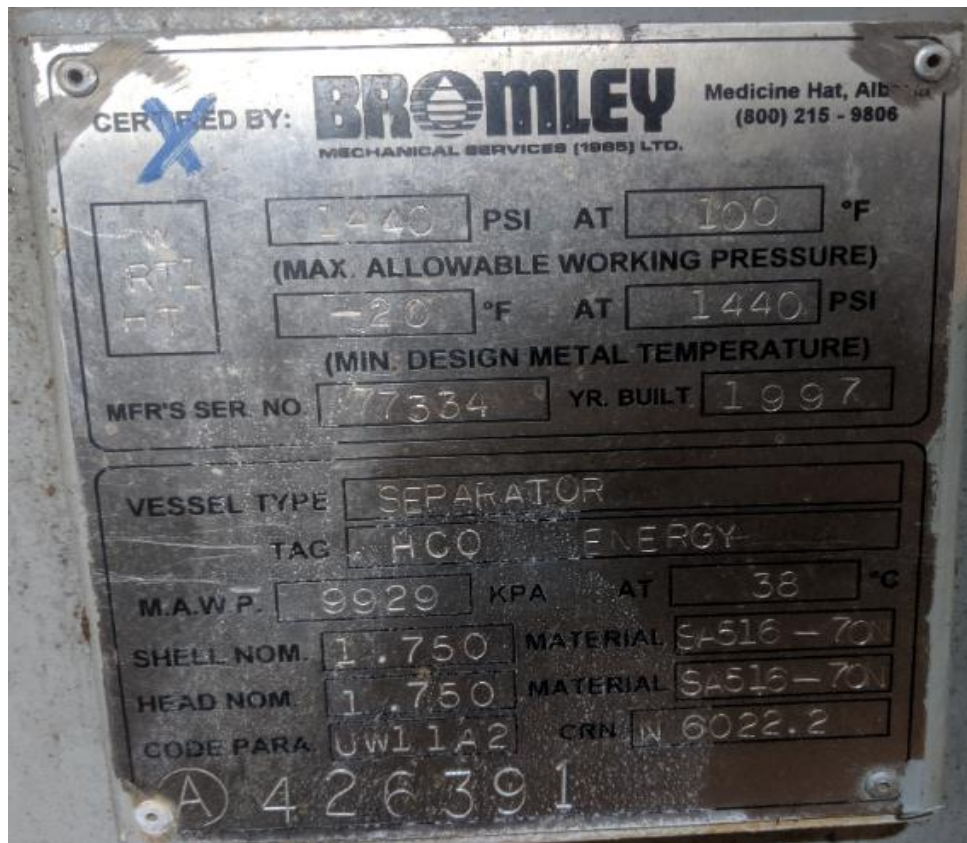
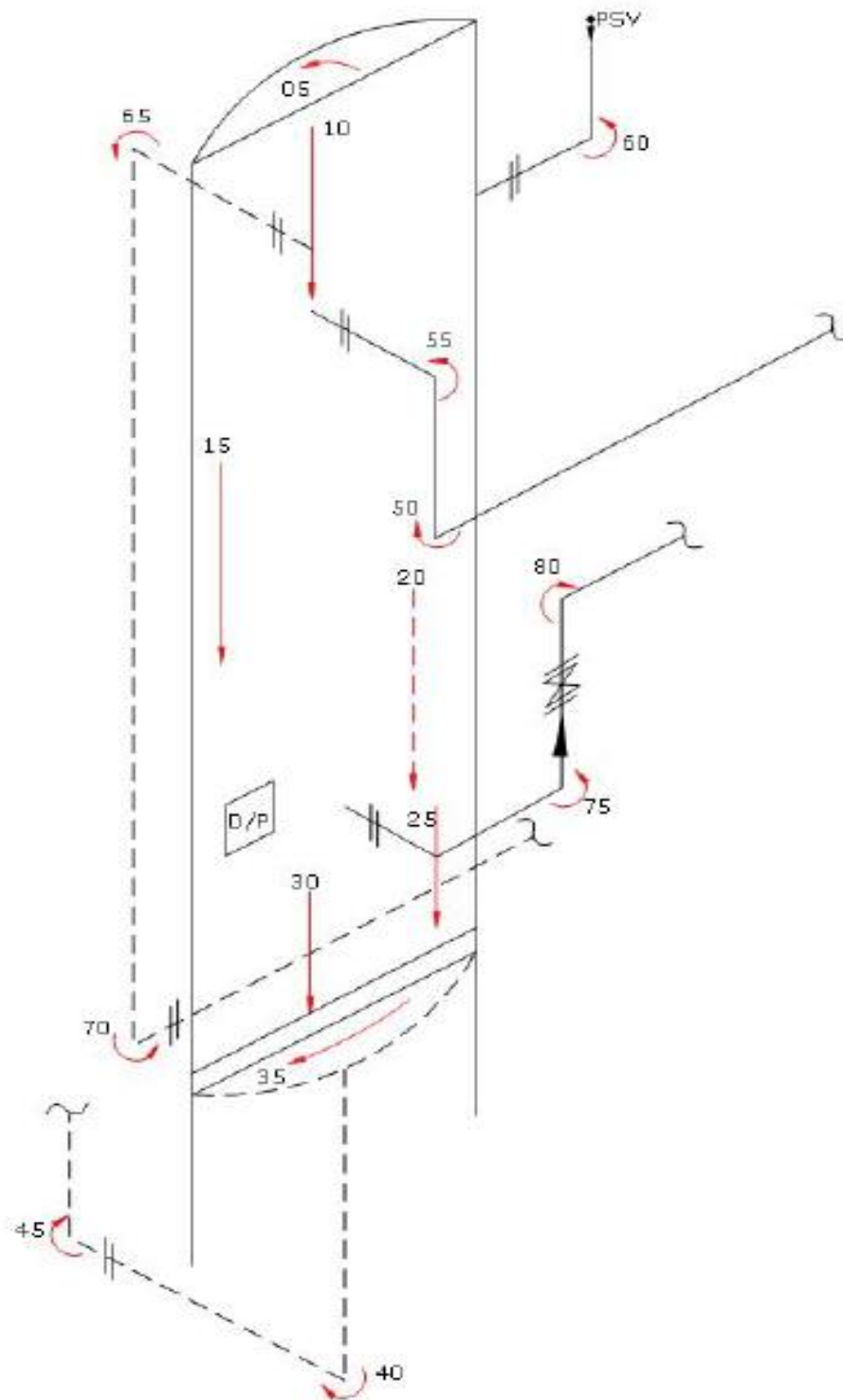




