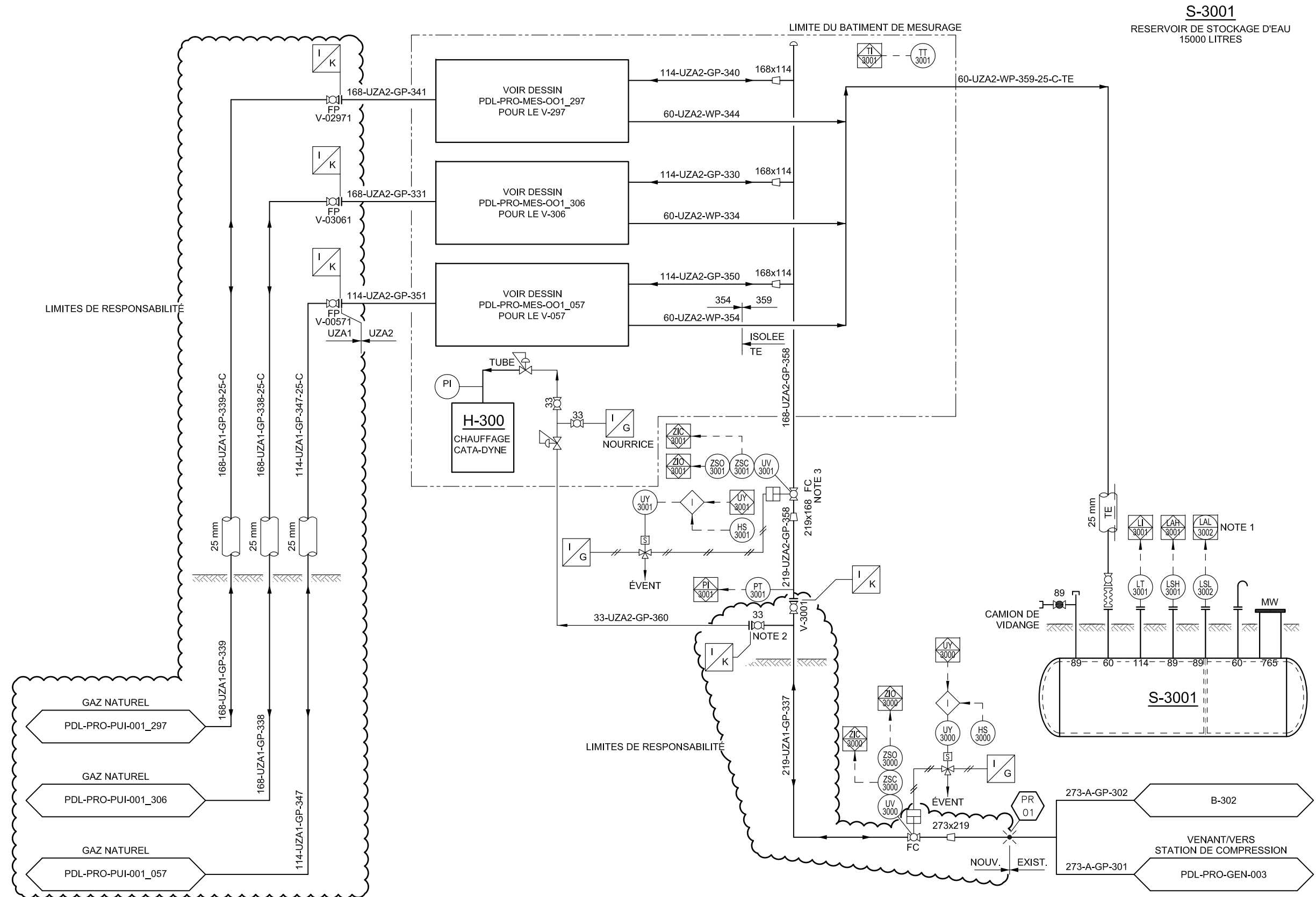


SCHÉMA DE PROCÉDÉ ET D'INSTRUMENTATION
EN RÉPONSE À L'ENGAGEMENT NO.1 DÉCOULANT DE LA SÉANCE
DE TRAVAIL DU 15 MAI 2019

NOM FICHER: W:\Intragaz\531900 (ODS 141864) - Accroissement de la capacité de stockage au site de Pointe-du-Lac\05_Dessins\01_Procédés\PDL-PRO-MES-001.dwg



S-3001
RESERVOIR DE STOCKAGE D'EAU
15000 LITRES

- NOTES :**
1. DETECTION DE FUITE DOUBLE PAROI.
 2. LOCALISER PROCHE DE LA CONDUITE PRINCIPALE.
 3. EVENT DES VANNES AUTOMATIQUES SONT ACHEMINES A L'EXTERIEUR.
 4. REVETEMENT DE PROTECTION EXTERNE POUR CONDUITES SOUTERRAINES EST REQUIS.
 5. KIT D'ISOLATION.

