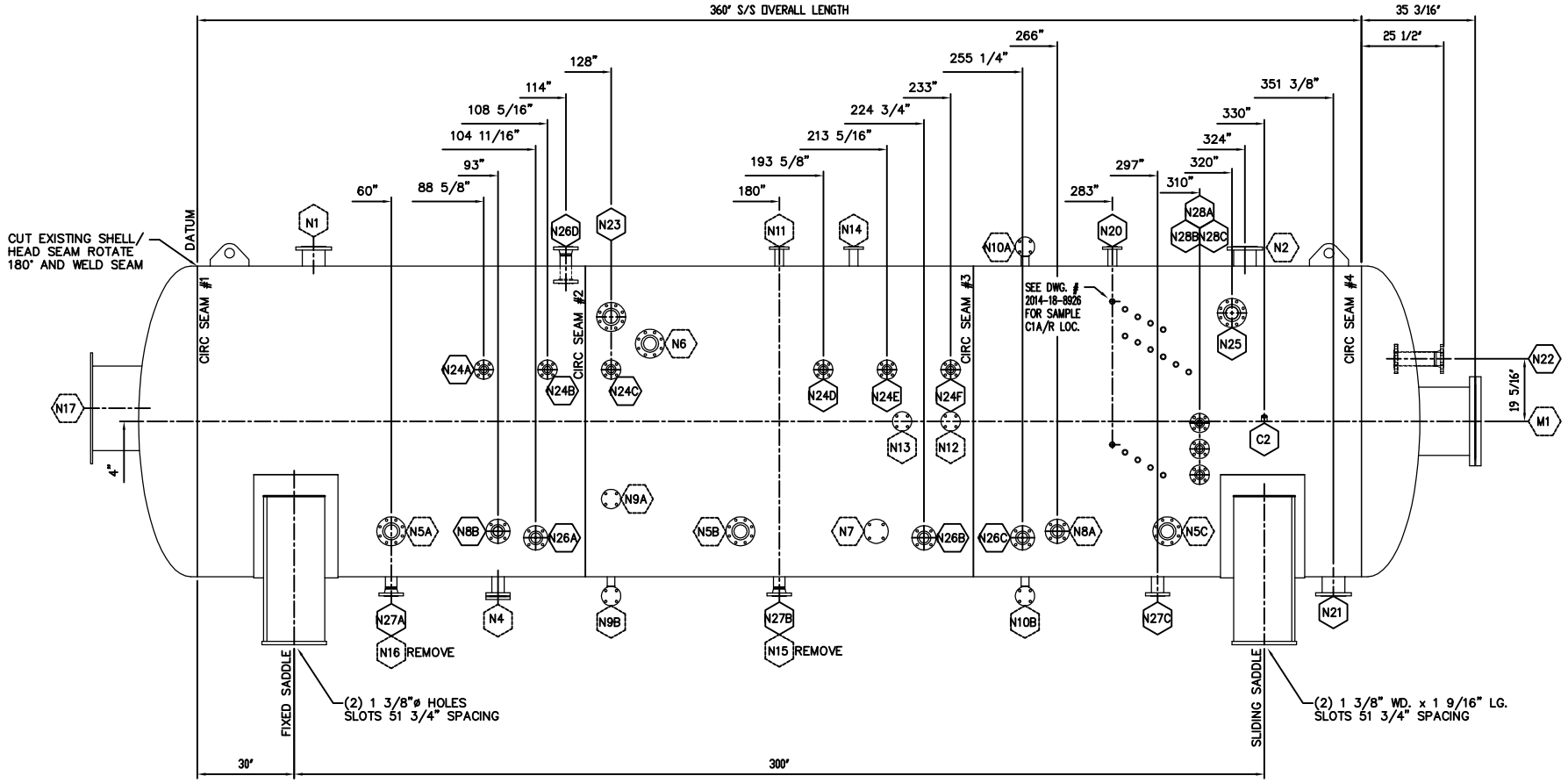

MATERIAL LIST

ITEM	QTY	PART/COMP. No.	DESCRIPTION	MATERIAL
1	10	-	2" 150# RFWN FLANGE w/ SCH 160 BORE	A105N
2	1	-	6" 150# RFWN FLANGE w/ SCH 80 BORE	A105N
3	3	-	4" 150# RFWN FLANGE w/ SCH 80 BORE	A105N
4	17	-	1" 3000# FULL CPLG, THRD X 6" LG.	A105N
5	8	-	3" 150# RFWN FLANGE w/ SCH 80 BORE	A105N
6	10	-	2" SCH 160 SMLS PIPE x 6" LG.	A106 Gr. B
7	1	-	6" SCH 80 SMLS PIPE x 6" LG.	A106 Gr. B
8	2	-	4" SCH 80 SMLS PIPE x 12" LG.	A106 Gr. B
9	1	-	4" SCH 80 SMLS PIPE x 10" LG.	A106 Gr. B
10	4	-	3" SCH 80 SMLS PIPE x 18" LG.	A106 Gr. B
11	1	-	4" 150# RFSO FLANGE	A105N
12	5	-	3" 150# RFSO FLANGE	A105N
13	1	-	3" SCH 80 SMLS PIPE x 10" LG.	A106 Gr. B
14	3	-	3" SCH 80 SMLS PIPE x 6" LG.	A106 Gr. B

NEW NOZZLE SCHEDULE

MARK	QTY.	SERVICE	SIZE	RATING	TYPE	PIPE SCH/ WALL THK	THK. REPAD	WIDTH REPAD	MIN. INSIDE PROJECTION	OUTSIDE PROJECTION	WELD DETAIL	A	B	C	BOM ITEM NUMBERS	N.S. NOTE
N28ABC	3	WATER LEVEL PROBE	2"	150	RFWN	SCH 160	–	–	0.375"	SEE DWG.	4,8	3/8"	–	–	1,6	NS1
