

PRESSURE VESSEL & COLUMN INSPECTION REPORT

LSD: 07-27-051-19W5M

Date: JUNE 07, 2014

SAP Equipment ID: 66046896

VESSEL STATIC DATA									
Plant		Ansell Gas Plant		Op Unit			System		
Prov. Insp. #		A0436391		CRN			N6022.2		
Equipment Description		Inlet Separator					Serial #		
Manufacturer		Bromley Mechanical					Vessel Class		
Internal Access:		yes		Description: 18" MW			Year Built		
MAWP		1440		PSI		@ 100		°F	
CODE :		RT : 1					PWHT : yes		
Diameter		36in I.D		Length		(S/S) in		OAL 192 in	
Shell		Mat'l		SA-516-70N		Thickness		1.750 in	
Head		Mat'l		SA-516-70N		Thickness min		1.720 in	
Nozzle		Mat'l				Thickness		in	
Internal Coating:		NO		Internal Clad :		NO		Capacity	
Manway :		yes		Inspection Port :		no		Skirt	
Nozzle Rating		600		lb ANSI		Painted :		YES	
						Insulated		no	
PROCESS DATA									
Product Description					Gas				
Operating Pressure					PSI		Operating Temperature		
							°C		
PSV STATIC DATA									
Serial No.	Location	Set Pressure	Capacity	Manufacturer	Model / Type	Service Date / Company			
			SCFM / Lbs/Hr / GPM						
C07-24958	Top shell	486psi	18060scfm	Crosby	JBSE35J	12-Sep-11. Wizard. PSV-1002			
PSV DETAILS									
	Type (Thread/Flange)			ANSI Rating			Size (in)		
PRD Inlet	Flanged			600			3"		
PRD Outlet	Flanged						4"		
NDE Equipment records									
Procedure#	Description	Manufacturer	Model#	Serial#	Due Date				

INSPECTION SUMMARY

A visual external and internal inspection was conducted on vessel during plant outage. In plant 1 inlet building. process building.

External:

Vessel and piping are in good condition, piping well supports. No significant paint damage, corrosion or mechanical damage noted on shell, top head or piping. Light surface rusting and general corrosion noted on bottom head and drain line. Estimated depth 0.015". Some very small, minor paint chips found on vessel. Vessel is securely welded to the skid floor. An inspection access port is present in the skirt. Dataplate is securely attached to vessel and is legible. Manway davit is only has a single nut. Bridle top PSI gauge has paint spatter on the glass, making is hard to read. Gound cable attached to skid, no direct connection to vessel. PSV service is up to date, set below MAWP, vents to flare header. Shortbolting noted on PSV inlet flange. UT survey done 2014 by Streamline Inspection.

Internal:

Internal inspection was done after vessel was washed and aired out. There was a wax buildup on vessel internally prior to cleaning. Internal access is through 18" manway. Manway nozzle throat and flange gasket surface in acceptable condition, no corrosion or damage noted. Internally the vessel bottom head and shell is in fair condition. No significant corrosion or damage noted. All visually accessible nozzles are in good condition, with no corrosion or obstructions found. Internal drain vortex breaker, inlet deflector and internal coil appear in good condition and are securely attached. Demister was not removed at time of inspection. Demister was found to be securely attached, but somewhat fouled and waxy. It is recommended that demister be removed and replaced at next plant outage, and a visual inspection be performed on top head at that time. All internal welds appear to be in good condition with no corrosion or defects noted.

Vessel was found to be in fair condition and fit for continued service.

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RECOMMENDATIONS

Review UT Survey results.
Double nut manway davit.
At next plant outage remove and replace demister pad, Visually inspect top head once demister has been removed.
Fix shortbolting on PSV inlet flange, will require longer bolts – operations was informed of concern.

NONCONFORMANCES / INSPECTION DEFICIENCIES

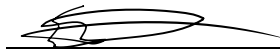
Shortbolting on PSV inlet flange.

INSPECTION PLANNING

Inspection Strategy	Availability	Inspection Interval
Inspection Date June 07, 2014	Date of Last Inspect	Date of Next Inspect

REPORT CERTIFICATION

The signatures below certify that inspections/tests have been completed in accordance with the identified inspection strategy and that the specified equipment is considered fit for service until the date of next inspection.

Inspected by	Ed Tymensen		Date	June 07, 2014
Company	Streamline Inspection	PESL #	000711	API # 27479
Reviewed and Approved by			Date	
		PESL #		API #
Criticality Assessment Rerun		Inspection Planning Rerun		
Assessed Next Inspection Date				

PRESSURE VESSEL & COLUMN INSPECTION REPORT

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DETAILED INSPECTION VISUAL EXTERNAL