Intragaz-7, Document 1.1
Page 2 de 17
R-4034-2018



6565, boul. JEAN XXIII
TROIS-RIVIERES-OUEST (Qc)
G9A 5C9
TEL.: (819) 377-8080
FAX.: (819) 377-8888

POINTE-DU-LAC
SCHEMA DE TUYAUTERIE ET D'INSTRUMENTATION
INTERCONNEXION AU BATIMENT DE MESURAGE

No PROJET: 01-D-1808 No DESSIN: PDL-PRO-MES-001 REVISION: PD

NOTES:
Original: 2019-05-22
DATE: 2019.05.17 9:58 AM

50, DE LAUZON
BOUCHERVILLE, QUEBEC
J4B 1E5
TEL: (450) 650-0770
FAX: (450) 650-0780

CONTRAT : 531900


FIRME EXTERNE: **LE GROUPE ULTRAGEN LTEE**

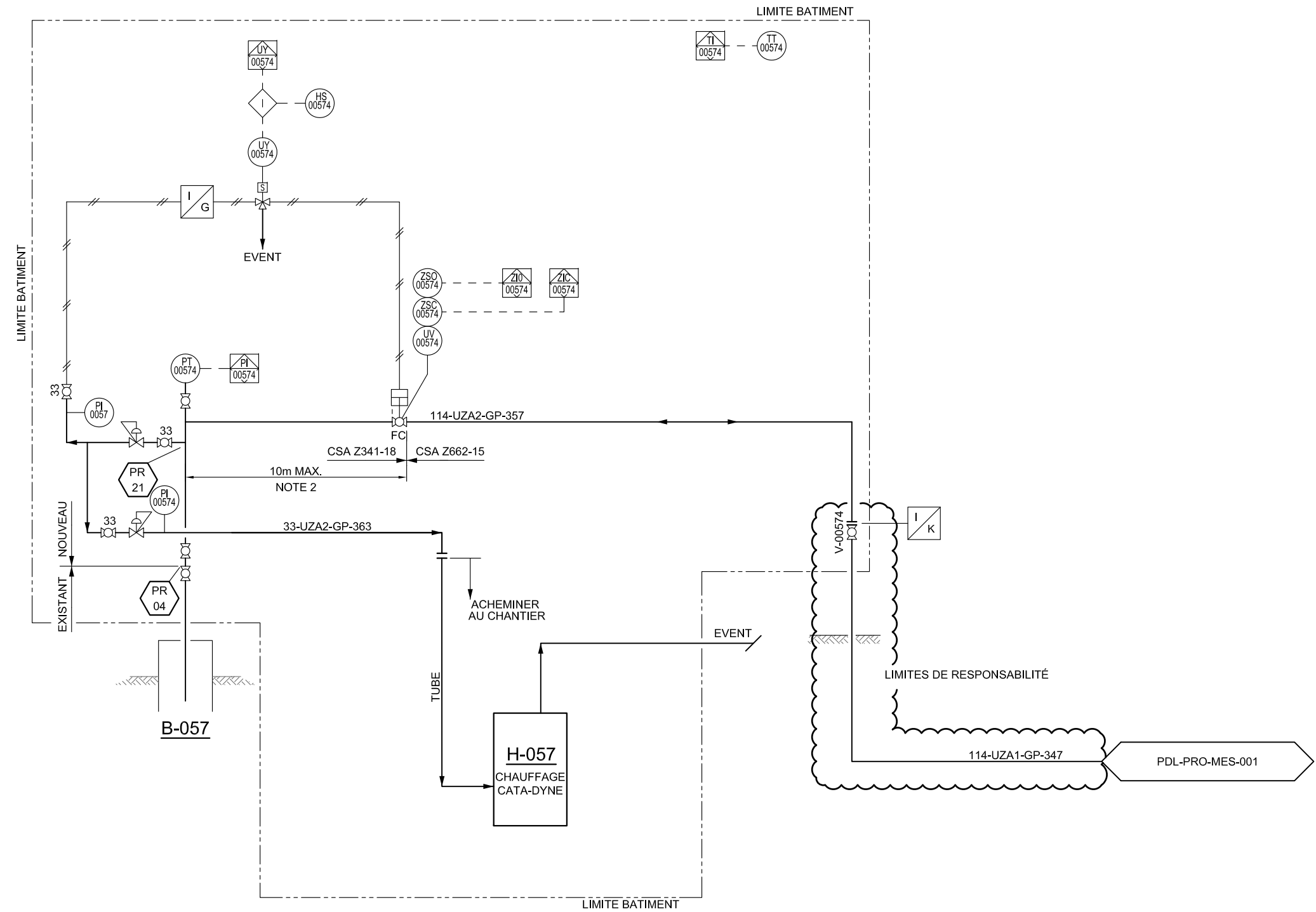
NO. DESSIN EXTERNE:

REV.	DATE	REVISION	No. PROJ.	DESS.	VER.	APPR.	APPR. CLIENT
PD	17-05-19	EMIS POUR INFORMATION. LIMITES DE RESPONSABILITE.		K.M	J.L		
PC	10-05-19	EMIS POUR CONCEPTION		M.D.	J.L		
PB	23-04-19	REEMIS POUR COMMENTAIRES		K.M	J.L		
PA	26-03-19	EMIS POUR COMMENTAIRES		K.M	TNg		

SCEAU:

NOTES :

1.  KIT D'ISOLATION.
2. LA VANNE AUTOMATIQUE D'ISOLEMENT DOIT ETRE A 10m MAX DE LA TETE DU PUIS.
3. REVETEMENT DE PROTECTION EXTERNE POUR CONDUITES SOUTERRAINES EST REQUIS.
4. EVENTS DES VANNES AUTOMATIQUES SONT ACHEMINES A L'EXTERIEUR.



Intragaz-7, Document 1.1
Page 3 de 17
R-4034-2018



Intragaz

6565, boul. JEAN XXIII
 TROIS-RIVIERES-OUEST (Qc)
 G9A 5C9
 TEL.: (819) 377-8080
 FAX.: (819) 377-8888

POINTE-DU-LAC
 SCHEMA DE TUYAUTERIE ET D'INSTRUMENTATION
 SITE DE PUIS B-057

No PROJET:
 01-D-1808

No DESSIN:
 PDL-PRO-PUI-001_057

REVISION:
 PD

NOTES:



FIRME EXTERNE: **LE GROUPE ULTRAGEN LTEE**
 NO. DESSIN EXTERNE:

REV.	DATE	REVISION	No. PROJ.	DESS.	VER.	APPR.	APPR. CLIENT
PD	17-05-19	EMIS POUR INFORMATION. LIMITES DE RESPONSABILITE.		K.M.	J.L.		
PC	10-05-19	EMIS POUR CONCEPTION		M.D.	J.L.		
PB	23-04-19	REEMIS POUR COMMENTAIRES		K.M.	J.L.		
PA	26-03-19	EMIS POUR COMMENTAIRES		K.M.	TNg		


SCEAU:

