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DIAGRAPHIES ET RAPPORT DE FIN DE FORAGE - Intragaz, Saint-Flavien No. 14

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Énergie et Ressources
naturelles

Québec 



Intragaz

INTRAGAZ ST-FLAVIEN #14

RAPPORT DE FIN DE FORAGE

PRÉSENTÉ AU MINISTÈRE DES RESSOURCES NATURELLES DU QUÉBEC

DATE : Novembre 2001
DOSSIER : D20303

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1. SOMMAIRE

Le puits Intragaz St-Flavien #14 fut implanté à quelque 465 m au sud-est du puits St-Flavien #9 sur le Bail du Réservoir Souterrain 1997BR-302.

Le forage, qui a débuté le 24 septembre 2000, a atteint la profondeur totale mesurée de 2 414 m le 15 novembre 2000. La foreuse fut libérée le 21 novembre suivant.

Afin d'optimiser la productivité du «Pool St-Flavien #3», l'unité B1 du Beauharnois fut traversée horizontalement, c'est-à-dire avec un angle de déviation de près de 90° et ce, sur la partie sommitale de la structure au sud-ouest du puits St-Flavien #9 telle qu'elle a été définie par la sismique 3D. Au-delà de 600 m de forage horizontal a été effectué au niveau de l'unité productrice (**Figures 1, 2 et 3**).

Après la mise en place du conducteur à 24 m, le forage a débuté et s'est arrêté à 274 m KB pour la pose du coffrage de surface de 244,5 mm.

Suite à la cimentation et la pose de l'équipement anti-éruption (BOP), le forage s'est poursuivi sans assistance jusqu'à 1 257 m.

Afin d'atteindre l'objectif visé, un moteur de fond a alors été mis en place ainsi qu'un enregistreur gamma ray (LWD¹), afin de contrôler la déviation du puits et de nous aider à connaître avec précision notre position stratigraphique.

Le Trenton, le Chazy et le Beekmantown furent rencontrés respectivement à 1 309,3 m mesurés (-1 094 m TVD²/mer), à 1372,3 m (-1 144,4 m TVD/mer) et à 1 538,2 m KB (-1 265,2 TVDm/mer) (**Tableau 1**). Le forage s'est arrêté temporairement à 1 677 m KB, soit 10 m stratigraphiquement au-dessus de l'unité B1 pour permettre la pose du coffrage intermédiaire de 177,8 mm.

À cette profondeur, l'inclinaison du puits avait atteint comme prévu, 79,1° avec un azimut de 284° afin de traverser le haut structural en direction est-ouest dans le secteur visé.

Dans le but de minimiser les endommagements du réservoir, la technique dite « *underbalanced drilling* » fut utilisée pour forer dans la zone d'intérêt.

¹ LWD : Logging While Drilling

² TVD : True Vertical Depth

Les opérations de forage débutèrent de nouveau le 21 octobre. Le sommet du Beekmantown « B » fut atteint à -1730 m mesurés ou -1333.0 m TVD/mer. L'inclinaison avait alors atteint 81,3°.

La dolomie supérieure de l'unité B1, qui s'avéra être l'horizon le plus productif dans les autres puits fut rencontré à 1 790 m.

En raison de l'usure du trépan, le forage s'est arrêté temporairement à 1 951 m. Dû à une productivité plus élevée que prévue, le « *snubbing unit* » utilisé pour sortir les tiges n'était pas suffisamment robuste pour des débits si élevés. Une unité plus puissante et une pompe à pression élevée et à faible débit furent utilisées afin de poursuivre la sortie des tiges de la façon la plus sécuritaire possible. Ces opérations se sont déroulées sur une période de 18 jours. Ce n'est que le 11 novembre que les travaux de forage ont redémarrés.

Le forage s'est poursuivi jusqu'à la profondeur totale (2 414 m mesurés) à l'intérieur de l'unité B1. Après les essais de production, le puits fut raccordé au réseau de collecte.

2. PERMIS DE FORAGE



Gouvernement du Québec
Ministère des Ressources naturelles
Direction du gaz et du pétrole

Permis de forage de puits 2000FA230

Nom du puits : Intragaz, St-Flavien No 14
Numéro du puits : 2000FA230
Date de délivrance : 20 septembre 2000
Permis de recherche : 1997BR302
Détenteur : Intragaz, Sec
Opérateur : Intragaz, Sec
Entrepreneur : Ressource Naturelle Ralex
Région : (A) Basses-Terres (consolidé)

Permis délivré en vertu de la loi sur les mines
(L.R.Q., chapitre M-13.1)



Jean-Yves Laliberté, ing.
Coordonnateur de l'exploration

3. INFORMATIONS GÉNÉRALES DU PUIT

NOM DU PUIT : Intragaz St-Flavien #14

NUMÉRO MRNQ : 2000FA230

COMTÉ : Lotbinière

DATE DU DÉBUT DU FORAGE : 24 septembre 2000

DATE DE LA FIN DU FORAGE : 21 novembre 2000

OBJECTIF PRIMAIRE : Foré horizontalement dans l'unité « B » sur la partie sommitale du réservoir dans le « Pool St-Flavien #3 » au sud du puits St-Flavien # 9.

PROFONDEUR TOTALE : 2 414 m KB

ÉLEVATION : Sol: 137,45 m
KB: 144,6 m

LOCALISATION (NAD 27): UTM NAD 27 FUSEAU 19 :
5 152 748,1 m N., 301 915,7 m E.

MTM NAD 83 FUSEAU 7 :
5 151 623,8 m N., 221 786.6 m E.

Lat. : 46° 30' 04,05 "
Long. : 71° 34' 53.51 "

ENTREPRENEUR DE FORAGE : Ressource Naturelle Ralex inc.

OPÉRATEUR : INTRAGAZ
6565, boul. Jean XXIII
Trois-Rivières (Québec)
G9A 5C9

COFFRAGES : CONDUCTEUR 406,4 mm @ 24 m KB
SURFACE 244,5 mm @ 274 m KB
PRODUCTION 177,8 mm @ 1 677 m KB

STATUT : Puits d'injection/soutirage

4. ACTIVITÉS DE FORAGE

4.1 Résumé des activités de forage (Figures 1 à 4)

Les opérations ont débuté le 24 septembre 2000 avec le forage de 311 mm de diamètre jusqu'à une profondeur de 274 m. Un coffrage de 244,5 mm OD fut alors mis en place et cimenté avec 21,3 tonnes de ciment classe « G » + 3% Ca Cl₂. Après la mise en place du BOP 346,1 mm, le trou a été approfondi de 4 mètres afin d'effectuer le « *leak off test* » de 31 kPa/m. Le forage s'est alors poursuivi mais avec un azimuth différent de celui prévu (340° versus 320°). Cette différence n'était pas suffisante pour ajouter un moteur de fond.

À 877 m, l'assemblage de forage fut modifié : le trépan du type PDC fut installé avec l'unité MWD. À 1 257 m nous avons procédé à l'ajout d'un moteur de fond afin de contrôler la déviation. À cette profondeur, la déviation et l'azimut avaient atteint 35° et 320° respectivement. Le forage s'est poursuivi jusqu'à 1 677 m où la déviation avait atteint 79° avec un azimuth de 270°. Le fond du trou se trouvait alors à 10 m vertical au-dessus de l'unité « B ».

Après avoir circulé la boue, le coffrage 177,8 mm OD fut mis en place et cimenté avec 37,6 tonnes de ciment de classe « G ». Par la suite, on a procédé à l'installation du nouveau BOP sur le coffrage de 177,8 mm, le raccordement du système de contrôle du « *UNDERBALANCED DRILLING* » de Northland et l'enregistrement de la diagraphie « *casing inspection and cement bond log* ». Après avoir vérifié le BOP avec une pression de 21 000 kPa, le nouvel assemblage MWD/LWD avec moteur de fond fut monté sur les tiges de 155,6 mm OD.

Le forage s'est poursuivi tout en respectant l'azimut souhaité. À 1 797 m la zone de gaz fut rencontrée. Le débit s'est continuellement accru jusqu'au changement de trépan à 1951 m. La pression et le débit plus élevés ont nécessité la mise en place d'un « *snubbing unit* » pour sortir l'assemblage du trou. Celui utilisé n'étant pas suffisamment puissant, un deuxième appareil a dû être utilisé, ce qui a entraîné des retards dans les opérations. Ce n'est qu'au jour 48, après 18 jours d'attente de l'équipement, que le forage a débuté de nouveau. Le puits est demeuré sub-horizontal avec un azimuth de 270° jusqu'à la fin du puits.

Un arrêt temporaire a dû être effectué à 2 260 m afin de changer un « *Flow T* » sur le raccordement du système Northland. Le forage s'est poursuivi jusqu'à 2414 m, la profondeur totale.

Après circulation, l'assemblage de forage fut retiré du trou et l'enregistrement du « *multifinger caliper* » fut réalisé de 1 527 m à la surface. Après avoir effectué un test de pression du tubage/coffrage à 29 000 kPa et une période de nettoyage de 9 heures, des essais d'écoulement à 280 et 420 x 10³ m³/j avec 13 500 kPa de pression en-tête du puits furent réalisés pendant 8 heures. Par la suite, l'équipement Northland fut alors démantelé et le puits fut fermé. La foreuse fut libérée le 21 novembre 2000.

4.2 Carottage

Aucun carottage n'a été effectué.

4.3 Diagraphies

La seule diagraphie disponible en trou ouvert est le gamma ray enregistré lors du forage lui-même (*LWD*).

DATE	SOMMET (m)	BASE (m)	TYPE
13/10/2000 au 15/11/2000	1 257	2 395,3	Natural G.R. Probe
18/10/2000	4,3	1 583,3	Multi-Sensor Caliper
19/10/2000	2,0	1 605,0	Gamma Ray - CBL

4.4 Gaz produit

4.4.1 PRODUCTION DE GAZ EN COURS DE FORAGE

Le forage de la section horizontale dans la zone en gaz s'est étendu sur la période du 22 octobre au 15 novembre. Sur cette période, le puits a été en production durant 149 heures, pour un volume de gaz total produit de 2 001 10³ m³.

4.4.2 NETTOYAGE DU PUIITS ET ESSAI DE PRODUCTION

Le nettoyage du puits s'est effectué le 20 novembre. Le débit maximum produit a été de 700 000 m³/j, et s'est maintenu pendant 30 minutes environ. La durée totale du nettoyage a été de 9 heures 20 minutes et 24.79 m³ de liquide ont été récupérés.

L'essai de production à deux créneaux de débits a été réalisé le 21 novembre. Les résultats du nettoyage et de l'essai sont présentés dans le tableau suivant. La pression était mesurée à la tête du puits.

TABLEAU 1			
Résumé du nettoyage et de l'essai de production effectué sur le puits SF14			
Date :	20/11/00 au 21/11/00		
Gaz produit :	281 748 m ³		
	Durée	Débit (m ³ /j)	Pression (kpag)
Nettoyage			
Débit #1 :	4h	484 334	-
Remontée #1 :	5h	0	16 242
Débit #2 :	1h	145 833	16 060
Débit #3 :	0.5h	229 368	15 672
Débit #4 :	0.5h	288 833	14 961
Débit #5 :	0.5h	353 963	13 994
Débit #6 :	0.5h	458 735	13 457
Débit #7 :	0.5h	526 696	12 498
Débit #8 :	2h	583 330	8 940
Remontée #2 :	5h	0	16 242
Essai de production			
Débit #1 :	4h	284 562	15 126
Remontée #1 :	4h	0	16 239
Débit #2 :	4h	416 438	13 588
Remontée #2 :	4h	0	16 184

5. STRATIGRAPHIE ET GÉOLOGIE

5.1 Généralités

Les contacts géologiques ont été déterminés à partir des corrélations avec les douze autres puits de la région, mais en particulier avec le puits St-Flavien #9 (**Tableau 1**). Seule la description des échantillons de forage et la diagraphie gamma ray furent utilisées. Cette dernière était de loin l'outil le plus précis jusqu'au sommet de la dolomie B (1 730 m KB).

Lorsque la dolomie B fut pénétrée et traversée longitudinalement, l'analyse des données recueillies a permis de demeurer dans l'unité B tout au long du forage.

Le puits ayant été foré près du puits St-Flavien #9, il n'a pas été nécessaire de prélever des échantillons sur tout le puits en entier. Seule la partie supérieure où le Klippe de la Chaudière est présent et la structure même de St-Flavien (Trenton jusqu'à la profondeur totale) fut échantillonnée.

La description des déblais de forage apparaît sur la planche (échelle 1:000) à l'**annexe 5** avec les informations relatives au forage, la détection du gaz, le taux d'approfondissement, la description des déblais ainsi que la production déterminée à partir de l'unité de production de gaz de surface (Northland).

5.2 Sommaire de la lithologie

Dépôts meubles (Quaternaire)

Aucun échantillon de forage n'a été prélevé au niveau du terrain. La composition de ce dépôt n'est pas déterminée en raison de la pose du coffrage conducteur à ce niveau. Son épaisseur était de 2.5 m.

Klippe de la Chaudière

Brèche volcanique verdâtre avec fragments de grosseur variable, très dure, schiste verdâtre, très dur, laminée avec calcite. Shale silteux, brun foncé, fissile.

Quebec City (Stoney Creek)

Peu d'échantillons ont été décrits à ce niveau. En se basant à ceux décrits dans les autres puits et sur la stratigraphie de la région de St-Flavien, on a un shale gris moyen à gris foncé, plus ou moins calcaireux, pyriteux, et un calcaire argileux gris brun à gris foncé avec trace de calcite de fractures et miroirs de faille.

Trenton Calcaire

Calcaire légèrement argileux gris foncé brunâtre à gris foncé, micro-cristallin avec un peu de shale moyennement calcaireux.

Trenton Shale (Black River)

Shale calcaireux gris foncé surtout et un calcaire très argileux gris brunâtre micro-cristallin.

Chazy

Calcaire brun pâle à gris brunâtre, micro-cristallin fossilifère devenant plus blanc par endroits.

Beauharnois (Unité A)

Alternance de calcaire blanc à légèrement brunâtre, micro-cristallin et d'une dolomie blanche à gris pâle, micro-cristalline à texture sucrosique.

Beauharnois (Unité B1)

Cette unité B1 a typiquement son épaisseur de 22 m dans le réservoir « Pool St-Flavien #3 » et contient principalement une dolomie micro-cristalline blanche qui devient légèrement grisâtre à la base. La partie supérieure d'une épaisseur de 5 m contient une dolomie blanche suivie d'un mince lit de shale pour se terminer par un lit de 2 m de calcaire dolomitique. Entre 13 et 15 m sous le sommet on y rencontre souvent un lit de calcaire qui marque le contact entre la dolomie supérieure plus propre et plus prolifique et la dolomie inférieure moins développée. Cette dernière devient légèrement plus argileuse à la base.

TABLEAU 2
INTRAGAZ ST-FLAVIEN # 14
PROFONDEUR MESURÉE VS VERTICALE

KB = 144,6

FORMATION	TMD PROFONDEUR MESURÉE mKB	TVD/KB PROFONDEUR VERTICALE (KB)	TVD/SS PROFONDEUR P/R MER
KLIPPE CHAUDIÈRE	SURFACE	--	--
LORRAINE CHEVAUCHÉ (QUEBEC CITY)	175	175	-30.4
TRENTON CALCAIRE	1309,3	1238,6	- 1094,0
TRENTON SHALE	1340,2	1263,0	-1118,4
CHAZY	1372,3	1289,0	- 1144,4
BEAUHARNOIS "A"	1538,2	1409,8	- 1265,2
BEAUHARNOIS "B"	1730,0	1477,6	- 1333,0
PROFONDEUR TOTALE	2414	1490,6	- 1346,0

INTRAGAZ ST-FLAVIEN #14
TRAJECTOIRE/TRAJECTORY
VUE EN PLAN/SURFACE PROJECTION

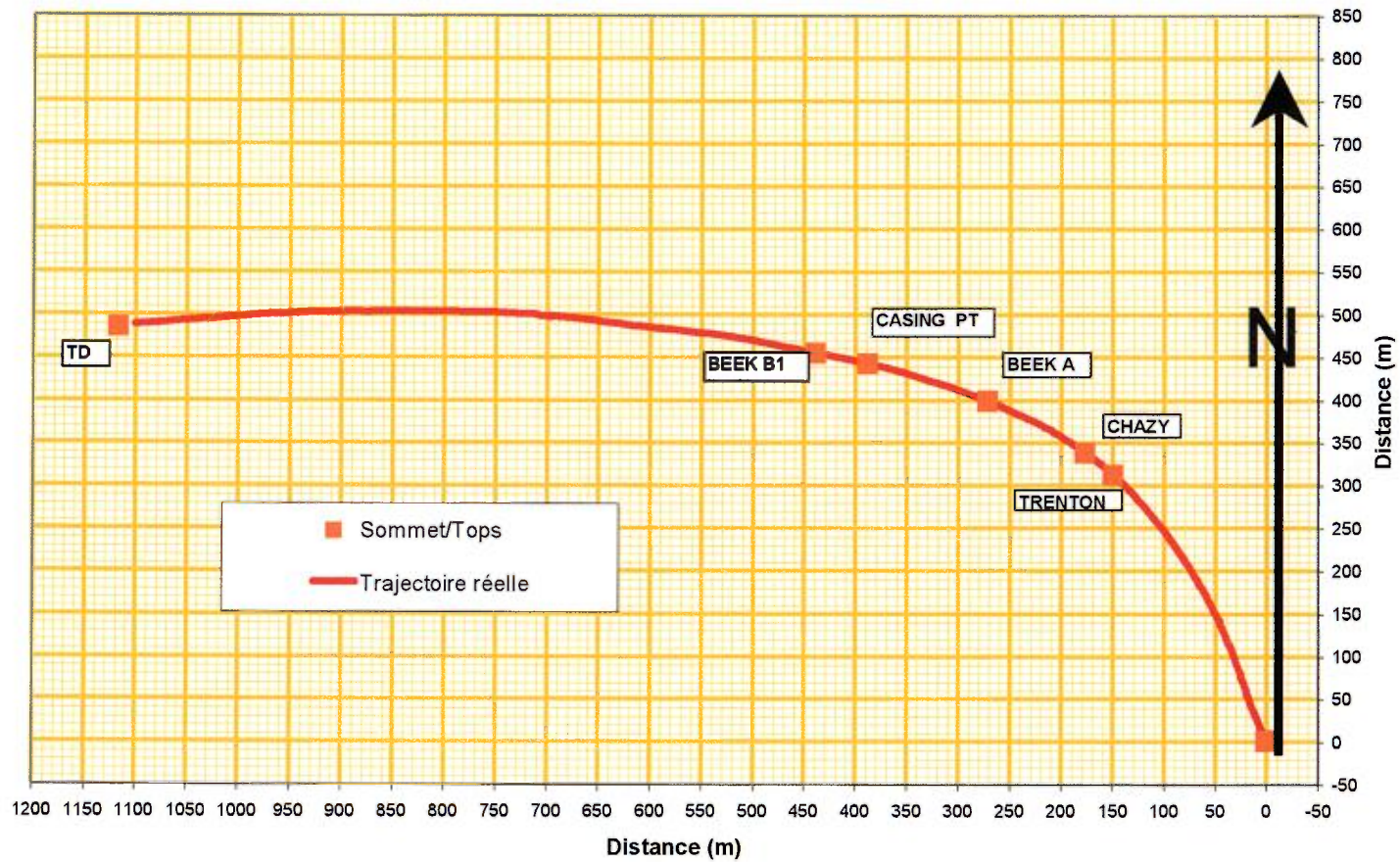


Figure 1

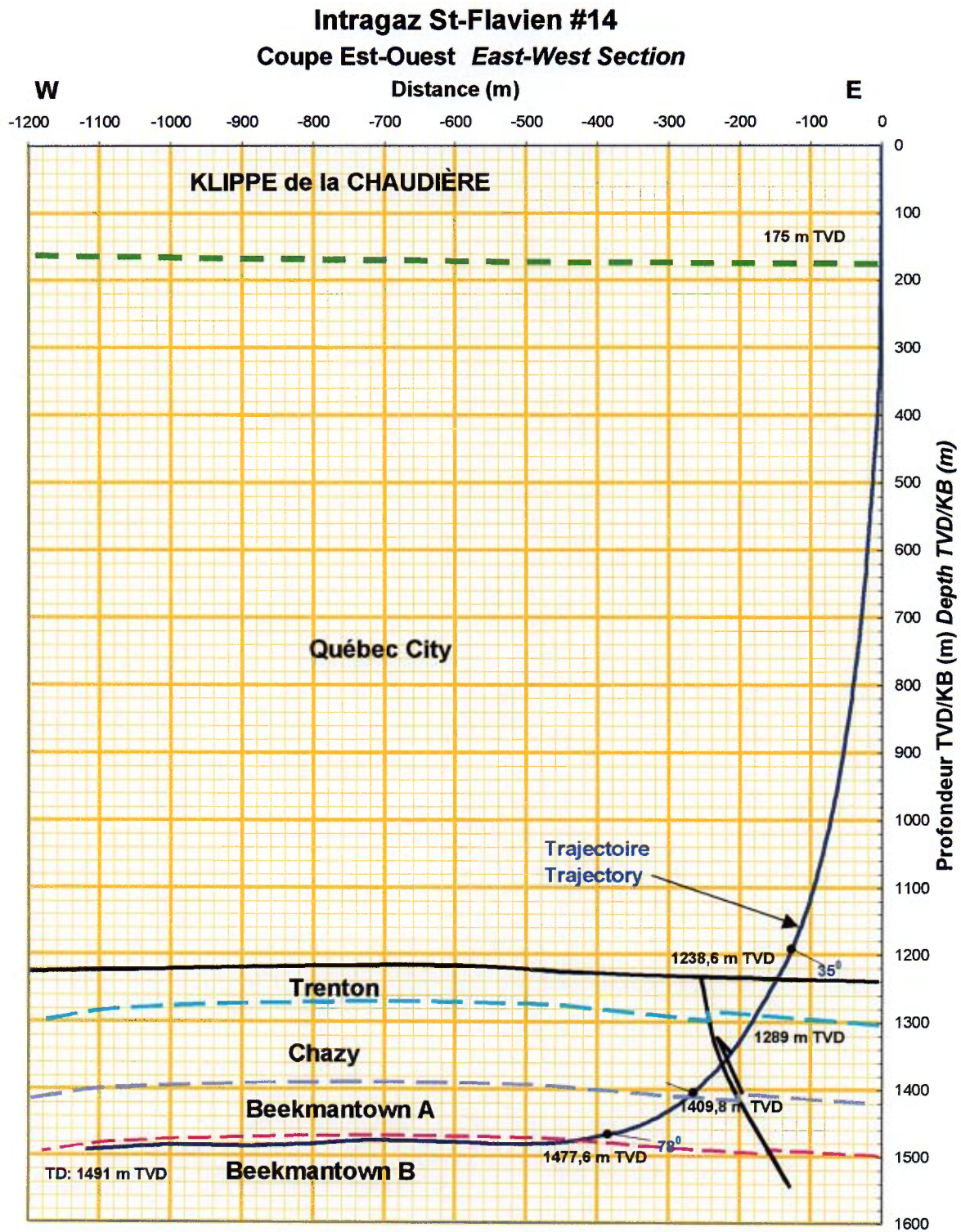


Figure 2

Coupe Nord-Sud SF9-SF14 North-South Section SF9-SF14

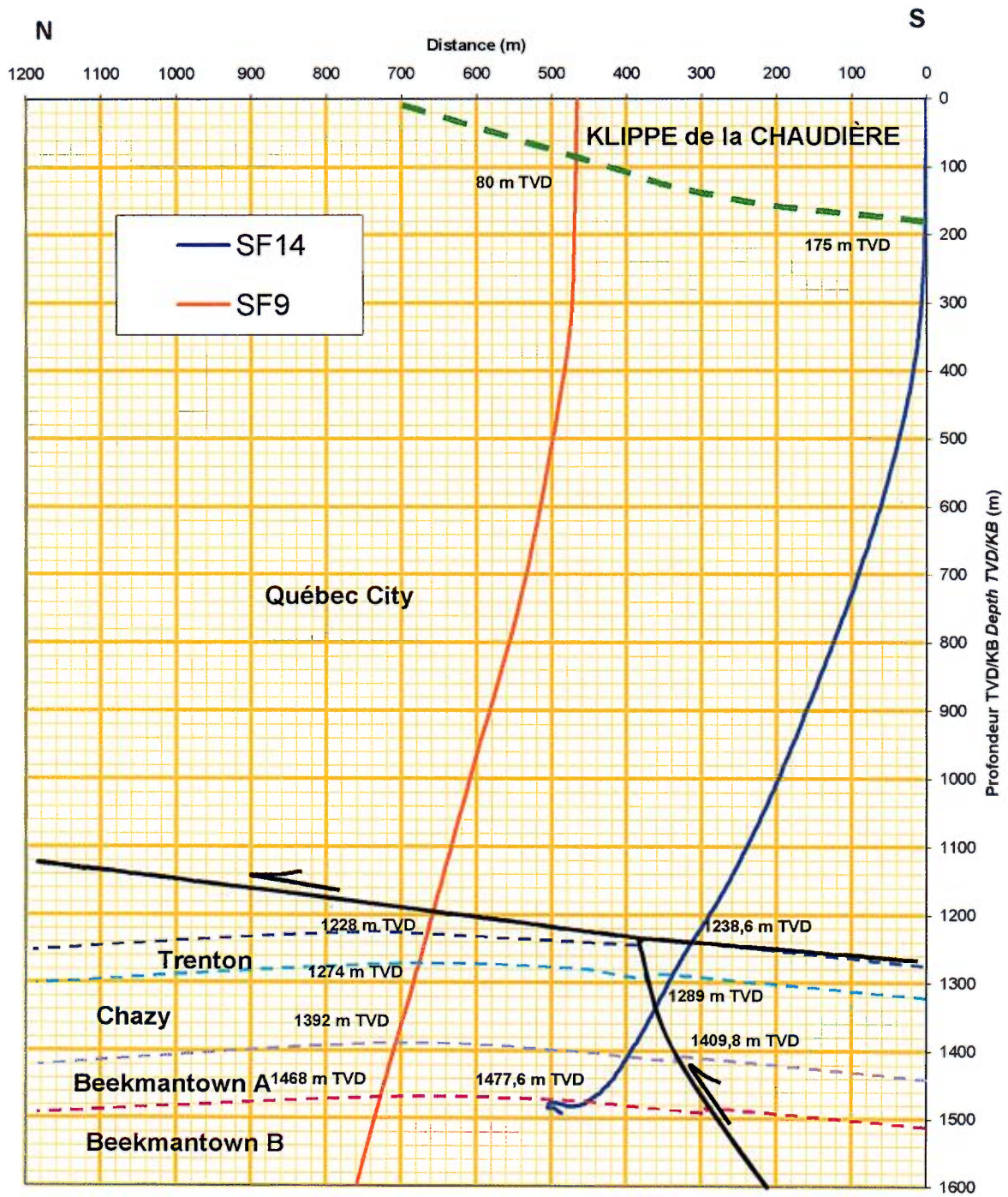
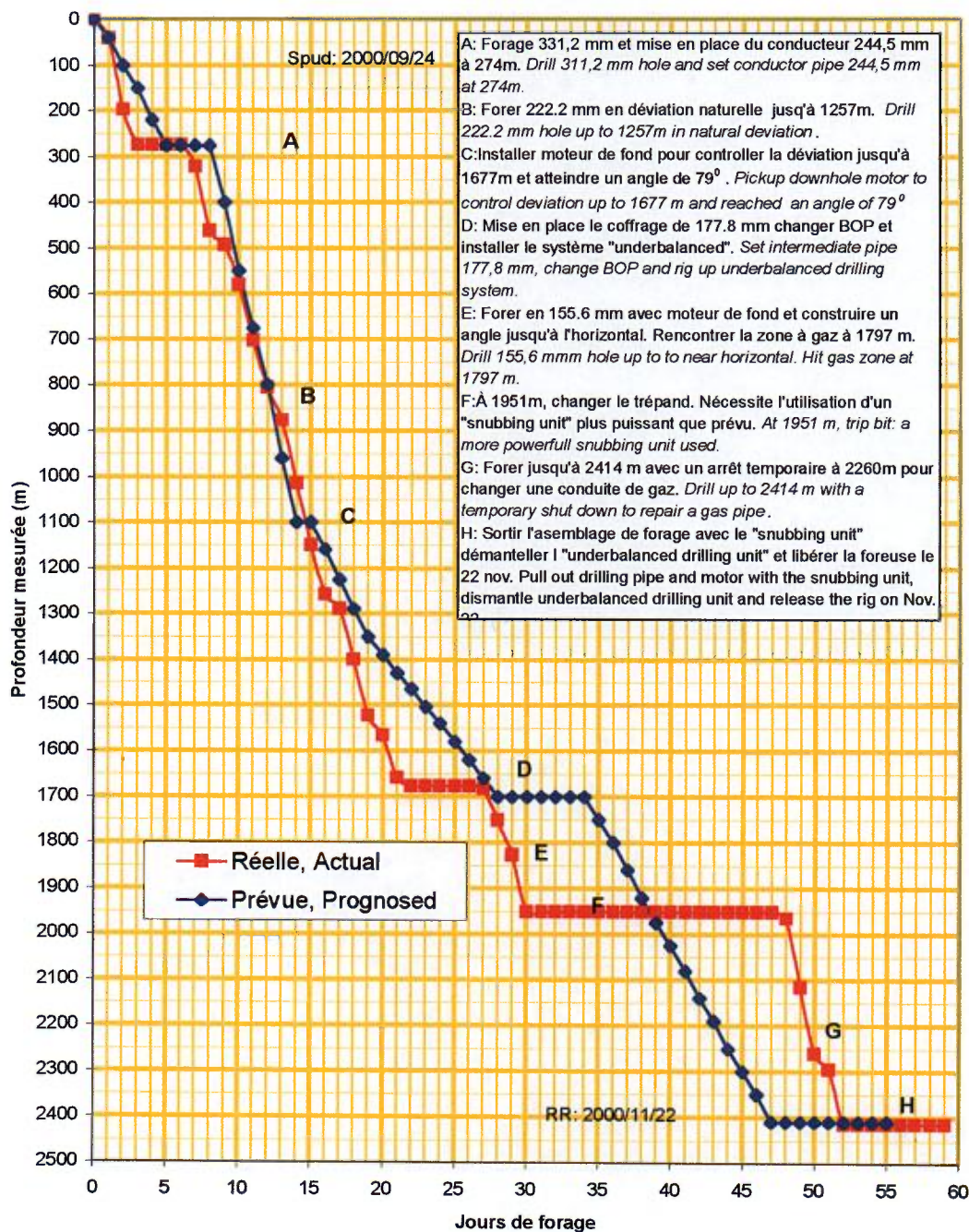


Figure 3

Figure 4

INTRAGAZ ST-FLAVIEN #14
PROFONDEUR VS JOURS DE FORAGE
TIME VS DEPTH CURVE





ANNEXES

RAPPORT FIN DE FORAGE INTRAGAZ ST-FLAVIEN # 14 Novembre 2001

Date : Novembre 2001
Dossier : D101234

1

ANNEXE 1 – ANNEX 1
Données techniques du puits
Well technical data

2

ANNEXE 2 – ANNEX 2
Rapports journaliers de forage
Daily drilling reports

3

ANNEXE 3 – ANNEX 3
Rapports journaliers de forage directionnel
Daily directional drilling reports

4

ANNEXE 4 – ANNEX 4
Rapports géologiques journaliers
Daily geological reports

5

ANNEXE 5 - ANNEX 5
Description géologique
Geological description

6

7

8

9

10



Intragaz

INTRAGAZ ST-FLAVIEN # 14

ANNEXE 1

**DONNÉES TECHNIQUES DU PUIT
WELL TECHNICAL DATA**

[illegible]



HALLIBURTON

Halliburton Energy Services
Down Hole Assembly Drawing



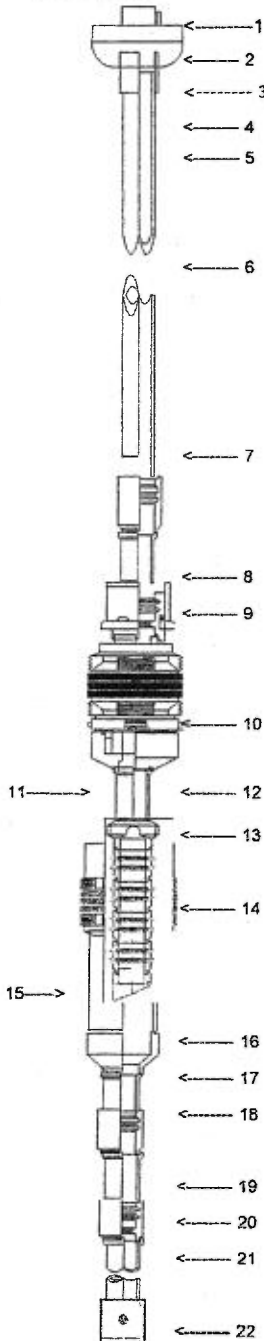
Company	Prepared For	Telephone	Date
INTRAGAZ	MARK NICKLOM/RANDY GENEST	780-853-7276	11/16/00
Field Location	LSD	Province	Completion Type
QUEBEC	SFL-14	QUEBEC	NEW

	Size	Weight	Grade	Thread	Depth	I.D.	Drift I.D.
Casing	177.80	38.69KG/M	L-80	LT&C		159.41	156.24
Tubing	88.90	13.84KG/M	L-80	NK3SB	1791.53	76.00	72.82

NOTE

PREPARED BY CLIFF RIDEOUT RED DEER 315-1689 OR 309-8888.			
TUBING LANDED IN 8000DaN COMPRESSION.			

Assembly



Item	Description	I.D.(mm)	O.D.(mm)	Length(m)	Top Depth (m)
	KB TO THF				6.50
					6.50
1.	DOGNUT	76.00	88.90	0.24	6.50
2.	1 JT 88.9MM NEW NK3SB L-80 TUBING.	76.00	88.90	9.67	6.74
3.	1 PUP JT 88.9MM NEW NK3SB L-80	76.00	88.90	1.78	16.41
4.	1 PUP JT 88.9MM NEW NK3SB L-80	76.00	88.90	1.17	18.19
5.	1 PUP JT 88.9MM NEW NK3SB L-80	76.00	88.90	0.55	19.36
	MINUS .50M FOR COMPRESSION.			-0.50	19.91
6.	146 JTS 88.9MM NEW NK3SB L-80 TUBING.	76.00	88.90	1407.99	19.41
7.	HALLIBURTON 'X' LANDING NIPPLE C/W 69.85 MM 'X' PROFILE. 88.9MM NEW NK3SB	69.85	108.02	0.39	1427.40
8.	1 JT 88.9MM NEW NK3SB L-80 TUBING.	76.00	88.90	9.67	1427.79
9.	HALLIBURTON 'OTIS' ON/OFF TOOL 177.8MM C/W 69.85MM 'X' PROFILE AND 88.9MM NEW NK 3SB BOX X 88.9MM EUE PIN.	69.85	143.91	0.51	1437.46
10.	HALLIBURTON 'PHL' HYDRAULIC SET DOUBLE GRIP RETREIVABLE PACKER FOR 177.8MM 29.76-38.69 KG/M CASING. 88.9MM EUE BOX/PIN. PT#12PHL71301-E. SHEAR RELEASE 24,297 DaN. TOP TO COE .49M	76.00	151.30	1.59	1437.97
11.	X OVER 88.9MM NEW NK3SB X 88.9MM EUE.	76.00	114.87	0.24	1439.56
12.	1 JT 88.9MM NEW NK3SB L-80 TUBING.	76.00	88.90	9.55	1439.80
13.	HALLIBURTON SEAL ASSEMBLY 'VTR' FOR 101.6 BORE C/W VITON,TEFLON,RYTON V-PACKING. PT#212 VTR 40000-A.	76.00	113.54	0.10	1449.35
14.	HALLIBURTON BWB SERIES PERMANENT PACKER C/W 101.6MM BORE. 177.8MM X 34.23- 47.62KG/M CASING. PT#212BWB 70400-A.	101.60	149.22	0.97	1449.45
15.	HALLIBURTON SEAL BORE EXTENSION C/W 101.6MM BORE.	101.60	127.00	2.28	1450.42
16.	SEAL BORE TO 88.9MM NEW NK3SB X OVER.	76.00	147.00	0.18	1452.70
17.	1 JT 88.9MM NEW NK3SB L-80 TUBING.	76.00	88.90	9.66	1452.88
18.	HALLIBURTON 'X' LANDING NIPPLE C/W 69.85 MM 'X' PROFILE. 88.9MM NEW NK 3SB.	69.85	108.02	0.39	1462.54
19.	1 JT 88.9MM NEW NK3SB L-80 TUBING.	76.00	88.90	9.67	1462.93
20.	HALLIBURTON 'XN' NO-GO NIPPLE C/W 69.85MM BORE AND 66.93MM NO-GO.	66.93	108.02	0.35	1472.60
21.	33 JTS 88.9MM NEW NK3SB L-80 TUBING	76.00	88.90	318.34	1472.95
22.	GUIBERSON PUMP-OUT PLUG SHEAR 21 MPA.	73.03	115.00	0.24	1791.29
A	PHL SET USING 22MPA HELD FOR 15MIN.				1791.53
B	P.T ON BWB 18MPA APPLIED SURFACE.				
C	HYD PACKER RELEASE 24,297DaN PULL				
D	BWB SET WITH 'HS' SETTING TOOL.25MPA.				
E	BWB COE @ 1450 M MKB [TOP TO COE .55M]				
F	PHL COE @ 1438.46 M MKB. P.T TO 20MPA .				



PIPE TALLY

DATE 18/11/2000 PAGE NO 1 OF 2
WELL INTRAGAZ LOCATION ST FLAVIEN #14
OPERATOR INTRAGAZ RIG RALEX #1
PIPE DESCRIPTION TUBING SIZE 88.9 mm WT 13.84 kg/m GRADE L80 RANGE 2
CPLG BEU. THREAD NEW NK35B MFG NKK NEW OR USED NEW
TYPE OF STRING PROD Tubing TALLIED BY Randy's Crew THREADS: ON OFF ☒

Length			Length			Length			Length			Length		
No.	Metres	Tenths	No.	Metres	Tenths	No.	Metres	Tenths	No.	Metres	Tenths	No.	Metres	Tenths
1	9	68	21	9	67	41	9	66	61	9	67	81	9	66
2	9	68	22	9	66	42	9	56	62	9	68	82	9	66
3	9	67	23	9	66	43	9	68	63	9	67	83	9	67
4	9	68	24	9	67	44	9	66	64	9	56	84	9	57
5	9	67	25	9	67	45	9	67	65	9	67	85	9	67
6	9	67	26	9	67	46	9	67	66	9	67	86	9	68
7	9	67	27	9	67	47	9	66	67	9	67	87	9	67
8	9	67	28	9	67	48	9	67	68	9	68	88	9	66
9	9	67	29	9	65	49	9	67	69	9	67	89	9	67
10	9	22	30	9	66	50	9	67	70	9	67	90	9	67
Total			Total			Total			Total			Total		
1-10	96	28	21-30	96	65	41-50	96	57	61-70	96	61	81-90	96	58
11	9	66	31	9	66	51	9	67	71	9	67	91	9	68
12	9	65	32	9	55	52	9	67	72	9	67	92	9	67
13	9	67	33	9	56	53	9	67	73	9	67	93	9	68
14	9	67	34	9	67	54	9	67	74	9	68	94	9	68
15	9	68	35	9	66	55	9	67	75	9	14	95	9	68
16	9	66	36	9	55	56	9	67	76	9	68	96	9	67
17	9	66	37	9	67	57	9	67	77	9	68	97	9	69
18	9	67	38	9	67	58	9	68	78	9	68	98	9	68
19	9	67	39	9	65	59	9	65	79	9	67	99	9	67
20	9	66	40	9	67	60	9	67	80	9	68	100	9	67
Total			Total			Total			Total			Total		
11-20	96	65	31-40	96	31	51-60	96	69	71-80	96	22	91-100	96	77
Total			Total			Total			Total			Total		
1-20	192	93	21-40	192	96	41-60	193	26	61-80	192	83	81-100	193	35

Total 1 - 20	<u>192 93</u>	Grand Totals		Remarks	<u>Jnts #1 thru #35</u>
Total 21 - 40	<u>192 96</u>	1 - 100	<u>965 33</u>	<u>RAN AS Tail Pipe Below</u>	
Total 41 - 60	<u>193 26</u>	Grand Totals		<u>PRIMER #1, TOTAL OF</u>	
Total 61 - 80	<u>192 83</u>	101 - 96	<u>927 10</u>	<u>337.67 m.</u>	
Total 81 - 100	<u>193 35</u>	Grand Totals		<u>Total Jts on Location 196</u>	

Grand Total

1 - 100

965. 33

Grand Total

1 - 196

1892.43

Agent of Operator

RANDY GENEST
MARK Nicklorn



PIPE TALLY

DATE 18/11/2000 PAGE NO 2 OF 2
 WELL INTRAGAZ LOCATION ST FLAVIEN
 OPERATOR INTRAGAZ RIG RALEX 1
 PIPE DESCRIPTION Tubing SIZE 88.9 mm WT 13.84 kg/m GRADE L80 RANGE II
 CPLG BEV THREAD NEW NKK35B MFG NKK NEW OR USED NEW
 TYPE OF STRING Prod TALLIED BY Randy & CREW THREADS: ON OFF ☒

Length			Length			Length			Length			Length		
No.	Metres	Tenths	No.	Metres	Tenths	No.	Metres	Tenths	No.	Metres	Tenths	No.	Metres	Tenths
1	9	68	21	9	66	41	9	66	61	9	68	81	9	68
2	9	67	22	9	67	42	9	56	62	9	66	82	9	66
3	9	68	23	9	69	43	9	67	63	9	65	83	9	67
4	9	68	24	9	68	44	9	56	64	9	67	84	9	67
5	9	67	25	9	67	45	9	68	65	9	66	85	9	67
6	9	67	26	9	67	46	9	66	66	9	66	86	9	67
7	9	68	27	9	66	47	9	67	67	9	68	87	9	68
8	9	57	28	9	68	48	9	67	68	9	65	88	9	69
9	9	67	29	9	66	49	9	67	69	9	66	89	9	69
10	9	67	30	9	68	50	9	67	70	9	65	90	9	69
Total	96	64	Total	96	72	Total	96	47	Total	96	62	Total	96	77
1-10			21-30			41-50			61-70			81-90		
11	9	67	31	9	56	51	9	68	71	9	66	91	9	67
12	9	67	32	9	50	52	9	69	72	9	68	92	9	66
13	9	69	33	9	56	53	9	69	73	9	65	93	9	68
14	9	69	34	9	66	54	9	69	74	9	67	94	9	65
15	9	67	35	9	66	55	9	67	75	9	65	95	9	66
16	9	67	36	9	68	56	9	66	76	9	63	96	9	67
17	9	56	37	9	66	57	9	56	77	9	66	97		
18	9	67	38	9	67	58	9	56	78	9	56	98		
19	9	68	39	9	66	59	9	68	79	9	67	99		
20	9	69	40	9	66	60	9	69	80	9	56	100		
Total	96	66	Total	96	27	Total	96	57	Total	96	39	Total	91	57.99
11-20			31-40			51-60			71-80			91-100		
Total	193	30	Total	192	99	Total	193	04	Total	193	01	Total	81	154.76
1-20			21-40			41-60			61-80			81-100		

Total 1 - 20	<u>193.30</u>	Grand Totals		Remarks	<u>JNTS #37 THRU #</u>
Total 21 - 40	<u>192.99</u>	1 - 100	<u>965 33</u>		<u>RAN ABOVE PACKER #2</u>
Total 41 - 60	<u>193.04</u>	Grand Totals			<u>JNTS #36 RAN AS SPACE</u>
Total 61 - 80	<u>193.01</u>	101 - 196	<u>927 10</u>		<u>BETWEEN PACKER #1 & #2</u>
Total 81 - 100	<u>154.76</u>	Grand Totals			<u>Total Jts on Location 196</u>
Grand Total		Grand Total		Agent of Operator	
1 - 100	<u>927 10</u>	1 - 196	<u>1892.43</u>		<u>RANDY GENEST</u>
					<u>MARK NickLom</u>



Intragaz

INTRAGAZ ST-FLAVIEN # 14

ANNEXE 2

**RAPPORTS JOURNALIERS DE FORAGE
DAILY DRILLING REPORT**

BISSETT RESOURCE CC TANTS LTD.

DAILY DRILLING REPORT

Weather Clear Temp 14 °C Road Good Date 00 09 25
 Well INTRAGAZ ST. FLAVIEN #14 HORIZONTAL Rig Ralex 1 Day No. 01
 Depth 41 m Progress 41 m Hole Size 311 mm Status Preparing to Survey
 Mud: Wt 1040 kg/m³ Visco. 42 s/L W.L. 60 cm³ pH 9.5 PV 20 mPa.s YP 4.5 Pa Gels 8/14 Pa
 Methyl Blue - Solids 2.5 % Filter Cake - mm Salt 100 mg/L Cal. 100 mg/L
 Desilter Underflow Wt. - kg/m³ Rate - L/min Desander Underflow Wt. - kg/m³ Rate - L/min
 Desilter Overflow Wt. - kg/m³ Rate - L/min Desander Overflow Wt. - kg/m³ Rate - L/min
 Centrifuge Underflow Wt. - kg/m³ Centrifuge Overflow Wt. - kg/m³

BITS				SURVEYS				TIME DISTRIBUTION	
No.								Code/Operation	Hours
1				19	m	1/4	°	1 RU & RD	
Size - mm	311			34	m	0	°	2 Drill Actual	4.75
Type	F-2				m		°	3 Reaming	
S.N.	LF-5266				m		°	4 Coring	
Jets - mm	14.3/12.7/11.1				m		°	5 Cond. Hole	0.25
Wt. - daN	2000				m		°	6 Trips	
r/min	60				m		°	7 Lubr. Rig	
Out - m	-			PUMP				8 Repair Rig	
In - m	0				Liner	Length		9 Cut Off D.L.	
Metres	41			No.	mm	mm	SPM	10 Dev. Survey	
Hours	4.75							11 Wireline Log	
Condition								12 Run Csg/Cmt	
DRILLING MUD ADDITIVES USED:				HYDRAULIC				13 Wait on Cmt	
78 sxs gel				PP	Output	AV	Power	14 Nipple Up	
				kPa	L/min	m/min	kW	15 Test BOP	
								16 DST	
								17 Plug Back	
								18 Squeeze Cmt	
								19 Fishing	
GEOLOGICAL SUMMARY: (Include formation tops, lithology and mud gas, if applicable)								20 Directional	
								21 Handle Tool	2.50
								22 Clean to Btm	
								23	
								24	
								25 Total	7.50

REMARKS: (Include cores, spud or rig release, casing, plugs, logs, hole problems, KB to GL, KB to CF, description of drill string)

Spudded at 23:30, September 24, 2000 with 311 mm bit. Drilling at 58 m at 5 to 6 m/h at 09:15. Shaker screen size: 180 mesh.

Bottomhole Assembly: bit, dog sub, Stabeco 6/7 Black Max Square Motor, IBS, 1 x nonmagnetic DC, nonmagnetic IBS, short nonmagnetic DC, UG IBS, 1 x 229 mm DC, crossover

SUPERVISOR Ken CreelmanPage No. 1

DAILY DRILLING REPORT

REVISED

Weather Clear Temp 14 °C Road Good Date 00 09 25
 Well INTRAGAZ ST. FLAVIEN #14 HORIZONTAL Rig Raflex 1 Day No. 01
 Depth 41 m Progress 41 m Hole Size 311 mm Status Preparing to Survey
 Mud: Wt 1040 kg/m³ Visc. 42 s/L W.L. 60 cm³ pH 9.5 PV 20 mPa.s YP 4.5 Pa Gels 8/14 Pa
 Methyl Blue - Solids 2.5 % Filter Cake - mm Salt 100 mg/L Cal. 100 mg/L
 Desilter Underflow Wt. - kg/m³ Rate - L/min Desander Underflow Wt. - kg/m³ Rate - L/min
 Desilter Overflow Wt. - kg/m³ Rate - L/min Desander Overflow Wt. - kg/m³ Rate - L/min
 Centrifuge Underflow Wt. - kg/m³ Centrifuge Overflow Wt. - kg/m³

BITS				SURVEYS				TIME DISTRIBUTION	
No.								Code/Operation	Hours
1				19	m	1/4	*	1 RU & RD	
Size - mm	311			34	m	0	*	2 Drill Actual	4.75
Type	F-2				m		*	3 Reaming	
S.N.	LF-5266				m		*	4 Coring	
Jets - mm	14.3/12.7/11.1				m		*	5 Cond. Hole	0.25
Wt. - daN	2000				m		*	6 Trips	
d/min	60				m		*	7 Lubr. Rig	
Out - m	-							8 Repair Rig	
In - m	0							9 Cut Off D.L.	
Metres	41							10 Dev. Survey	
Hours	4.75							11 Wireline Log	
Condition								12 Run Csg/Cmt	
DRILLING MUD ADDITIVES USED:				PUMP				13 Wait on Cmt	
78 sxs gel				HYDRAULIC				14 Nipple Up	
				No.	Liner mm	Length mm	SPM	15 Test BOP	
								16 DST	
								17 Plug Back	
								18 Squeeze Cmt	
								19 Fishing	
GEOLOGICAL SUMMARY: (Include formation tops, lithology and mud gas, if applicable)								20 Directional	
								21 Handle Tool	2.50
								22 Clean to Btm	
								23	
								24	
								25 Total	7.50

REMARKS: (Include cores, spud or rig release, casing, plugs, logs, hole problems, KB to GL, KB to CF, description of drill string)

Spudded at 23:30, September 24, 2000 with 311 mm bit. Drilling at 58 m at 5 to 6 m/h at 09:15. Shaker screen size: 180 mesh.

Bottomhole Assembly: bit, dog sub, Stabeco 6/7 Black Max Square Motor, IBS, 1 x nonmagnetic DC, nonmagnetic IBS, short nonmagnetic DC, UG IBS, 1 x 229 mm DC, crossover

SUPERVISOR Ken CreelmanPage No. 1

DAILY DRILLING REPORT

Weather Clear Temp 1 °C Road Good Date 00 09 26
 Well INTRAGAZ ST. FLAVIEN #14 HORIZONTAL Rig Ralex 1 Day No. 02
 Depth 197 m Progress 156 m Hole Size 311 mm Status Drilling
 Mud: Wt 1060 kg/m³ Visc. 48 s/L W.L. 46 cm³ pH 8.5 PV 19 mPa.s YP 7.0 Pa Gels 4/16 Pa
 Methyl Blue - Solids 3.8 % Filter Cake 1 mm Salt 166 mg/L Cal. 35 mg/L
 Desilter Underflow Wt. - kg/m³ Rate - L/min Desander Underflow Wt. - kg/m³ Rate - L/min
 Desilter Overflow Wt. - kg/m³ Rate - L/min Desander Overflow Wt. - kg/m³ Rate - L/min
 Centrifuge Underflow Wt. - kg/m³ Centrifuge Overflow Wt. - kg/m³

BITS				SURVEYS				TIME DISTRIBUTION	
No.								Code/Operation	Hours
1				53	m	0.38/335	°	1	RU & RD
Size - mm	311			82	m	0.60/343	°	2	Drill Actual
Type	F-2			129	m	0.80/328	°	3	Reaming
S.N.	LF-5266			158	m	1.00/341	°	4	Coring
Jets - mm	14.3/12.7/11.1				m			5	Cond. Hole
Wt. - daN	8 - 12				m			6	Trips
r/min	150				m			7	Lubr. Rig
Out - m	Running				m			8	Repair Rig
In - m	0				m			9	Cut Off D.L.
Metres	197							10	Dev. Survey
Hours	19.25							11	Wireline Log
Condition								12	Run Csg/Cmt
								13	Wait on Cmt
								14	Nipple Up
								15	Test BOP
								16	DST
								17	Plug Back
								18	Squeeze Cmt
								19	Fishing
								20	Directional
								21	Handle Tool
								22	Clean to Btm
								23	
								24	
								25	Total

DRILLING MUD ADDITIVES USED:

	PP	Output	AV	Power
	kPa	L/min	m/min	KW
53 sxs gel				
1 sxs soda ash	10 500	2 400		

GEOLOGICAL SUMMARY: (Include formation tops, lithology and mud gas, if applicable)

REMARKS: (Include cores, spud or rig release, casing, plugs, logs, hole problems, KB to GL, KB to CF, description of drill string)

Drilling ahead, surveying as required.

SUPERVISOR Ken CreelmanPage No. 2

**DAILY DRILLING REPORT - CONFIDENTIAL**

Weather Clear Temperature 5 °C Road Good Date 27-Sep-00
Well INTRAGAZ ST. FLAVIEN #14 HORIZONTAL Rig Ralex 1 Day No. 03
Depth (m) 274 Progress (m) 118 Hole Size (mm) 311 Status Laying down motor
Mud: Wt (kg/m³) 1060 Visc (s/L) 80 WL (cm³) - pH 8.5 PV (mPa.s) 19 YP (Pa) 7 Gels (Pa) 4/16
Methyl Blue - Solids (%) 3.8 Filter Cake (mm) 1 Salt (mg/L) 100 Cal (mg/L) 20
3 RPM - 6 RPM - Soluble Sulfides (mg/L) - Electrical Stability (v) -
Desander: Underflow Wt (kg/m³) - Rate (L/m) - Overflow Wt (kg/m³) - Rate (L/m) -
Desilter: Underflow Wt (kg/m³) - Rate (L/m) - Overflow Wt (kg/m³) - Rate (L/m) -
Centrifuge: Underflow Wt (kg/m³) #1 - #2 - Overflow Wt (kg/m³) #1 - #2 -

Bits

Number	Size (mm)	Type	SN	Jets (mm)	WOB (daN)	RPM	Out (m)	In (m)	Metres	Hours	Condition
1	311	F-2	LF5266	14.3/12.7/11.1	8 - 12	150	274	0	274	29.00	3-2-I

Pumps / Hydraulics

No.	Liner (mm)	Length (mm)	SPM	PP (kPa)	Output (L/min)	AV (m/min)	Power (kW)
1	140	235	116	12500	2530		
2	140	235	116				

Drilling Mud Additives

53 sxs Gel
1 sx Soda Ash

Surveys

Depth	Inclination	Azimuth
176	1.3	343
194	1.5	328
213	2.0	340
232	2.3	332
251	2.6	341

Time Distribution

Operation	Hours
Drilling	9.75
Cond. Hole	2.00
Trips	9.75
Lubr. Rig	0.25
Repair Rig	0.25
Dev. Survey	2.00

Geological Summary (Include formation tops, lithology and mud gas if applicable)

Total Hours 24.00

Remarks (Include cores, spud or rig release, casing, plugs, logs, hole problems, KB to GL, KB to CF, description of drill string, etc.)

Drilled ahead. Surveyed as required. Wiper trip to shoe at 206 m. Good trip. Drilled ahead to 274 m. Surveyed as required. Circulated bottoms up. Raised viscosity to 81 s/L. Wiper trip to conductor barrel, good trip. Circulated. Pulled out of hole to run casing. Laid down motor and 228 mm drill collars and stabilizer.

Supervisor Ken Creelman

**DAILY DRILLING REPORT - CONFIDENTIAL**

Weather Cloudy Temperature 6 °C Road Good Date 00 09 28
Well INTRAGAZ ST. FLAVIEN #14 HORIZONTAL Rig Ralex 1 Day No. 04
Depth (m) 274 Progress (m) 0 Hole Size (mm) 311 Status Nippling up BOPs
Mud: Wt (kg/m³) Visc (s/L) WL (cm³) pH PV (mPa.s) YP (Pa) Gels (Pa)
Methyl Blue Solids (%) Filter Cake (mm) Salt (mg/L) Cal (mg/L)
3 RPM 6 RPM Soluble Sulfides (mg/L) Electrical Stability (v)
Desander: Underflow Wt (kg/m³) Rate (L/m) Overflow Wt (kg/m³) Rate (L/m)
Desilter: Underflow Wt (kg/m³) Rate (L/m) Overflow Wt (kg/m³) Rate (L/m)
Centrifuge: Underflow Wt (kg/m³) #1 #2 Overflow Wt (kg/m³) #1 #2

Bits

Number	Size (mm)	Type	SN	Jets (mm)	WOB (daN)	RPM	Out (m)	In (m)	Metres	Hours	Condition

Pumps / Hydraulics

No.	Liner (mm)	Length (mm)	SPM	PP (kPa)	Output (L/min)	AV (m/min)	Power (kW)

Drilling Mud Additives

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Surveys

Depth	Inclination	Azimuth

Time Distribution

Operation	Hours
Cond. Hole	1.00
Run Csg/Cmt	6.25
Waiting on Cement	7.50
Handle Tools	2.00
Safety Meeting	0.25
Casing and Bowl	6.00
Nipple Up	1.00
Total Hours	24.00

Geological Summary (Include formation tops, lithology and mud gas if applicable)

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Remarks (Include cores, spud or rig release, casing, plugs, logs, hole problems, KB to GL, KB to CF, description of drill string, etc.)

Ran 20 joints 244.5 mm OD 59.7 kg/m K55 LT&C casing. Cemented with 21.3 tonnes Class "G" + 3% CaCl₂. Displaced with 10.3 m³ water. 6 m³ good cement returns. Plug down at 16:15. Bumped plug with 9000 kPa. Floats held okay.

NOTE: Bruno Belanger injured left inside of knee when latch on tongs flew open when trying to stabilize sub from bottom of motor. No lost time.

