Form: QR-19.7a Rev.: 2, Date: Jan 22<sup>nd</sup>, 2018

#### PRESSURE VESSEL & COLUMN INSPECTION REPORT

Report # 66149346-2019-VE-LSD: 07-27-051-19W5M Date: June 13, 2019 SAP Equipment ID 66149346

	VESSEL STATIC DATA							
Plant Ansell Gas Plant			Op Unit		System			
Prov. Insp. # A0			CRN I	J2298.2	Equip Tag	#		
Equipment De	escription	Flare Knockou	nockout Drum			Serial # 07-2987-0002		
Manufacturer	-	Pyramid Corpo	oration		Vessel Cla	Vessel Class		
Internal Acce	ss YES,	NO Description	cription			Year Built 2006		
MAWP		kPa / PSI	@	°C/°F	MDMT	°C/°F		
CODE UM	<b>U</b> U2	<b>RT</b> 1	2 3 4		PWHT			
Diameter	Le	ngth (T/T)	mm/in <b>C</b>	DAL mm/in	Vertical	Horizontal		
Shell Mat		Thick	ness	mm / in	Corr Allowa	nce mm/in		
Head Mat	'I	Thick	ness	mm / in	Corr Allowa	nce mm/in		
Nozzle Mat	'I	Thick	ness	mm / in	Corr Allowa	nce mm/in		
Internal Coating: YES NO			Internal Clad YES NO			Capacity m <sup>3</sup>		
Manway	YES NO	Inspec	ction Port YE	S NO	Skirt Leg	gs Saddle		
Nozzle Rating	j II	b ANSI Painte	ed YES	3 NO	Insulated	YES NO		
	•	•	PROCESS D					
Product Desc				Swee				
Operating Pre	essure		Pa / psi	Operating Tem	perature	°C / °F		
		PROT	ECTED BY PR					
PRD STATIC DATA						Last Service Date		
Serial No.	Location	Set Pressure	Capacity SCFM / Lbs/Hr / GPM	Manufacturer	Model / Type	& Company		
N/A	Open to flare							
PRD DETAILS								
	Type (Th	read/Flange)		ANSI Rating		Size (mm)		
PRD Inlet								
PRD Outlet								

#### **INSPECTION SUMMARY**

- Visual inspection performed
- Data plate secure and legible
- Vessel adequately supported
  Vessel is insulated, and the cladding is in good condition.
- Vessel and piping in acceptable condition
- The vessel is open to flare
- Vessel is acceptable and FFS.

#### **RECOMMENDATIONS**

1. The vessel is acceptable and FFS.

#### NONCONFORMANCES / INSPECTION DEFICIENCIES

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### PRESSURE VESSEL & COLUMN INSPECTION REPORT

LSD: 07-27-051-19W	/5M Date	e: June 13, 2019	SAP Equipment ID	66149346	Report # 6614 01	9346-2019-VE-
Inspection Strategy		Availability		Inspection In	terval	
Inspection Date June 13, 2019 Date of Last Inspect		Date of Next Inspect				
		-		-		

#### REPORT CERTIFICATION

	1121 0111 02111			
The signatures below certify that inspe	•		nspection s	strategy and that
the specified equipment is considered	fit for service until the date of no	ext inspection.		
Inspected by	Jabulani (Jay) Dube	2Dure	Date	June 13, 2019
Company	Streamline Inspection	PESL #	API#	
Reviewed and Approved by			Date	
		PESL#	API#	
Criticality Assessment Rerun		Inspection Planning Rerun		_
Optional Rule Group Confirmed		Assessed Next Inspection Date		

Form: QR-19.7a Rev.: 2, Date: Jan 22<sup>nd</sup>, 2018

#### PRESSURE VESSEL & COLUMN INSPECTION REPORT

LSD: 07-27-051-19W5M Date: June 13, 2019 SAP Equipment ID 66149346 Report # 66149346-2019-VE-

