



**Client:**  
**CNRL**

UT SURVEY	Accept
PSV INSP	Accept
VTE INSP	Accept
VTI INSP	N/A

**EQUIPMENT DEFICIENCY SUMMARY**

District:	Fort St John	Facility	Beavertail	Location/LSD	C-049-A/094-A-15
Equipment Name	SEPARATOR			Prov Reg No.:	3121025
Serial No.:	94-059	Equip No.:		National Board No.:	N/A

**UT SURVEY**      LATEST UT DATE USED IN SUMMARY      November 04, 2018

LOCATION	Nom - CA	Low RDG	Avg RD	TMin	UT Flag	RECOMMENDATION	QUALITY ACTION	RESULT
N/A					No TMLs Flagged for This	N/A	N/A	Accept

**PSV INSPECTION**      LATEST PSV INSP DATE USED IN SUMMARY      November 04, 2018

DEFICIENCY	RECOMMENDATION	QUALITY ACTION	RESULT
No Deficiencies Found	N/A	N/A	Accept

**VISUAL EXTERNAL INSPECTION**      LATEST VTE DATE USED IN SUMMARY      November 04, 2018

DEFICIENCY	RECOMMENDATION	QUALITY ACTION	RESULT
No Deficiencies Found	N/A	N/A	Accept

**VISUAL INTERNAL INSPECTION**      LATEST VTI DATE USED IN SUMMARY

DEFICIENCY	RECOMMENDATION	QUALITY ACTION	RESULT
N/A	N/A	N/A	N/A



Client:  
CNRL

## PRESSURE EQUIPMENT DATA REPORT

### EQUIPMENT GENERAL INFORMATION

<b>District:</b>	Fort St John		
<b>Facility:</b>	Beavertail		
<b>Location /LSD:</b>	C-049-A/094-A-15	<b>Operating Province:</b>	British Columbia
<b>Equipment Name:</b>	SEPARATOR		
<b>Equipment Status:</b>	Operating	<b>Orientation:</b>	Vertical
<b>Skid No.:</b>	N/A	<b>Unit:</b>	

### EQUIPMENT STATIC DATA

<b>AB Registration No.:</b>	3121025	<b>Serial No.:</b>	94-059	
<b>Registration No./Other:</b>		<b>Equipment No.:</b>		
<b>CRN NO.:</b>	H7588.12	<b>Unique ID No.:</b>		
<b>National Board No.:</b>	N/A	<b>Oncor ID No.:</b>	170434	
<b>Manufacturer:</b>	T&K Ironworks	<b>Year Built:</b>	1995	
<b>MAWP:</b>	720.00 (psi)	4964.26 (Kpa)	<b>Temperature:</b>	100.00 (F) 37.78 (C)
<b>Diameter.:</b>	24.000 (In)	609.600 (mm)	<b>Length:</b>	90.00 (In) 2286.00 (mm)
<b>Radiography:</b>	RT1		<b>Heat Treatment:</b>	Yes
<b>Corrosion allowance:</b>	(In)	0.000 (mm)	<b>MDMT:</b>	-20.00
<b>Lining Or Coated:</b>			<b>Painted:</b>	Yes
<b>Insulated:</b>	No		<b>Internally Clad:</b>	
<b>Hand Hole:</b>	Yes		<b>Support Type:</b>	Skirt
<b>Manway:</b>	No		<b>Manway Size(In):</b>	
<b>Capacity/Volume(m3):</b>			<b>Nozzle Rating:</b>	

### MATERIALS/COMPONENTS

Name	Joint Efficiency	Outside Diameter(in.)	Head Type	Material Type	Stress Value (PSI)	Nominal Thickness(In.)
SHELL	1.00	24.000		SA-516 70	17500	0.75
HEAD	1.00	24.000	Ellipsoidal	Unknown	17500	

### PIPING STATIC DATA

<b>Primary Flange Rating:</b>	300	<b>ASME B16.5 - Table 2-1.1 @ 150F:</b>	740 (psi)	
<b>Pressure Use For TMin:</b>	Vess Design Press	<b>Piping Operating Press:</b>	720 (psi)	
<b>Stress Value:</b>	20000 (psi)	<b>E Value:</b>	1.00	<b>Joint:</b> SMLS