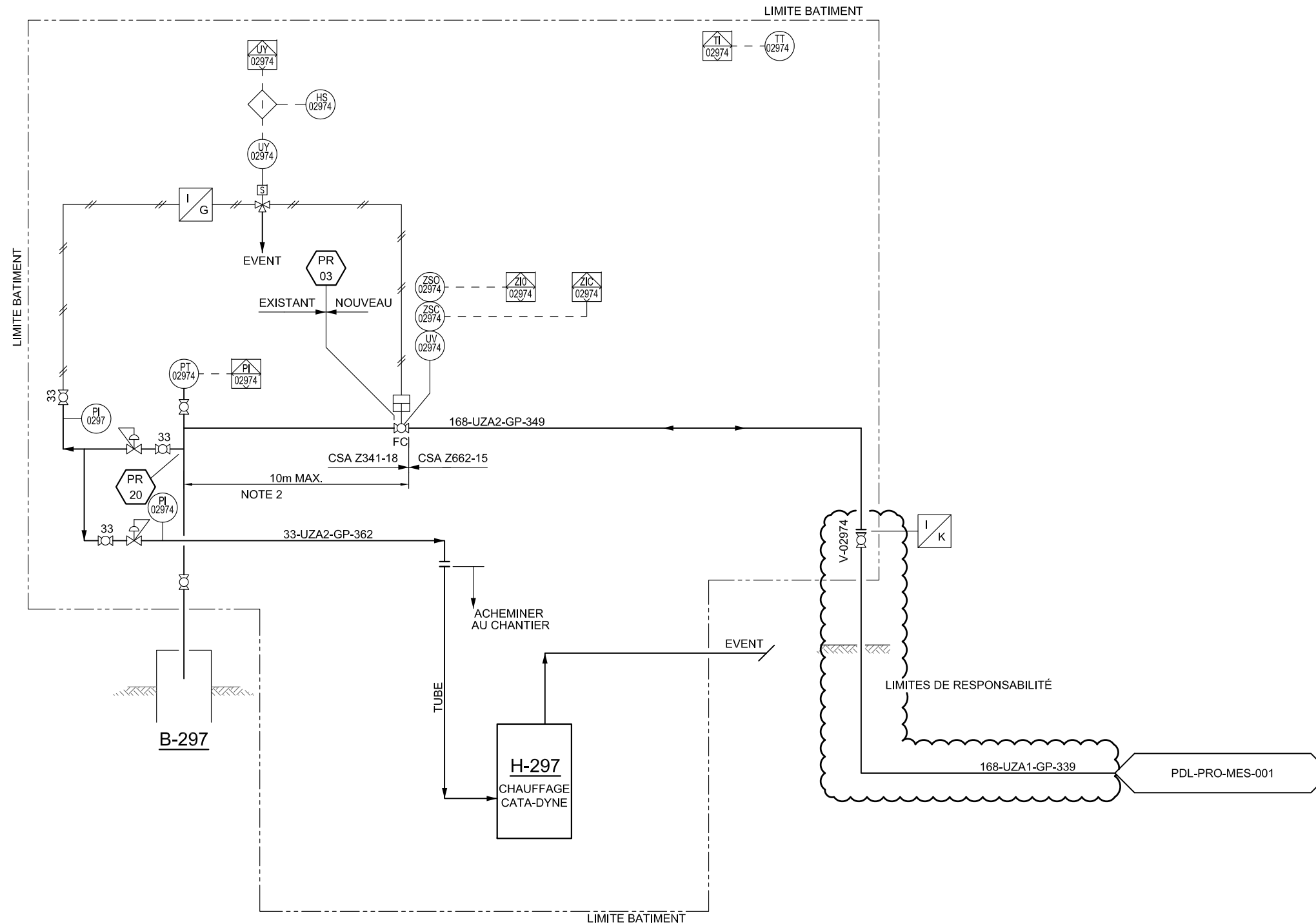
Original: 2019-05-22

DATE: 2019.05.17 9:57 AM

NOM FICHER: W:\Intragaz\531900 (ODS 141864) - Accroissement de la capacité de stockage au site de Pointe-du-Lac\05_Dessins\01_Procédés\PDL-PRO-PUI-001_057.dwg

NOTES :

1.  KIT D'ISOLATION.
2. LA VANNE AUTOMATIQUE D'ISOLEMENT DOIT ETRE A 10m MAX DE LA TETE DU PUIS.
3. REVETEMENT DE PROTECTION EXTERNE POUR CONDUITES SOUTERRAINES EST REQUIS.
4. EVENTS DES VANNES AUTOMATIQUES SONT ACHEMINES A L'EXTERIEUR.



Intragaz-7, Document 1.1
Page 4 de 17
R-4034-2018



Intragaz

6565, boul. JEAN XXIII
TROIS-RIVIERES-OUEST (Qc)
G9A 5C9
TEL.: (819) 377-8080
FAX.: (819) 377-8888

POINTE-DU-LAC
SCHEMA DE TUYAUTERIE ET D'INSTRUMENTATION
SITE DE PUIS B-297

No PROJET:
01-D-1808

No DESSIN:
PDL-PRO-PUI-001_297

REVISION:
PD

NOTES:



50, DE LAUZON
BOUCHERVILLE, QUEBEC
J4B 1E5
TEL: (450) 650-0770
FAX: (450) 650-0780

FIRME EXTERNE: LE GROUPE ULTRAGEN LTEE

NO. DESSIN EXTERNE:

REV.	DATE	REVISION	No. PROJ.	DESS.	VER.	APPR.	APPR. CLIENT
PD	17-05-19	EMIS POUR INFORMATION. LIMITES DE RESPONSABILITE.		K.M.	J.L.		
PC	10-05-19	EMIS POUR CONCEPTION		M.D.	J.L.		
PB	23-04-19	REEMS POUR COMMENTAIRES		K.M.	J.L.		
PA	26-03-19	EMIS POUR COMMENTAIRES		K.M.	TNg		


SCEAU:

