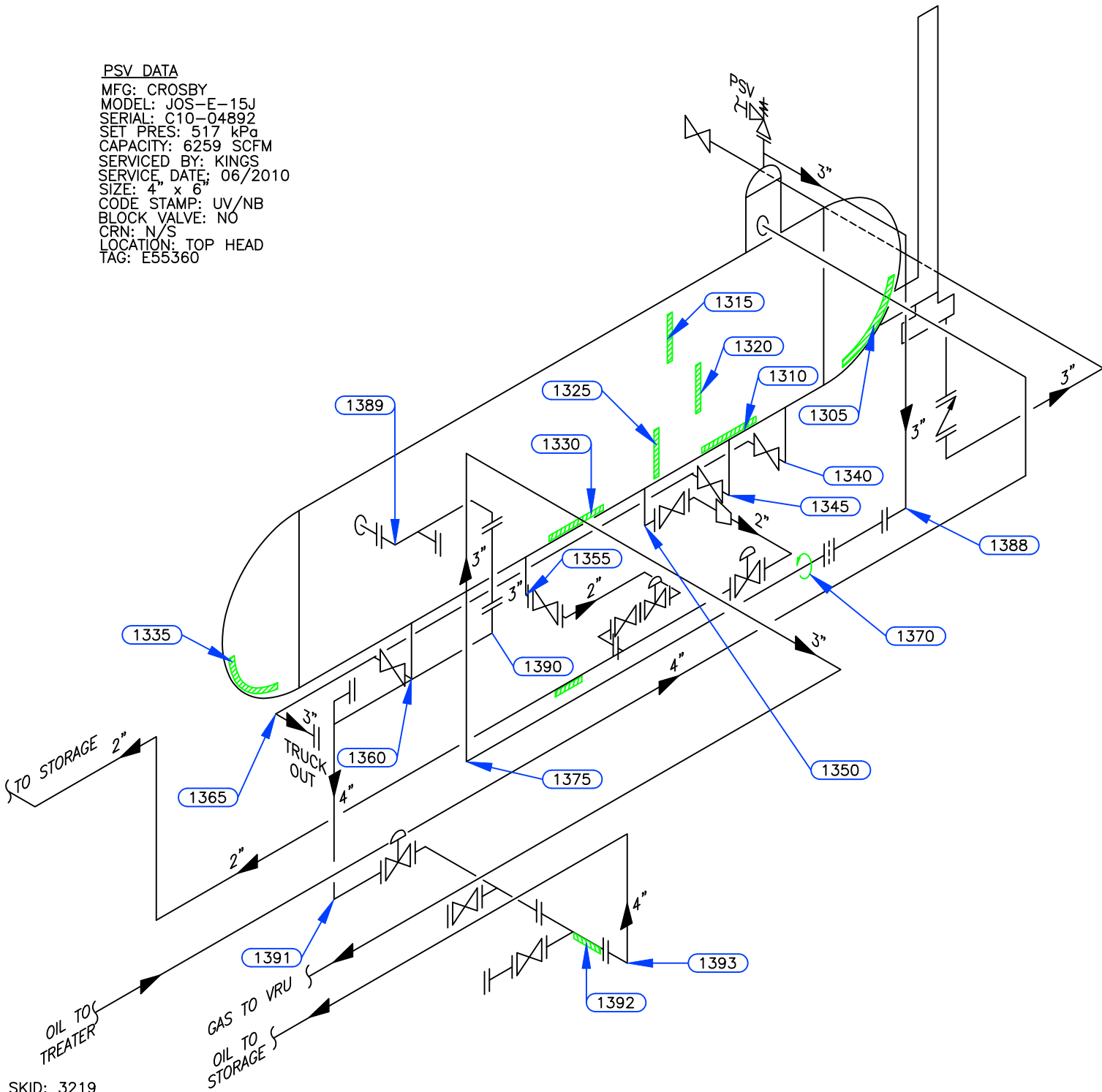


PSV DATA

MFG: CROSBY
 MODEL: JOS-E-15J
 SERIAL: C10-04892
 SET PRES: 517 kPa
 CAPACITY: 6259 SCFM
 SERVICED BY: KINGS
 SERVICE DATE: 06/2010
 SIZE: 4" x 6"
 CODE STAMP: UV/NB
 BLOCK VALVE: NO
 CRN: N/S
 LOCATION: TOP HEAD
 TAG: E55360



