Canadian Natural Resources Limited CENERAL PRESSURE VESSEL INFORMATION Lob # 05 001058											
GENERAL PRESSURE VESSEL INFORMATION Job # 05.00195											
District: Ft. St. Jo	hn B.C.		Skid No.								
Facility: Halfway	Battery	Location (LSD)	: 05-12-87	-25-W6N	И.						
Vessel Name Equips	ment Number: Group	Separator									
Orientation: Horizo	ontal										
Status: In Service Regulatory Inspection											
PRESSURE VESSEL NAMEPLATE DATA											
"A" or "G" or	r "S" (Sask.) or BC R	egistration Number.	CRN Number:								
	A 439359		I 2812 212								
Vessel serial number	r: 012941-1		L 2812. 213 Size: 46 in OD X 175 in. S/S								
	60.8 mm		Shell material: SA 516 70 N								
Head thickness: 5	50.4 mm		Head material: SA 516 70 N								
Tube wall thickness:			Tube material:								
Tube diameter:			Tube length:								
Channel thickness:	T			Channel material:							
Design pressure	Shell: 1345 psi			Operating pressure		Shell:					
	Tubes:					Tubes:					
Design Temp.	Shell: 200 deg. F			Operating temperature		Shell:					
Design Temp.	Tubes:					Tubes					
X-ray: RT-1				Heat treatment: Yes							
Code parameters: As				Coated: No							
Manufacturer: Ops				Year built: 1998							
Corrosion allowance				Manway: Yes							
	PF	RESSURE SAFETY	VALV	E NAMEPLATI	E DATA						
PSV Tag #	Manufacture	Model #		Serial # Set Pr		essure	Capacity	Set Date			
		Serial II									
							(scfm)				
8242F	Farris	27FA45- 1720/S7	CE	-403771-3-KE 1345		psi	8410	06/24/05			
CRN#	Service By	Block Valve		Location Size		ze	Code Stamp				
OGO386.9C	UFL	No		Top Shell	1.5 in X 2 in		UV				
SERVICE CONDITIONS-INDICATE ALL THAT APPLY											
Sweet	Sour				Gas	Gas					
Amine	LPG		Cone	densate Air				Glycol			
Other (Describe):											
Inspection IntervalPSV Service Interval											
(Determined by MIC in conjunction with Chief Inspector following guidelines of CNRL's Owner-User Inspection Program) Reports reviewed and accepted by: Mechanical Integrity Coordinator											

External Inspection Items	G	F	P	N/A	Comments
Insulation Verify sealed around manways, nozzles, no damage present, and there is no egress of moisture.				X	Non insulated vessel.
External Condition Assess paint condition, areas peeling, record any corrosion, damage, etc (record location, size and depth of corrosion or damage)	X				Paint loose at the 7:00 and 4:00 o'clock positions with slight surface corrosion occurring at these areas – no pitting.
Leakage Record any leakage at flanges, threaded joints, weep holes on repads, etc.	X				Oil outlet piping – gasket seating face at vessel is seeping product.
Saddle Assess condition of paint, fire protection, concrete. Look for corrosion, buckling, dents, etc. Look at vessel surface area near supports. Verify no signs of leakage at attachment to vessel and attachment welds are acceptable. Ground wire attached?	X				No distortion to saddles – no Mechanical damage noted – no leaks at saddle to shell welds. Slight surface corrosion occurring at the floor to saddle interface – no pitting. Skid package is grounded.
Anchor Bolts Hammer tap to ensure secure. Look for cracking in treads or signs of deformation.	X				- All bolts firmly attached.
Concrete foundation Check for cracks, spalling, etc.				X	Steel skid.
Ladder / Platform Describe general condition, ensure support is secure to vessel, describe any hazards.				X	- No ladders or platforms required.
Nozzle Assess paint, look for leakage, and ensure stud threads are fully engaged. Record any damage, deflection, etc. Are nozzles gusseted?	X				Slight corrosion occurring at the nozzle bolts and flange area – no pitting. - No damage or deflection noted, no gussets. - No leakage noted.
Gauges Ensure gauges are visible, working, no leakage, and suitable for range of MAWP/ Temp.	X				Temperature and pressure gauge attached – within range for operation.
External Piping Ensure pipe is well supported. All clamps, supports, shoes, etc. in place. Look for evidence of structural overload, deflection, etc. Paint condition, external corrosion?	X				Piping is well supported – no evidence of overload or deflection. Paint is fair with slight surface corrosion occurring at the clamp areas on the inlet piping – no pitting.
Valving Ensure no leaks are visible. Valves are properly supported and chained if necessary.	X				All valves supported, no leaks noted. No chains required
PSV Ensure PSV is set at pressure at or below that of vessel.	X				 Located on top shell – set at MAWP of vessel. Seal intact – no block valve – discharge piping same size as outlet orifice.
NDE methods Was UT/ MPI done on vessel (MI coordinator to review results)	X				Ultrasonic thickness survey carried out, piping metal thickness detected below nominal minus corrosion allowance – Calculations carried out to ensure sufficient metal exists for safe operation. No change from 2005 corrosion survey.