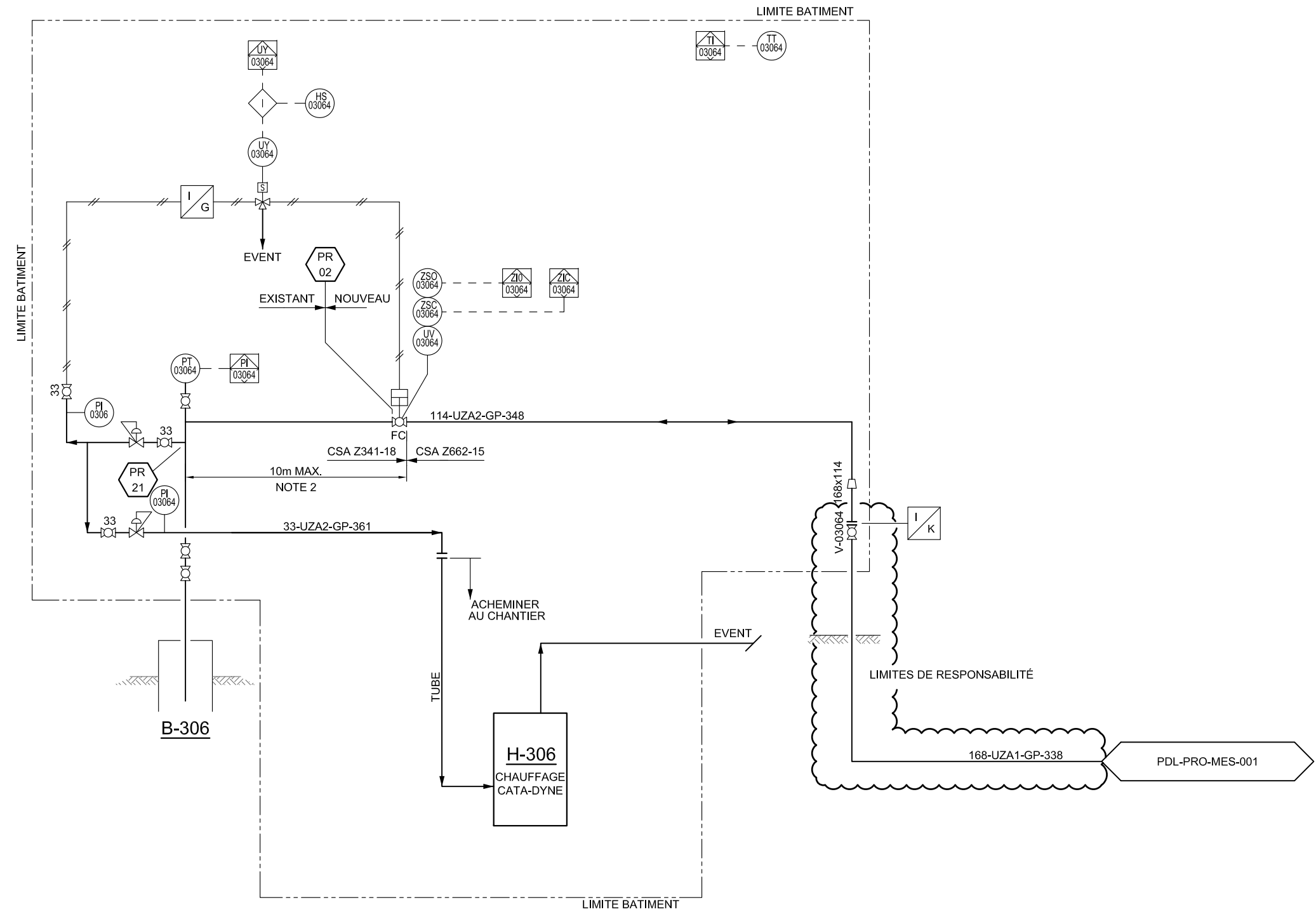
NOM FICHER: W:\Intragaz\531900 (ODS 141864) - Accroissement de la capacité de stockage au site de Pointe-du-Lac\05_Dessins\01_Procédé\PDL-PRO-PUI-001_297.dwg

Original: 2019-05-22

DATE: 2019.05.17 9:57 AM

NOTES :

1.  KIT D'ISOLATION.
2. LA VANNE AUTOMATIQUE D'ISOLEMENT DOIT ETRE A 10m MAX DE LA TETE DU PUIS.
3. REVETEMENT DE PROTECTION EXTERNE POUR CONDUITES SOUTERRAINES EST REQUIS.
4. EVENTS DES VANNES AUTOMATIQUES SONT ACHEMINES A L'EXTERIEUR.



Intragaz-7, Document 1.1
Page 5 de 17
R-4034-2018



6565, boul. JEAN XXIII
 TROIS-RIVIERES-OUEST (Qc)
 G9A 5C9
 TEL.: (819) 377-8080
 FAX.: (819) 377-8888

POINTE-DU-LAC SCHEMA DE TUYAUTERIE ET D'INSTRUMENTATION SITE DE PUIS B-306		
No PROJET: 01-D-1808	No DESSIN: PDL-PRO-PUI-001_306	REVISION: PD

NOTES:

Original: 2019-05-22

DATE: 2019.05.17 9:56 AM



50, DE LAUZON
 BOUCHERVILLE, QUEBEC
 J4B 1E5
 TEL: (450) 650-0770
 FAX: (450) 650-0780

CONTRAT : 531900

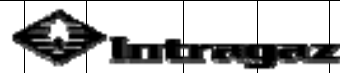
FIRME EXTERNE: **LE GROUPE ULTRAGEN LTEE**

NO. DESSIN EXTERNE:

REV.	DATE	REVISION	No. PROJ.	DESS.	VER.	APPR.	APPR. CLIENT
PD	17-05-19	EMIS POUR INFORMATION, LIMITES DE RESPONSABILITE.		K.M.	J.L.		
PC	10-05-19	EMIS POUR CONCEPTION		M.D.	J.L.		
PB	23-04-19	REEMIS POUR COMMENTAIRES		K.M.	J.L.		
PA	26-03-19	EMIS POUR COMMENTAIRES		K.M.	TNg		

SCEAU:

NOM FICHER: W:\Intragaz\531900 (ODS 141864) - Accroissement de la capacité de stockage au site de Pointe-du-Lac\05_Dessins\01_Procédé\PDL-PRO-PUI-001_306.dwg