DETAILED INSPECTION VISUAL EXTERNAL

D   Description   Condition   Location   NCR   Comments	
V2         General Corrosion         N/A         No concerns           V3         General Leaks         N/A         N/A         None noted           V4         Vibration         N/A         None noted           V5         Dissimilar Flange Rating         Acceptable         Similar ratings           V6         Ladder/Stairway/Platforms         N/A         Acceptable           V7         Heads         Fair         Top Quick opening head         Acceptable condition           V8         Guy Wires         N/A         Acceptable condition           V9         Electrical Ground         Good         Attached to skid         Secure           V10         Painted Inactive Corrosion         N/A         Acceptable condition           V11         Coating/Painting         Good         Shell inside building under the vessel         Acceptable condition           V11         Coating/Painting         Good         Temp, pressure and level gauge         Clear and legible           V12         Expansion Joint or Bellows         N/A         Insulated and cladding is good.           V14         Shell         Good         Piping         Adequately supported by skid           V21         Support Other (Please explain)         Good         Building supported	
V2         General Corrosion         N/A         No concerns           V3         General Leaks         N/A         No concerns           V4         Vibration         N/A         No concerns           V5         Dissimilar Flange Rating         Acceptable         Similar ratings           V6         Ladder/Stairway/Platforms         N/A         N/A           V7         Heads         Fair         Top Quick opening head         Acceptable condition           V8         Guy Wires         N/A         N/A         Secure           V10         Painted Inactive Corrosion         N/A         Secure           V10         Painted Inactive Corrosion         N/A         Secure           V11         Coating/Painting         Good         Shell inside building under the vessel           V11         Coating/Painting         Good         Temp, pressure and level gauge         Clear and legible           V12         Expansion Joint or Bellows         N/A         Clear and legible           V11         Shell         Good         Insulated and cladding is good.           V12         Shell         Good         Piping         Adequately supported           V21         Support Other (Please explain)         Good         Bu	
Vibration   Vibration   Vibration   Vibration   Vibration   Dissimilar Flange Rating   Acceptable   Similar ratings	
V5    Dissimilar Flange Rating	
V6         Ladder/Stairway/Platforms         N/A           V7         Heads         Fair         Top Quick opening head         Acceptable condition           V8         Guy Wires         N/A         Secure           V9         Electrical Ground         Good         Attached to skid         Secure           V10         Painted Inactive Corrosion         N/A         Acceptable           V11         Coating/Painting         Good         Shell inside building under the vessel         Acceptable condition           V12         Expansion Joint or Bellows         N/A         Acceptable condition         Acceptable condition           V13         Gauge/Site Glass         Good         Temp, pressure and level gauge         Clear and legible           V14         Shell         Good         Insulated and cladding is good.           V15         Jacket         Acceptable         Adequately supported           V21         Support Other (Please explain)         Good         Building supported by skid           V22         Foundation         Good         Building supported by skid           V23         Anchor Bolts         Good         Secure           V24         Saddle/Skirt         Skirt         Bolted to skid           V25	
