GENERAL NOTES

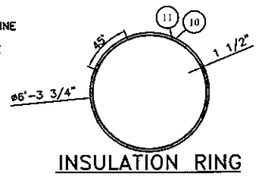
1. QUALITY CONTROL PROGRAM NUMBER: AQP-1317(S)
2. WELDING PROCEDURE REGISTRATION NUMBER: WP1970.2
3. STEAM COIL DESIGNED TO ASME SECTION VIII, DIV. 1
   DESIGN PRESSURE: 225 PSI @ 250°F/32°F
   CORROSION: EXT: NIL
   HYDROTEST: 338 PSI
   IMPACTS EXEMPT PER UG-20(f)(1-S)
   RADIOGRAPHY: 100% PER UW-11(a)
4. SHELL AND HEAD MATERIAL: SA-516-70N
5. FLANGE MATERIAL: SA-105-N
6. PIPE MATERIAL: SA-106-B
7. PLATE MATERIAL: SA-516-70N/SA-36
8. BOLTING MATERIAL: SA-193-B7M/SA-194-2HM
9. INTERNAL SANDBLAST: SSPC-SP10 (NEAR WHITE)
10. INTERNAL COATING:
    DEVOE 253 AS PER MANUFACTURER'S SPECIFICATION
    DEVOE 111 AS PER MANUFACTUER'S SPEC'S (LOWER 1/3 OF VESSEL)
11. EXTERNAL SANDBLAST: SSPC-SP3 (POWER TOOL)
12. EXTERNAL COATING:
    ALL AREAS: ONE COAT OF PRIMER (SUITABLE FOR 250°F)
    NON-INSULATED AREAS: ONE COAT OF INDUSTRIAL ENAMEL (WARM GREY)
13. INSULATION: 1 1/2" THK CALCIUM SILICATE INSULATION c/w 0.024" ALUMINUM CLADDING
14. HARDNESS TESTING TO PERFORMED ON ONE LONG SEAM, ONE CIRC SEAM
    AND ONE CAT "C" WELD PER WELDER (200 BHN MAXIMUM)
15. ALL BOLT HOLES TO STRADDLE CENTERLINE
16. ALL OPENINGS TO BE COVERED PRIOR TO SHIPPING
17. ALL OUTSIDE PROJECTIONS ARE TO BE MEASURED ALONG THE CENTERLINE
    OF THE NOZZLE
18. ALL INSIDE PROJECTIONS ARE TO BE MEASURED ALONG THE SHORTSIDE
    OF THE NOZZLE
19. FABRICATION TOLERANCE AS PER BWML DWG: TOL2002
20. SEAL WELD ALL INTERNALS & 1/8" RADIUS FOR COATING
21. VESSEL TO BE REGISTERED IN ALBERTA
22. VESSEL TO BE SUPPLIED WITH U-STAMP
23. VESSEL IS IN SOUR SERVICE
24. SHIPPING DIMENSIONS: 7'-0" W x 8'-6" H x 14'-6" LG
25. SHIPPING WEIGHT: 7,000 LBS
26. SERIAL NUMBER: 14171

NOZZLE SCHEDULE

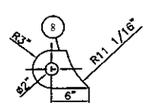
MARK	NO. REQ'D	DESCRIPTION	NPS	CLASS	TYPE	PROJECTION INSIDE	PROJECTION OUTSIDE	WELD DETAIL	WELD A	WELD B	REPAD C	REPAD D	BILL OF MATERIALS ITEM NUMBER
N1	1	VAPOR INLET	3	150	RFWN	1"	6"	1,5	1/4	–	3/16	–	13,14,15,16
N2	1	VAPOR OUTLET	6	150	RFWN	1"	8"	1,5	5/16	–	3/16	–	17,18,19
N3	1	LIQUID INLET	2	150	RFWN	1"	6"	1,5	1/4	–	3/16	–	20,21,22
N4	1	FUEL GAS	2	150	RFWN	1"	6"	1,3	1/4	–	–	–	20,21
⚠1 N5	1	TRUCK-OUT	3	150	RFWN	15"	6"	1,2	1/4	–	–	–	13,23,24,25,26,27
N6	1	DRAIN	2	150	RFWN	FLUSH	6"	1,2	1/4	–	–	–	20,28
N7A/B	2	HEAT COIL	2	150	RFWN	6"	8"	1,3	1/4	–	–	–	29,30,38,39,40,41,42,43,44,45,46,47
N8A/B	2	INSTR. BRIDLE	2	150	RFWN	1"	6"	1,3	1/4	–	–	–	20,21
N9	1	TI	2	150	RFWN	1"	6"	1,3	1/4	–	–	–	20,21
N10	1	TC	2	150	RFWN	1"	6"	1,3	1/4	–	–	–	20,21
M1	1	MANWAY	20	150	RFWN	1"	8"	1,3	1/4	–	–	–	31,32,33,34,35,36,37