ID	Description	Condition	Location	NCR	Comments
V1	General Other (Please Explain)	Good			Overall
V2	General Corrosion	Fair	Bottom head and drain line		Light general corrosion, estimated depth 0.015"
V3	General Leaks	n/a			No leaks noted
V4	Vibration	n/a			Plant was down during inspection
V5	Dissimilar Flange Rating	Good			Similar flange ratings
V6	Ladder/Stairway	n/a			
V7	Heads	Fair	Bottom head		Light general corrosion, estimated depth 0.015"
V8	Guy Wires	n/a			
V9	Electrical Ground	Fair	Skid is grounded, no direct attachment to vessel		Ground cable connection to skid tight and secure
V10	Painted Inactive Corrosion	n/a			
V11	Coating/Painting	Fair			Minor paint damage on shell, no corrosion
V12	Expansion Joint or Bellows	n/a			
V13	Gauge/Site Glass	Fair	PSI gauge on top of bridle		Gauge glass lightly covered in paint overspray.
V14	Shell	Good	Limited to ut ports		No significant corrosion or damage noted
V15	Jacket	n/a			
V21	Support Other (Please explain)	Good	Piping		Well supported
V22	Foundation	Good			Vessel on steel skid. Building on steel piles
V23	Anchor Bolts	n/a			
V24	Saddle/Skirt	Good	Skirt		Welded to floor, secure. Light surface rusting / corrosion on skirt I.D.
V25	Davit	Fair			Single nut
V26	Fireproofing	n/a			
V31	Connections Other (Please explain)	Good			All connections secure
V32	Small Branches	Good	Tubing		No leaks or kinks
V33	Nozzles	Good			No corrosion or damage noted
V34	Manways	Good			No corrosion or damage, gasket surfaces acceptable
V35	Reinforcing Pads	Fair	Bottom drain nozzle		Unable to determine presence of weephole. Very light surface corrosion on repad.
V36	Inadequate Thread Engagement	Poor	PSV inlet flange		3 studs shortbolted on both ends, 3 threads shy of flush
V37	Bolting	Fair			Bolting tight and secure. No corrosion of threads noted. Three shortbolts on PSV inlet flange
V38	Flanges	Good			No leaks or corrosion noted
V39	Leak Clamps	n/a			
V41	Insulation Other (Please explain)	n/a			
	Damage	n/a			
V43	Penetrations	n/a			
V44	Insulation Jacket	n/a			
V45	Banding	n/a			
V46	Seals/Joints	n/a			
V51	Relief Devices Other (Please explain)	Good			PSV service up to date, set below MAWP
V52	Corrosion	n/a			None noted
V53	Leaks	n/a			None noted
V54	Restricted Inlet/Outlet	n/a			
V55	Manual Operation Lever	n/a			

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DETAILED INSPECTION VISUAL INTERNAL

ID	Description	Condition	Location	NCR	Comments
V1	General Other (Please Explain)	Fair			Overall
V2	Corrosion (depth, length, width)	n/a			No corrosion noted
V3	Erosion	n/a			No erosion noted
V4	Distortion	n/a			No distortions noted
V5	Blisters	n/a			No blisters noted
V6	Deposits	n/a			No deposits found
V7	Heads	Fair	Bottom head		NO significant corrosion or damage noted
V8	Welds	Good			No corrosion, damage or visible defects noted
V9	Nozzles	Good			No corrosion, damage or obstructions noted
V10	Shell	Fair			No significant corrosion or damage noted
V11	Gasket Surfaces	Good	manway		Acceptable condition, no corrosion or damage
V21	Internals Other (Please explain)	Good	Inlet deflector plate, internal coil, vortex breaker		Securely attached
V22	Demister	Fair			Securely attached, some fouling noted
V23	Baffle/Wier	n/a			
V24	Sparger	n/a			
V25	Thermowells	n/a			
V26	Metallic Linings	n/a			
V27	Nonmetallic Linings	n/a			
V28	Trays	n/a			
V29	Tray Rings	n/a			
V30	Other Welded Attachments	Good	Demister support bars		Securely attached

DETAILED INSPECTION OTHER TECHNIQUES

ID	Location	Observation/Measurement	Acceptance Criteria	NCR	Comments
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

DETAILED INSPECTION UT THICKNESS

CML	Nom. Thk	Current Reading	Short Term Corr Rate	Long Term Corr Rate	Remaining Life	Comments

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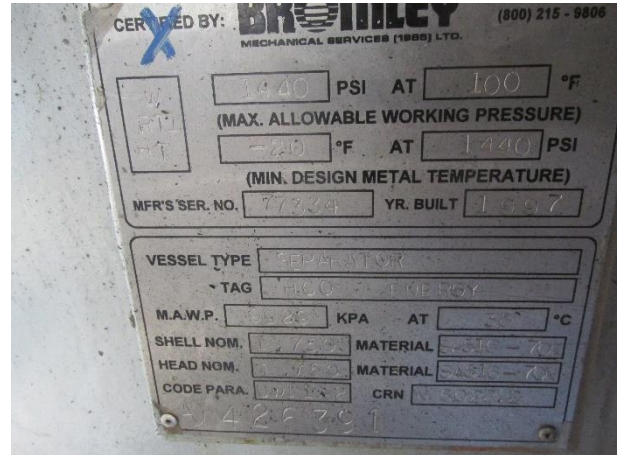
Date: JUNE 07, 2014