V6         Ladder/Stairway/Platforms         N/A         N/A           V7         Heads         Fair         Top Quick opening head         Acceptable condition           V8         Guy Wires         N/A         Secure           V9         Electrical Ground         Good         Attached to skid         Secure           V10         Painted Inactive Corrosion         N/A         Acceptable           V11         Coating/Painting         Good         Shell inside building under the vessel         Acceptable condition           V12         Expansion Joint or Bellows         N/A         Insulated and cladding is good.           V13         Gauge/Site Glass         Good         Temp, pressure and level gauge         Clear and legible           V14         Shell         Good         Insulated and cladding is good.           V15         Jacket         Acceptable         Adequately supported           V21         Support Other (Please explain)         Good         Building supported by skid           V22         Foundation         Good         Building supported by skid           V22         Foundation         Good         Secure           V24         Saddle/Skirt         Skirt         Bolted to skid           V25         Davi	
V7	
V9         Electrical Ground         Good         Attached to skid         Secure           V10         Painted Inactive Corrosion         N/A         Acceptable condition           V11         Coating/Painting         Good         Shell inside building under the vessel         Acceptable condition           V12         Expansion Joint or Bellows         N/A         Image: Clear and legible condition           V13         Gauge/Site Glass         Good         Temp, pressure and level gauge         Clear and legible           V14         Shell         Good         Insulated and cladding is good.           V15         Jacket         Acceptable         Insulated and cladding is good.           V21         Support Other (Please explain)         Good         Piping         Adequately supported           V22         Foundation         Good         Building supported by skid           V23         Anchor Bolts         Good         Secure           V24         Saddle/Skirt         Skirt         Bolted to skid           V25         Davit         N/A         Image: Clear and legible           V31         Condation         Good         Secure           V32         Acceptable         All accessible condections apper secure           V33	
V10       Painted Inactive Corrosion       N/A       Shell inside building under the vessel       Acceptable condition         V11       Expansion Joint or Bellows       N/A       Clear and legible         V13       Gauge/Site Glass       Good       Temp, pressure and level gauge       Clear and legible         V14       Shell       Good       Insulated and cladding is good.         V15       Jacket       Acceptable         V21       Support Other (Please explain)       Good       Piping       Adequately supported         V22       Foundation       Good       Building supported by skid         V23       Anchor Bolts       Good       Secure         V24       Saddle/Skirt       Skirt       Bolted to skid         V25       Davit       N/A       Secure         V26       Fireproofing       N/A       All accessible connections appeared explain)         V31       Connections Other (Please explain)       Good       All accessible connections appeared explain)         V32       Small Branches       Good       N/A       No leaks or kinks         V33       Nozzles       N/A       N/A       No leaks or kinks         V34       Manways       Good       Inacted and cladding is good.       Inacted	
V11       Coating/Painting       Good       Shell inside building under the vessel       Acceptable condition         V12       Expansion Joint or Bellows       N/A       Clear and legible         V13       Gauge/Site Glass       Good       Temp, pressure and level gauge       Clear and legible         V14       Shell       Good       Insulated and cladding is good.         V15       Jacket       Acceptable         V21       Support Other (Please explain)       Good       Piping       Adequately supported         V22       Foundation       Good       Building supported by skid         V23       Anchor Bolts       Good       Secure         V24       Saddle/Skirt       Skirt       Bolted to skid         V25       Davit       N/A       Bolted to skid         V26       Fireproofing       N/A       All accessible connections appeared explain)         V31       Connections Other (Please explain)       Good       All accessible connections appeared explain)         V32       Small Branches       Good       Tubing       No leaks or kinks         V33       Nozzles       N/A       N/A         V34       Manways       Good       Good         V35       Reinforcing Pads	