SKID: 3219

Equip. No. E-23465 Prov. Reg. No. Ⓐ 191862 C.R.N. E-1466.2 Serial No. 81-7900-A Yr. Inst. _____
 Code/Div. ASME VIII, Div 1 Size: 12ft x 40ft Manufacturer: MALONEY STEEL Yr. Blt. 1981
 C. Stamp: U Service: SWEET PWHT: NIL Radiography: RT-1 Insulated: YES

Design & Materials Data

HEAD:
 Mat'l. SA 516 70 Nom. 28.6mm C.A. 3.2mm
 Mat'l. SA 516 70 Nom. 15.9mm C.A. _____
CHANNEL:
 Material: _____ Nominal: _____ C.A. _____
BOOT
 Head Mat'l. _____ Head Nom. _____ Head C.A. _____
 Shell Mat'l. _____ Shell Nom. _____ Shell C.A. _____
SHELL
 Material: SA 516 70 Nominal: 12.7mm C.A. 3.2mm
 MAWP Shell Side: 517 kPa @ Temp. 93°C
 MAWP Tube Side: _____ @ Temp. _____

CLIENT	CANADIAN NATURAL RESOURCES LTD.	
FACILITY	FIREBIRD BATTERY LSD 08-11-98-08 W6M	
ITEM	HORIZONTAL TREATER	
BY: MH	DATE: 03/2010	DWG.# 1

UTS DATA

CLIENT: CANADIAN NATURAL RESOURCES LTD
EQUIPMENT: HORIZONTAL TREATER
CRN#: E-1466.2
PROV REG: A 191862
TESTED ON STREAM

FACILITY: FIREBIRD BATTERY
SERVICE: SWEET
LOCATION: 08-11-98-08 W6M
RTD JOB #: 10.112250
REFER TO DRAWING: 1

Test Point	THICKNESS DATA				Flag	T-Min	C.A.	Nom.	Short Term	Long Term	Ave. mm/py	Retirement Date
1305												
Description:	LOWER HEAD											
	2010	3	2012	9								
Min. Thick.	28.8		27.9		25.40	7.8	3.2	28.60	.36		.36	
Average:	28.9		28.2						.28		.28	2052
Analysis:												
1310												
Description:	BOTTOM SHELL											
	2010	3	2012	9								
Min. Thick.	12.8		12.8		9.50		3.2	12.70	0		0	
Average:	12.9		12.9						0		0	
Analysis:												
1315												
Description:	UPPER SHELL											
	2010	3	2012	9								
Min. Thick.	12.8		12.8		9.50		3.2	12.70	0		0	
Average:	12.9		12.9						0		0	
Analysis:												
1320												
Description:	MID SHELL											
	2010	3	2012	9								
Min. Thick.	13.1		13		9.50		3.2	12.70	.04		.04	
Average:	13.2		13.1						.04		.04	
Analysis:												
1325												
Description:	LOWER SHELL											
	2010	3	2012	9								
Min. Thick.	13.5		13.4		9.50		3.2	12.70	.04		.04	
Average:	13.6		13.5						.04		.04	
Analysis:												
1330												
Description:	BOTTOM SHELL											
	2010	3	2012	9								
Min. Thick.	13.1		12.7		9.50	9.1	3.2	12.70	.16		.16	
Average:	13.2		13						.08		.08	2026
Analysis:												

UTS DATA

CLIENT: CANADIAN NATURAL RESOURCES LTD
EQUIPMENT: HORIZONTAL TREATER
CRN#: E-1466.2
PROV REG: A 191862
TESTED ON STREAM

FACILITY: FIREBIRD BATTERY
SERVICE: SWEET
LOCATION: 08-11-98-08 W6M
RTD JOB #:10.112250
REFER TO DRAWING: 1

Test Point	THICKNESS DATA				Flag	T-Min	C.A.	Nom.	Short Term	Long Term	Ave. mm/py	Retirement Date
1335	Description: LOWER HEAD											
	2010	3	2012	9								
Min. Thick.	16.6		16.4			15.90		15.90	.08		.08	
Average:	16.8		16.7						.04		.04	
Analysis:												