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PHOTOS



LSD sign



Daplate



Vessel overview



Skirt access port



Minor paint damage to shell



Bottom head general corrosion

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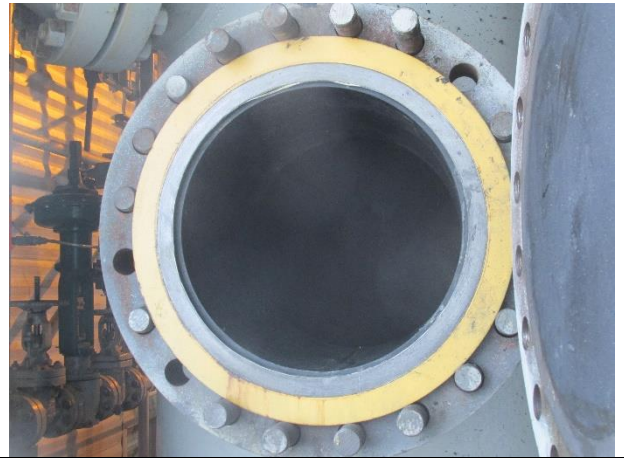
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PHOTOS



Access through Manway, port in wall to access



Manway



Davit arm, single nut only



Manway cover and davit arm



Manway nozzle throat



Nozzle internal

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PHOTOS



Bottom head, vortex breaker



Internal coil attachment and supports



Internal coil support



Bottom head to shell circ weld



Some waxy deposits remaining on manway nozzle



Demister pad

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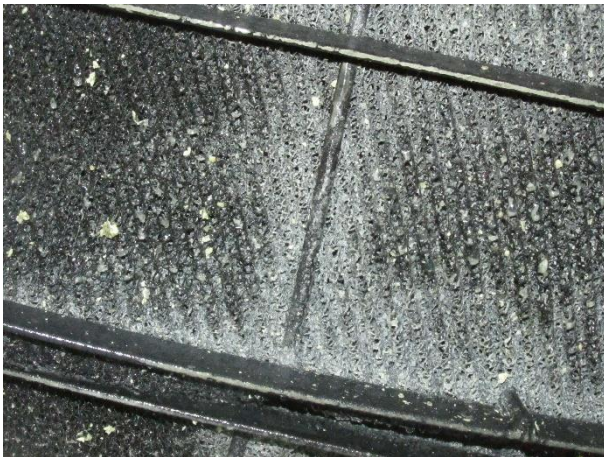
PHOTOS