Supervisor Ken Creelman

**DAILY DRILLING REPORT - CONFIDENTIAL**

Weather Clear Temperature -3 °C Road Good Date 00 09 29
Well INTRAGAZ ST. FLAVIEN #14 HORIZONTAL Rig Ralex 1 Day No. 05
Depth (m) 274 Progress (m) 0 Hole Size (mm) 311 Status Nippling up BOPs
Mud: Wt (kg/m³) Visc (s/L) WL (cm³) pH PV (mPa.s) YP (Pa) Gels (Pa)
Methyl Blue Solids (%) Filter Cake (mm) Salt (mg/L) Cal (mg/L)
3 RPM 6 RPM Soluble Sulfides (mg/L) Electrical Stability (v)
Desander: Underflow Wt (kg/m³) Rate (L/m) Overflow Wt (kg/m³) Rate (L/m)
Desilter: Underflow Wt (kg/m³) Rate (L/m) Overflow Wt (kg/m³) Rate (L/m)
Centrifuge: Underflow Wt (kg/m³) #1 #2 Overflow Wt (kg/m³) #1 #2

Bits

Number	Size (mm)	Type	SN	Jets (mm)	WOB (daN)	RPM	Out (m)	In (m)	Metres	Hours	Condition
--------	-----------	------	----	-----------	-----------	-----	---------	--------	--------	-------	-----------

Pumps / Hydraulics

No.	Liner (mm)	Length (mm)	SPM	PP (kPa)	Output (L/min)	AV (m/min)	Power (kW)
-----	------------	-------------	-----	----------	----------------	------------	------------

Drilling Mud Additives

28 sxs	Gel
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Surveys

Depth	Inclination	Azimuth
-------	-------------	---------

Time Distribution

Operation	Hours
Nipple Up	24.00

Geological Summary (Include formation tops, lithology and mud gas if applicable)

Total Hours	24.00
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Remarks (Include cores, spud or rig release, casing, plugs, logs, hole problems, KB to GL, KB to CF, description of drill string, etc.)

Nippled up BOPs. Rebuild split drilling nipple. Preparing to test BOPs, estimated drilling out early a.m.

KB to GL: 7.08 m

KB to CF: 7.08 m

Personnel on lease: 1 - Sperry Sun; 2 - Bissett

Supervisor K. Creelman/R. Genest

DAILY DRILLING REPORT - CONFIDENTIAL

Weather	Cloudy	Temperature	2	°C	Road	Good	Date	00 09 30					
Well	INTRAGAZ ST. FLAVIEN #14 HORIZONTAL				Rig	Ralex 1	Day No.	06					
Depth (m)	274	Progress (m)	0	Hole Size (mm)	311	Status	Pressure Testing						
Mud: Wt (kg/m ³)	1040	Visc (s/L)	63	WL (cm ³)	9	pH	9.5	PV (mPa.s)	24	YP (Pa)	3	Gels (Pa)	3/4
Methyl Blue	-	Solids (%)	2.5	Filter Cake (mm)	1	Salt (mg/L)	100	Cal (mg/L)	40				
3 RPM	6 RPM		Soluble Sulfides (mg/L)				Electrical Stability (v)						
Desander:	Underflow Wt (kg/m ³)		Rate (L/m)		Overflow Wt (kg/m ³)		Rate (L/m)						
Desilter:	Underflow Wt (kg/m ³)		Rate (L/m)		Overflow Wt (kg/m ³)		Rate (L/m)						
Centrifuge:	Underflow Wt (kg/m ³)		#1	#2	Overflow Wt (kg/m ³)		#1	#2					

Bits

Number	Size (mm)	Type	SN	Jets (mm)	WOB (daN)	RPM	Out (m)	In (m)	Metres	Hours	Condition
--------	-----------	------	----	-----------	-----------	-----	---------	--------	--------	-------	-----------

Pumps / Hydraulics

No.	Liner (mm)	Length (mm)	SPM	PP (kPa)	Output (L/min)	AV (m/min)	Power (kW)
-----	------------	-------------	-----	----------	----------------	------------	------------

Drilling Mud Additives

Surveys

<u>Depth</u>	<u>Inclination</u>	<u>Azimuth</u>
--------------	--------------------	----------------

Time Distribution

<u>Operation</u>	<u>Hours</u>
Nipple Up	5.00
Test BOP	9.00
Work on Accumulator	10.00
Total Hours	24.00

Geological Summary (Include formation tops, lithology and mud gas if applicable)

DATE	TIME	WELL	DEPTH	LOG	REMARKS
10/10/2023	14:00	WELL 1	100	100	Remarks (Include cores, spud or rig release, casing, plugs, logs, hole problems, KB to GL, KB to CF, description of drill string, etc.)

Nippled up BOPs. Cleaned out accumulator. Pressure tested blind rams, HCR, all manifold valves, kill line valve to 1 400 kPa low and 14 000 kPa high. Check valve did not test.

Premixed mud. Rigged in centrifuges. One load drilling tools sent to Western Canada.

NOTE: Mud check is from tanks.

Personnel on lease:

- 1 - Sperry Sun
2 - Bissett
1 - Rocky Mountain
2 - MI

E

Supervisor K. Creelman/R. Genest

**DAILY DRILLING REPORT - CONFIDENTIAL**

Weather Clear Temperature 8 °C Road Good Date 00 10 01
Well INTRAGAZ ST. FLAVIEN #14 HORIZONTAL Rig Ralex 1 Day No. 07
Depth (m) 321 Progress (m) 47 Hole Size (mm) 222 Status Surveying
Mud: Wt (kg/m³) 1040 Visc (s/L) 61 WL (cm³) 9 pH 9.5 PV (mPa.s) 23 YP (Pa) 3 Gels (Pa) 3/4
Methyl Blue - Solids (%) 2.5 Filter Cake (mm) 1 Salt (mg/L) 100 Cal (mg/L) 50
3 RPM 6 RPM Soluble Sulfides (mg/L) Electrical Stability (v)
Desander: Underflow Wt (kg/m³) Rate (L/m) Overflow Wt (kg/m³) Rate (L/m)
Desilter: Underflow Wt (kg/m³) Rate (L/m) Overflow Wt (kg/m³) Rate (L/m)
Centrifuge: Underflow Wt (kg/m³) 1800 Rate (L/m) 400 Overflow Wt (kg/m³) 1030 Rate (L/m)

Bits

Number	Size (mm)	Type	SN	Jets (mm)	WOB (daN)	RPM	Out (m)	In (m)	Metres	Hours	Condition
1	222	MA-32	JS-178	6 x 7.9	6 - 8000	60 - 80	-	321	47	5.75	Running

Pumps / Hydraulics

No.	Liner (mm)	Length (mm)	SPM	PP (kPa)	Output (L/min)	AV (m/min)	Power (kW)
1	140	235	120	5800	1240		

Drilling Mud Additives

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Surveys

Depth	Inclination	Azimuth

Time Distribution

Operation	Hours
Drill Actual	5.75
Cond. Hole	0.75
Lubr. Rig	0.25
Dev. Survey	0.50
Test BOP	7.00
Handle Tools	5.00
Change Bit Shoe	4.25
Leak Off Test	0.50
Total Hours	24.00

Geological Summary (Include formation tops, lithology and mud gas if applicable)

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Remarks (Include cores, spud or rig release, casing, plugs, logs, hole problems, KB to GL, KB to CF, description of drill string, etc.)

Picked up bottomhole assembly. Pressure tested rams, annular, Swaco choke, upper and lower kelly cock, stabbing valve, inside BOP to 1 400 kPa low and 14 000 kPa high, annular tested to 7 500 kPa. Drilled out cement float collar and float shoe. Drilled 4 m new hole. Conducted leak off test, 31 kPa/m. Good casing seat. Drilling ahead.

Personnel on lease:

- 1 - Sperry Sun
- 2 - Bissett
- 1 - Rocky Mountain
- 2 - MI

Supervisor K. Creelman/R. Genest

**DAILY DRILLING REPORT - CONFIDENTIAL**

Weather Clear Temperature 6 °C Road Good Date 00 10 02
Well INTRAGAZ ST. FLAVIEN #14 HORIZONTAL Rig Ralex 1 Day No. 08
Depth (m) 462 Progress (m) 141 Hole Size (mm) 222 Status Drilling
Mud: Wt (kg/m³) 1040 Visc (s/L) 47 WL (cm³) 11 pH 9 PV (mPa.s) 14 YP (Pa) 4 Gels (Pa) 3/4
Methyl Blue - Solids (%) 2.5 Filter Cake (mm) 1 Salt (mg/L) 200 Cal (mg/L) 60
3 RPM 6 RPM Soluble Sulfides (mg/L) Electrical Stability (v)
Desander: Underflow Wt (kg/m³) Rate (L/m) Overflow Wt (kg/m³) Rate (L/m)
Desilter: Underflow Wt (kg/m³) Rate (L/m) Overflow Wt (kg/m³) Rate (L/m)
Centrifuge: Underflow Wt (kg/m³) 1040 Rate (L/m) 400 Overflow Wt (kg/m³) 1030 Rate (L/m)

Bits

Number	Size (mm)	Type	SN	Jets (mm)	WOB (daN)	RPM	Out (m)	In (m)	Metres	Hours	Condition
1	222	MA-32	JS-178	6 x 7.9	6 - 8000	60 - 70	330	274	56	8.25	No wear
2	222	M-223	JS-0456		3 - 5000	60 - 70	462	330	132	11.25	

Pumps / Hydraulics

No.	Liner (mm)	Length (mm)	SPM	PP (kPa)	Output (L/min)	AV (m/min)	Power (kW)
1	140	235	120	8500	1200		

Drilling Mud Additives

58 sxs Gel
1 sx Sodium Carbonate
1 sx Poly plus

Surveys

Depth Inclination Azimuth

Time Distribution

Operation	Hours
Drill Actual	14.00
Cond. Hole	0.25
Trips	2.75
Lubr. Rig	0.25
Repair Rig	2.00
Dev. Survey	4.75

Geological Summary (Include formation tops, lithology and mud gas if applicable)

Total Hours 24.00

Remarks (Include cores, spud or rig release, casing, plugs, logs, hole problems, KB to GL, KB to CF, description of drill string, etc.)

Drilled and surveyed to 330 m. Tripped for more aggressive PDC bit and more stabilization. Drilled and surveyed to 462 m KB.

Personnel on lease:

1 - Sperry Sun
2 - Bissett
1 - Rocky Mountain
2 - MI

Supervisor K. Creelman/R. Genest

**DAILY DRILLING REPORT - CONFIDENTIAL**

Weather Cloudy Temperature 10 °C Road Good Date 00 10 03
Well INTRAGAZ ST. FLAVIEN #14 HORIZONTAL Rig Ralex 1 Day No. 09
Depth (m) 493 Progress (m) 31 Hole Size (mm) 222 Status Drilling
Mud: Wt (kg/m³) 1040 Visc (s/L) 60 WL (cm³) 8.6 pH 8.0 PV (mPa.s) 17 YP (Pa) 8.5 Gels (Pa) 4/14
Methyl Blue - Solids (%) 2.5 Filter Cake (mm) 1 Salt (mg/L) 1450 Cal (mg/L) 12
3 RPM 6 RPM Soluble Sulfides (mg/L) Electrical Stability (v)
Desander: Underflow Wt (kg/m³) Rate (L/m) Overflow Wt (kg/m³) Rate (L/m)
Desilter: Underflow Wt (kg/m³) Rate (L/m) Overflow Wt (kg/m³) Rate (L/m)
Centrifuge: Underflow Wt (kg/m³) Rate (L/m) Overflow Wt (kg/m³) Rate (L/m)

Bits

Number	Size (mm)	Type	SN	Jets (mm)	WOB (daN)	RPM	Out (m)	In (m)	Metres	Hours	Condition
2	222	M-223	JS-0456		2 - 3000	60	468	330	138	14.50	Good
3	222	F2H	LW4513	3 x 20							
4	222	F-15Hp	LW0542	3 x 9.5	3 - 4 000	40		468	25	7.25	Running

Pumps / Hydraulics

No.	Liner (mm)	Length (mm)	SPM	PP (kPa)	Output (L/min)	AV (m/min)	Power (kW)

Drilling Mud Additives

1 sx	XC Polymer
14 sxs	Gel
1 sxs	Polyplus

Surveys

Depth	Inclination	Azimuth

Time Distribution

Operation	Hours
Drill Actual	10.50
Cond. Hole	0.50
Trips	9.50
Lubr. Rig	0.25
Dev. Survey	3.25
Total Hours	24.00

Geological Summary (Include formation tops, lithology and mud gas if applicable)**Remarks (Include cores, spud or rig release, casing, plugs, logs, hole problems, KB to GL, KB to CF, description of drill string, etc.)**

Drilled to 468 m KB. Pulled out and changed bottomhole assembly Tripped in and surveyed. Tripped out. Made up new bottomhole assembly and tripped in. Drilled ahead with light weight on bit. Drilling at 500 m at 11:00 estimated.

Personnel on lease:

- 1 - Sperry Sun
- 2 - Bissett
- 14 - Ralex
- 2 - MI

Supervisor K. Creelman/R. Genest

DAILY DRILLING REPORT - CONFIDENTIAL

Weather	Cloudy	Temperature	4	°C	Road	Good	Date	00 10 04					
Well	INTRAGAZ ST. FLAVIEN #14 HORIZONTAL				Rig	Ralex 1	Day No.	10					
Depth (m)	581	Progress (m)	88	Hole Size (mm)	222	Status	Drilling						
Mud: Wt (kg/m³)	1040	Visc (s/L)	49	WL (cm³)	1.2	pH	8	PV (mPa.s)	9	YP (Pa)	5.5	Gels (Pa)	6/18
Methyl Blue	-	Solids (%)	2.5	Filter Cake (mm)	1	Salt (mg/L)	3800	Cal (mg/L)	80				
3 RPM	6 RPM	Soluble Sulfides (mg/L)				Electrical Stability (v)							
Desander:	Underflow Wt (kg/m³)	Rate (L/m)	Overflow Wt (kg/m³)	Rate (L/m)									
Desilter:	Underflow Wt (kg/m³)	Rate (L/m)	Overflow Wt (kg/m³)	Rate (L/m)									
Centrifuge:	Underflow Wt (kg/m³)	1020	Rate (L/m)	400	Overflow Wt (kg/m³)	1840	Rate (L/m)						

Bits

<u>Number</u>	<u>Size (mm)</u>	<u>Type</u>	<u>SN</u>	<u>Jets (mm)</u>	<u>WOB (daN)</u>	<u>RPM</u>	<u>Out (m)</u>	<u>In (m)</u>	<u>Metres</u>	<u>Hours</u>	<u>Condition</u>
4	222	F15P	LW0542	3 x 9.5	8 - 9 000	110		468	113	28.50	

Pumps / Hydraulics

<u>No.</u>	<u>Liner (mm)</u>	<u>Length (mm)</u>	<u>SPM</u>	<u>PP (kPa)</u>	<u>Output (L/min)</u>	<u>AV (m/min)</u>	<u>Power (kW)</u>
1	140	235	120	7500	1270	45	159

Drilling Mud Additives

2 sxs	Caustic Soda
3 sxs	Lignite

Surveys

<u>Depth</u>	<u>Inclination</u>	<u>Azimuth</u>
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Time Distribution

<u>Operation</u>	<u>Hours</u>
Drill Actual	21.25
Lubr. Rig	0.25
Dev. Survey	2.50
Total Hours	24.00

Geological Summary (Include formation tops, lithology and mud gas if applicable)

Date	Time	Location	Remarks (Include cores, spud or rig release, casing, plugs, logs, hole problems, KB to GL, KB to CF, description of drill string, etc.)

Drilled ahead. Surveyed as required. One-half turn of torque on bottom with 200 reading on Chimo torque gauge. Pickup = 4 daN; Slackoff = 2 daN.

Held BOP drill

RSPP: 2900 kPa at 71 SPM

Personnel on lease:

- 4 - Sperry Sun
2 - Bissett
13 - Ralex
2 - MI

Supervisor K. Creelman/R. Genest

**DAILY DRILLING REPORT - CONFIDENTIAL**

Weather Cloudy Temperature 2 °C Road Good Date 00 10 05
Well INTRAGAZ ST. FLAVIEN #14 HORIZONTAL Rig Ralex 1 Day No. 11
Depth (m) 703 Progress (m) 122 Hole Size (mm) 222 Status Drilling
Mud: Wt (kg/m³) 1040 Visc (s/L) 47 WL (cm³) 12 pH 8.5 PV (mPa.s) 10 YP (Pa) 4 Gels (Pa) 5/15.5
Methyl Blue - Solids (%) 2.5 Filter Cake (mm) 1 Salt (mg/L) 3200 Cal (mg/L) 200
3 RPM 6 RPM Soluble Sulfides (mg/L) Electrical Stability (v)
Desander: Underflow Wt (kg/m³) Rate (L/m) Overflow Wt (kg/m³) Rate (L/m)
Desilter: Underflow Wt (kg/m³) Rate (L/m) Overflow Wt (kg/m³) Rate (L/m)
Centrifuge: Underflow Wt (kg/m³) 1030 Rate (L/m) 400 Overflow Wt (kg/m³) 1850 Rate (L/m) -
Centrifuge: Underflow Wt (kg/m³) 1030 Rate (L/m) 400 Overflow Wt (kg/m³) 1870 Rate (L/m) -

Bits

Number	Size (mm)	Type	SN	Jets (mm)	WOB (daN)	RPM	Out (m)	In (m)	Metres	Hours	Condition
4	222	F15P	LW0542	3 x 9.5	6 - 8000	110		468	235	50.25	

Pumps / Hydraulics

No.	Liner (mm)	Length (mm)	SPM	PP (kPa)	Output (L/min)	AV (m/min)	Power (kW)
1	140	235	120	8000	1270	45	154

Drilling Mud Additives

3 sxs Caustic Soda

Surveys

Depth	Inclination	Azimuth
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Time Distribution

Operation	Hours
Drill Actual	21.00
Lubr. Rig	0.25
Dev. Survey	2.75

Geological Summary (Include formation tops, lithology and mud gas if applicable)

Total Hours	24.00
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Remarks (Include cores, spud or rig release, casing, plugs, logs, hole problems, KB to GL, KB to CF, description of drill string, etc.)

Drilled ahead. Surveyed as required.

Survey distances off bottom:

19.4 m - Single-shot directional assembly

19.2 m - MWD assembly

Personnel on lease:

4 - Sperry Sun
2 - Bissett
13 - Ralex
2 - MI

Supervisor K. Creelman/R. Genest

**DAILY DRILLING REPORT - CONFIDENTIAL**

Weather Raining Temperature 2 °C Road Good Date 00 10 06
Well INTRAGAZ ST. FLAVIEN #14 HORIZONTAL Rig Ralex 1 Day No. 12
Depth (m) 806 Progress (m) 103 Hole Size (mm) 222 Status Drilling
Mud: Wt (kg/m³) 1040 Visc (s/L) 49 WL (cm³) 12 pH 8 PV (mPa.s) 10 YP (Pa) 5 Gels (Pa) 6/19
Methyl Blue 42 Solids (%) 3.1 Filter Cake (mm) 2 Salt (mg/L) 3400 Cal (mg/L) 60
3 RPM 6 RPM Soluble Sulfides (mg/L) Electrical Stability (v)
Desander: Underflow Wt (kg/m³) Rate (L/m) Overflow Wt (kg/m³) Rate (L/m)
Desilter: Underflow Wt (kg/m³) Rate (L/m) Overflow Wt (kg/m³) Rate (L/m)
Centrifuge: Underflow Wt (kg/m³) 1855/1855 Rate (L/m) 900 Overflow Wt (kg/m³) 1030/1030 Rate (L/m) -

Bits

Number	Size (mm)	Type	SN	Jets (mm)	WOB (daN)	RPM	Out (m)	In (m)	Metres	Hours	Condition
4	222	F15H	LW0542	3 x 9.5	6 - 8000	110	In	468	338	72	

Pumps / Hydraulics

No.	Liner (mm)	Length (mm)	SPM	PP (kPa)	Output (L/min)	AV (m/min)	Power (kW)
1	140	235	120	8000	1270	45	159

Drilling Mud Additives

1 sx Caustic
23 sxs Gel

Surveys

Depth	Inclination	Azimuth
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Time Distribution

Operation	Hours
Drill Actual	21.75
Lubr. Rig	0.25
Dev. Survey	2.00

Geological Summary (Include formation tops, lithology and mud gas if applicable)

Total Hours 24.00

Remarks (Include cores, spud or rig release, casing, plugs, logs, hole problems, KB to GL, KB to CF, description of drill string, etc.)

Drilled 222 mm hole, surveying as required.

Hook Load: 48 000 daN

Pickup: 5000 daN above string weight

Slackoff: 4000 daN below string weight

Personnel on lease:

4 - Sperry Sun
2 - Bissett
11 - Ralex
2 - MI

Supervisor K. Creelman/R. Genest



DAILY DRILLING REPORT - CONFIDENTIAL

Weather Overcast Temperature 3 °C Road Good Date 00 10 07
Well INTRAGAZ ST. FLAVIEN #14 HORIZONTAL Rig Ralex 1 Day No. 13
Depth (m) 877 Progress (m) 71 Hole Size (mm) 222 Status Tripping
Mud: Wt (kg/m³) 1050 Visc (s/L) 48 WL (cm³) 10.5 pH 8.5 PV (mPa.s) 10 YP (Pa) 5 Gels (Pa) 6/16
Methyl Blue 49 Solids (%) 3.1 Filter Cake (mm) 1 Salt (mg/L) 3500 Cal (mg/L) 80
3 RPM 6 RPM 6 Soluble Sulfides (mg/L) Electrical Stability (v)
Desander: Underflow Wt (kg/m³) Rate (L/m) Overflow Wt (kg/m³) Rate (L/m)
Desilter: Underflow Wt (kg/m³) Rate (L/m) Overflow Wt (kg/m³) Rate (L/m)
Centrifuge: Underflow Wt (kg/m³) 1860/1860 Rate (L/m) 1000 Overflow Wt (kg/m³) 1032/1035 Rate (L/m) -

Bits

Number	Size (mm)	Type	SN	Jets (mm)	WOB (daN)	RPM	Out (m)	In (m)	Metres	Hours	Condition
4	222	F15H	LW0542	3 x 9.5	4-6000	110	877	468	409	85.25	5-4-I

Pumps / Hydraulics

No.	Liner (mm)	Length (mm)	SPM	PP (kPa)	Output (L/min)	AV (m/min)	Power (kW)
1	140	235	120				

Drilling Mud Additives

1 sx Caustic Soda
1 sx Lignite
26 sxs Gel
1 sx Polypac

Surveys

Depth	Inclination	Azimuth
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Time Distribution

Operation	Hours
Drill Actual	13.25
Cond. Hole	0.25
Trips	4.25
Lubr. Rig	0.25
Dev. Survey	2.00
Handle Tools	1.75
Swivel Pk	2.00
Flow Check	0.25

Geological Summary (Include formation tops, lithology and mud gas if applicable)

Total Hours 24.00

Remarks (Include cores, spud or rig release, casing, plugs, logs, hole problems, KB to GL, KB to CF, description of drill string, etc.)

Drilled ahead. Surveyed as required. Tripped out for PDC bit and MWD tools.

Personnel on lease:

4 - Sperry Sun
2 - Bissett
11 - Ralex
2 - MI

Supervisor K. Creelman/R. Genest

**DAILY DRILLING REPORT - CONFIDENTIAL**

Weather Overcast Temperature 3 °C Road Good Date 00 10 08
Well INTRAGAZ ST. FLAVIEN #14 HORIZONTAL Rig Ralex 1 Day No. 14
Depth (m) 1014 Progress (m) 137 Hole Size (mm) 222 Status Drilling
Mud: Wt (kg/m³) 1050 Visc (s/L) 48 WL (cm³) 12 pH 9 PV (mPa.s) 10 YP (Pa) 6 Gels (Pa) 7/17
Methyl Blue 49 Solids (%) 3.1 Filter Cake (mm) 1 Salt (mg/L) 3400 Cal (mg/L) 80
3 RPM 6 RPM Soluble Sulfides (mg/L) Electrical Stability (v)
Desander: Underflow Wt (kg/m³) Rate (L/m) Overflow Wt (kg/m³) Rate (L/m)
Desilter: Underflow Wt (kg/m³) Rate (L/m) Overflow Wt (kg/m³) Rate (L/m)
Centrifuge: Underflow Wt (kg/m³) 1840/1840 Rate (L/m) 900 Overflow Wt (kg/m³) 1040/1040 Rate (L/m) -

Bits

Number	Size (mm)	Type	SN	Jets (mm)	WOB (daN)	RPM	Out (m)	In (m)	Metres	Hours	Condition
5RR	222		JS0456		8-12000	100	In	877	137	18	

Pumps / Hydraulics

No.	Liner (mm)	Length (mm)	SPM	PP (kPa)	Output (L/min)	AV (m/min)	Power (kW)
1	140	235	120	7800	1270	45	159

Drilling Mud Additives

1 sx Caustic
19 sxs Gel

Surveys

Depth Inclination Azimuth

Time Distribution

Operation	Hours
Drill Actual	18.00
Trips	2.75
Dev. Survey	3.25

Total Hours 24.00

Remarks (Include cores, spud or rig release, casing, plugs, logs, hole problems, KB to GL, KB to CF, description of drill string, etc.)

Tripped in with PDC and MWD tools. Checked MWD on trip in. Drilled 222 mm hole with surveys.

Hook Load: 50 000 daN

Drag Up: 8000 daN

Drag Down: 5000 daN

RSPP at 70 SPM = 3000 kPa at 976 m

Torque on Gauge: 150 to 250

Personnel on lease:

4 - Sperry Sun
2 - Bissett
11 - Ralex
2 - MI

Supervisor K. Creelman/R. Genest

**DAILY DRILLING REPORT - CONFIDENTIAL**

Weather Overcast Temperature -4 °C Road Good Date 00 10 09
Well INTRAGAZ ST. FLAVIEN #14 HORIZONTAL Rig Ralex 1 Day No. 15
Depth (m) 1149 Progress (m) 135 Hole Size (mm) 222 Status Drilling
Mud: Wt (kg/m³) 1050 Visc (s/L) 47 WL (cm³) 11 pH 8.5 PV (mPa.s) 10 YP (Pa) 6.5 Gels (Pa) 6/15
Methyl Blue 47 Solids (%) 3.1 Filter Cake (mm) 2 Salt (mg/L) 3000 Cal (mg/L) 60
3 RPM 6 RPM Soluble Sulfides (mg/L) Electrical Stability (v)
Desander: Underflow Wt (kg/m³) Rate (L/m) Overflow Wt (kg/m³) Rate (L/m)
Desilter: Underflow Wt (kg/m³) Rate (L/m) Overflow Wt (kg/m³) Rate (L/m)
Centrifuge: Underflow Wt (kg/m³) 1910/1910 Rate (L/m) 1100 Overflow Wt (kg/m³) 1050/1050 Rate (L/m) -

Bits

Number	Size (mm)	Type	SN	Jets (mm)	WOB (daN)	RPM	Out (m)	In (m)	Metres	Hours	Condition
5RR	222	MA-74	JS0456	3 x 11.9	10-12000	100 - 110	In	877	272	38.50	

Pumps / Hydraulics

No.	Liner (mm)	Length (mm)	SPM	PP (kPa)	Output (L/min)	AV (m/min)	Power (kW)
1	140	235	120	8100	1270	45	159

Drilling Mud Additives

17 sxs Gel
1 sx Polypac

Surveys

Depth	Inclination	Azimuth
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Time Distribution

Operation	Hours
Drill Actual	20.50
Repair Rig	0.50
Dev. Survey	2.50
Flow Check	0.50

Geological Summary (Include formation tops, lithology and mud gas if applicable)

Total Hours 24.00

Remarks (Include cores, spud or rig release, casing, plugs, logs, hole problems, KB to GL, KB to CF, description of drill string, etc.)

Drilled 222 mm hole with surveys. Flow check at 1137 m and 1148 m

Hook Load: 51 000 daN
Drag Up: 10 - 12 000 daN
Drag Down: 4 - 5 000 daN

Personnel on lease:

4 - Sperry Sun
2 - Bissett
11 - Ralex
2 - MI

Supervisor K. Creelman/R. Genest

**DAILY DRILLING REPORT - CONFIDENTIAL**

Weather Snowing Temperature -1 °C Road Good Date 00 10 10
Well INTRAGAZ ST. FLAVIEN #14 HORIZONTAL Rig Ralex 1 Day No. 16
Depth (m) 1257 Progress (m) 108 Hole Size (mm) 222 Status Tripping
Mud: Wt (kg/m³) 1050 Visc (s/L) 50 WL (cm³) 11.5 pH 9 PV (mPa.s) 13 YP (Pa) 5.5 Gels (Pa) 4/14
Methyl Blue 49 Solids (%) 3.1 Filter Cake (mm) 1 Salt (mg/L) 3400 Cal (mg/L) 80
3 RPM 6 RPM Soluble Sulfides (mg/L) Electrical Stability (v)
Desander: Underflow Wt (kg/m³) Rate (L/m) Overflow Wt (kg/m³) Rate (L/m)
Desilter: Underflow Wt (kg/m³) Rate (L/m) Overflow Wt (kg/m³) Rate (L/m)
Centrifuge: Underflow Wt (kg/m³) 1920/1920 Rate (L/m) 1100 Overflow Wt (kg/m³) 1040/1040 Rate (L/m) -

Bits

Number	Size (mm)	Type	SN	Jets (mm)	WOB (daN)	RPM	Out (m)	In (m)	Metres	Hours	Condition
5RR	222	MA-74	JS0456	3 x11.9	10-12000	80 - 100	1257	877	380	58.50	

Pumps / Hydraulics

No.	Liner (mm)	Length (mm)	SPM	PP (kPa)	Output (L/min)	AV (m/min)	Power (kW)
1	140	235	120	8300	1270	45	175

Drilling Mud Additives

2 sxs Caustic Soda
10 sxs Gel
2 sxs Polypac

Surveys

Depth	Inclination	Azimuth
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Time Distribution

Operation	Hours
Drill Actual	20.00
Cond. Hole	1.00
Trips	0.75
Lubr. Rig	0.50
Dev. Survey	1.50
Flow Check	0.25

Geological Summary (Include formation tops, lithology and mud gas if applicable)

Total Hours 24.00

Remarks (Include cores, spud or rig release, casing, plugs, logs, hole problems, KB to GL, KB to CF, description of drill string, etc.)

Drilled ahead and surveyed as required. Circulated bottoms up. Tripped out for BHA change at 6:15 a.m.

Personnel on lease:

4 - Sperry Sun
2 - Bissett
11 - Ralex
2 - MI
1 - Datalog

Supervisor K. Creelman/R. Genest

**DAILY DRILLING REPORT - CONFIDENTIAL**

Weather Cloudy Temperature 3 °C Road Good Date 00 10 11
Well INTRAGAZ ST. FLAVIEN #14 HORIZONTAL Rig Ralex 1 Day No. 17
Depth (m) 1288 Progress (m) 31 Hole Size (mm) 222 Status Drilling
Mud: Wt (kg/m³) 1050 Visc (s/L) 47 WL (cm³) 9.5 pH 8.5 PV (mPa.s) 13 YP (Pa) 4 Gels (Pa) 4/10
Methyl Blue 43 Solids (%) 3.1 Filter Cake (mm) 2 Salt (mg/L) 3300 Cal (mg/L) 80
3 RPM 6 RPM Soluble Sulfides (mg/L) Electrical Stability (v)
Desander: Underflow Wt (kg/m³) Rate (L/m) Overflow Wt (kg/m³) Rate (L/m)
Desilter: Underflow Wt (kg/m³) Rate (L/m) Overflow Wt (kg/m³) Rate (L/m)
Centrifuge: Underflow Wt (kg/m³) 1430 Rate (L/m) 1100 Overflow Wt (kg/m³) 1100 Rate (L/m) -

Bits

Number	Size (mm)	Type	SN	Jets (mm)	WOB (daN)	RPM	Out (m)	In (m)	Metres	Hours	Condition
5RR	222	MA-74	JS0456	3 x11.9	6 - 12000	100	1257	877	380	58.50	

Pumps / Hydraulics

No.	Liner (mm)	Length (mm)	SPM	PP (kPa)	Output (L/min)	AV (m/min)	Power (kW)
1	140	235	120	10800	1270	45	249

Drilling Mud Additives

1 sx Caustic
7 sxs Gel
2 sxs Polypac
1 sx Lignite

Surveys

Depth	Inclination	Azimuth
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Time Distribution

Operation	Hours
Drill Actual	5.50
Trips	16.00
Lubr. Rig	0.25
Cut Off DL	0.75
Dev. Survey	0.75
Clean to Btm	0.25
Check MWD	0.50

Geological Summary (Include formation tops, lithology and mud gas if applicable)

Total Hours 24.00

Remarks (Include cores, spud or rig release, casing, plugs, logs, hole problems, KB to GL, KB to CF, description of drill string, etc.)

Tripped for BHA change to run directional drilling assembly. Laid down drill collars and stabilization. Picked up hevi-wate DP. Tripped in to check MWD. Drilled with motor and MWD. Surveyed every single.

Personnel on lease:

4 - Sperry Sun
2 - Bissett
11 - Ralex
2 - MI
1 - Datalog
1 - Intragaz

Supervisor K. Creelman/R. Genest

**DAILY DRILLING REPORT - CONFIDENTIAL**

Weather Overcast Temperature 2 °C Road Good Date 00 10 12
Well INTRAGAZ ST. FLAVIEN #14 HORIZONTAL Rig Ralex 1 Day No. 18
Depth (m) 1400 Progress (m) 112 Hole Size (mm) 222 Status Drilling
Mud: Wt (kg/m³) 1070 Visc (s/L) 55 WL (cm³) 9.5 pH 8.5 PV (mPa.s) 15 YP (Pa) 8.5 Gels (Pa) 4/15
Methyl Blue 49 Solids (%) 3.7 Filter Cake (mm) 2 Salt (mg/L) 3400 Cal (mg/L) 80
3 RPM 6 RPM Soluble Sulfides (mg/L) Electrical Stability (v)
Desander: Underflow Wt (kg/m³) Rate (L/m) Overflow Wt (kg/m³) Rate (L/m)
Desilter: Underflow Wt (kg/m³) Rate (L/m) Overflow Wt (kg/m³) Rate (L/m)
Centrifuge: Underflow Wt (kg/m³) 1960/1960 Rate (L/m) - Overflow Wt (kg/m³) 1060/1060 Rate (L/m) 1000

Bits

Number	Size (mm)	Type	SN	Jets (mm)	WOB (daN)	RPM	Out (m)	In (m)	Metres	Hours	Condition
6RR	222	F2H	LW4513	3 x11.9	14-16000	80 - 30	In	1257	143	26.75	

Pumps / Hydraulics

No.	Liner (mm)	Length (mm)	SPM	PP (kPa)	Output (L/min)	AV (m/min)	Power (kW)
1	140	235	120	10700	1270	45	249

Drilling Mud Additives

1 sx Caustic
15 sxs Gel
1 sx Polypac

Surveys

Depth	Inclination	Azimuth
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Time Distribution

Operation	Hours
Drill Actual	21.25
Lubr. Rig	0.50
Dev. Survey	2.25

Geological Summary (Include formation tops, lithology and mud gas if applicable)

Total Hours 24.00

Remarks (Include cores, spud or rig release, casing, plugs, logs, hole problems, KB to GL, KB to CF, description of drill string, etc.)

Drilled ahead with MWD and motor. Surveyed every single.

Hook Load: 52 000 daN
Drag Up: 16 000 daN
Drag Down: 5 000 daN
RSPP: 4100 kPa at 70 SPM at 1367 m

Personnel on lease:

4 - Sperry Sun
2 - Bissett
11 - Ralex
2 - MI
1 - Datalog
1 - Intragaz

Supervisor K. Creelman/R. Genest

**DAILY DRILLING REPORT - CONFIDENTIAL**

Weather Light Cloud Temperature 4 °C Road Good Date 00 10 13
Well INTRAGAZ ST. FLAVIEN #14 HORIZONTAL Rig Ralex 1 Day No. 19
Depth (m) 1523 Progress (m) 123 Hole Size (mm) 222 Status Drilling with surveys
Mud: Wt (kg/m³) 1070 Visc (s/L) 61 WL (cm³) 8 pH 9.0 PV (mPa.s) 16 YP (Pa) 9.5 Gels (Pa) 4/11
Methyl Blue 57 Solids (%) 4.4 Filter Cake (mm) 2 Salt (mg/L) 2700 Cal (mg/L) 80
3 RPM 6 RPM Soluble Sulfides (mg/L) Electrical Stability (v)
Desander: Underflow Wt (kg/m³) Rate (L/m) Overflow Wt (kg/m³) Rate (L/m)
Desilter: Underflow Wt (kg/m³) Rate (L/m) Overflow Wt (kg/m³) Rate (L/m)
Centrifuge: Underflow Wt (kg/m³) 1860/1860 Rate (L/m) - Overflow Wt (kg/m³) 1060/1060 Rate (L/m) 900

Bits

Number	Size (mm)	Type	SN	Jets (mm)	WOB (daN)	RPM	Out (m)	In (m)	Metres	Hours	Condition
6RR	222	F2H	LW4513	3 x 11.9	16-20000	80 + 30	In	1257	266	48.25	

Pumps / Hydraulics

No.	Liner (mm)	Length (mm)	SPM	PP (kPa)	Output (L/min)	AV (m/min)	Power (kW)
1	140	235	120	13000	1270	45	275

Drilling Mud Additives

2 sxs Caustic
13 sxs Gel
1 sx Polypac
4 sxs Poly Plus
1 sx Xanvis

Surveys

Depth	Inclination	Azimuth
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Time Distribution

Operation	Hours
Drill Actual	21.50
Lubr. Rig	0.50
Dev. Survey	2.00

Geological Summary (Include formation tops, lithology and mud gas if applicable)

Total Hours 24.00

Remarks (Include cores, spud or rig release, casing, plugs, logs, hole problems, KB to GL, KB to CF, description of drill string, etc.)

Drilled ahead with mud motor and MWD. Surveyed every single. Continued building and turning with 1.5° bent housing with pad.

Hook Load: 53 000 daN
Drag Up: 13 000 daN
Drag Down: 6 000 daN
RSPP: 4800 kPa at 70 SPM at 1486 m

Personnel on lease:

4 - Sperry Sun
2 - Bissett
11 - Ralex
2 - MI
1 - Datalog
1 - Intragaz

Supervisor K. Creelman/R. Genest

DAILY DRILLING REPORT - CONFIDENTIAL

Weather Rain Temperature 3 °C Road Good Date 00 10 14
 Well INTRAGAZ ST. FLAVIEN #14 HORIZONTAL Rig Ralex 1 Day No. 20
 Depth (m) 1566 Progress (m) 63 Hole Size (mm) 222 Status Drilling
 Mud: Wt (kg/m³) 1080 Visc (s/L) 56 WL (cm³) 9 pH 8.5 PV (mPa.s) 17 YP (Pa) 10.5 Gels (Pa) 5/13
 Methyl Blue 57 Solids (%) 5 Filter Cake (mm) 2 Salt (mg/L) 1800 Cal (mg/L) 40
 3 RPM 6 RPM Soluble Sulfides (mg/L) Electrical Stability (v)
 Desander: Underflow Wt (kg/m³) Rate (L/m) Overflow Wt (kg/m³) Rate (L/m)
 Desilter: Underflow Wt (kg/m³) Rate (L/m) Overflow Wt (kg/m³) Rate (L/m)
 Centrifuge: Underflow Wt (kg/m³) 1950/1950 Rate (L/m) - Overflow Wt (kg/m³) 1070/1070 Rate (L/m) 900

Bits

Number	Size (mm)	Type	SN	Jets (mm)	WOB (daN)	RPM	Out (m)	In (m)	Metres	Hours	Condition
6RR	222	F2H	LW4513	3 x 11.9	16-20000	80 + 30	1560	1257	303	56.25	7-5-l
7	222	F3	LR9535	3 x 11.9	16-20000	80 + 30	In	1560	6	1.50	

Pumps / Hydraulics

No.	Liner (mm)	Length (mm)	SPM	PP (kPa)	Output (L/min)	AV (m/min)	Power (kW)
1	140	235	120	14000	1270	45	296

Drilling Mud Additives

1 sx Caustic
 27 sxs Gel
 1 sx Xanvis

Surveys

Depth Inclination Azimuth

Time Distribution

Operation	Hours
Drill Actual	9.75
Cond. Hole	3.25
Trips	8.00
Lubr. Rig	0.50
Dev. Survey	0.75
Handle Tools	1.75

Geological Summary (Include formation tops, lithology and mud gas if applicable)

Total Hours 24.00

Remarks (Include cores, spud or rig release, casing, plugs, logs, hole problems, KB to GL, KB to CF, description of drill string, etc.)

Drilled ahead with surveys to 1560 m. Tripped for bit and motor. Drilled ahead with surveys to report time.

Tally: 1567.90

Strap: 1568.58

Difference: 0.68 - no correction

Hook Load: 53 000 daN

Drag Up: 14 000 daN

Drag Down: 6 000 daN

RSPP: 5300 kPa at 70 SPM at 1550 m

Personnel on lease:

4 - Sperry Sun 2 - MI
 2 - Bissett 1 - Datalog
 11 - Ralex 1 - Intragaz

Supervisor K. Creelman/R. Genest

DAILY DRILLING REPORT - CONFIDENTIAL

Weather	Overcast	Temperature		5	°C	Road	Good	Date	00 10 15				
Well	INTRAGAZ ST. FLAVIEN #14 HORIZONTAL					Rig	Ralex 1	Day No.	21				
Depth (m)	1659	Progress (m)	93	Hole Size (mm)	222	Status	Drilling with Surveys						
Mud: Wt (kg/m³)	1080	Visc (s/L)	61	WL (cm³)	8.5	pH	9	PV (mPa.s)	16	YP (Pa)	11.5	Gels (Pa)	5/12
Methyl Blue	57	Solids (%)	5	Filter Cake (mm)	2	Salt (mg/L)	1700	Cal (mg/L)	40				
3 RPM	6 RPM		Soluble Sulfides (mg/L)				Electrical Stability (v)						
Desander:	Underflow Wt (kg/m³)		Rate (L/m)		Overflow Wt (kg/m³)		Rate (L/m)						
Desilter:	Underflow Wt (kg/m³)		Rate (L/m)		Overflow Wt (kg/m³)		Rate (L/m)						
Centrifuge:	Underflow Wt (kg/m³) 1940/1940		Rate (L/m) -		Overflow Wt (kg/m³) 1070/1070		Rate (L/m)		900				

Bits

<u>Number</u>	<u>Size (mm)</u>	<u>Type</u>	<u>SN</u>	<u>Jets (mm)</u>	<u>WOB (daN)</u>	<u>RPM</u>	<u>Out (m)</u>	<u>In (m)</u>	<u>Metres</u>	<u>Hours</u>	<u>Condition</u>
7	222	F3	LR9535	3 x 11.9	16-20000	80 + 30	In	1560	99		

Pumps / Hydraulics

<u>No.</u>	<u>Liner (mm)</u>	<u>Length (mm)</u>	<u>SPM</u>	<u>PP (kPa)</u>	<u>Output (L/min)</u>	<u>AV (m/min)</u>	<u>Power (kW)</u>
1	140	235	120	15000	1270	45	317

Drilling Mud Additives

1 sx	Caustic
20 sxs	Gel
1 sx	Xanvis
1 sx	Poly Plus

Surveys

Depth	Inclination	Azimuth
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Time Distribution

<u>Operation</u>	<u>Hours</u>
Drill Actual	21.75
Lubr. Rig	0.50
Dev. Survey	1.75

Geological Summary (Include formation tops, lithology and mud gas if applicable)

Total Hours	24.00
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Date	Time	Location	Remarks (Include cores, spud or rig release, casing, plugs, logs, hole problems, KB to GL, KB to CF, description of drill string, etc.)

Directionally drilled 222 mm hole with surveys.

Hook Load: 55 000 daN

Drag Up: 14 000 daN

Drag Down: 10 000 daN

RSPP: 6700 kPa at 70 SPM at 1636 m

Personnel on lease:

4 - Sperry Sun
2 - Bissett
11 - Ralex

Supervisor K. Creelman/R. Genest

DAILY DRILLING REPORT - CONFIDENTIAL

Weather Overcast Temperature -4 °C Road Good Date 00 10 16
 Well INTRAGAZ ST. FLAVIEN #14 HORIZONTAL Rig Ralex 1 Day No. 22
 Depth (m) 1677 Progress (m) 18 Hole Size (mm) 222 Status Laying Down Tools
 Mud: Wt (kg/m³) 1095 Visc (s/L) 78 WL (cm³) 8 pH 9 PV (mPa.s) 21 YP (Pa) 14 Gels (Pa) 8/17
 Methyl Blue 71 Solids (%) 5.9 Filter Cake (mm) 1 Salt (mg/L) 1500 Cal (mg/L) 60
 3 RPM 6 RPM Soluble Sulfides (mg/L) Electrical Stability (v)
 Desander: Underflow Wt (kg/m³) Rate (L/m) Overflow Wt (kg/m³) Rate (L/m)
 Desilter: Underflow Wt (kg/m³) Rate (L/m) Overflow Wt (kg/m³) Rate (L/m)
 Centrifuge: Underflow Wt (kg/m³) 1935/1935 Rate (L/m) - Overflow Wt (kg/m³) 1080/1080 Rate (L/m)

Bits

Number	Size (mm)	Type	SN	Jets (mm)	WOB (daN)	RPM	Out (m)	In (m)	Metres	Hours	Condition
7	222	F3	LR9535	3 x 11.9	16-20000	80 + 30	1677	1560	117	28.00	

Pumps / Hydraulics

No.	Liner (mm)	Length (mm)	SPM	PP (kPa)	Output (L/min)	AV (m/min)	Power (kW)
1	140	235	120	15000	1270	45	317

Drilling Mud Additives

2 sxs Caustic Soda
 47 sxs Gel
 1 sx Xanvis
 1 sx Poly Plus
 85 bags Barite

Surveys

Depth Inclination Azimuth

Time Distribution

Operation	Hours
Drill Actual	4.75
Cond. Hole	2.00
Trips	6.50
Dev. Survey	0.50
Handle Tools	1.00
Flow Check	0.50
LDDP	8.75

Geological Summary (Include formation tops, lithology and mud gas if applicable)

Total Hours 24.00

Remarks (Include cores, spud or rig release, casing, plugs, logs, hole problems, KB to GL, KB to CF, description of drill string, etc.)

Drilled ahead to TD 1677 m. Circulated sample and conditioned mud. Wiper trip to casing shoe. Circulated and conditioned mud. Laid down drillpipe, tripped HWDP and 171.5 mm Sperry-Sun directional tools. Predicted survey near end of intermediate hole (1676 m MD, 78.6° 286 az 1467.8 TVD).

Hook Load: 55 000 daN

Drag Up: 14 000 daN

Drag Down: 10 000 daN

RSPP: 6700 kPa at 70 SPM at 1636 m

Personnel on lease:

4 - Sperry Sun 1 - Datalog
 2 - Bissett 8 - Northland
 15 - Ralex

Supervisor K. Creelman/R. Genest

**DAILY DRILLING REPORT - CONFIDENTIAL**

Weather Clear Temperature 2 °C Road Good Date 00 10 17
Well INTRAGAZ ST. FLAVIEN #14 HORIZONTAL Rig Ralex 1 Day No. 23
Depth (m) 1677 Progress (m) 0 Hole Size (mm) 222 Status WOC
Mud: Wt (kg/m³) 1040 Visc (s/L) 41 WL (cm³) - pH 8 PV (mPa.s) 15 YP (Pa) 2.5 Gels (Pa) 1/3
Methyl Blue - Solids (%) 2.5 Filter Cake (mm) 1 Salt (mg/L) 1100 Cal (mg/L) 40
3 RPM 6 RPM Soluble Sulfides (mg/L) Electrical Stability (v)
Desander: Underflow Wt (kg/m³) Rate (L/m) Overflow Wt (kg/m³) Rate (L/m)
Desilter: Underflow Wt (kg/m³) Rate (L/m) Overflow Wt (kg/m³) Rate (L/m)
Centrifuge: Underflow Wt (kg/m³) Rate (L/m) Overflow Wt (kg/m³) Rate (L/m)

Bits

Number	Size (mm)	Type	SN	Jets (mm)	WOB (daN)	RPM	Out (m)	In (m)	Metres	Hours	Condition
7	222	F3	LR9535	3 x 11.9	16-20000	80 + 30	1677	1560	117	28.00	8-4-l

Pumps / Hydraulics

No.	Liner (mm)	Length (mm)	SPM	PP (kPa)	Output (L/min)	AV (m/min)	Power (kW)
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Drilling Mud Additives

154 sxs Barite

Surveys

Depth	Inclination	Azimuth
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Time Distribution

Operation	Hours
Run Csg/Cmt	15.00
Wait on Cmt	8.50
Handle Tools	0.50
Total Hours	24.00

Geological Summary (Include formation tops, lithology and mud gas if applicable)**Remarks (Include cores, spud or rig release, casing, plugs, logs, hole problems, KB to GL, KB to CF, description of drill string, etc.)**

Ran 124 joints 177.8 mm OD 38.69 kg/m L80 LT&C 8RD RGE 3 new casing. Overall length = 1680.69 m including float shoe and float collar. Pumped 5 m³ water, 3 m³ scavenger at 1300 kg/m³. Cemented with 25.84 tonnes 0:1:4 Class G with 0.5% CD32 + 0.2% FL-6. Followed with 11.8 tonnes 0:1:0 Class "G" with 0.5% CD32 + 3% FL-63 + 1.0% A-11 + 0.2% R-6 displaced with 32.98 m³ water. Reciprocated casing first half of displacement. Plug pumped with 21 000 kPa (3 000 kPa over). Casing landed at 1677 m KB. Plug down October 16, 2000 at 22:24 hours.

2 m3 good cement returns

Personnel on lease:

4 - Sperry Sun	1 - Datalog
2 - Bissett	7 - Northland
13 - Ralex	2 - MI

Supervisor K. Creelman/R. Genest

DAILY DRILLING REPORT - CONFIDENTIAL

Weather	Overcast	Temperature	4	°C	Road	Good	Date	00 10 18
Well	INTRAGAZ ST. FLAVIEN #14 HORIZONTAL				Rig	Ralex 1	Day No.	24
Depth (m)	1677	Progress (m)	0	Hole Size (mm)	Status		Nipple Up BOPs	
Mud: Wt (kg/m ³)		Visc (s/L)		WL (cm ³)	pH	PV (mPa.s)	YP (Pa)	Gels (Pa)
Methyl Blue		Solids (%)		Filter Cake (mm)		Salt (mg/L)		Cal (mg/L)
3 RPM		6 RPM		Soluble Sulfides (mg/L)		Electrical Stability (v)		
Desander:	Underflow Wt (kg/m ³)		Rate (L/m)		Overflow Wt (kg/m ³)		Rate (L/m)	
Desilter:	Underflow Wt (kg/m ³)		Rate (L/m)		Overflow Wt (kg/m ³)		Rate (L/m)	
Centrifuge:	Underflow Wt (kg/m ³)		Rate (L/m)		Overflow Wt (kg/m ³)		Rate (L/m)	

Bits

<u>Number</u>	<u>Size (mm)</u>	<u>Type</u>	<u>SN</u>	<u>Jets (mm)</u>	<u>WOB (daN)</u>	<u>RPM</u>	<u>Out (m)</u>	<u>In (m)</u>	<u>Metres</u>	<u>Hours</u>	<u>Condition</u>
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Pumps / Hydraulics

No.	Liner (mm)	Length (mm)	SPM	PP (kPa)	Output (L/min)	AV (m/min)	Power (kW)
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Drilling Mud Additives

[illegible]

Surveys

<u>Depth</u>	<u>Inclination</u>	<u>Azimuth</u>
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Time Distribution

<u>Operation</u>	<u>Hours</u>
Nipple Up	24.00
Total Hours	24.00

Geological Summary (Include formation tops, lithology and mud gas if applicable)

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[illegible]

Nipple down 346.1 mm BOPs. Installed tubing spool and tested to 34 500 kPa. Nipped up 177.8 mm BOP stack and rig BOP. Removed gate valves from rig BOP and prepared to install same on rental stack.

Personnel on lease:

4 - Sperry Sun
2 - Bissett
11 - Ralex

1 - Datalog
7 - Northland
2 - MI

Supervisor K. Creelman/R. Genest

DAILY DRILLING REPORT - CONFIDENTIAL

Weather	Overcast With Fog	Temperature	4	°C	Road	Good	Date	00 10 19
Well	INTRAGAZ ST. FLAVIEN #14 HORIZONTAL				Rig	Ralex 1	Day No.	25
Depth (m)	1677	Progress (m)	0	Hole Size (mm)	Status RU Tongs, Preparing to PU DP			
Mud: Wt (kg/m ³)		Visc (s/L)		WL (cm ³)	pH	PV (mPa.s)	YP (Pa)	Gels (Pa)
Methyl Blue		Solids (%)		Filter Cake (mm)	Salt (mg/L)		Cal (mg/L)	
3 RPM		6 RPM		Soluble Sulfides (mg/L)		Electrical Stability (v)		
Desander:	Underflow Wt (kg/m ³)		Rate (L/m)		Overflow Wt (kg/m ³)		Rate (L/m)	
Desilter:	Underflow Wt (kg/m ³)		Rate (L/m)		Overflow Wt (kg/m ³)		Rate (L/m)	
Centrifuge:	Underflow Wt (kg/m ³)		Rate (L/m)		Overflow Wt (kg/m ³)		Rate (L/m)	

Bits

Number	Size (mm)	Type	SN	Jets (mm)	WOB (daN)	RPM	Out (m)	In (m)	Metres	Hours	Condition
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Pumps / Hydraulics

No.	Liner (mm)	Length (mm)	SPM	PP (kPa)	Output (L/min)	AV (m/min)	Power (kW)
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Drilling Mud Additives

Surveys

Time Distribution

[illegible]

<u>Depth</u>	<u>Inclination</u>	<u>Azimuth</u>
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<u>Operation</u>	<u>Hours</u>
Wireline Log	10.50
Nipple Up	11.00
Safety Meeting	0.25
Rig Up Tongs	2.25

Geological Summary (Include formation tops, lithology and mud gas if applicable)

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Total Hours	24.00
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Remarks (Include cores, spud or rig release, casing, plugs, logs, hole problems, KB to GL, KB to CF, description of drill string, etc.)

Nippling up BOPs and rig BOP and hook into Northland System. Rigged up and ran multiarm casing inspection log and cement bond log. Rigged up floor with new tongs. Prepared to pick up drillpipe and hevi-wate drillpipe.

Personnel on lease:

4 - Sperry Sun	1 - Datalog
2 - Bissett	8 - Northland
11 - Ralex	3 - Computalog

Supervisor K. Creelman/R. Genest

DAILY DRILLING REPORT - CONFIDENTIAL

Weather	Overcast	Temperature	2	°C	Road	Good	Date	00 10 20
Well	INTRAGAZ ST. FLAVIEN #14 HORIZONTAL				Rig	Ralex 1	Day No.	26
Depth (m)	1677	Progress (m)	0	Hole Size (mm)	Status		Pressure Testing	
Mud: Wt (kg/m ³)		Visc (s/L)		WL (cm ³)	pH	PV (mPa.s)	YP (Pa)	Gels (Pa)
Methyl Blue		Solids (%)		Filter Cake (mm)		Salt (mg/L)		Cal (mg/L)
3 RPM		6 RPM		Soluble Sulfides (mg/L)		Electrical Stability (v)		
Desander:	Underflow Wt (kg/m ³)		Rate (L/m)		Overflow Wt (kg/m ³)		Rate (L/m)	
Desilter:	Underflow Wt (kg/m ³)		Rate (L/m)		Overflow Wt (kg/m ³)		Rate (L/m)	
Centrifuge:	Underflow Wt (kg/m ³)		Rate (L/m)		Overflow Wt (kg/m ³)		Rate (L/m)	

Bits

Number	Size (mm)	Type	SN	Jets (mm)	WOB (daN)	RPM	Out (m)	In (m)	Metres	Hours	Condition
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Pumps / Hydraulics

No.	Liner (mm)	Length (mm)	SPM	PP (kPa)	Output (L/min)	AV (m/min)	Power (kW)
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Drilling Mud Additives



Surveys

[illegible]

Time Distribution

<u>Operation</u>	<u>Hours</u>
Cut Off DL	0.75
Test BOP	10.25
Handle Tools	3.50
Pick Up Pipe	9.50
Total Hours	24.00

Geological Summary (Include formation tops, lithology and mud gas if applicable)

[illegible]

Remarks (Include cores, spud or rig release, casing, plugs, logs, hole problems, KB to GL, KB to CF, description of drill string, etc.)

Picked up drillpipe and hevi-wate drillpipe. Slipped and cut drill line. Changed out Kelly. Pressure tested BOP and manifold to 21 000 kPa high and 1 400 kPa low. Ran casing inspection log from 1583.5 m (60° deviation point) to surface and bond log from 1605.0 m (63.5° deviation point) to surface. Cement bond very good.