N27ABC	3	DESAND DRAIN	3"	150	RFWN	SCH 80	–	–	FLUSH	SEE DWG.	6,8	3/8"	–	–	5,14	NS4
N26D	1	DESAND FLUSH	3"	150	RFWN	SCH 80	–	–	0.375"	SEE DWG.	4,8	3/8"	–	–	5,12,13	NS3
N26A–C	3	DESAND FLUSH	3"	150	RFWN	SCH 80	–	–	0.375"	SEE DWG.	4,8	3/8"	–	–	5,10,12	NS3
N25	1	OIL LC	4"	150	RFWN	SCH 80	–	–	0.375"	SEE DWG.	4,8	3/8"	–	–	3,8	NS1
N24A–F	6	TEMP. IND.	2"	150	RFWN	SCH 160	–	–	0.375"	SEE DWG.	4,8	3/8"	–	–	1,6	NS1
N23	1	HLSD	4"	150	RFWN	SCH 80	–	–	0.375"	SEE DWG.	4,8	3/8"	–	–	3,9	NS1
N22	1	OIL OUTLET w/COLLECTOR	4"	150	RFWN	SCH 80	–	–	SEE DWG.	SEE DWG.	4,8	3/8"	1/4"	–	3,8,11	NS3
N21	1	WATER OUT w/ VORTEX BRKR.	6"	150	RFWN	SCH 80	–	–	FLUSH	SEE DWG.	6,8	3/8"	–	–	2,7	NS4
N20	1	FUTURE LT	2"	150	RFWN	SCH 160	–	–	0.375"	SEE DWG.	4,8	3/8"	–	–	1,6	NS1
N8B	1	DESLUDGE w/ INTERNAL	3"	150	RFWN	SCH 80	–	–	SEE DWG.	SEE DWG.	4,8	3/8"	–	–	5,10,12	NS3
C2	1	DREXELBROOK LT	1"	3000	THRD	–	–	–	0.375"	1" MIN.	4	1/4"	–	–	4	NS1
C1A–R	16	SAMPLE	1"	3000	THRD	–	–	–	0.375"	1" MIN.	4	1/4"	–	–	4	NS1