Demister pad fouling



Demister pad fouling



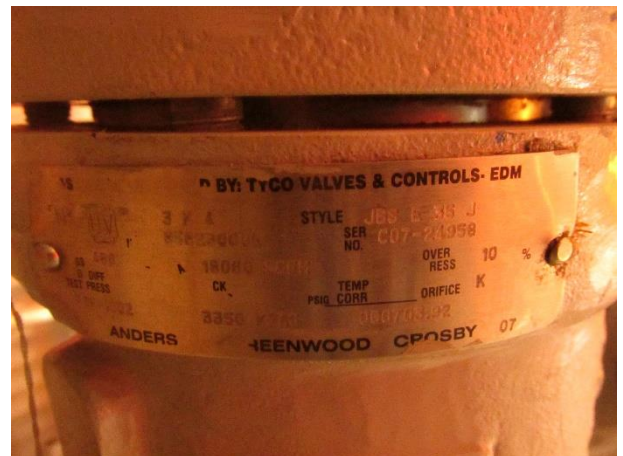
Demister pad fouling



PSV service tag



PSV overview



PSV Dataplate

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PHOTOS



PSV inlet flange shortbolting top of studs



PSV inlet flange shortbolting bottom of studs

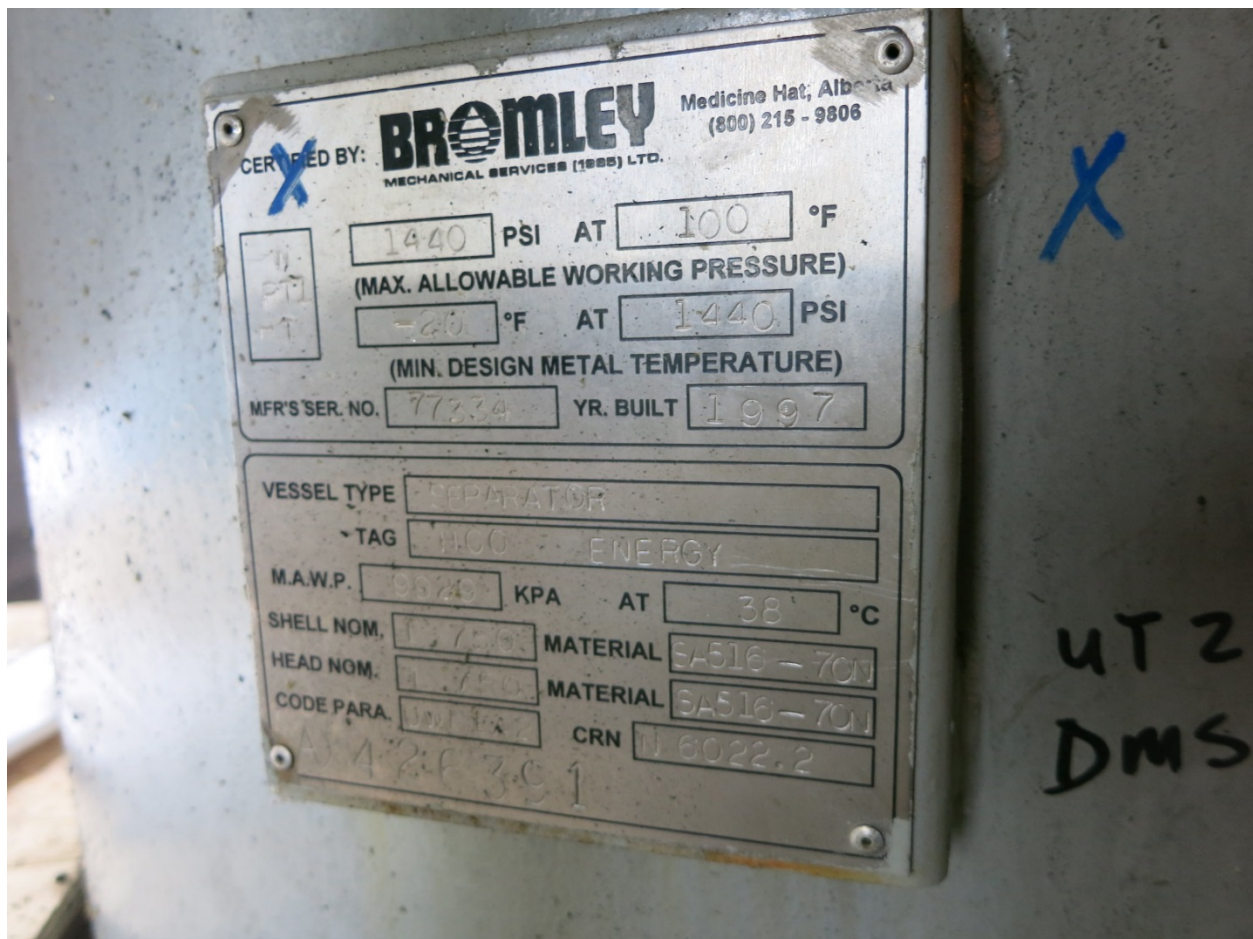


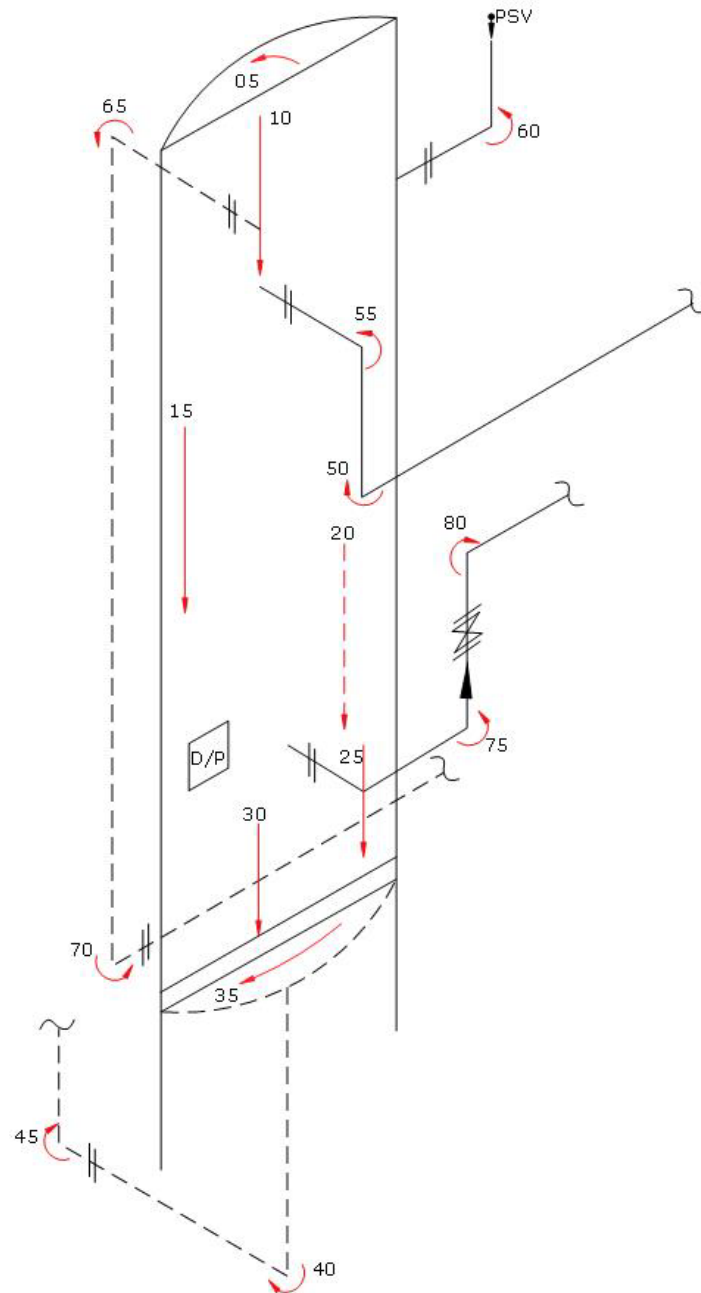
Paint overspray on bridge PSI gauge glass



Location Name:	ANSELL GAS PLANT	LSD:	7-27-51-19W5
A#:	A0426391	Equipment/Tag No.	BC#002895
Equipment Description:	SEPARATOR	Serial Number:	77334
		CRN: (or other ID#)	N6022.2
MAWP:	1440 PSI	Design Temp:	100°F
Shell Material:	SA 516 70	Head Material:	SA 516 70
Shell Thickness:	1.750"	Head Thickness:	1.720"
Corrosion Allowance:	0.125"	Date Built:	1997
Size:	40"	Manufacturer:	BROMLEY
RT:		Pipe / Rolled Plate:	ROLLED PLATE

Notes: CML 40, EROSION NOTED.