### SERVICE CONDITIONS

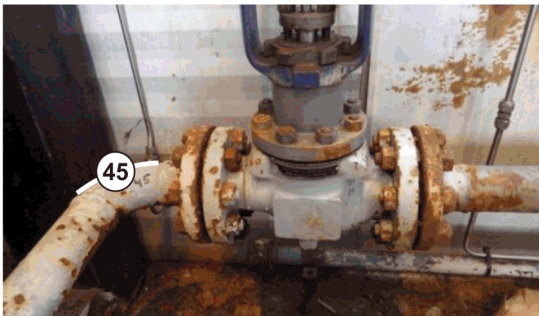
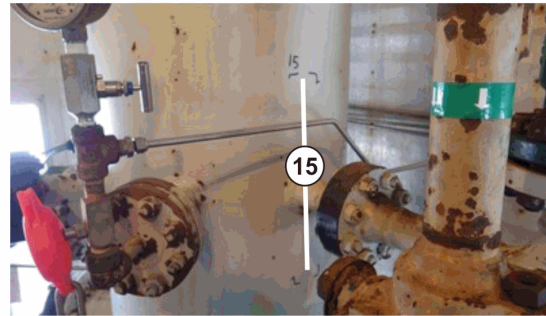
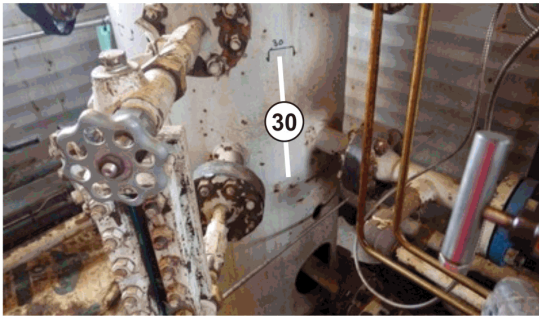
<b>Sweet</b>	<b>Sour</b>	<b>Oil</b>	<b>Gas</b>	<b>Water</b>
<b>Amine</b>	<b>LPG</b>	<b>Condensate</b>	<b>Air</b>	<b>Glycol</b>

### COMMENTS

--

**EXAMINATION ILLUSTRATION**

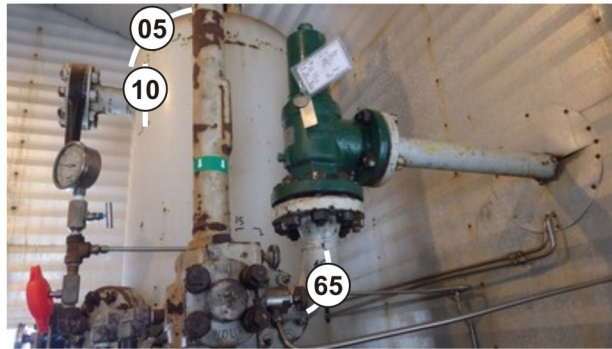
<b>DISTRICT:</b>	Fort St John	<b>FACILITY:</b>	Beavertail	<b>LOCATION/LSD:</b>	C-049-A/094-A-15
<b>EQUIP NAME:</b>	SEPARATOR			<b>PROV REG No.:</b>	3121025
<b>SERIAL No.:</b>	94-059	<b>Equip No.:</b>		<b>National Board No.:</b>	N/A



NOTES:

### EXAMINATION ILLUSTRATION

DISTRICT:	FORT SAINT JOHN	FACILITY:	BEAVERTAIL	LOCATION/LSD:	C-049-A/094-A-15
EQUIP NAME:	SEPARATOR			PROV REG No.:	3121025
SERIAL No.:	94-059	Equip No.:	V-100	National Board No.:	



NOTES:



Client:  
**CNRL**

## ULTRASONIC CORROSION SURVEY REPORT

DISTRICT:	Fort St John	FACILITY:	Beavertail	LOCATION/LSD:	C-049-A/094-A-15
EQUIP NAME:	SEPARATOR			PROV REG No.:	3121025
SERIAL No.:	94-059	Equip No.:		National Board No.:	N/A

### SUMMARY

TYPE	LAST INSPECTIONS	INSPECTION INTERVAL (YEARS)	CORROSION RATE (IN/YR)		REMAINING LIFE (YEARS)	NEXT INSPECTION DATE
			SHORT TERM	LONG TERM		
VESSEL	Nov 4, 2018	5.0	0.0000	0.0000	198.0	Nov 4, 2023
PIPING	Nov 4, 2018	5.0	0.0018	0.0018	89.4	