EXISTING NOZZLE SCHEDULE

MARK	QTY.	SERVICE	SIZE	RATING	TYPE	PIPE SCH/ WALL THK	THK. REPAD	WIDTH REPAD	MIN. INSIDE PROJECTION	OUTSIDE PROJECTION	WELD DETAIL	A	B	C	BOM ITEM NUMBERS	N.S. NOTE
M1	1	MANWAY	20"	150	RFWN	SCH 80	–	–	0.375"	9"	4,8	3/8"	3/8"	–	–	–
N17	1	FIRETUBE	56x28	–	PL FLG	–	–	–	1" MIN.	6"	4,8	3/8"	3/8"	–	–	–
N16	1	TO BE REMOVED	2"	150	RFWN	SCH 160	–	–	FLUSH	6"	6,8	3/8"	–	–	–	–
N15	1	TO BE REMOVED	2"	150	RFWN	SCH 160	–	–	FLUSH	6"	6,8	3/8"	–	–	–	–
N14	1	PSHH	2"	150	RFWN	SCH 160	–	–	0.25"	6"	4,8	3/8"	3/8"	–	–	–
N13	1	SPARE w/ RFBF	2"	150	RFWN	SCH 160	–	–	0.25"	6"	4,8	3/8"	3/8"	–	–	–
N12	1	SPARE w/ RFBF	2"	150	RFWN	SCH 160	–	–	0.25"	6"	4,8	3/8"	3/8"	–	–	–
N11	1	PSV	2"	150	RFWN	SCH 160	–	–	0.25"	6"	4,8	3/8"	3/8"	–	–	–
N10AB	2	SPARE W/ RFBF	2"	150	RFWN	SCH 160	–	–	FLUSH	6"	6,8	3/8"	–	–	–	–
N9B	1	SPARE W/ RFBF	2"	150	RFWN	SCH 80	–	–	FLUSH	6"	6,8	3/8"	–	–	–	–
N9A	1	SPARE W/ RFBF	2"	150	RFWN	SCH 160	–	–	0.25"	6"	4,8	3/8"	3/8"	–	–	–
N8A	1	DESLUDGE w/INTERNAL	3"	150	RFWN	SCH 80	–	–	8"	10"	4,8	3/8"	3/8"	–	–	–
N7	1	SPARE w/ RFBF	3"	150	RFWN	SCH 80	–	–	0.25"	6"	4,8	3/8"	3/8"	–	–	–
N6	1	LSHH	4"	150	RFWN	SCH 80	–	–	0.25"	10"	4,8	3/8"	3/8"	–	–	–
N5ABC	3	ANODE	4"	150	RFWN	SCH 80	–	–	0.25"	10"	4,8	3/8"	3/8"	–	–	–
N4	1	SPARE w/ RFBF	3"	150	RFWN	SCH 80	–	–	FLUSH	6"	6,8	3/8"	–	–	–	–
~~N3 NOTE 1~~	1	~~OIL OUTLET (NOTE 1)~~	~~3"~~	~~150~~	~~RFWN~~	~~SCH 80~~	–	–	~~0.25"~~	~~6"~~	~~4,8~~	~~3/8"~~	~~3/8"~~	–	–	–
N2	1	GAS OUTLET	6"	150	RFWN	SCH 80	–	–	0.25"	6"	4,8	3/8"	3/8"	–	–	–
N1	1	INLET	6"	150	RFWN	SCH 80	–	–	0.25"	6"	4,8	3/8"	3/8"	–	–	–