V12 Expansion Joint or Bellows N/A  V13 Gauge/Site Glass Good Temp, pressure and level gauge  V14 Shell Good Insulated and cladding is good.  V15 Jacket Acceptable  V21 Support Other (Please explain) Good Piping Adequately supported by skid  V22 Foundation Good Building supported by skid  V23 Anchor Bolts Good Secure  V24 Saddle/Skirt Skirt Bolted to skid  V25 Davit N/A  V36 Fireproofing N/A  V31 Connections Other (Please Good Good All accessible connections appear explain)  V32 Small Branches Good All accessible connections appear explain)  V33 Nozzles N/A  V34 Manways Good Manways Good Good Good Good Good Good Good Goo	
V13   Gauge/Site Glass   Good   Temp, pressure and level gauge   Clear and legible	
Shell   Good   Insulated and cladding is good.	
V14       Shell       Good       Insulated and cladding is good.         V15       Jacket       Acceptable         V21       Support Other (Please explain)       Good       Piping       Adequately supported         V22       Foundation       Good       Building supported by skid         V23       Anchor Bolts       Good       Secure         V24       Saddle/Skirt       Skirt       Bolted to skid         V25       Davit       N/A       Bolted to skid         V26       Fireproofing       N/A       All accessible connections appeared by skid         V31       Connections Other (Please explain)       Good       All accessible connections appeared by skid         V32       Small Branches       Good       Tubing       No leaks or kinks         V33       Nozzles       N/A       No leaks or kinks         V33       Nozzles       N/A       No leaks or kinks         V34       Manways       Good	
V21       Support Other (Please explain)       Good       Piping       Adequately supported         V22       Foundation       Good       Building supported by skid         V23       Anchor Bolts       Good       Secure         V24       Saddle/Skirt       Skirt       Bolted to skid         V25       Davit       N/A       Secure         V26       Fireproofing       N/A         V31       Connections Other (Please explain)       Good       All accessible connections appear explain)         V32       Small Branches       Good       No leaks or kinks         V33       Nozzles       N/A       No leaks or kinks         V34       Manways       Good       Secure         V34       Manways       Good       N/A         V35       Reinforcing Pads       N/A       N/A         V36       Inadequate Thread Engagement       N/A       N/A         V37       Bolting       Acceptable       Acceptable         V39       Leak Clamps       N/A       Cladding in good condition         V41       Insulation Other (Please explain)       Acceptable       Entire vessel except part inside building underneath shell	
V22       Foundation       Good       Building supported by skid         V23       Anchor Bolts       Good       Secure         V24       Saddle/Skirt       Skirt       Bolted to skid         V25       Davit       N/A       Bolted to skid         V26       Fireproofing       N/A       All accessible connections appear	
V22       Foundation       Good       Building supported by skid         V23       Anchor Bolts       Good       Secure         V24       Saddle/Skirt       Skirt       Bolted to skid         V25       Davit       N/A       Solted to skid         V26       Fireproofing       N/A       All accessible connections appeared acceptable         V31       Connections Other (Please explain)       Good       All accessible connections appeared acceptable         V32       Small Branches       Good       Tubing       No leaks or kinks         V33       Nozzles       N/A       N/A         V34       Manways       Good       Secure         V35       Reinforcing Pads       N/A       N/A         V36       Inadequate Thread Engagement       N/A       N/A         V37       Bolting       Acceptable       Acceptable         V39       Leak Clamps       N/A       Cladding in good condition         V41       Insulation Other (Please explain)       Entire vessel except part inside building underneath shell       Cladding in good condition	
V23       Anchor Bolts       Good       Secure         V24       Saddle/Skirt       Skirt       Bolted to skid         V25       Davit       N/A       Secure         V26       Fireproofing       N/A       All accessible connections appeared and appeared an	
V24     Saddle/Skirt     Skirt     Bolted to skid       V25     Davit     N/A     VA       V26     Fireproofing     N/A     All accessible connections appear explain)       V31     Connections Other (Please explain)     Good     All accessible connections appear explain       V32     Small Branches     Good     No leaks or kinks       V33     Nozzles     N/A     No leaks or kinks       V34     Manways     Good     Good       V35     Reinforcing Pads     N/A     N/A       V36     Inadequate Thread Engagement     N/A     N/A       V37     Bolting     Acceptable     Acceptable       V38     Flanges     Acceptable     Cladding in good condition       V41     Insulation Other (Please explain)     Acceptable     Entire vessel except part inside building underneath shell     Cladding in good condition	