BILL OF MATERIALS

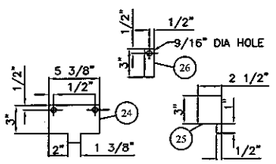
ITEM	REQ'D	PART	DESCRIPTION	MATERIAL	WEIGHT
1	1	SHELL	3/8" THK x 120" W, ROLL TO 72" ID (CIRC=19'-0 1/2" LG)	SA-516-70N	–
2	2	HEAD	3/8" THK (0.3130" MIN) x 72" ID 2:1 S.E.	SA-516-70N	–
3	2	SADDLE	8" x 1/4" THK x 7'-0 3/8" LG, ROLL TO 72 3/4" ID	SA-516-70N	–
4	4	SADDLE	6" x 3/8" THK x 3'-1 5/8" LG	SA-36	–
5	2	SADDLE	3/8" THK x 37 5/8" W x 63 1/4" LG (SEE DETAIL)	SA-36	–
6	2	SADDLE	6" x 1/2" THK x 5'-5" LG c/w HOLES OR SLOTS (SEE DETAIL)	SA-36	–
7	1	NAMEPLATE	6" x 8" NAMEPLATE BRACKET	SA-36	–
8	2	LIFT LUG	1/2" THK x 6" W x 9" LG (SEE DETAIL)	SA-36	–
9	1	GROUND LUG	2" x 1/4" THK x 6" LG c/w 9/16" DIA HOLE	SA-36	–
10	2	INSULATION RING	1" x 3/16" THK x 19'-10" LG, ROLL TO 6'-3 3/4" OD	SA-36	–
11	16	INSULATION RING	1 1/2" x 1/4" THK x 2 1/4" LG	SA-36	–
12	250 SqFt	INSULATION	1 1/2" THK CALCIUM SILICATE INSULATION c/w 0.024" ALUMINUM CLADDING	–	–
13	2	N1,N5	3" x CLASS 150 RFWN FLG SCH XH	SA-105-N	–
14	1	N1	REPAD: 3/8" THK x 15" OD, ROLLED TO 73 3/4" ID	SA-516-70N	–
15	1	N1	3" PIPE SCH XH x 4 3/4" LG (BOE,ROE)	SA-106-B	–
16	1	N1	3/8" THK DEFLECTOR PLATE	SA-516-70N	–
17	1	N2	6" x CLASS 150 RFWN FLG SCH XH	SA-105-N	–
18	1	N2	REPAD: 3/8" THK x 29" OD, ROLLED TO 73 3/4" ID	SA-516-70N	–
19	1	N2	6" PIPE SCH XH x 6" LG (BOE,ROE)	SA-106-B	–
20	7	N3,4,6,8,9,10	2" x CLASS 150 RFWN FLG SCH 160	SA-105-N	–
21	6	N3,4,8,9,10	2" PIPE SCH 160 x 4 7/8" LG (BOE,ROE)	SA-105-N	–
22	1	N3	REPAD: 3/8" THK x 12" OD, ROLLED TO 73 3/4" ID	SA-516-70N	–
⚠1 23	1	N5	3" PIPE SCH XH x 1'-6 3/4" LG (BOE,COE)	SA-106-B	–
24	1	N5	VORTEX: 4" x 1/8" SS FLATBAR x 6" LG	SA-240-TP316	–
25	2	N5	VORTEX: 4" x 1/8" SS FLATBAR x 2 7/8" LG (SEE DETAIL)	SA-240-TP316	–
26	2	N5	VORTEX: 1" x 1/8" SS FLATBAR x 3" LG	SA-240-TP316	–
27	2	N5	VORTEX: 1/2" DIA x 1" LG BOLT c/w NUT	SS	–
28	1	N6	2" PIPE SCH 160 x 4 7/8" LG (BOE,COE)	SA-105-N	–
29	4	N7	2" x CLASS 150 RFWN FLG SCH XH (STAINLESS)	SA-182-F316	–
30	2	N7	2" PIPE SCH XH x 9 3/4" LG (BBE) (STAINLESS)	SA-312-TP316	–
31	1	M1	20" x CLASS 150 RFWN FLG SCH STD	SA-105-N	–
32	1	M1	20" x CLASS 150 RF BLIND FLG	SA-105-N	–
33	1	M1	20" x CLASS 150 RF FLEX GASKET	316SS	–
34	1	M1	20" x CLASS 150 DAVIT ARM	–	–
35	1	M1	20" PIPE SCH STD x 4 5/8" LG (BOE,ROE)	SA-106-B	–
36	20	M1	1 1/8" DIA x 6 1/4" LG STUD	SA-193-B7M	–
37	40	M1	1 1/8" DIA NUT	SA-194-2HM	–
38	4	N7	2" x CLASS 150 RFWN FLG SCH STD (STAINLESS)	SA-182-F316	–
39	3	N7	2" x CLASS 150 RF FLEX GASKET	304SS	–
40	4	N7	2" x 90° SR BW ELBOW SCH STD (STAINLESS)	SA-403-WP316	–
41	2	N7	2" PIPE SCH STD x 6'-2" LG (BBE) (STAINLESS)	SA-312-TP316	–
42	2	N7	2" PIPE SCH STD x 7 3/8" LG (BBE) (STAINLESS)	SA-312-TP316	–
43	12	N7	5/8" DIA x 3" LG STUD	SA-193-B8M	–
44	24	N7	5/8" DIA NUT	SA-194-8M	–
45	2	N7	2" x 3/8" THK FLATBAR x 9 1/4" LG (STAINLESS)	SA-240-TP316	–
46	2	N7	2" x 3/8" THK FLATBAR x4" LG c/w HOLES FOR U-BOLT (STAINLESS)	SA-240-TP316	–
47	2	N7	2" PIPE U-BOLT (STAINLESS)	SS	–
⚠1 48	1	INSULATION	1" PIPE SCH XH x 1 1/2" LG (CBE)	SA-106-B	–