Ultrasonic Corrosion Survey

Survey Name: Husky Energy

Date: Jun 8, 2014

Inspector: W. Gill

LSD: 07-27-051-19W5 Area: Ansell Location: Gas Plant
A #: A0426391 Tag Number: BC#002895 Vessel Name: Separator
CRN: N6022.2 Year Built: 1997 Serial Number: 77334
Vessel CA: 3.175 mm Manufacturer: Bromley
Shell MAWP: 1440psi MAWTF: 100°F Tube MAWP: MAWTF:

TML Description		Baseline				Material:	SA-516-70
05	Head	2014	Flag	CA	Nominal	T Min	Corr. Rate
Shape:	Ellipsoidal	Min	40.513	3.175	43.688		
OD:	40"	Avg	44.480				Remaining Life:
Spec:	ASME VIII Div.1	Comments:					Retirement Date:

TML Description		Baseline				Material:	SA-516-70
10	Shell	2014	Flag	CA	Nominal	T Min	Corr. Rate
Shape:	Cylindrical	Min	41.275	3.175	44.450		
OD:	40"	Avg	45.540				Remaining Life:
Spec:	ASME VIII Div.1	Comments:					Retirement Date:

TML Description		Baseline				Material:	SA-516-70
15	Shell	2014	Flag	CA	Nominal	T Min	Corr. Rate
Shape:	Cylindrical	Min	41.275	3.175	44.450		
OD:	40"	Avg	45.360				Remaining Life:
Spec:	ASME VIII Div.1	Comments:					Retirement Date:

TML Description		Baseline				Material:	SA-516-70
20	Shell	2014	Flag	CA	Nominal	T Min	Corr. Rate
Shape:	Cylindrical	Min	41.275	3.175	44.450		
OD:	40"	Avg	45.030				Remaining Life:
Spec:	ASME VIII Div.1	Comments:					Retirement Date:



Ultrasonic Corrosion Survey

Survey Name: Husky Energy

Date: Jun 8, 2014

Inspector: W. Gill

LSD: 07-27-051-19W5 Area: Ansell Location: Gas Plant
A #: A0426391 Tag Number: BC#002895 Vessel Name: Separator
CRN: N6022.2 Year Built: 1997 Serial Number: 77334
Vessel CA: 3.175 mm Manufacturer: Bromley
Shell MAWP: 1440psi MAWTF: 100°F Tube MAWP: MAWTF:

TML Description		Baseline				Material:	SA-516-70
25	Shell	2014	Flag	CA	Nominal	T Min	Corr. Rate
Shape:	Cylindrical	Min	44.980	41.275	3.175	44.450	
OD:	40"	Avg	45.570				Remaining Life:
Spec:	ASME VIII Div.1	Comments:					Retirement Date:

TML Description		Baseline				Material:	SA-516-70
30	Shell	2014	Flag	CA	Nominal	T Min	Corr. Rate
Shape:	Cylindrical	Min	44.600	41.275	3.175	44.450	
OD:	40"	Avg	44.980				Remaining Life:
Spec:	ASME VIII Div.1	Comments:					Retirement Date:

TML Description		Baseline				Material:	SA-516-70
35	Head	2014	Flag	CA	Nominal	T Min	Corr. Rate
Shape:	Ellipsoidal	Min	43.460	41.275	3.175	44.450	
OD:	40"	Avg	45.260				Remaining Life:
Spec:	ASME VIII Div.1	Comments:					Retirement Date:

TML Description		Baseline				Material:	A-234-WPB
40	Nozzle	2014	Flag	CA	Nominal	T Min	Corr. Rate
Shape:	90° Elbow	Min	7.540	7.623	1.089	8.712	0.069
OD:	2.375"	Avg	7.980			Assumed	Remaining Life: 74.65 Years
Spec:	ASME VIII Div.1	Comments:	Erosion Found				Retirement Date: 2/1/2089



Ultrasonic Corrosion Survey

Survey Name: Husky Energy

Date: Jun 8, 2014

Inspector: W. Gill

LSD: 07-27-051-19W5 Area: Ansell Location: Gas Plant
A #: A0426391 Tag Number: BC#002895 Vessel Name: Separator
CRN: N6022.2 Year Built: 1997 Serial Number: 77334
Vessel CA: 3.175 mm Manufacturer: Bromley
Shell MAWP: 1440psi MAWTF: 100°F Tube MAWP: MAWTF:

TML Description		Baseline				Material:	A-234-WPB
45	Piping	2014	Flag	CA	Nominal	T Min	Corr. Rate
Shape:	90° Elbow	Min	3.330	3.423	0.489	3.912	2.540
OD:	2.375"	Avg	3.730			Assumed	
Spec:	ASME B31.3	Comments:	No corrosion found				
						Remaining Life:	23.5 Years
						Retirement Date:	12/5/2037

TML Description		Baseline				Material:	A-234-WPB
50	Piping	2014	Flag	CA	Nominal	T Min	Corr. Rate
Shape:	90° Elbow	Min	9.450	7.156	1.022	8.179	
OD:	8.625"	Avg	9.730			Assumed	
Spec:	ASME B31.3	Comments:					
						Remaining Life:	
						Retirement Date:	

TML Description		Baseline				Material:	A-234-WPB
55	Piping	2014	Flag	CA	Nominal	T Min	Corr. Rate
Shape:	90° Elbow	Min	9.120	7.157	1.022	8.179	
OD:	8.625"	Avg	9.500			Assumed	
Spec:	ASME B31.3	Comments:					
						Remaining Life:	
						Retirement Date:	

TML Description		Baseline				Material:	A-234-WPB
60	Piping	2014	Flag	CA	Nominal	T Min	Corr. Rate
Shape:	90° Elbow	Min	5.410	4.801	0.686	5.486	
OD:	3.5"	Avg	6.050			Assumed	
Spec:	ASME B31.3	Comments:					
						Remaining Life:	
						Retirement Date:	



Ultrasonic Corrosion Survey

Survey Name: Husky Energy

Date: Jun 8, 2014

Inspector: W. Gill

LSD: 07-27-051-19W5 Area: Ansell Location: Gas Plant
A #: A0426391 Tag Number: BC#002895 Vessel Name: Separator
CRN: N6022.2 Year Built: 1997 Serial Number: 77334
Vessel CA: 3.175 mm Manufacturer: Bromley
Shell MAWP: 1440psi MAWTF: 100°F Tube MAWP: MAWTF:

TML Description		Baseline				Material:	A-234-WPB
65	Piping	2014	Flag	CA	Nominal	T Min	Corr. Rate
Shape:	90° Elbow	Min	6.270	6.223	0.889	7.112	
OD:	6.625"	Avg	6.930		Assumed		Remaining Life:
Spec:	ASME B31.3	Comments:					Retirement Date:

TML Description		Baseline				Material:	A-234-WPB
70	Piping	2014	Flag	CA	Nominal	T Min	Corr. Rate
Shape:	90° Elbow	Min	7.290	6.223	0.889	7.112	
OD:	6.625"	Avg	7.800		Assumed		Remaining Life:
Spec:	ASME B31.3	Comments:					Retirement Date:

TML Description		Baseline				Material:	A-234-WPB
75	Piping	2014	Flag	CA	Nominal	T Min	Corr. Rate
Shape:	90° Elbow	Min	5.690	4.801	0.686	5.486	
OD:	3.5"	Avg	6.050		Assumed		Remaining Life:
Spec:	ASME B31.3	Comments:					Retirement Date:

TML Description		Baseline				Material:	A-234-WPB
80	Piping	2014	Flag	CA	Nominal	T Min	Corr. Rate
Shape:	90° Elbow	Min	3.940	3.423	0.489	3.912	
OD:	2.375"	Avg	4.290		Assumed		Remaining Life:
Spec:	ASME B31.3	Comments:					Retirement Date:

ALBERTA LABOUR
 Alberta Boilers Safety Association
 200, 4208 - 97 Street
 Edmonton AB T6E 5Z9
 Partial/ Partiel ☐

**MANUFACTURER'S DATA REPORT
 FOR PRESSURE VESSEL**
**DÉCLARATION DE CONFORMITÉ DU CONSTRUCTEUR
 D'APPAREILS SOUS PRESSION**

Upon shipment of a pressure vessel, this form fully and correctly filled in must be mailed to the office of the Chief Inspector in the province of installation in accordance with the regulations under the Act, governing the construction and installation of pressure vessels.

Au moment de l'expédition d'un appareil sous pression, ce formulaire complété correctement, doit être envoyé au bureau de l'inspecteur en chef de la province d'installation tel que prévu dans les règlements de la loi sur les appareils sous pression.

Manufactured by Construit par	Name and address of Manufacturer: Nom et adresse du constructeur Bromley Mechanical Services (1985) Ltd., Box 464, 773-16 Street S.W., Medicine Hat, Alberta T1A 7G2
Manufactured for Construit pour	Name and address of Purchaser or Consignee: Nom et adresse du client ou de son représentant HCO Energy Ltd., 2700, 406 - 3 Avenue S.W., Calgary, Alberta T2P 4H2
Ultimate owner Utilisateur	Name and address: Nom et adresse Same as above
Location of installation Lieu d'installation	Address: Adresse Ansel Gas Plant LSD: 07-27-51-19 W5M

Pressure Vessel/Appareil			
Type/Genre Vertical Separator	Serial No./N° de série 77334	Year built/Année de fabrication 1997	Overall Length/Longueur totale 16' 0"
Provincial Registration No./N° d'enregistrement provincial - N.E.C. N 6022.2	National Board No./N° National Board	Drawing No./N° de dessin 361-1440-CAV Rev 0	Diameter/Diamètre 36" ID

The chemical and physical properties of all parts meet the requirements of material specifications of the A.S.M.E. Code.
 Les propriétés chimiques et physiques de toutes les composantes respectent les exigences des spécifications de matériaux de code ASME.