**LISTE DES PIPELINES ET TUYAUTERIES
SITE DE POINTE-DU-LAC**



Line number						De	Vers	Numero de PID	MFS. #	Longueur (m)	Type de Revetement	Epaisseurs (mm)	Cedule	Grade de materiel	Classe d'emplacement	Protection Cathodique	Température de Conception °C	Pression de Conception KPag	Temperature d'operation °C	Pression d'operation KPa	Pression d'essai Kpag	Radiographie	Corrosion Admissible mm	Traitement Thermique	Commentaires	Fabriqué le	Modifié le aa-mm-jj																																				
Dia	Spec.	Code	No.	Isolation	TR.																																																										
219	UZA1	GP	337			273-A-GP-301 (PR-01)	219-UZA2-GP-358	PDL-PRO-MES-001		2067	YJ			Grade 359	3	ANODE	-5/20	1960	5	1890	2940	Note 1	0.75				Note 1,3																																				
168	UZA1	GP	338			Meas. Bldg 168-UZA2-GP-331	168-UZA2-GP-348	PDL-PRO-MES-001		377	YJ			Grade 359	2	ANODE	-5/20	1960	5	1890	2940	Note 1	0.75				Note 1,3																																				
168	UZA1	GP	339			Meas. Bldg 168-UZA2-GP-341	168-UZA2-GP-349	PDL-PRO-MES-001		12	YJ			Grade 359	2	ANODE	-5/20	1960	5	1890	2940	Note 1	0.75				Note 1,3																																				
114	UZA1	GP	347			Meas. Bldg 114-UZA2-GP-351	114-UZA2-GP-357	PDL-PRO-MES-001		243	YJ			Grade 359	2	ANODE	-5/20	1960	5	1890	2940	Note 1	0.75				Note 1,3																																				
114	UZA2	GP	348			168-UZA1-GP-338	B-306 (PR-02)	PDL-PRO-PUI-001_306			Note 2			A106 G.B	2	NONE	-29/65	1960	5/12	1890	2940	15 %	1.6				Note 4																																				
168	UZA2	GP	349			168-UZA1-GP-339	B-297 (PR-03)	PDL-PRO-PUI-001_297			Note 2			A106 G.B	2	NONE	-29/65	1960	5/12	1890	2940	15 %	1.6				Note 4																																				
114	UZA2	GP	357			114-UZA1-GP-347	B-057 (PR-04)	PDL-PRO-PUI-001_057			Note 2			A106 G.B	2	NONE	-29/65	1960	5/12	1890	2940	15 %	1.6				Note 4																																				
219	UZA2	GP	358			219-UZA1-GP-337	114-UZA2-GP-350	PDL-PRO-MES-001			Note 2			A106 G.B	2	NONE	-29/65	1960	5/12	1890	2940	15 %	1.6				Note 4																																				
033	UZA2	GP	360			219-UZA1-GP-337	H-300	PDL-PRO-MES-001			Note 2			A106 G.B	2	NONE	-29/65	1960	5/12	101	2940	N/A	1.6				Note 4																																				
Note:																																																															
1- Sera spécifié sur le dessin de la tuyauterie																																																															
2- Voir la specification de peinture xxxx-xxxx-xx-xxx-xx																																																															
3- Une portion de la ligne est situee hors-terre, la temperature minimale de conception pour cette portion est de -29°C.																																																															
4- Une partie de la ligne est à l'extérieur du bâtiment, la température minimale d'operation pour cette partie est de -28 ° C																																																															
<table border="1"> <tr> <td>No.</td> <td>Date</td> <td>Révision</td> <td>Par</td> <td>App</td> <td>Projet</td> <td>INTRAGAZ</td> <td>Numéro de document</td> <td>5319-000-PR-404-01-00A</td> </tr> <tr> <td>PA</td> <td>2019-04-24</td> <td>Pour Commentaires</td> <td>M.Meiabadi</td> <td>S.Surveyer</td> <td>Localisation</td> <td>POINTE-DU-LAC</td> <td></td> <td></td> </tr> <tr> <td>00</td> <td>2019-05-10</td> <td>Pour Design</td> <td>M.Meiabadi</td> <td>S.Surveyer</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>00A</td> <td>2019-05-21</td> <td>Pour Information</td> <td>M.Meiabadi</td> <td>S.Surveyer</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>																												No.	Date	Révision	Par	App	Projet	INTRAGAZ	Numéro de document	5319-000-PR-404-01-00A	PA	2019-04-24	Pour Commentaires	M.Meiabadi	S.Surveyer	Localisation	POINTE-DU-LAC			00	2019-05-10	Pour Design	M.Meiabadi	S.Surveyer					00A	2019-05-21	Pour Information	M.Meiabadi	S.Surveyer				
No.	Date	Révision	Par	App	Projet	INTRAGAZ	Numéro de document	5319-000-PR-404-01-00A																																																							
PA	2019-04-24	Pour Commentaires	M.Meiabadi	S.Surveyer	Localisation	POINTE-DU-LAC																																																									
00	2019-05-10	Pour Design	M.Meiabadi	S.Surveyer																																																											
00A	2019-05-21	Pour Information	M.Meiabadi	S.Surveyer																																																											



Piping Material Specifications

Spécifications des Matériaux de Tuyauterie

Document N° : 5319-000-MP-310-01-00

Date : 2019-04-22



INSTRUCTION TO DOCUMENT CONTROL / INSTRUCTION POUR CONTRÔLE DE DOCUMENTS :

Entire specification revised. Issue all pages
Document révisé en entier. Émettre toutes les pages

Issue revised pages only
Émettre les pages révisées seulement

STAMP THE SPECIFICATION AS FOLLOWS / ÉTAMPER LES SPÉCIFICATIONS COMME SUIT:

Issued for Client review and comments
Émission pour revue et commentaires du client

Issue for design
Émission pour conception

Approved for construction / Achat
Approuvé pour construction / Achat

REVISION INDEX / HISTORIQUE DES RÉVISIONS

PIPING COMMITTEE / COMITÉ DE TUYAUTERIE					
Rev. No.	Date	Prepared / Préparé	Verified / Vérifié	Approved / Approuvé	Comments / Commentaires
00	2019-04-22	P. Albert, ing	A. NICA <i>AN</i>	P. Albert, ing <i>PA</i>	

Notes :

- 1- Ultragen piping group is the Owner of the document "Piping Material Specification" / Le groupe de tuyauterie d'Ultragen est Propriétaire du document "Spécification des matériaux de tuyauterie".
- 2- Since all the specification terms for piping are generally used in English, those will only be in English.
Étant donné les termes techniques utilisés dans l'industrie et pour faciliter la compréhension des spécifications, celles-ci seront en anglais seulement.

Table of Contents / Table des matières

1	PIPING CLASS / CLASSES DE TUYAUTERIES	4
1.1	Piping Class abbreviation / Abréviation des classes de tuyauteries.....	4
1.2	Piping specification index / Index des spécifications	5
2	PIPING MATERIAL SPECIFICATION / SPÉCIFICATION DE TUYAUTERIE	6
3	BRANCH CONNECTION TABLES / TABLEAU DE RACCORD D'EMBRANCHEMENT ...	11

1 PIPING CLASS / CLASSES DE TUYAUTERIES

1.1 Piping Class abbreviation / Abréviation des classes de tuyauteries

Piping Classes are identified by a four character (digit) coding system as follows /

Les classes de tuyauteries sont identifiées selon le code à quatre caractères suivants :

- The first letter, "U" identifies an Ultragen standard, and it is common to all the Piping Material Specifications / La première lettre, "U" identifie le standard Ultragen, et est commun à toutes les spécifications de tuyauterie.
- The second letter, designates the design code / La seconde lettre, identifie le code de conception de la spécification :

Z	-	CSA Z662-15
B	-	ASME B31.3 (2016)
X	-	Other

- The third letter, identifies the ASME flange ratings / La troisième lettre, identifie la classe de bride selon la norme ASME :

A	-	ANSI 150
B	-	ANSI 300
C	-	ANSI 600
D	-	ANSI 900
E	-	ANSI 1500

- The fourth letter, identifies the sequence within the service class / La quatrième lettre, identifie le numéro séquentiel.