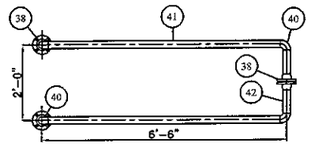
INSULATION RING



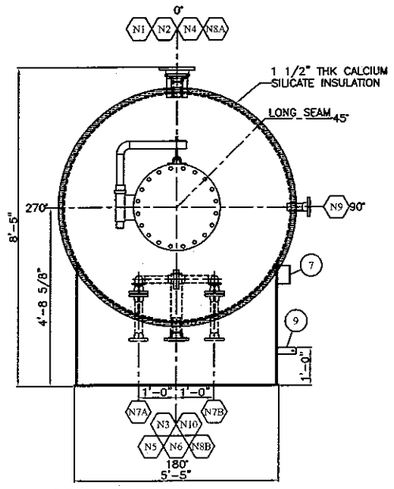
LIFT LUG



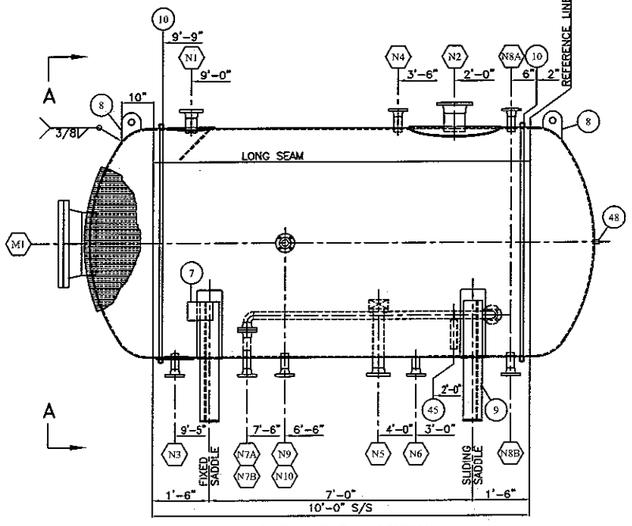
VORTEX BREAKER



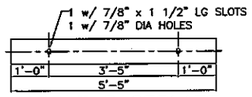
STEAM COIL PLAN VIEW



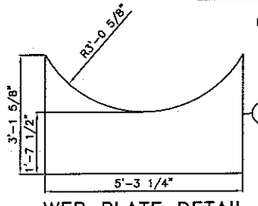
ORIENTATION VIEW A-A



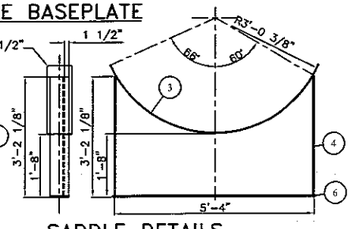
ELEVATION VIEW



SADDLE BASEPLATE



WEB PLATE DETAIL



SADDLE DETAILS

WELD DETAIL NUMBER	REGISTERED WELDING PROCEDURE NUMBER ROOT	HOT PASS	FILL & CAP	BACKWELD/GOUGE
1,2,3,4	BWM-1 (GMAW)	BWM-1 (SMAW)	BWM-1 (SMAW)	N/A
5	BWM-1 (GMAW)	BWM-3 (SAW)	BWM-3 (SAW)	N/A
6 & N7	BWM-12 (GMAW)	BWM-18 (SMAW)	BWM-18 (SMAW)	N/A

1 WELD NECK FLANGE — α=75°(-15°) G=1/8"(-1/16")

2 NOZZLE NECK — EXPOSED INSIDE EDGES SHALL BE CHAMFERED AS PER UG-76(c) — α=40°(-15°) G=1/8"(-1/16") h=1/16"(-1/16")

3 NOZZLE NECK — EXPOSED INSIDE EDGES SHALL BE CHAMFERED AS PER UG-76(c) — α=40°(-15°) G=1/8"(-1/16") h=1/16"(-1/16")

4 NOZZLE NECK — EXPOSED INSIDE EDGES SHALL BE CHAMFERED AS PER UG-76(c) — FULL — α=60°(-15°) G=1/8"(-1/16")

5 ATTACHMENTS — VESSEL WALL — ATTACHMENT — 1/4W

6 SEAMS — WITHOUT BACKING — α=60°(-15°) G=1/8"(-1/16") h=-3/32"

7 STAINLESS ATTACHMENT — 1/4W — VESSEL WALL

DESIGN SPECIFICATIONS