Length of BHA: 46.68 m

Length of Compression DP: 345.7 m

Bottom of hevi-wate will start at 38° deviation point

Personnel on lease:

4 - Sperry Sun
2 - Bissett
11 - Ralex

1 - Datalog
8 - Northland
2 - MI

Supervisor K. Creelman/R. Genest

**DAILY DRILLING REPORT - CONFIDENTIAL**

Weather Overcast Temperature 2 °C Road Good Date 00 10 21
Well INTRAGAZ ST. FLAVIEN #14 HORIZONTAL Rig Ralex 1 Day No. 27
Depth (m) 1683 Progress (m) 6 Hole Size (mm) 156 Status Drilling
Mud: Wt (kg/m³) 1005 Visc (s/L) 33 WL (cm³) - pH 7.5 PV (mPa.s) 2 YP (Pa) 2.9 Gels (Pa) 1 1/2
Methyl Blue Solids (%) Filter Cake (mm) Salt (mg/L) Cal (mg/L)
3 RPM 6 RPM Soluble Sulfides (mg/L) Electrical Stability (v)
Desander: Underflow Wt (kg/m³) Rate (L/m) Overflow Wt (kg/m³) Rate (L/m)
Desilter: Underflow Wt (kg/m³) Rate (L/m) Overflow Wt (kg/m³) Rate (L/m)
Centrifuge: Underflow Wt (kg/m³) Rate (L/m) Overflow Wt (kg/m³) Rate (L/m)

Bits

Number	Size (mm)	Type	SN	Jets (mm)	WOB (daN)	RPM	Out (m)	In (m)	Metres	Hours	Condition
8	156	XR300	LY7203	7.9/8.7/9.5	7000	120 + 30	1677	6	2		

Pumps / Hydraulics

No.	Liner (mm)	Length (mm)	SPM	PP (kPa)	Output (L/min)	AV (m/min)	Power (kW)
1	140	235	75	8000	810	68	108

Drilling Mud Additives

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Surveys

Depth	Inclination	Azimuth

Time Distribution

Operation	Hours
Drilling	2.00
Cond. Hole	0.25
Trips	6.50
Lubr. Rig	0.25
Repair Rig	1.00
Test BOP	5.75
Handle Tools	2.50
Wear Bushing	0.50
Safety Meetings	1.00
Drill Out	4.25
Total Hours	24.00

Geological Summary (Include formation tops, lithology and mud gas if applicable)

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Remarks (Include cores, spud or rig release, casing, plugs, logs, hole problems, KB to GL, KB to CF, description of drill string, etc.)

Tripped out. Finished pressure testing. Set wear bushing, picked up new BHA. Tripped in. Tested MWD. Drilled out float collar, cement and float shoe. Drilled ahead to 1683 m.

Personnel on lease:

4 - Sperry Sun	1 - Datalog
2 - Bissett	8 - Northland
11 - Ralex	1 - MI

Supervisor K. Creelman/R. Genest

**DAILY DRILLING REPORT - CONFIDENTIAL**

Weather Overcast Temperature 1 °C Road Good Date 00 10 22
Well INTRAGAZ ST. FLAVIEN #14 HORIZONTAL Rig Ralex 1 Day No. 28
Depth (m) 1752 Progress (m) 69 Hole Size (mm) 156 Status Drilling
Mud: Wt (kg/m³) 1005 Visc (s/L) 34 WL (cm³) - pH 7.5 PV (mPa.s) 2 YP (Pa) 3 Gels (Pa) 1/1.5
Methyl Blue - Solids (%) 0.3 Filter Cake (mm) n/a Salt (mg/L) 200 Cal (mg/L) 60
3 RPM - 6 RPM - Soluble Sulfides (mg/L) - Electrical Stability (v) -
Desander: Underflow Wt (kg/m³) - Rate (L/m) - Overflow Wt (kg/m³) - Rate (L/m) -
Desilter: Underflow Wt (kg/m³) - Rate (L/m) - Overflow Wt (kg/m³) - Rate (L/m) -
Centrifuge: Underflow Wt (kg/m³) - Rate (L/m) - Overflow Wt (kg/m³) - Rate (L/m) -

Bits

Number	Size (mm)	Type	SN	Jets (mm)	WOB (daN)	RPM	Out (m)	In (m)	Metres	Hours	Condition
8	156	XR30	LY7203	7.9/8.7/9.5	6 - 8000	120 + 30		1677	75	20.50	

Pumps / Hydraulics

No.	Liner (mm)	Length (mm)	SPM	PP (kPa)	Output (L/min)	AV (m/min)	Power (kW)
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Drilling Mud Additives

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Surveys

Depth	Inclination	Azimuth

Time Distribution

Operation	Hours
Drilling	18.50
Cond. Hole	4.25
Lubr. Rig	0.25
Dev. Survey	1.00

Geological Summary (Include formation tops, lithology and mud gas if applicable)

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Total Hours	24.00
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Remarks (Include cores, spud or rig release, casing, plugs, logs, hole problems, KB to GL, KB to CF, description of drill string, etc.)

Drilled ahead through Northlands system surveying every single.

Personnel on lease:

4 - Sperry Sun	1 - Datalog
2 - Bissett	8 - Northland
10 - Ralex	1 - MI

Supervisor K. Creelman/M. Nicklorn

**DAILY DRILLING REPORT - CONFIDENTIAL**

Weather Clear Temperature -4 °C Road Good Date 00 10 23
Well INTRAGAZ ST. FLAVIEN #14 HORIZONTAL Rig Ralex 1 Day No. 29
Depth (m) 1827 Progress (m) 75 Hole Size (mm) 156 Status Drilling
Mud: Wt (kg/m³) 1005 Visc (s/L) 33 WL (cm³) - pH 7.5 PV (mPa.s) 2 YP (Pa) 2.5 Gels (Pa) 1/1
Methyl Blue - Solids (%) 0.6 Filter Cake (mm) - Salt (mg/L) 220 Cal (mg/L) 80
3 RPM - 6 RPM - Soluble Sulfides (mg/L) - Electrical Stability (v) -
Desander: Underflow Wt (kg/m³) - Rate (L/m) - Overflow Wt (kg/m³) - Rate (L/m) -
Desilter: Underflow Wt (kg/m³) - Rate (L/m) - Overflow Wt (kg/m³) - Rate (L/m) -
Centrifuge: Underflow Wt (kg/m³) - Rate (L/m) - Overflow Wt (kg/m³) - Rate (L/m) -

Bits

Number	Size (mm)	Type	SN	Jets (mm)	WOB (daN)	RPM	Out (m)	In (m)	Metres	Hours	Condition
8	156	XR30	LY7203	7.9/8.7/9.5	8 - 10000	120 + 30		1677	150		

Pumps / Hydraulics

No.	Liner (mm)	Length (mm)	SPM	PP (kPa)	Output (L/min)	AV (m/min)	Power (kW)
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Drilling Mud Additives

1 sx Xanvis

Surveys

Depth	Inclination	Azimuth
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Time Distribution

Operation	Hours
Drilling	15.75
Cond. Hole	2.50
Lubr. Rig	0.50
Dev. Survey	1.25
Change Kelly	4.00

Geological Summary (Include formation tops, lithology and mud gas if applicable)

Total Hours	24.00
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Remarks (Include cores, spud or rig release, casing, plugs, logs, hole problems, KB to GL, KB to CF, description of drill string, etc.)

Drilled ahead. Changed Kelly and Kelly busing to improve RBOP sealing capability. Checked RBOP. Drilled ahead underbalanced through Northland's system surveying every single. Gas to surface at 23:30 hours at 1797 m.

Personnel on lease:

4 - Sperry Sun	1 - Datalog
2 - Bissett	8 - Northland
11 - Ralex	1 - MI

Supervisor K. Creelman/M. Nicklom

**DAILY DRILLING REPORT - CONFIDENTIAL**

Weather Clear Temperature 1 °C Road Good Date 00 10 24
Well INTRAGAZ ST. FLAVIEN #14 HORIZONTAL Rig Ralex 1 Day No. 30
Depth (m) 1952 Progress (m) 125 Hole Size (mm) 156 Status Changed RBOP Element
Mud: Wt (kg/m³) 1010 Visc (s/L) 34 WL (cm³) - pH 7.5 PV (mPa.s) 2 YP (Pa) 3 Gels (Pa) 1/1
Methyl Blue - Solids (%) - Filter Cake (mm) - Salt (mg/L) 250 Cal (mg/L) 160
3 RPM - 6 RPM - Soluble Sulfides (mg/L) - Electrical Stability (v) -
Desander: Underflow Wt (kg/m³) - Rate (L/m) - Overflow Wt (kg/m³) - Rate (L/m) -
Desilter: Underflow Wt (kg/m³) - Rate (L/m) - Overflow Wt (kg/m³) - Rate (L/m) -
Centrifuge: Underflow Wt (kg/m³) - Rate (L/m) - Overflow Wt (kg/m³) - Rate (L/m) -

Bits

Number	Size (mm)	Type	SN	Jets (mm)	WOB (daN)	RPM	Out (m)	In (m)	Metres	Hours	Condition
8	156	XR30	LY7203	7.9/8.7/9.5	8 - 10	120 + 30	1952	1677	275	51.25	

Pumps / Hydraulics

No.	Liner (mm)	Length (mm)	SPM	PP (kPa)	Output (L/min)	AV (m/min)	Power (kW)
1	140	235	75	9000	800		

Drilling Mud Additives

2 sxs Xanvis

SurveysDepth Inclination Azimuth**Time Distribution**

Operation	Hours
Drill Actual	15.25
Cond. Hole	0.75
Trips	1.75
Lubr. Rig	0.25
Dev. Survey	1.50
Bleed Off Well	1.50
Repair RBOP	3.00

Geological Summary (Include formation tops, lithology and mud gas if applicable)Total Hours 24.00**Remarks (Include cores, spud or rig release, casing, plugs, logs, hole problems, KB to GL, KB to CF, description of drill string, etc.)**

Drilled ahead underbalanced surveying every single. Approximate flow 115 103m³/d with 5200 kPa choke pressure at surface. Circulated sample. Tripped to 1670 m. Drew down well pressure to 800 kPa while flowing through three bleed off lines. Tripped out to 1476 m. Changed out RBOP element. Element badly damaged during stripping operations with 101.2 mm drillpipe. Lost large pieces of element by shear caused by tool joint pins. Difficulty recovering lower half of element.

Supervisor K. Creelman/M. Nicklorn

**DAILY DRILLING REPORT - CONFIDENTIAL**

Weather Clear Temperature 0 °C Road Good Date 00 10 25
Well INTRAGAZ ST. FLAVIEN #14 HORIZONTAL Rig Ralex 1 Day No. 31
Depth (m) 1952 Progress (m) 0 Hole Size (mm) 156 Status Waiting on Snubbing Unit
Mud: Wt (kg/m³) 1010 Visc (s/L) 34 WL (cm³) - pH 7.5 PV (mPa.s) - YP (Pa) - Gels (Pa) -
Methyl Blue - Solids (%) - Filter Cake (mm) - Salt (mg/L) - Cal (mg/L) -
3 RPM - 6 RPM - Soluble Sulfides (mg/L) - Electrical Stability (v) -
Desander: Underflow Wt (kg/m³) - Rate (L/m) - Overflow Wt (kg/m³) - Rate (L/m) -
Desilter: Underflow Wt (kg/m³) - Rate (L/m) - Overflow Wt (kg/m³) - Rate (L/m) -
Centrifuge: Underflow Wt (kg/m³) - Rate (L/m) - Overflow Wt (kg/m³) - Rate (L/m) -

Bits

Number	Size (mm)	Type	SN	Jets (mm)	WOB (daN)	RPM	Out (m)	In (m)	Metres	Hours	Condition
8	156	XR30	LY7203	7.9/8.7/9.5	8 - 10000	120 + 30	1952	1677	275	51.25	

Pumps / Hydraulics

No.	Liner (mm)	Length (mm)	SPM	PP (kPa)	Output (L/min)	AV (m/min)	Power (kW)
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Drilling Mud Additives**Surveys**

Depth	Inclination	Azimuth
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Time Distribution

Operation	Hours
Trips	1.50
Flow Well	5.50
Shut In	17.00
Total Hours	24.00

Geological Summary (Include formation tops, lithology and mud gas if applicable)**Remarks (Include cores, spud or rig release, casing, plugs, logs, hole problems, KB to GL, KB to CF, description of drill string, etc.)**

Tripped three stands. Tripped in five stands. Damaged RBOP element. Flowed well until 09:00 h 395 10³m³/d at 1200 kPa. Shut in well until noon. Opened well, bled off to 13 500 kPa rate 190 10³m³/d. Shut in well at 17:00 h and observed buildup, pressure was 17 050 kPa at 07:00 h.

Supervisor K. Creelman/M. Nicklorn

DAILY DRILLING REPORT - CONFIDENTIAL

Weather	Overcast	Temperature	5	°C	Road	Good	Date	00 26 10
Well	INTRAGAZ ST FLAVIEN #14				Rig	RALEX 1	Day No.	32
Depth (m)	1952	Progress (m)	-	Hole Size (mm)	156	Status	Waiting On Snubbing Unit	
Mud: Wt (kg/m³)		Visc (s/L)		WL (cm³)		pH	PV (mPa.s)	YP (Pa)
								Gels (Pa)
Methyl Blue		Solids (%)	-	Filter Cake (mm)		Salt (mg/L)		Cal (mg/L)
3 RPM		6 RPM		Soluble Sulfides (mg/L)		Electrical Stability (v)		
Desander:	Underflow Wt (kg/m³)		Rate (L/m)		Overflow Wt (kg/m³)		Rate (L/m)	
Desilter:	Underflow Wt (kg/m³)		Rate (L/m)		Overflow Wt (kg/m³)		Rate (L/m)	
Centrifuge:	Underflow Wt (kg/m³)		Rate (L/m)		Overflow Wt (kg/m³)		Rate (L/m)	

Bits

Number	Size (mm)	Type	SN	Jets (mm)	WOB (daN)	RPM	Out (m)	In (m)	Metres	Hours	Condition
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Pumps / Hydraulics

No.	Liner (mm)	Length (mm)	SPM	PP (kPa)	Output (L/min)	AV (m/min)	Power (kW)
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Drilling Mud Additives

The first two papers by H. J. van den Hul and A. M. de Groot deal with the problem of determining the optimal sampling strategy for a given system. The third paper by R. L. Smith and J. W. Smith deals with the problem of determining the optimal sampling strategy for a given system. The fourth paper by J. W. Smith and R. L. Smith deals with the problem of determining the optimal sampling strategy for a given system. The fifth paper by J. W. Smith and R. L. Smith deals with the problem of determining the optimal sampling strategy for a given system. The sixth paper by J. W. Smith and R. L. Smith deals with the problem of determining the optimal sampling strategy for a given system. The seventh paper by J. W. Smith and R. L. Smith deals with the problem of determining the optimal sampling strategy for a given system. The eighth paper by J. W. Smith and R. L. Smith deals with the problem of determining the optimal sampling strategy for a given system. The ninth paper by J. W. Smith and R. L. Smith deals with the problem of determining the optimal sampling strategy for a given system. The tenth paper by J. W. Smith and R. L. Smith deals with the problem of determining the optimal sampling strategy for a given system.

Surveys

<u>Depth</u>	<u>Inclination</u>	<u>Azimuth</u>
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Time Distribution

<u>Operation</u>	<u>Hours</u>
Wait on Snubbing Unit	24.00
Total Hours	24

Geological Summary (Include formation tops, lithology and mud gas if applicable)

[illegible]

Remarks (include cores, spud or rig release, casing, plugs, logs, hole problems, KB to GL, KB to CF, description of drill string, etc.)

Waited on snubbing unit. Sourced additional equipment for flare line, larger flare stack, high pressure RBOP.

Personel on lease:

2-Bisset
4-Sperry
5-C 55

Supervisor K. Creelman/M. Nicklom

DAILY DRILLING REPORT - CONFIDENTIAL

Weather	Temperature		4	°C	Road	Good	Date	00 10 27
Well	INTRAGAZ ST FLAVIEN #14				Rig	RALEX 1	Day No.	33
Depth (m)	1952	Progress (m)	-	Hole Size (mm)	156	Status	Rigging Up Snubber	
Mud: Wt (kg/m ³)		Visc (s/L)		WL (cm ³)		pH	PV (mPa.s)	YP (Pa)
								Gels (Pa)
Methyl Blue		Solids (%)	-	Filter Cake (mm)		Salt (mg/L)	Cal (mg/L)	
3 RPM		6 RPM		Soluble Sulfides (mg/L)		Electrical Stability (v)		
Desander:	Underflow Wt (kg/m ³)		Rate (L/m)		Overflow Wt (kg/m ³)		Rate (L/m)	
Desilter:	Underflow Wt (kg/m ³)		Rate (L/m)		Overflow Wt (kg/m ³)		Rate (L/m)	
Centrifuge:	Underflow Wt (kg/m ³)		Rate (L/m)		Overflow Wt (kg/m ³)		Rate (L/m)	

Bits

Number	Size (mm)	Type	SN	Jets (mm)	WOB (daN)	RPM	Out (m)	In (m)	Metres	Hours	Condition
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Pumps / Hydraulics

No.	Liner (mm)	Length (mm)	SPM	PP (kPa)	Output (L/min)	AV (m/min)	Power (kW)
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Drilling Mud Additives

Surveys

Depth	Inclination	Azimuth
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Time Distribution

<u>Operation</u>	<u>Hours</u>
Wait on Snubbing	
Unit	14.00
Rig to Snubber	10.00

Geological Summary (Include formation tops, lithology and mud gas if applicable)

Total Hours	24.00
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Remarks (Include cores, spud or rig release, casing, plugs, logs, hole problems, KB to GL, KB to CF, description of drill string, etc.)

Waited on snubbing unit off/on Atlas (Canadian Specialty Services), Bled pressure from 17500 kPa to 1865 kPa, Removed RBOP element, installed snubbing adapter, rigged up snubbing unit, Flowing pressure: 9500 kPa at 320 10³m³/d. Will start snubbing operation with this pressure and flow rate.

Personel on lease:

3-Bisset	11-Ralex
4-Sperry Sun	2-M.I.
1 Datalog	5-C55
2-Northlands	

Supervisor K. Creelman/M. Nicklom

DAILY DRILLING REPORT - CONFIDENTIAL

Weather	Partly Cloudy	Temperature	2	°C	Road	Good	Date	00 10 28
Well	INTRAGAZ ST FLAVIEN #14				Rig	RALEX 1	Day No.	34
Depth (m)	1952	Progress (m)	-	Hole Size (mm)	156	Status	Stubbing Out	
Mud: Wt (kg/m ³)		Visc (s/L)		WL (cm ³)		pH	PV (mPa.s)	YP (Pa)
								Gels (Pa)
Methyl Blue		Solids (%)	-	Filter Cake (mm)		Salt (mg/L)		Cal (mg/L)
3 RPM		6 RPM		Soluble Sulfides (mg/L)		Electrical Stability (v)		
Desander:	Underflow Wt (kg/m ³)		Rate (L/m)		Overflow Wt (kg/m ³)		Rate (L/m)	
Desilter:	Underflow Wt (kg/m ³)		Rate (L/m)		Overflow Wt (kg/m ³)		Rate (L/m)	
Centrifuge:	Underflow Wt (kg/m ³)		Rate (L/m)		Overflow Wt (kg/m ³)		Rate (L/m)	

Bits

Number	Size (mm)	Type	SN	Jets (mm)	WOB (daN)	RPM	Out (m)	In (m)	Metres	Hours	Condition
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Pumps / Hydraulics

No.	Liner (mm)	Length (mm)	SPM	PP (kPa)	Output (L/min)	AV (m/min)	Power (kW)
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Drilling Mud Additives

Surveys

Depth	Inclination	Azimuth
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Time Distribution

<u>Operation</u>	<u>Hours</u>
Trips	7.75
Rig Up Snubbing Unit	9.00
Rig down RBOP	6.75
Safety Meeting	0.50

Geological Summary (Include formation tops, lithology and mud gas if applicable)

While snubbing, wellhead pressure was 9500 kPa, Flow rate at 11.2 million

Wellhead pressure 17,000 snubbing, not bleeding

Remarks (Include cores, spud or rig release, casing, plugs, logs, hole problems, KB to GL, KB to CF, description of drill string, etc.)

Rigged up snubbing unit and tongs. Tripped out with snubbing unit. Snubbed out 68 joints drill pipe, bit depth 834.24 m. Hung off pipe on upper pipe rams. Rigged out snubbing unit and laid down 14,000 kPa static RBOP. Rigged up snubbing unit, snubbed out of hole.

Personel on lease:

4-Bisset
4-Sperry Sun
1-Datalog
5-C55

Supervisor K. Creelman/
M. Nicklorn/Randy Genest



DAILY DRILLING REPORT - CONFIDENTIAL

Weather	Overcast	Temperature	1	°C	Road	Good	Date	00 10 30
Well	INTRAGAZ ST FLAVIEN #14				Rig	RALEX 1	Day No.	36
Depth (m)	1951	Progress (m)	-	Hole Size (mm)	156	Status	Waiting on Orders	
Mud: Wt (kg/m ³)		Visc (s/L)		WL (cm ³)		pH	PV (mPa.s)	YP (Pa)
								Gels (Pa)
Methyl Blue		Solids (%)	-	Filter Cake (mm)		Salt (mg/L)		Cal (mg/L)
3 RPM		6 RPM		Soluble Sulfides (mg/L)		Electrical Stability (v)		
Desander:	Underflow Wt (kg/m ³)		Rate (L/m)		Overflow Wt (kg/m ³)		Rate (L/m)	
Desilter:	Underflow Wt (kg/m ³)		Rate (L/m)		Overflow Wt (kg/m ³)		Rate (L/m)	
Centrifuge:	Underflow Wt (kg/m ³)		Rate (L/m)		Overflow Wt (kg/m ³)		Rate (L/m)	

Bits

<u>Number</u>	<u>Size (mm)</u>	<u>Type</u>	<u>SN</u>	<u>Jets (mm)</u>	<u>WOB (daN)</u>	<u>RPM</u>	<u>Out (m)</u>	<u>In (m)</u>	<u>Metres</u>	<u>Hours</u>	<u>Condition</u>
8	156	XR30TY	LY7203	3 x 8.7			1951	1677	274	51.00	

Pumps / Hydraulics

No.	Liner (mm)	Length (mm)	SPM	PP (kPa)	Output (L/min)	AV (m/min)	Power (kW)
1	140	235					

Drilling Mud Additives



Surveys

[illegible]

Time Distribution

<u>Operation</u>	<u>Hours</u>
Snubbing	1.00
Test BOP	3.00
X/O Rams	5.50
Snubbing Unit Repair	3.00
Nipple up	11.50
Total Hours	24.00

Geological Summary (Include formation tops, lithology and mud gas if applicable)

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Remarks (Include cores, spud or rig release, casing, plugs, logs, hole problems, KB to GL, KB to CF, description of drill string, etc.)

Lowered 152 mm stack and erected 305 mm stack. Nipped up 305 mm stack and installed guy lines, fabricated new spool and installed same. Ran 152 mm gut line. Pressure tested 2 manual valves and annular. Repaired accumulator on snubbing unit. Bled down and positioned tool joint to pressure test upper pipe rams. Conducted Safety Meeting with crews, changed out upper pipe rams. Pressure tested to 2000 kPa and 17,000 kPa for ten minutes each. OK. Attempted to strip out Hevi-Wate DP. Tool joints do not align with spacing on snubbing unit.

Personel on lease:

3-Bisset	11-Ralex
4-Sperry Sun	1-M.I.
1-Datalog	7-Northlands
4-C55	2-Live Well
1-Williams	

Supervisor **K. Creelman/
M. Nicklorn/Randy Genest**

**DAILY DRILLING REPORT - CONFIDENTIAL**

Weather Overcast Temperature 2 °C Road Good Date 00 10 31
Well INTRAGAZ ST FLAVIEN #14 Rig RALEX 1 Day No. 37
Depth (m) 1951 Progress (m) - Hole Size (mm) 156 Status Waiting on Snubbing Unit
Mud: Wt (kg/m³) Visc (s/L) WL (cm³) pH PV (mPa.s) YP (Pa) Gels (Pa)
Methyl Blue Solids (%) Filter Cake (mm) Salt (mg/L) Cal (mg/L)
3 RPM 6 RPM Soluble Sulfides (mg/L) Electrical Stability (v)
Desander: Underflow Wt (kg/m³) Rate (L/m) Overflow Wt (kg/m³) Rate (L/m)
Desilter: Underflow Wt (kg/m³) Rate (L/m) Overflow Wt (kg/m³) Rate (L/m)
Centrifuge: Underflow Wt (kg/m³) Rate (L/m) Overflow Wt (kg/m³) Rate (L/m)

Bits

Number	Size (mm)	Type	SN	Jets (mm)	WOB (daN)	RPM	Out (m)	In (m)	Metres	Hours	Condition
8	156	XR30TY	LY7203	3 x 8.7			1951	1677	274	51.25	

Pumps / Hydraulics

No.	Liner (mm)	Length (mm)	SPM	PP (kPa)	Output (L/min)	AV (m/min)	Power (kW)
1	140	235					

Drilling Mud Additives

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Surveys

Depth	Inclination	Azimuth

Time Distribution

Operation	Hours
Waiting on Replacement Snubbing Unit	24.00
Total Hours	24.00

Geological Summary (include formation tops, lithology and mud gas if applicable)

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Remarks (include cores, spud or rig release, casing, plugs, logs, hole problems, KB to GL, KB to CF, description of drill string, etc.)

Waited on snubbing unit.

Shut-in Casing. Pressure - 17250 kPa

Personel on lease:

4- Bisset	11-Ralex
4- Sperry Sun	7-Northland
4-C55	2-Live Well
1-Williams	1-M.I.
1-Datalog	

K. Creelman/
Supervisor M. Nicklom/Randy Genest

DAILY DRILLING REPORT - CONFIDENTIAL

Weather	Overcast	Temperature	2	°C	Road	Good	Date	00 11 01
Well	INTRAGAZ ST FLAVIEN #14				Rig	RALEX 1	Day No.	38
Depth (m)	1951	Progress (m)	-	Hole Size (mm)	156	Status	Waiting on Snubbing Unit	
Mud: Wt (kg/m³)		Visc (s/L)		WL (cm³)		pH	PV (mPa.s)	YP (Pa)
								Gels (Pa)
Methyl Blue		Solids (%)	-	Filter Cake (mm)		Salt (mg/L)		Cal (mg/L)
3 RPM		6 RPM		Soluble Sulfides (mg/L)		Electrical Stability (v)		
Desander:	Underflow Wt (kg/m³)		Rate (L/m)		Overflow Wt (kg/m³)		Rate (L/m)	
Desilter:	Underflow Wt (kg/m³)		Rate (L/m)		Overflow Wt (kg/m³)		Rate (L/m)	
Centrifuge:	Underflow Wt (kg/m³)		Rate (L/m)		Overflow Wt (kg/m³)		Rate (L/m)	

Bits

[illegible]

Pumps / Hydraulics

No.	Liner (mm)	Length (mm)	SPM	PP (kPa)	Output (L/min)	AV (m/min)	Power (kW)
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Drilling Mud Additives



Surveys

<u>Depth</u>	<u>Inclination</u>	<u>Azimuth</u>
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Time Distribution

<u>Operation</u>	<u>Hours</u>
Wait on	
Replacement	
Snubbing Unit	24.00
Total Hours	24.00

Geological Summary (Include formation tops, lithology and mud gas if applicable)

Remarks (Include cores, spud or rig release, casing, plugs, logs, hole problems, KB to GL, KB to CF, description of drill string, etc.)

Waited on snubbing unit. Bled down well from 17250 kPa to 850 kPa, through 305 mm stack and then also bled through 152 mm gut line. Removed one HWDP and snubbed in two joints DP. Hung off on top pipe rams, final flowing pressure: 700 kPa. Shut in and pressure tested to wellhead pressure, closed lower pipe rams and annular. Rigged out Atlas snubbing unit and loaded out same.

Personel on lease:

4-Bisset	11-Ralex
4-Sperry Sun	1-M.I.
1-Datalog	4-C55
7-Northland	2-Live Well
1-Williams	

Supervisor K. Creelman/
M. Nicklorn/Randy Genest

**DAILY DRILLING REPORT - CONFIDENTIAL**

Weather Clear Temperature -2 °C Road Good Date 00 11 02
Well INTRAGAZ ST FLAVIEN #14 Rig RALEX 1 Day No. 39
Depth (m) 1951 Progress (m) - Hole Size (mm) 156 Status Nippling Up Snubbers
Mud: Wt (kg/m³) 1010 Visc (s/L) 33 WL (cm³) - pH 7.5 PV (mPa.s) 3 YP (Pa) 2 Gels (Pa) 0.511
Methyl Blue - Solids (%) 0.6 Filter Cake (mm) - Salt (mg/L) 220 Cal (mg/L) 120
3 RPM - 6 RPM - Soluble Sulfides (mg/L) - Electrical Stability (v) -
Desander: Underflow Wt (kg/m³) - Rate (L/m) - Overflow Wt (kg/m³) - Rate (L/m) -
Desilter: Underflow Wt (kg/m³) - Rate (L/m) - Overflow Wt (kg/m³) - Rate (L/m) -
Centrifuge: Underflow Wt (kg/m³) - Rate (L/m) - Overflow Wt (kg/m³) - Rate (L/m) -

Bits

Number	Size (mm)	Type	SN	Jets (mm)	WOB (daN)	RPM	Out (m)	In (m)	Metres	Hours	Condition
8	156	XR30	LY7230	3 x 87	8-10,000	120 + 3	1951	1677	274	51.25	

Pumps / Hydraulics

No.	Liner (mm)	Length (mm)	SPM	PP (kPa)	Output (L/min)	AV (m/min)	Power (kW)
1	140	235					
2	140	235					

Drilling Mud Additives

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Surveys

Depth	Inclination	Azimuth

Time Distribution

Operation	Hours
RU & RD	3.50
WO Snub	20.50
Total Hours	24.00

Geological Summary (Include formation tops, lithology and mud gas if applicable)

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Remarks (Include cores, spud or rig release, casing, plugs, logs, hole problems, KB to GL, KB to CF, description of drill string, etc.)

Waited on Live Well Services snubbing unit (Finished loading out Atlas snubbing unit). Mixed new mud system. Rigged up shear tank pump tp pump down hole. Installed Bottom QRC. Live Well Snubbing Unit arrived at 03:30. Rigged up new snubbing unit and RBOP.

Personel on lease:

3-Bisset	11-Ralex
4-Sperry Sun	5-Northland
5-Live Well	4-C55
1-M.I.	1-Williams
1-Datalog	

Supervisor K. Creelman/
M. Nicklorn/Randy Genest

**DAILY DRILLING REPORT - CONFIDENTIAL**

Weather Clear Temperature 2 °C Road Good Date 00 11 03
Well INTRAGAZ ST FLAVIEN #14 Rig RALEX 1 Day No. 40
Depth (m) 1951 Progress (m) - Hole Size (mm) 156 Status Wait on Choke
Mud: Wt (kg/m³) 1010 Visc (s/L) 36 WL (cm³) - pH 7.5 PV (mPa.s) 5 YP (Pa) 5.5 Gels (Pa) 3.5/4.5
Methyl Blue - Solids (%) 0.44 Filter Cake (mm) - Salt (mg/L) 100 Cal (mg/L) 80
3 RPM - 6 RPM - Soluble Sulfides (mg/L) - Electrical Stability (v) -
Desander: Underflow Wt (kg/m³) - Rate (L/m) - Overflow Wt (kg/m³) - Rate (L/m) -
Desilter: Underflow Wt (kg/m³) - Rate (L/m) - Overflow Wt (kg/m³) - Rate (L/m) -
Centrifuge: Underflow Wt (kg/m³) - Rate (L/m) - Overflow Wt (kg/m³) - Rate (L/m) -

Bits

Number	Size (mm)	Type	SN	Jets (mm)	WOB (daN)	RPM	Out (m)	In (m)	Metres	Hours	Condition
8	156	XR30	LY7230	3 x 8.7	8-10000	120 + 30	1951	1677	274	51.25	

Pumps / Hydraulics

No.	Liner (mm)	Length (mm)	SPM	PP (kPa)	Output (L/min)	AV (m/min)	Power (kW)
1	140	235					
2	140	235					

Drilling Mud Additives

Xonuis 8 sks
Cal/Card 27 sks

Surveys

Depth	Inclination	Azimuth
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Time Distribution

Operation	Hours
RU & RD	11.00
WD Choke	3.50
Safety	0.50
Test BOP	3.75
Pump	5.25

Geological Summary (Include formation tops, lithology and mud gas if applicable)

Total Hours 24.00

Remarks (Include cores, spud or rig release, casing, plugs, logs, hole problems, KB to GL, KB to CF, description of drill string, etc.)

Rigged up snubbing unit. Pressure tested snubbing unit. Repaired leaks and replace BOP. stack. Valve (upper choke line valve leaking externally through packing) pumped 8m³ Xanuis down well and bled off 1369 m³ gas. Started to pump calcium carbonate fluid (small injection pump quit). Waited on choke.

Small injection pump quit. A choke was obtained from the Ralex yard to install on mud roll in order to run rig pump at 60 to 70 RPM. The flow loop will be choked down to inject fluid into wellbore through a parallel line.

Personnel on lease:

3-Bisset	11-Ralex
4-Sperry Sun	5-Northland,
5-Live Well	1-M.I.
1-Williams	1-Datalog
4-C55	

Supervisor K. Creelman/
M. Nicklorn/Randy Genest

**DAILY DRILLING REPORT - CONFIDENTIAL**

Weather Clear Temperature 1 °C Road Good Date 00 11 04
Well INTRAGAZ ST FLAVIEN #14 Rig RALEX 1 Day No. 41
Depth (m) 1951 Progress (m) - Hole Size (mm) 156 Status Filling hole
Mud: Wt (kg/m³) 1010 Visc (s/L) 36 WL (cm³) - pH 7.5 PV (mPa.s) 3.5 YP (Pa) 6 Gels (Pa) 3.5/4.5
Methyl Blue - Solids (%) 0.44 Filter Cake (mm) - Salt (mg/L) 100 Cal (mg/L) 80
3 RPM - 6 RPM - Soluble Sulfides (mg/L) - Electrical Stability (v) -
Desander: Underflow Wt (kg/m³) - Rate (L/m) - Overflow Wt (kg/m³) - Rate (L/m) -
Desilter: Underflow Wt (kg/m³) - Rate (L/m) - Overflow Wt (kg/m³) 0.4 Rate (L/m) -
Centrifuge: Underflow Wt (kg/m³) - Rate (L/m) - Overflow Wt (kg/m³) - Rate (L/m) -

Bits

Number	Size (mm)	Type	SN	Jets (mm)	WOB (daN)	RPM	Out (m)	In (m)	Metres	Hours	Condition
8	156	XR30	LY7230	3 x 8.7	8-10000	120 + 30	1951	1677	274	51.25	

Pumps / Hydraulics

No.	Liner (mm)	Length (mm)	SPM	PP (kPa)	Output (L/min)	AV (m/min)	Power (kW)
1	140	235					
2	140	235					

Drilling Mud Additives

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Surveys

Depth	Inclination	Azimuth

Time Distribution

Operation	Hours
Fill Well	20.00
Rig Up Choke	4.00
Total Hours	24.00

Geological Summary (Include formation tops, lithology and mud gas if applicable)

--

Remarks (Include cores, spud or rig release, casing, plugs, logs, hole problems, KB to GL, KB to CF, description of drill string, etc.)

Rigged in choke and fabricated bypass line. Filled wellbore in stages, letting fluid drop and bled off pressure until 22:30. Circulated through Northlands choke, started pressure at 15600 - pressure at 07:00: 13500 kPa.

Total volume in hole at report time is 31.9 m³

2 barrels of oil were for Northlands. The RBOP. was shipped empty.

Personnel on lease:

3-Bisset	11-Ralex
4-Sperry Sun	5-Northlands
5-Live Well	1- M.I.
1-Williams	1-Datalog

Supervisor K. Creelman/
M. Nicklorn/Randy Genest

DAILY DRILLING REPORT - CONFIDENTIAL

Weather	Foggy		Temperature	1	°C	Road	Good		Date	00 11 05		
Well	INTRAGAZ ST FLAVIEN #14					Rig	RALEX 1		Day No.	42		
Depth (m)	1951	Progress (m)			Hole Size (mm)	156	Status	Snubbing Out of Hole				
Mud: Wt (kg/m³)	1007	Visc (s/L)	32	WL (cm³)	pH	7.5	PV (mPa.s)	4	YP (Pa)	2.2	Gels (Pa)	0.5/1.0
Methyl Blue	Solids (%)		4.38	Filter Cake (mm)			Salt (mg/L)	100	Cal (mg/L)	80		
3 RPM	6 RPM		Soluble Sulfides (mg/L)				Electrical Stability (v)					
Desander:	Underflow Wt (kg/m³)		Rate (L/m)		Overflow Wt (kg/m³)				Rate (L/m)			
Desilter:	Underflow Wt (kg/m³)		Rate (L/m)		Overflow Wt (kg/m³)				Rate (L/m)			
Centrifuge:	Underflow Wt (kg/m³)		Rate (L/m)		Overflow Wt (kg/m³)				Rate (L/m)			

Bits

Number	Size (mm)	Type	SN	Jets (mm)	WOB (daN)	RPM	Out (m)	In (m)	Metres	Hours	Condition
8	156	XR30	LY7230	3x8.7	8-10,000	80 + 30	1951	1677	274	51 1/4	

Pumps / Hydraulics

No.	Liner (mm)	Length (mm)	SPM	PP (kPa)	Output (L/min)	AV (m/min)	Power (kW)
1	140	235					
2	140	235					

Drilling Mud Additives

Surveys

<u>Depth</u>	<u>Inclination</u>	<u>Azimuth</u>
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Time Distribution

<u>Operation</u>	<u>Hours</u>
Trips/Snub	7.00
Test BOP.	2.50
Pump	10.50
Unlock Rams	4.00

Geological Summary (include formation tops, lithology and mud gas if applicable)

Total Hours	24.00
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Remarks (Include cores, spud or rig release, casing, plugs, logs, hole problems, KB to GL, KB to CF, description of drill string, etc.)

Circulated through Northlands choke. Starting pressure 13500 kPa. Circulated until pressure dropped to 11000 kPa, tried to snub out HWDP stuck in the upper pipe ram (could not unlock rams). Backed off hydraulic cylinder and backed off locks. Opened door and checked upper pipe rams - good. Bottom pipe rams were leaking slowly. Snubbed out of the hole

Ordered RTTS packer and 101.2 mm ram blanking tool. Checked on wire line setting plug for inside DP.

Personel on lease:

3-Bisset	11-Ralex
4-Sperry Sun	5-Northland
5-Live Well	1-M.I.
1-Williams	1-Datalog

Supervisor K. Creelman/
M. Nicklorn/Randy Genest

**DAILY DRILLING REPORT - CONFIDENTIAL**

Weather Cloudy Temperature 1 °C Road Good Date 00 11 07
Well INTRAGAZ ST FLAVIEN #14 Rig RALEX 1 Day No. 44
Depth (m) 1951 Progress (m) - Hole Size (mm) 156 Status Circulating with BJ Pumper
Mud: Wt (kg/m³) 1010 Visc (s/L) 3.5 WL (cm³) pH 7.5 PV (mPa.s) 4 YP (Pa) 7.5 Gels (Pa) 3/4.0
Methyl Blue Solids (%) 0.6 Filter Cake (mm) Salt (mg/L) 100 Cal (mg/L) 60
3 RPM 6 RPM Soluble Sulfides (mg/L) Electrical Stability (v)
Desander: Underflow Wt (kg/m³) Rate (L/m) Overflow Wt (kg/m³) Rate (L/m)
Desilter: Underflow Wt (kg/m³) Rate (L/m) Overflow Wt (kg/m³) Rate (L/m)
Centrifuge: Underflow Wt (kg/m³) Rate (L/m) Overflow Wt (kg/m³) Rate (L/m)

Bits

Number	Size (mm)	Type	SN	Jets (mm)	WOB (daN)	RPM	Out (m)	In (m)	Metres	Hours	Condition

Pumps / Hydraulics

No.	Liner (mm)	Length (mm)	SPM	PP (kPa)	Output (L/min)	AV (m/min)	Power (kW)
1	140	235					
2	140	235					

Drilling Mud Additives

Xanvis - 5sxs

Gel - 1

Surveys

Depth	Inclination	Azimuth
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Time Distribution

Operation	Hours
RU & Pump	1.00
DST Snub	1.50
Pump Methanol	9.00
Monitor Well	10.00
Rig in BJ Start Circ.	2.50

Geological Summary (Include formation tops, lithology and mud gas if applicable)**Total Hours** 24.00**Remarks (Include cores, spud or rig release, casing, plugs, logs, hole problems, KB to GL, KB to CF, description of drill string, etc.)**

Monitored well. Waited for high pressure pump unit. Rigged in methanol pump and injected methanol into wellhead at 4.5 to 5.0 L/min until 17:00. Equalized the pressure and tried to snub into well (made 2.5 m of progress and hit bridge again). Closed in well with 15800 kPa on wellbore at 18:30. Monitored well to 03:30. Pressure dropped from 15800 kPa to 15366 kPa at 03:00. Rigged in BJ high pressure unit and established circulation at 21000 kPa. Pumped 401 litres of methanol in total.

Operators were delayed due to airlines - arrived on location at 01:30

Personel on lease:

3-Bisset	12-Ralex
4-Sperry Sun	5-Northlands
5-Live Well	1-M.I.
1-Datalog	1-Williams
1-Halliburton	3-Nowsco

K: Greelman/
Supervisor M. Nicklorn/Randy Genest

**DAILY DRILLING REPORT - CONFIDENTIAL**

Weather Overcast Temperature 2 °C Road Good Date 00 11 08
Well INTRAGAZ ST FLAVIEN #14 Rig RALEX 1 Day No. 45
Depth (m) 1951 Progress (m) _____ Hole Size (mm) 156 Status _____ Snubbing in w/Clec _____
Mud: Wt (kg/m³) 1010 Visc (s/L) 3.5 WL (cm³) _____ pH 7.5 PV (mPa.s) 5 YP (Pa) 7 Gels (Pa) 2.5/3
Methyl Blue _____ Solids (%) 0.6 Filter Cake (mm) _____ Salt (mg/L) 100 Cal (mg/L) 80
3 RPM _____ 6 RPM _____ Soluble Sulfides (mg/L) _____ Electrical Stability (v) _____
Desander: Underflow Wt (kg/m³) _____ Rate (L/m) _____ Overflow Wt (kg/m³) _____ Rate (L/m) _____
Desilter: Underflow Wt (kg/m³) _____ Rate (L/m) _____ Overflow Wt (kg/m³) _____ Rate (L/m) _____
Centrifuge: Underflow Wt (kg/m³) _____ Rate (L/m) _____ Overflow Wt (kg/m³) _____ Rate (L/m) _____

Bits

Number	Size (mm)	Type	SN	Jets (mm)	WOB (daN)	RPM	Out (m)	In (m)	Metres	Hours	Condition
9	156	XR30		3 x 9.5				1951			

Pumps / Hydraulics

No.	Liner (mm)	Length (mm)	SPM	PP (kPa)	Output (L/min)	AV (m/min)	Power (kW)
1	140	235					
2	140	235					

Drilling Mud Additives

Xanvis - 1sxs

Surveys

Depth	Inclination	Azimuth
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Time Distribution

Operation	Hours
Handle Tools	10.50
Snub	3.50
Clean Lines	10.00

Geological Summary (Include formation tops, lithology and mud gas if applicable)

Total Hours	24.00
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Remarks (Include cores, spud or rig release, casing, plugs, logs, hole problems, KB to GL, KB to CF, description of drill string, etc.)

Unable to circulate through bit. Tried to circulate through BOP, kill lines and flare lines (lines plugged with calcium carbonate) cleaned lines and pumped clear. Laid out one single and tried to circulate with no success. Snubbed out BHA (bit and motor free) laid down motor, repaired float, scribed BHA. Installed single in stack and equalized pressure. Bled off through choke lines. Laid down drillpipe. Tripped in with bit, motor, 2 floats and nonmagnetic hang-off sub. Equalized above blind rams. Held safety meeting. Rigged up to run in hole by circulating through drillpipe. Function tested MWD at 22.06 m.

Personnel on lease:

3-Bisset	12-Ralex
4-Sperry Sun	5-Northlands
5-Live Well	1-M.I.
1-Datalog	1-Williams
1-Halliburton	3-Nowasco

Supervisor K. Creelman/
M. Nicklorn/Randy Genest

**DAILY DRILLING REPORT - CONFIDENTIAL**

Weather Overcast Temperature 2 °C Road Good Date 00 11 09
Well INTRAGAZ ST FLAVIEN #14 Rig RALEX 1 Day No. 46
Depth (m) 1951 Progress (m) - Hole Size (mm) 156 Status Running in With Snubber
Mud: Wt (kg/m³) 1010 Visc (s/L) 35 WL (cm³) pH 7.5 PV (mPa.s) 4 YP (Pa) 6.5 Gels (Pa) 2.5/3.5
Methyl Blue Solids (%) 0.6 Filter Cake (mm) Salt (mg/L) 100 Cal (mg/L) 80
3 RPM 6 RPM Soluble Sulfides (mg/L) Electrical Stability (v)
Desander: Underflow Wt (kg/m³) Rate (L/m) Overflow Wt (kg/m³) Rate (L/m)
Desilter: Underflow Wt (kg/m³) Rate (L/m) Overflow Wt (kg/m³) Rate (L/m)
Centrifuge: Underflow Wt (kg/m³) Rate (L/m) Overflow Wt (kg/m³) Rate (L/m)

Bits

Number	Size (mm)	Type	SN	Jets (mm)	WOB (daN)	RPM	Out (m)	In (m)	Metres	Hours	Condition
9	156	XR30		3x9.5				1951			

Pumps / Hydraulics

No.	Liner (mm)	Length (mm)	SPM	PP (kPa)	Output (L/min)	AV (m/min)	Power (kW)
1	140	235					
2	140	235					

Drilling Mud Additives

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Surveys

Depth	Inclination	Azimuth

Time Distribution

Operation	Hours
Safety	0.50
Snub in and Circ	23.50
Total Hours	24.00

Geological Summary (Include formation tops, lithology and mud gas if applicable)

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Remarks (Include cores, spud or rig release, casing, plugs, logs, hole problems, KB to GL, KB to CF, description of drill string, etc.)

Snubbed in BHA and 1 DP. Circulated. Snubbed in and reamed multiple bridges to 219 m. Snubbed in singles and circulated. to 603 m at time of report.

Last bridge at 219 m. Snubbed in and circulated bottoms up every 4 to 6 singles.

Personnel on lease:

3-Bisset	12-Ralex
4-Sperry Sun	5-Northlands
5-Live Well	1-M.I.
1-Datalog	1-Williams
1-Halliburton	2-B.J.

Supervisor K. Creelman/
M. Nicklorn/Randy Genest

DAILY DRILLING REPORT - CONFIDENTIAL

Weather	Overcast	Temperature		1	°C	Road	Good	Date	00 11 10
Well	INTRAGAZ ST FLAVIEN #14					Rig	RALEX 1	Day No.	47
Depth (m)	1951	Progress (m)	-	Hole Size (mm)	156	Status	Pressure Testing		
Mud: Wt (kg/m³)	1005	Visc (s/L)	34	WL (cm³)	pH 7.5	PV (mPa.s)	4	YP (Pa)	6.5 Gels (Pa) 2.5/3.5
Methyl Blue		Solids (%)	0.6	Filter Cake (mm)		Salt (mg/L)	100	Cal (mg/L)	80
3 RPM	6 RPM	Soluble Sulfides (mg/L)				Electrical Stability (v)			
Desander:	Underflow Wt (kg/m³)		Rate (L/m)		Overflow Wt (kg/m³)		Rate (L/m)		
Desilter:	Underflow Wt (kg/m³)		Rate (L/m)		Overflow Wt (kg/m³)		Rate (L/m)		
Centrifuge:	Underflow Wt (kg/m³)		Rate (L/m)		Overflow Wt (kg/m³)		Rate (L/m)		

Bits

<u>Number</u>	<u>Size (mm)</u>	<u>Type</u>	<u>SN</u>	<u>Jets (mm)</u>	<u>WOB (daN)</u>	<u>RPM</u>	<u>Out (m)</u>	<u>In (m)</u>	<u>Metres</u>	<u>Hours</u>	<u>Condition</u>
9	156	XR30		3 x 9.5				1951			

Pumps / Hydraulics

No.	Liner (mm)	Length (mm)	SPM	PP (kPa)	Output (L/min)	AV (m/min)	Power (kW)
1	140	235					
2	140	235					

Drilling Mud Additives

Surveys

<u>Depth</u>	<u>Inclination</u>	<u>Azimuth</u>
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Time Distribution

<u>Operation</u>	<u>Hours</u>
Cond. Hole	4.25
Trips	6.25
Lubricate Rig	0.25
Test BOP	3.25
Handle Tools	1.25
Snub In	6.75
Run Packer	2.00
Total Hours	24.00

Geological Summary (Include formation tops, lithology and mud gas if applicable)

Remarks (Include cores, spud or rig release, casing, plugs, logs, hole problems, KB to GL, KB to CF, description of drill string, etc.)

Circulated bottoms up at 603 m, Ran in to 699 m. Circulated bottoms up. Snubbed in to 809 m. Rig serviced. Circulated bottoms up at 809 m. Circulated HWDP in from 809 m to 870 m near tight spot at 843 m. Ran in singles from 870 to 1151 m, Circulate bottoms up - very little gas at surface. Picked up and ran packer (RTTS). Pressure tested packer. Tried to retrieve wear bushing - test plug would not go past x/o at Williams head. Opened blind rams door. Changed out rubbers and cleaned out calcium carbonate. Change out lower pipe rams rubbers and cleaned calcium carbonate. Pressure tested rams to 1400 kPa low and 21000 kPa high for 15 minutes. Each checked O.K.

Personel on Lease:

3-Bisset	12-Ralex
4-Sperry Sun	5-Northlands
5-Live Well	1-M.I.
1-Datalog	1-Williams
1-Halliburton	2-BJ Newsco

Supervisor K. Creelman/
M. Nicklorn/Randy Genest

**DAILY DRILLING REPORT - CONFIDENTIAL**

Weather	Overcast/Rain	Temperature	2	°C	Road	Good	Date	00 11 11
Well	INTRAGAZ ST FLAVIEN #14				Rig	RALEX 1	Day No.	48
Depth (m)	1965	Progress (m)	14	Hole Size (mm)	156	Status	Drilling	
Mud: Wt (kg/m ³)	1010	Visc (s/L)	35	WL (cm ³)	pH 7.5	PV (mPa.s)	5	YP (Pa) 7 Gels (Pa) 2.5/3.0
Methyl Blue		Solids (%)	.06	Filter Cake (mm)		Salt (mg/L)	100	Cal (mg/L) 80
3 RPM		6 RPM		Soluble Sulfides (mg/L)		Electrical Stability (v)		
Desander:	Underflow Wt (kg/m ³)		Rate (L/m)		Overflow Wt (kg/m ³)		Rate (L/m)	
Desilter:	Underflow Wt (kg/m ³)		Rate (L/m)		Overflow Wt (kg/m ³)		Rate (L/m)	
Centrifuge:	Underflow Wt (kg/m ³)	2060	Rate (L/m)		Overflow Wt (kg/m ³)	1010	Rate (L/m)	

Bits

Number	Size (mm)	Type	SN	Jets (mm)	WOB (daN)	RPM	Out (m)	In (m)	Metres	Hours	Condition
9	156	XR30	LY7204	3 x 9.5	12,000	70 + 30	In	1951	14	2.50	Running

Pumps / Hydraulics

No.	Liner (mm)	Length (mm)	SPM	PP (kPa)	Output (L/min)	AV (m/min)	Power (kW)
1	140	235	75	10,500	800	41	140
2	140	235					

Drilling Mud Additives

Xanvis - 5 sxs

Surveys

Depth	Inclination	Azimuth
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Time Distribution

Operation	Hours
Drill Actual	2.50
Trips	7.50
Nipple Down	2.00
Test BOP	2.25
Wear Bushing	3.75
Handle tools	3.00
Shear Pump	1.00
Rotate Head	2.00

Geological Summary (Include formation tops, lithology and mud gas if applicable)

Total Hours	24.00
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Remarks (Include cores, spud or rig release, casing, plugs, logs, hole problems, KB to GL, KB to CF, description of drill string, etc.)

Finished pressure testing pipe rams. Retrieved wear bushing. Retrieved RTTS, ran testing plug and hung off drill string with stabbing valve. Nipped down snubbing unit. Instal equalizing line from spool to Williams head. Installed rubber. Pulled test plug. Re-installed rubber. Rigged in shear pump and pumped wellhead. Ran in 14 stands and 6 singles. Circulated from casing shoe (bottoms up). Circulate 7 singles. Held back 3750 kPa. Ran 3 singles and circulated lowered bottomhole pressure to 2500 kPa. Gas to surface. Ran 3 singles and circulated. Cleaned 2 m fill to bottom holding 5800 to 6500 kPa. Drilled from 1951 m to 1965 m at time of report

Personel on lease:

3-Bisset	12-Ralex
4-Sperry Sun	5-Northland
5-Live Well	1-M.I.
1-Datalog	1-Williams
1-BJ Nowsco	1-Halliburton
1-Intragaz	

Supervisor K. Creelman/
M. Nicklorn/Randy Genest

**DAILY DRILLING REPORT - CONFIDENTIAL**

Weather	Clear	Temperature	-4 °C	Road	Good	Date	00 11 12
Well	INTRAGAZ ST FLAVIEN #14			Rig	RALEX 1	Day No.	49
Depth (m)	2115	Progress (m)	150	Hole Size (mm)	156	Status	Drilling
Mud: Wt (kg/m ³)	1010	Visc (s/L)	36	WL (cm ³)	pH 7.5	PV (mPa.s)	5 YP (Pa) 4.5 Gels (Pa) 1/1.5
Methyl Blue		Solids (%)	0.6-	Filter Cake (mm)		Salt (mg/L)	100 Cal (mg/L) 120
3 RPM		6 RPM		Soluble Sulfides (mg/L)		Electrical Stability (v)	
Desander:	Underflow Wt (kg/m ³)		Rate (L/m)	Overflow Wt (kg/m ³)		Rate (L/m)	
Desilter:	Underflow Wt (kg/m ³)		Rate (L/m)	Overflow Wt (kg/m ³)		Rate (L/m)	
Centrifuge:	Underflow Wt (kg/m ³)		Rate (L/m)	Overflow Wt (kg/m ³)		Rate (L/m)	

Bits

Number	Size (mm)	Type	SN	Jets (mm)	WOB (daN)	RPM	Out (m)	In (m)	Metres	Hours	Condition
9	156	XR30	LY7204	3 x 9.5	8-12000	80 + 30	N	1951	164	2.25	Running

Pumps / Hydraulics

No.	Liner (mm)	Length (mm)	SPM	PP (kPa)	Output (L/min)	AV (m/min)	Power (kW)
1	140	235	82	11000	86	42	164
2	140	235					

Drilling Mud Additives

Nil

Surveys

Depth	Inclination	Azimuth
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Time Distribution

Operation	Hours
Drill Actual	20.75
Lubricate Rig	0.25
Dev. Survey	2.50
Circ. Sample	0.50

Geological Summary (Include formation tops, lithology and mud gas if applicable)**Total Hours** 24.00**Remarks (Include cores, spud or rig release, casing, plugs, logs, hole problems, KB to GL, KB to CF, description of drill string, etc.)**

Drilled 156 mm hole, surveying every single. Circulated up sample at 2067m

Pump Pressure: 11600 kPa Casing Pressure: 5200 kPa

Well Flowing Gas at 465 10³m³/d while drilling

ROP: presently at 12.4m/h - average 7.3 m/h

Personel on lease:

3-Bisset	12-Ralex
4-Sperry Sun	5-Northlands
5-Live Well	1-M.I.
1-Williams	1-BJ Nowsco
1-Halliburton	2-Intragaz

Supervisor K. Creelman/
M. Nicklorn/Randy Genest

**DAILY DRILLING REPORT - CONFIDENTIAL**

Weather Clear Temperature 2 °C Road Good Date 00 11 13
Well INTRAGAZ ST FLAVIEN #14 Rig RALEX 1 Day No. 50
Depth (m) 2260 Progress (m) 145 Hole Size (mm) 156 Status Waiting on Northland Parts
Mud: Wt (kg/m³) 1010 Visc (s/L) 35 WL (cm³) pH 8.5 PV (mPa.s) 5 YP (Pa) 4 Gels (Pa) .75/1.25
Methyl Blue Solids (%) 0.6 Filter Cake (mm) Salt (mg/L) 100 Cal (mg/L) 120
3 RPM 6 RPM Soluble Sulfides (mg/L) Electrical Stability (v)
Desander: Underflow Wt (kg/m³) Rate (L/m) Overflow Wt (kg/m³) Rate (L/m)
Desilter: Underflow Wt (kg/m³) Rate (L/m) Overflow Wt (kg/m³) Rate (L/m)
Centrifuge: Underflow Wt (kg/m³) Rate (L/m) Overflow Wt (kg/m³) Rate (L/m)

Bits

Number	Size (mm)	Type	SN	Jets (mm)	WOB (daN)	RPM	Out (m)	In (m)	Metres	Hours	Condition
9	156	XR30	LY7204	3 x 9.5	8-12000	80 + 30	In	1951	309	41	Running

Pumps / Hydraulics

No.	Liner (mm)	Length (mm)	SPM	PP (kPa)	Output (L/min)	AV (m/min)	Power (kW)
1	140	235	83	12600	86	41	180
2	140	235					

Drilling Mud Additives

Caustic - 7 sxs

Surveys

Depth	Inclination	Azimuth
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Time Distribution

Operation	Hours
Drill Actual	17.75
Cond. Hole	0.75
Trips	2.25
Lubricate Rig	0.75
Dev Survey	1.75
Handle Tools	0.75

Geological Summary (Include formation tops, lithology and mud gas if applicable)**Total Hours 24.00****Remarks (Include cores, spud or rig release, casing, plugs, logs, hole problems, KB to GL, KB to CF, description of drill string, etc.)**

Drilled ahead with surveys and rig serviced to 2060 m. Tripped out to 1850 m, change rubber element in rotating head. (Tripped out waiting for 76 mm flowline repairs for Northlands)

Drag up: 10000 daN

Drag Down 8000 daN

Personel on lease:

3-Bisset	12-Ralex
4-Sperry Sun	5-Northlands
5-Live Well	1-M.I.
1-Williams	1-BJ Nowsco
1-Halliburton	2-Intragaz

Supervisor K. Creelman/
M. Nicklom/Randy Genest

DAILY DRILLING REPORT - CONFIDENTIAL

Weather Clear Temperature 3 °C Road Good Date 00 11 14
 Well INTRAGAZ ST FLAVIEN #14 Rig RALEX 1 Day No. 51
 Depth (m) 2295 Progress (m) 35 Hole Size (mm) 156 Status Drilling
 Mud: Wt (kg/m³) 1010 Visc (s/L) 35 WL (cm³) pH 8.5 PV (mPa.s) 5 YP (Pa) 3.5 Gels (Pa) .75/1.25
 Methyl Blue Solids (%) 0.6 Filter Cake (mm) Salt (mg/L) 100 Cal (mg/L) 120
 3 RPM 6 RPM Soluble Sulfides (mg/L) Electrical Stability (v)
 Desander: Underflow Wt (kg/m³) Rate (L/m) Overflow Wt (kg/m³) Rate (L/m)
 Desilter: Underflow Wt (kg/m³) Rate (L/m) Overflow Wt (kg/m³) Rate (L/m)
 Centrifuge: Underflow Wt (kg/m³) Rate (L/m) Overflow Wt (kg/m³) Rate (L/m)

Bits

Number	Size (mm)	Type	SN	Jets (mm)	WOB (daN)	RPM	Out (m)	In (m)	Metres	Hours	Condition
9	156	XR30	LY7204	3 x 9.5	8-12000	80 - 30	In	1951	344	45.25	Running

Pumps / Hydraulics

No.	Liner (mm)	Length (mm)	SPM	PP (kPa)	Output (L/min)	AV (m/min)	Power (kW)
1	140	235	82	12400	860	71	177
2	140	235					

Drilling Mud Additives

Caustic - 1 sxs
 Xanvis - 5sxs

Surveys

Depth	Inclination	Azimuth
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Time Distribution

Operation	Hours
Drill Actual	3.50
Cond. Hole	2.00
Trips	2.50
Dev Survey	0.50
Clean to Btm	0.25
Monitor Well	14.25
X/O Rubber	1.00

Geological Summary (Include formation tops, lithology and mud gas if applicable)

Trips

Total Hours 24

Remarks (Include cores, spud or rig release, casing, plugs, logs, hole problems, KB to GL, KB to CF, description of drill string, etc.)