UTS DATA

CLIENT: CANADIAN NATURAL RESOURCES LTD
EQUIPMENT: HORIZONTAL TREATER PIPING
CRN#:
PROV REG:
TESTED ON STREAM

FACILITY: FIREBIRD BATTERY
SERVICE: SWEET
LOCATION: 08-11-98-08 W6M
RTD JOB #: 10.112250
REFER TO DRAWING: 1

Test Point	THICKNESS DATA				Flag	T-Min	C.A.	Nom.	Short Term	Long Term	Ave. mm/py	Retirement Date
1340												
Description:	3" 90° ELBOW											
	2012 9											
Min. Thick.	6.4	4.81	.7	5.50					0	0		
Average:	6.7											
Analysis:												
1345												
Description:	3" 90° ELBOW											
	2012 9											
Min. Thick.	6.3	4.81	.7	5.50					0	0		
Average:	6.6											
Analysis:												
1350												
Description:	4" 90° ELBOW											
	2012 9											
Min. Thick.	7.7	6.21	.9	7.10					0	0		
Average:	8.2											
Analysis:	09/2012 MIN SCAN AT DOWNSTREAM WELD											
1355												
Description:	3" 90° ELBOW											
	2012 9											
Min. Thick.	6.4	4.81	.7	5.50					0	0		
Average:	6.7											
Analysis:												
1360												
Description:	3" 90° ELBOW											
	2012 9											
Min. Thick.	6.3	4.81	.7	5.50					0	0		
Average:	6.6											
Analysis:												
1370												
Description:	3" 90° ELBOW											
	2012 9											
Min. Thick.	5	4.81	.7	5.50					0	0		
Average:	5.3											
Analysis:												

UTS DATA

CLIENT: CANADIAN NATURAL RESOURCES LTD
EQUIPMENT: HORIZONTAL TREATER PIPING
CRN#:
PROV REG:
TESTED ON STREAM

FACILITY: FIREBIRD BATTERY
SERVICE: SWEET
LOCATION: 08-11-98-08 W6M
RTD JOB #: 10.112250
REFER TO DRAWING: 1

Test Point	THICKNESS DATA				Flag	T-Min	C.A.	Nom.	Short Term	Long Term	Ave. mm/py	Retirement Date
1375												
Description:	3" 90° ELBOW											
	2012	9										
Min. Thick.	5.4		4.81		.7	5.50						
Average:	5.7							0		0		
Analysis:												
1388												
Description:	4" 90° ELBOW											
	2010	3	2012	9								
Min. Thick.	5.6		5.4		5.25	1.6	.8	6.00	.08		.08	
Average:	5.7		5.7						0		0	
Analysis:	09/2012 CRITICAL THICKNESS CALCULATIONS CARRIED OUT TO 0.2mm BUT CODE MINIMUM IS MAINTAINED AT 1.6mm. RETIREMENT DATE:2037											
1389												
Description:	4" 90° ELBOW											
	2010	3	2012	9								
Min. Thick.	5.6		5.8		5.25		.8	6.00	0		0	
Average:	5.9		6.1						0		0	
Analysis:												
1390												
Description:	4" 90° ELBOW											
	2010	3	2012	9								
Min. Thick.	6		5.8		5.25		.8	6.00	.08		.08	
Average:	6.2		6.1						.04		.04	
Analysis:												
1391												
Description:	4" 90° ELBOW											
	2010	3	2012	9								
Min. Thick.	5.8		5.4		5.25	1.6	.8	6.00	.16		.16	
Average:	6		5.7						.12		.12	
Analysis:	09/2012 CRITICAL THICKNESS CALCULATIONS CARRIED OUT TO 0.2mm BUT CODE MINIMUM IS MAINTAINED AT 1.6mm. RETIREMENT DATE:2037											
1392												
Description:	4" 90° ELBOW											
	2010	3	2012	9								
Min. Thick.	5.8		5.8		5.25		.8	6.00	0		0	
Average:	5.9		5.9						0		0	
Analysis:												

UTS DATA

CLIENT: CANADIAN NATURAL RESOURCES LTD
EQUIPMENT: HORIZONTAL TREATER PIPING
CRN#:
PROV REG:
TESTED ON STREAM

FACILITY: FIREBIRD BATTERY
SERVICE: SWEET
LOCATION: 08-11-98-08 W6M
RTD JOB #: 10.112250
REFER TO DRAWING: 1

Test Point	THICKNESS DATA				Flag	T-Min	C.A.	Nom.	Short Term	Long Term	Ave. mm/py	Retirement Date
1393												
Description: 4" 90° ELBOW												
	2010	3	2012	9								
Min. Thick.	5.8		5.7		5.25		.8	6.00	.04		.04	
Average:	5.9		5.8						.04		.04	
Analysis:												