DESIGN & FABRICATE TO:	2004 ASME BOILER & PRESSURE VESSEL CODE SEC VIII, DIV 1 2005 ADDENDA
DESIGN PRESSURE & TEMPERATURE:	50 PSI @ 250°F
MINIMUM DESIGN METAL TEMP:	-20°F @ 50 PSI
IMPACT TESTS:	EXEMPT AS PER UG-20(f)(1-5)
RADIOGRAPHY:	100% AS PER UW-11(a)
POST WELD HEAT TREATMENT:	NONE AS PER UCS-56
HYDROSTATIC TEST PRESSURE:	75 PSIG PREHEAT: 150°F
CORROSION ALLOWANCE:	1/8" MAWP: 50 PSI @ 250°F
HEAD THK. MIN.:	0.3130" VOLUME: 347 CuFt, 9.9 Cum
WEIGHT EMPTY:	6,800 LBS WEIGHT FULL: 45,100 LBS

REV. NO.	DATE	REVISION	BY	APP'D
A	05/10/06	ISSUED FOR APPROVAL	DSG	
B	05/30/06	REVISED AS PER CLIENT REQUEST	DSG	
0	05/31/06	ISSUED FOR FABRICATION	DSG	JAM
1	06/12/06	REVISED N5 INSIDE PROJECTION	DSG	JAM
2	08/08/06	AS BUILT DRAWING	DSG	JAM

BILTON Welding & Manufacturing Ltd.
BOX 6106
5815 37 Street
INNISFAIL, AB
CANADA
403-227-7799
1-888-227-4923
FAX 227-7796

ALTAGAS LTD

HORIZONTAL CO2 STILL COLUMN VENT DRUM - TAG: V-902
72" ID x 10'-0" S/S x 50 PSI MAWP

DATE: 05/09/06	SHEET: 1 OF 1
SCALE: N.T.S.	JOB NO.: B780 SIZE: D
DRAWN BY: DSG	
PURCHASE ORDER: 06119C-4	
LOCATION: PRINCESS GAS PLANT	DRAWING NO.: B780-1 REV.: 2
CRN DWG: BWM-138-05 R2	APP'D: JAM
CRN NUMBER: T1798.2	

FILE PATH:MAINDATA\CAD\TANKS\B700-B799\B780-1

CERTIFIED AS BUILT