Changed out Williams rotating head rubber. Tripped out to casing shoe. Circulated with BJ pump truck. Shut in well and monitored same. Waited on repairs for Northland. Washed out flow tees. Change over to second line. Tripped in hole, drilled ahead surveying every single.

Personnel on lease:

3-Bisset	12-Ralex
5-Northlands	1-M.I.
1-Williams	1-BJ Nowsco
1-Halliburton	1-Intragaz

Supervisor K. Creelman/
M. Nicklorn/Randy Genest

**DAILY DRILLING REPORT - CONFIDENTIAL**

Weather Overcast/Rain Temperature 2 °C Road Good Date 00 11 15
Well INTRAGAZ ST FLAVIEN #14 Rig RALEX 1 Day No. 52
Depth (m) 2414 Progress (m) 119 Hole Size (mm) 156 Status Tripping Out
Mud: Wt (kg/m³) 1010 Visc (s/L) 35 WL (cm³) pH PV (mPa.s) 4 YP (Pa) 3.5 Gels (Pa) 1.0/1.5
Methyl Blue Solids (%) 0.6 Filter Cake (mm) Salt (mg/L) 100 Cal (mg/L) 80
3 RPM 6 RPM Soluble Sulfides (mg/L) Electrical Stability (v)
Desander: Underflow Wt (kg/m³) Rate (L/m) Overflow Wt (kg/m³) Rate (L/m)
Desilter: Underflow Wt (kg/m³) Rate (L/m) Overflow Wt (kg/m³) Rate (L/m)
Centrifuge: Underflow Wt (kg/m³) Rate (L/m) Overflow Wt (kg/m³) Rate (L/m)

Bits

Number	Size (mm)	Type	SN	Jets (mm)	WOB (daN)	RPM	Out (m)	In (m)	Metres	Hours	Condition
9	156	XR30	LY7204	3 x 9.5	8-12000	80 + 30	2414	1951	463	62.5	Running

Pumps / Hydraulics

No.	Liner (mm)	Length (mm)	SPM	PP (kPa)	Output (L/min)	AV (m/min)	Power (kW)
1	140	235	82	12500	860	70	177
2	140	235					

Drilling Mud Additives

Caustic - 4 sxs
Xanvis - 3 sxs

Surveys

Depth	Inclination	Azimuth
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Time Distribution

Operation	Hours
Drill Actual	17.25
Trips	1.00
Lubricate Rig	0.75
Dev. Survey	1.00
Circ Samp	4.00

Geological Summary (Include formation tops, lithology and mud gas if applicable)

Total Hours 24.00

Remarks (Include cores, spud or rig release, casing, plugs, logs, hole problems, KB to GL, KB to CF, description of drill string, etc.)

Drilled 156mm hole surveying every single to 2308, 2359, circulated sample. Drilled ahead to 2404 m, circulated sample. Drilled to 2414 m. Drilled 156mm hole, surveying every single. Circulated samples at 2308 m MD, 2359 m MD, 2402 m MD, and 2404 m MD. Circulated sample, circulated two bottoms up, tripped out of hole stripping through Williams head at approximately 5000 kPa surface pressure.

Personel on lease:

3-Bisset	12-Ralex
5-Northland	1-M.I.
5-Live Well	1-Williams
1-BJ Nowsco	1-Halliburton
2-Intragaz	

Supervisor K. Creelman/
M. Nicklom/Randy Genest

**DAILY DRILLING REPORT - CONFIDENTIAL**

Weather Cloudy Temperature 2 °C Road Good Date 00 11 16
Well INTRAGAZ ST FLAVIEN #14 Rig RALEX 1 Day No. 53
Depth (m) 2414 Progress (m) - Hole Size (mm) 156 Status Rigging Up Computalog
Mud: Wt (kg/m³) 1010 Visc (s/L) 36 WL (cm³) - pH 10.5 PV (mPa.s) 4 YP (Pa) 4 Gels (Pa) .75/1.25
Methyl Blue - Solids (%) 0.6 Filter Cake (mm) - Salt (mg/L) 100 Cal (mg/L) 60
3 RPM - 6 RPM - Soluble Sulfides (mg/L) - Electrical Stability (v) -
Desander: Underflow Wt (kg/m³) - Rate (L/m) - Overflow Wt (kg/m³) - Rate (L/m) -
Desilter: Underflow Wt (kg/m³) - Rate (L/m) - Overflow Wt (kg/m³) - Rate (L/m) -
Centrifuge: Underflow Wt (kg/m³) - Rate (L/m) - Overflow Wt (kg/m³) - Rate (L/m) -

Bits

Number	Size (mm)	Type	SN	Jets (mm)	WOB (daN)	RPM	Out (m)	In (m)	Metres	Hours	Condition
9	156	XR30	LY7204	3 x 9.5	8-12000	80 + 30	2414	1951	463	62.50	7-5-1

Pumps / Hydraulics

No.	Liner (mm)	Length (mm)	SPM	PP (kPa)	Output (L/min)	AV (m/min)	Power (kW)
1	140	235	82	12,500	860	71	177
1	140	235					

Drilling Mud Additives

Caustic - 9 sxs
Xanvis - 6 sxs
KD-40 - 1 x 208 L drum

Surveys

Depth	Inclination	Azimuth
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Time Distribution

Operation	Hours
RU & RD	3
Cond Hole	2.25
Trips	7.25
Wireline log	0.75
Test BOP	2
Snub	8.75
Total Hours	24

Geological Summary (Include formation tops, lithology and mud gas if applicable)**Remarks (Include cores, spud or rig release, casing, plugs, logs, hole problems, KB to GL, KB to CF, description of drill string, etc.)**

Tripped out slowly, circulated with BJ pumper. Tripped out and laid down HWDP. Installed test plug. Rigged up snubbers and pressure tested same. Snubbed out of hole. Rigged up Computalog.

Personnel on lease:

3-Bisset	12-Ralex
5-Northlands	5-Live Well
1-Williams	1-BJ Nowsco
1-Halliburton	1-M.I.
3-F.I. Canada	2-Computalog

Supervisor K. Creelman/
M. Nicklorn/Randy Genest

**DAILY DRILLING REPORT - CONFIDENTIAL**

Weather	Rain	Temperature	1	°C	Road	Good	Date	00 11 17
Well	INTRAGAZ ST FLAVIEN #14				Rig	RALEX 1	Day No.	54
Depth (m)	2414	Progress (m)	TD	Hole Size (mm)	156	Status	Laying Down Snubbers	
Mud: Wt (kg/m ³)	1010	Visc (s/L)	36	WL (cm ³)	pH 10.5	PV (mPa.s)	4	YP (Pa) 4 Gels (Pa) .75/1.25
Methyl Blue		Solids (%)	0.6-	Filter Cake (mm)		Salt (mg/L)	100	Cal (mg/L) 60
3 RPM		6 RPM		Soluble Sulfides (mg/L)		Electrical Stability (v)		
Desander:	Underflow Wt (kg/m ³)		Rate (L/m)		Overflow Wt (kg/m ³)		Rate (L/m)	
Desilter:	Underflow Wt (kg/m ³)		Rate (L/m)		Overflow Wt (kg/m ³)		Rate (L/m)	
Centrifuge:	Underflow Wt (kg/m ³)		Rate (L/m)		Overflow Wt (kg/m ³)		Rate (L/m)	

Bits

Number	Size (mm)	Type	SN	Jets (mm)	WOB (daN)	RPM	Out (m)	In (m)	Metres	Hours	Condition

Pumps / Hydraulics

No.	Liner (mm)	Length (mm)	SPM	PP (kPa)	Output (L/min)	AV (m/min)	Power (kW)
1	140	235					
2	140	235					

Drilling Mud Additives

Caustic - 1 sx
Xanvis - 3sxs

Surveys

Depth Inclination Azimuth

Time Distribution

Operation	Hours
RU & RD	3.00
Wireline Log	13.00
Snub	7.75
Safety	0.25

Geological Summary (Include formation tops, lithology and mud gas if applicable)

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Total Hours 24.00

Remarks (Include cores, spud or rig release, casing, plugs, logs, hole problems, KB to GL, KB to CF, description of drill string, etc.)

Logged with Computalog. Ran gauge ring from 1525 m MD (50° point) to surface. Ran multifinger caliper log from 1527 to surface. Rigged up snubbing unit. Held safety meeting. Snub in 88.9 mm production tubing tailpipe and DP to 673 m. Rigging out snubbing unit at report time.

Personnel on lease:

3-Bisset	12-Ralex
5-Northland	5-Live Well
1-Williams	1-BJ Nowco
1-Halliburton	1-M.I.
3-F.I. Canada	

Supervisor K. Creelman/
M. Nicklom/Randy Genest

**DAILY DRILLING REPORT - CONFIDENTIAL**

Weather Light Cloud Temperature -4 °C Road Good Date 00 11-18
Well INTRAGAZ ST FLAVIEN #14 Rig RALEX 1 Day No. 55
Depth (m) 2414 Progress (m) _____ Hole Size (mm) 156 Status Laying Down William Head
Mud: Wt (kg/m³) 1000 Visc (s/L) _____ WL (cm³) _____ pH 10.5 PV (mPa.s) _____ YP (Pa) _____ Gels (Pa) _____
Methyl Blue _____ Solids (%) _____ Filter Cake (mm) _____ Salt (mg/L) _____ Cal (mg/L) 60
3 RPM _____ 6 RPM _____ Soluble Sulfides (mg/L) _____ Electrical Stability (v) _____
Desander: Underflow Wt (kg/m³) _____ Rate (L/m) _____ Overflow Wt (kg/m³) _____ Rate (L/m) _____
Desilter: Underflow Wt (kg/m³) _____ Rate (L/m) _____ Overflow Wt (kg/m³) _____ Rate (L/m) _____
Centrifuge: Underflow Wt (kg/m³) _____ Rate (L/m) _____ Overflow Wt (kg/m³) _____ Rate (L/m) _____

Bits

Number	Size (mm)	Type	SN	Jets (mm)	WOB (daN)	RPM	Out (m)	In (m)	Metres	Hours	Condition

Pumps / Hydraulics

No.	Liner (mm)	Length (mm)	SPM	PP (kPa)	Output (L/min)	AV (m/min)	Power (kW)
1	140	235					
2	140	235					

Drilling Mud Additives

Lime - 17
MI Gel - 4
Soda Ash - 2
Xanvis - 5
Calcium Carbonate - 1

Surveys

Depth Inclinacion Azimuth

Time Distribution

Operation	Hours
Dis	0.75
Trips	4.00
Test Packer	0.75
Snub	5.25
Handle Tools	2.50
LDDP	9.00
Set Packer	1.75

Geological Summary (Include formation tops, lithology and mud gas if applicable)

Total Hours 24.00

Remarks (Include cores, spud or rig release, casing, plugs, logs, hole problems, KB to GL, KB to CF, description of drill string, etc.)

Rigged out snubbing unit, ran in hole with DP (Liner and packer on bottom) to 1450.0 m KB. Set packer, displace hole to inhibited water. Pressure test to 21000 kPa, checked O.K. Laid down DP (Broke Kelly) Rigged out William head and rigged lower QRC to report time.

1 - Load mud sent east

1 - Load DP and casing sent west

Personel on lease:

3-Bisset 12-Ralex
5-Northland 5-Live Well
1-Williams 1-BJ Nowosco
1-Halliburton 1-M.I.
3-F.I. Canada

Supervisor K. Creelman/
M. Nicklorn/Randy Genest

**DAILY DRILLING REPORT - CONFIDENTIAL**

Weather	Snow	Temperature	-4 °C	Road	Good	Date	00 11 19
Well	INTRAGAZ ST FLAVIEN #14			Rig	RALEX 1	Day No.	56
Depth (m)	2414	Progress (m)		Hole Size (mm)	156	Status	Pressure Testing Tubing
Mud: Wt (kg/m ³)		Visc (s/L)		WL (cm ³)		pH	
Methyl Blue		Solids (%)		Filter Cake (mm)		PV (mPa.s)	YP (Pa) Gels (Pa)
3 RPM		6 RPM		Soluble Sulfides (mg/L)		Salt (mg/L)	Cal (mg/L)
Desander:	Underflow Wt (kg/m ³)		Rate (L/m)	Overflow Wt (kg/m ³)			Rate (L/m)
Desilter:	Underflow Wt (kg/m ³)		Rate (L/m)	Overflow Wt (kg/m ³)			Rate (L/m)
Centrifuge:	Underflow Wt (kg/m ³)		Rate (L/m)	Overflow Wt (kg/m ³)			Rate (L/m)

Bits

Number	Size (mm)	Type	SN	Jets (mm)	WOB (daN)	RPM	Out (m)	In (m)	Metres	Hours	Condition
N/A											

Pumps / Hydraulics

No.	Liner (mm)	Length (mm)	SPM	PP (kPa)	Output (L/min)	AV (m/min)	Power (kW)
1	140	235					
2	140	235					

Drilling Mud Additives

Nil

Surveys

Depth	Inclination	Azimuth
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Time Distribution

Operation	Hours
RU & RD	4.50
Run Casing/Cmt	12.00
Test BOP	1.50
Space Out	2.50
Safety	0.25
WO Packer	2.25

Geological Summary (Include formation tops, lithology and mud gas if applicable)**Total Hours** 24**Remarks (Include cores, spud or rig release, casing, plugs, logs, hole problems, KB to GL, KB to CF, description of drill string, etc.)**

Rigged out lower QRC and laid down rig in power tongs. Held safety meeting. Waited on packer. Picked up packer. Sealed assembly and torque, ran 88.9 mm tubing. Pressure tested annular to 11000 kPa. Spaced out and set tubing hanger with 8000 daN pressure. Tested tubing/casing to 19000 kPa. Held 21000 kPa on inside of tubing for 15 minutes.

2 - Loads of MI product sent east

1 - Load of Live Well equipment sent west.

Personel on lease:

3-Bisset	12-Ralex
5-Northland	1-Live Well
1-Williams	1-BJ Nowsco
1-Halliburton	1-M.I.
3-F.I. Canada	2-Dale Holland

Supervisor K. Creelman/
M. Nicklorn/Randy Genest

DAILY DRILLING REPORT - CONFIDENTIAL

Weather	Cloudy	Temperature	-6 °C	Road	Good	Date	00 11 20
Well	INTRAGAZ ST FLAVIEN #14			Rig	RALEX 1	Day No.	57
Depth (m)	2414	Progress (m)		Hole Size (mm)	156	Status	Rigging Out Wireline
Mud: Wt (kg/m ³)		Visc (s/L)		WL (cm ³)		pH	
						PV (mPa.s)	
						YP (Pa)	
						Gels (Pa)	
Methyl Blue		Solids (%)		Filter Cake (mm)		Salt (mg/L)	
						Cal (mg/L)	
3 RPM		6 RPM		Soluble Sulfides (mg/L)		Electrical Stability (v)	
Desander:	Underflow Wt (kg/m ³)		Rate (L/m)	Overflow Wt (kg/m ³)		Rate (L/m)	
Desilter:	Underflow Wt (kg/m ³)		Rate (L/m)	Overflow Wt (kg/m ³)		Rate (L/m)	
Centrifuge:	Underflow Wt (kg/m ³)		Rate (L/m)	Overflow Wt (kg/m ³)		Rate (L/m)	

Bits

[illegible]

Pumps / Hydraulics

No.	Liner (mm)	Length (mm)	SPM	PP (kPa)	Output (L/min)	AV (m/min)	Power (kW)
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Drilling Mud Additives



Surveys

<u>Depth</u>	<u>Inclination</u>	<u>Azimuth</u>
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Time Distribution

<u>Operation</u>	<u>Hours</u>
Total Hours	24.00

Geological Summary (Include formation tops, lithology and mud gas if applicable)

Remarks (Include cores, spud or rig release, casing, plugs, logs, hole problems, KB to GL, KB to CF, description of drill string, etc.)

Tested tubing. Rigged down stack. Rigged in wellhead. Rigged in Northland. Pressure tested to 21000 kPa. Rigged up wireline unit. Ran in and recovered prong. Ran in to recover plug, unable to pull plug. Tubing did not equalize, ports plugged. Made run with bailer and recovered about two litres viscous fluid. Applied 2000 kPa to tubing, increased pressure slowly to 8300 kPa. Tubing started to bleed off, then went on vacuum. Filled Tubing with water, ran in and recovered plug. Rigged down wireline truck.

Personel on lease:

3-Bisset	12-Ralex
5-Northland	1-Live Well
1-Williams	1-Halliburton
2-Dale Holland	

Supervisor K. Creelman/
M. Nicklöm/Randy Genest

DAILY DRILLING REPORT - CONFIDENTIAL

Weather	Overcast	Temperature	-4	°C	Road	Good	Date	00 11 21
Well	INTRAGAZ ST FLAVIEN #14				Rig	RALEX 1	Day No.	58
Depth (m)	2414	Progress (m)		Hole Size (mm)	156	Status	Flowing Well	
Mud: Wt (kg/m ³)		Visc (s/L)		WL (cm ³)		pH	PV (mPa.s)	YP (Pa)
		Gels (Pa)						
Methyl Blue		Solids (%)		Filter Cake (mm)		Salt (mg/L)		Cal (mg/L)
3 RPM		6 RPM		Soluble Sulfides (mg/L)		Electrical Stability (v)		
Desander:	Underflow Wt (kg/m ³)		Rate (L/m)		Overflow Wt (kg/m ³)		Rate (L/m)	
Desilter:	Underflow Wt (kg/m ³)		Rate (L/m)		Overflow Wt (kg/m ³)		Rate (L/m)	
Centrifuge:	Underflow Wt (kg/m ³)		Rate (L/m)		Overflow Wt (kg/m ³)		Rate (L/m)	

Bits

[illegible]

Pumps / Hydraulics

No.	Liner (mm)	Length (mm)	SPM	PP (kPa)	Output (L/min)	AV (m/min)	Power (kW)
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Drilling Mud Additives



Surveys

<u>Depth</u>	<u>Inclination</u>	<u>Azimuth</u>
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Time Distribution

<u>Operation</u>	<u>Hours</u>
Well Test	24.00
Total Hours	24.00

Geological Summary (Include formation tops, lithology and mud gas if applicable)

[illegible]

Remarks (Include cores, spud or rig release, casing, plugs, logs, hole problems, KB to GL, KB to CF, description of drill string, etc.)

Rigged out wireline. Rigged in BJ pumper and tied in Northland lines 1 h. Circulated through choke and pressure test lines to 36000 kPa - checked O.K. 3/4 h. Pressured up against plug to 26000 kPa. Plug let go 0.25 h. Rigged out BJ and installed companion flange 0.25 h. Flowed well 3.5 h. Pumped methanol 5 h. Flowed well for clean-up 5.5 h Shut in well 5 h. Flowed well for clean up for 1 h. to report time.

Personel on lease:

2-Bisset	11-Ralex
5-Northland	1-Live Well
1-Williams	1-Intragaz

Supervisor K. Creelman/
Randy Genest

DAILY DRILLING REPORT - CONFIDENTIAL

Weather	Temperature		°C	Road	Good	Date	00 11 22
Well	INTRAGAŽ ST FLAVIEN #14			Rig	RALEX 1	Day No.	59
Depth (m)	2414	Progress (m)		Hole Size (mm)	156	Status	Shut Down
Mud: Wt (kg/m ³)		Visc (s/L)		WL (cm ³)		pH	
						PV (mPa.s)	
						YP (Pa)	
						Gels (Pa)	
Methyl Blue		Solids (%)		Filter Cake (mm)		Salt (mg/L)	
						Cal (mg/L)	
3 RPM		6 RPM		Soluble Sulfides (mg/L)		Electrical Stability (v)	
Desander:	Underflow Wt (kg/m ³)			Rate (L/m)		Overflow Wt (kg/m ³)	
Desilter:	Underflow Wt (kg/m ³)			Rate (L/m)		Overflow Wt (kg/m ³)	
Centrifuge:	Underflow Wt (kg/m ³)			Rate (L/m)		Overflow Wt (kg/m ³)	

Bits

Number	Size (mm)	Type	SN	Jets (mm)	WOB (daN)	RPM	Out (m)	In (m)	Metres	Hours	Condition
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Pumps / Hydraulics

No.	Liner (mm)	Length (mm)	SPM	PP (kPa)	Output (L/min)	AV (m/min)	Power (kW)
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Drilling Mud Additives

Surveys

<u>Depth</u>	<u>Inclination</u>	<u>Azimuth</u>
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<u>Depth</u>	<u>Inclination</u>	<u>Azimuth</u>
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Time Distribution

<u>Operation</u>	<u>Hours</u>
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<u>Operation</u>	<u>Hours</u>
Total Hours _____	

Geological Summary (Include formation tops, lithology and mud gas if applicable)

Remarks (include cores, spud or rig release, casing, plugs, logs, hole problems, KB to GL, KB to CF, description of drill string, etc.)

Flowed well at approximately 280 10³m³/d at 15025 kPa 2.00 h. Shut in well from 08:00 to 12:00. Flowed well at approximately 420 10³m³/d at 13500 kPa for 4 h. Shut in well and recorded well pressures for 4 h. (20:00 hours well completed)

Rig Released 00 11 21 at 12:00 noon

7,596,986

Supervisor

K. Creelman/
Randy Genest



INTRAGAZ ST-FLAVIEN # 14

ANNEXE 3

**RAPPORTS JOURNALIERS DE FORAGE
DIRECTIONNEL
DAILY DIRECTIONAL DRILLING REPORT**



End of Well Report

Intragaz Inc.

St. Flavien

#14

Lic #2000FA230

November 20, 2000

Table of Contents

- 1. Discussion**
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Customer : Intragaz Inc.

Well Name : Intragaz St. Flavien #14

Discussion:

BHA #	Bit #	Motor Run #	Hole Size (mm)	MD In (m)	MD Out (m)	TVD In (m)	TVD Out (m)	Inc In (deg)	Inc Out (deg)	Azi In (deg)	Azi Out (deg)	Drlg hrs	Circ hrs
1	1	?	311.0	0	274	0	274	0.0	3.1	0	343	29	2
2	2	?	222.0	274	330	274	330	3.1	6.6	343	339	9	5
3	3	?	222.0	330	468	330	466	6.6	12.6	339	341	15	0
4	4		222.0	468	468	466	466	12.6	12.6	341	341	0	0
5	5		222.0	468	877	466	856	12.6	21.2	341	338	85	1
6	6rr3		222.0	877	1257	856	1197	21.2	34.6	338	323	58	9
7	4rr1	1	222.0	1257	1559	1197	1422	34.6	55.4	323	293	57	10
8	3rr1	2	222.0	1559	1677	1422	1468	55.4	79.1	293	284	28	5
9	7	9	156.0	1677	1951	1468	1478	79.1	91.8	284	279	52	16
10	8	10	156.0	1951	1951	1478	1478	91.8	91.8	279	279	0	0
11	9	4	156.0	1951	2414	1478	1491	91.8	87.0	279	264	63	36

Table 1 - BHA Summary

Motor Run #	Manufacturer	Type	Lobe	OD (mm)	Gauge (mm)	Bend (deg)	Adj	DLS (Ori) (°/30m)	ROP (Ori) (m/hr)	ROP (Rot) (m/hr)
?	Black Max	Square Motor	6/7	244.5	311.0	0.00	N	0.00	0	9
?	Black Max Stabeco	6-3/4" Square Motor	6/7	171.5	222.0	0.00	N		0	7
?	Black Max Stabeco	6-3/4" Square Motor	6/7	171.5	222.0	0.00	N		0	10
1	SSDS	SperryDrill	6/7	170.0	219.0	1.50	N	16.00	5	6
2	SSDS	SperryDrill	8/9	170.0		1.83	N	7.00	4	5
9	SSDS	SperryDrill	7/8	119.0		1.50	N	3.31	4	6
10	SSDS	SperryDrill	7/8	119.0		1.50	N			
4	SSDS	SperryDrill	7/8	119.0		1.50	N	2.29	5	8

Table 2 - Motor Run Summary

Bit #	Manufacturer	Style	OD (mm)	Gge Len (mm)	Nozzles (mm)	TFA (mm²)	Dull Grades I O D L B G O R	Ftge (m)	Drlg hrs	ROP (m/hr)
1	Smith	F2P	311.0	25.0	1x14.3, 1x12.7, 1x11.1	384.1	1-1-WT-A -E-I-NO-TD	274	29.25	9
2	Smith	MA32PX	222.0	222.0	6x7.9	294.1	1-1-WT-G -X-I-NO-BHA	56	8.50	7
3	Smith	MGR74PX	222.0	50.0		253.0	1-1-NO-A -X-I-NO-BHA	138	14.50	10
4	Smith	F2H	222.0	25.0	3x15.9	595.7	- - - - -NEW	0	0.00	
5	Smith	F15HP	222.0	25.0	3x9.5	212.6	5-4-WT-A -E-I-NO-PEN	409	84.50	5
6rr3	Smith	MA74PX	222.0	50.0		253.0		380	58.25	7
4rr1	Smith	F2H	222.0		3x11.9	333.7	5-7-BT-HR-E-1-FC-BHA	302	56.50	5
3rr1	Smith	F3H	222.0	25.0	3x11.9	333.7	8-8-BT-A -E-1-WT-TD	118	28.00	4
7	Smith Tools	XR30TY	156.0	25.0	1x7.9, 1x8.7, 1x9.5	179.3	6-2-LT-G1-E-1-BT-HR	274	51.50	5
8	Smith Tools	MA32QPX	156.0	38.0	3x9.5, 3x5.6	283.9		0	0.00	
9	Smith	XR30TY	156.0	25.0	3x9.5	212.6	2-6-LT-AG-E-1-JD-TD	463	63.00	7

Table 3 - Bit Run Summary

sperry-sun

DRILLING SERVICES

Daily Drilling Report

Customer : Intragaz Inc.
 Well Name : Intragaz St. Flavien #14
 Field : St. Flavien (Lic #2000FA230)
 Location : #14
 Rig : Ralex #1 (RKB 144.54m)
 Job # : CX-HZ-01166

CURRENT STATUS Report # 1 09/15/2000

Total Depth (m) :	0	Casing Depth (m) :	14.00	Operator Reps :	Ken Creelman
Drilled last 24 hrs (m) :	0	Casing Diameter (mm) :	406.0	SSDS Reps :	
Hole Size (mm) :		Casing ID (mm) :			

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
0.00	0.00	0.00	0.00	0.00	N00.00E

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Klippe Chaudiere	0.00	0.00

BHA SUMMARY

MUD DATA

Type	Weight (kg/m ³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Gel/Freshwater	1130	81	32	18.0	5.5 / 17.0	44	8.0	8.10	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00.00	00.00	24.00	0.00		Rig Up (Tools sent from Nisku, Rental on 9" Non-Mags & SS Kit)

COMMENTS

sperry-sun

DRILLING SERVICES

Daily Drilling Report

Customer : Intragaz Inc.
Well Name : Intragaz St. Flavien #14
Field : St. Flavien (Lic #2000FA230)
Location : #14
Rig : Ralex #1 (RKB 144.54m)
Job # : CX-HZ-01166

CURRENT STATUS Report # 2 09/16/2000

Total Depth (m) :	0	Casing Depth (m) :	14.00	Operator Reps :	Ken Creelman
Drilled last 24 hrs (m) :	0	Casing Diameter (mm) :	406.0	SSDS Reps :	
Hole Size (mm) :		Casing ID (mm) :			

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
0.00	0.00	0.00	0.00	0.00	N00.00E

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Klippe Chaudiere	0.00	0.00

BHA SUMMARY

MUD DATA

Type	Weight (kg/m ³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Gel/Freshwater	1130	81	32	18.0	5.5 / 17.0	44	8.0	8.10	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	00:00	24.00	0.00		Rig Up (Tools on Standby, Rental on 9" Non-Mags & SS Kit)

COMMENTS

sperry-sun

DRILLING SERVICES

Daily Drilling Report

Customer : Intragaz Inc.
Well Name : Intragaz St. Flavien #14
Field : St. Flavien (Lic #2000FA230)
Location : #14
Rig : Ralex #1 (RKB 144.54m)
Job # : CX-HZ-01166

CURRENT STATUS Report # 3 09/17/2000

Total Depth (m) :	0	Casing Depth (m) :	14.00	Operator Reps :	Ken Creelman
Drilled last 24 hrs (m) :	0	Casing Diameter (mm) :	406.0	SSDS Reps :	
Hole Size (mm) :		Casing ID (mm) :			

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
0.00	0.00	0.00	0.00	0.00	N00.00E

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Klippe Chaudiere	0.00	0.00

BHA SUMMARY

MUD DATA

Type	Weight (kg/m ³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Gel/Freshwater	1130	81	32	18.0	5.5 / 17.0	44	8.0	8.10	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	00:00	24:00	0.00		Rig Up (Tools on Standby, Daily Rental on 9" Non-Mags & SS Kit)

COMMENTS

sperry-sun

DRILLING SERVICES

Daily Drilling Report

Customer : Intragaz inc.
Well Name : Intragaz St. Flavien #14
Field : St. Flavien (Lic #2000FA230)
Location : #14
Rig : Ralex #1 (RKB 144.54m)
Job # : CX-HZ-01166

CURRENT STATUS Report # 4 09/18/2000

Total Depth (m)	:	0	Casing Depth (m)	:	14.00	Operator Reps	:	Ken Creelman
Drilled last 24 hrs (m)	:	0	Casing Diameter (mm)	:	406.0	SSDS Reps	:	
Hole Size (mm)	:		Casing ID (mm)	:				

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
0.00	0.00	0.00	0.00	0.00	N00.00E

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Klippe Chaudiere	0.00	0.00

BHA SUMMARY

MUD DATA

Type	Weight (kg/m ³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Gel/Freshwater	1130	81	32	18.0	5.5 / 17.0	44	8.0	8.10	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00.00	00.00	24.00	0.00		Rig Up (Tools on Standby, Daily Rental on 9" Non-Mags)

COMMENTS

sperry-sun

DRILLING SERVICES

Daily Drilling Report

Customer : Intragaz Inc.
 Well Name : Intragaz St. Flavien #14
 Field : St. Flavien (Lic #2000FA230)
 Location : #14
 Rig : Ralex #1 (RKB 144.54m)
 Job # : CX-HZ-01166

CURRENT STATUS Report # 5 09/19/2000

Total Depth (m) :	0	Casing Depth (m) :	14.00	Operator Reps :	Ken Creelman
Drilled last 24 hrs (m) :	0	Casing Diameter (mm) :	406.0	SSDS Reps :	
Hole Size (mm) :		Casing ID (mm) :			

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
0.00	0.00	0.00	0.00	0.00	N00.00E

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Klippe Chaudiere	0.00	0.00

BHA SUMMARY

MUD DATA

Type	Weight (kg/m ³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Gel/Freshwater	1130	81	32	18.0	5.5 / 17.0	44	8.0	8.10	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	00:00	24.00	0.00		Rig Up (Tools on Standby, Daily Rental on 9" Non-Mags)

COMMENTS



Daily Drilling Report

Customer : Intragaz Inc.
Well Name : Intragaz St. Flavien #14
Field : St. Flavien (Lic #2000FA230)
Location : #14
Rig : Ralex #1 (RKB 144.54m)
Job # : CX-HZ-01166

CURRENT STATUS Report # 6 09/20/2000

Total Depth	(m)	:	0	Casing Depth	(m)	:	14.00	Operator Reps	:	Ken Creelman
Drilled last 24 hrs	(m)	:	0	Casing Diameter	(mm)	:	406.0	SSDS Reps	:	
Hole Size	(mm)	:		Casing ID	(mm)	:				

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
0.00	0.00	0.00	0.00	0.00	N00.00E

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Klippe Chaudiere	0.00	0.00

BHA SUMMARY

MUD DATA

Type	Weight (kg/m ³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Gel/Freshwater	1130	81	32	18.0	5.5 / 17.0	44	8.0	8.10	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	00:00	24.00	0.00		Rig Up (Tools on Standby, Daily Rental on 9" Non-Mags & SS Kit)

COMMENTS



Daily Drilling Report

Customer : Intragaz Inc.
Well Name : Intragaz St. Flavien #14
Field : St. Flavien (Lic #2000FA230)
Location : #14
Rig : Ralex #1 (RKB 144.54m)
Job # : CX-HZ-01166

CURRENT STATUS Report # 7 09/21/2000

Total Depth	(m)	:	0	Casing Depth	(m)	:	14.00	Operator Reps	:	Ken Creelman
Drilled last 24 hrs	(m)	:	0	Casing Diameter	(mm)	:	406.0	SSDS Reps	:	
Hole Size	(mm)	:		Casing ID	(mm)	:				

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
0.00	0.00	0.00	0.00	0.00	N00.00E

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Klippe Chaudiere	0.00	0.00

BHA SUMMARY

MUD DATA

Type	Weight (kg/m ³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Gel/Freshwater	1130	81	32	18.0	5.5 / 17.0	44	8.0	8.10	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	00:00	24.00	0.00		Rig Up (Tools on Standby, Rental on 9" Non-Mags & SS Kit)

COMMENTS



Daily Drilling Report

Customer : Intragaz Inc.
Well Name : Intragaz St. Flavien #14
Field : St. Flavien (Lic #2000FA230)
Location : #14
Rig : Ralex #1 (RKB 144.54m)
Job # : CX-HZ-01166

CURRENT STATUS Report # 8 09/22/2000

Total Depth	(m)	:	0	Casing Depth	(m)	:	14.00	Operator Reps	:	Ken Creelman
Drilled last 24 hrs	(m)	:	0	Casing Diameter	(mm)	:	406.0	SSDS Reps	:	Frank van Noord (1)
Hole Size	(mm)	:		Casing ID	(mm)	:				

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
0.00	0.00	0.00	0.00	0.00	N00.00E

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Klippe Chaudiere	0.00	0.00

BHA SUMMARY

MUD DATA

Type	Weight (kg/m ³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Gel/Freshwater	1130	81	32	18.0	5.5 / 17.0	44	8.0	8.10	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	06:00	6.00	0.00		Rig Up (Tools on Standby, Rental on 9" Non-Mags & SS Kit)
06:00	00:00	18.00	0.00		Travel from Edmonton to location

COMMENTS

sperry-sun

DRILLING SERVICES

Daily Drilling Report

Customer : Intragaz Inc.
Well Name : Intragaz St. Flavien #14
Field : St. Flavien (Lic #2000FA230)
Location : #14
Rig : Ralex #1 (RKB 144.54m)
Job # : CX-HZ-01166

CURRENT STATUS Report # 9 09/23/2000

Total Depth (m) :	0	Casing Depth (m) :	14.00	Operator Reps :	Ken Creelman
Drilled last 24 hrs (m) :	0	Casing Diameter (mm) :	406.0	SSDS Reps :	Frank van Noord (2)
Hole Size (mm) :		Casing ID (mm) :			

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
0.00	0.00	0.00	0.00	0.00	N00.00E

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Klippe Chaudiere	0.00	0.00

BHA SUMMARY

MUD DATA

Type	Weight (kg/m³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Gel/Freshwater	1130	81	32	18.0	5.5 / 17.0	44	8.0	8.10	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	00:00	24.00	0.00		Rig Up & Caliper Tools (Rental on 9" NMDC's & SS Kit)

COMMENTS

sperry-sun

DRILLING SERVICES

Daily Drilling Report

Customer : Intragaz Inc.
 Well Name : Intragaz St. Flavien #14
 Field : St. Flavien (Lic #2000FA230)
 Location : #14
 Rig : Ralex #1 (RKB 144.54m)
 Job # : CX-HZ-01166

CURRENT STATUS Report # 10 09/24/2000

Total Depth (m) :	16	Casing Depth (m) :	14.00	Operator Reps :	Ken Creelman
Drilled last 24 hrs (m) :	16	Casing Diameter (mm) :	406.0	SSDS Reps :	Frank van Noord (3)
Hole Size (mm) :	311.0	Casing ID (mm) :			

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
0.00	0.00	0.00	0.00	0.00	N00.00E

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Klippe Chaudiere	0.00	0.00

BHA SUMMARY

BHA 1: 256.98 m; Bit #1 (0.5 hrs), Stab, PDM # (0.5 hrs), Stab, 1x DC, Stab, Pony, Stab, 1x DC, Jar, 1x DC, 1x DC, Sub, 12x DC, Sub, 9x HWDP

MUD DATA

Type	Weight (kg/m³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Gel/Freshwater	1130	81	32	18.0	5.5 / 17.0	44	8.0	8.10	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	20:30	20.50	0.00		Rig Up (Rental on 9" NMDC's & SS Kit)
20:30	23:15	2.75	0.00	1	Make Up BHA # 1
23:15	23:30	0.25	0.00	1	Trip In
23:30	00:00	0.50	16.00	1	Drilling 311mm Hole from 0 to 16 meters

COMMENTS

sperry-sun

DRILLING SERVICES

Daily Drilling Report

Customer : Intragaz Inc.
 Well Name : Intragaz St. Flavien #14
 Field : St. Flavien (Lic #2000FA230)
 Location : #14
 Rig : Ralex #1 (RKB 144.54m)
 Job # : CX-HZ-01166

CURRENT STATUS Report # 11 09/25/2000

Total Depth (m) :	148	Casing Depth (m) :	14.00	Operator Reps :	Ken Creelman
Drilled last 24 hrs (m) :	132	Casing Diameter (mm) :	406.0	SSDS Reps :	Frank van Noord (4)
Hole Size (mm) :	311.0	Casing ID (mm) :			

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
138.68	0.80	325.00	138.68	0.99	N28.76W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Klippe Chaudiere	0.00	0.00

BHA SUMMARY

BHA 1: 256.98 m; Bit #1 (14.25 hrs), Stab, PDM # (14.5 hrs), Stab, 1x DC, Stab, Pony, Stab, 1x DC, Jar, 1x DC, 1x DC, Sub, 12x DC, Sub, 9x HWDP

MUD DATA

Type	Weight (kg/m ³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Gel/Freshwater	1130	81	32	18.0	5.5 / 17.0	44	8.0	8.10	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	01:45	1.75	25.00	1	Drilling 311mm Hole from 16 to 25m
01:45	02:45	1.00	25.00	1	Pick up Monel & Non-Mag Stabilizer
02:45	04:30	1.75	37.00	1	Drilling 311mm Hole from 25 to 37m
04:30	05:30	1.00	37.00	1	Pick up Pony NMDC & Stabilizer
05:30	06:15	0.75	41.00	1	Drilling 311mm Hole from 37 to 41m
06:15	06:30	0.25	41.00	1	Circulate
06:30	07:30	1.00	41.00	1	Pick up 228mm DC
07:30	07:45	0.25	41.00	1	Wireline Single Shot Deviation Survey
07:45	09:45	2.00	65.00	1	Drilling 311mm Hole from 41 to 65m
09:45	11:45	2.00	65.00	1	Pick up Jars & DC
11:45	12:00	0.25	65.00	1	Service Rig
12:00	19:30	7.50	148.00	1	Drilling 311mm Hole from 65 to 148m
19:30	21:30	2.00	148.00	1	Wireline Single Shot Deviation Surveys
21:30	23:45	2.25	148.00	1	Drill Collar Connections
23:45	00:00	0.25	148.00	1	Service Rig

COMMENTS

sperry-sun

DRILLING SERVICES

Daily Drilling Report

Customer : Intragaz Inc.
 Well Name : Intragaz St. Flavien #14
 Field : St. Flavien (Lic #2000FA230)
 Location : #14
 Rig : Ralex #1 (RKB 144.54m)
 Job # : CX-HZ-01166

CURRENT STATUS Report # 12 09/26/2000

Total Depth (m) :	274	Casing Depth (m) :	274.00	Operator Reps :	Ken Creelman
Drilled last 24 hrs (m) :	126	Casing Diameter (mm) :	244.5	SSDS Reps :	Frank van Noord (5)
Hole Size (mm) :	311.0	Casing ID (mm) :	224.4		

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
250.71	2.60	341.00	250.65	4.15	N25.06W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Quebec City	175.00	174.99

BHA SUMMARY

BHA 1: 256.98 m; Bit #1 (29.25 hrs), Stab, PDM # (31. hrs), Stab, 1x DC, Stab, Pony, Stab, 1x DC, Jar, 1x DC, 1x DC, Sub, 12x DC, Sub, 9x HWDP

MUD DATA

Type	Weight (kg/m³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Gel/Freshwater	1130	81	32	18.0	5.5 / 17.0	44	8.0	8.10	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	00:15	0.25	150.00	1	Drilling 311mm Hole from 148 to 150m
00:15	00:45	0.50	150.00	1	Connection & Deviation Survey
00:45	01:45	1.00	159.00	1	Drilling 311mm Hole from 150 to 159m
01:45	02:15	0.50	159.00	1	Connection & Deviation Survey
02:15	03:15	1.00	169.00	1	Drilling 311mm Hole from 159 to 169m
03:15	03:45	0.50	169.00	1	Connection & Deviation Survey
03:45	04:30	0.75	179.00	1	Drilling 311mm Hole from 169 to 179m
04:30	05:00	0.50	179.00	1	Connection & Deviation Survey
05:00	07:00	2.00	198.00	1	Drilling 311mm Hole from 179 to 198m
07:00	07:30	0.50	198.00	1	Connection & Deviation Survey
07:30	08:45	1.25	206.00	1	Drilling 311mm Hole from 198 to 206m
08:45	09:15	0.50	206.00	1	Circulate
09:15	11:15	2.00	206.00	1	Wiper Trip
11:15	11:30	0.25	206.00	1	Service Rig
11:30	11:45	0.25	211.00	1	Drilling 311mm Hole from 206 to 211m
11:45	12:00	0.25	211.00	1	Work on Light Plant, Rig Repair
12:00	13:00	1.00	215.00	1	Drilling 311mm Hole from 211 to 215m
13:00	13:15	0.25	215.00	1	Deviation Survey
13:15	15:15	2.00	234.00	1	Drilling 311mm Hole from 215 to 234m
15:15	15:30	0.25	234.00	1	Deviation Survey
15:30	17:30	2.00	252.00	1	Drilling 311mm Hole from 234 to 252m
17:30	18:00	0.50	252.00	1	Connection & Deviation Survey

COMMENTS

COMMENTS

sperry-sun

DRILLING SERVICES

Daily Drilling Report

Customer : Intragaz Inc.
 Well Name : Intragaz St. Flavien #14
 Field : St. Flavien (Lic #2000FA230)
 Location : #14
 Rig : Ralex #1 (RKB 144.54m)
 Job # : CX-HZ-01166

CURRENT STATUS Report # 13 09/27/2000

Total Depth (m) :	274	Casing Depth (m) :	274.00	Operator Reps :	Ken Creelman
Drilled last 24 hrs (m) :	0	Casing Diameter (mm) :	244.5	SSDS Reps :	Frank van Noord (6)
Hole Size (mm) :	311.0	Casing ID (mm) :	224.4		

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
250.71	2.60	341.00	250.65	4.15	N25.06W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Quebec City	175.00	174.99

BHA SUMMARY

BHA 1: 256.98 m; Bit #1 (29.25 hrs), Stab, PDM # (31.5 hrs), Stab, 1x DC, Stab, Pony, Stab, 1x DC, Jar, 1x DC, 1x DC, Sub, 12x DC, Sub, 9x HWDP

MUD DATA

Type	Weight (kg/m³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Gel/Freshwater	1130	81	32	18.0	5.5 / 17.0	44	8.6	8.10	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	02:45	2.75	274.00	1	Wiper Trip
02:45	03:15	0.50	274.00	1	Circulate
03:15	08:00	4.75	274.00	1	POOH & Lay Down 9" BHA
08:00	13:15	5.25	274.00		Run Casing
13:15	14:15	1.00	274.00		Circulate Casing
14:15	14:45	0.50	274.00		Rig up to Cement
14:45	16:30	1.75	274.00		Cement
16:30	00:00	7.50	274.00		Wait on Cement

COMMENTS



Daily Drilling Report

Customer : Intragaz Inc.
Well Name : Intragaz St. Flavien #14
Field : St. Flavien (Lic #2000FA230)
Location : #14
Rig : Ralex #1 (RKB 144.54m)
Job # : CX-HZ-01166

CURRENT STATUS **Report # 14** **09/28/2000**

Total Depth	(m)	:	274
Drilled last 24 hrs	(m)	:	0
Hole Size	(mm)	:	

Casing Depth (m) : 274.00
Casing Diameter (mm) : 244.5
Casing ID (mm) : 224.4

Operator Reps : Ken Creelman, Randy Genest
SSDS Reps : Frank van Noord (7)

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
250.71	2.60	341.00	250.65	4.15	N25.06W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Quebec City	175.00	174.99

BHA SUMMARY

MUD DATA

Type	Weight (kg/m ³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Gel/Freshwater	1130	81	32	18.0	5.5 / 17.0	44	8.0	8.10	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	06:00	6.00	274.00		Cut Casing & Weld on Casing Bowl
06:00	00:00	18.00	274.00		Nipple Up BOP

COMMENTS

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DRILLING SERVICES

Daily Drilling Report

Customer : Intragaz Inc.
 Well Name : Intragaz St. Flavien #14
 Field : St. Flavien (Lic #2000FA230)
 Location : #14
 Rig : Ralex #1 (RKB 144.54m)
 Job # : CX-HZ-01166

CURRENT STATUS Report # 15 09/29/2000

Total Depth (m) :	274	Casing Depth (m) :	274.00	Operator Reps :	Ken Creelman, Randy Genest
Drilled last 24 hrs (m) :	0	Casing Diameter (mm) :	244.5	SSDS Reps :	Frank van Noord (8)
Hole Size (mm) :		Casing ID (mm) :	224.4		

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
250.71	2.60	341.00	250.65	4.15	N25.06W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Quebec City	175.00	174.99

BHA SUMMARY

MUD DATA

Type	Weight (kg/m ³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Gel/Freshwater	1130	81	32	18.0	5.5 / 17.0	44	8.0	8.10	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	22:00	22.00	274.00		Nipple Up BOP
22:00	00:00	2.00	274.00		Test BOP

COMMENTS

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DRILLING SERVICES

Daily Drilling Report

Customer : Intragaz Inc.
 Well Name : Intragaz St. Flavien #14
 Field : St. Flavien (Lic #2000FA230)
 Location : #14
 Rig : Ralex #1 (RKB 144.54m)
 Job # : CX-HZ-01166

CURRENT STATUS Report # 16 09/30/2000

Total Depth (m) :	278	Casing Depth (m) :	274.00	Operator Reps :	Ken Creelman, Randy Genest
Drilled last 24 hrs (m) :	4	Casing Diameter (mm) :	244.5	SSDS Reps :	Frank van Noord (9)
Hole Size (mm) :	222.0	Casing ID (mm) :	224.4		

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
250.71	2.60	341.00	250.65	4.15	N25.06W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Quebec City	175.00	174.99

BHA SUMMARY

BHA 2: 258.39 m; Bit #2 (4.75 hrs), Stab, PDM # (5. hrs), Sub, 1x DC, Stab, Pony, Stab, 1x DC, Jar, Pony, 14x DC, Sub, 9x HWDP

MUD DATA

Type	Weight (kg/m ³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Gel/Freshwater	1130	81	32	18.0	5.5 / 17.0	44	8.0	8.10	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	06:30	6.50	274.00		Test BOP
06:30	10:00	3.50	274.00		Make up BHA # 2
10:00	12:00	2.00	274.00	2	Trip In, tag cement @ 249 meters
12:00	19:00	7.00	274.00	2	Test BOP
19:00	23:15	4.25	274.00	2	Drill Cement, Float plug & Shoe
23:15	23:45	0.50	278.00	2	Drilling 222mm Hole from 274 to 278m
23:45	00:00	0.25	278.00	2	Circulate for Formation Integrity Test

COMMENTS

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DRILLING SERVICES

Daily Drilling Report

Customer : Intragaz Inc.
 Well Name : Intragaz St. Flavien #14
 Field : St. Flavien (Lic #2000FA230)
 Location : #14
 Rig : Ralex #1 (RKB 144.54m)
 Job # : CX-HZ-01166

CURRENT STATUS Report # 17 10/01/2000

Total Depth (m) :	406	Casing Depth (m) :	274.00	Operator Reps :	Ken Creelman, Randy Genest
Drilled last 24 hrs (m) :	128	Casing Diameter (mm) :	244.5	SSDS Reps :	Frank van Noord (10)
Hole Size (mm) :	222.0	Casing ID (mm) :	224.4		

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
391.48	8.40	341.00	390.71	17.50	N20.20W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Quebec City	175.00	174.99

BHA SUMMARY

BHA 2: 258.39 m; Bit #2 (12.75 hrs), Stab, PDM # (13.5 hrs), Sub, 1x DC, Stab, Pony, Stab, 1x DC, Jar, Pony, 14x DC, Sub, 9x HWDP
 BHA 3: 259.68 m; Bit #3 (6.5 hrs), Stab, PDM # (20. hrs), Sub, Stab, 1x DC, Stab, Pony, Stab, 1x DC, Jar, Pony, 14x DC, Sub, 9x HWDP

MUD DATA

Type	Weight (kg/m³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Gel/Freshwater	1130	81	32	18.0	5.5 / 17.0	44	8.0	8.10	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	00:30	0.50	278.00	2	FIT
00:30	01:00	0.50	278.00	2	Circulate & Condition Mud
01:00	02:15	1.25	301.00	2	Drilling 222mm Hole from 278 to 301m
02:15	02:30	0.25	301.00	2	Deviation Survey
02:30	02:45	0.25	301.00	2	Service Rig
02:45	06:45	4.00	321.00	2	Drilling 222mm Hole from 301 to 321m
06:45	07:15	0.50	321.00	2	Connection & Deviation Survey
07:15	09:15	2.00	321.00	2	Rig Repair, Rotary Chain
09:15	12:00	2.75	330.00	2	Drilling 222mm Hole from 321 to 330m
12:00	14:00	2.00	330.00	2	Trip Out (at Surface) to change BHA
14:00	14:30	0.50	330.00	3	Change Bit and add Stabilizer
14:30	15:30	1.00	330.00	3	Trip In
15:30	16:15	0.75	341.00	3	Drilling 222mm Hole from 330 to 341m
16:15	16:30	0.25	341.00	3	Deviation Survey
16:30	17:15	0.75	351.00	3	Drilling 222mm Hole from 341 to 351m
17:15	17:45	0.50	351.00	3	Deviation Survey
17:45	18:30	0.75	361.00	3	Drilling 222mm Hole from 351 to 361m
18:30	18:45	0.25	361.00	3	Deviation Survey
18:45	20:00	1.25	380.00	3	Drilling 222mm Hole from 361 to 380m
20:00	20:30	0.50	380.00	3	Deviation Survey
20:30	22:00	1.50	400.00	3	Drilling 222mm Hole from 380 to 400m
22:00	22:30	0.50	400.00	3	Deviation Survey
22:30	00:00	1.50	406.00	3	Drilling 222mm Hole from 400 to 406m

COMMENTS

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DRILLING SERVICES

Daily Drilling Report

Customer : Intragaz Inc.
 Well Name : Intragaz St. Flavien #14
 Field : St. Flavien (Lic #2000FA230)
 Location : #14
 Rig : Ralex #1 (RKB 144.54m)
 Job # : CX-HZ-01166

CURRENT STATUS Report # 18 10/02/2000

Total Depth (m) :	472	Casing Depth (m) :	274.00	Operator Reps :	Ken Creelman, Randy Genest
Drilled last 24 hrs (m) :	66	Casing Diameter (mm) :	244.5	SSDS Reps :	Frank van Noord (11)
Hole Size (mm) :	222.0	Casing ID (mm) :	224.4		

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
469.01	12.60	341.00	466.91	31.69	N19.92W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Quebec City	175.00	174.99

BHA SUMMARY

BHA 3: 259.68 m; Bit #3 (14.5 hrs), Stab, PDM # (28. hrs), Sub, Stab, 1x DC, Stab, Pony, Stab, 1x DC, Jar, Pony, 14x DC, Sub, 9x HWDP
 BHA 4: 235.51 m; Bit #4 (56.75 hrs), Sub, 1x DC, Stab, Jar, Pony, 14x DC, Sub, 9x HWDP
 BHA 5: 877.00 m; Bit #5 (1.5 hrs), Stab, Stab, Stab, Stab, Stab, 1x DC, Stab, Pony, Stab, 1x DC, Jar, Pony, 14x DC, Sub, 9x HWDP, 67x DP (E), Other

MUD DATA

Type	Weight (kg/m ³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Gel/Freshwater	1130	81	32	18.0	5.5 / 17.0	44	8.0	8.10	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	00:30	0.50	409.00	3	Drilling 222mm Hole from 406 to 409m
00:30	01:00	0.50	409.00	3	Deviation Survey
01:00	01:15	0.25	409.00	3	Service Rig
01:15	02:30	1.25	429.00	3	Drilling 222mm Hole from 409 to 429m
02:30	03:00	0.50	429.00	3	Deviation Survey
03:00	04:30	1.50	448.00	3	Drilling 222mm Hole from 429 to 448m
04:30	05:00	0.50	448.00	3	Deviation Survey
05:00	06:15	1.25	458.00	3	Drilling 222mm Hole from 448 to 458m
06:15	06:45	0.50	458.00	3	Deviation Survey
06:45	10:15	3.50	468.00	3	Drilling 222mm Hole from 458 to 468m
10:15	10:30	0.25	468.00	3	Deviation Survey
10:30	11:30	1.00	468.00	3	Trip Out to Rack Motor & Stabs in Derrick
11:30	13:00	1.50	468.00	4	PU BHA # 4
13:00	14:00	1.00	468.00	4	Trip In
14:00	16:00	2.00	468.00	4	Deviation Survey, Check inclination only to bottom
16:00	18:00	2.00	468.00	4	Trip Out (at Surface)
18:00	19:00	1.00	468.00	4	Lay down square motor
19:00	21:00	2.00	468.00	5	Pick up BHA # 5
21:00	22:00	1.00	468.00	5	Trip In
22:00	22:30	0.50	468.00	5	Break Circulation
22:30	00:00	1.50	472.00	5	Drilling 222mm Hole from 468 to 472m

COMMENTS

9" Monels, pony and 12-1/4" Stabilizers arrived in Nisku from location. Last day of charges for these tools.