1.2 Piping specification index / Index des spécifications de tuyauterie

SPECIFICATIONS:

Service	Line Specification / Spécification de la conduite	ASME CLASS / CLASSE ASME	Pressure-Temperature Range / Plage de Pression- température	CA	DESIGN CODE / CODE DE CONCEPTION
Compressor Station: Low Pressure Natural Gas, Utilities, and Process Services Station de compression: Gaz Naturel à basse pression, services d'utilités et de procédé	UBA1	150#	1 960 kPa @ -29°C to 38°C 1 380 kPa @ 200°C	0.063" 1.6mm	ASME B31.3
Compressor Station: Medium Pressure Natural Gas, Utilities, and Process Services Station de compression: Gaz Naturel à moyenne pression, services d'utilités et de procédé	UBC1	600#	10 210 kPa @ -29°C to 38°C 8 760 kPa @ 200°C	0.063" 1.6mm	ASME B31.3
Pipeline (Underground): Low Pressure Natural Gas Pipeline (Souterrain): Gaz Naturel à basse pression	UZA1	150#	1 960 kPa @ -29°C to 38°C 1 770 kPa @ 100°C	0.03" 0.75mm	CSA Z662-15
Pipeline station (Above Ground): Low Pressure Natural Gas Station de pipeline (Hors-terre): Gaz Naturel à basse pression	UZA2	150#	1 960 kPa @ -29°C to 38°C 1 770 kPa @ 100°C	0.063" 1.6mm	CSA Z662-15

Note(s): 1-



PIPING MATERIAL SPECIFICATIONS
SPÉCIFICATIONS DES MATÉRIAUX DE TUYAUTERIE

Document No.:
5319-000-MP-310-01-00

Rev. 0

Page 6 of 11

2 PIPING MATERIAL SPECIFICATION / SPÉCIFICATION DE TUYAUTERIE



PIPING MATERIAL SPECIFICATIONS
SPÉCIFICATIONS DES MATÉRIAUX DE TUYAUTERIE

Document No.:
5319-000-MP-310-01-00

Rev. 0

Page 7 of 11



UBA1

Rev. 0

Page 1 of 1

LINE SPECIFICATION – UBA1

ASME CLASS: 150

DESIGN CODE: ASME B31.3 (2016)

SERVICE:

Compressor Station:

Low Pressure Natural Gas, Utilities, and Process Services

Station de compression :

Gaz naturel à basse pression, services d'utilités et de procédé

SERVICE LIMITS:

**Pressure - Temperature: 1 960 kPa @ -29°C to 38°C
1 380 kPa @ 200°C**

Refer to ASME B16.5 (Latest Edition) Code for Pressure-Temperature limits for Material Group 1.1

B31.3 Category: Normal Fluid Service

Piping Materials: Killed Carbon Steel

Corrosion Allowance: 0.063" (1.6 mm)

External Protective Coating: Per Project Spec (Note 8).

Non-Destructive Examinations: Per Design Code (min. 10% RT) (Note 10)

ITEM	NPS SIZE		RATING	ENDS	MATERIAL SPEC.		DESCRIPTION / NOTES
	FROM	TO					
PIPE	½"	2"	SCH 80	TE or BE	ASTM	A106 Gr.B	SMLS, ASME B36.10 (Notes 5,7)
	3"	12"	SCH Std	BE	ASTM	A106 Gr.B	SMLS, ASME B36.10 (Note 5)
FITTINGS	½"	1 ½"	Class 3000	TE	ASTM	A105N	ASME B16.11 (Note 7)
			SCH 160		ASTM	A106 Gr.B	Nipples & Swages, ASME B36.10 & B16.11
	2"	12"	Note 3	Buttweld	ASTM	A234 Gr.WPB	Bore to suit pipe, ASME B16.9
BRANCHES	See "Ultragen" branch connection tables and/or ASME B31.3 Code						
FLANGES	½"	1 ½"	Class 150	TE, RF	ASTM	A105N	Bore to suit pipe, ASME B16.5 (Note 7)
	2"	24"	Class 150	WN, RF.	ASTM	A105N	Bore to suit pipe, ASME B16.5 (Note 3)
BOLTING (Note 11)	ALL		Alloy Steel Studs ASTM A193 Gr.B7, threaded full length to ASME B1.1 Class 2A Heavy Hex Nuts ASTM A194 Gr.2H, threaded to ASME B1.1 Class 2B				
GASKETS	ALL		316SS Spiral Wound to ASME B16.5 Flanges, Flexible Graphite Filled c/w Carbon Steel Centering Outer Ring and Inner Ring, ASME B16.20				
VALVE TYPE	ALL		For valve selection, see P&ID & Project Valve List				

NOTES:

- Use 1" NPS for vents and drains unless otherwise specified.
- Use 1 ½" NPS for flanged instrument connections unless otherwise specified.
- Schedule of fittings and WN flanges to be the same as the pipe schedule.
- All flange serrations shall be per ASME B16.5, 125-250 micro inch AARH.
- Service conditions may require OFF-SPEC heavier wall pipe and fittings. To be used only when instructed by piping lead/engineer.
- Piping shall be designed as per B31.3 Process Piping Code.
- Where (direct or indirect) vibrations can occur in the piping, no screwed connections are allowed, except for vents, drain or instrument connections. Use socket welded connections.
- External protective coatings for buried piping shall be: Yellow Jacket (high density two layer polyethylene coating).
- Use of Small Radius elbows is not permitted.
- See piping drawings for additional and / or other NDE requirements.
- For underground flanges, use ASTM A193-B7M & ASTM A194 Gr.2HM studs & nuts.