NS1: MINIMUM I/S PROJECTION = 10mm (3/8") FROM SHORT SIDE OF NOZZLE TO SHELL OR HEAD. DO NOT TRIM BACK IF PROJECTION EXCEEDS VALUE.
NS2: I/S PROJECTION STATED IS REQUIRED FOR DESIGN CALCULATIONS. DO NOT TRIM BACK IF PROJECTION EXCEEDS VALUE.
NS3: I/S PROJECTION STATED IS CRITICAL FOR PROCESS OR FABRICATION PURPOSES AND MUST BE HELD.
NS4: NOZZLE NECK SHALL BE CONTOURED & GROUND FLUSH WITH INSIDE OF SHELL OR HEAD.
NS5: NOZZLE NECK SHALL BE SET FLUSH WITH INSIDE OF SHELL OR HEAD–DO NOT GRIND.

NOTE:

1. NOZZLE N3 RENAMED TO N27C DESAND DRAIN.

MATERIAL NOTES:

M1. MATERIAL & FORMING SHALL MEET THE REQUIREMENTS OF THE LATEST EDITION OF ASME SECT. VIII, DIV.1 & ASME SECT. 2, PART A.
M2. FLANGES SHALL BE IN ACCORDANCE WITH ASME B16.5, NPT SHALL BE IN ACCORDANCE WITH B1.20.1– 1983.
M3. MATERIAL SUBSTITUTIONS: SA–106–B REPLACE WITH SA–333–GR6, SA–105–N REPLACE WITH SA–350–LF2 CL1, SA–234–WPB REPLACE WITH SA–420–WPL6.
M4. MTR'S ARE REQUIRED FOR ALL MATERIAL.

FABRICATION NOTES:

F1. UNLESS OTHERWISE NOTED ALL BOLT HOLES SHALL STRADDLE THE NATURAL CENTERLINES OF THE VESSEL.
F2. INSULATION: NONE.
F3. INTERNAL COATING:
- PREP: SSPC SP5 WHITE METAL BLAST
- COATING: DEVOE 253

F4. EXTERNAL COATING:
- PREP: SSPC SP6 COMMERCIAL BLAST
- PRIMER: CLOVERDALE T–101
- TOPCOAT: ENVIROGUARD–IT DTM 1.5 – 2.0 MILS DFT

⚠1 F5. ROUND ALL INTERNAL EDGES AS PER UG–76(c)

ALTERED BY:
CAMERON
CANADA CORPORATION
PROCESS SYSTEMS – CALGARY, AB

	MAWP	75	PSI @	266	°F
W		517	KPA @	130	°C
RT–2	MAEWP	–	PSI @	–	°F
	MDMT	–20	°F @	75	PSI
		–29	°C @	517	KPA

SERIAL NO. 12–014–1 YR. BLT. 2014

CRN. V7949.23

SH/MAT. SA–51670 TH.(NOM.) 0.375 IN. 9.52 MM.
HD/MAT. SA–51670 TH.(MIN.) 0.3125 IN. 7.94 MM.
CORR. ALL. 0.0625 IN. 1.59 MM.

DRAWN BY GREAT PLAINS ENG. FOR CAMERON PROCESS SYSTEMS

ALTERATION NAMEPLATE

CIRC. SEAMS		LONG SEAMS		REINFORCED NOZZLES THRU SHELL OR HEAD		NOZZLE/CPLG. THRU SHELL OR HEAD		REINFORCED NOZZLES FLUSH SHELL OR HEAD		NOZZLE/CPLG. FLUSH SHELL OR HEAD		D'LET		FLANGE TO PIPE		SPLIT REPAD	
1		2		3		4		5		6		7		8		9	
WPS	1SMP1A–R2 2GMSMSAP1A–R3	WPS	1SMP1A–R2 2GMSMSAP1A–R3	WPS	– REV. –	WPS	1SMP1A–R2 1GTSMP1A–R1	WPS	– REV. –	WPS	1SMP1A–R2 1GTSMP1A–R1	WPS	– REV. –	WPS	1SMP1A–R2 1GTSMP1A–R1	WPS	– REV. –
NDE	RT–2	NDE	RT–2	NDE	UT	NDE	UT	NDE	UT	NDE	UT	NDE	UT	NDE	UT	NDE	RT–2