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DRILLING SERVICES

Daily Drilling Report

Customer : Intragaz Inc.
 Well Name : Intragaz St. Flavien #14
 Field : St. Flavien (Lic #2000FA230)
 Location : #14
 Rig : Ralex #1 (RKB 144.54m)
 Job # : CX-HZ-01166

CURRENT STATUS Report # 19 10/03/2000

Total Depth (m) : 545	Casing Depth (m) : 274.00	Operator Reps : Ken Creelman, Randy Genest
Drilled last 24 hrs (m) : 73	Casing Diameter (mm) : 244.5	SSDS Reps : Frank van Noord (12), Don Roy (1)
Hole Size (mm) : 222.0	Casing ID (mm) : 224.4	

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
537.09	13.90	342.00	533.15	47.39	N19.51W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Quebec City	175.00	174.99

BHA SUMMARY

BHA 5: 877.00 m; Bit #5 (22.75 hrs), Stab, Stab, Stab, Stab, Stab, 1x DC, Stab, Pony, Stab, 1x DC, Jar, Pony, 14x DC, Sub, 9x HWDP, 67x DP (E), Other

MUD DATA

Type	Weight (kg/m³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Polymer	1040	48	11	4.5	5.0 / 18.0	11	8.0	2.50	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	01:45	1.75	478.00	5	Drilling 222mm Hole from 472 to 478m
01:45	02:15	0.50	478.00	5	Deviation Survey
02:15	04:30	2.25	488.00	5	Drilling 222mm Hole from 478 to 488m
04:30	05:00	0.50	488.00	5	Deviation Survey
05:00	05:15	0.25	488.00	5	Service Rig
05:15	09:30	4.25	498.00	5	Drilling 222mm Hole from 488 to 498m
09:30	10:00	0.50	498.00	5	Deviation Survey
10:00	13:30	3.50	507.00	5	Drilling 222mm Hole from 498 to 507m
13:30	13:45	0.25	507.00	5	Deviation Survey
13:45	18:00	4.25	517.00	5	Drilling 222mm Hole from 507 to 517m
18:00	18:15	0.25	517.00	5	Deviation Survey
18:15	22:00	3.75	537.00	5	Drilling 222mm Hole from 517 to 537m
22:00	22:30	0.50	537.00	5	Deviation Survey
22:30	00:00	1.50	545.00	5	Drilling 222mm Hole from 537 to 545m

COMMENTS

MWD Personnel: Rene Bourque and Fred MacInnes

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DRILLING SERVICES

Daily Drilling Report

Customer : Intragaz Inc.
 Well Name : Intragaz St. Flavien #14
 Field : St. Flavien (Lic #2000FA230)
 Location : #14
 Rig : Ralex #1 (RKB 144.54m)
 Job # : CX-HZ-01166

CURRENT STATUS Report # 20 10/04/2000

Total Depth (m) :	667	Casing Depth (m) :	274.00	Operator Reps :	Ken Creelman, Randy Genest
Drilled last 24 hrs (m) :	122	Casing Diameter (mm) :	244.5	SSDS Reps :	Frank van Noord (13), Don Roy (2)
Hole Size (mm) :	222.0	Casing ID (mm) :	224.4		

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
643.97	16.80	345.00	636.18	75.75	N18.12W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Quebec City	175.00	174.99

BHA SUMMARY

BHA 5: 877.00 m; Bit #5 (43. hrs), Stab, Stab, Stab, Stab, Stab, 1x DC, Stab, Pony, Stab, 1x DC, Jar, Pony, 14x DC, Sub, 9x HWDP, 67x DP (E), Other

MUD DATA

Type	Weight (kg/m ³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Polymer	1040	48	11	4.5	5.0 / 18.0	11	8.0	2.50	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	02:00	2.00	556.00	5	Drilling 222mm Hole from 545 to 556m
02:00	02:30	0.50	556.00	5	Deviation Survey
02:30	02:45	0.25	556.00	5	Service Rig
02:45	06:00	3.25	575.00	5	Drilling 222mm Hole from 556 to 575m
06:00	06:30	0.50	575.00	5	Deviation Survey
06:30	08:00	1.50	585.00	5	Drilling 222mm Hole from 575 to 585m
08:00	08:30	0.50	585.00	5	Deviation Survey
08:30	11:00	2.50	605.00	5	Drilling 222mm Hole from 585 to 605m
11:00	11:15	0.25	605.00	5	Deviation Survey
11:15	12:00	0.75	610.00	5	Drilling 222mm Hole from 605 to 610m
12:00	14:45	2.75	624.00	5	Drilling 222mm Hole from 610 to 624m
14:45	15:30	0.75	624.00	5	Deviation Survey
15:30	19:30	4.00	643.00	5	Drilling 222mm Hole from 624 to 643m
19:30	20:00	0.50	643.00	5	Deviation Survey
20:00	23:00	3.00	663.00	5	Drilling 222mm Hole from 643 to 663m
23:00	23:15	0.25	663.00	5	Deviation Survey
23:15	23:30	0.25	663.00	5	Service Rig
23:30	00:00	0.50	667.00	5	Drilling 222mm Hole from 663 to 667m

COMMENTS

MWD Personnel: Rene Bourque and Fred MacInnes

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DRILLING SERVICES

Daily Drilling Report

Customer : Intragaz Inc.
 Well Name : Intragaz St. Flavien #14
 Field : St. Flavien (Lic #2000FA230)
 Location : #14
 Rig : Ralex #1 (RKB 144.54m)
 Job # : CX-HZ-01166

CURRENT STATUS Report # 21 10/05/2000

Total Depth (m) :	777	Casing Depth (m) :	274.00	Operator Reps :	Ken Creelman, Randy Genest
Drilled last 24 hrs (m) :	110	Casing Diameter (mm) :	244.5	SSDS Reps :	Frank van Noord (14), Don Roy (3)
Hole Size (mm) :	222.0	Casing ID (mm) :	224.4		

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
760.53	19.20	341.00	747.04	111.71	N17.78W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Quebec City	175.00	174.99

BHA SUMMARY

BHA 5: 877.00 m; Bit #5 (65. hrs), Stab, Stab, Stab, Stab, Stab, 1x DC, Stab, Pony, Stab, 1x DC, Jar, Pony, 14x DC, Sub, 9x HWDP, 67x DP (E), Other

MUD DATA

Type	Weight (kg/m³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Gel/Freshwater	1050	49	10	5.0	6.0 / 19.0	12	8.0	3.10	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	04:45	4.75	692.00	5	Drilling 222mm Hole from 667 to 692m
04:45	05:15	0.50	692.00	5	Deviation Survey
05:15	11:00	5.75	721.00	5	Drilling 222mm Hole from 692 to 721m
11:00	11:30	0.50	721.00	5	Deviation Survey
11:30	18:00	6.50	750.00	5	Drilling 222mm Hole from 721 to 750m
18:00	18:45	0.75	750.00	5	Deviation Survey
18:45	22:30	3.75	770.00	5	Drilling 222mm Hole from 750 to 770m
22:30	22:45	0.25	770.00	5	Service Rig
22:45	00:00	1.25	777.00	5	Drilling 222mm Hole from 770 to 777m

COMMENTS

MWD Personnel: Rene Bourque and Fred MacInnes
 The 6-3/4" directional & all MWD tools including gamma arrived today.

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DRILLING SERVICES

Daily Drilling Report

Customer : Intragaz Inc.
 Well Name : Intragaz St. Flavien #14
 Field : St. Flavien (Lic #2000FA230)
 Location : #14
 Rig : Ralex #1 (RKB 144.54m)
 Job # : CX-HZ-01166

CURRENT STATUS Report # 22 10/06/2000

Total Depth (m) : 877	Casing Depth (m) : 274.00	Operator Reps : Ken Creelman, Randy Genest
Drilled last 24 hrs (m) : 100	Casing Diameter (mm) : 244.5	SSDS Reps : Frank van Noord (15), Don Roy (4)
Hole Size (mm) : 222.0	Casing ID (mm) : 224.4	

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
876.89	21.20	338.40	856.14	152.10	N18.44W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Quebec City	175.00	174.99

BHA SUMMARY

BHA 5: 877.00 m; Bit #5 (84.5 hrs), Stab, Stab, Stab, Stab, Stab, 1x DC, Stab, Pony, Stab, 1x DC, Jar, Pony, 14x DC, Sub, 9x HWDP, 67x DP (E), Other

MUD DATA

Type	Weight (kg/m³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Gel/Freshwater	1050	48	10	5.0	6.0 / 16.0	11	8.5	3.10	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	00:45	0.75	779.00	5	Drilling 222mm Hole from 777 to 779m
00:45	01:30	0.75	779.00	5	Deviation Survey
01:30	07:30	6.00	809.00	5	Drilling 222mm Hole from 779 to 809m
07:30	08:00	0.50	809.00	5	Deviation Survey
08:00	09:30	1.50	818.00	5	Drilling 222mm Hole from 809 to 818m
09:30	10:00	0.50	818.00	5	Deviation Survey
10:00	11:45	1.75	828.00	5	Drilling 222mm Hole from 818 to 828m
11:45	12:00	0.25	828.00	5	Service Rig
12:00	15:15	3.25	847.00	5	Drilling 222mm Hole from 828 to 847m
15:15	15:45	0.50	847.00	5	Service Rig
15:45	16:45	1.00	853.00	5	Drilling 222mm Hole from 847 to 853m
16:45	17:00	0.25	853.00	5	Flow Check
17:00	22:15	5.25	877.00	5	Drilling 222mm Hole from 853 to 877m
22:15	22:45	0.50	877.00	5	Deviation Survey
22:45	23:00	0.25	877.00	5	Circulate
23:00	00:00	1.00	877.00	5	Trip Out to pick up PDC bit & MWD tools

COMMENTS

MWD Personnel: Rene Bourque and Fred MacInnes

sperry-sun

DRILLING SERVICES

Daily Drilling Report

Customer : Intragaz Inc.
 Well Name : Intragaz St. Flavien #14
 Field : St. Flavien (Lic #2000FA230)
 Location : #14
 Rig : Ralex #1 (RKB 144.54m)
 Job # : CX-HZ-01166

CURRENT STATUS Report # 23 10/07/2000

Total Depth (m) :	943	Casing Depth (m) :	274.00	Operator Reps :	Ken Creelman, Randy Genest
Drilled last 24 hrs (m) :	66	Casing Diameter (mm) :	244.5	SSDS Reps :	Frank van Noord (16), Don Roy (5)
Hole Size (mm) :	222.0	Casing ID (mm) :	224.4		

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
935.16	21.40	336.80	910.37	173.38	N18.92W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Quebec City	175.00	174.99

BHA SUMMARY

BHA 5: 877.00 m; Bit #5 (84.5 hrs), Stab, Stab, Stab, Stab, Stab, 1x DC, Stab, Pony, Stab, 1x DC, Jar, Pony, 14x DC, Sub, 9x HWDP, 67x DP (E), Other
 BHA 6: 285.17 m; Bit #6r3 (27. hrs), Stab, Stab, Stab, Stab, Stab, 1x DC, Stab, MWD, Pony, Stab, 1x DC, Jar, Pony, 14x DC, Sub, 9x HWDP, DP (E), Other

MUD DATA

Type	Weight (kg/m ³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Gel/Freshwater	1050	48	10	6.0	7.0 / 17.0	12	9.0	3.10	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	00:30	0.50	877.00	5	Trip Out to 225m
00:30	02:30	2.00	877.00	5	Change out packing on kelly swivel
02:30	03:30	1.00	877.00	5	Trip Out (at Surface)
03:30	05:15	1.75	877.00	6	Make up BHA #6 with PDC bit, locked assembly & MWD tools only.
05:15	09:45	4.50	877.00	6	Trip In & Surveys
09:45	10:15	0.50	878.00	6	Drilling 222mm Hole from 877 to 878m
10:15	10:30	0.25	878.00	6	Survey & Connection
10:30	13:15	2.75	888.00	6	Drilling 222mm Hole from 878 to 888m
13:15	13:30	0.25	888.00	6	Survey & Connection
13:30	15:45	2.25	898.00	6	Drilling 222mm Hole from 888 to 898m
15:45	16:00	0.25	898.00	6	Survey & Connection
16:00	18:15	2.25	907.00	6	Drilling 222mm Hole from 898 to 907m
18:15	18:30	0.25	907.00	6	Survey & Connection
18:30	19:45	1.25	917.00	6	Drilling 222mm Hole from 907 to 917m
19:45	20:00	0.25	917.00	6	Survey & Connection
20:00	21:45	1.75	927.00	6	Drilling 222mm Hole from 917 to 927m
21:45	22:00	0.25	927.00	6	Survey & Connection
22:00	23:00	1.00	936.00	6	Drilling 222mm Hole from 927 to 936m
23:00	23:15	0.25	936.00	6	Survey & Connection
23:15	00:00	0.75	943.00	6	Drilling 222mm Hole from 936 to 943m

COMMENTS

MWD Personnel: Rene Bourque and Fred MacInnes
 The MWD tools are in the hole.

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DRILLING SERVICES

Daily Drilling Report

Customer : Intragaz Inc.
 Well Name : Intragaz St. Flavien #14
 Field : St. Flavien (Lic #2000FA230)
 Location : #14
 Rig : Ralex #1 (RKB 144.54m)
 Job # : CX-HZ-01166

CURRENT STATUS Report # 24 10/08/2000

Total Depth (m) : 1111	Casing Depth (m) : 274.00	Operator Reps : Ken Creelman, Randy Genest
Drilled last 24 hrs (m) : 168	Casing Diameter (mm) : 244.5	SSDS Reps : Frank van Noord (17), Don Roy (6)
Hole Size (mm) : 222.0	Casing ID (mm) : 224.4	

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
1110.08	26.60	330.10	1070.34	243.42	N21.29W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Quebec City	175.00	174.99

BHA SUMMARY

BHA 6: 285.17 m; Bit #6rr3 (47. hrs), Stab, Stab, Stab, Stab, Stab, 1x DC, Stab, MWD, Pony, Stab, 1x DC, Jar, Pony, 14x DC, Sub, 9x HWDP, DP (E), Other

MUD DATA

Type	Weight (kg/m ³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Gel/Freshwater	1050	47	10	6.5	6.0 / 15.0	11	8.5	3.10	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	00:15	0.25	946.00	6	Drilling 222mm Hole from 943 to 946m
00:15	00:30	0.25	946.00	6	Survey & Connection
00:30	01:15	0.75	956.00	6	Drilling 222mm Hole from 946 to 956m
01:15	01:30	0.25	956.00	6	Survey & Connection
01:30	02:15	0.75	965.00	6	Drilling 222mm Hole from 956 to 965m
02:15	02:30	0.25	965.00	6	Survey & Connection
02:30	03:15	0.75	975.00	6	Drilling 222mm Hole from 965 to 975m
03:15	03:30	0.25	975.00	6	Survey & Connection
03:30	04:15	0.75	985.00	6	Drilling 222mm Hole from 975 to 985m
04:15	04:30	0.25	985.00	6	Survey & Connection
04:30	05:15	0.75	995.00	6	Drilling 222mm Hole from 985 to 995m
05:15	05:30	0.25	995.00	6	Survey & Connection
05:30	06:15	0.75	1004.00	6	Drilling 222mm Hole from 995 to 1004m
06:15	06:30	0.25	1004.00	6	Survey & Connection
06:30	07:00	0.50	1014.00	6	Drilling 222mm Hole from 1004 to 1014m
07:00	07:15	0.25	1014.00	6	Survey & Connection
07:15	08:15	1.00	1024.00	6	Drilling 222mm Hole from 1014 to 1024m
08:15	08:30	0.25	1024.00	6	Survey & Connection
08:30	09:30	1.00	1033.00	6	Drilling 222mm Hole from 1024 to 1033m
09:30	09:45	0.25	1033.00	6	Survey & Connection
09:45	10:45	1.00	1043.00	6	Drilling 222mm Hole from 1033 to 1043m
10:45	11:00	0.25	1043.00	6	Survey & Connection

COMMENTS

MWD Personnel: Rene Bourque and Fred MacInnes
 The MWD tools are in the hole.

CURRENT STATUS Report # 2, 10/08/2000

Total Depth	(m)	: 1111	Casing Depth	(m)	: 274.00	Operator Reps	: Ken Creelman, Randy Genest
Drilled last 24 hrs	(m)	: 168	Casing Diameter	(mm)	: 244.5	SSDS Reps	: Frank van Noord (17), Don Roy (6)
Hole Size	(mm)	: 222.0	Casing ID	(mm)	: 224.4		

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
1110.08	26.60	330.10	1070.34	243.42	N21.29W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Quebec City	175.00	174.99

BHA SUMMARY

BHA 6: 285.17 m; Bit #6rr3 (47. hrs), Stab, Stab, Stab, Stab, Stab, 1x DC, Stab, MWD, Pony, Stab, 1x DC, Jar, Pony, 14x DC, Sub, 9x HWDP, DP (E), Other

MUD DATA

Type	Weight (kg/m ³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Gel/Freshwater	1050	47	10	6.5	6.0 / 15.0	11	8.5	3.10	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
11:00	11:15	0.25	1043.00	6	Service Rig
11:15	20:15	9.00	1092.00	6	Drilling 222mm Hole from 1043 to 1092m
20:15	21:00	0.75	1092.00	6	Surveys & Connections
21:00	21:15	0.25	1092.00	6	Service Rig
21:15	00:00	2.75	1111.00	6	Drilling 222mm Hole from 1092 to 1111m

COMMENTS

MWD Personnel: Rene Bourque and Fred MacInnes
The MWD tools are in the hole.

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DRILLING SERVICES

Daily Drilling Report

Customer : Intragaz Inc.
 Well Name : Intragaz St. Flavien #14
 Field : St. Flavien (Lic #2000FA230)
 Location : #14
 Rig : Ralex #1 (RKB 144.54m)
 Job # : CX-HZ-01166

CURRENT STATUS Report # 25 10/09/2000

Total Depth (m) :	1234	Casing Depth (m) :	274.00	Operator Reps :	Ken Creelman, Randy Genest
Drilled last 24 hrs (m) :	123	Casing Diameter (mm) :	244.5	SSDS Reps :	Frank van Noord (18), Don Roy (7)
Hole Size (mm) :	222.0	Casing ID (mm) :	224.4		

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
1226.67	32.60	324.20	1172.06	299.28	N23.49W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Quebec City	175.00	174.99

BHA SUMMARY

BHA 6: 285.17 m; Bit #6rr3 (68.5 hrs), Stab, Stab, Stab, Stab, Stab, 1x DC, Stab, MWD, Pony, Stab, 1x DC, Jar, Pony, 14x DC, Sub, 9x HWDP, DP (E), Other

MUD DATA

Type	Weight (kg/m ³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Gel/Freshwater	1050	50	13	5.5	4.0 / 14.0	12	9.0	3.10	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	03:00	3.00	1135.00	6	Drilling 222mm Hole from 1111 to 1135m
03:00	03:45	0.75	1135.00	6	Accumulative Surveys
03:45	04:00	0.25	1135.00	6	Flow Check
04:00	06:30	2.50	1148.00	6	Drilling 222mm Hole from 1135 to 1148m
06:30	06:45	0.25	1148.00	6	Flow Check
06:45	11:30	4.75	1169.00	6	Drilling 222mm Hole from 1148 to 1169m
11:30	11:45	0.25	1169.00	6	Accumulative Surveys
11:45	12:00	0.25	1169.00	6	Service Rig
12:00	23:15	11.25	1234.00	6	Drilling 222mm Hole from 1169 to 1234m
23:15	00:00	0.75	1234.00	6	Accumulative Surveys

COMMENTS

MWD Personnel: Rene Bourque and Fred MacInnes
 The MWD tools are in the hole.

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DRILLING SERVICES

Daily Drilling Report

Customer : Intragaz Inc.
 Well Name : Intragaz St. Flavien #14
 Field : St. Flavien (Lic #2000FA230)
 Location : #14
 Rig : Ralex #1 (RKB 144.54m)
 Job # : CX-HZ-01166

CURRENT STATUS Report # 26 10/10/2000

Total Depth (m) :	1257	Casing Depth (m) :	274.00	Operator Reps :	Ken Creelman, Randy Genest
Drilled last 24 hrs (m) :	23	Casing Diameter (mm) :	244.5	SSDS Reps :	Frank van Noord (19), Don Roy (8)
Hole Size (mm) :	222.0	Casing ID (mm) :	224.4		

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
1256.42	34.50	323.40	1196.88	315.30	N24.14W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Quebec City	175.00	174.99

BHA SUMMARY

BHA 6: 285.17 m; Bit #6rr3 (72.75 hrs), Stab, Stab, Stab, Stab, Stab, 1x DC, Stab, MWD, Pony, Stab, 1x DC, Jar, Pony, 14x DC, Sub, 9x HWDP, DP (E), Other
 BHA 7: 582.29 m; Bit #4rr1 (0.25 hrs), PDM #1 (0.25 hrs), Sub, Flex, Flex, MWD, Flex, Flex, Jar, Sub, 57x HWDP

MUD DATA

Type	Weight (kg/m ³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Gel/Freshwater	1050	47	14	4.0	4.0 / 10.0	10	8.5	3.10	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	04:15	4.25	1257.00	6	Drilling 222mm Hole from 1234 to 1257m
04:15	04:45	0.50	1257.00	6	Accumulative Surveys
04:45	05:00	0.25	1257.00	6	Service Rig
05:00	06:00	1.00	1257.00	6	Circulate Bottoms Up.
06:00	06:15	0.25	1257.00	6	Flow check
06:15	09:15	3.00	1257.00	6	Trip Out 23 stands in derrick.
09:15	12:30	3.25	1257.00	6	Trip Out (at Surface) Laydown 32x DP, 15x Drill collar & BHA #6.
12:30	15:00	2.50	1257.00	6	Make up BHA #7, Set motor at 1.5° w/219mm offset pad.
15:00	16:00	1.00	1257.00	6	Lined dug out pit with plastic.
16:00	18:45	2.75	1257.00	7	Trip In, Picking up 48x HWDP off pipe racks.
18:45	19:00	0.25	1257.00	7	Shallow test MWD (OK)
19:00	19:45	0.75	1257.00	7	Slip & Cut Drill Line
19:45	22:00	2.25	1257.00	7	Continue to tripin HWDP off pipe racks.
22:00	00:00	2.00	1257.00	7	Trip In & Fill pipe @ 800m.

COMMENTS

MWD Personnel: Rene Bourque and Fred MacInnes

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DRILLING SERVICES

Daily Drilling Report

Customer : Intragaz Inc.
 Well Name : Intragaz St. Flavien #14
 Field : St. Flavien (Lic #2000FA230)
 Location : #14
 Rig : Ralex #1 (RKB 144.54m)
 Job # : CX-HZ-01166

CURRENT STATUS Report # 27 10/11/2000

Total Depth (m) :	1367	Casing Depth (m) :	274.00	Operator Reps :	Ken Creelman, Randy Genest
Drilled last 24 hrs (m) :	110	Casing Diameter (mm) :	244.5	SSDS Reps :	Frank van Noord (20), Don Roy (9)
Hole Size (mm) :	222.0	Casing ID (mm) :	224.4		

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
1363.34	36.00	312.00	1281.76	377.33	N27.31W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Trenton	1325.19	1251.13

BHA SUMMARY

BHA 7: 582.29 m; Bit #4rr1 (20.75 hrs), PDM #1 (23.5 hrs), Sub, Flex, Flex, MWD, Flex, Flex, Jar, Sub, 57x HWD

MUD DATA

Type	Weight (kg/m ³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Gel/Freshwater	1060	55	15	8.5	4.0 / 15.0	10	8.5	3.70	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	00:15	0.25	1257.00	7	Continue to trip In.
00:15	00:30	0.25	1257.00	7	Ream & Wash to bottom.
00:30	00:45	0.25	1257.00	7	Service Rig
00:45	06:15	5.50	1295.00	7	Drilling 222mm Hole from 1257 to 1295m
06:15	07:00	0.75	1295.00	7	Accumulative Surveys
07:00	11:30	4.50	1314.00	7	Drilling 222mm Hole from 1295 to 1314m
11:30	12:00	0.50	1314.00	7	Accumulative Surveys
12:00	19:15	7.25	1354.00	7	Drilling 222mm Hole from 1314 to 1354m
19:15	20:00	0.75	1354.00	7	Accumulative Surveys
20:00	20:15	0.25	1354.00	7	Service Rig
20:15	23:30	3.25	1367.00	7	Drilling 222mm Hole from 1354 to 1367m
23:30	00:00	0.50	1367.00	7	Accumulative Surveys

COMMENTS

MWD Personnel: Rene Bourque and Fred MacInnes.
 NMDC, Pony NMDC, Single Shot Kits & Stabilizers left location today.

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DRILLING SERVICES

Daily Drilling Report

Customer : Intragaz Inc.
 Well Name : Intragaz St. Flavien #14
 Field : St. Flavien (Lic #2000FA230)
 Location : #14
 Rig : Ralex #1 (RKB 144.54m)
 Job # : CX-HZ-01166

CURRENT STATUS Report # 28 10/12/2000

Total Depth (m) :	1486	Casing Depth (m) :	274.00	Operator Reps :	Ken Creelman, Randy Genest
Drilled last 24 hrs (m) :	119	Casing Diameter (mm) :	244.5	SSDS Reps :	Frank van Noord (21), Don Roy (10)
Hole Size (mm) :	222.0	Casing ID (mm) :	224.4		

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
1479.90	46.30	299.20	1371.54	444.40	N31.67W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Chazy	1374.00	1290.39

BHA SUMMARY

BHA 7: 582.29 m; Bit #4rr1 (42. hrs), PDM #1 (47. hrs), Sub, Flex, Flex, MWD, Flex, Flex, Jar, Sub, 57x HWDP

MUD DATA

Type	Weight (kg/m ³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Gel/Freshwater	1070	61	17	12.5	4.0 / 16.0	10	9.5	4.40	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	06:15	6.25	1396.00	7	Drilling 222mm Hole from 1367 to 1396m
06:15	06:45	0.50	1396.00	7	Accumulated Surveys
06:45	07:00	0.25	1396.00	7	Service Rig
07:00	11:30	4.50	1428.00	7	Drilling 222mm Hole from 1396 to 1428m
11:30	12:00	0.50	1428.00	7	Accumulated Surveys
12:00	18:15	6.25	1462.00	7	Drilling 222mm Hole from 1428 to 1462m
18:15	18:45	0.50	1462.00	7	Accumulated Surveys
18:45	19:00	0.25	1462.00	7	Service Rig
19:00	23:15	4.25	1486.00	7	Drilling 222mm Hole from 1462 to 1486m
23:15	00:00	0.75	1486.00	7	Accumulated Surveys

COMMENTS

MWD Personnel: Rene Bourque and Fred MacInnes

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DRILLING SERVICES

Daily Drilling Report

Customer : Intragaz Inc.
 Well Name : Intragaz St. Flavien #14
 Field : St. Flavien (Lic #2000FA230)
 Location : #14
 Rig : Ralex #1 (RKB 144.54m)
 Job # : CX-HZ-01166

CURRENT STATUS Report # 29 10/13/2000

Total Depth (m) : 1559	Casing Depth (m) : 274.00	Operator Reps : Ken Creelman, Randy Genest
Drilled last 24 hrs (m) : 73	Casing Diameter (mm) : 244.5	SSDS Reps : Frank van Noord (22), Don Roy (11)
Hole Size (mm) : 222.0	Casing ID (mm) : 224.4	

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
1557.69	55.10	292.90	1421.59	496.36	N35.19W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Beekmantown A	1538.00	1409.66

BHA SUMMARY

BHA 7: 582.29 m; Bit #4rr1 (56.75 hrs), PDM #1 (66. hrs), Sub, Flex, Flex, MWD, Flex, Flex, Jar, Sub, 57x HWDP

MUD DATA

Type	Weight (kg/m ³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Gel/Freshwater	1070	61	17	12.5	4.0 / 16.0	10	9.5	4.40	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	05:30	5.50	1519.00	7	Drilling 222mm Hole from 1486 to 1519m
05:30	06:00	0.50	1519.00	7	Accumulated Surveys
06:00	06:15	0.25	1519.00	7	Service Rig
06:15	09:30	3.25	1535.00	7	Drilling 222mm Hole from 1519 to 1535m
09:30	10:15	0.75	1535.00	7	Circulate Sample Up @ 1535m
10:15	10:30	0.25	1537.50	7	Drilling 222mm Hole from 1535 to 1537.5m
10:30	11:00	0.50	1537.50	7	Circulate Sample Up @ 1537.5m
11:00	11:30	0.50	1540.00	7	Drilling 222mm Hole from 1537.5 to 1540m
11:30	11:45	0.25	1540.00	7	Survey
11:45	12:30	0.75	1540.00	7	Circulate Sample Up @ 1540m
12:30	16:00	3.50	1555.00	7	Drilling 222mm Hole from 1540 to 1555m
16:00	16:30	0.50	1555.00	7	Accumulated Surveys
16:30	17:00	0.50	1555.00	7	Circulate Bottoms Up
17:00	18:45	1.75	1559.00	7	Drilling 222mm Hole from 1555 to 1559m
18:45	19:00	0.25	1559.00	7	Service Rig
19:00	19:30	0.50	1559.00	7	Circulate Bottoms Up
19:30	19:45	0.25	1559.00	7	Flow Check
19:45	00:00	4.25	1559.00	7	Trip Out (at Surface) For Bit

COMMENTS

MWD Personnel: Rene Bourque and Fred MacInnes

sperry-sun

DRILLING SERVICES

Daily Drilling Report

Customer : Intragaz Inc.
 Well Name : Intragaz St. Flavien #14
 Field : St. Flavien (Lic #2000FA230)
 Location : #14
 Rig : Ralex #1 (RKB 144.54m)
 Job # : CX-HZ-01166

CURRENT STATUS Report # 30 10/14/2000

Total Depth (m) : 1636	Casing Depth (m) : 274.00	Operator Reps : Ken Creelman, Randy Genest
Drilled last 24 hrs (m) : 77	Casing Diameter (mm) : 244.5	SSDS Reps : Frank van Noord (23), Don Roy (12)
Hole Size (mm) : 222.0	Casing ID (mm) : 224.4	

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
1635.43	70.80	289.40	1457.33	555.23	N39.07W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Beekmantown A	1538.00	1409.66

BHA SUMMARY

BHA 7: 582.29 m; Bit #4rr1 (56.75 hrs), PDM #1 (66. hrs), Sub, Flex, Flex, MWD, Flex, Flex, Jar, Sub, 57x HWDP
 BHA 8: 580.36 m; Bit #3rr1 (17.25 hrs), PDM #2 (19. hrs), Sub, Flex, Flex, MWD, Flex, Flex, Jar, Sub, 57x HWDP

MUD DATA

Type	Weight (kg/m ³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Polymer	1080	61	16	11.5	5.0 / 12.0	9	9.0	5.00	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	01:30	1.50	1559.00	7	Make up BHA #8 Pick up new motor set @ 1.83° & Change out bit.
01:30	02:45	1.25	1559.00	8	Trip In to 312m
02:45	03:00	0.25	1559.00	8	Shallow test MWD (Ok)
03:00	04:45	1.75	1559.00	8	Trip In & Fill pipe @ 1000m
04:45	05:15	0.50	1559.00	8	Ream & Wash to bottom
05:15	05:30	0.25	1559.00	8	Service Rig
05:30	11:30	6.00	1587.00	8	Drilling 222mm Hole from 1559 to 1587m
11:30	12:00	0.50	1587.00	8	Accumulative Surveys
12:00	22:45	10.75	1636.00	8	Drilling 222mm Hole from 1587 to 1636m
22:45	23:45	1.00	1636.00	8	Accumulative Surveys
23:45	00:00	0.25	1636.00	8	Service Rig

COMMENTS

MWD Personnel: Rene Bourque and Fred MacInnes

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DRILLING SERVICES

Daily Drilling Report

Customer : Intragaz Inc.
 Well Name : Intragaz St. Flavien #14
 Field : St. Flavien (Lic #2000FA230)
 Location : #14
 Rig : Ralex #1 (RKB 144.54m)
 Job # : CX-HZ-01166

CURRENT STATUS Report # 31 10/15/2000

Total Depth (m) : 1677	Casing Depth (m) : 1677.00	Operator Reps : Ken Creelman, Randy Genest
Drilled last 24 hrs (m) : 41	Casing Diameter (mm) : 177.8	SSDS Reps : Frank van Noord (24), Don Roy (13)
Hole Size (mm) : 222.0	Casing ID (mm) : 159.4	

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
1675.52	79.10	284.50	1467.47	587.79	N41.18W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Beekmantown A	1538.00	1409.66

BHA SUMMARY

BHA 8: 580.36 m; Bit #3rr1 (28.5 hrs), PDM #2 (33. hrs), Sub, Flex, Flex, MWD, Flex, Flex, Jar, Sub, 57x HWD

MUD DATA

Type	Weight (kg/m ³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Polymer	1095	78	21	14.0	8.0 / 17.0	8	9.0	5.90	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	06:30	6.50	1658.00	8	Drilling 222mm Hole from 1636 to 1658m
06:30	06:45	0.25	1658.00	8	Accumulative Surveys
06:45	07:00	0.25	1658.00	8	Service Rig
07:00	11:30	4.50	1676.00	8	Drilling 222mm Hole from 1658 to 1676m
11:30	12:00	0.50	1676.00	8	Accumulative Surveys
12:00	12:15	0.25	1677.00	8	Drilling 222mm Hole from 1676 to 1677m, Csg Pt.
12:15	13:15	1.00	1677.00	8	Circulate and condition mud
13:15	13:30	0.25	1677.00	8	Pump Pill and Flow Check
13:30	14:30	1.00	1677.00	8	Wiper Trip
14:30	15:30	1.00	1677.00	8	Mix & Pump Pill
15:30	20:00	4.50	1677.00	8	Wiper Trip to 9-5/8" Casing Shoe
20:00	21:00	1.00	1677.00	8	Circulate Hole Clean
21:00	21:15	0.25	1677.00	8	Flow Check, Trip Out
21:15	00:00	2.75	1677.00	8	Trip Out, Lay Down Pipe to run casing

COMMENTS

MWD Personnel: Rene Bourque and Fred MacInnes

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DRILLING SERVICES

Daily Drilling Report

Customer : Intragaz Inc.
 Well Name : Intragaz St. Flavien #14
 Field : St. Flavien (Lic #2000FA230)
 Location : #14
 Rig : Ralex #1 (RKB 144.54m)
 Job # : CX-HZ-01166

CURRENT STATUS Report # 32 10/16/2000

Total Depth (m) : 1677	Casing Depth (m) : 1677.00	Operator Reps : Ken Creelman, Randy Genest
Drilled last 24 hrs (m) : 0	Casing Diameter (mm) : 177.8	SSDS Reps : Frank van Noord (25), Don Roy (14)
Hole Size (mm) : 222.0	Casing ID (mm) : 159.4	

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
1675.52	79.10	284.50	1467.47	587.79	N41.18W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Beekmantown A	1538.00	1409.66

BHA SUMMARY

BHA 8: 580.36 m; Bit #3rr1 (28.5 hrs), PDM #2 (33. hrs), Sub, Flex, Flex, MWD, Flex, Flex, Jar, Sub, 57x HWDP

MUD DATA

Type	Weight (kg/m³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Polymer	1095	78	21	14.0	8.0 / 17.0	8	9.0	5.90	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	06:00	6.00	1677.00	8	Trip Out (at Surface)Lay Down DP & HWDP
06:00	07:30	1.50	1677.00	8	Lay Down Directional BHA to run casing
07:30	18:00	10.50	1677.00		Rig up & run casing
18:00	20:30	2.50	1677.00		Circulate casing
20:30	22:30	2.00	1677.00		Rig up & cement casing
22:30	00:00	1.50	1677.00		Wait on Cement, Work on BOP stack

COMMENTS

MWD Personnel: Rene Bourque and Fred MacInnes

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DRILLING SERVICES

Daily Drilling Report

Customer : Intragaz Inc.
 Well Name : Intragaz St. Flavien #14
 Field : St. Flavien (Lic #2000FA230)
 Location : #14
 Rig : Ralex #1 (RKB 144.54m)
 Job # : CX-HZ-01166

CURRENT STATUS Report # 33 10/17/2000

Total Depth (m) :	1677	Casing Depth (m) :	1677.00	Operator Reps :	Ken Creelman, Randy Genest
Drilled last 24 hrs (m) :	0	Casing Diameter (mm) :	177.8	SSDS Reps :	Frank van Noord (26), Don Roy (15)
Hole Size (mm) :		Casing ID (mm) :	159.4		

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
1675.52	79.10	284.50	1467.47	587.79	N41.18W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Beekmantown A	1538.00	1409.66

BHA SUMMARY

MUD DATA

Type	Weight (kg/m ³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Polymer	1095	78	21	14.0	8.0 / 17.0	8	9.0	5.90	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	07:00	7.00	1677.00		Wait on Cement, Nipple down BOP stack
07:00	07:30	0.50	1677.00		Set slip on casing.
07:30	13:00	5.50	1677.00		Wash & Laydown BOP stack
13:00	18:00	5.00	1677.00		Install casing seal, Tubing hanger spool and test
18:00	00:00	6.00	1677.00		Nipple Up BOP stack

COMMENTS

MWD Personnel: Rene Bourque and Fred MacInnes

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DRILLING SERVICES

Daily Drilling Report

Customer : Intragaz Inc.
 Well Name : Intragaz St. Flavien #14
 Field : St. Flavien (Lic #2000FA230)
 Location : #14
 Rig : Ralex #1 (RKB 144.54m)
 Job # : CX-HZ-01166

CURRENT STATUS Report # 34 10/18/2000

Total Depth (m) :	1677	Casing Depth (m) :	1677.00	Operator Reps :	Ken Creelman, Randy Genest
Drilled last 24 hrs (m) :	0	Casing Diameter (mm) :	177.8	SSDS Reps :	Frank van Noord (27), Don Roy (16)
Hole Size (mm) :		Casing ID (mm) :	159.4		

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
1675.52	79.10	284.50	1467.47	587.79	N41.18W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Beekmantown A	1538.00	1409.66

BHA SUMMARY

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MUD DATA

Type	Weight (kg/m ³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Polymer	1095	78	21	14.0	8.0 / 17.0	8	9.0	5.90	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	18:00	18.00	1677.00		Nipple up BOP And Rig up Under balance equipment.
18:00	19:00	1.00	1677.00		Rig up wireline unit with Computalog.
19:00	19:15	0.25	1677.00		Pre Job Safety Meeting.
19:15	00:00	4.75	1677.00		Wireline logs, OD casing inspection And Casing bond logs.

COMMENTS

MWD Personnel: Rene Bourque and Fred MacInnes

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DRILLING SERVICES

Daily Drilling Report

Customer : Intragaz inc.
 Well Name : Intragaz St. Flavien #14
 Field : St. Flavien (Lic #2000FA230)
 Location : #14
 Rig : Ralex #1 (RKB 144.54m)
 Job # : CX-HZ-01166

CURRENT STATUS Report # 35 10/19/2000

Total Depth (m) :	1677	Casing Depth (m) :	1677.00	Operator Reps :	Ken Creelman, Randy Genest
Drilled last 24 hrs (m) :	0	Casing Diameter (mm) :	177.8	SSDS Reps :	Frank van Noord (28), Don Roy (17)
Hole Size (mm) :		Casing ID (mm) :	159.4		

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
1675.52	79.10	284.50	1467.47	587.79	N41.18W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Beekmantown A	1538.00	1409.66

BHA SUMMARY

MUD DATA

Type	Weight (kg/m³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Polymer	1095	78	21	14.0	8.0 / 17.0	8	9.0	5.90	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	04:45	4.75	1677.00		Continue to run casing bond log and Rig out.
04:45	16:30	11.75	1677.00		RIH w/ 48 HWDP & 120 DP
16:30	20:00	3.50	1677.00		Lay down 4-1/2" Kelly & Pick up 3-1/2" Kelly
20:00	20:45	0.75	1677.00		Cut Drill Line
20:45	00:00	3.25	1677.00		Test BOP

COMMENTS

MWD Personnel: Rene Bourque and Fred MacInnes

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DRILLING SERVICES

Daily Drilling Report

Customer : Intragaz Inc.
 Well Name : Intragaz St. Flavien #14
 Field : St. Flavien (Lic #2000FA230)
 Location : #14
 Rig : Ralex #1 (RKB 144.54m)
 Job # : CX-HZ-01166

CURRENT STATUS Report # 36 10/20/2000

Total Depth (m) :	1677	Casing Depth (m) :	1677.00	Operator Reps :	Ken Creelman, Randy Genest
Drilled last 24 hrs (m) :	0	Casing Diameter (mm) :	177.8	SSDS Reps :	Frank van Noord (29), Don Roy (18)
Hole Size (mm) :	156.0	Casing ID (mm) :	159.4		

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
1675.52	79.10	284.50	1467.47	587.79	N41.18W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Beekmantown A	1538.00	1409.66

BHA SUMMARY

BHA 9: 1951.00 m; Bit #7 (4.25 hrs), PDM #9 (0.25 hrs), Sub, Sub, Flex, Sub, MWD, Flex, Flex, Jar, Sub, 36x DP (X), 48x HWDP, Sub, 84x DP (X), Sub, 24x DP (X), Sub, 7x DP (X), Other

MUD DATA

Type	Weight (kg/m ³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Polymer	1095	78	21	14.0	8.0 / 17.0	8	9.0	5.90	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	07:00	7.00	1677.00		Test BOP
07:00	07:45	0.75	1677.00		POOH w/ DP & HWDP
07:45	08:45	1.00	1677.00		Rig Repair, Drawworks chain
08:45	09:00	0.25	1677.00		Service Rig
09:00	10:00	1.00	1677.00		POOH w/ DP & HWDP
10:00	16:00	6.00	1677.00		Test BOP
16:00	16:30	0.50	1677.00		Install Wear Bushing
16:30	19:00	2.50	1677.00		Pick Up BHA # 9 , 121mm PDM
19:00	19:30	0.50	1677.00	9	Safety Meeting w/ Northlands
19:30	21:00	1.50	1677.00	9	RIH 12 Stds DP, Install RBOP & Shallow Test MWD
21:00	00:00	3.00	1677.00	9	Trip In, Tag cement @ 1625 meters

COMMENTS

MWD Personnel: Rene Bourque and Fred MacInnes

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DRILLING SERVICES

Daily Drilling Report

Customer : Intragaz Inc.
 Well Name : Intragaz St. Flavien #14
 Field : St. Flavien (Lic #2000FA230)
 Location : #14
 Rig : Ralex #1 (RKB 144.54m)
 Job # : CX-HZ-01166

CURRENT STATUS Report # 37 10/21/2000

Total Depth (m) : 1730	Casing Depth (m) : 1677.00	Operator Reps : Ken Creelman, R. Genest, M. Nicklorn
Drilled last 24 hrs (m) : 53	Casing Diameter (mm) : 177.8	SSDS Reps : Frank van Noord (30), Don Roy (19)
Hole Size (mm) : 156.0	Casing ID (mm) : 159.4	

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
1723.33	79.00	283.10	1476.53	626.80	N43.64W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Unit "B1"	1699.35	1472.03

BHA SUMMARY

BHA 9: 1951.00 m; Bit #7 (18.75 hrs), PDM #9 (24. hrs), Sub, Sub, Flex, Sub, MWD, Flex, Flex, Jar, Sub, 36x DP (X), 48x HWDP, Sub, 84x DP (X), Sub, 24x DP (X), Sub, 7x DP (X), Other

MUD DATA

Type	Weight (kg/m ³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Polymer	1005	34	2	3.0	1.0 / 1.5	0	7.5	0.30	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	00:15	0.25	1677.00	9	Break Circulation
00:15	04:30	4.25	1677.00	9	Drill Out Cement, Float and Shoe at 1677m TMD
04:30	06:30	2.00	1683.00	9	Drilling 156mm hole from 1677m to 1683m.
06:30	07:00	0.50	1683.00	9	Circulate, Safety meeting with Northland personnel
07:00	11:30	4.50	1702.00	9	Drilling 156mm hole from 1683m to 1702m
11:30	12:00	0.50	1702.00	9	Accumulative Surveys
12:00	12:15	0.25	1702.00	9	Circulate to clean hole
12:15	12:30	0.25	1702.00	9	Circulate, Safety meeting with Northland personnel
12:30	17:45	5.25	1723.00	9	Drilling 156mm Hole from 1702 to 1723m
17:45	18:45	1.00	1723.00	9	Circulate
18:45	19:00	0.25	1723.00	9	Accumulative Surveys
19:00	19:45	0.75	1726.00	9	Drilling 156mm Hole from 1723 to 1726m
19:45	22:00	2.25	1726.00	9	Circulate Wait on Orders
22:00	00:00	2.00	1730.00	9	Drilling 156mm Hole from 1726 to 1730m

COMMENTS

MWD Personnel: Rene Bourque and Fred MacInnes

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DRILLING SERVICES

Daily Drilling Report

Customer : Intragaz Inc.
 Well Name : Intragaz St. Flavien #14
 Field : St. Flavien (Lic #2000FA230)
 Location : #14
 Rig : Ralex #1 (RKB 144.54m)
 Job # : CX-HZ-01166

CURRENT STATUS Report # 38 10/22/2000

Total Depth (m) :	1797	Casing Depth (m) :	1677.00	Operator Reps :	Ken Creelman, Marc Nicklom
Drilled last 24 hrs (m) :	67	Casing Diameter (mm) :	177.8	SSDS Reps :	Frank van Noord (31), Don Roy (20)
Hole Size (mm) :	156.0	Casing ID (mm) :	159.4		

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
1790.27	88.20	283.10	1481.69	683.76	N46.68W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Beek B1	1731.00	1477.84

BHA SUMMARY

BHA 9: 1951.00 m; Bit #7 (36. hrs), PDM #9 (43.5 hrs), Sub, Sub, Flex, Sub, MWD, Flex, Flex, Jar, Sub, 36x DP (X), 48x HWDP, Sub, 84x DP (X), Sub, 24x DP (X), Sub, 7x DP (X), Other

MUD DATA

Type	Weight (kg/m³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Polymer	1010	33	2	2.5	1.0 / 1.0	0	7.5	0.60	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	00:15	0.25	1730.00	9	Accumulative Surveys
00:15	02:15	2.00	1739.00	9	Drilling 156mm Hole from 1730 to 1739m
02:15	02:45	0.50	1739.00	9	Circulate up Bottom Hole Sample
02:45	06:45	4.00	1749.00	9	Drilling 156mm Hole from 1739m to 1749m
06:45	07:00	0.25	1749.00	9	Service Rig
07:00	09:00	2.00	1758.00	9	Drilling 156mm Hole from 1749 to 1758m
09:00	09:30	0.50	1758.00	9	Circulate up Bottom Hole Sample
09:30	12:00	2.50	1758.00	9	Tripout to 1660m And Change out Kelly for 4"
12:00	12:15	0.25	1758.00	9	Service Rig
12:15	12:30	0.25	1758.00	9	Inspected RBOP Element Okay
12:30	13:45	1.25	1758.00	9	Finish to Change out Kelly And Tripin to Bottom
13:45	23:00	9.25	1797.00	9	Drilling 156mm Hole from 1758 to 1797m
23:00	23:30	0.50	1797.00	9	Accumulative Surveys
23:30	00:00	0.50	1797.00	9	Circulate Bottoms Up

COMMENTS

MWD Personnel: Rene Bourque and Fred MacInnes

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DRILLING SERVICES

Daily Drilling Report

Customer : Intragaz Inc.
 Well Name : Intragaz St. Flavien #14
 Field : St. Flavien (Lic #2000FA230)
 Location : #14
 Rig : Ralex #1 (RKB 144.54m)
 Job # : CX-HZ-01166

CURRENT STATUS Report # 39 10/23/2000

Total Depth (m) :	1951	Casing Depth (m) :	1677.00	Operator Reps :	Ken Creelman, Marc Nicklom
Drilled last 24 hrs (m) :	154	Casing Diameter (mm) :	177.8	SSDS Reps :	Frank van Noord (32), Don Roy (21)
Hole Size (mm) :	156.0	Casing ID (mm) :	159.4		

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
1944.19	91.80	279.60	1478.04	814.88	N52.84W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Beek B1	1731.00	1477.84

BHA SUMMARY

BHA 9: 1951.00 m; Bit #7 (55.75 hrs), PDM #9 (67. hrs), Sub, Sub, Flex, Sub, MWD, Flex, Flex, Jar, Sub, 36x DP (X), 48x HWDP, Sub, 84x DP (X), Sub, 24x DP (X), Sub, 7x DP (X), Other

MUD DATA

Type	Weight (kg/m³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Polymer	1010	34	2	3.0	1.0 / 1.0	0	7.5	0.60	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	01:30	1.50	1797.00	9	Circulate Sample Up
01:30	02:00	0.50	1797.00	9	Survey
02:00	06:30	4.50	1826.00	9	Drilling 156mm Hole from 1797m to 1826m
06:30	06:45	0.25	1826.00	9	Survey
06:45	07:00	0.25	1826.00	9	Service Rig
07:00	07:45	0.75	1826.00	9	Accumulative Surveys
07:45	12:00	4.25	1865.00	9	Drilling 156mm Hole from 1826m to 1865m
12:00	12:45	0.75	1865.00	9	Accumulative Surveys
12:45	23:45	11.00	1951.00	9	Drilling 156mm Hole from 1865 to 1951m
23:45	00:00	0.25	1951.00	9	Service Rig

COMMENTS

MWD Personnel: Rene Bourque and Fred MacInnes

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DRILLING SERVICES

Daily Drilling Report

Customer : Intragaz Inc.
 Well Name : Intragaz St. Flavien #14
 Field : St. Flavien (Lic #2000FA230)
 Location : #14
 Rig : Ralex #1 (RKB 144.54m)
 Job # : CX-HZ-01166

CURRENT STATUS Report # 40 10/24/2000

Total Depth (m) : 1951	Casing Depth (m) : 1677.00	Operator Reps : Ken Creelman, Marc Nicklom
Drilled last 24 hrs (m) : 0	Casing Diameter (mm) : 177.8	SSDS Reps : Frank van Noord (33), Don Roy (22)
Hole Size (mm) : 156.0	Casing ID (mm) : 159.4	

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
1944.19	91.80	279.60	1478.04	814.88	N52.84W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Beek B1	1731.00	1477.84

BHA SUMMARY

BHA 9: 1951.00 m; Bit #7 (55.75 hrs), PDM #9 (67.75 hrs), Sub, Sub, Flex, Sub, MWD, Flex, Flex, Jar, Sub, 36x DP (X), 48x HWDP, Sub, 84x DP (X), Sub, 24x DP (X), Sub, 7x DP (X), Other

MUD DATA

Type	Weight (kg/m³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Polymer	1010	34	2	3.0	1.0 / 1.0	0	7.5	0.60	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	00:45	0.75	1951.00	9	Circulate Sample Up
00:45	01:45	1.00	1951.00	9	Tripout 12 Stands of Drill Pipe to 1677m
01:45	03:15	1.50	1951.00	9	Bleed Down Well with Northland
03:15	04:00	0.75	1951.00	9	Tripout 6 Stands of Drill Pipe to 1490m
04:00	07:00	3.00	1951.00	9	Change out Rubber on RBOP element
07:00	08:00	1.00	1951.00	9	Trip Out 3 Stds
08:00	08:30	0.50	1951.00	9	Trip In 5 Stds
08:30	00:00	15.50	1951.00	9	W. O. Tools, Snubbing Unit

COMMENTS

MWD Personnel: Rene Bourque and Fred MacInnes

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DRILLING SERVICES

Daily Drilling Report

Customer : Intragaz Inc.
 Well Name : Intragaz St. Flavien #14
 Field : St. Flavien (Lic #2000FA230)
 Location : #14
 Rig : Ralex #1 (RKB 144.54m)
 Job # : CX-HZ-01166

CURRENT STATUS Report # 41 10/25/2000

Total Depth (m) :	1951	Casing Depth (m) :	1677.00	Operator Reps :	Ken Creelman, Marc Nicklom
Drilled last 24 hrs (m) :	0	Casing Diameter (mm) :	177.8	SSDS Reps :	Frank van Noord (34), Don Roy (23)
Hole Size (mm) :	156.0	Casing ID (mm) :	159.4		

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
1944.19	91.80	279.60	1478.04	814.88	N52.84W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Beek B1	1731.00	1477.84

BHA SUMMARY

BHA 9: 1951.00 m; Bit #7 (55.75 hrs), PDM #9 (67.75 hrs), Sub, Sub, Flex, Sub, MWD, Flex, Flex, Jar, Sub, 36x DP (X), 48x HWDP, Sub, 84x DP (X), Sub, 24x DP (X), Sub, 7x DP (X), Other

MUD DATA

Type	Weight (kg/m³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Polymer	1010	34	2	3.0	1.0 / 1.0	0	7.5	0.60	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	00:00	24.00	1951.00	9	W. O. Tools, Snubbing Unit

COMMENTS

MWD Personnel: Rene Bourque and Fred MacInnes

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DRILLING SERVICES

Daily Drilling Report

Customer : Intragaz Inc.
Well Name : Intragaz St. Flavien #14
Field : St. Flavien (Lic #2000FA230)
Location : #14
Rig : Ralex #1 (RKB 144.54m)
Job # : CX-HZ-01166

CURRENT STATUS Report # 42 10/26/2000

Total Depth (m) :	1951	Casing Depth (m) :	1677.00	Operator Reps :	Ken Creelman, Marc Nicklorn
Drilled last 24 hrs (m) :	0	Casing Diameter (mm) :	177.8	SSDS Reps :	Frank van Noord (35), Don Roy (24)
Hole Size (mm) :	156.0	Casing ID (mm) :	159.4		

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
1944.19	91.80	279.60	1478.04	814.88	N52.84W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Beek B1	1731.00	1477.84

BHA SUMMARY

BHA 9: 1951.00 m; Bit #7 (55.75 hrs), PDM #9 (67.75 hrs), Sub, Sub, Flex, Sub, MWD, Flex, Flex, Jar, Sub, 36x DP (X), 48x HWDP, Sub, 84x DP (X), Sub, 24x DP (X), Sub, 7x DP (X), Other

MUD DATA

Type	Weight (kg/m ³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Polymer	1010	34	2	3.0	1.0 / 1.0	0	7.5	0.60	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	20:00	20.00	1951.00	9	W. O. Tools, Snubbing Unit
20:00	00:00	4.00	1951.00	9	W. O. Tools, Rig up Snubbing Unit

COMMENTS

MWD Personnel: Rene Bourque and Fred MacInnes

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DRILLING SERVICES

Daily Drilling Report

Customer : Intragaz Inc.
 Well Name : Intragaz St. Flavien #14
 Field : St. Flavien (Lic #2000FA230)
 Location : #14
 Rig : Ralex #1 (RKB 144.54m)
 Job # : CX-HZ-01166

CURRENT STATUS Report # 43 10/27/2000

Total Depth (m) :	1951	Casing Depth (m) :	1677.00	Operator Reps :	Ken Creelman, Marc Nicklorn
Drilled last 24 hrs (m) :	0	Casing Diameter (mm) :	177.8	SSDS Reps :	Frank van Noord (36), Don Roy (25)
Hole Size (mm) :	156.0	Casing ID (mm) :	159.4		

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
1944.19	91.80	279.60	1478.04	814.88	N52.84W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Beek B1	1731.00	1477.84

BHA SUMMARY

BHA 9: 1951.00 m; Bit #7 (55.75 hrs), PDM #9 (67.75 hrs), Sub, Sub, Flex, Sub, MWD, Flex, Flex, Jar, Sub, 36x DP (X), 48x HWDP, Sub, 84x DP (X), Sub, 24x DP (X), Sub, 7x DP (X), Other

MUD DATA

Type	Weight (kg/m³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Polymer	1010	34	2	3.0	1.0 / 1.0	0	7.5	0.60	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	00:45	0.75	1951.00	9	Bleed Down Well & Pressure at 1711 Kpa
00:45	02:00	1.25	1951.00	9	Remove RBOP element, Install Snubbing adapter
02:00	13:00	11.00	1951.00	9	Rig up Snubbing Unit & Continue to Flow Well
13:00	18:00	5.00	1951.00	9	Trip Out (Lay down 68 Jts DP)
18:00	00:00	6.00	1951.00	9	Hang off on Pipe Rams, Rig out Snubber & RBOP

COMMENTS

MWD Personnel: Rene Bourque and Fred MacInnes

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DRILLING SERVICES

Daily Drilling Report

Customer : Intragaz Inc.
 Well Name : Intragaz St. Flavien #14
 Field : St. Flavien (Lic #2000FA230)
 Location : #14
 Rig : Ralex #1 (RKB 144.54m)
 Job # : CX-HZ-01166

CURRENT STATUS Report # 45 10/29/2000

Total Depth (m) : 1951	Casing Depth (m) : 1677.00	Operator Reps : Ken Creelman, Marc Nicklom
Drilled last 24 hrs (m) : 0	Casing Diameter (mm) : 177.8	SSDS Reps : Frank van Noord (38), Don Roy (27)
Hole Size (mm) : 156.0	Casing ID (mm) : 159.4	

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
1944.19	91.80	279.60	1478.04	814.88	N52.84W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Beek B1	1731.00	1477.84

BHA SUMMARY

BHA 9: 1951.00 m; Bit #7 (55.75 hrs), PDM #9 (67.75 hrs), Sub, Sub, Flex, Sub, MWD, Flex, Flex, Jar, Sub, 36x DP (X), 48x HWDP, Sub, 84x DP (X), Sub, 24x DP (X), Sub, 7x DP (X), Other

MUD DATA

Type	Weight (kg/m ³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Polymer	1010	34	2	3.0	1.0 / 1.0	0	7.5	0.60	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	13:30	13.50	1951.00	9	Continue to Wait on Parts for Snubbing Unit, Install 120ft Flare Stack
13:30	00:00	10.50	1951.00	9	Pressure test BOP's and lines

COMMENTS

MWD Personnel: Rene Bourque and Fred MacInnes

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DRILLING SERVICES

Daily Drilling Report

Customer : Intragaz Inc.
Well Name : Intragaz St. Flavien #14
Field : St. Flavien (Lic #2000FA230)
Location : #14
Rig : Ralex #1 (RKB 144.54m)
Job # : CX-HZ-01166

CURRENT STATUS Report # 46 10/30/2000

Total Depth (m) :	1951	Casing Depth (m) :	1677.00	Operator Reps :	Ken Creelman, Marc Nicklom
Drilled last 24 hrs (m) :	0	Casing Diameter (mm) :	177.8	SSDS Reps :	Frank van Noord (39), Don Roy (28)
Hole Size (mm) :	156.0	Casing ID (mm) :	159.4		

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
1944.19	91.80	279.60	1478.04	814.88	N52.84W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Beek B1	1731.00	1477.84

BHA SUMMARY

BHA 9: 1951.00 m; Bit #7 (55.75 hrs), PDM #9 (67.75 hrs), Sub, Sub, Flex, Sub, MWD, Flex, Flex, Jar, Sub, 36x DP (X), 48x HWDP, Sub, 84x DP (X), Sub, 24x DP (X), Sub, 7x DP (X), Other

MUD DATA

Type	Weight (kg/m ³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Polymer	1010	34	2	3.0	1.0 / 1.0	0	7.5	0.60	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	06:00	6.00	1951.00	9	Continue to Pressure Test BOP and Lines
06:00	07:00	1.00	1951.00	9	Attempt to Snub Pipe and Snubbing Unit Failed, Secure Well
07:00	12:00	5.00	1951.00	9	Evaluate Situation and Install stabbing valve. Pressure on Casing Bowl 17,250 Kpa
12:00	00:00	12.00	1951.00	9	Wait to Replace Men and Equipment from Edmonton.