PIPING MATERIAL SPECIFICATIONS
SPÉCIFICATIONS DES MATÉRIAUX DE TUYAUTERIE

Document No.:
5319-000-MP-310-01-00

Rev. 0

Page 8 of 11



UBC1

Rev. 0

Page 1 of 1

LINE SPECIFICATION – UBC1

ASME CLASS: 600

DESIGN CODE: ASME B31.3 (2016)

SERVICE:

Compressor Station:

Medium Pressure Natural Gas

Station de compression:

Gaz naturel à moyenne pression

SERVICE LIMITS:

Pressure - Temperature: 10 210 kPa @ -29°C to 38°C C
8 760 kPa @ 200°C

Refer to ASME B16.5 (Latest Edition) Code for Pressure-Temperature limits for Material Group 1.1

B31.3 Category: Normal Fluid Service

Piping Materials: Killed Carbon Steel

Corrosion Allowance: 0.063" (1.6 mm)

External Protective Coating: Per Project Spec (Note 11)

Non-Destructive Examinations: Per Design Code (min. 10% RT) (Note 13)

ITEM	NPS SIZE		RATING	ENDS	MATERIAL SPEC.		DESCRIPTION / NOTES
	FROM	TO					
PIPE	½"	1 ½"	SCH 80	TE, BE	ASTM	A106 Gr.B	SMLS, ASME B36.10 (Notes 7, 9)
	2"	8"	SCH 80	BE	ASTM	A106 Gr.B	SMLS, ASME B36.10 (Note 7)
FITTINGS	½"	1 ½"	Class 3000	TE	ASTM	A105N	ASME B16.11 (Note 9, 10)
			SCH 160	PE	ASTM	A106 Gr.B	Nipples & Swages, ASME B36.10
	2"	8"	Note 5	Buttweld	ASTM	A234 Gr.WPB	Bore to suit pipe, ASME B16.9
BRANCHES	See "Ultragen" branch connection tables and/or ASME B31.3 Code						
FLANGES	½"	1 ½"	Class 600	TE, RF	ASTM	A105N	Bore to suit pipe, ASME B16.5 (Note 9)
	2"	8"	Class 600	WN, RF.	ASTM	A105N	Bore to suit pipe, ASME B16.5 (Note 5)
BOLTING (Note 14)	ALL		Alloy Steel Studs ASTM A-193 Gr.B7, threaded full length to ASME B1.1 Class 2A Heavy Hex Nuts ASTM A-194 Gr.2H, threaded to ASME B1.1 Class 2B				
GASKETS	ALL		316SS Spiral Wound to ASME B16.5 Flanges, Flexible Graphite Filled c/w Carbon Steel Centering Outer Ring and Inner Ring, ASME B16.20				
VALVE TYPE	ALL		For valve selection, see P&ID & Project Valve List				

NOTES:

~~1. Deleted.~~

~~2. Deleted.~~

3. Use 1" NPS for vents and drains unless otherwise specified.
4. Use 1 ½" NPS for flanged instrument connections unless otherwise specified.
5. Schedule of fittings and WN flanges to be the same as the pipe schedule.
6. All flange serrations shall be per ASME B16.5, 125-250 micro inch AARH.
7. Service conditions may require OFF-SPEC heavier wall pipe and fittings. To be used only when instructed by piping lead/engineer.
8. Piping shall be designed as per B31.3 Process Piping Code.
9. Where (direct or indirect) vibration can occur in the piping, no screwed connections are allowed, except for vents, drain or instrument connections. Use socket welded connections.
10. Unions are not permitted, use flanges.
11. External protective coatings for buried piping shall be: Yellow Jacket (high density two layer polyethylene coating).
12. Use of Small Radius elbows is not permitted.
13. See piping drawings for additional and / or other NDE requirements.
14. For underground flanges, use ASTM A193-B7M & ASTM A194 Gr.2HM studs & nuts.



PIPING MATERIAL SPECIFICATIONS
SPÉCIFICATIONS DES MATÉRIAUX DE TUYAUTERIE

Document No.:
5319-000-MP-310-01-00

Rev. 0

Page 9 of 11



UZA1

Rev. 0

Page 1 of 1

LINE SPECIFICATION – UZA1

ASME CLASS: 150

DESIGN CODE: CSA-Z662-15

ROAD CROSSING: API RP 1102

SERVICE:

Pipeline (Underground);

Low Pressure Natural Gas Pipeline

Pipeline (Souterrain);

Gaz naturel à basse pression Pipeline

SERVICE LIMITS:

**Pressure - Temperature: 1 960 kPa @ -29°C to 38°C
1 770 kPa @ 100°C**

Refer to ASME B16.5 (Latest Edition) Code for Pressure-Temperature limits for Material Group 1.1

CSA-Z662-15: Category I, Class 2 & 3, L = 0.625

Piping Materials: Killed Carbon Steel

Corrosion Allowance: 0.03" (0.75 mm)

External Protective Coating: Per Project Spec (Note 12)

Non-Destructive Examinations: Per Design Code (min. 15% RT) (Note 13)

ITEM	NPS SIZE		RATING	ENDS	MATERIAL SPEC.		DESCRIPTION / NOTES
	FROM	TO					
PIPE	¾"	1 ½"	SCH 80	PE or BE	CSA	Z245.1 Gr.359 Cat. I	SMLS, ASME B36.10 (Notes 1, 2, 6)
	4"	4"	Min 0.188"	BE	CSA	Z245.1 Gr.359 Cat. I	SMLS or EW, ASME B36.10 (Note 6)
	6"	8"	Min 0.219"	BE	CSA	Z245.1 Gr.359 Cat. I	SMLS or EW, ASME B36.10 (Note 6)
	10"	12"	Calc.	BE	CSA	Z245.1 Gr.359 Cat. I	SMLS or EW, ASME B36.10 (Note 6)
FITTINGS	¾"	1 ½"	Class 3000	Socketweld	ASTM	A105N	Notes 1, 2, 3, 8, 9, 10, 11
	4"	12"	Note 4	Buttweld	ASTM	A234 Gr.WPB	Notes 8, 9, 10, 11
BRANCHES	See "Ultragen" branch connection tables and/or ASME B31.3 Code						
FLANGES	¾"	1 ½"	Class 150	SW, RF	ASTM	A105N	Bore to suit pipe, ASME B16.5 (Note 4)
	2"	12"	Class 150	WN, RF.	ASTM	A105N	Bore to suit pipe, ASME B16.5 (Note 4)
BOLTING	ALL		Alloy Steel Studs ASTM A-193 Gr.B7M, threaded full length to ASME B1.1 Class 2A Heavy Hex Nuts ASTM A-194 Gr.2HM, threaded to ASME B1.1 Class 2B				
GASKETS	ALL		316SS Spiral Wound to ASME B16.5 Flanges, Flexible Graphite Filled c/w Carbon Steel Centering Outer Ring and Inner Ring, ASME B16.20				
VALVE TYPE	ALL		For valve selection, see P&ID & Project Valve List				