The design, construction and workmanship conform to CSA B51.
 La conception, la construction et la façon sont conformes à CS/NOR B51.

ASME
 Sec VIII

Division
 1

Addenda/
 Supplément
1985 ED/86 ADD

Code case No.
 N° de cas

Manufacturers' partial data reports properly identified and signed by authorized inspectors have been furnished for the following items of the report, and attached to this report:
 Les rapports partiels du constructeur adéquatement identifiés et signés par les inspecteurs autorisés ont été produits pour les items suivants du rapport, et attachés à ce rapport:

Names of parts/ Nom de la composante	Item No./ N° d'item	Manufacturer's Name/ Nom du constructeur	Identifying Stamp/ Estampe d'identification

Shell/Coque

Description	Material Matériau	Thickness Épaisseur	Corr Allow Surépais. de corr	Diameter Diamètre	Overall Length Long totale	Number of courses Nombre de sections	Girth Joints Joints de circonférence		Longitudinal Joints Joints longitudinaux			P.W.H.T. Traitement therm	
							Type	R.T. Radiog	Type	R.T. Radiog	Efficiency Efficacité	Temp	Time Durée
Shell	SA516-70N	1.750"	0.125"	36" ID	8'0"	1	1	Full	1	Full	1	1150°F	20 Min
Shell	SA516-70N	1.750"	0.125"	36" ID	4'9"	1	1	Full	1	Full	1	1150°F	120 Min

Heads/Têtes

Description	Material Matériau	Min Thickness Épais min	Corr Allow Surépais. Corr	Crown Radius Rayon couron	Knuckle Radius Petit rayon	Ellipse Ratio Rapp. ellipse	Conical Apex Angle Angle conique	Hemisph Radius Ray. Hémisph	Flat Diameter Diam. plat	Side to pressure Côte sous pression
Heads: Top	SA516-70N	1.720"	0.125"	---	---	2:1	---	---	---	Concave
Heads: Bottom	SA516-70N	1.720"	0.125"	---	---	2:1	---	---	---	Concave

Removable bolts used (describe other fastenings)
 Boulons amovibles utilisés (décrire tout autre attache)

Mat Spec. Spec. du mat.

Grade

Size/ Dimension

Pressure - Temperature/Pression - température

Pressure Vessel Part Partie de l'appareil	Constructed for max. allowable working pressure Construit pour une pression maximale de marche permise	At max. temp. A une temp. max	Min. Temp. (when less than 29°C) Temp min inférieure à 29°C	Test pressure (hydro-pneumatic or combination) Pression d'épreuve (hydro-pneumatique ou combinaison)
Vessel	1440 psi / 9929 kpa	100 ° F / 38°C	-6 ° F / -21°C	2160 psi / 14894 kpa

(A)426391

Tube Section/Faisceau tubulaire

Tube sheet / Plaque tubulaire	Material / Matériau	Diameter / Diamètre	Nominal Thickness / Épaisseur nominale	Corr. Allow. / Surepais. corrosion	Attachment / Mode d'attachement
Tube material / Matériau des tubes	Diameter / Diamètre	Nominal Thickness (gauge) / Épaisseur nominale (calibre)	Number / Nbre	Type (Straight or U) / Type (Droit ou U)	Heating Surface / Surface de chauffe

Jacket/Chemise

Type of jacket / Genre de chemise	Jacket closure / Fermeture de chemise	Proof Test / Pression d'épreuve	Heating Surface / Surface de chauffe	Sketch / Schéma
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Safety Valve Outlets/Soupapes de sûreté

Number / Nombre	Dimension	Location / Endroit
1	3" 600	Shell

Nozzles and Openings/Tubulures et ouvertures

Purpose / But	Number / Nombre	Dimension	Temp.	Material / Matériau	Nominal Thickness / Épaisseur nominale	Reinforcement material / Matériau de renfort	How attached / Genre d'attaches	Location / Endroit
Please See Supplementary Sheet								

Supports/Supports

Skirt/Jupe Yes/Oui No/Non	Lugs/Oreilles No./Nbre	Legs/Pieds No./Nbre	Other / Autres (Description)	Attached/Attaches (Where and How / Méthode et endroit)
X				Bottom Head / Weld

Remarks / Observations (Cubical Capacity/Volume)

Volume = 99.3 cu. ft. or 2.819 m³
 M.D.M.T. = -6°F at 1440 psi
 CA = 0.125"
 Impact testing not mandatory per UCS, UG20f

Certificate of Compliance / Certificat de conformité

We certify that the statements made in this data report are correct and that the said vessel has been constructed in accordance with the Provincial Registered design below and the requirements of standard CSA B51.

Nous certifions que les données de la déclaration de conformité sont correctes et que l'appareil a été construit en accord avec l'enregistrement provincial ci-dessous et les exigences de la norme ACNOR B51.