### VESSEL SURVEY READINGS

POINT NUMBER	TYPE	POINT DATA (INCH)			DATE	SURVEY READINGS			CALCULATIONS				Flag
		NOM.	C.A.	NOM-CA		LOW	AVG	T Req (inch)	short term corr	long term	remaining life		
05	HEAD	0.0000	0.0000	0.0000	Nov 4/18	0.726	0.740	0.476	0.0000	0.0000	198.0	NO COMMENTS	
10	SHELL	0.7500	0.0000	0.7500	Nov 4/18	0.776	0.780	0.486	0.0000	0.0000	198.0	NO COMMENTS	
15	SHELL	0.7500	0.0000	0.7500	Nov 4/18	0.781	0.785	0.486	0.0000	0.0000	198.0	NO COMMENTS	
20	SHELL	0.7500	0.0000	0.7500	Nov 4/18	0.783	0.785	0.486	0.0000	0.0000	198.0	NO COMMENTS	
25	SHELL	0.7500	0.0000	0.7500	Nov 4/18	0.777	0.783	0.486	0.0000	0.0000	198.0	NO COMMENTS	
30	SHELL	0.7500	0.0000	0.7500	Nov 4/18	0.779	0.782	0.486	0.0000	0.0000	198.0	NO COMMENTS	
35	HEAD	0.0000	0.0000	0.0000	Nov 4/18	0.736	0.745	0.476	0.0000	0.0000	198.0	NO COMMENTS	

Comments: LIMITED ACCESS DUE TO EXTERIOR SURFACE CORROSION

### PIPING SURVEY READINGS

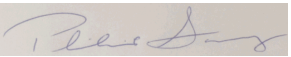
POINT NUMBER	TYPE	SIZE	SCH	POINT DATA (INCH)			DATE	SURVEY READINGS			CALCULATIONS				Flag
				NOM.	Mill Tol./CA	NOM-CA		LOW	AVG	T Req (inch)	short term corr	long term corr rate	remaining life		
40	90L 2 160	2.00	160	0.3440	0.0430	0.3010	Nov 4/18	0.302	0.325	0.043	0.0018	0.0018	147.6	NO COMMENTS	
Comments: CORROSION NOTED AT BOTTOM SECTION OF 90															
45	90L 2 XS	2.00	XS	0.2180	0.0273	0.1908	Nov 4/18	0.189	0.200	0.043	0.0012	0.0012	120.6	NO COMMENTS	
50	90L 2 XS	2.00	XS	0.2180	0.0273	0.1908	Nov 4/18	0.204	0.210	0.043	0.0006	0.0006	275.5	NO COMMENTS	
55	90L 2 XS	2.00	XS	0.2180	0.0273	0.1908	Nov 4/18	0.202	0.210	0.043	0.0007	0.0007	238.0	NO COMMENTS	
60	90L 2 XS	2.00	XS	0.2180	0.0273	0.1908	Nov 4/18	0.181	0.195	0.043	0.0015	0.0015	89.4	NO COMMENTS	
65	90L 2 XS	2.00	XS	0.2180	0.0273	0.1908	Nov 4/18	0.193	0.200	0.043	0.0010	0.0010	143.7	NO COMMENTS	
70	90L 2 XS	2.00	XS	0.2180	0.0273	0.1908	Nov 4/18	0.182	0.195	0.043	0.0015	0.0015	92.5	NO COMMENTS	
75	90L 2 XS	2.00	XS	0.2180	0.0273	0.1908	Nov 4/18	0.195	0.200	0.043	0.0010	0.0010	158.3	NO COMMENTS	
80	90L 2 XS	2.00	XS	0.2180	0.0273	0.1908	Nov 4/18	0.190	0.195	0.043	0.0012	0.0012	125.8	NO COMMENTS	





Client:  
**CNRL**

**INSPECTOR-EQUIPMENT DATA**

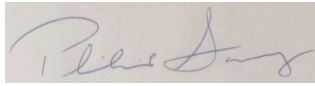
Inspected By	Signature	CGSB Level	CGSB No.	Survey Dat	UT Equipment	Due Date OF Calibration	NDE Procedure #
Philip Sacrey		2	17106	11/04/2018	104_91638503_EPOCH4	05/01/2019	WQS UT-001



**Client:**  
**CNRL**

District	Fort St John	Facility	Beavertail	Location/LSD	C-049-A/094-A-1
Equipment Name:	SEPARATOR			Prov Reg No.:	3121025
Serial No.:	94-059	Equip No.:		National Board No.:	N/A

**External Inspection**

Inspector:	Philip Sacrey	API510#:79368	Signature:		Date:	11/04/2018
------------	---------------	---------------	------------	--	-------	------------