REV.	DATE	BY	CHK	APR	DESCRIPTION	CALC
1	14–12–02	TRF	VRDO	JP	ADDED NOTE F5, NO EXTERNAL PRESSURE	0
0	14–08–13	TRF	VRDO	JP	ISSUED FOR REGISTRATION	0

REVISION HISTORY

MATERIAL

SHELL: SA–516–70N		TYPE: ROLLED PLATE		THK.: 9.53mm/0.375"	
TOP/LEFT HEAD: SA–516–70N		TYPE: ASME 2:1 SE		THK. (MIN.): 7.94 mm/0.3125"	
BTM/RIGHT HEAD: SA–516–70N		TYPE: ASME 2:1 SE		THK. (MIN.): 7.94 mm/0.3125"	
FITTINGS:	SA–234–WPB	FLG/CPLG.:	SA–105N	PIPE:	SA–106B
STUDS:	SA–193–B7	NUTS:	SA–194–2H	GASKETS:	SPIRAL WND 316LSS
EXT. ATTACH:	SA–516–70N	INT. ATTACH:	SA–516–70N	SUPPORTS:	SA–516–70N
INTERNALS:	CS	INSULATION:	NONE		

DESIGN DATA

VESSEL TO BE CONSTRUCTED IN STRICT ACCORDANCE WITH ASME SECTION VIII, DIV. 1, 2013 EDITION.

CODE PARAGRAPH:	UW–12(a)	PROV. OF REGISTRATION:	AB/SK
CRN:	V7949.23	REGISTRATION DWG:	13–050–VESSEL
SERIAL NUMBER:	12–014–01	U–STAMP:	YES
IMPACT TEST:	EXEMPT PER UCS–66(a)(c)	NATIONAL BOARD NO.:	NO
M.A.W.P.:	75 PSI/517 kPa	M.A.E.P.:	– ⚠1
DESIGN PRESSURE:	75 PSI/517 kPa	DESIGN TEMP.:	266°F/130°C
OPERATING PRESSURE:	– PSI/– kPa	OPERATING TEMP.:	–°F/–°C
HYDROTEST PRESSURE:	98 PSI/676 kPa	HYDROTEST TEMP.:	70°F/21°C
M.D.M.T.:	–20°F/–29°C	MAWP LIMITED BY:	HEAD/SHELL/FLANGE
CORROSION ALLOWANCE:	0.0625"/1.6mm	RADIOGRAPHY:	RT–2
JOINT EFFICIENCY (LONG):	1.0	JOINT EFFICIENCY (CIRC.):	0.7
P.W.H.T. PER UCS–56:	NONE		
SHIPPING WEIGHT:	17,500 LBS/7,938 KGS	TOTAL VOLUME:	1617 CU. FT/45.79 CU. M
HYDROTEST WEIGHT:	122,000 LBS/55,340 KGS	OIL VOLUME:	– CU. FT/– CU. M
OPERATING WEIGHT:	– LBS/– KGS	WATER VOLUME:	– CU. FT/– CU. M
WELD PROCEDURES:	327.2	SOURCE DRAWING:	13–050–VESSEL

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PROJECT/LOCATION:

CAMERON
PROCESS SYSTEMS–CANADA

DRAWN BY:	TRF
DATE:	14–04–10
PROJECT MANAGER:	–
SCALE:	1:20
CUSTOMER REFERENCE NO.	–
CONTRACT NO.:	–
SHEET:	SHT. 1 OF 1
DRAWING NO.:	D–2014–18–8925
REV.:	1

HORIZONTAL FWKO
8'–00" O.D. x 30'–00" S/S