COMMENTS

MWD Personnel: Rene Bourque and Fred MacInnes

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DRILLING SERVICES

Daily Drilling Report

Customer : Intragaz inc.
 Well Name : Intragaz St. Flavien #14
 Field : St. Flavien (Lic #2000FA230)
 Location : #14
 Rig : Ralex #1 (RKB 144.54m)
 Job # : CX-HZ-01166

CURRENT STATUS Report # 47 10/31/2000

Total Depth (m) :	1951	Casing Depth (m) :	1677.00	Operator Reps :	Ken Creelman, Marc Nicklom
Drilled last 24 hrs (m) :	0	Casing Diameter (mm) :	177.8	SSDS Reps :	Frank van Noord (40), Don Roy (29)
Hole Size (mm) :	156.0	Casing ID (mm) :	159.4		

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
1944.19	91.80	279.60	1478.04	814.88	N52.84W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Beek B1	1731.00	1477.84

BHA SUMMARY

BHA 9: 1951.00 m; Bit #7 (55.75 hrs), PDM #9 (67.75 hrs), Sub, Sub, Flex, Sub, MWD, Flex, Flex, Jar, Sub, 36x DP (X), 48x HWDP, Sub, 84x DP (X), Sub, 24x DP (X), Sub, 7x DP (X), Other

MUD DATA

Type	Weight (kg/m ³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Polymer	1010	34	2	3.0	1.0 / 1.0	0	7.5	0.60	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	13:00	13.00	1951.00	9	Wait on New Snubbing unit. Pressure on Casing Bowl 17,250 Kpa
13:00	14:30	1.50	1951.00	9	Bleed down well
14:30	17:00	2.50	1951.00	9	Snub out 1 Jt HWDP, Snub in 2 Jts DP & Hang Off on Pipe Rams
17:00	00:00	7.00	1951.00	9	Monitor Well, Wait on New Snubbing Unit

COMMENTS

MWD Personnel: Rene Bourque and Fred MacInnes

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DRILLING SERVICES

Daily Drilling Report

Customer : Intragaz Inc.
Well Name : Intragaz St. Flavien #14
Field : St. Flavien (Lic #2000FA230)
Location : #14
Rig : Ralex #1 (RKB 144.54m)
Job # : CX-HZ-01166

CURRENT STATUS Report # 48 11/01/2000

Total Depth (m) :	1951	Casing Depth (m) :	1677.00	Operator Reps :	Ken Creelman, Marc Nicklom
Drilled last 24 hrs (m) :	0	Casing Diameter (mm) :	177.8	SSDS Reps :	Frank van Noord (41), Don Roy (30)
Hole Size (mm) :	156.0	Casing ID (mm) :	159.4		

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
1944.19	91.80	279.60	1478.04	814.88	N52.84W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Beek B1	1731.00	1477.84

BHA SUMMARY

BHA 9: 1951.00 m; Bit #7 (55.75 hrs), PDM #9 (67.75 hrs), Sub, Sub, Flex, Sub, MWD, Flex, Flex, Jar, Sub, 36x DP (X), 48x HWDP, Sub, 84x DP (X), Sub, 24x DP (X), Sub, 7x DP (X), Other

MUD DATA

Type	Weight (kg/m ³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Polymer	1010	34	2	3.0	1.0 / 1.0	0	7.5	0.60	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	00:00	24.00	1951.00	9	Rig out Atlas Snubbing Unit, Wait on New Snubbing Unit

COMMENTS

MWD Personnel: Rene Bourque and Fred MacInnes

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DRILLING SERVICES

Daily Drilling Report

Customer : Intragaz Inc.
 Well Name : Intragaz St. Flavien #14
 Field : St. Flavien (Lic #2000FA230)
 Location : #14
 Rig : Ralex #1 (RKB 144.54m)
 Job # : CX-HZ-01166

CURRENT STATUS Report # 49 11/02/2000

Total Depth (m) : 1951	Casing Depth (m) : 1677.00	Operator Reps : Ken Creelman, Marc Nicklorn
Drilled last 24 hrs (m) : 0	Casing Diameter (mm) : 177.8	SSDS Reps : Frank van Noord (42), Don Roy (31)
Hole Size (mm) : 156.0	Casing ID (mm) : 159.4	

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
1944.19	91.80	279.60	1478.04	814.88	N52.84W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Beek B1	1731.00	1477.84

BHA SUMMARY

BHA 9: 1951.00 m; Bit #7 (55.75 hrs), PDM #9 (67.75 hrs), Sub, Sub, Flex, Sub, MWD, Flex, Flex, Jar, Sub, 36x DP (X), 48x HWDP, Sub, 84x DP (X), Sub, 24x DP (X), Sub, 7x DP (X), Other

MUD DATA

Type	Weight (kg/m ³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Polymer	1010	34	2	3.0	1.0 / 1.0	0	7.5	0.60	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	04:00	4.00	1951.00	9	Wait on New Snubbing Unit
04:00	18:00	14.00	1951.00	9	Rig Up New Snubbing Unit
18:00	20:00	2.00	1951.00	9	Change 3" Valve on BOPs
20:00	20:30	0.50	1951.00	9	Safety Meeting
20:30	22:15	1.75	1951.00	9	Pressure Test Snubbing Unit
22:15	00:00	1.75	1951.00	9	Pump Pill Xanvis, Calcium Carbonate down Wellbore Through Kill Line.

COMMENTS

MWD Personnel: Rene Bourque and Fred MacInnes

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DRILLING SERVICES

Daily Drilling Report

Customer : Intragaz Inc.
 Well Name : Intragaz St. Flavien #14
 Field : St. Flavien (Lic #2000FA230)
 Location : #14
 Rig : Ralex #1 (RKB 144.54m)
 Job # : CX-HZ-01166

CURRENT STATUS Report # 50 11/03/2000

Total Depth (m) : 1951	Casing Depth (m) : 1677.00	Operator Reps : Ken Creelman, Marc Nicklom
Drilled last 24 hrs (m) : 0	Casing Diameter (mm) : 177.8	SSDS Reps : Frank van Noord (43), Don Roy (32)
Hole Size (mm) : 156.0	Casing ID (mm) : 159.4	

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
1944.19	91.80	279.60	1478.04	814.88	N52.84W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Beek B1	1731.00	1477.84

BHA SUMMARY

BHA 9: 1951.00 m; Bit #7 (55.75 hrs), PDM #9 (67.75 hrs), Sub, Sub, Flex, Sub, MWD, Flex, Flex, Jar, Sub, 36x DP (X), 48x HWDP, Sub, 84x DP (X), Sub, 24x DP (X), Sub, 7x DP (X), Other

MUD DATA

Type	Weight (kg/m³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Polymer	1010	34	2	3.0	1.0 / 1.0	0	7.5	0.60	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	03:30	3.50	1951.00	9	Continue Pump Pill through Kill line to reduced Wellbore pressure.
03:30	07:30	4.00	1951.00	9	Wait for Choke
07:30	11:00	3.50	1951.00	9	Rig in Choke, Fabricate steel return line.
11:00	11:30	0.50	1951.00	9	Pump 2.5m3 through kill line
11:30	12:00	0.50	1951.00	9	Let fluid drop and bleed down well
12:00	12:30	0.50	1951.00	9	Pump 2.4m3 Xanvis w/Calcium Carbonate through kill line
12:30	13:30	1.00	1951.00	9	Let fluid drop and bleed down well
13:30	14:00	0.50	1951.00	9	Pump 2.8m3 through kill line
14:00	15:30	1.50	1951.00	9	Let fluid drop and bleed down well
15:30	16:00	0.50	1951.00	9	Pump 3.6m3 through kill line
16:00	17:30	1.50	1951.00	9	Let fluid drop and bleed down well
17:30	18:00	0.50	1951.00	9	Pump 4.2m3 through kill line
18:00	19:45	1.75	1951.00	9	Let fluid drop and bleed down well
19:45	20:00	0.25	1951.00	9	Pump 4.0m3 through kill line
20:00	22:00	2.00	1951.00	9	Let fluid drop and bleed down well
22:00	00:00	2.00	1951.00	9	Pump 6.6m3 through kill line

COMMENTS

MWD Personnel: Rene Bourque and Fred MacInnes

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DRILLING SERVICES

Daily Drilling Report

Customer : Intragaz Inc.
 Well Name : Intragaz St. Flavien #14
 Field : St. Flavien (Lic #2000FA230)
 Location : #14
 Rig : Ralex #1 (RKB 144.54m)
 Job # : CX-HZ-01166

CURRENT STATUS Report # 51 11/04/2000

Total Depth (m) :	1951	Casing Depth (m) :	1677.00	Operator Reps :	Ken Creelman, Marc Nicklom
Drilled last 24 hrs (m) :	0	Casing Diameter (mm) :	177.8	SSDS Reps :	Frank van Noord (44), Don Roy (33)
Hole Size (mm) :	156.0	Casing ID (mm) :	159.4		

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
1944.19	91.80	279.60	1478.04	814.88	N52.84W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Beek B1	1731.00	1477.84

BHA SUMMARY

BHA 9: 1951.00 m; Bit #7 (55.75 hrs), PDM #9 (67.75 hrs), Sub, Sub, Flex, Sub, MWD, Flex, Flex, Jar, Sub, 36x DP (X), 48x HWDP, Sub, 84x DP (X), Sub, 24x DP (X), Sub, 7x DP (X), Other

MUD DATA

Type	Weight (kg/m ³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Polymer	1010	34	2	3.0	1.0 / 1.0	0	7.5	0.60	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	17:30	17.50	1951.00	9	Pumping Xanvis with Calcium Carbonate in hole
17:30	21:30	4.00	1951.00	9	Shut pump off equalize BOP stack & Work on pipe rams
21:30	00:00	2.50	1951.00	9	Trip Out with Snubbing Unit & Laydown each singles on pipe racks

COMMENTS

MWD Personnel: Rene Bourque and Fred MacInnes

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DRILLING SERVICES

Daily Drilling Report

Customer : Intragaz Inc.
 Well Name : Intragaz St. Flavien #14
 Field : St. Flavien (Lic #2000FA230)
 Location : #14
 Rig : Ralex #1 (RKB 144.54m)
 Job # : CX-HZ-01166

CURRENT STATUS Report # 52 11/05/2000

Total Depth (m) : 1951	Casing Depth (m) : 1677.00	Operator Reps : Ken Creelman, Marc Nicklorn
Drilled last 24 hrs (m) : 0	Casing Diameter (mm) : 177.8	SSDS Reps : Frank van Noord (45), Don Roy (34)
Hole Size (mm) : 156.0	Casing ID (mm) : 159.4	

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
1944.19	91.80	279.60	1478.04	814.88	N52.84W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Beek B1	1731.00	1477.84

BHA SUMMARY

BHA 9: 1951.00 m; Bit #7 (55.75 hrs), PDM #9 (67.75 hrs), Sub, Sub, Flex, Sub, MWD, Flex, Flex, Jar, Sub, 36x DP (X), 48x HWDP, Sub, 84x DP (X), Sub, 24x DP (X), Sub, 7x DP (X), Other
 BHA 10: 1951.00 m; Bit #8 (0. hrs), PDM #10 (0. hrs), Sub, Sub, Flex, Sub, MWD, Flex, Flex, Jar, Sub, Sub, 69x DP (X), Sub, 48x HWDP, 51x DP (X), Sub, 30x DP (X), 1x DP (X), Other

MUD DATA

Type	Weight (kg/m³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Polymer	1010	34	2	3.0	1.0 / 1.0	0	7.5	0.60	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	08:00	8.00	1951.00	9	Continue to trip out with snubbing unit
08:00	12:00	4.00	1951.00	9	Laydown BHA #9 with snubbing unit
12:00	15:00	3.00	1951.00	9	Pick up New BHA #10 set Motor at 1.5°
15:00	15:30	0.50	1951.00	9	Safety Meeting
15:30	18:00	2.50	1951.00	10	Trip In with Flex DC & One Drill pipe (Hit Bridge Plug)
18:00	23:00	5.00	1951.00	10	Attempt to Break Circulation & Well Bore Pressure Up.
23:00	00:00	1.00	1951.00	10	Secure Well & Wait on Pumper Unit from Dartmouth

COMMENTS

MWD Personnel: Rene Bourque and Fred MacInnes

sperry-sun

DRILLING SERVICES

Daily Drilling Report

Customer : Intragaz Inc.
Well Name : Intragaz St. Flavien #14
Field : St. Flavien (Lic #2000FA230)
Location : #14
Rig : Ralex #1 (RKB 144.54m)
Job # : CX-HZ-01166

CURRENT STATUS Report # 53 11/06/2000

Total Depth (m) :	1951	Casing Depth (m) :	1677.00	Operator Reps :	Ken Creelman, Marc Nicklorn
Drilled last 24 hrs (m) :	0	Casing Diameter (mm) :	177.8	SSDS Reps :	Frank van Noord (46), Don Roy (35)
Hole Size (mm) :	156.0	Casing ID (mm) :	159.4		

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
1944.19	91.80	279.60	1478.04	814.88	N52.84W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Beek B1	1731.00	1477.84

BHA SUMMARY

BHA 10: 1951.00 m; Bit #8 (0. hrs), PDM #10 (0. hrs), Sub, Sub, Flex, Sub, MWD, Flex, Flex, Jar, Sub, Sub, 69x DP (X), Sub, 48x HWDP, 51x DP (X), Sub, 30x DP (X), 1x DP (X), Other

MUD DATA

Type	Weight (kg/m ³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Polymer	1010	34	2	3.0	1.0 / 1.0	0	7.5	0.60	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	00:00	24.00	1951.00	10	Continue to Wait on Pumper Unit.

COMMENTS

MWD Personnel: Rene Bourque and Fred MacInnes

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DRILLING SERVICES

Daily Drilling Report

Customer : Intragaz Inc.
 Well Name : Intragaz St. Flavien #14
 Field : St. Flavien (Lic #2000FA230)
 Location : #14
 Rig : Ralex #1 (RKB 144.54m)
 Job # : CX-HZ-01166

CURRENT STATUS Report # 54 11/07/2000

Total Depth (m) : 1951	Casing Depth (m) : 1677.00	Operator Reps : Ken Creelman, Marc Nicklom
Drilled last 24 hrs (m) : 0	Casing Diameter (mm) : 177.8	SSDS Reps : Frank van Noord (47), Don Roy (36)
Hole Size (mm) : 156.0	Casing ID (mm) : 159.4	

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
1944.19	91.80	279.60	1478.04	814.88	N52.84W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Beek B1	1731.00	1477.84

BHA SUMMARY

BHA 10: 1951.00 m; Bit #8 (0. hrs), PDM #10 (0. hrs), Sub, Sub, Flex, Sub, MWD, Flex, Flex, Jar, Sub, Sub, 69x DP (X), Sub, 48x HWDP, 51x DP (X), Sub, 30x DP (X), 1x DP (X), Other
 BHA 11: 2414.00 m; Bit #9 (0.5 hrs), PDM #4 (1.25 hrs), Sub, Sub, Flex, Sub, MWD, Flex, Flex, Jar, Sub, 69x DP (X), Sub, 48x HWDP, 51x DP (X), Sub, 30x DP (X), Sub, 49x DP (X), Other

MUD DATA

Type	Weight (kg/m³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Polymer	1010	34	2	3.0	1.0 / 1.0	0	7.5	0.60	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	05:00	5.00	1951.00	10	Rig Up Pumper Unit & Condition Mud.
05:00	05:15	0.25	1951.00	10	Safety Meeting w/ Nowsco
05:15	06:00	0.75	1951.00	10	Test BOP & Lines
06:00	09:00	3.00	1951.00	10	Pump w/ Nowsco
09:00	14:00	5.00	1951.00	10	Equalize Pressure in Stack, Lay out 1 single & try to pump through DP.
14:00	16:00	2.00	1951.00	10	Let pressure stabilize
16:00	19:30	3.50	1951.00	10	Snubing out pipe and BHA out of hole
19:30	21:00	1.50	1951.00	10	Lay out motor removed and repaired float (broken spring) and test motor w/Nowsco
21:00	22:00	1.00	1951.00	10	Trip Out (at Surface)
22:00	00:00	2.00	1951.00	11	Make up motor, hang off DC, Put pipe in hole above blind rams, Equalize pressures

COMMENTS

MWD Personnel: Rene Bourque and Fred MacInnes

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DRILLING SERVICES

Daily Drilling Report

Customer : Intragaz Inc.
 Well Name : Intragaz St. Flavien #14
 Field : St. Flavien (Lic #2000FA230)
 Location : #14
 Rig : Ralex #1 (RKB 144.54m)
 Job # : CX-HZ-01166

CURRENT STATUS Report # 55 11/08/2000

Total Depth (m) : 1951	Casing Depth (m) : 1677.00	Operator Reps : Ken Creelman, Marc Nicklom
Drilled last 24 hrs (m) : 0	Casing Diameter (mm) : 177.8	SSDS Reps : Frank van Noord (48), Don Roy (37)
Hole Size (mm) : 156.0	Casing ID (mm) : 159.4	

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
1944.19	91.80	279.60	1478.04	814.88	N52.84W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Beek B1	1731.00	1477.84

BHA SUMMARY

BHA 11: 2414.00 m; Bit #9 (0.5 hrs), PDM #4 (7.75 hrs), Sub, Sub, Flex, Sub, MWD, Flex, Flex, Jar, Sub, 69x DP (X), Sub, 48x HWDP, 51x DP (X), Sub, 30x DP (X), Sub, 49x DP (X), Other

MUD DATA

Type	Weight (kg/m ³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Polymer	1010	34	2	3.0	1.0 / 1.0	0	7.5	0.60	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	06:00	6.00	1951.00	11	Equalize pressures, Safety meeting and Rig up to circulate.
06:00	06:30	0.50	1951.00	11	Snub in Flex collars
06:30	07:45	1.25	1951.00	11	Accumulative time to circulate flex collars in hole.
07:45	10:00	2.25	1951.00	11	Equalize pressures and Snub in drill pipe from 46.51m to 56.69m
10:00	10:15	0.25	1951.00	11	Circulate through drill pipe
10:15	12:00	1.75	1951.00	11	Equalize pressures and Rig up circulating head on drill pipe
12:00	12:15	0.25	1951.00	11	Snub in drill pipe from 56.69m to 66.31m
12:15	13:15	1.00	1951.00	11	Circulate through drill pipe when snubbing in hole
13:15	17:45	4.50	1951.00	11	Accumulative time to rig up circulating head on drill pipe
17:45	18:45	1.00	1951.00	11	Accumulative time to Snub in drill pipe from 66.31m to 219.18m
18:45	00:00	5.25	1951.00	11	Accumulative time when circulating pipe while Snubbing in hole

COMMENTS

MWD Personnel: Rene Bourque and Fred MacInnes

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DRILLING SERVICES

Daily Drilling Report

Customer : Intragaz Inc.
 Well Name : Intragaz St. Flavien #14
 Field : St. Flavien (Lic #2000FA230)
 Location : #14
 Rig : Ralex #1 (RKB 144.54m)
 Job # : CX-HZ-01166

CURRENT STATUS Report # 56 11/09/2000

Total Depth (m) : 1951	Casing Depth (m) : 1677.00	Operator Reps : Ken Creelman, Marc Nicklom
Drilled last 24 hrs (m) : 0	Casing Diameter (mm) : 177.8	SSDS Reps : Frank van Noord (49), Don Roy (38)
Hole Size (mm) : 156.0	Casing ID (mm) : 159.4	

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
1944.19	91.80	279.60	1478.04	814.88	N52.84W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Beek B1	1731.00	1477.84

BHA SUMMARY

BHA 11: 2414.00 m; Bit #9 (0.5 hrs), PDM #4 (19.5 hrs), Sub, Sub, Flex, Sub, MWD, Flex, Flex, Jar, Sub, 69x DP (X), Sub, 48x HWDP, 51x DP (X), Sub, 30x DP (X), Sub, 49x DP (X), Other

MUD DATA

Type	Weight (kg/m ³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Polymer	1010	34	2	3.0	1.0 / 1.0	0	7.5	0.60	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	03:00	3.00	1951.00	11	Accumulative time to rig up circulating head on drill pipe
03:00	09:00	6.00	1951.00	11	Accumulative time to snub in from 219m to 809m
09:00	14:30	5.50	1951.00	11	Accumulative time when circulating pipe while Snubbing in hole
14:30	14:45	0.25	1951.00	11	Service Rig
14:45	15:30	0.75	1951.00	11	Circulate pipe at 809m
15:30	19:30	4.00	1951.00	11	Circulate while snubbing in HWDP from 809m to 875.25m
19:30	22:00	2.50	1951.00	11	Snub in from 875.25m to 1151.41m
22:00	23:30	1.50	1951.00	11	Circulate to condition hole
23:30	00:00	0.50	1951.00	11	Pick up and Snub in Packer

COMMENTS

MWD Personnel: Rene Bourque and Fred MacInnes

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DRILLING SERVICES

Daily Drilling Report

Customer : Intragaz Inc.
 Well Name : Intragaz St. Flavien #14
 Field : St. Flavien (Lic #2000FA230)
 Location : #14
 Rig : Ralex #1 (RKB 144.54m)
 Job # : CX-HZ-01166

CURRENT STATUS Report # 57 11/10/2000

Total Depth (m) : 1951	Casing Depth (m) : 1677.00	Operator Reps : Ken Creelman, Marc Nicklom
Drilled last 24 hrs (m) : 0	Casing Diameter (mm) : 177.8	SSDS Reps : Frank van Noord (50), Don Roy (39)
Hole Size (mm) : 156.0	Casing ID (mm) : 159.4	

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
1944.19	91.80	279.60	1478.04	814.88	N52.84W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Beek B1	1731.00	1477.84

BHA SUMMARY

BHA 11: 2414.00 m; Bit #9 (0.5 hrs), PDM #4 (20.5 hrs), Sub, Sub, Flex, Sub, MWD, Flex, Flex, Jar, Sub, 69x DP (X), Sub, 48x HWDP, 51x DP (X), Sub, 30x DP (X), Sub, 49x DP (X), Other

MUD DATA

Type	Weight (kg/m³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Polymer	1010	34	2	3.0	1.0 / 1.0	0	7.5	0.60	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	01:30	1.50	1951.00	11	Continue to run Packer in and Set
01:30	02:00	0.50	1951.00	11	Pressure test Packer
02:00	03:15	1.25	1951.00	11	Retrieve wear bushing and Could not get retrieving tool through BOP's stack,
03:15	08:15	5.00	1951.00	11	Change Blind rams and Upper pipe rams rubbers
08:15	12:00	3.75	1951.00	11	Rerun retrieving tool, Retrieved wear bushing and Test BOP's
12:00	14:00	2.00	1951.00	11	Rig out Snubbing unit.
14:00	19:00	5.00	1951.00	11	Rig up Williams rotating head
19:00	20:00	1.00	1951.00	11	Rig in shearing pump
20:00	22:30	2.50	1951.00	11	Trip In to 1674m
22:30	23:00	0.50	1951.00	11	Circulate bottoms up
23:00	23:30	0.50	1951.00	11	Safety Meeting
23:30	00:00	0.50	1951.00	11	Reaming / Washing from 1674m to 1704m

COMMENTS

MWD Personnel: Rene Bourque and Fred MacInnes

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DRILLING SERVICES

Daily Drilling Report

Customer : Intragaz Inc.
 Well Name : Intragaz St. Flavien #14
 Field : St. Flavien (Lic #2000FA230)
 Location : #14
 Rig : Ralex #1 (RKB 144.54m)
 Job # : CX-HZ-01166

CURRENT STATUS Report # 58 11/11/2000

Total Depth (m) : 2088	Casing Depth (m) : 1677.00	Operator Reps : Ken Creelman, Marc Nicklom
Drilled last 24 hrs (m) : 137	Casing Diameter (mm) : 177.8	SSDS Reps : Frank van Noord (51), Don Roy (40)
Hole Size (mm) : 156.0	Casing ID (mm) : 159.4	

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
2078.84	86.30	270.50	1480.30	931.22	N57.27W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Target 2	2023.09	1477.24

BHA SUMMARY

BHA 11: 2414.00 m; Bit #9 (22. hrs), PDM #4 (44.25 hrs), Sub, Sub, Flex, Sub, MWD, Flex, Flex, Jar, Sub, 69x DP (X), Sub, 48x HWDP, 51x DP (X), Sub, 30x DP (X), Sub, 49x DP (X), Other

MUD DATA

Type	Weight (kg/m ³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Polymer	1010	36	5	4.5	1.0 / 1.5	0	7.5	0.70	0.30	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	03:30	3.50	1951.00	11	Reaming / Washing from 1674m to 1951m
03:30	11:30	8.00	2008.00	11	Drilling 156mm Hole from 1951 to 2008m
11:30	12:00	0.50	2008.00	11	Accumulative surveys
12:00	19:00	7.00	2067.00	11	Drilling 156mm Hole from 2008m to 2067m
19:00	20:00	1.00	2067.00	11	Accumulative surveys
20:00	20:15	0.25	2067.00	11	Service Rig
20:15	20:45	0.50	2067.00	11	Circulate sample up
20:45	23:45	3.00	2088.00	11	Drilling 156mm Hole from 2067m to 2088m
23:45	00:00	0.25	2088.00	11	Accumulative surveys

COMMENTS

MWD Personnel: Rene Bourque and Fred MacInnes

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DRILLING SERVICES

Daily Drilling Report

Customer : Intragaz Inc.
 Well Name : Intragaz St. Flavien #14
 Field : St. Flavien (Lic #2000FA230)
 Location : #14
 Rig : Ralex #1 (RKB 144.54m)
 Job # : CX-HZ-01166

CURRENT STATUS Report # 59 11/12/2000

Total Depth (m) :	2250	Casing Depth (m) :	1677.00	Operator Reps :	Ken Creelman, Marc Nicklom
Drilled last 24 hrs (m) :	162	Casing Diameter (mm) :	177.8	SSDS Reps :	Frank van Noord (52), Don Roy (41)
Hole Size (mm) :	156.0	Casing ID (mm) :	159.4		

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
2242.92	91.60	266.70	1484.22	1072.06	N62.08W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Target 2	2023.09	1477.24

BHA SUMMARY

BHA 11: 2414.00 m; Bit #9 (43.75 hrs), PDM #4 (67.75 hrs), Sub, Sub, Flex, Sub, MWD, Flex, Flex, Jar, Sub, 69x DP (X), Sub, 48x HWDP, 51x DP (X), Sub, 30x DP (X), Sub, 49x DP (X), Other

MUD DATA

Type	Weight (kg/m ³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Polymer	1010	35	5	4.0	0.8 / 1.3	0	8.5	0.60	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	07:15	7.25	2134.00	11	Drilling 156mm Hole from 2088 to 2134m
07:15	07:30	0.25	2134.00	11	Service Rig
07:30	11:15	3.75	2163.00	11	Drilling 156mm Hole from 2134 to 2163m
11:15	12:00	0.75	2163.00	11	Accumulative Surveys
12:00	16:00	4.00	2185.00	11	Drilling 156mm Hole from 2163m to 2185m
16:00	16:30	0.50	2185.00	11	Accumulative Surveys
16:30	16:45	0.25	2185.00	11	Service Rig
16:45	23:30	6.75	2250.00	11	Drilling 156mm Hole from 2185m to 2250m
23:30	00:00	0.50	2250.00	11	Accumulative Surveys

COMMENTS

MWD Personnel: Rene Bourque and Fred MacInnes

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DRILLING SERVICES

Daily Drilling Report

Customer : Intragaz Inc.
 Well Name : Intragaz St. Flavien #14
 Field : St. Flavien (Lic #2000FA230)
 Location : #14
 Rig : Ralex #1 (RKB 144.54m)
 Job # : CX-HZ-01166

CURRENT STATUS Report # 60 11/13/2000

Total Depth (m) :	2260	Casing Depth (m) :	1677.00	Operator Reps :	Ken Creelman, Marc Nicklom
Drilled last 24 hrs (m) :	10	Casing Diameter (mm) :	177.8	SSDS Reps :	Frank van Noord (53), Don Roy (42)
Hole Size (mm) :	156.0	Casing ID (mm) :	159.4		

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
2252.58	90.10	266.20	1484.07	1080.31	N62.35W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Target 2	2023.09	1477.24

BHA SUMMARY

BHA 11: 2414.00 m; Bit #9 (45.5 hrs), PDM #4 (70.5 hrs), Sub, Sub, Flex, Sub, MWD, Flex, Flex, Jar, Sub, 69x DP (X), Sub, 48x HWDP, 51x DP (X), Sub, 30x DP (X), Sub, 49x DP (X), Other

MUD DATA

Type	Weight (kg/m ³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Polymer	1010	35	5	4.0	0.8 / 1.3	0	8.5	0.60	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	01:45	1.75	2260.00	11	Drilling 159mm Hole from 2250m to 2260m
01:45	02:00	0.25	2260.00	11	Accumulative Surveys
02:00	02:15	0.25	2260.00	11	Service Rig
02:15	03:00	0.75	2260.00	11	Circulate prior tripping to casing shoe
03:00	05:15	2.25	2260.00	11	Trip out 15 Stds
05:15	07:00	1.75	2260.00	11	Change rubber on Williams rotating head
07:00	08:15	1.25	2260.00	11	Trip out 5 Stands to 1670 m
08:15	10:15	2.00	2260.00	11	Circulate across wellhead to stabilize well pressure
10:15	00:00	13.75	2260.00	11	Shut in well and monitor, Repair return line on Northland equipment

COMMENTS

MWD Personnel: Rene Bourque and Fred MacInnes

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DRILLING SERVICES

Daily Drilling Report

Customer : Intragaz Inc.
 Well Name : Intragaz St. Flavien #14
 Field : St. Flavien (Lic #2000FA230)
 Location : #14
 Rig : Ralex #1 (RKB 144.54m)
 Job # : CX-HZ-01166

CURRENT STATUS Report # 61 11/14/2000

Total Depth (m) : 2402	Casing Depth (m) : 1677.00	Operator Reps : Ken Creelman, Marc Nicklorn
Drilled last 24 hrs (m) : 142	Casing Diameter (mm) : 177.8	SSDS Reps : Frank van Noord (54), Don Roy (43)
Hole Size (mm) : 156.0	Casing ID (mm) : 159.4	

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
2397.00	87.00	263.60	1490.29	1203.91	N66.08W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Beek B2	2353.79	1487.37

BHA SUMMARY

BHA 11: 2414.00 m; Bit #9 (65. hrs), PDM #4 (92.25 hrs), Sub, Sub, Flex, Sub, MWD, Flex, Flex, Jar, Sub, 69x DP (X), Sub, 48x HWDP, 51x DP (X), Sub, 30x DP (X), Sub, 49x DP (X), Other

MUD DATA

Type	Weight (kg/m ³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Polymer	1010	35	4	3.5	1.0 / 1.5	0	8.5	0.60	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	00:30	0.50	2260.00	11	Shut in well and monitor
00:30	01:45	1.25	2260.00	11	Trip In to bottom
01:45	02:00	0.25	2260.00	11	Ream and Wash 9.5m to bottom (No Fill)
02:00	05:30	3.50	2295.00	11	Drilling 156mm Hole from 2260m to 2295 m
05:30	06:00	0.50	2295.00	11	Accumulative Surveys
06:00	08:15	2.25	2308.00	11	Drilling 156mm Hole from 2295 to 2308 m
08:15	09:15	1.00	2308.00	11	Circulate & Wait on Orders
09:15	11:45	2.50	2327.00	11	Drilling 156mm Hole from 2308 to 2327 m
11:45	12:00	0.25	2327.00	11	Service Rig
12:00	17:45	5.75	2359.00	11	Drilling 156mm Hole from 2327m to 2359m
17:45	18:15	0.50	2359.00	11	Circulate & Wait on Orders
18:15	23:30	5.25	2402.00	11	Drilling 156mm Hole from 2359m to 2402m
23:30	23:45	0.25	2402.00	11	Accumulative Surveys
23:45	00:00	0.25	2402.00	11	Service Rig

COMMENTS

MWD Personnel: Rene Bourque and Fred MacInnes

sperry-sun

DRILLING SERVICES

Daily Drilling Report

Customer : Intragaz Inc.
 Well Name : Intragaz St. Flavien #14
 Field : St. Flavien (Lic #2000FA230)
 Location : #14
 Rig : Ralex #1 (RKB 144.54m)
 Job # : CX-HZ-01166

CURRENT STATUS Report # 62 11/15/2000

Total Depth (m) : 2414	Casing Depth (m) : 1677.00	Operator Reps : Ken Creelman, Marc Nicklorn
Drilled last 24 hrs (m) : 12	Casing Diameter (mm) : 177.8	SSDS Reps : Frank van Noord (55), Don Roy (44)
Hole Size (mm) : 156.0	Casing ID (mm) : 159.4	

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
2414.00	87.00	263.60	1491.18	1218.60	N66.48W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Beek B2	2353.79	1487.37

BHA SUMMARY

BHA 11: 2414.00 m; Bit #9 (67.25 hrs), PDM #4 (99.25 hrs), Sub, Sub, Flex, Sub, MWD, Flex, Flex, Jar, Sub, 69x DP (X), Sub, 48x HWDP, 51x DP (X), Sub, 30x DP (X), Sub, 49x DP (X), Other

MUD DATA

Type	Weight (kg/m³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Polymer	1010	35	4	3.5	1.0 / 1.5	0	8.5	0.60	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	00:15	0.25	2404.00	11	Drilling 156mm Hole from 2402m to 2404m
00:15	00:30	0.25	2404.00	11	Service Rig
00:30	01:00	0.50	2404.00	11	Circulate & Wait on Orders
01:00	03:00	2.00	2414.00	11	Drilling 156mm Hole from 2404m to 2414m
03:00	05:00	2.00	2414.00	11	Circulate & condition hole for trip out
05:00	07:00	2.00	2414.00	11	Trip Out
07:00	09:15	2.25	2414.00	11	Circulate through Drill Pipe w/B.J. Pumping Unit
09:15	15:30	6.25	2414.00	11	Trip Out DP & L/D HWDP
15:30	20:30	5.00	2414.00	11	Rig up Live Well Services Snubbing Unit
20:30	00:00	3.50	2414.00	11	Trip Out with Snubbing Unit

COMMENTS

MWD Personnel: Rene Bourque and Fred MacInnes

sperry-sun

DRILLING SERVICES

Daily Drilling Report

Customer : Intragaz Inc.
 Well Name : Intragaz St. Flavien #14
 Field : St. Flavien (Lic #2000FA230)
 Location : #14
 Rig : Ralex #1 (RKB 144.54m)
 Job # : CX-HZ-01166

CURRENT STATUS Report # 63 11/16/2000

Total Depth (m) : 2414	Casing Depth (m) : 1677.00	Operator Reps : Ken Creelman, Marc Nicklom
Drilled last 24 hrs (m) : 0	Casing Diameter (mm) : 177.8	SSDS Reps : Frank van Noord (56), Don Roy (45)
Hole Size (mm) : 156.0	Casing ID (mm) : 159.4	

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
2414.00	87.00	263.60	1491.18	1218.60	N66.48W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Beek B2	2353.79	1487.37

BHA SUMMARY

BHA 11: 2414.00 m; Bit #9 (67.25 hrs), PDM #4 (99.25 hrs), Sub, Sub, Flex, Sub, MWD, Flex, Flex, Jar, Sub, 69x DP (X), Sub, 48x HWDP, 51x DP (X), Sub, 30x DP (X), Sub, 49x DP (X), Other

MUD DATA

Type	Weight (kg/m ³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Polymer	1010	35	4	3.5	1.0 / 1.5	0	8.5	0.60	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	04:00	4.00	2414.00	11	Trip Out (at Surface)
04:00	05:15	1.25	2414.00	11	Laydown Directional tools
05:15	12:00	6.75	2414.00	11	Rig out and Don Roy, Rene Bourque & Fred MacInnes travel to Quebec City
12:00	00:00	12.00	2414.00	11	Travel from Quebec City to Edmonton

COMMENTS

MWD Personnel: Rene Bourque and Fred MacInnes
 Tools left location Thursday afternoon, all items checked on Tri-Line truck . Due back November 20th/ 2000.



Daily Drilling Report

Customer : Intragaz Inc.

Well Name : Intragaz St. Flavien #14

Field : St. Flavien (Lic #2000FA230)

Location : #14

Rig : Ralex #1 (RKB 144.54m)

Job # : CX-HZ-01166

CURRENT STATUS Report # 64 11/17/2000

Total Depth (m) : 2414

Casing Depth (m) : 1677.00

Operator Reps : Ken Creelman, Marc Nicklom

Drilled last 24 hrs (m) : 0

Casing Diameter (mm): 177.8

SSDS Reps : Frank van Noord (57)

Hole Size (mm) : 156.0

Casing ID (mm): 159.4

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
2414.00	87.00	263.60	1491.18	1218.60	N66.48W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Beek B2	2353.79	1487.37

BHA SUMMARY

BHA 11: 2414.00 m; Bit #9 (67.25 hrs), PDM #4 (99.25 hrs), Sub, Sub, Flex, Sub, MWD, Flex, Flex, Jar, Sub, 69x DP (X), Sub, 48x HWDP, 51x DP (X), Sub, 30x DP (X), Sub, 49x DP (X), Other

MUD DATA

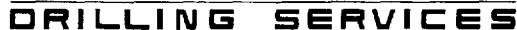
Type	Weight (kg/m ³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Polymer	1010	35	4	3.5	1.0 / 1.5	0	8.5	0.60	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	00:00	24.00	2414.00	11	Drive to Montreal, return rental car & fly to Edmonton

COMMENTS

Frank van Noord is leaving location.



Daily Drilling Report

Customer : Intragaz Inc.
Well Name : Intragaz St. Flavien #14
Field : St. Flavien (Lic #2000FA230)
Location : #14
Rig : Ralex #1 (RKB 144.54m)
Job # : CX-HZ-01166

CURRENT STATUS Report # 65 11/18/2000

Total Depth	(m)	: 2414	Casing Depth	(m)	: 1677.00	Operator Reps	: Ken Creelman, Marc Nicklom
Drilled last 24 hrs	(m)	: 0	Casing Diameter	(mm)	: 177.8	SSDS Reps	:
Hole Size	(mm)	: 156.0	Casing ID	(mm)	: 159.4		

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
2414.00	87.00	263.60	1491.18	1218.60	N66.48W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Beek B2	2353.79	1487.37

BHA SUMMARY

BHA 11: 2414.00 m; Bit #9 (67.25 hrs), PDM #4 (99.25 hrs), Sub, Sub, Flex, Sub, MWD, Flex, Flex, Jar, Sub, 69x DP (X), Sub, 48x HW DP, 51x DP (X), Sub, 30x DP (X), Sub, 49x DP (X), Other

MUD DATA

Type	Weight (kg/m ³)	FV (sec)	VP (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Polymer	1010	35	4	3.5	1.0 / 1.5	0	8.5	0.60	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	00:00	24.00	2414.00	11	Tools on standby heading back to Nisku shop.

COMMENTS

sperry-sun

DRILLING SERVICES

Daily Drilling Report

Customer : Intragaz Inc.
 Well Name : Intragaz St. Flavien #14
 Field : St. Flavien (Lic #2000FA230)
 Location : #14
 Rig : Ralex #1 (RKB 144.54m)
 Job # : CX-HZ-01166

CURRENT STATUS Report # 66 11/19/2000

Total Depth (m) : 2414	Casing Depth (m) : 1677.00	Operator Reps : Ken Creelman, Marc Nicklom
Drilled last 24 hrs (m) : 0	Casing Diameter (mm) : 177.8	SSDS Reps :
Hole Size (mm) : 156.0	Casing ID (mm) : 159.4	

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
2414.00	87.00	263.60	1491.18	1218.60	N66.48W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Beek B2	2353.79	1487.37

BHA SUMMARY

BHA 11: 2414.00 m; Bit #9 (67.25 hrs), PDM #4 (99.25 hrs), Sub, Sub, Flex, Sub, MWD, Flex, Flex, Jar, Sub, 69x DP (X), Sub, 48x HWDP, 51x DP (X), Sub, 30x DP (X), Sub, 49x DP (X), Other

MUD DATA

Type	Weight (kg/m ³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Polymer	1010	35	4	3.5	1.0 / 1.5	0	8.5	0.60	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	00:00	24.00	2414.00	11	Tools on standby heading to Nisku shop.

COMMENTS



Daily Drilling Report

Customer : Intragaz Inc.
Well Name : Intragaz St. Flavien #14
Field : St. Flavien (Lic #2000FA230)
Location : #14
Rig : Ralex #1 (RKB 144.54m)
Job # : CX-HZ-01166

CURRENT STATUS Report # 67 11/20/2000

Total Depth	(m)	:	2414	Casing Depth	(m)	:	1677.00	Operator Reps	:	Ken Creelman, Marc Nicklorn
Drilled last 24 hrs	(m)	:	0	Casing Diameter	(mm)	:	177.8	SSDS Reps	:	
Hole Size	(mm)	:	156.0	Casing ID	(mm)	:	159.4			

LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
2414.00	87.00	263.60	1491.18	1218.60	N66.48W

LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Beek B2	2353.79	1487.37

BHA SUMMARY

BHA 11: 2414.00 m; Bit #9 (67.25 hrs), PDM #4 (99.25 hrs), Sub, Sub, Flex, Sub, MWD, Flex, Flex, Jar, Sub, 69x DP (X), Sub, 48x HWDP, 51x DP (X), Sub, 30x DP (X), Sub, 49x DP (X), Other

MUD DATA

Type	Weight (kg/m ³)	FV (sec)	PV (mPa-s)	YP (Pa)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Polymer	1010	35	4	3.5	1.0 / 1.5	0	8.5	0.60	0.20	

TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	00:00	24.00	2414.00	11	Tools on standby heading to Nisku shop

COMMENTS

DRILLING SERVICES

BHA Report

Customer : Intragaz Inc.
Well Name : Intragaz St. Flavien #14
Field : St. Flavien (Lic #2000FA230)
Location : #14
Rig : Ralex #1 (RKB 144.54m)
Job # : CX-HZ-01166

BHA# 1

BHA# 1 : Date In :09/24/200 MD In (m) : 0 TVD In (m) : 0 Date Out 09/27/2000MD Out (m): 274 TVD Out (m): 274

BIT DATA

Bit #	OD (mm)	MFR	Style	Serial#	Nozzles (mm)	TFA (mm ²)	Dull Condition
1	311.0	Smith	F2P	LF5266	1x14.3, 1x12.7, 1x11.1	384.1	1-1-WT-A -E-I-NO-TD

MOTOR DATA

Run #	OD (mm)	MFR	Model	Serial#	Bend	NzI (mm)	Avg Dif (kPa)	Cum Circ Hrs
	244.5	Black Max	Square Motor		0.00°		500	31.50

COMPONENT DATA

[illegible]

sperry-sun

DRILLING SERVICES

BHA Report

Customer : Intragaz Inc.
 Well Name : Intragaz St. Flavien #14
 Field : St. Flavien (Lic #2000FA230)
 Location : #14
 Rig : Ralex #1 (RKB 144.54m)
 Job # : CX-HZ-01166

BHA# 1

Parameter	Min	Max	Ave
WOB (daN) :	2000	10000	9533
RPM (rpm) :	60	60	60
Flow (m³/min)	2.30	2.40	2.31
SPP (kPa) :	7500	12800	12491

Activity	Hrs
Drilling :	29.25
Reaming :	0.00
Circ-Other :	2.25
Total :	31.50

BHA Weight	(kg)
In Air (Total) :	38815
in Mud (Total) :	33384
In Air (Bel Jars) :	9416
in Mud (Bel Jars) :	8099

Drill String	OD(mm)	Len (m)
DP(E)-NC46(XH)-16.60#	114.3	17

PERFORMANCE		
	In	Out
Inclination (deg)	0.00	3.10
Azimuth (deg)	0.00	343.28

	Distance (m)	ROP (m/hr)	Build (°/30m)	Turn (°/30m)	DLS (°/30m)
Oriented :	0.00	0			0.00
Rotated :	274.00	9			
Total :	274.00	9	0.34	0.00	0.34

COMMENTS
Using Black Max Square Body Motor Survey Sensor to Bit = 16 meters Cougar Jars - Lock Up = 39,000 daN , Lock Down = 28,000 daN Delay 23 seconds at 40,000 daN

Customer : Intragaz Inc.
Well Name : Intragaz St. Flavien #14
Field : St. Flavien (Lic #2000FA230)
Location : #14
Rig : Ralex #1 (RKB 144.54m)
Job # : CX-HZ-01166

BHA# 1

OBJECTIVES:

The objective of BHA #1 is to drill a 311mm surface hole, minimizing the inclination and doglegs.

RESULTS:

BHA #1 was used to drill 274m of a 311mm surface hole from 0-274m MD. A square blackmax/stabeco PDM was used with lots of additional stabilization employed. We pumped an average of 2.3m³/min and rotated the kelly at 60 RPM with 10,000-15,000 WOB when available. Penetration rates were from 5-25m/hr, averaging 10m/hr. This assembly was built at an average rate of 2"/30m in the Klippe Chaudiere and 6"/30m in the Quebec formation. The Smith F2P was called 1-1-WT-A-E-I-NO-TD.

sperry-sun

DRILLING SERVICES

BHA Report

Customer : Intragaz Inc.
Well Name : Intragaz St. Flavien #14
Field : St. Flavien (Lic #2000FA230)
Location : #14
Rig : Ralex #1 (RKB 144.54m)
Job # : CX-HZ-01166

BHA# 2

BHA# 2 : Date In :09/30/200 MD In (m) : 274 TVD In (m) : 274 Date Out 10/01/2000MD Out (m): 330 TVD Out (m): 330

BIT DATA

Bit #	OD (mm)	MFR	Style	Serial#	Nozzles (mm)	TFA (mm ²)	Dull Condition
2	222.0	Smith	MA32PX	JS178	6x7.9	294.1	1-1-WT-G -X-I-NO-BHA

MOTOR DATA

Run #	OD (mm)	MFR	Model	Serial#	Bend	Nzl (mm)	Avg Dif (kPa)	Cum Circ Hrs
171.5	Black Max	Stabeco	6-3/4" Square Motor	675803	0.00°		1000	13.50

COMPONENT DATA

Item #	Description	Serial #	OD (mm)	ID (mm)	Gauge (mm)	Weight (kg/m)	Top Con	Length (m)	Bit - Center Blade (m)
1	Smith MA32PX PDC w/6x7.9 Jets	JS178	222.0		222.0	100.00	P 4-1/2" Reg	0.25	
2	Dog Sub	MS 87505	222.0	57.0	222.0	284.17	P 4-1/2" Reg	0.21	0.35
3	6-3/4" BlackMax SquareMotor 6/7-5.0stg - top motor stabilizer	675803	171.5	114.2	222.0	100.89	B 5" H90	8.04	0.97 5.36
4	Float Sub w/ 4R Float & Totco Ring	SU 03	170.0	77.0		141.80	B 5" H90	0.69	
5	1x Non-Mag Drill collar	NM 67011	169.0	72.0		144.30	B 5" H90	9.31	
6	Non-Mag Integral Blade Stabilizer	NM 2327	168.0	72.0	222.0	142.22	B 5" H90	1.46	19.18
7	Non-Mag Pony collar	NM 6023	167.0	72.0		140.15	B 5" H90	3.60	
8	Integral Blade Stabilizer	Stabeco 99 2	171.0	64.0	210.0	155.22	B 5" H90	1.71	24.36
9	1x Drill Collar	Ralex # 1	170.0	65.0		152.32	B 5" H90	9.45	
10	Drilling Jar	DJ667519V	169.0	67.0		148.59	B 5" H90	5.06	
11	Pony collar	SC6604	170.0	73.0		145.50	B 5" H90	2.59	
12	14x Drill collar	Ralex#1-17 1mmDC's	171.5	63.5		156.23	B 5" H90	132.80	
13	Cross Over Sub	4.5XH B x 5H90 P	167.0	73.0		139.26	B 4-1/2" XH	0.58	
14	9x HWDP		114.3	69.9		61.00	B 4-1/2" XH	82.64	
								258.39	

Parameter	Min	Max	Ave
WOB (daN) :	5000	5000	5000
RPM (rpm) :	60	60	60
Flow (m ³ /min)	1.30	1.30	1.30
SPP (kPa) :	8000	8000	8000

Activity	Hrs
Drilling :	8.50
Reaming :	0.00
Circ-Other :	5.00
Total :	13.50

BHA Weight (kg)
In Air (Total) : 31752
In Mud (Total) : 27188
In Air (Bel Jars) : 4754
In Mud (Bel Jars) : 4071

Drill String	OD(mm)	Len (m)
DP(E)-NC46(XH)-16.60#	114.3	72

PERFORMANCE

	In	Out
Inclination (deg)	3.10	6.64
Azimuth (deg)	343.28	339.31

	Distance(m)	ROP (m/hr)	Build (°/30m)	Turn (°/30m)	DLS (°/30m)
Oriented :	0.00	0			
Rotated :	56.00	7			
Total :	56.00	7	1.89	-2.13	1.90

COMMENTS

Customer : Intragaz Inc.
Well Name : Intragaz St. Flavien #14
Field : St. Flavien (Lic #2000FA230)
Location : #14
Rig : Ralex #1 (RKB 144.54m)
Job # : CX-HZ-01166

BHA# 2

OBJECTIVES:

The objective of BHA #2 is to drill a 222mm hole, minimizing the inclination and doglegs, monitoring for KOP.

RESULTS:

BHA #2 was used to drill 56m of a 222mm hole from 274-330m MD. A square blackmax/stabeco PDM was used with lots of additional stabilization employed. We pumped an average of 1.25m³/min and rotated the kelly at 70 RPM with 5,000-10,000 WOB when available. Penetration rates were from 5-25m/hr, averaging 10m/hr. This assembly built at an average rate of 1.89°/30m and turned -2.13°/30m.

DRILLING SERVICES

BHA Report

Customer : Intragaz Inc.
Well Name : Intragaz St. Flavien #14
Field : St. Flavien (Lic #2000FA230)
Location : #14
Rig : Ralex #1 (RKB 144.54m)
Job # : CX-HZ-01166

BHA# 3

BHA# 3 : Date In :10/01/200 MD In (m) : 330 TVD In (m) : 330 Date Out 10/02/2000MD Out (m): 468 TVD Out (m): 466

BIT DATA

Bit #	OD (mm)	MFR	Style	Serial#	Nozzles (mm)	TFA (mm²)	Dull Condition
3	222.0	Smith	MGR74PX	JS0456		253.0	1-1-NO-A -X-I-NO-BHA

MOTOR DATA

Run #	OD (mm)	MFR	Model	Serial#	Bend	Nzl (mm)	Avg Dif (kPa)	Cum Circ Hrs
	171.5	Black Max Stabeco	6-3/4" Square Motor	675803	0.00°		1000	28.00

COMPONENT DATA

[illegible]

sperry-sun

DRILLING SERVICES

BHA Report

Customer : Intragaz Inc.
 Well Name : Intragaz St. Flavien #14
 Field : St. Flavien (Lic #2000FA230)
 Location : #14
 Rig : Ralex #1 (RKB 144.54m)
 Job # : CX-HZ-01166

BHA# 3

Parameter	Min	Max	Ave
WOB (daN) :	5000	5000	5000
RPM (rpm) :	70	70	70
Flow (m ³ /min)	1.30	1.30	1.30
SPP (kPa) :	8500	8500	8500

Activity	Hrs
Drilling :	14.50
Reaming :	0.00
Circ-Other :	0.00
Total :	14.50

BHA Weight	(kg)
In Air (Total) :	31980
In Mud (Total) :	27384
In Air (Bel Jars) :	4983
In Mud (Bel Jars) :	4267

Drill String	OD(mm)	Len (m)
DP(E)-NC46(XH)-16.60#	114.3	208

PERFORMANCE		
	In	Out
Inclination (deg)	6.64	12.57
Azimuth (deg)	339.31	340.90

	Distance (m)	ROP (m/hr)	Build (°/30m)	Turn (°/30m)	DLS (°/30m)
Oriented :	0.00	0			
Rotated :	138.00	10			
Total :	138.00	10	1.29	0.35	1.29

COMMENTS

sperry-sun

DRILLING SERVICES

BHA Report page 2

Customer : Intragaz Inc.
Well Name : Intragaz St. Flavien #14
Field : St. Flavien (Lic #2000FA230)
Location : #14
Rig : Ralex #1 (RKB 144.54m)
Job # : CX-HZ-01166

BHA# 3

RESULTS:

BHA #3 was used to drill 138m of a 222mm hole from 330-468m. A square blackmax/stabeco PDM was used with lots of additional stabilization employed. We pumped an average of 1.25m³/min and rotated the kelly at 70 RPM with 5,000-10,000 WOB when available. Penetration rates were from 5-25m/hr, averaging 10m/hr. This assembly built at an average rate of 1.89°/30m and turned -2.13°/30m. This assembly was tripped out to check the build rates as close to bottom by running only the bit, bit sub and steel collar.

sperry-sun

DRILLING SERVICES

BHA Report

Customer : Intragaz Inc.
Well Name : Intragaz St. Flavien #14
Field : St. Flavien (Lic #2000FA230)
Location : #14
Rig : Ralex #1 (RKB 144.54m)
Job # : CX-HZ-01166

BHA# 4

BHA# 4 : Date In :10/02/200 MD In (m) : 468 TVD In (m) : 466 Date Out 10/02/2000 MD Out (m): 468 TVD Out (m): 466

BIT DATA

Bit #	OD (mm)	MFR	Style	Serial#	Nozzles (mm)	TFA (mm ²)	Dull Condition
4	222.0	Smith	F2H	LW4513	3x15.9	595.7	- - - - -NEW

MOTOR DATA

Run #	OD (mm)	MFR	Model	Serial#	Bend	Nzl (mm)	Avg Dif (kPa)	Cum Circ Hrs

COMPONENT DATA

Item #	Description	Serial #	OD (mm)	ID (mm)	Gauge (mm)	Weight (kg/m)	Top Con	Length (m)	Bit - Center Blade (m)
1	Tricone	LW4513	222.0		222.0		P 4-1/2" Reg	0.25	
2	Bit Sub		167.0	70.0		141.91	B 5" H90	0.61	
3	1x Drill Collar	Ralex # 1	170.0	65.0		152.32	B 5" H90	9.45	
4	Integral Blade Stabilizer	NS0840	170.0	70.0	222.0	148.15	B 5" H90	1.53	10.91
5	Drilling Jar	DJ667519V	169.0	67.0		148.59	B 5" H90	5.06	
6	Pony collar	SC6604	170.0	73.0		145.50	B 5" H90	2.59	
7	14x Drill collar	Ralex#1-17 1mmDC's	171.5	63.5		156.23	B 5" H90	132.80	
8	Cross Over Sub	4.5XH B x 5H90 P	167.0	73.0		139.26	B 4-1/2" XH	0.58	
9	9x HWDP		114.3	69.9		61.00	B 4-1/2" XH	82.64	
								235.51	

Parameter	Min	Max	Ave
WOB (daN) :			
RPM (rpm) :			
Flow (m ³ /min)			
SPP (kPa) :			

Activity	Hrs
Drilling :	0.00
Reaming :	0.00
Circ-Other :	0.00
Total :	0.00

BHA Weight (kg)
In Air (Total) :
In Mud (Total) :
In Air (Bel Jars) : 0
In Mud (Bel Jars) : 0

Drill String	OD(mm)	Len (m)
DP(E)-NC46(XH)-16.60#	114.3	232

PERFORMANCE

	In	Out
Inclination (deg)	12.57	12.57
Azimuth (deg)	340.90	340.90

Distance (m)	ROP (m/hr)	Build (°/30m)	Turn (°/30m)	DLS (°/30m)
Oriented :				
Rotated :				
Total :				

COMMENTS

Customer : Intragaz Inc.
Well Name : Intragaz St. Flavien #14
Field : St. Flavien (Lic #2000FA230)
Location : #14
Rig : Ralex #1 (RKB 144.54m)
Job # : CX-HZ-01166

BHA# 4

OBJECTIVES:

The objective of BHA #4 is to run in the hole to get the surveys as close to bottom as possible, and observe the effect of low WOB on inclination.

RESULTS:

This BHA #4 was run in to get surveys as close to bottom as possible. No pumping or drilling was done, and no motor or MWD were in the hold.