Recommendations or corrective actions: Vessel is Fit for Service or describe corrective actions required) (MIC to review corrective actions with Operations, discuss with Chief Inspector where necessary, and get remedial action implemented)

Recommendations: 1. Re seal leaking flange on oil outlet nozzle.

Summary: This vessel is in good overall condition, ultrasonic thickness survey carried out, piping metal thickness detected below nominal minus corrosion allowance – Calculations carried out to ensure sufficient metal exists for safe operation.

Vessel is fit for service.

Inspected By: Dellas Wiedman Date: March 12 – 2008

Internal Inspection Items	G	F	P	N/A	Comments
Coating Assess coating. Describe area coated,					None.
general condition of coating.					
Anodes. How many, type, condition. %				X	None
consumed. Are they being replaced?					
Internal Piping Is there any? If so, carbon or				X	None.
stainless steel. Describe condition, dents,					
corrosion, erosion, etc. Ensure supports are					
secure and any bolts are suitable for future					
use.					
Trays How many? Type of material. Are				X	None.
valves in place? Check for erosion/ corrosion;					
wear on tray valve legs. Cleanliness?					
Baffles, deflector plates, etc. If present,	X				None.
describe condition. Look closely at welds					
attached to vessel wall.					
West Head Note all corrosion, erosion or	X				Little to no mechanical damage, corrosion or erosion was
mechanical damage. (If vessel is horizontal					found.
identify direction of this head)					Good overall condition.
East Head Note all corrosion, erosion or	X				Little to no mechanical damage, corrosion or erosion was
mechanical damage. (If vessel is horizontal					found.
identify direction of this head)					Good overall condition.
Shell Sections Record number of shell		X			Two shell sections were found to form the Shell. The shell is
sections. Record location, size and depth of all					in good overall condition, the lower shell has pits to
erosion, corrosion or mechanical damage.					approximately 0.120" deep through out the 6:00 position
Describe general condition. If any corrosion					between the two weir plates.
greater than corrosion allowance is observed					No signs of mechanical damages were noted.
in either shell or head, discuss with Chief					
Inspector before closing vessel.					
Demister pad Is it in place? Is it clean? If any	X				Demister pad is reasonably clean in place and intact no
corrosion is apparent in vessel, lift pad and					apparent mechanical damage.
check top head for corrosion.					
Welds Inspect all welds, including attachment	X				All visible welds appear to be in good overall condition.
welds. Record all service-related damages and					
if there is any discuss with Chief Inspector					
before closing.					
Repairs Required. If yes, ensure procedure				X	None.
and copy of AB 40 is on file, and one sent to					
local ABSA, and Chief Inspector					
NDE Was any NDE done. (MI coordinator to	X				Ultrasonic thickness carried out on the shell lowest reading
review results)					found was 1.875" thick.