NOTES:

- Pipe nipples and swages 1 ½" NPS and smaller shall be SCH 160.
- Use 1" NPS for vents, drains, and 1 ½"NPS blowdown lines only.
- Use 1 ½" NPS for flanged instrument connections unless otherwise specified.
- Schedule of fittings and WN flanges to be the same as the pipe schedule.
- All flange serrations shall be per ASME B16.5, 125-250 micro inch AARH.
- Service conditions may require OFF-SPEC heavier wall pipe and fittings. To be used only when instructed by piping lead/engineer.
- ~~Deleted~~
- No screwed connections are allowed.
- Unions are not permitted, use flanges.
- Use of Small Radius elbows is not permitted.
- Fittings manufactured from listed materials, and their manufacturing weldments when applicable, shall be as specified in ASME B16.9, ASME B16.11, ASME B16.48, MSS SP-75, MSS SP-95, or MSS SP-97.
- External protective coatings for buried piping shall be: Yellow Jacket (high density two-layer polyethylene coating).
- See piping drawings for additional and / or other NDE requirements.



PIPING MATERIAL SPECIFICATIONS
SPÉCIFICATIONS DES MATÉRIAUX DE TUYAUTERIE

Document No.:
5319-000-MP-310-01-00

Rev. 0

Page 10 of 11



UZA2

Rev. 0

Page 1 of 1

LINE SPECIFICATION – UZA2

ASME CLASS: 150

DESIGN CODE: CSA-Z662-15

SERVICE:

Pipeline Station (Above Ground);

Low Pressure Natural Gas Pipeline

Station de pipeline (Hors-terre);

Gaz naturel à basse pression Pipeline

SERVICE LIMITS:

Pressure - Temperature: 1 960 kPa @ -29°C to 38°C

1 770 kPa @ 100°C

Refer to ASME B16.5 (Latest Edition) Code for Pressure-Temperature limits for Group Material 1.1

CSA Z662-15: Category I, Class 2 & 3, L= 0.625

Piping Materials: Killed Carbon Steel

Corrosion Allowance: 0.063" (1.6 mm)

External Protective Coating: Per Project Spec.

Non-Destructive Examinations: Per Design Code (min. 15% RT) (Note 13)

ITEM	NPS SIZE		RATING	ENDS	MATERIAL SPEC.		DESCRIPTION / NOTES
	FROM	TO					
PIPE	½"	2"	SCH 80	TE, BE	ASTM	A106 Gr.B	SMLS, ASME B36.10 (Note 7)
	3"	4"	SCH Std	BE	ASTM	A106 Gr.B	SMLS, ASME B36.10 (Note 7)
	6"	8"	SCH Std	BE	ASTM	A106 Gr.B	SMLS, ASME B36.10 (Note 7)
FITTINGS	½"	1 ½"	Class 3000	TE	ASTM	A105N	Notes 1, 2, 3, 4, 11, 12
			SCH 160	TE	ASTM	A106 Gr.B	Nipples & Swages, ASME B36.10
	2"	8"	Note 5	Buttweld	ASTM	A234 Gr. WPB	Notes 11, 12
BRANCHES	See "Ultragen" branch connection tables and/or ASME B31.3 Code						
FLANGES	½"	1 ½"	Class 150	TE, RF	ASTM	A105N	Bore to suit pipe, ASME B16.5
	2"	12"	Class 150	WN, RF.	ASTM	A105N	Bore to suit pipe, ASME B16.5 (Note 5)
BOLTING	ALL		Alloy Steel Studs ASTM A-193 Gr.B7, threaded full length to ASME B1.1 Class 2A Heavy Hex Nuts ASTM A-194 Gr.2H, threaded to ASME B1.1 Class 2B				
GASKETS	ALL		316SS Spiral Wound to ASME B16.5 Flanges, Flexible Graphite Filled c/w Carbon Steel Centering Outer Ring and Inner Ring, ASME B16.20				
VALVE TYPE	ALL		For valve selection, see P&ID & Project Valve List				

NOTES:

- Pipe nipples and swages 1 ½" NPS and smaller shall be SCH 160.
- Use class 6000 rating when branches are schedule 160 or heavier.
- Use 1" NPS for vents and drains unless otherwise specified.
- Use 1 ½" NPS for flanged instrument connections unless otherwise specified.
- Schedule of fittings and WN flanges to be the same as the pipe schedule.
- All flange serrations shall be per ASME B16.5, 125-250 micro inch AARH.
- Service conditions may require OFF-SPEC heavier wall pipe and fittings. To be used only when instructed by piping lead/engineer.
- ~~8. Deleted.~~
- ~~9. Deleted.~~
- ~~10. Deleted.~~
- Use of Small Radius elbows is not permitted.
- Fittings manufactured from listed materials, and their manufacturing weldments when applicable, shall be as specified in ASME B16.9, ASME B16.11, ASME B16.48, MSS SP-75, MSS SP-95, or MSS SP-97.
- See piping drawings for additional and / or other NDE requirements.

3 BRANCH CONNECTION TABLES / TABLEAU DE RACCORD D'EMBRANCHEMENT

Table 1 / Tableau 1

Applicable line classes / classes applicables:
UBA1, UBC1, UZA1, UZA2.

T = Equal Tee / Té égaux
RT = Reducing Tee / Té Réduit
O = Olet per class / Classe de raccord "Olet"
W = Weldolet

HEADER NPS	½	T																			
	¾	RT	T																		
	1	RT	RT	T																	
	1 ½	RT	RT	RT	T																
	2	O	O	O	O	T															
	3	O	O	O	O	RT	T														
	4	O	O	O	O	W	RT	T													
	6	O	O	O	O	W	W	RT	T												
	8	O	O	O	O	W	W	W	RT	T											
	10	O	O	O	O	W	W	W	W	RT	T										
	12	O	O	O	O	W	W	W	W	RT	RT	T									
	14	O	O	O	O	W	W	W	W	RT	RT	RT	T								
	16	O	O	O	O	W	W	W	W	W	RT	RT	RT	T							
	18	O	O	O	O	W	W	W	W	W	RT	RT	RT	RT	T						
	20	O	O	O	O	W	W	W	W	W	W	RT	RT	RT	RT	T					
	24	O	O	O	O	W	W	W	W	W	W	W	RT	RT	RT	RT	T				
		½	¾	1	1 ½	2	3	4	6	8	10	12	14	16	18	20	24				
BRANCH NPS																					