DRILLING SERVICES

BHA Report

Customer : Intragaz Inc.
Well Name : Intragaz St. Flavien #14
Field : St. Flavien (Lic #2000FA230)
Location : #14
Rig : Ralex #1 (RKB 144.54m)
Job # : CX-HZ-01166

BHA# 5

BHA# 5 : Date In :10/02/200 MD In (m) : 468 TVD In (m) : 466 Date Out 10/07/2000MD Out (m): 877 TVD Out (m): 856

BIT DATA

Bit #	OD (mm)	MFR	Style	Serial#	Nozzles (mm)	TFA (mm ²)	Dull Condition
5	222.0	Smith	F15HP	LW0542	3x9.5	212.6	5-4-WT-A -E-I-NO-PEN

MOTOR DATA

[illegible]

COMPONENT DATA

[illegible]

sperry-sun

DRILLING SERVICES

BHA Report

Customer : Intragaz Inc.
 Well Name : Intragaz St. Flavien #14
 Field : St. Flavien (Lic #2000FA230)
 Location : #14
 Rig : Ralex #1 (RKB 144.54m)
 Job # : CX-HZ-01166

BHA# 5

Parameter	Min	Max	Ave
WOB (daN) :	4000	7000	6215
RPM (rpm) :	90	110	105
Flow (m³/min)	1.30	1.30	1.30
SPP (kPa) :	7400	7400	7400

Activity	Hrs
Drilling :	84.50
Reaming :	0.00
Circ-Other :	0.75
Total :	85.25

BHA Weight	(kg)
In Air (Total) :	
In Mud (Total) :	
In Air (Bel Jars) :	6670
In Mud (Bel Jars) :	5780

Drill String	OD(mm)	Len(m)
DP(E)-NC46(XH)-16.60#	114.3	0

PERFORMANCE		
	In	Out
Inclination (deg)	12.57	21.20
Azimuth (deg)	340.90	338.39

	Distance(m)	ROP (m/hr)	Build (°/30m)	Turn (°/30m)	DLS (°/30m)
Oriented :	0.00	0			0.00
Rotated :	409.00	5	0.72	1.03	
Total :	409.00	5	0.63	-0.18	0.64

COMMENTS

Customer : Intragaz Inc.
Well Name : Intragaz St. Flavien #14
Field : St. Flavien (Lic #2000FA230)
Location : #14
Rig : Ralex #1 (RKB 144.54m)
Job # : CX-HZ-01166

BHA# 5**OBJECTIVES:**

BHA #5 was run in the hole to continue to get single shot surveys as close to bottom and observe the effect of the locked assembly.

RESULTS:

BHA #5 drilled 409m from 468-877m MD, staying in the Quebec City formation throughout the run. No PDM was used, only single shot surveys were run in this locked up assembly. Two square pony collars were augmented with a near bit stabilizer and straight blade dog sub, and a non-magnetic string stabilizer, all full gauge, and an 1/8" undergauge stabilizer. This assembly could produce average build rates of 6°/30m and 2°/30m turn rates rotating at 110 RPM. There was right hand turn for the first half of the run, and left hand turn for the last half. This assembly was run to 877m TMD, where it appeared we would best be able to monitor the well's direction and pick a kick-off point by coming out and putting the MWD in the hole. The Smith F15HP bit was rated at 3-7-WT-S-X-I-BT-BHA.

DRILLING SERVICES

BHA Report

Well Name : Intragaz St. Flavien #14

Location : #14

Job # : CX-HZ-01166

BHA# 6

BHA# 6 : Date In :10/07/200 MD In (m) : 877 TVD In (m) : 856 Date Out 10/10/2000MD Out (m): 1257 TVD Out (m): 1197

BIT DATA

Bit #	OD (mm)	MFR	Style	Serial#	Nozzles (mm)	TFA (mm ²)	Dull Condition
6rr3	222.0	Smith	MA74PX	JS0456		253.0	

MOTOR DATA

Run #	OD (mm)	MFR	Model	Serial#	Bend	Nzl (mm)	Avg Dif (kPa)	Cum Clrc Hrs
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COMPONENT DATA

[illegible]

sperry-sun

DRILLING SERVICES

BHA Report

Customer : Intragaz Inc.
 Well Name : Intragaz St. Flavien #14
 Field : St. Flavien (Lic #2000FA230)
 Location : #14
 Rig : Ralex #1 (RKB 144.54m)
 Job # : CX-HZ-01166

BHA# 6

Parameter	Min	Max	Ave
WOB (daN) :	7000	10000	9634
RPM (rpm) :	100	110	108
Flow (m³/min)	1.25	1.25	1.25
SPP (kPa) :	8200	8300	8279

Activity	Hrs
Drilling :	58.25
Reaming :	0.00
Circ-Other :	8.50
Total :	66.75

BHA Weight	(kg)
In Air (Total) :	
In Mud (Total) :	
In Air (Bel Jars) :	6849
In Mud (Bel Jars) :	5934

Drill String	OD(mm)	Len(m)

PERFORMANCE		
	In	Out
Inclination (deg)	21.20	34.58
Azimuth (deg)	338.39	323.32

	Distance (m)	ROP (m/hr)	Buidd (°/30m)	Turn (°/30m)	DLS (°/30m)
Oriented :	0.00	0			0.00
Rotated :	380.00	7	1.54	-1.85	
Total :	380.00	7	1.06	-1.19	1.19

COMMENTS

sperry-sun

DRILLING SERVICES

BHA Report page 2

Customer : Intragaz Inc.
Well Name : Intragaz St. Flavien #14
Field : St. Flavien (Lic #2000FA230)
Location : #14
Rig : Ralex #1 (RKB 144.54m)
Job # : CX-HZ-01166

BHA# 6

OBJECTIVES:

The objective of BHA #6 is to run in the hole with a PDC bit and lock to get the MWD surveys and observe the effect of the locked assembly.

RESULTS:

BHA #6 was drilled to 380m from 877-1257m MD, staying in the Quebec City formation throughout the run. No PDM was used, only MWD was run in this locked up assembly. Two square pony collars were augmented with a near bit stabilizer and straight blade dog sub, and a non-magnetic string stabilizer, all full gauge, and a 1/8" undergauge stabilizer. This assembly could produce average build rates of 2°/30m and -2°/30m turn rates rotating at 110 RPM. This assembly was run to 1257m TMD, where it appeared we would best be able to start our kick off. The Smith MA74 PDC rerun bit was rated 3-7-WT-S-X-I-BT-BHA.

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DRILLING SERVICES

BHA Report

Customer : Intragaz Inc.
 Well Name : Intragaz St. Flavien #14
 Field : St. Flavien (Lic #2000FA230)
 Location : #14
 Rig : Ralex #1 (RKB 144.54m)
 Job # : CX-HZ-01166

BHA# 7

BHA# 7 : Date In :10/10/200 MD In (m) : 1257 TVD In (m) : 1197 Date Out 10/14/2000 MD Out (m): 1559 TVD Out (m): 1422

BIT DATA

Bit #	OD (mm)	MFR	Style	Serial#	Nozzles (mm)	TFA (mm ²)	Dull Condition
4rr1	222.0	Smith	F2H	LW4513	3x11.9	333.7	5-7-BT-HR-E-1-FC-BHA

MOTOR DATA

Run #	OD (mm)	MFR	Model	Serial#	Bend	Nzl (mm)	Avg Dif (kPa)	Cum Circ Hrs
1	170.0	SSDS	SperryDrill	675375	1.50°		1763	66.00

COMPONENT DATA

Item #	Description	Serial #	OD (mm)	ID (mm)	Gauge (mm)	Weight (kg/m)	Top Con	Length (m)	Bit - Center Blade (m)
1	Smith F2H w/3x 11.9mm Jets	LW4513	222.0		222.0	75.00	P 4-1/2" Reg	0.25	
2	6-3/4" SperryDrill Lobe 6/7 - 5.0 stg	675375	170.0	114.2	219.0	97.82	B 4-1/2" Reg	8.45	1.38
3	171mm Float Sub X/O w/4R	3617	164.0	63.0		141.53	B 5" H90	0.61	
4	171mm Non-Mag Short Flex Drill Collar	6063	174.0	72.0		154.89	B 5" H90	3.90	
5	171mm Non-Mag Flex Drill Collar	C-974	172.0	73.0		149.72	B 5" H90	9.45	
6	6-3/4" DWD 650 Non-Mag HOS	59260	162.0	74.0		128.20	B 5" H90	1.72	
7	171mm Non-Mag Flex Drill Collar	C-976	173.0	72.0		152.75	B 5" H90	9.46	
8	171mm Non-Mag Flex Drill Collar	C-975	172.0	73.0		149.72	B 5" H90	9.45	
9	Drilling Jar	DJ667519V	169.0	67.0		148.59	B 5" H90	5.06	
10	Cross Over Sub	4.5XH B x 5H90 P	167.0	73.0		139.26	B 4-1/2" XH	0.58	
11	57x HWDP		114.3	69.9		61.00	B 4-1/2" XH	533.36	
								582.29	

Parameter	Min	Max	Ave
WOB (daN) :	10000	20000	13863
RPM (rpm) :	30	30	30
Flow (m ³ /min)	1.25	1.25	1.25
SPP (kPa) :	10500	12400	11466

Activity	Hrs
Drilling :	56.50
Reaming :	0.25
Circ-Other :	9.25
Total :	66.00

BHA Weight	(kg)
In Air (Total)	: 39400
In Mud (Total)	: 34037
In Air (Bel Jars)	: 6031
In Mud (Bel Jars)	: 5210

Drill String	OD(mm)	Len(m)

PERFORMANCE

	In	Out
Inclination (deg)	34.58	55.42
Azimuth (deg)	323.32	292.87

	Distance (m)	ROP (m/hr)	Build (°/30m)	Turn (°/30m)	DLS (°/30m)
Oriented :	111.21	5			16.00
Rotated :	190.79	6	1.00	1.00	
Total :	302.00	5	2.07	-3.02	2.93

COMMENTS

Rig Floor Offset - (110/677)360 =59° RFO
 Bit to Probe -20.00m Bit to Gamma - 21.32m

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DRILLING SERVICES

BHA Report page 2

Customer : Intragaz Inc.
Well Name : Intragaz St. Flavien #14
Field : St. Flavien (Lic #2000FA230)
Location : #14
Rig : Ralex #1 (RKB 144.54m)
Job # : CX-HZ-01166

BHA# 7

OBJECTIVES:

The objective of BHA #7 is to drill ahead with a 222mm hole, and establish the build section as per the revised well proposal.

RESULTS:

BHA #7 drilled 302m from 1257-1559m MD, starting in the Quebec City formation, through the Trenton, 1309.5m MD, the Chazy, 1374m MD and the Beekmantown "A", 1538.2m MD formations. This assembly could produce 5°/30m doglegs, sliding 3m/single. This assembly would build on its own to the end of the Quebec City formation, adding to the dogleg. In the Trenton formation we continued to hold for a landing farther north of the proposed target casing point, as per the consensus of the team. This assembly was run to 1559m TMD, where it appeared we were not getting the necessary build rates to land at the desired coordinates. This may have been due to the bottom of the Chazy formation. This assembly was pulled to check the bit, increase the bend and check the offset pad. The Smith F2H Tri-cone bit was rated 5-7-BT-HR-E-1-FC-BHA.

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DRILLING SERVICES

BHA Report

Customer : Intragaz Inc.
Well Name : Intragaz St. Flavien #14
Field : St. Flavien (Lic #2000FA230)
Location : #14
Rig : Ralex #1 (RKB 144.54m)
Job # : CX-HZ-01166

BHA# 8

BHA# 8 : Date In :10/14/200 MD In (m) : 1559 TVD In (m) : 1422 Date Out 10/16/2000 MD Out (m): 1677 TVD Out (m): 1468

BIT DATA

Bit #	OD (mm)	MFR	Style	Serial#	Nozzles (mm)	TFA (mm ²)	Dull Condition
3rr1	222.0	Smith	F3H	LR9535	3x11.9	333.7	8-8-BT-A -E-1-WT-TD

MOTOR DATA

Run #	OD (mm)	MFR	Model	Serial#	Bend	Nzl (mm)	Avg Dif (kPa)	Cum Circ Hrs
2	170.0	SSDS	SperryDrill	675014A	1.83°		1838	33.00

COMPONENT DATA

Item #	Description	Serial #	OD (mm)	ID (mm)	Gauge (mm)	Weight (kg/m)	Top Con	Length (m)	Bit - Center Blade (m)
1	Smith F3H w/3x 11.9mm Jets	LR9535	222.0		222.0	75.00	P 4-1/2" Reg	0.25	
2	6-3/4" SperryDrill Lobe 8/9 - 3.0 stg	675014A	170.0	113.5		98.86	B 4-1/2" Reg	6.52	1.36
3	171mm Float Sub X/O w/4R	3617	164.0	63.0		141.53	B 5" H90	0.61	
4	171mm Non-Mag Short Flex Drill Collar	6063	174.0	72.0		154.89	B 5" H90	3.90	
5	171mm Non-Mag Flex Drill Collar	C-974	172.0	73.0		149.72	B 5" H90	9.45	
6	6-3/4" DWD 650 Non-Mag HOS	59260	162.0	74.0		128.20	B 5" H90	1.72	
7	171mm Non-Mag Flex Drill Collar	C-976	173.0	72.0		152.75	B 5" H90	9.46	
8	171mm Non-Mag Flex Drill Collar	C-975	172.0	73.0		149.72	B 5" H90	9.45	
9	Drilling Jar	DJ667519V	169.0	67.0		148.59	B 5" H90	5.06	
10	Cross Over Sub	4.5XH B x 5H90 P	167.0	73.0		139.26	B 4-1/2" XH	0.58	
11	57x HWDP		114.3	69.9		61.00	B 4-1/2" XH	533.36	
								580.36	

Parameter	Min	Max	Ave
WOB (daN) :	14000	20000	16542
RPM (rpm) :	30	30	30
Flow (m ³ /min)	1.25	1.25	1.25
SPP (kPa) :	12200	13100	12977

Activity	Hrs
Drilling :	28.00
Reaming :	0.50
Circ-Other :	4.50
Total :	33.00

BHA Weight	(kg)
In Air (Total) :	39218
In Mud (Total) :	33830
In Air (Bel Jars) :	5849
In Mud (Bel Jars) :	5045

Drill String	OD(mm)	Len (m)

PERFORMANCE

	In	Out
Inclination (deg)	55.42	79.10
Azimuth (deg)	292.87	284.33

	Distance (m)	ROP (m/hr)	Build (°/30m)	Turn (°/30m)	DLS (°/30m)
Oriented :	50.00	4			7.00
Rotated :	68.00	5	1.00	1.00	
Total :	118.00	4	6.02	-2.17	6.34

COMMENTS

Rig Floor Offset - (635/678)360 =337° RFO
Bit to Probe -18.00m Bit to Gamma - 19.39m

OBJECTIVES:

The objective of BHA #8 is to drill ahead with a 222mm hole, and establish the build section as per the revised well proposal.

RESULTS:

BHA #8 was drilled 118m from 1559-1677m MD, intermediate casing point, in the Beekmantown "A", 1538.20m MD formation. This assembly could produce doglegs at 5°/30m sliding 2m/single. There was a trend for turning to the right which had to be compensated for. The previous assembly had been giving us the doglegs required after we crossed into the Beekmantown "A". This assembly was run in to 1559m TMD, washed and reamed, 9.5m to bottom. We commenced to orient 20 left of highside and delivered 16°/30m total tool performance, landing the build section at 1677m TMD with 79.2° inclination and 1467.85m TVD, extrapolated. The Smith F3 Tri-cone bit was rated 8-8-BT-A-E-1-WT-TD.

DRILLING SERVICES

BHA Report

Customer : Intragaz Inc.
Well Name : Intragaz St. Flavien #14
Field : St. Flavien (Lic #2000FA230)
Location : #14
Rig : Ralex #1 (RKB 144.54m)
Job # : CX-HZ-01166

BHA# 9

BHA# 9 : Date In :10/20/200 MD In (m) : 1677 TVD In (m) : 1468 Date Out 11/05/2000MD Out (m): 1951 TVD Out (m): 1478

BIT DATA

Bit #	OD (mm)	MFR	Style	Serial#	Nozzles (mm)	TFA (mm²)	Dull Condition
7	156.0	Smith Tools	XR30TY	LY7203	1x7.9, 1x8.7, 1x9.5	179.3	6-2-LT-G1-E-1-BT-HR

MOTOR DATA

Run #	OD (mm)	MFR	Model	Serial#	Bend	Nzl (mm)	Avg Dif (kPa)	Cum Circ Hrs
9	119.0	SSDS	SperryDrill	475362	1.50°		1082	67.75

COMPONENT DATA

[illegible]

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DRILLING SERVICES

BHA Report

Customer : Intragaz Inc.
 Well Name : Intragaz St. Flavien #14
 Field : St. Flavien (Lic #2000FA230)
 Location : #14
 Rig : Ralex #1 (RKB 144.54m)
 Job # : CX-HZ-01166

BHA# 9

Parameter	Min	Max	Ave
WOB (daN) :	7000	10000	7482
RPM (rpm) :	30	30	30
Flow (m ³ /min)	0.80	0.80	0.80
SPP (kPa) :	8300	9800	8969

Activity	Hrs
Drilling :	51.50
Reaming :	0.00
Circ-Other :	16.25
Total :	67.75

BHA Weight	(kg)
In Air (Total) :	
In Mud (Total) :	
In Air (Bel Jars) :	2525
In Mud (Bel Jars) :	2200

Drill String	OD(mm)	Len (m)

PERFORMANCE		
	In	Out
Inclination (deg)	79.10	91.80
Azimuth (deg)	284.33	279.18

	Distance (m)	ROP (m/hr)	Build (°/30m)	Turn (°/30m)	DLS (°/30m)
Oriented :	44.00	4			3.31
Rotated :	230.00	6	-1.56	1.00	
Total :	274.00	5	1.39	-0.56	1.50

COMMENTS
Rig Floor Offset - (012/483)360 = 009° RFO
Bit to Probe - 17.00m Bit to Gamma - 18.84m
Jars 23,000 daN Up , 14,000 daN Down in 30 seconds
Blind Rams to Table 4.40 meters
Top RBOP to Table 1.45 meters , RBOP Element 0.67 meters long

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DRILLING SERVICES

BHA Report page 2

Customer : Intragaz Inc.

Well Name : Intragaz St. Flavien #14

Field : St. Flavien (Lic #2000FA230)

Location : #14

Rig : Ralex #1 (RKB 144.54m)

Job # : CX-HZ-01166

BHA# 9

OBJECTIVES:

The objective of BHA #9 is to drill the horizontal wellbore as directed by wellsite geology.

RESULTS:

BHA #9 was drilled 274m from 1677-1951m MD, including the 7" wiper plugs, float collar, cement and casing shoe, in the Beekmantown "A" formation. This assembly could produce 5°/30m doglegs, sliding 2m/single. There was a trend for turn to the right which had to be compensated for. The 1.5° angle on the motor with 152mm off-set pad gave doglegs of 14-18°/30m range. This wellbore was drilled to orders from wellsite geology. This run ended when bit hours were accumulated as a precautionary measure to avoid any bit problems. Due to well flowing pressures while tripping out, a bigger snubbing unit was ordered and traveled from Red Deer to location. The well was shut in and held at 17,000 Kpa+ to the wellhead, while waiting for the swabbing unit. The Smith XR30TY Tri-cone bit was rated 2-6-LT-G-A-E-1-BT-HR.

DRILLING SERVICES

BHA Report

Well Name : Intragaz St. Flavien #14

Field : St. Flavien (Lic #2000FA230)

Location : #14

Rig : Ralex #1 (RKB 144.54m)

Job # : CX-HZ-01166

BHA# 10

BHA# 10 : Date In :11/05/200 MD In (m) : 1951 TVD In (m) : 1478 Date Out 11/07/2000 MD Out (m): 1951 TVD Out (m): 1478

BIT DATA

Bit #	OD (mm)	MFR	Style	Serial#	Nozzles (mm)	TFA (mm ²)	Dull Condition
8	156.0	Smith Tools	MA32QPX	JS1781	3x9.5, 3x5.6	283.9	

MOTOR DATA

Run #	OD (mm)	MFR	Model	Serial#	Bend	Nzl (mm)	Avg Dif (kPa)	Cum Circ Hrs
10	119.0	SSDS	SperryDrill	475013	1.50°			0.00

COMPONENT DATA

Item #	Description	Serial #	OD (mm)	ID (mm)	Gauge (mm)	Weight (kg/m)	Top Con	Length (m)	Bit - Center Blade (m)
1	Smith MA32QPX w/ 283.9 TFA	JS1781	156.0		156.0	45.00	P 3-1/2" Reg	0.20	1.10
2	4-3/4" SperryDrill Lobe 7/8 - 2.stg	475013	119.0	73.7		53.90	B 3-1/2" IF	7.65	
3	121mm Float Sub X/O W/3R	3305	117.0	45.0		72.00	B 3-1/2" IF	0.49	
4	121mm Float Sub X/O W/3R	3303	118.0	45.0		73.45	B 3-1/2" IF	0.49	
5	121mm Short Non-Mag Flex Drill Collar 82	4634-10-00	116.0	59.0		61.57	B 3-1/2" IF	3.06	
6	121mm Non-Mag Dbl Pin X/O	3716	117.0	58.0		63.73	P 3-1/2" IF	0.60	
7	4 3/4" DWD SlimHole Non-Mag HOC	96205	121.0	71.0		59.26	B 3-1/2" IF	9.57	
8	121mm Non-Mag Flex Drill Collar	C-754	118.0	58.0		65.19	B 3-1/2" IF	9.27	
9	121mm Non-Mag Flex Drill Collar	C-761	117.0	57.0		64.44	B 3-1/2" IF	9.28	
10	Drilling Jar Hyd/Mech 23K Up / 14K Dn	475546	116.0	56.0		63.70	B 3-1/2" IF	5.43	
11	Cross Over Sub	137621	131.0	65.0		79.85	B 4" FH	0.50	
12	Float Sub	NL # 609	133.0	60.0		86.97	B 4" FH	0.52	
13	69x DP (X) - NC40(FH) - 14.00#		101.6	84.8		22.76	B 4" FH	662.04	
14	Float Sub	NL #607	134.0	59.0		89.35	B 4" FH	0.53	
15	48x HWDP		101.6	65.1		44.19	B 4" FH	442.67	
16	51x DP (X) - NC40(FH) - 14.00#		101.6	84.8		22.76	B 4" FH	489.70	
17	Float Sub	NL 608	135.0	59.0		91.01	B 4" FH	0.53	
18	30x DP (X) - NC40(FH) - 14.00#		101.6	84.8		22.76	B 4" FH	287.28	
19	1x DP (X) - NC40(FH) - 14.00#		101.6	84.8		22.76	B 4" FH	9.54	
20	Kelly						B 4" FH	11.65	
								1951.00	

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DRILLING SERVICES

BHA Report

Customer : Intragaz Inc.
 Well Name : Intragaz St. Flavien #14
 Field : St. Flavien (Lic #2000FA230)
 Location : #14
 Rig : Ralex #1 (RKB 144.54m)
 Job # : CX-HZ-01166

BHA# 10

Parameter	Min	Max	Ave	Activity	Hrs	BHA Weight (kg)	Drill String	OD(mm)	Len(m)
WOB (daN) :				Drilling :	0.00	In Air (Total) :			
RPM (rpm) :				Reaming :	0.00	In Mud (Total) :			
Flow (m ³ /min)				Circ-Other :	0.00	In Air (Bel Jars) :	2489		
SPP (kPa) :				Total :	0.00	In Mud (Bel Jars) :	2169		

PERFORMANCE			Distance(m)	ROP (m/hr)	Build (°/30m)	Turn (°/30m)	DLS (°/30m)
	In	Out					
Inclination (deg)	91.80	91.80					
Azimuth (deg)	279.18	279.18					
Oriented :							
Rotated :							
Total :							

COMMENTS
Rig Floor Offset - (8° RFO) Bit to Probe - 17.00m Bit to Gamma - 18.78m Jars 23,000 daN Up , 14,000 daN Down in 30 seconds Blind Rams to Table 4.40 meters

OBJECTIVES:

The objective of BHA #10 is to drill the lateral section as per geology's requirements.

RESULTS:

BHA #10 was run in the hole to 50m and a bridge was hit. We could not pump through the tools and suspected it was plugged jets. When the tools were retrieved, we could find no evidence of plugged jets or a damaged motor. The motor was surface tested with Xarvis and water, (drilling fluid) and performed as it should have. The floats were checked and found to be O.K., except the spring on the flapper was replaced. There could have been sufficient pressure drop outside the motor, when it was above the blind rams and the well was shut in, with the pressure in the stack bled off, to account for the jets becoming unplugged before seeing the bit at surface. There was a large chunk of the bit broken off somewhere between the surface and the "plug".

DRILLING SERVICES

BHA Report

Customer : Intragaz Inc.
Well Name : Intragaz St. Flavien #14
Field : St. Flavien (Lic #2000FA230)
Location : #14
Rig : Ralex #1 (RKB 144.54m)
Job # : CX-HZ-01166

BHA# 11

16

BHA# 11 : Date In :11/07/200 MD In (m) : 1951 TVD In (m) : 1478 Date Cur.11/20/2000MD Cur (m): 2414 TVD Cur (m): 1491

BIT DATA

Bit #	OD (mm)	MFR	Style	Serial#	Nozzles (mm)	TFA (mm²)	Dull Condition
9	156.0	Smith	XR30TY	LY7204	3x9.5	212.6	2-6-LT-AG-E-1-JD-TD

MOTOR DATA

Run #	OD (mm)	MFR	Model	Serial#	Bend	Nzl (mm)	Avg Dlf (kPa)	Cum Clrc Hrs
4	119.0	SSDS	SperryDrill	475013	1.50°		1499	99.25

COMPONENT DATA

[illegible]

sperry-sun

DRILLING SERVICES

BHA Report

Customer : Intragaz Inc.
 Well Name : Intragaz St. Flavien #14
 Field : St. Flavien (Lic #2000FA230)
 Location : #14
 Rig : Ralex #1 (RKB 144.54m)
 Job # : CX-HZ-01166

BHA# 11

Parameter	Min	Max	Ave
WOB (daN) :	7000	21000	12022
RPM (rpm) :	25	30	25
Flow (m³/min)	0.80	0.85	0.84
SPP (kPa) :	9800	11200	11042

Activity	Hrs
Drilling :	63.00
Reaming :	4.25
Circ-Other :	32.00
Total :	99.25

BHA Weight	(kg)
In Air (Total) :	
In Mud (Total) :	
In Air (Bel Jars) :	2489
In Mud (Bel Jars) :	2169

Drill String	OD(mm)	Len (m)

PERFORMANCE			
	In	Out	
Inclination (deg)	91.80	87.00	
Azimuth (deg)	279.18	263.60	

	Distance (m)	ROP (m/hr)	Build (°/30m)	Turn (°/30m)	DLS (°/30m)
Oriented :	48.50	5			2.29
Rotated :	414.50	8	2.47	-1.23	
Total :	463.00	7	-0.31	-1.01	1.06

COMMENTS
Rig Floor Offset - (8° RFO)
Bit to Probe - 17.00m Bit to Gamma - 18.78m
Jars 23,000 daN Up , 14,000 daN Down in 30 seconds
Blind Rams to Table 4.40m

sperry-sun

DRILLING SERVICES

BHA Report page 2

Customer : Intragaz Inc.
Well Name : Intragaz St. Flavien #14
Field : St. Flavien (Lic #2000FA230)
Location : #14
Rig : Ralex #1 (RKB 144.54m)
Job # : CX-HZ-01166

BHA# 11

OBJECTIVES:

The objective of BHA #11 is to drill the lateral section as per geology's requirements.

RESULTS:

BHA #11 was drilled 463m from 1951- 2414m MD. The trend was for the assembly to rotate to the left, with the direction not being important during this run and so corrections were only during the build or drop slides. The pump was increased to 88m³/min to control gas losses. This assembly could produce 4-5°/30m doglegs, sliding 2m/single. There was a trend for turning to the left which had to be compensated for. The 1.5° angle on the motor with a 152mm off-set pad gave doglegs of 14-18°/30m. The wellbore was drilled to orders from wellsite geology. This run ended when TD was called by the geology department. The New Smith XR30TY Tri-cone bit was rated 2-6-LT-G-A-E-1-JD-TD. There were some indications that we had gone by the piece of the PDC bit from BHA #10.

Motor Serial # : _____ **Job # :** CX-HZ-01166
Directional Driller(s) : Frank van Noord **Customer :** Intragaz Inc.
Location : #14 **Rig :** Ralex #1 (RKB 144.54m)
Well Name : Intragaz St. Flavien #14 **Bit Run # :** 1 **BHA # :** 1 **Motor Run # :** _____
Depth In/Out : 0 / 274 m **Date In/Out :** 09/24/2000 / 09/27/2000 **Hole Size :** 311.0 mm
Application Details : _____

MOTOR CONFIGURATION

	From Bit (m)	Component	Type	Diam In/Out (mm)
Upr Stab	1	1.25	Sleeve Stab/Pad Yes	Stab: 610°
	2		Bent Housing No	
Lwr Stab or Pad Sub	3		Housing Tool Used No	
Motor Top	4	9.67	Stator Elastomer	
Pad	5		Bent Sub / 2nd Bent Hsg No	
Bend (Housing)	6	6.45	Lower String Stab Yes	Stab: 610°
	7	10.39	Upper String Stab Yes	Stab: 31180°
Sleeve Tool				311.0 311.0

Additional Features :
Flex Collar : No **Short Brg Pack :** No **Rtr Noz / Size :** mm
Brg Cfg (Off/On) : 3/3 **Lobe Cfg :** 6/7 **BHA OD/ID :** 230.0 / 78.0 mm

Arr Ret
Pick Up Sub : Yes No
Bit Box Protr : Yes No

MOTOR RUN DATA

Max Dogleg While Rotating : °/30m	RPM :	Motor Stalled : No	Prev Job/Well Hrs : 0.00
Max Dogleg Overpulled In : °/30m	Force : daN	Float Valve : No	Drilling Hrs : 29.25
Max Dogleg Pushed Through : °/30m	Force : daN	DP Filter : No	Circ Hrs : 2.25
Hole Azimuth Start / End : 0.00° / 343.28°	Inc Start / End : 0.00° / 3.10°		Reaming Hrs : 0.00
Interval Oriented / Rot. : 0 / 274 m	Directional Perf Ori / Rot : 0.00 / °/30m		Total Hrs This Run : 31.50
Jarring Occured : No			New Cumulative Hrs : 31.50

	Diff Press (kPa)	Str RPM	Rotn Torque (Nm)	Drag Up/Dn (daN)	WOB (daN)	ROP Oriented (m/hr)	ROP Rotated (m/hr)
Avg :	500	60	132	/	9533	0	9
Max :	500	60	200	/	10000		10

PRE-RUN TESTS

Motor Tested Pre-Run : No **with :** _____
Dump Sub Operating : N/A **Brg Play :** mm
Flow 1 : m³/min **Pressure 1 :** kPa
Flow 2 : m³/min **Pressure 2 :** kPa
Driveshaft Rotation Observed : No
Bearing Leakage Observed : No

POST-RUN TESTS

Motor Tested Post-Run : No **with :** _____
Dump Sub Operating : N/A **Brg Play :** mm
Flow 1 : m³/min **Pressure 1 :** kPa
Flow 2 : m³/min **Pressure 2 :** kPa
Driveshaft Rotation Observed : No
Bearing Leakage Observed : No
Driveshaft Rotated to Drain Mud : No
Fluid Flushed : No **Fluid Used :** _____

MUD DATA

Base : Water **Additives :** _____ **Mud Wt :** 1130 kg/m³ **SPP Start/End :** 7500 / 12800 kPa
% Oil/Water : / **% Solids :** 8.10 **% Sand :** 0.20 **PV :** 32 mPa-s **YP :** 18.0 Pa **pH :** 8.0
DH Temp Avg/Max : 26.5 / 38.0 **FlowRate Avg/Max :** 2.31 / 2.40 m³/min **Chloride Content :** 40 ppm
Principle Formation Name(s) : Klippe Chaudiere, Quebec City **Lithology :** Shale

BIT DATA

Make : Smith	Type : F2P	Serial # : LF5266	Dull Grade	1	2	3	4	5	6	7	8
Pre Existing Hours From Other Wells :			In	NEW							
Prev Drilling Hrs : 0.00	Prev Reaming Hrs : 0.00	No of Runs This Bit : 1	Out	1	1	WT	A	E	I	NO	TD
Jet Sizes (mm) : 1x14.3, 1x12.7, 1x11.1 TFA : 384.1 mm² Gage Length : 25.0 mm											

PERFORMANCE COMMENTS

Problem Perceived : No **Problem Date :** _____ **Service Interrupt :** No **Service Interrupt Hrs :** _____
Performance Motor : Yes **Tandem Motor :** No **LIH :** No **PPR Ref # :** _____

Customer Representative's Signature (optional) : _____

Date: _____

Motor Serial # : 675803
 Directional Driller(s) : Frank van Noord

Job # : CX-HZ-01166
 Customer : Intragaz Inc.
 Rig : Ralex #1 (RKB 144.54m)

Location : #14
 Well Name : Intragaz St. Flavien #14
 Depth In/Out : 274 / 330 m

Bit Run # : 2 BHA # : 2
 Date In/Out : 09/30/2000 / 10/01/2000

Motor Run # :
 Hole Size : 222.0 mm

Application Details :
MOTOR CONFIGURATION

	From Bit (m)	Component	Type	Diam In/Out (mm)
Upr Stab	1	Sleeve Stab/Pad	Yes	222.0 222.0
Lwr Stab or Pad Sub	2	Bent Housing	No	
Motor Top	3	Housing Tool Used	No	
Pad	4	Stator Elastomer	No	
Band (Housing)	5	Bent Sub / 2nd Bent Hsg	No	
Sleeve Tool	6	Lower String Stab	Yes	222.0 222.0
	7	Upper String Stab	Yes	
Additional Features :				Arr Ret
Flex Collar : No Short Brg Pack : Yes Rtr Noz / Size : mm				Pick Up Sub : Yes No
Brg Cfg (Off/On) : 3/3 Lobe Cfg : 6/7 BHA OD/ID : 170.0 / 77.0 mm				Bit Box Protr : Yes No

MOTOR RUN DATA

Max Dogleg While Rotating	: 1/30m	RPM	:	Motor Stalled	: No	Prev Job/Well Hrs	: 0.00
Max Dogleg Overpulled In	: 1/30m	Force	: daN	Float Valve	: No	Drilling Hrs	: 8.50
Max Dogleg Pushed Through	: 1/30m	Force	: daN	DP Filter	: No	Circ Hrs	: 5.00
Hole Azimuth Start / End	: 343.28° / 339.31°	Inc Start / End	: 3.10° / 6.64°	Total Hrs This Run	: 13.50	Reaming Hrs	: 0.00
Interval Oriented / Rot.	: 0 / 56 m	Directional Perf Ori / Rot	: / 1/30m	New Cumulative Hrs	: 13.50		
Jarring Occured	: No						
Diff Press (kPa)	Str RPM	Rotn Torque (nM)	Drag Up/Dn (daN)	WOB (daN)	ROP Oriented (m/hr)	ROP Rotated (m/hr)	
Avg : 1000	60	150	!	5000	0	7	
Max : 1000	60	150	!	5000		15	

PRE-RUN TESTS

Motor Tested Pre-Run	: No	with :	
Dump Sub Operating	: N/A	Brg Play	: mm
Flow 1	: m ³ /min	Pressure 1	: kPa
Flow 2	: m ³ /min	Pressure 2	: kPa
Driveshaft Rotation Observed	: No		
Bearing Leakage Observed	: No		

POST-RUN TESTS

Motor Tested Post-Run	: No	with :	
Dump Sub Operating	: N/A	Brg Play	: mm
Flow 1	: m ³ /min	Pressure 1	: kPa
Flow 2	: m ³ /min	Pressure 2	: kPa
Driveshaft Rotation Observed	: No		
Bearing Leakage Observed	: No		
Driveshaft Rotated to Drain Mud	: No		
Fluid Flushed	: No	Fluid Used	:

MUD DATA

Base : Water	Additives :	Mud Wt : 1130 kg/m ³	SPP Start/End : 8000 / 8000 kPa
% Oil/Water : /	% Solids : 8.10	% Sand : 0.20	PV : 32 mPa-s YP : 18.0 Pa pH : 8.0
DH Temp Avg/Max : 20.0 / 20.0	FlowRate Avg/Max : 1.30 / 1.30 m ³ /min	Chloride Content : 40 ppm	Lithology : Shale
Principle Formation Name(s) : Quebec City			

BIT DATA

Make : Smith	Type : MA32PX	Serial # : JS178	Dull Grade	1	2	3	4	5	6	7	8
Pre Existing Hours From Other Wells:			In								NEW
Prev Drilling Hrs : 0.00	Prev Reaming Hrs : 0.00	No of Runs This Bit : 1	Out	1	1	WT	G	X	I	NO	BHA
Jet Sizes (mm) : 6x7.9	TFA : 294.1 mm ²	Gage Length : 222.0 mm									

PERFORMANCE COMMENTS

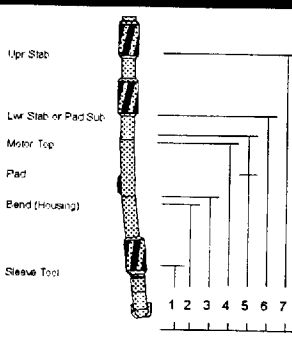
Problem Perceived : No	Problem Date :	Service Interrupt : No	Service Interrupt Hrs :
Performance Motor : Yes	Tandem Motor : No	LIH : No	PPR Ref # :

Customer Representative's Signature (optional) :

Date:

Motor Serial # : 675803	Job # : CX-HZ-01166
Directional Driller(s) : Frank van Noord	Customer : Intragaz Inc.
Location : #14	Rig : Ralex #1 (RKB 144.54m)
Well Name : Intragaz St. Flavien #14	Bit Run # : 3 BHA # : 3
Depth In/Out : 330 / 468 m	Date In/Out : 10/01/2000 / 10/02/2000
Application Details :	Motor Run # : Hole Size : 222.0 mm

MOTOR CONFIGURATION

	From Bit (m)		Component		Type	Diam In/Out (mm)		
	1	0.97	Sleeve Stab/Pad	Yes	Stab: 4 0°	222.0	222.0	
	2		Bent Housing	No				
	3		Housing Tool Used	No				
	4	8.50	Stator Elastomer					
	5		Bent Sub / 2nd Bent Hsg	No				
	6	5.36	Lower String Stab	Yes	Stab: 4 0°			
	7	9.79	Upper String Stab	Yes	Stab: 3 180°	222.0	222.0	
Additional Features :							Arr	Ret
Flex Collar : No		Short Brg Pack : Yes		Rtr Noz / Size : mm		Pick Up Sub : Yes	No	
Brg Cfg (Off/On) : 3/3		Lobe Cfg : 6/7		BHA OD/ID : 170.0 / 77.0 mm		Bit Box Protr : Yes	No	

MOTOR RUN DATA

Max Dogleg While Rotating : °/30m	RPM :	Motor Stalled : No	Prev Job/Well Hrs : 13.50
Max Dogleg Overpulled In : °/30m	Force : daN	Float Valve : No	Drilling Hrs : 14.50
Max Dogleg Pushed Through : °/30m	Force : daN	DP Filter : No	Circ Hrs : 0.00
Hole Azimuth Start / End : 339.31° / 340.90°	Inc Start / End : 6.64° / 12.57°		Reaming Hrs : 0.00
Interval Oriented / Rot. : 0 / 138 m	Directional Perf Ori / Rot : / °/30m		Total Hrs This Run : 14.50
Jarring Occured : No			New Cumulative Hrs : 28.00

	Diff Press (kPa)	Str RPM	Rotn Torque (nM)	Drag Up/Dn (daN)	WOB (daN)	ROP Oriented (m/hr)	ROP Rotated (m/hr)
Avg :	1000	70	120	/	5000	0	10
Max :	1000	70	120	/	5000		15

PRE-RUN TESTS

Motor Tested Pre-Run : No	with :
Dump Sub Operating : N/A	Brg Play : mm
Flow 1 : m³/min	Pressure 1 : kPa
Flow 2 : m³/min	Pressure 2 : kPa
Driveshaft Rotation Observed : No	
Bearing Leakage Observed : No	

POST-RUN TESTS

Motor Tested Post-Run : No	with :
Dump Sub Operating : N/A	Brg Play : mm
Flow 1 : m³/min	Pressure 1 : kPa
Flow 2 : m³/min	Pressure 2 : kPa
Driveshaft Rotation Observed : No	
Bearing Leakage Observed : No	
Driveshaft Rotated to Drain Mud : No	
Fluid Flushed : No	Fluid Used :

MUD DATA

Base : Water	Additives :	Mud Wt : 1130 kg/m³	SPP Start/End : 8500 / 8500 kPa
% Oil/Water : /	% Solids : 8.10	% Sand : 0.20	PV : 32 mPa-s
DH Temp Avg/Max : 20.0 / 20.0	FlowRate Avg/Max : 1.30 / 1.30 m³/min	YP : 18.0 Pa	pH : 8.0
Principle Formation Name(s) : Quebec City	Chloride Content : 40 ppm	Lithology : Shale	

BIT DATA

Make : Smith	Type : MGR74PX	Serial # : JS0456	Dull Grade	1	2	3	4	5	6	7	8
Pre Existing Hours From Other Wells :			In								
Prev Drilling Hrs : 0.00	Prev Reaming Hrs : 0.00	No of Runs This Bit : 1	Out	1	1	NO	A	X	I	NO	BHA
Jet Sizes (mm) :	TFA : 253.0 mm²	Gage Length : 50.0 mm									

PERFORMANCE COMMENTS

Problem Perceived : No	Problem Date :	Service Interrupt : No	Service Interrupt Hrs :
Performance Motor : Yes	Tandem Motor : No	LIH : No	PPR Ref # :

Customer Representative's Signature (optional) :

Date:

Motor Serial # : 675375 **Job # :** CX-HZ-01166
Directional Driller(s) : Frank van Noord, Don Roy **Customer :** Intragaz Inc.
Location : #14 **Rig :** Ralex #1 (RKB 144.54m)
Well Name : Intragaz St. Flavien #14 **Bit Run # :** 4rr1 **BHA # :** 7 **Motor Run # :** 1
Depth In/Out : 1257 / 1559 m **Date In/Out :** 10/10/2000 / 10/14/2000 **Hole Size :** 222.0 mm
Application Details : Steerable Drilling

MOTOR CONFIGURATION

	From Bit (m)	Component	Type	Diam In/Out (mm)
1	1.38	Sleeve Stab/Pad	Yes	
2	2.78	Bent Housing	Yes	Non-Adjustable: 1.50° bend
3		Housing Tool Used	No	
4	8.70	Stator Elastomer	Nitrile	Stator: Standard
5		Bent Sub / 2nd Bent Hsg	No	
6		Lower String Stab	No	
7		Upper String Stab	No	

Additional Features :	Arr	Ret
Flex Collar : Yes	Short Brg Pack : No	Rtr Noz / Size : mm
Brg Cfg (Off/On) :	Lobe Cfg : 6/7	BHA OD/ID : 164.0 / 63.0 mm
	Pick Up Sub : Yes	Yes
	Bit Box Protr : Yes	Yes

MOTOR RUN DATA

Max Dogleg While Rotating :	°/30m	RPM : 30	Motor Stalled : No	Prev Job/Well Hrs : 0.00
Max Dogleg Overpulled In :	°/30m	Force : 12000 daN	Float Valve : Yes	Drilling Hrs : 56.50
Max Dogleg Pushed Through :	°/30m	Force : 5000 daN	DP Filter : Yes	Circ Hrs : 9.25
Hole Azimuth Start / End :	323.32° / 292.87°	Inc Start / End :	34.58° / 55.42°	Reaming Hrs : 0.25
Interval Oriented / Rot. :	111 / 191 m	Directional Perf Ori / Rot :	16.00 / 1.22 °/30m	Total Hrs This Run : 66.00
Jarring Occured : No				New Cumulative Hrs : 66.00

	Diff Press (kPa)	Str RPM	Rotn Torque (mM)	Drag Up/Dn (daN)	WOB (daN)	ROP Oriented (m/hr)	ROP Rotated (m/hr)
Avg :	1763	30	261	10000 / 5000	13863	5	6
Max :	2000	30	320	13000 / 6000	20000	7	7

PRE-RUN TESTS

Motor Tested Pre-Run : Yes	with : 2 Collars, Bit, MWD
Dump Sub Operating : N/A	Brg Play : mm
Flow 1 : 1.20 m³/min	Pressure 1 : 6900 kPa
Flow 2 : m³/min	Pressure 2 : kPa
Driveshaft Rotation Observed : Yes	
Bearing Leakage Observed : No	

POST-RUN TESTS

Motor Tested Post-Run : No	with :
Dump Sub Operating : N/A	Brg Play : 1.0 mm
Flow 1 : m³/min	Pressure 1 : kPa
Flow 2 : m³/min	Pressure 2 : kPa
Driveshaft Rotation Observed : Yes	
Bearing Leakage Observed : Yes	
Driveshaft Rotated to Drain Mud : Yes	
Fluid Flushed : No	Fluid Used :

MUD DATA

Base : Water	Additives :	Mud Wt : 1070 kg/m³	SPP Start/End : 10500 / 12200 kPa
% Oil/Water : /	% Solids : 4.40	% Sand : 0.20	PV : 17 mPa-s
DH Temp Avg/Max : 27.2 / 32.8	FlowRate Avg/Max : 1.25 / 1.25 m³/min	YP : 12.5 Pa	pH : 9.5
Principle Formation Name(s) : Quebec City, Trenton Calcrite, Trenton, Chazy, Beekmantown A	Lithology : Shale, Limestone, Dolomite / Limestone	Chloride Content : 2300 ppm	

BIT DATA

Make : Smith	Type : F2H	Serial # : LW4513	Dull Grade	1	2	3	4	5	6	7	8
Pre Existing Hours From Other Wells :			In	1	1	NO	A	E	I	NO	BHA
Prev Drilling Hrs : 0.00	Prev Reaming Hrs : 0.00	No of Runs This Bit : 2	Out	5	7	BT	HR	E	1	FC	BHA
Jet Sizes (mm) : 3x11.9	TFA : 333.7 mm²	Gage Length : mm									

PERFORMANCE COMMENTS

Problem Perceived : No	Problem Date :	Service Interrupt : No	Service Interrupt Hrs :
Performance Motor : Yes	Tandem Motor : No	LIH : No	PPR Ref # :
Customer Representative's Signature (optional) :			
Date :			

Motor Serial # : 675014A **Job # :** CX-HZ-01166
Directional Driller(s) : Frank van Noord, Don Roy **Customer :** Intragaz Inc.
Location : #14 **Rig :** Ralex #1 (RKB 144.54m)
Well Name : Intragaz St. Flavien #14 **Bit Run # :** 3rr1 **BHA # :** 8 **Motor Run # :** 2
Depth In/Out : 1559 / 1677 m **Date In/Out :** 10/14/2000 / 10/16/2000 **Hole Size :** 222.0 mm
Application Details : Steerable Drilling

MOTOR CONFIGURATION

	From Bit (m)	Component	Type	Diam In/Out (mm)
Upr Stab	1	1.36	Sleeve Stab/Pad	Yes
	2	2.83	Bent Housing	Yes
	3		Housing Tool Used	No
	4	6.77	Stator Elastomer	Nitrile
	5		Bent Sub / 2nd Bent Hsg	No
	6		Lower String Stab	No
	7		Upper String Stab	No
Additional Features : Flex Collar : Yes Short Brg Pack : No Rtr Noz / Size : mm Brg Cfg (Off/On) : Lobe Cfg : 8/9 BHA OD/ID : 164.0 / 63.0 mm				
				Arr Ret Pick Up Sub : Yes Yes Bit Box Protr : Yes Yes

MOTOR RUN DATA

Max Dogleg While Rotating	: 1/30m	RPM	: 30	Motor Stalled	: No	Prev Job/Well Hrs	: 0.00
Max Dogleg Overpulled In	: 1/30m	Force	: daN	Float Valve	: Yes	Drilling Hrs	: 28.00
Max Dogleg Pushed Through	: 1/30m	Force	: daN	DP Filter	: Yes	Circ Hrs	: 4.50
Hole Azimuth Start / End	: 292.87° / 284.33°	Inc Start / End	: 55.42° / 79.10°			Reaming Hrs	: 0.50
Interval Oriented / Rot.	: 50 / 68 m	Directional Perf Ori / Rot	: 7.00 / 1.36 1/30m			Total Hrs This Run	: 33.00
Jarring Occured	: No					New Cumulative Hrs	: 33.00
Diff Press (kPa)	Str RPM	Rotn Torque (nM)	Drag Up/Dn (daN)	WOB (daN)	ROP Oriented (m/hr)	ROP Rotated (m/hr)	
Avg : 1838	30	330	10000 / 5000	16542	4	5	
Max : 1900	30	330	12000 / 6000	20000	5	6	

PRE-RUN TESTS

Motor Tested Pre-Run	: Yes	with : 2 Collars, Bit, MWD
Dump Sub Operating	: N/A	Brg Play : mm
Flow 1	: 1.20 m ³ /min	Pressure 1 : 6900 kPa
Flow 2	: m ³ /min	Pressure 2 : kPa
Driveshaft Rotation Observed	: Yes	
Bearing Leakage Observed	: No	

POST-RUN TESTS

Motor Tested Post-Run	: No	with :
Dump Sub Operating	: N/A	Brg Play : 2.0 mm
Flow 1	: m ³ /min	Pressure 1 : kPa
Flow 2	: m ³ /min	Pressure 2 : kPa
Driveshaft Rotation Observed	: Yes	
Bearing Leakage Observed	: Yes	
Driveshaft Rotated to Drain Mud	: Yes	
Fluid Flushed	: No	Fluid Used :

MUD DATA

Base : Water	Additives :	Mud Wt : 1095 kg/m ³	SPP Start/End : 12400 / 13100 kPa
% Oil/Water : /	% Solids : 5.90	% Sand : 0.20	PV : 21 mPa-s YP : 14.0 Pa pH : 9.0
DH Temp Avg/Max : 35.9 / 37.5	FlowRate Avg/Max : 1.25 / 1.25 m ³ /min	Chloride Content : 1500 ppm	
Principle Formation Name(s) : Beekmantown A	Lithology : Dolomite / Limestone		

BIT DATA

Make : Smith	Type : F3H	Serial # : LR9535	Dull Grade	1	2	3	4	5	6	7	8
Pre Existing Hours From Other Wells:			In								NEW
Prev Drilling Hrs : 0.00	Prev Reaming Hrs : 0.00	No of Runs This Bit : 1	Out	8	8	BT	A	E	1	WT	TD
Jet Sizes (mm) : 3x11.9	TFA : 333.7 mm ²	Gage Length : 25.0 mm									

PERFORMANCE COMMENTS

Problem Perceived : No	Problem Date :	Service Interrupt : No	Service Interrupt Hrs :
Performance Motor : No	Tandem Motor : No	LIH : No	PPR Ref # :
Customer Representative's Signature (optional) : _____ Date: _____			

Motor Serial # : 475362 **Job # :** CX-HZ-01166
Directional Driller(s) : Frank van Noord, Don Roy **Customer :** Intragaz Inc.
Location : #14 **Rig :** Ralex #1 (RKB 144.54m)
Well Name : Intragaz St. Flavien #14 **Bit Run # :** 7 **BHA # :** 9 **Motor Run # :** 9
Depth In/Out : 1677 / 1951 m **Date In/Out :** 10/20/2000 / 11/05/2000 **Hole Size :** 156.0 mm
Application Details : Horizontal

MOTOR CONFIGURATION

	From Bit (m)	Component	Type	Diam In/Out (mm)
1	1.08	Sleeve Stab/Pad	Yes	Pad: Pad 150.0 mm T
2	2.26	Bent Housing	Yes	Non-Adjustable: 1.50° bend
3	7.91	Housing Tool Used	No	Stator: Standard
4		Stator Elastomer	Nitrile	
5		Bent Sub / 2nd Bent Hsg	No	
6		Lower String Stab	No	
7		Upper String Stab	No	
Additional Features : Flex Collar : Yes Short Brg Pack : No Rtr Noz / Size : mm Brg Cfg (Off/On) : Lobe Cfg : 7/8 BHA OD/ID : 117.0 / 45.0 mm				
				Arr Ret Pick Up Sub : Yes Yes Bit Box Protr : Yes Yes

MOTOR RUN DATA

Max Dogleg While Rotating		: 1.56 °/30m	RPM	: 30	Motor Stalled	: No	Prev Job/Well Hrs		: 0.00
Max Dogleg Overpulled In		: 1.56 °/30m	Force	: 13000 daN	Float Valve	: Yes	Drilling Hrs		: 51.50
Max Dogleg Pushed Through		: 1.56 °/30m	Force	: 10000 daN	DP Filter	: Yes	Circ Hrs		: 16.25
Hole Azimuth Start / End		: 284.33° / 279.18°	Inc Start / End		: 79.10° / 91.80°	Reaming Hrs		: 0.00	
Interval Oriented / Rot.		: 44 / 230 m	Directional Perf Ori / Rot		: 3.31 / 1.85 °/30m	Total Hrs This Run		: 67.75	
Jarring Occured		: No					New Cumulative Hrs		: 67.75
	Diff Press (kPa)	Str RPM	Rotn Torque (nM)	Drag Up/Dn (daN)	WOB (daN)	ROP Oriented (m/hr)	ROP Rotated (m/hr)		
Avg :	1082	30	175	13000 / 10000	7482	4	6		
Max :	1300	30	180	15000 / 12000	10000	10	10		

PRE-RUN TESTS

Motor Tested Pre-Run : No with : 2 Collars, Bit, MWD
Dump Sub Operating : N/A **Brg Play** : mm
Flow 1 : m³/min **Pressure 1** : kPa
Flow 2 : m³/min **Pressure 2** : kPa
Driveshaft Rotation Observed : No
Bearing Leakage Observed : No

POST-RUN TESTS

Motor Tested Post-Run : Yes with : 2 Collars, Bit
Dump Sub Operating : N/A **Brg Play** : mm
Flow 1 : m³/min **Pressure 1** : kPa
Flow 2 : m³/min **Pressure 2** : kPa
Driveshaft Rotation Observed : Yes
Bearing Leakage Observed : Yes
Driveshaft Rotated to Drain Mud : Yes
Fluid Flushed : No **Fluid Used** :

MUD DATA

Base : Water **Additives** : **Mud Wt** : 1010 kg/m³ **SPP Start/End** : 8300 / 9800 kPa
% Oil/Water : / **% Solids** : 0.60 **% Sand** : 0.20 **PV** : 2 mPa-s **YP** : 3.0 Pa **pH** : 7.5
DH Temp Avg/Max : 30.0 / 30.5 **FlowRate Avg/Max** : 0.80 / 0.80 m³/min **Chloride Content** : 230 ppm
Principle Formation Name(s) : Beekmantown A, Unit "B1", Beek B1 **Lithology** : Dolomite / Limestone, Dolomite

BIT DATA

Make : Smith Tools **Type** : XR30TY **Serial #** : LY7203
Pre Existing Hours From Other Wells : **Dull Grade** : 1 2 3 4 5 6 7 8
Prev Drilling Hrs : 0.00 **Prev Reaming Hrs** : 0.00 **No of Runs This Bit** : 1
Jet Sizes (mm) : 1x7.9, 1x8.7, 1x9.5 **TFA** : 179.3 mm² **Gage Length** : 25.0 mm
In : **Out** : 6 2 LT G1 E 1 BT HR

PERFORMANCE COMMENTS

Problem Perceived : No **Problem Date** : **Service Interrupt** : No **Service Interrupt Hrs** :
Performance Motor : Yes **Tandem Motor** : No **LIH** : No **PPR Ref #** :

Customer Representative's Signature (optional) :
Date:

Motor Serial # : 475013 **Job # :** CX-HZ-01166
Directional Driller(s) : Frank van Noord, Don Roy **Customer :** Intragaz Inc.
Location : #14 **Rig :** Ralex #1 (RKB 144.54m)
Well Name : Intragaz St. Flavien #14 **Bit Run # :** 8 **BHA # :** 10 **Motor Run # :** 10
Depth In/Out : 1951 / 1951 m **Date In/Out :** 11/05/2000 / 11/07/2000 **Hole Size :** 156.0 mm
Application Details : Horizontal

MOTOR CONFIGURATION

	From Bit (m)	Component	Type	Diam In/Out (mm)
1	1.10	Sleeve Stab/Pad	Yes	Pad: Offset 150.0 mm
2	2.26	Bent Housing	Yes	Non-Adjustable: 1.50° bend
3		Housing Tool Used	No	
4	7.85	Stator Elastomer	Nitrile	Stator: Standard
5		Bent Sub / 2nd Bent Hsg	No	
6		Lower String Stab	No	
7		Upper String Stab	No	

Additional Features :
 Flex Collar : Yes Short Brg Pack : No Rtr Noz / Size : mm
 Brg Cfg (Off/On) : Lobe Cfg : 7/8 BHA OD/ID : 117.0 / 45.0 mm

Arr Ret
 Pick Up Sub : Yes Yes
 Bit Box Protr : Yes Yes

MOTOR RUN DATA

Max Dogleg While Rotating	: °/30m	RPM	:	Motor Stalled	: No	Prev Job/Well Hrs	: 0.00
Max Dogleg Overpulled In	: °/30m	Force	: daN	Float Valve	: No	Drilling Hrs	: 0.00
Max Dogleg Pushed Through	: °/30m	Force	: daN	DP Filter	: Yes	Circ Hrs	: 0.00
Hole Azimuth Start / End	: 279.18° / 279.18°	Inc Start / End	: 91.80° / 91.80°	Total Hrs This Run	: 0.00	Reaming Hrs	: 0.00
Interval Oriented / Rot.	: m	Directional Perf Ori / Rot	: / °/30m	New Cumulative Hrs	: 0.00		
Jarring Occured	: No						

	Diff Press (kPa)	Str RPM	Rotn Torque (nM)	Drag Up/Dn (daN)	WOB (daN)	ROP Oriented (m/hr)	ROP Rotated (m/hr)
Avg :				/			
Max :				/			

PRE-RUN TESTS

Motor Tested Pre-Run	: No	with :	
Dump Sub Operating	: N/A	Brg Play	: mm
Flow 1	: m³/min	Pressure 1	: kPa
Flow 2	: m³/min	Pressure 2	: kPa
Driveshaft Rotation Observed	: No		
Bearing Leakage Observed	: No		

POST-RUN TESTS

Motor Tested Post-Run	: No	with :	
Dump Sub Operating	: N/A	Brg Play	: 1.0 mm
Flow 1	: 0.30 m³/min	Pressure 1	: 650 kPa
Flow 2	: m³/min	Pressure 2	: kPa
Driveshaft Rotation Observed	: Yes		
Bearing Leakage Observed	: No		
Driveshaft Rotated to Drain Mud	: No		
Fluid Flushed	: No	Fluid Used :	