Provincial Registered Design
 Enregistrement provincial N 6022.2

Manufacturer / Constructeur: **Bromley Mechanical Services (1985) Ltd.**

Signature: *[Signature]* Date: *April 1997*

Certificate of Compliance - Field Work / Certificat de conformité - Installation au chantier

We certify that the field installation of all parts of the vessel conforms with the requirements of Provincial Regulations.

Nous certifions que l'installation au chantier de toutes les composantes de l'appareil est conforme aux règlements provinciaux.

Installer's Name
 Nom de l'installateur

Signature:

Date

Certificate of Shop Inspection / Certificat d'inspection en usine

I, the undersigned, a duly authorized Boiler and Pressure Vessel Inspector / Je, soussigné, inspecteur autorisé de chaudières et appareil sous pression employed by / employé par **Alberta Boilers Safety Association**

or / de have inspected the above vessel and state that to the best of my knowledge and belief, the manufacturer has constructed the vessel in accordance with the Provincial Registration CRN **N 6022.2** and the requirements of standard CSA B51.

et inspecté l'appareil précité et, autant que je sache, crois que la constructeur a construit l'appareil en accord avec l'enregistrement provincial NEC et les exigences de la norme ACNOR B51.

Inspector's Name / Nom de l'inspecteur: **Harold Matheson ALFRED ROY**

Signature: *[Signature]* Date: *4/11/97*

Certificate of Field Inspection / Certificat d'inspection - Installation au chantier

I, the undersigned, a duly authorized Boiler and Pressure Vessel Inspector / Je, soussigné, inspecteur autorisé de chaudières et appareil sous pression employed by / employé par

have inspected the items not covered by the Shop Inspection Certificate and the installation of the items and state that to the best of my knowledge and belief the construction and assembly of the items are in accordance with the Provincial Regulations.

et inspecté les composantes non couvertes par le certificat d'inspection en usine et l'installation de l'appareil et, autant que je sache, la construction et l'assemblage de l'appareil sont en accord avec les règlements provinciaux.

Inspector's Name / Nom de l'inspecteur

Signature

Date

**MANUFACTURER'S DATA REPORT
SUPPLEMENTARY SHEET**

Form manusupp 10/95

(A)426391

- 1 Manufactured and Certified by: Bromley Mechanical Services (1985) Ltd., Box 404, 773 - 16th Street S.W.
(Name & Address of Manufacturer) Medicine Hat, AB T1A 7C2
- 2 Manufactured for: HCO Energy Ltd., 2700, 400 - 3rd Avenue S.W., Calgary, Alberta T2P 4H2
(Name & Address of Purchaser)
- 3 Location: Ansel Gas Plant LSD: 07-27-51-19 WSM
(Name & Address)
- 4 Type: Vertical Separator 77334
(Honz, Vert, Sphere) (Tank, Separator etc.) (Mfr's Serial No.)
- N 6022.2 36I-1440-CAV Rev 0 1997
(CRN) (Drawing No.) (Year Built)

Data Report Item

Nozzles & Openings	Purpose	Number	NPS or Size	Type	Neck Material	Nominal Thickness	Reinforcement Material	How Attached	Location
M1	Manway	1	18"	Nozzle	SA350-LF2	2.60"	Ni1	Weld	Shell
N1	Inlet	1	8"	Nozzle	SA350-LF2	2.16"	Ni1	Weld	Shell
N2	Outlet	1	6"	Nozzle	SA350-LF2	1.38"	Ni1	Weld	Shell
N3	Vapour Return	1	6"	Nozzle	SA350-LF2	1.38"	Ni1	Weld	Shell
N4	Liquid In/Out	1	10"	Nozzle	SA350-LF2	2.72"	Ni1	Weld	Shell
N5	HC Out	1	3"	Nozzle	SA350-LF2	1.24"	Ni1	Weld	Shell
N6	Drain	1	2"	Nozzle	SA333Gr6	0.344"	SA516 70N	Weld	Bottom Head
N7A	Bridle	1	3"	Nozzle	SA350-LF2	1.24"	Ni1	Weld	Shell
N7 B/C	Bridle	2	2"	Nozzle	SA350-LF2	1.00"	Ni1	Weld	Shell
N8	Relief	1	3"	Nozzle	SA350-LF2	1.24"	Ni1	Weld	Shell
C1	PI	1	1/2"	TOL	SA105	6000	Ni1	Weld	Shell
C2	TI	1	3/4"	CPLG	SA350-LF2	6000	Ni1	Weld	Shell
C3	Spare	1	1"	CPLG	SA350-LF2	6000	Ni1	Weld	Shell
C4a/b, C11a/b, C12	L.S.	6	1"	CPLG	SA350-LF2	6000	Ni1	Weld	Shell
C5a/b, C6a/b, C9a/b, C13a/b	Gauge	8	3/4"	CPLG	SA350-LF2	6000	Ni1	Weld	Shell
C7, C8	Coil In/Out	2	1"	CPLG	SA350-LF2	6000	Ni1	Weld	Shell
C10	Vent	1	1/2"	TOL	SA105	6000	Ni1	Weld	Top Head

Other

Date April 10/99 Name Bromley Mechanical Services (1985) Ltd.

Signed [Signature] (Representative)

Date 4/11/97 Name Harold Matheson
(Print Inspector's Name)

Inspector's Signature

[Signature]