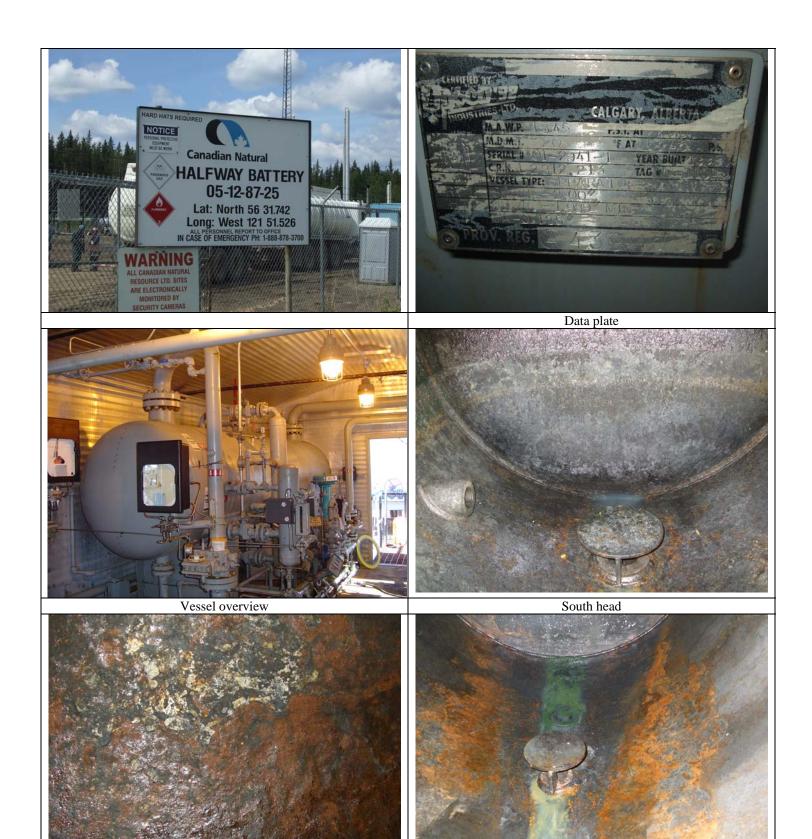
Recommendations or corrective actions: Vessel is Fit for Service or describe corrective actions required)

(MIC to review corrective actions with Operations, discuss with Chief Inspector where necessary, and get remedial action implemented)

Recommendations: 1. Coat lower section of shell with inhibitor to prevent further metal loss.

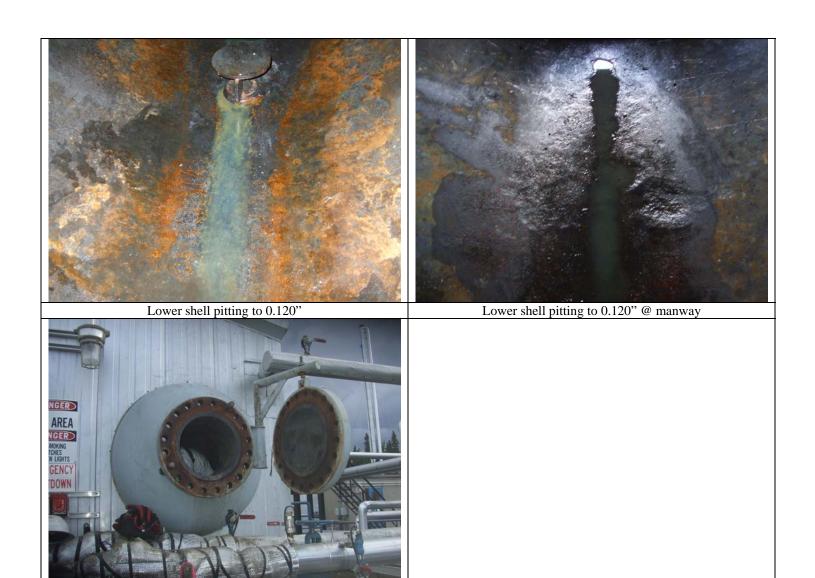
Summary: This vessel is in good over all condition, visual internal / external carried out.

Vessel is fit for service.



Lower shell pitting to 0.120"

Lower shell pitting to 0.120"



Manway