**External Corrosion**

General Minor :&lt;0.020 external corrosion was found on Top Piping

Accept

**External Damage**

There was no external corrosion found on the vessel/piping

Accept

**Leakage**

No Leaks were found on the vessel or piping connections

Accept

**Vessel and Piping Supports**

Vessel support is Skirt and is acceptable

Accept

Vessel support anchor bolts are in place and acceptable

Accept

Vessel Foundation is Metal and is acceptable

Accept

Piping is supported by clamp and is acceptable

Accept

**Insulation/Paint**

	Type	Findings	
Vessel	Painted	Peeling	Accept
Inlet Piping	Painted	PeelingBubbling	Accept
Outlet Piping	Painted	PeelingBubbling	Accept

**Pressure Envelope Flanging**

	Bolting	Thread engagement	Gaskets	Flange Rating	
Manway	NA				Accept
Vessel	Accept	Accept	Accept	Accept	Accept
Inlet Piping	Accept	Accept	Accept	Accept	Accept
Outlet Piping	Accept	Accept	Accept	Accept	Accept
Other Piping	Accept	Accept	Accept	Accept	Accept

UNABLE TO VISUALLY INSPECT SELECT VESSEL GASKETS DUE TO WRAPPED FLANGES.

**General**

Pressure Gauge is acceptable, Temp Gauge is acceptable, Level Gauge is acceptable, Grounding is acceptable,

Accept

**Comment**

VESSEL PRESSURE GAUGE SCALE IS LESS THAN MAWP AND PSV SET PRESSURE.



Client:  
**CNRL**

### PRESSURE RELIEF VALVE SUMMARY

<b>District:</b>	Fort St John	<b>Facility:</b>	Beavertail	<b>Location/LSD:</b>	C-049-A/094-A-15
------------------	--------------	------------------	------------	----------------------	------------------

#### PSV STATIC DATA

<b>Tag/Equip No.:</b>	2556F	<b>Serial No.:</b>	27109
<b>Manufacturer:</b>	Mercer	<b>CRN No.:</b>	0G2606.5C
<b>Model No.:</b>	9143H111785AS	<b>Code Stamp:</b>	
<b>Side (Shell or Tube):</b>	Shell	<b>Outlet Size:</b>	2
<b>Inlet Size:</b>	2	<b>Outlet Type / ANSI Rating:</b>	Flanged / 150
<b>Inlet Type / ANSI Rating</b>	Flanged / 300		

#### PSV SERVICE DATA

<b>Set Date:</b>	5 Oct, 2018	<b>Service Interval:</b>	60
<b>Set Pressure (psig)</b>	720	<b>Capacity (scfm):</b>	10470
<b>Service Company:</b>	UNIFIED VALVE	<b>Next Service Date:</b>	5 Oct, 2023

#### PSV FIELD INSPECTION

**Inspector** Philip Sacrey      **Company** Western Quality Services      **Signature:**       **Inspection Date:** 04-Nov-2018

**Inspection Type:**

<b>RESTRICTIONS</b>	<b>BLINDS</b>	INLET:	No Blinds found btwn vessels and psv inlet	Accept
		OUTLET:	No blinds found btwn PSV and discharge point	Accept
	<b>REDUCERS</b>	INLET:	No reducers found btwn Vessel(s) and PSV Inlet	Accept
		OUTLET:	No reducers found btwn PSV and Discharge Point	Accept
	<b>BLOCK VALVES</b>	INLET:	No block valve	Accept
		OUTLET:	No block valve	Accept
<b>SERVICING</b>	<b>SET PRESSURE</b>	PSV set pressure is at or less than MAWP of all linked vessels in the system.		Accept
	<b>SERVICE DATE</b>	PSV set date is current at time of inspection		Accept
	<b>SERVICE SEAL</b>	Service seal is intact		Accept
<b>OPERATION</b>	<b>TAGGING</b>	Service tag is properly attached to the psv		Accept
	<b>VIBRATION</b>	None		Accept
	<b>DISCHARGE</b>	PSV Discharge point is in a safe location and is acceptable		Accept
	<b>LEAKS</b>	INLET:	No visible leaks found at psv inlet connection	
OUTLET:		No visible leaks found at psv outlet connection		Accept
<b>INSTALLATION</b>	<b>PSV SUPPORTS</b>	PSV supported		Accept
	<b>ANGLE</b>	PSV is installed in the proper upright positon		Accept

#### EQUIPMENT PROTECTED

Prov Reg No.	Equipment No.	Serial No.	Equipment Name	Status	MAWP
3121025		94-059	SEPARATOR	Operating	720.00



**PHOTOGRAPHS**



LSD



NAMEPLATE

**PHOTOGRAPHS**



OVERALL



PSV

**PHOTOGRAPHS**



PSV TAG