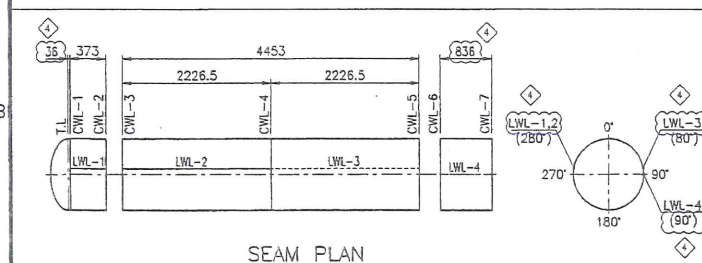
KEY PLAN



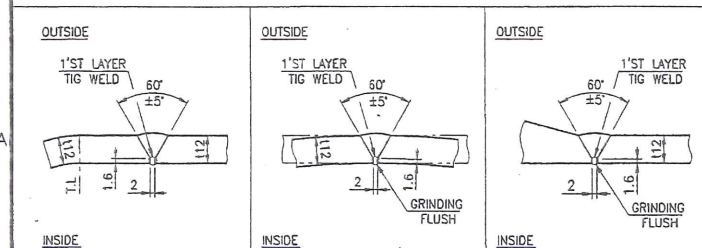
TYPICAL NOZZLE ASSEMBLY



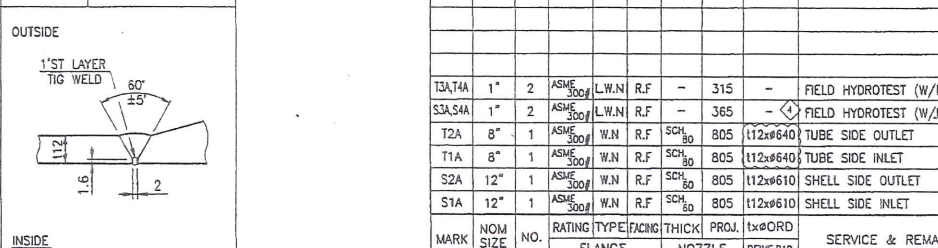
STACKING ARRANGEMENT



SEAM PLAN



OUTSIDE INSIDE



OUTSIDE INSIDE