Location Name:	ANSELL	LSD:	07-27-051-19 W5M
Jur #:	A0426391	Equipment/Tag No.	66046896
Equipment Description:	SEPARATOR		
Manufacturer:	BROMLEY		
Serial Number:	77334	CRN:	N6022.2
Shell MAWP:	9928	KPA Shell Design Temp:	38 °C
Tube MAWP:		KPA Tube Design Temp:	°C
Shell Material:	SA-516-70	Head Material:	SA-516-70
Shell Thickness:	44.45	mm Head Thickness:	43.69 mm
Corrosion Allowance:	3.175	mm Date Built:	1997
Size:	1016	mm Pipe / Rolled Plate:	
RT:	1	Streamline Report #:	STL-19-0246-DMS 37

NOTES: SEE PREV REPORT USE PREV REPORT IN FOLDER FOR ANY EMPTY INFORMATION









Ultrasonic Corrosion Survey

*All values are in millimeters unless otherwise stated.

Survey Name: Husky Energy

Date: June 12 2019

Streamline Report #: STL-19-0246-DMS 37

Inspector: Dylan Sundquist

LSD: 07-27-051-19 W5M	Area: ANSELL	Location: GAS PLANT
Jur #: A0426391	Tag Number: 66046896	Vessel Name: SEPARATOR
CRN: N6022.2	Year Built: 1997	Serial Number: 77334
RT: 1	Vessel CA: 3.175 mm	Manufacturer: BROMLEY
	Shell MAWP: 9928 KPA	Tube MAWP: KPA
	MAWT: 38 °C	MAWT: °C
		Pipe/Plate

CML Description	Baseline	Flange ANSI:	Material: SA-516-70
05 HEAD	2014 2019	CA Nominal	T Min
Shape: Ellipsoidal	Min 43.51 44.91	43.688	STCR mm/yr 0.000
OD: 1016	Avg 44.48 45.62		LTCR mm/yr 0.000
Spec: ASME VIII Div.1	Comments:		Remaining Life:
			Retirement Date:

CML Description	Baseline	Flange ANSI:	Material: SA-516-70
10 SHELL	2014 2019	CA Nominal	T Min
Shape: Cylindrical	Min 45.24 45.54	44.450	STCR mm/yr 0.000
OD: 1016	Avg 45.54 45.64		LTCR mm/yr 0.000
Spec: ASME VIII Div.1	Comments:		Remaining Life:
			Retirement Date:

CML Description	Baseline	Flange ANSI:	Material: SA-516-70
15 SHELL	2014 2019	CA Nominal	T Min
Shape: Cylindrical	Min 45.16 45.59	44.450	STCR mm/yr 0.000
OD: 1016	Avg 45.36 46.38		LTCR mm/yr 0.000
Spec: ASME VIII Div.1	Comments:		Remaining Life:
			Retirement Date:

CML Description	Baseline	Flange ANSI:	Material: SA-516-70
20 SHELL	2014 2019	CA Nominal	T Min
Shape: Cylindrical	Min 44.75 45.19	44.450	STCR mm/yr 0.000
OD: 1016	Avg 45.03 45.95		LTCR mm/yr 0.000
Spec: ASME VIII Div.1	Comments:		Remaining Life:
			Retirement Date:



Ultrasonic Corrosion Survey

*All values are in millimeters unless otherwise stated.

Survey Name: Husky Energy

Date: June 12 2019

Streamline Report #: STL-19-0246-DMS 37

Inspector: Dylan Sundquist

LSD: 07-27-051-19 W5M	Area: ANSELL	Location: GAS PLANT
Jur #: A0426391	Tag Number: 66046896	Vessel Name: SEPARATOR
CRN: N6022.2	Year Built: 1997	Serial Number: 77334
RT: 1	Vessel CA: 3.175 mm	Manufacturer: BROMLEY
	Shell MAWP: 9928 KPA	Tube MAWP: KPA
	MAWT: 38 °C	MAWT: °C
		Pipe/Plate 0

CML Description	Baseline	Flange ANSI:	Material: SA-516-70
25 SHELL	2014 2019	CA Nominal	T Min
Shape: Cylindrical	Min 44.98 45.24	3.175 44.450	STCR mm/yr 0.000
OD: 1016	Avg 45.57 46.23		LTCR mm/yr 0.000
Spec: ASME VIII Div.1	Comments:		Remaining Life:
			Retirement Date:

CML Description	Baseline	Flange ANSI:	Material: SA-516-70
30 SHELL	2014 2019	CA Nominal	T Min
Shape: Cylindrical	Min 44.60 45.16	3.175 44.450	STCR mm/yr 0.000
OD: 1016	Avg 44.98 46.10		LTCR mm/yr 0.000
Spec: ASME VIII Div.1	Comments:		Remaining Life:
			Retirement Date:

CML Description	Baseline	Flange ANSI:	Material: SA-516-70
35 HEAD	2014 2019	CA Nominal	T Min
Shape: Ellipsoidal	Min 43.46 45.19	3.175 43.688	STCR mm/yr 0.000
OD: 1016	Avg 45.26 45.97		LTCR mm/yr 0.000
Spec: ASME VIII Div.1	Comments:		Remaining Life:
			Retirement Date:

CML Description	Baseline	Flange ANSI:	Material: SA-234-WPB
40 NOZZLE	2014 2019	CA Nominal	T Min
Shape: 90° Elbow	Min 7.54 7.49	3.175 8.712	STCR mm/yr 0.009
OD: 60.325	Avg 7.98 8.08		LTCR mm/yr 0.055
Spec: ASME VIII Div.1	Comments: EROSION FOUND		Remaining Life:
			Retirement Date:



Ultrasonic Corrosion Survey

*All values are in millimeters unless otherwise stated.

Survey Name: Husky Energy

Date: June 12 2019

Streamline Report #: STL-19-0246-DMS 37

Inspector: Dylan Sundquist

LSD: 07-27-051-19 W5M	Area: ANSELL	Location: GAS PLANT
Jur #: A0426391	Tag Number: 66046896	Vessel Name: SEPARATOR
CRN: N6022.2	Year Built: 1997	Serial Number: 77334
RT: 1	Vessel CA: 3.175 mm	Manufacturer: BROMLEY
	Shell MAWP: 9928 KPA	Tube MAWP: KPA
	MAWT: 38 °C	MAWT: °C
		Pipe/Plate 0

CML Description		Baseline			Flange ANSI:		Material: SA-234-WPB		
45 PIPING		2014	2019	Flag	CA	Nominal	T Min	STCR mm/yr	LTCR mm/yr
Shape: 90° Elbow	Min	3.33	3.07	3.423	0.489	3.912	2.108	0.051	0.038
OD: 60.325	Avg	3.73	3.20					Remaining Life:	18 yrs
Spec: ASME B31.3	Comments:							Retirement Date:	2037