V26       Fireproofing       N/A         V31       Connections Other (Please explain)       Good       All accessible connections appear appear appear and appear appe	
V31 Connections Other (Please explain)  V32 Small Branches  V33 Nozzles  V34 Manways  V35 Reinforcing Pads  V36 Inadequate Thread Engagement  V37 Bolting  V38 Flanges  V39 Leak Clamps  V41 Insulation Other (Please explain)  V31 Connections Other (Please explain)  C32 Good  C33 Nozzles  N/A  V41 Insulation Other (Please explain)  V36 Entire vessel except part inside building underneath shell  C30 Tubing  No leaks or kinks  All accessible connections appearations appearati	
explain)  V32 Small Branches Good Tubing No leaks or kinks  V33 Nozzles N/A  V34 Manways Good V35 Reinforcing Pads N/A  V36 Inadequate Thread Engagement V37 Bolting V38 Flanges V39 Leak Clamps V41 Insulation Other (Please explain)  Rood V30 Tubing No leaks or kinks  N/A  VAA  Entire vessel except part inside building underneath shell  Cladding in good condition	
V32       Small Branches       Good       Tubing       No leaks or kinks         V33       Nozzles       N/A          V34       Manways       Good          V35       Reinforcing Pads       N/A          V36       Inadequate Thread Engagement       N/A          V37       Bolting       Acceptable          V38       Flanges       Acceptable          V39       Leak Clamps       N/A          V41       Insulation Other (Please explain)       Acceptable part inside building underneath shell       Cladding in good condition	ir secure
V33       Nozzles       N/A         V34       Manways       Good         V35       Reinforcing Pads       N/A         V36       Inadequate Thread Engagement       N/A         V37       Bolting       Acceptable         V38       Flanges       Acceptable         V39       Leak Clamps       N/A         V41       Insulation Other (Please explain)       Entire vessel except part inside building underneath shell       Cladding in good condition	
V34       Manways       Good       Cood         V35       Reinforcing Pads       N/A       N/A         V36       Inadequate Thread Engagement       N/A       N/A         V37       Bolting       Acceptable       Acceptable         V38       Flanges       Acceptable       Acceptable         V39       Leak Clamps       N/A         V41       Insulation Other (Please explain)       Acceptable       Entire vessel except part inside building underneath shell       Cladding in good condition	
V35 Reinforcing Pads N/A  V36 Inadequate Thread Engagement N/A  V37 Bolting Acceptable  V38 Flanges Acceptable  V39 Leak Clamps N/A  V41 Insulation Other (Please explain) Acceptable Entire vessel except part inside building underneath shell	
V36 Inadequate Thread Engagement N/A V37 Bolting Acceptable V38 Flanges Acceptable V39 Leak Clamps N/A V41 Insulation Other (Please explain) Acceptable Entire vessel except part inside building underneath shell	
V37 Bolting Acceptable V38 Flanges Acceptable V39 Leak Clamps V41 Insulation Other (Please explain)  Acceptable Entire vessel except part inside building underneath shell  Cladding in good condition	
V38 Flanges Acceptable V39 Leak Clamps N/A  V41 Insulation Other (Please explain) Acceptable Entire vessel except part inside building underneath shell Cladding in good condition	
V39 Leak Clamps N/A  V41 Insulation Other (Please explain) Acceptable Entire vessel except part inside building underneath shell Cladding in good condition	
V41 Insulation Other (Please explain) Acceptable Entire vessel except part inside building underneath shell Cladding in good condition	
V/40 B	
V42 Damage N/A Acceptable condition	
V43 Penetrations N/A	
V44 Insulation Jacket Good	
V45 Banding N/A	
V46 Seals/Joints N/A	
V51 Relief Devices Other (Please N/A Open to flare explain)	
V52 Corrosion N/A None noted on exposed surfaces	
V53 Leaks n/a None noted	
V54 Restricted Inlet/Outlet N/A	
V55 Manual Operation Lever N/A	

Form: QR-19.7a Rev.: 2, Date: Jan 22<sup>nd</sup>, 2018

#### PRESSURE VESSEL & COLUMN INSPECTION REPORT

LSD: 07-27-051-19W5M

Date: June 13, 2019

SAP Equipment ID 66149346

Report # 66149346-2019-VE-

#### **PHOTOS**