CML Description		Baseline			Flange ANSI:		Material: SA-234-WPB		
50 PIPING		2014	2019	Flag	CA	Nominal	T Min	STCR mm/yr	LTCR mm/yr
Shape: 90° Elbow	Min	9.45	9.47	7.156	1.022	8.179		0.000	0.000
OD: 219.075	Avg	9.73	9.88					Remaining Life:	
Spec: ASME B31.3	Comments:							Retirement Date:	

CML Description		Baseline			Flange ANSI:		Material: SA-234-WPB		
55 PIPING		2014	2019	Flag	CA	Nominal	T Min	STCR mm/yr	LTCR mm/yr
Shape: 90° Elbow	Min	9.12	9.14	7.156	1.022	8.179		0.000	0.000
OD: 219.075	Avg	9.50	9.63					Remaining Life:	
Spec: ASME B31.3	Comments:							Retirement Date:	

CML Description		Baseline			Flange ANSI:		Material: SA-234-WPB		
60 PIPING		2014	2019	Flag	CA	Nominal	T Min	STCR mm/yr	LTCR mm/yr
Shape: 90° Elbow	Min	5.41	5.33	4.801	0.686	5.486		0.015	0.007
OD: 88.9	Avg	6.05	5.97					Remaining Life:	
Spec: ASME B31.3	Comments:							Retirement Date:	



Ultrasonic Corrosion Survey

*All values are in millimeters unless otherwise stated.

Survey Name: Husky Energy

Date: June 12 2019

Streamline Report #: STL-19-0246-DMS 37

Inspector: Dylan Sundquist

LSD:	07-27-051-19 W5M	Area:	ANSELL	Location:	GAS PLANT
Jur #:	A0426391	Tag Number:	66046896	Vessel Name:	SEPARATOR
CRN:	N6022.2	Year Built:	1997	Serial Number:	77334
RT:	1	Vessel CA:	3.175 mm	Manufacturer:	BROMLEY
		Shell MAWP:	9928 KPA	Tube MAWP:	KPA
		MAWT:	38 °C	MAWT:	°C
				Pipe/Plate	0

CML Description		Baseline			Flange ANSI:		Material:	SA-234-WPB	
65	PIPING	2014	2019	Flag	CA	Nominal	T Min	STCR mm/yr	LTCR mm/yr
Shape:	90° Elbow	Min	6.27	6.223	0.889	7.112		1.254	0.050
OD:	168.275	Avg	6.93					Remaining Life:	
Spec:	ASME B31.3	Comments:	NO SAFE ACCESS AT TIME OF INSPECTION					Retirement Date:	

CML Description		Baseline			Flange ANSI:		Material:	SA-234-WPB	
70	PIPING	2014	2019	Flag	CA	Nominal	T Min	STCR mm/yr	LTCR mm/yr
Shape:	90° Elbow	Min	7.29	7.14	6.223	0.889	7.112	0.031	0.000
OD:	168.275	Avg	7.80	7.52				Remaining Life:	
Spec:	ASME B31.3	Comments:						Retirement Date:	

CML Description		Baseline			Flange ANSI:		Material:	SA-234-WPB	
75	PIPING	2014	2019	Flag	CA	Nominal	T Min	STCR mm/yr	LTCR mm/yr
Shape:	90° Elbow	Min	5.69	5.13	4.801	0.686	5.486	0.112	0.016
OD:	88.9	Avg	6.05	5.94				Remaining Life:	
Spec:	ASME B31.3	Comments:						Retirement Date:	

CML Description		Baseline			Flange ANSI:		Material:	SA-234-WPB	
80	PIPING	2014	2019	Flag	CA	Nominal	T Min	STCR mm/yr	LTCR mm/yr
Shape:	90° Elbow	Min	3.94	3.99	3.423	0.489	3.912	0.000	0.000
OD:	60.325	Avg	4.29	4.22				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. - C.R.N./ N° d'enregistrement provincial - N.E.C. N 6022.2	National Board No. N° National Board	Drawing No./ N° de dessin 36I-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	Cor 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. Thickn. 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'l 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. / Surépais. 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 1	Dimension 3" 600	Location / Endroit 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 X	Lugs/Oreilles No./Nbre	Legs/Pieds No./Nbre	Other / Autres (Description)	Attached/Attaches (Where and How / Méthode et endroit) 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.

or / de 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.

or / de 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]