MUD DATA

Base : Water	Additives :	Mud Wt : 1010 kg/m³	SPP Start/End :	kPa
% Oil/Water : /	% Solids : 0.60	% Sand : 0.20	PV : 2 mPa-s	YP : 3.0 Pa
DH Temp Avg/Max : /	FlowRate Avg/Max : / m³/min	Chloride Content : 230 ppm	pH : 7.5	
Principle Formation Name(s) : Beek B1		Lithology : Dolomite		

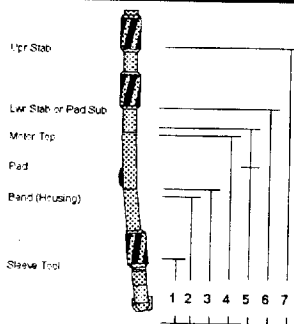
BIT DATA

Make : Smith Tools	Type : MA32QPX	Serial # : JS1781	Dull Grade	1	2	3	4	5	6	7	8
Pre Existing Hours From Other Wells :			In								
Prev Drilling Hrs : 0.00	Prev Reaming Hrs : 0.00	No of Runs This Bit : 1	Out								
Jet Sizes (mm) : 3x9.5, 3x5.6	TFA : 283.9 mm²	Gage Length : 38.0 mm									

PERFORMANCE COMMENTS

Problem Perceived : No	Problem Date :	Service Interrupt : No	Service Interrupt Hrs :
Performance Motor : Yes	Tandem Motor : No	LIH : No	PPR Ref # :
Customer Representative's Signature (optional) :		Date :	

Motor Serial # : 475013 Job # : CX-HZ-01166
 Directional Driller(s) : Frank van Noord, Don Roy Customer : Intragaz Inc.
 Location : #14 Rig : Ralex #1 (RKB 144.54m)
 Well Name : Intragaz St. Flavien #14 Bit Run # : 9 BHA # : 11 Motor Run # : 4
 Depth In/Out : 1951 / 2414 m Date In/Out : 11/07/2000 / 11/20/2000 Hole Size : 156.0 mm
 Application Details : Horizontal

MOTOR CONFIGURATION


From Bit (m)	Component	Type	Diam In/Out (mm)
1 1.10	Sleeve Stab/Pad	Yes Pad: Offset 150.0 mm	
2 2.26	Bent Housing	Yes Non-Adjustable: 1.50° bend	
3 7.85	Housing Tool Used	No	
4	Stator Elastomer	Nitrile Stator: Standard	
5	Bent Sub / 2nd Bent Hsg	No	
6	Lower String Stab	No	
7	Upper String Stab	No	

Additional Features :
 Flex Collar : Yes Short Brg Pack : No Rtr Noz / Size : mm
 Brg Cfg (Off/On) : Lobe Cfg : 7/8 BHA OD/ID : 117.0 / 45.0 mm

Arr	Ret
Pick Up Sub : Yes	Yes
Bit Box Protr : Yes	Yes

MOTOR RUN DATA

Max Dogleg While Rotating : 4.72 °/30m	RPM : 30	Motor Stalled : No	Prev Job/Well Hrs : 0.00
Max Dogleg Overpulled In : 4.72 °/30m	Force : 12000 daN	Float Valve : No	Drilling Hrs : 63.00
Max Dogleg Pushed Through : 4.72 °/30m	Force : 10000 daN	DP Filter : Yes	Circ Hrs : 32.00
Hole Azimuth Start / End : 279.18° / 263.60°	Inc Start / End : 91.80° / 87.00°		Reaming Hrs : 4.25
Interval Oriented / Rot. : 48 / 415 m	Directional Perf Ori / Rot : 2.29 / 2.76 °/30m		Total Hrs This Run : 99.25
Jarring Occured : No			New Cumulative Hrs : 99.25

Diff Press (kPa)	Str RPM	Rotn Torque (nM)	Drag Up/Dn (daN)	WOB (daN)	ROP Oriented (m/hr)	ROP Rotated (m/hr)
Avg : 1499	25	233	10000 / 8000	12022	5	8
Max : 1500	30	260	13000 / 11000	21000	10	15

PRE-RUN TESTS

Motor Tested Pre-Run : Yes	with : 2 Collars, Bit, MWD
Dump Sub Operating : N/A	Brg Play : 1.0 mm
Flow 1 : 0.80 m³/min	Pressure 1 : 8000 kPa
Flow 2 : m³/min	Pressure 2 : kPa
Driveshaft Rotation Observed : Yes	
Bearing Leakage Observed : No	

POST-RUN TESTS

Motor Tested Post-Run : No	with :
Dump Sub Operating : N/A	Brg Play : mm
Flow 1 : m³/min	Pressure 1 : kPa
Flow 2 : m³/min	Pressure 2 : kPa
Driveshaft Rotation Observed : No	
Bearing Leakage Observed : No	
Driveshaft Rotated to Drain Mud : No	
Fluid Flushed : No	Fluid Used :

MUD DATA

Base : Water	Additives :	Mud Wt : 1010 kg/m³	SPP Start/End : 10500 / 11200 kPa
% Oil/Water : /	% Solids : 0.60	% Sand : 0.20	PV : 4 mPa-s
DH Temp Avg/Max : 31.2 / 35.2	FlowRate Avg/Max : 0.84 / 0.85 m³/min	YP : 3.5 Pa	pH : 8.5
Principle Formation Name(s) : Beek B1, Target 2, Beek B2	Chloride Content : 100 ppm		
	Lithology : Dolomite, Limestone / Shale		

BIT DATA

Make : Smith	Type : XR30TY	Serial # : LY7204	Dull Grade	1	2	3	4	5	6	7	8
Pre Existing Hours From Other Wells:			In								NEW
Prev Drilling Hrs : 0.00	Prev Reaming Hrs : 0.00	No of Runs This Bit : 1	Out	2	6	LT	AG	E	1	JD	TD
Jet Sizes (mm) : 3x9.5	TFA : 212.6 mm²	Gage Length : 25.0 mm									

PERFORMANCE COMMENTS

Problem Perceived : No	Problem Date :	Service Interrupt : No	Service Interrupt Hrs :
Performance Motor : Yes	Tandem Motor : No	LIH : No	PPR Ref # :
No problems were encountered.			
Customer Representative's Signature (optional) : _____ Date: _____			

JAR PERFORMANCE REPORT

J-CX-HZ-01166-1

Jar Serial #: DJ690010V
Directional Driller(s): Frank van Noord
Location: #14
Well Name: Intragaz St. Flavian #14
Date In/Out : 09/24/2001 09/27/2000

Job #: CX-HZ-01166
Customer: Intragaz Inc.
Rig: Ralex #1 (RKB 144.54m)
Well Type: Horizontal
Inc In/Out : 0.00° / 3.10°

APPLICATION DETAILS

Depth In/Out : 0 / 274 m
Hours Below Rotary : 56.75
Mud Wt : 1130 kg/m³
Avg Flow Rate : 2.31 m³/min
Pressure Drop Below Jar : kPa

PLACEMENT DETAILS

BHA Elements Below Jar : Bit, Stab, PDM, Stab, 1x DC, Stab, Pony, Stab, 1x DC
BHA Elements Above Jar : [Jar], 1x DC, 1x DC, Sub, 12x DC, Sub, 9x HWDP
Typical Drag Up : daN
Typical Drag Down : daN

OPERATING DETAILS

No. of Times Jarred Up (estimate) :
No. of Times Jarred Down (estimate) :
Problem Perceived : No
Wt. Indicator Reading to Jar Up : daN
Wt. Indicator Reading to Jar Down : daN

PERFORMANCE COMMENTS

Customer Representative's Signature (optional) :

Date :

JAR PERFORMANCE REPORT

J-CX-HZ-01166-2

Jar Serial #: DJ667519V
Directional Driller(s): Frank van Noord
Location: #14
Well Name: Intragaz St. Flavien #14

Job #: CX-HZ-01166
Customer: Intragaz Inc.
Rig: Ralex #1 (RKB 144.54m)
Well Type: Horizontal

Date In/Out : 09/30/200 / 10/01/2000

Inc In/Out : 3.10° / 6.64°

APPLICATION DETAILS

Depth In/Out : 274 / 330 m

Mud Wt: 1130 kg/m³

Hours Below Rotary : 28.00

Avg Flow Rate : 1.30 m³/min

Pressure Drop Below Jar : kPa

PLACEMENT DETAILS

BHA Elements Below Jar : Bit, Stab, PDM, Sub, 1x DC, Stab, Pony, Stab, 1x DC

BHA Elements Above Jar : [Jar], Pony, 14x DC, Sub, 9x HWDP

Typical Drag Up : daN

Typical Drag Down : daN

OPERATING DETAILS

No. of Times Jarred Up (estimate) :

No. of Times Jarred Down (estimate) :

Wt. Indicator Reading to Jar Up : daN

Wt. Indicator Reading to Jar Down : daN

Problem Perceived : No

PERFORMANCE COMMENTS

Customer Representative's Signature (optional) :

Date :

JAR PERFORMANCE REPORT

J-CX-HZ-01166-3

Jar Serial # : DJ667519V
Directional Driller(s) : Frank van Noord
Location : #14
Well Name : Intragaz St. Flavien #14
Date In/Out : 10/01/2001 10/02/2000

Job # : CX-HZ-01166
Customer : Intragaz Inc.
Rig : Ralex #1 (RKB 144.54m)
Well Type : Horizontal
Inc In/Out : 6.64° / 12.57°

APPLICATION DETAILS

Depth In/Out : 330 / 468 m
Hours Below Rotary : 21.00
Mud Wt : 1130 kg/m³
Avg Flow Rate : 1.30 m³/min
Pressure Drop Below Jar : kPa

PLACEMENT DETAILS

BHA Elements Below Jar : Bit, Stab, PDM, Sub, Stab, 1x DC, Stab, Pony, Stab, 1x DC
BHA Elements Above Jar : [Jar], Pony, 14x DC, Sub, 9x HWDP
Typical Drag Up : daN
Typical Drag Down : daN

OPERATING DETAILS

No. of Times Jarred Up (estimate) :
No. of Times Jarred Down (estimate) :
Problem Perceived : No
Wt. Indicator Reading to Jar Up : daN
Wt. Indicator Reading to Jar Down : daN

PERFORMANCE COMMENTS

Customer Representative's Signature (optional) :

Date :

Jar Serial # : DJ667519V
Directional Driller(s) : Frank van Noord
Location : #14
Well Name : Intragaz St. Flavien #14

Job # : CX-HZ-01166
Customer : Intragaz Inc.
Rig : Ralex #1 (RKB 144.54m)
Well Type : Horizontal

Date In/Out : 10/02/2001 / 10/02/2000

Inc In/Out : 12.57° / 12.57°

APPLICATION DETAILS

Depth In/Out : 468 / 468 m
Hours Below Rotary : 5.00

Mud Wt : 1130 kg/m³
Avg Flow Rate : m³/min
Pressure Drop Below Jar : kPa

PLACEMENT DETAILS

BHA Elements Below Jar : Bit, Sub, 1x DC, Stab

BHA Elements Above Jar : [Jar], Pony, 14x DC, Sub, 9x HWDP

Typical Drag Up : daN
Typical Drag Down : daN

OPERATING DETAILS

No. of Times Jarred Up (estimate) :
No. of Times Jarred Down (estimate) :

Wt. Indicator Reading to Jar Up : daN
Wt. Indicator Reading to Jar Down : daN

Problem Perceived : No

PERFORMANCE COMMENTS

Customer Representative's Signature (optional) :

Date :

Jar Serial # : DJ667519V
Directional Driller(s) : Frank van Noord
Location : #14
Well Name : Intragaz St. Flavien #14

Job # : CX-HZ-01166
Customer : Intragaz Inc.
Rig : Ralex #1 (RKB 144.54m)
Well Type : Horizontal

Date In/Out : 10/02/2001 10/07/2000

Inc In/Out : 12.57° / 21.20°

APPLICATION DETAILS

Depth In/Out : 468 / 877 m
Hours Below Rotary : 102.50

Mud Wt : 1050 kg/m³
Avg Flow Rate : 1.30 m³/min
Pressure Drop Below Jar : kPa

PLACEMENT DETAILS

BHA Elements Below Jar : Bit, Stab, Stab, Stab, Stab, 1x DC, Stab, Pony, Stab, 1x DC

BHA Elements Above Jar : [Jar], Pony, 14x DC, Sub, 9x HWDP, 67x DP (E), Other

Typical Drag Up : daN
Typical Drag Down : daN

OPERATING DETAILS

No. of Times Jarred Up (estimate) :
No. of Times Jarred Down (estimate) :

Wt. Indicator Reading to Jar Up : daN
Wt. Indicator Reading to Jar Down : daN

Problem Perceived : No

PERFORMANCE COMMENTS

Customer Representative's Signature (optional) :

Date :

JAR PERFORMANCE REPORT

J-CX-HZ-01166-6

Jar Serial # : DJ667519V
Directional Driller(s) : Frank van Noord, Don Roy
Location : #14
Well Name : Intragaz St. Flavien #14

Job # : CX-HZ-01166
Customer : Intragaz Inc.
Rig : Ralex #1 (RKB 144.54m)
Well Type : Horizontal

Date In/Out : 10/07/200/ 10/10/2000

Inc In/Out : 21.20° / 34.58°

APPLICATION DETAILS

Depth In/Out : 877 / 1257 m
Hours Below Rotary : 79.25

Mud Wt : 1050 kg/m³
Avg Flow Rate : 1.25 m³/min
Pressure Drop Below Jar : kPa

PLACEMENT DETAILS

BHA Elements Below Jar : Bit, Stab, Stab, Stab, Stab, Stab, 1x DC, Stab, MWD, Pony, Stab, 1x DC

BHA Elements Above Jar : [Jar], Pony, 14x DC, Sub, 9x HWDP, DP (E), Other

Typical Drag Up : daN
Typical Drag Down : daN

OPERATING DETAILS

No. of Times Jarred Up (estimate) :
No. of Times Jarred Down (estimate) :

Wt. Indicator Reading to Jar Up : daN
Wt. Indicator Reading to Jar Down : daN

Problem Perceived : No

PERFORMANCE COMMENTS

Customer Representative's Signature (optional) :

Date :

Jar Serial # : DJ667519V
Directional Driller(s) : Frank van Noord, Don Roy
Location : #14
Well Name : Intragaz St. Flavien #14

Job # : CX-HZ-01166
Customer : Intragaz Inc.
Rig : Ralex #1 (RKB 144.54m)
Well Type : Horizontal

Date In/Out : 10/10/2000 / 10/14/2000

Inc In/Out : 34.58° / 55.42°

APPLICATION DETAILS

Depth In/Out : 1257 / 1559 m
Hours Below Rotary : 80.00

Mud Wt : 1070 kg/m³
Avg Flow Rate : 1.25 m³/min
Pressure Drop Below Jar : kPa

PLACEMENT DETAILS

BHA Elements Below Jar : Bit, PDM, Sub, Flex, Flex, MWD, Flex, Flex

BHA Elements Above Jar : [Jar], Sub, 57x HWDP

Typical Drag Up : 13000 daN
Typical Drag Down : 6000 daN

OPERATING DETAILS

No. of Times Jarred Up (estimate) :
No. of Times Jarred Down (estimate) :

Wt. Indicator Reading to Jar Up : daN
Wt. Indicator Reading to Jar Down : daN

Problem Perceived : No

PERFORMANCE COMMENTS

The jars did not fire up or down.

Customer Representative's Signature (optional) :

Date :

JAR PERFORMANCE REPORT

J-CX-HZ-01166-8

Jar Serial # : DJ667519V
Directional Driller(s) : Frank van Noord, Don Roy
Location : #14
Well Name : Intragaz St. Flavien #14

Job # : CX-HZ-01166
Customer : Intragaz Inc.
Rig : Ralex #1 (RKB 144.54m)
Well Type : Horizontal

Date In/Out : 10/14/2001 10/16/2000

Inc In/Out : 55.42° / 79.10°

APPLICATION DETAILS

Depth In/Out : 1559 / 1677 m

Mud Wt : 1095 kg/m³

Hours Below Rotary : 52.50

Avg Flow Rate : 1.25 m³/min

Pressure Drop Below Jar : kPa

PLACEMENT DETAILS

BHA Elements Below Jar : Bit, PDM, Sub, Flex, Flex, MWD, Flex, Flex

BHA Elements Above Jar : [Jar], Sub, 57x HWDP

Typical Drag Up : 12000 daN

Typical Drag Down : 6000 daN

OPERATING DETAILS

No. of Times Jarred Up (estimate) :

No. of Times Jarred Down (estimate) :

Wt. Indicator Reading to Jar Up : daN

Wt. Indicator Reading to Jar Down : daN

Problem Perceived : No

PERFORMANCE COMMENTS

The jars did not fire up or down.

Customer Representative's Signature (optional) :

Date :

JAR PERFORMANCE REPORT

J-CX-HZ-01166-9

Jar Serial # : 475546
Directional Driller(s) : Frank van Noord, Don Roy
Location : #14
Well Name : Intragaz St. Flavien #14

Job # : CX-HZ-01166
Customer : Intragaz Inc.
Rig : Ralex #1 (RKB 144.54m)
Well Type : Horizontal

Date In/Out : 10/20/2001 11/05/2000

Inc In/Out : 79.10° / 91.80°

APPLICATION DETAILS

Depth In/Out : 1677 / 1951 m
Hours Below Rotary : 373.00

Mud Wt : 1010 kg/m³
Avg Flow Rate : 0.80 m³/min
Pressure Drop Below Jar : kPa

PLACEMENT DETAILS

BHA Elements Below Jar : Bit, PDM, Sub, Sub, Flex, Sub, MWD, Flex, Flex

BHA Elements Above Jar :

Typical Drag Up : 13000 daN
Typical Drag Down : 10000 daN

OPERATING DETAILS

No. of Times Jarred Up (estimate) :
No. of Times Jarred Down (estimate) :

Wt. Indicator Reading to Jar Up : daN
Wt. Indicator Reading to Jar Down : daN

Problem Perceived : No

PERFORMANCE COMMENTS

The jars did not fire, up or down.

Customer Representative's Signature (optional) :

Date :

JAR PERFORMANCE REPORT

J-CX-HZ-01166-10

Jar Serial # : 475546
Directional Driller(s) : Frank van Noord, Don Roy
Location : #14
Well Name : Intragaz St. Flavien #14

Job # : CX-HZ-01166
Customer : Intragaz Inc.
Rig : Ralex #1 (RKB 144.54m)
Well Type : Horizontal

Date In/Out : 11/05/2000 / 11/07/2000

Inc In/Out : 91.80° / 91.80°

APPLICATION DETAILS

Depth In/Out : 1951 / 1951 m
Hours Below Rotary : 54.50

Mud Wt : 1010 kg/m³
Avg Flow Rate : m³/min
Pressure Drop Below Jar : kPa

PLACEMENT DETAILS

BHA Elements Below Jar : Bit, PDM, Sub, Sub, Flex, Sub, MWD, Flex, Flex

BHA Elements Above Jar :

Typical Drag Up : daN
Typical Drag Down : daN

OPERATING DETAILS

No. of Times Jarred Up (estimate) :
No. of Times Jarred Down (estimate) :

Wt. Indicator Reading to Jar Up : daN
Wt. Indicator Reading to Jar Down : daN

Problem Perceived : No

PERFORMANCE COMMENTS

The jars did not fire up or down.

Customer Representative's Signature (optional) :

Date :

Jar Serial # : 475546
Directional Driller(s) : Frank van Noord, Don Roy
Location : #14
Well Name : Intragaz St. Flavien #14

Job # : CX-HZ-01166
Customer : Intragaz Inc.
Rig : Ralex #1 (RKB 144.54m)
Well Type : Horizontal

Date In/Out : 11/07/2001 11/20/2000

Inc In/Out : 91.80° / 87.00°

APPLICATION DETAILS

Depth In/Out : 1951 / 2414 m
Hours Below Rotary : 190.00

Mud Wt : 1010 kg/m³
Avg Flow Rate : 0.84 m³/min
Pressure Drop Below Jar : 5000 kPa

PLACEMENT DETAILS

BHA Elements Below Jar : Bit, PDM, Sub, Sub, Flex, Sub, MWD, Flex, Flex

BHA Elements Above Jar :

Typical Drag Up : 12000 daN
Typical Drag Down : 10000 daN

OPERATING DETAILS

No. of Times Jarred Up (estimate) : 0
No. of Times Jarred Down (estimate) : 0

Wt. Indicator Reading to Jar Up : daN
Wt. Indicator Reading to Jar Down : daN

Problem Perceived : No

PERFORMANCE COMMENTS

The jars did not fire up or down.

Customer Representative's Signature (optional) :

Date :

MOTOR RUN REPORT

GENERAL DATA

Customer : Intragaz Inc.
Field : St. Flavien (Lic #2000FA230)
Well Name : Intragaz St. Flavien #14
Location : #14

Job # : CX-HZ-01166
Contractor : Ralex Drilling
Rig : Ralex #1 (RKB 144.54m)
Hole Size : 311.0 mm

MOTOR DATA

Type : 9-5/8" Square Black Max Lobe 6/7 - 4.0 stg

Size : 244.5 mm

Motor Serial # :

RUN DATA

Motor Run # :

Date In : 09/24/2000

Reason for Run :

Date Out : 09/27/2000

Depth In : 0 m

Drilling Hrs : 29.25

Depth Out : 274 m

Reaming Hrs : 0.00

Footage : 274 m

Circulating Hrs : 2.25

Total Circulating Hrs : 31.50

REMARKS

Remarks concerning the Motor Run may be added here:

Directional Drilling Supervisor:

Date:

Customer Representative:

Date:

MOTOR RUN REPORT

GENERAL DATA

Customer : Intragaz Inc.
Field : St. Flavien (Lic #2000FA230)
Well Name : Intragaz St. Flavien #14
Location : #14

Job # : CX-HZ-01166
Contractor : Ralex Drilling
Rig : Ralex #1 (RKB 144.54m)
Hole Size : 222.0 mm

MOTOR DATA

Type : 6-3/4" SperryDrill Lobe 6/7 - 5.0 stg

Size : 170.0 mm

Motor Serial # : 675375

RUN DATA

Motor Run # : 1

Date In : 10/10/2000

Reason for Run : Steerable Drilling

Date Out : 10/14/2000

Depth In : 1257 m

Drilling Hrs : 56.50

Depth Out : 1559 m

Reaming Hrs : 0.25

Footage : 302 m

Circulating Hrs : 9.25

Total Circulating Hrs : 66.00

REMARKS

Remarks concerning the Motor Run may be added here:

Directional Drilling Supervisor:

Date:

Customer Representative:

Date:

MOTOR RUN REPORT

GENERAL DATA

Customer : Intragaz Inc.
Field : St. Flavien (Lic #2000FA230)
Well Name : Intragaz St. Flavien #14
Location : #14

Job # : CX-HZ-01166
Contractor : Ralex Drilling
Rig : Ralex #1 (RKB 144.54m)
Hole Size : 156.0 mm

MOTOR DATA

Type : 4-3/4" SperryDrill Lobe 7/8 - 2.stg

Size : 119.0 mm

Motor Serial # : 475013

RUN DATA

Motor Run # : 10

Date In : 11/05/2000

Reason for Run : Horizontal

Date Out : 11/07/2000

Depth In : 1951 m

Drilling Hrs : 0.00

Depth Out : 1951 m

Reaming Hrs : 0.00

Footage : 0 m

Circulating Hrs : 0.00

Total Circulating Hrs : 0.00

REMARKS

Remarks concerning the Motor Run may be added here:

Directional Drilling Supervisor:

Date:

Customer Representative:

Date:

MOTOR RUN REPORT

GENERAL DATA

Customer : Intragaz Inc.
Field : St. Flavien (Lic #2000FA230)
Well Name : Intragaz St. Flavien #14
Location : #14

Job # : CX-HZ-01166
Contractor : Ralex Drilling
Rig : Ralex #1 (RKB 144.54m)
Hole Size : 222.0 mm

MOTOR DATA

Type : 6-3/4" SperryDrill Lobe 8/9 - 3.0 stg

Size : 170.0 mm

Motor Serial # : 675014A

RUN DATA

Motor Run # : 2

Reason for Run : Steerable Drilling

Depth In : 1559 m

Depth Out : 1677 m

Footage : 118 m

Date In : 10/14/2000

Date Out : 10/16/2000

Drilling Hrs : 28.00

Reaming Hrs : 0.50

Circulating Hrs : 4.50

Total Circulating Hrs : 33.00

REMARKS

Remarks concerning the Motor Run may be added here:

Directional Drilling Supervisor:

Date:

Customer Representative:

Date:

MOTOR RUN REPORT

GENERAL DATA

Customer : Intragaz Inc.
Field : St. Flavien (Lic #2000FA230)
Well Name : Intragaz St. Flavien #14
Location : #14

Job # : CX-HZ-01166
Contractor : Ralex Drilling
Rig : Ralex #1 (RKB 144.54m)
Hole Size : 156.0 mm

MOTOR DATA

Type : 4-3/4" SperryDrill Lobe 7/8 - 2.stg

Size : 119.0 mm

Motor Serial # : 475013

RUN DATA

Motor Run # : 4

Date In : 11/07/2000

Reason for Run : Horizontal

Date Out : 11/20/2000

Depth In : 1951 m

Drilling Hrs : 63.00

Depth Out : 2414 m

Reaming Hrs : 4.25

Footage : 463 m

Circulating Hrs : 32.00

Total Circulating Hrs : 99.25

REMARKS

Remarks concerning the Motor Run may be added here:

Directional Drilling Supervisor:

Date:

Customer Representative:

Date:

MOTOR RUN REPORT

GENERAL DATA

Customer : Intragaz Inc.
Field : St. Flavien (Lic #2000FA230)
Well Name : Intragaz St. Flavien #14
Location : #14

Job # : CX-HZ-01166
Contractor : Ralex Drilling
Rig : Ralex #1 (RKB 144.54m)
Hole Size : 156.0 mm

MOTOR DATA

Type : 4-3/4" SperryDrill Lobe 7/8 - 3.8 stg

Size : 119.0 mm

Motor Serial # : 475362

RUN DATA

Motor Run # : 9

Reason for Run : Horizontal

Depth In : 1677 m

Depth Out : 1951 m

Footage : 274 m

Date In : 10/20/2000

Date Out : 11/05/2000

Drilling Hrs : 51.50

Reaming Hrs : 0.00

Circulating Hrs : 16.25

Total Circulating Hrs : 67.75

REMARKS

Remarks concerning the Motor Run may be added here:

Directional Drilling Supervisor:

Date:

Customer Representative:

Date:

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DRILLING SERVICES

Survey and Drilling Parameters

Customer : Intragaz Inc.
Well Name : Intragaz St. Flavien #14
Rig : Ralex #1 (RKB 144.54m)

Field : St. Flavien (Lic #2000FA230)
Location : #14
Job # : CX-HZ-01166

Page : 1

North Ref : True Declination : -17.23° VS Dir : 316.06° (from Wellhead)

WELLBORE SURVEY										DRILLING PARAMETERS										Comment
Measured Depth (m)	Incl Angle (deg)	Azi Dir (deg)	Vertical Depth (m)	Vertical Section (m)	Coordinates		DLS (°/30m)	Build Rate (°/30m)	Turn Rate (°/30m)	WOB (daN)	RPM	Flow Rate m³/min	Stand Pipe (kPa)	Orientation		Tool Face (deg)	ROP (m/hr)	BHA No. (#)		
					N/S (m)	E/W (m)								From (m)	To (m)					
0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	2000	60	2.40	7500				2	1	Tieon	
19.07	0.25	305.00	19.1	0.0	0.0	0.0	0.39	0.39	0.00	10000	60	2.30	12800				10	1		
33.92	0.00	0.00	33.9	0.1	0.0	-0.1	0.51	-0.51	0.00	10000	60	2.30	12800				10	1		
42.94	0.25	353.00	42.9	0.1	0.1	-0.1	0.83	0.83	0.00	10000	60	2.30	12800				10	1		
53.26	0.38	335.00	53.3	0.1	0.1	-0.1	0.47	0.38	0.00	10000	60	2.30	12800				10	1		
62.70	0.40	321.00	62.7	0.2	0.2	-0.1	0.31	0.06	0.00	10000	60	2.30	12800				10	1		
72.08	0.38	313.00	72.1	0.3	0.2	-0.2	0.19	-0.06	0.00	10000	60	2.30	12800				10	1		
81.60	0.60	343.00	81.6	0.3	0.3	-0.2	1.04	0.69	0.00	10000	60	2.30	12800				10	1		
91.02	0.50	352.00	91.0	0.4	0.4	-0.2	0.42	-0.32	0.00	10000	60	2.30	12800				10	1		
100.65	0.50	324.00	100.6	0.5	0.4	-0.2	0.75	0.00	0.00	10000	60	2.30	12800				10	1		
110.09	0.70	339.00	110.1	0.6	0.5	-0.3	0.80	0.64	0.00	10000	60	2.30	12800				10	1		
129.04	0.80	328.00	129.0	0.8	0.8	-0.4	0.28	0.16	0.00	10000	60	2.30	12800				10	1		
138.68	0.80	325.00	138.7	1.0	0.9	-0.5	0.13	0.00	0.00	10000	60	2.30	12800				10	1		
148.18	0.80	329.00	148.2	1.1	1.0	-0.5	0.18	0.00	0.00	10000	60	2.30	12800				10	1		
157.58	1.00	341.00	157.6	1.2	1.1	-0.6	0.87	0.64	0.00	10000	60	2.30	12800				10	1		
175.95	1.30	343.00	175.9	1.6	1.5	-0.7	0.49	0.49	0.00	10000	60	2.30	12800				10	1		
194.31	1.50	328.00	194.3	2.0	1.9	-0.9	0.68	0.33	-24.51	10000	60	2.30	12800				10	1		
213.43	2.00	340.00	213.4	2.5	2.4	-1.2	0.97	0.78	18.83	10000	60	2.30	12800				10	1		
231.80	2.30	332.00	231.8	3.2	3.0	-1.4	0.69	0.49	-13.06	10000	60	2.30	12800				10	1		
250.71	2.60	341.00	250.7	3.9	3.8	-1.8	0.77	0.48	14.28	10000	60	2.30	12800				10	1		
283.27	3.30	344.00	283.2	5.4	5.4	-2.3	0.66	0.64	2.76	5000	60	1.30	8000				15	2		
302.71	4.20	348.00	302.6	6.5	6.6	-2.6	1.45	1.39	6.17	5000	60	1.30	8000				15	2		
312.44	4.70	345.00	312.3	7.2	7.3	-2.7	1.70	1.54	-9.25	5000	60	1.30	8000				15	2		
323.45	6.30	340.00	323.2	8.1	8.3	-3.1	4.55	4.36	-13.62	5000	60	1.30	8000				15	2		
333.17	6.80	339.00	332.9	9.1	9.4	-3.4	1.58	1.54	-3.09	5000	70	1.30	8500				15	3		
342.88	7.00	338.00	342.5	10.2	10.5	-3.9	0.72	0.62	-3.09	5000	70	1.30	8500				15	3		
352.60	7.10	340.00	352.2	11.3	11.6	-4.3	0.82	0.31	6.17	5000	70	1.30	8500				15	3		
372.03	7.50	340.00	371.4	13.6	13.9	-5.1	0.62	0.62	0.00	5000	70	1.30	8500				15	3		
391.48	8.40	341.00	390.7	16.0	16.4	-6.0	1.40	1.39	1.54	5000	70	1.30	8500				15	3		

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DRILLING SERVICES

Survey and Drilling Parameters

Customer : Intragaz Inc.
Well Name : Intragaz St. Flavien #14
Rig : Ralex #1 (RKB 144.54m)

Field : St. Flavien (Lic #2000FA230)
Location : #14
Job # : CX-HZ-01166

Page : 2

North Ref : True Declination : -17.23° VS Dir : 316.06° (from Wellhead)

WELLBORE SURVEY										DRILLING PARAMETERS									Comment
Measured Depth (m)	Incl Angle (deg)	Azi Dir (deg)	Vertical Depth (m)	Vertical Section (m)	Coordinates N/S (m)	E/W (m)	DLS (°/30m)	Build Rate (°/30m)	Turn Rate (°/30m)	WOB (daN)	RPM	Flow Rate m³/min	Stand Pipe (kPa)	Orientation From (m)	To (m)	Tool Face (deg)	ROP (m/hr)	BHA No. (#)	
410.94	9.40	340.00	409.9	18.8	19.3	-7.1	1.56	1.54	-1.54	5000	70	1.30	8500				15	3	
430.39	10.70	340.00	429.1	21.9	22.5	-8.2	2.01	2.01	0.00	5000	70	1.30	8500				15	3	
440.09	11.00	341.00	438.6	23.5	24.2	-8.8	1.10	0.93	3.09	5000	70	1.30	8500				15	3	
449.80	11.60	341.00	448.1	25.3	26.0	-9.4	1.85	1.85	0.00	5000	70	1.30	8500				15	3	
459.30	12.30	340.00	457.4	27.0	27.8	-10.1	2.31	2.21	-3.16	5000	70	1.30	8500				15	3	
469.01	12.60	341.00	466.9	28.9	29.8	-10.8	1.14	0.93	3.09	4000	90	1.30	7400				3	5	
478.75	13.00	340.00	476.4	30.9	31.8	-11.5	1.41	1.23	-3.08	4000	90	1.30	7400				3	5	
488.47	13.30	341.00	485.9	32.9	33.9	-12.3	1.16	0.93	3.09	4000	90	1.30	7400				3	5	
498.18	13.10	341.00	495.3	34.9	36.0	-13.0	0.62	-0.62	0.00	4000	90	1.30	7400				3	5	
517.64	13.60	342.00	514.3	39.0	40.3	-14.4	0.85	0.77	1.54	4000	90	1.30	7400				3	5	
537.09	13.90	342.00	533.2	43.2	44.7	-15.8	0.46	0.46	0.00	4000	90	1.30	7400				3	5	
566.27	14.60	343.00	561.4	49.6	51.5	-18.0	0.76	0.72	1.03	4000	90	1.30	7400				3	5	
585.74	15.40	345.00	580.2	54.0	56.4	-19.4	1.47	1.23	3.08	7000	110	1.30	7400				5	5	
605.13	16.00	345.00	598.9	58.6	61.4	-20.7	0.93	0.93	0.00	7000	110	1.30	7400				5	5	
624.56	16.30	345.00	617.6	63.4	66.7	-22.1	0.46	0.46	0.00	7000	110	1.30	7400				5	5	
643.97	16.80	345.00	636.2	68.2	72.0	-23.6	0.77	0.77	0.00	7000	110	1.30	7400				5	5	
673.12	17.20	344.00	664.1	75.7	80.2	-25.8	0.51	0.41	-1.03	7000	110	1.30	7400				5	5	
702.28	18.00	343.00	691.8	83.5	88.7	-28.3	0.88	0.82	-1.03	7000	110	1.30	7400				5	5	
731.41	18.70	342.00	719.5	91.7	97.4	-31.1	0.79	0.72	-1.03	7000	110	1.30	7400				5	5	
760.53	19.20	341.00	747.0	100.3	106.4	-34.1	0.61	0.52	-1.03	7000	110	1.30	7400				5	5	
799.37	20.00	340.00	783.6	112.1	118.7	-38.5	0.67	0.62	-0.77	7000	110	1.30	7400				5	5	
828.47	20.70	340.00	810.9	121.4	128.2	-41.9	0.72	0.72	0.00	7000	110	1.30	7400				5	5	
857.47	20.90	338.60	838.0	130.8	137.8	-45.6	0.55	0.21	-1.45	7000	110	1.30	7400				5	5	
867.19	21.10	338.60	847.1	134.1	141.0	-46.8	0.62	0.62	0.00	7000	110	1.30	7400				5	5	
876.89	21.20	338.40	856.1	137.3	144.3	-48.1	0.38	0.31	-0.62	7000	110	1.30	7400				5	5	
886.60	21.30	337.90	865.2	140.5	147.6	-49.4	0.64	0.31	-1.54	7000	100	1.25	8200				7	6	
896.31	21.80	337.90	874.2	143.9	150.9	-50.8	1.54	1.54	0.00	7000	100	1.25	8200				7	6	
906.00	21.40	337.80	883.2	147.2	154.2	-52.1	1.24	-1.24	-0.31	7000	100	1.25	8200				7	6	
915.72	21.50	337.50	892.3	150.5	157.5	-53.5	0.46	0.31	-0.93	9000	100	1.25	8200				9	6	

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DRILLING SERVICES

Survey and Drilling Parameters

Customer : Intragaz Inc.
Well Name : Intragaz St. Flavien #14
Rig : Ralex #1 (RKB 144.54m)

Field : St. Flavien (Lic #2000FA230)
Location : #14
Job # : CX-HZ-01166

Page : 3

North Ref : True Declination : -17.23° VS Dir : 316.06° (from Wellhead)

WELLBORE SURVEY										DRILLING PARAMETERS										Comment
Measured Depth (m)	Incl Angle (deg)	Azi Dir (deg)	Vertical Depth (m)	Vertical Section (m)	Coordinates N/S (m)	E/W (m)	DLS (°/30m)	Build Rate (°/30m)	Turn Rate (°/30m)	WOB (daN)	RPM	Flow Rate m³/min	Stand Pipe (kPa)	Orientation From (m)	To (m)	Tool Face (deg)	ROP (m/hr)	BHA No. (#)		
925.43	21.50	337.20	901.3	153.8	160.7	-54.8	0.34	0.00	-0.93	9000	100	1.25	8200				9	6		
935.16	21.40	336.80	910.4	157.1	164.0	-56.2	0.55	-0.31	-1.23	9000	100	1.25	8200				9	6		
944.86	21.60	336.30	919.4	160.4	167.3	-57.6	0.84	0.62	-1.55	9000	100	1.25	8200				9	6		
954.58	22.00	335.50	928.4	163.8	170.6	-59.1	1.54	1.23	-2.47	9000	100	1.25	8200				9	6		
964.29	21.90	335.20	937.4	167.3	173.9	-60.6	0.46	-0.31	-0.93	10000	110	1.25	8300				7	6		
974.01	22.10	334.90	946.4	170.7	177.2	-62.2	0.71	0.62	-0.93	10000	110	1.25	8300				7	6		
983.74	22.30	334.30	955.4	174.2	180.5	-63.7	0.93	0.62	-1.85	10000	110	1.25	8300				7	6		
993.47	22.70	334.00	964.4	177.7	183.8	-65.4	1.28	1.23	-0.93	10000	110	1.25	8300				7	6		
1003.19	23.00	333.60	973.4	181.3	187.2	-67.0	1.04	0.93	-1.23	10000	110	1.25	8300				7	6		
1012.91	23.60	333.10	982.3	185.0	190.7	-68.8	1.95	1.85	-1.54	10000	110	1.25	8300				7	6		
1022.64	24.10	332.90	991.2	188.8	194.2	-70.5	1.56	1.54	-0.62	10000	110	1.25	8300				7	6		
1032.35	24.30	332.50	1000.1	192.6	197.7	-72.4	0.80	0.62	-1.24	10000	110	1.25	8300				7	6		
1042.07	24.40	332.40	1008.9	196.4	201.3	-74.2	0.33	0.31	-0.31	10000	110	1.25	8300				7	6		
1051.79	24.60	331.70	1017.8	200.3	204.8	-76.1	1.09	0.62	-2.16	10000	110	1.25	8300				7	6		
1061.50	25.00	331.60	1026.6	204.2	208.4	-78.0	1.24	1.24	-0.31	10000	110	1.25	8300				7	6		
1071.21	25.40	331.30	1035.4	208.2	212.0	-80.0	1.30	1.24	-0.93	10000	110	1.25	8300				7	6		
1080.92	25.50	330.80	1044.1	212.2	215.7	-82.0	0.73	0.31	-1.54	10000	110	1.25	8300				7	6		
1090.65	25.80	330.20	1052.9	216.3	219.4	-84.1	1.22	0.92	-1.85	10000	110	1.25	8300				7	6		
1100.37	26.30	330.20	1061.6	220.5	223.1	-86.2	1.54	1.54	0.00	10000	110	1.25	8300				7	6		
1110.08	26.60	330.10	1070.3	224.6	226.8	-88.4	0.94	0.93	-0.31	10000	110	1.25	8300				7	6		
1119.81	26.80	329.90	1079.0	228.9	230.6	-90.6	0.68	0.62	-0.62	10000	110	1.25	8300				7	6		
1129.52	27.30	329.40	1087.7	233.2	234.4	-92.8	1.70	1.54	-1.54	10000	110	1.25	8300				7	6		
1139.23	27.60	328.90	1096.3	237.5	238.2	-95.1	1.17	0.93	-1.54	10000	110	1.25	8300				7	6		
1148.95	28.00	328.80	1104.9	242.0	242.1	-97.4	1.24	1.23	-0.31	10000	110	1.25	8300				7	6		
1158.68	28.40	328.40	1113.5	246.5	246.1	-99.8	1.36	1.23	-1.23	10000	110	1.25	8300				6	6		
1168.38	28.80	327.80	1122.0	251.0	250.0	-102.3	1.52	1.24	-1.86	10000	110	1.25	8300				6	6		
1178.10	29.30	326.80	1130.5	255.6	254.0	-104.8	2.15	1.54	-3.09	10000	110	1.25	8300				6	6		
1187.81	30.00	325.40	1138.9	260.4	258.0	-107.5	3.04	2.16	-4.33	10000	110	1.25	8300				6	6		
1197.52	30.90	324.80	1147.3	265.2	262.0	-110.3	2.94	2.78	-1.85	10000	110	1.25	8300				6	6		

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DRILLING SERVICES

Survey and Drilling Parameters

Customer : Intragaz Inc.
Well Name : Intragaz St. Flavien #14
Rig : Ralex #1 (RKB 144.54m)

Field : St. Flavien (Lic #2000FA230)
Location : #14
Job # : CX-HZ-01166

North Ref : True Declination : -17.23° VS Dir : 316.06° (from Wellhead)

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WELLBORE SURVEY										DRILLING PARAMETERS										Comment
Measured Depth (m)	Incl Angle (deg)	Azi Dir (deg)	Vertical Depth (m)	Vertical Section (m)	Coordinates N/S (m) E/W (m)		DLS (°/30m)	Build Rate (°/30m)	Turn Rate (°/30m)	WOB (daN)	RPM	Flow Rate m³/min	Stand Pipe (kPa)	Orientation From (m) To (m)		Tool Face (deg)	ROP (m/hr)	BHA No. (#)		
1207.25	31.60	324.30	1155.6	270.2	266.1	-113.3	2.30	2.16	-1.54	10000	110	1.25	8300				6	6		
1216.97	32.10	324.30	1163.9	275.3	270.3	-116.3	1.54	1.54	0.00	10000	110	1.25	8300				6	6		
1226.67	32.60	324.20	1172.1	280.4	274.5	-119.3	1.56	1.55	-0.31	10000	110	1.25	8300				6	6		
1236.39	33.10	324.10	1180.2	285.6	278.8	-122.4	1.55	1.54	-0.31	10000	110	1.25	8300				6	6		
1246.69	33.70	323.80	1188.8	291.3	283.3	-125.7	1.81	1.75	-0.87	10000	110	1.25	8300				6	6		
1256.42	34.50	323.40	1196.9	296.7	287.7	-129.0	2.56	2.47	-1.23	10000	110	1.25	8300				6	6		
1266.14	35.90	322.10	1204.8	302.2	292.2	-132.3	4.90	4.32	-4.01	10000	30	1.25	10500	1257	1260	70L	6	7		
1275.88	37.10	320.20	1212.7	308.0	296.7	-136.0	5.08	3.70	-5.85	10000	30	1.25	10500	1267	1270	70L	6	7		
1285.58	38.50	318.90	1220.3	313.9	301.2	-139.8	4.98	4.33	-4.02	10000	30	1.25	10500	1276	1279	70L	6	7		
1295.30	39.10	317.70	1227.9	320.0	305.8	-143.9	2.97	1.85	-3.70	10000	30	1.25	10500	1286	1288	110L	6	7		
1305.02	39.50	317.40	1235.4	326.2	310.3	-148.0	1.37	1.23	-0.93	10000	30	1.25	10500	1296	1298	140L	6	7		
1314.75	39.00	316.60	1243.0	332.3	314.8	-152.2	2.19	-1.54	-2.47	10000	30	1.25	10500				6	7		
1324.45	37.90	315.70	1250.5	338.4	319.2	-156.4	3.82	-3.40	-2.78	10000	30	1.25	10500	1315	1319	150L	6	7		
1334.17	36.80	314.60	1258.3	344.3	323.3	-160.6	3.97	-3.40	-3.40	10000	30	1.25	10500	1325	1328	150L	6	7		
1343.89	36.50	314.20	1266.1	350.1	327.4	-164.7	1.18	-0.93	-1.23	10000	30	1.25	10500	1335	1338	150L	6	7		
1353.61	36.30	313.30	1273.9	355.8	331.4	-168.9	1.76	-0.62	-2.78	10000	30	1.25	10500				6	7		
1363.34	36.00	312.00	1281.8	361.5	335.3	-173.1	2.54	-0.92	-4.01	10000	30	1.25	10500	1354	1356	90L	6	7		
1373.06	35.90	310.80	1289.6	367.2	339.1	-177.4	2.20	-0.31	-3.70	12000	30	1.25	10500	1364	1366	90L	6	7		
1382.75	36.20	309.60	1297.5	372.9	342.7	-181.7	2.38	0.93	-3.72	12000	30	1.25	11500	1374	1376	80L	6	7		
1392.47	36.80	308.10	1305.3	378.6	346.4	-186.3	3.32	1.85	-4.63	12000	30	1.25	11500	1383	1385	65L	6	7		
1402.19	37.40	307.20	1313.0	384.4	349.9	-190.9	2.50	1.85	-2.78	12000	30	1.25	11500	1393	1396	50L	6	7		
1411.92	38.30	306.40	1320.7	390.3	353.5	-195.7	3.16	2.77	-2.47	12000	30	1.25	12000	1403	1406	45L	7	7		
1421.63	39.20	305.90	1328.3	396.3	357.1	-200.6	2.94	2.78	-1.54	12000	30	1.25	12000	1412	1416	40L	7	7		
1431.35	39.80	305.40	1335.8	402.4	360.7	-205.6	2.10	1.85	-1.54	12000	30	1.25	12000	1422	1425	35L	7	7		
1441.06	40.60	304.70	1343.2	408.6	364.3	-210.7	2.84	2.47	-2.16	12000	30	1.25	12000	1432	1435	35L	7	7		
1450.75	41.60	303.20	1350.5	414.8	367.9	-216.0	4.35	3.10	-4.64	14000	30	1.25	12000	1442	1446	40L	7	7		
1460.46	42.70	301.90	1357.7	421.1	371.4	-221.5	4.34	3.40	-4.02	14000	30	1.25	12000	1451	1457	45L	7	7		
1470.18	44.70	300.00	1364.7	427.6	374.8	-227.3	7.38	6.17	-5.86	14000	30	1.25	12400	1461	1468	40L	7	7		
1479.90	46.30	299.20	1371.5	434.2	378.2	-233.3	5.24	4.94	-2.47	14000	30	1.25	12400	1471	1475	45L	7	7		

sperry-sun

DRILLING SERVICES

Survey and Drilling Parameters

Customer : Intragaz Inc.
Well Name : Intragaz St. Flavien #14
Rig : Ralex #1 (RKB 144.54m)

Field : St. Flavien (Lic #2000FA230)
Location : #14
Job # : CX-HZ-01166

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North Ref : True Declination : -17.23° VS Dir : 316.06° (from Wellhead)

WELLBORE SURVEY										DRILLING PARAMETERS										Comment
Measured Depth (m)	Incl Angle (deg)	Azi Dir (deg)	Vertical Depth (m)	Vertical Section (m)	Coordinates		DLS (°/30m)	Build Rate (°/30m)	Turn Rate (°/30m)	WOB (daN)	RPM	Flow Rate m³/min	Stand Pipe (kPa)	Orientation		Tool Face (deg)	ROP (m/hr)	BHA No. (#)		
					N/S (m)	E/W (m)								From (m)	To (m)					
1489.64	47.90	299.10	1378.2	441.1	381.7	-239.5	4.93	4.93	-0.31	14000	30	1.25	12400	1480	1486	20L	7	7		
1499.37	48.30	299.10	1384.7	448.0	385.2	-245.9	1.23	1.23	0.00	14000	30	1.25	12400	1490	1494	HS	7	7		
1509.08	49.10	299.70	1391.1	455.0	388.8	-252.2	2.84	2.47	1.85	14000	30	1.25	12400	1500	1503	HS	7	7		
1518.78	49.80	298.50	1397.4	462.0	392.4	-258.7	3.56	2.16	-3.71	14000	30	1.25	12400	1510	1514	20L	7	7		
1528.45	50.20	297.30	1403.6	469.1	395.9	-265.2	3.11	1.24	-3.72	14000	30	1.25	12400	1519	1524	40L	6	7		
1538.19	51.00	296.50	1409.8	476.2	399.3	-271.9	3.11	2.46	-2.46	14000	30	1.25	12400	1529	1535	50L	5	7		
1547.97	52.40	293.90	1415.8	483.4	402.5	-278.9	7.59	4.29	-7.98	14000	30	1.25	12400	1540	1546	40L	5	7		
1557.69	55.10	292.90	1421.6	490.6	405.7	-286.1	8.70	8.33	-3.09	20000		1.25	12200	1548	1558	20L	4	7		
1567.41	57.50	292.70	1427.0	498.0	408.8	-293.5	7.43	7.41	-0.62	14000	30	1.25	12400	1558	1561	20L	6	8		
														1562	1565	25L		8		
1577.13	58.90	292.30	1432.1	505.6	411.9	-301.1	4.45	4.32	-1.23	20000		1.25	13000	1569	1571	10L	5	8		
														1576	1577	10L		8		
1586.84	60.50	291.60	1437.0	513.2	415.1	-308.9	5.28	4.94	-2.16	20000		1.25	13000	1577	1578	10L	5	8		
														1585	1587	20L		8		
1596.57	62.10	291.70	1441.7	521.0	418.2	-316.8	4.94	4.93	0.31	20000		1.25	13000	1587	1588	20L	5	8		
														1595	1597	10L		8		
1606.29	63.70	291.80	1446.1	528.9	421.4	-324.9	4.95	4.94	0.31	20000		1.25	13000	1597	1597	10L	5	8		
														1605	1606	10L		8		
1616.00	65.90	291.60	1450.2	536.9	424.7	-333.0	6.82	6.80	-0.62	20000		1.25	13000	1606	1608	10L	5	8		
														1615	1616	25L		8		
1625.71	68.80	290.70	1454.0	545.0	427.9	-341.4	9.32	8.96	-2.78	20000		1.25	13000	1616	1621	25L	5	8		
														1624	1626	30L		8		
1635.43	70.80	289.40	1457.3	553.2	431.0	-350.0	7.23	6.17	-4.01	20000		1.25	13000	1626	1629	30L	4	8		
														1634	1635	40L		8		
1645.14	73.10	288.70	1460.3	561.4	434.1	-358.7	7.40	7.11	-2.16	20000		1.25	13000	1635	1640	40L	4	8		
														1644	1645	40L		8		
1654.86	75.40	287.10	1463.0	569.7	436.9	-367.6	8.54	7.10	-4.94	20000		1.25	13000	1645	1649	40L	4	8		
														1653	1655	30L		8		
1666.08	77.80	285.70	1465.6	579.2	440.0	-378.1	7.38	6.42	-3.74	20000		1.25	13000	1655	1658	30L	4	8		

sperry-sun

DRILLING SERVICES

Survey and Drilling Parameters

Customer : Intragaz Inc.
Well Name : Intragaz St. Flavien #14
Rig : Ralex #1 (RKB 144.54m)

Field : St. Flavien (Lic #2000FA230)
Location : #14
Job # : CX-HZ-01166

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North Ref : True Declination : -17.23° VS Dir : 316.06° (from Wellhead)

WELLBORE SURVEY										DRILLING PARAMETERS										Comment
Measured Depth (m)	Incl Angle (deg)	Azi Dir (deg)	Vertical Depth (m)	Vertical Section (m)	Coordinates		DLS (°/30m)	Build Rate (°/30m)	Turn Rate (°/30m)	WOB (daN)	RPM	Flow Rate m³/min	Stand Pipe (kPa)	Orientation		Tool Face (deg)	ROP (m/hr)	BHA No. (#)		
					N/S (m)	E/W (m)								From (m)	To (m)					
1675.52	79.10	284.50	1467.5	587.1	442.4	-387.0	5.57	4.13	-3.81	14000	30	1.25	13100	1663	1666	45L		8		
1685.02	79.10	283.40	1469.3	595.0	444.7	-396.0	3.41	0.00	-3.47	7000	30	0.80	8300			45L	4	8		
1694.65	78.70	284.20	1471.1	603.0	446.9	-405.2	2.74	-1.25	2.49	7000	30	0.80	8300				6	9		
1704.31	79.30	283.80	1473.0	611.0	449.2	-414.4	2.23	1.86	-1.24	10000		0.80	8300	1702	1704	30L	5	9		
1713.80	79.20	283.60	1474.7	618.9	451.4	-423.5	0.70	-0.32	-0.63	7000	30	0.80	8300	1704	1705	30L	6	9		
1723.33	79.00	283.10	1476.5	626.8	453.6	-432.6	1.67	-0.63	-1.57	7000	30	0.80	8300				6	9		
1732.82	81.90	283.20	1478.1	634.6	455.7	-441.7	9.17	9.17	0.32	10000		0.80	8300	1726	1730	10L	4	9		
														1731	1733	10L		9		
1742.39	84.40	283.50	1479.2	642.6	457.9	-450.9	7.89	7.84	0.94	10000		0.80	8300	1733	1737	10L	4	9		
														1740	1742	10L		9		
1751.91	87.10	283.80	1480.0	650.7	460.1	-460.2	8.56	8.51	0.95	10000		0.80	8300	1742	1747	10L	4	9		
														1750	1752	HS		9		
1761.54	87.30	283.70	1480.4	658.8	462.4	-469.5	0.70	0.62	-0.31	7000	30	0.80	8300	1752	1754	HS	7	9		
1771.25	87.10	283.40	1480.9	667.0	464.7	-478.9	1.11	-0.62	-0.93	7000	30	0.80	8300				7	9		
1780.71	87.60	283.80	1481.3	674.9	466.9	-488.1	2.03	1.59	1.27	7000	30	0.80	9000	1779	1780	10L	7	9		
1790.27	88.20	283.10	1481.7	683.0	469.1	-497.4	2.89	1.88	-2.20	7000	30	0.80	9000	1788	1790	15L	10	9		
1799.99	88.90	282.40	1481.9	691.1	471.3	-506.9	3.05	2.16	-2.16	7000	30	0.80	9000	1798	1800	45L	10	9		
1809.71	89.80	281.10	1482.0	699.1	473.3	-516.4	4.88	2.78	-4.01	7000	30	0.80	9000	1807	1809	60L	10	9		
1819.18	90.40	280.20	1482.0	706.8	475.0	-525.7	3.43	1.90	-2.85	7000	30	0.80	9000	1817	1818	50L	10	9		
1828.91	91.00	278.90	1481.9	714.7	476.6	-535.3	4.41	1.85	-4.01	7000	30	0.80	9000	1827	1828	50L	10	9		
1838.43	92.00	277.60	1481.7	722.2	478.0	-544.7	5.17	3.15	-4.10	7000	30	0.80	9000				10	9		
1848.15	93.00	277.10	1481.2	729.8	479.2	-554.4	3.45	3.09	-1.54	7000	30	0.80	9000	1839	1841	40L	10	9		
1857.69	93.30	276.80	1480.7	737.2	480.4	-563.8	1.33	0.94	-0.94	7000	30	0.80	9000	1849	1850	20R	10	9		
1867.32	92.90	276.70	1480.2	744.6	481.5	-573.4	1.28	-1.25	-0.31	7000	30	0.80	9000				10	9		
1877.32	92.20	277.10	1479.7	752.3	482.7	-583.3	2.42	-2.10	1.20	7000	30	0.80	9800	1868	1869	130R	10	9		
1887.04	91.90	278.30	1479.4	760.0	484.0	-592.9	3.82	-0.93	3.70	10000		0.80	9500	1878	1880	110R	10	9		
														1887	1887	110R		9		
1896.51	91.60	277.30	1479.1	767.4	485.3	-602.3	3.31	-0.95	-3.17	7000	30	0.80	9800	1887	1888	110R	10	9		

sperry-sun

DRILLING SERVICES

Survey and Drilling Parameters

Customer : Intragaz Inc.
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Rig : Ralex #1 (RKB 144.54m)

Field : St. Flavien (Lic #2000FA230)
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Job # : CX-HZ-01166

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North Ref : True Declination : -17.23° VS Dir : 316.06° (from Wellhead)

WELLBORE SURVEY										DRILLING PARAMETERS									
Measured Depth (m)	Incl Angle (deg)	Azi Dir (deg)	Vertical Depth (m)	Vertical Section (m)	Coordinates N/S (m) E/W (m)		DLS (°/30m)	Build Rate (°/30m)	Turn Rate (°/30m)	WOB (daN)	RPM	Flow Rate m³/min	Stand Pipe (kPa)	Orientation From (m) To (m)		Tool Face (deg)	ROP (m/hr)	BHA No. (#)	Comment
1906.04	91.30	277.70	1478.9	774.8	486.6	-611.7	1.57	-0.94	1.26	7000	30	0.80	9800	1898	1899	140R	10	9	
1915.67	90.80	277.70	1478.7	782.4	487.8	-621.3	1.56	-1.56	0.00	7000	30	0.80	9800	1908	1909	130R	10	9	
1925.21	91.10	278.80	1478.5	789.9	489.2	-630.7	3.58	0.94	3.46	7000	30	0.80	9800	1917	1918	135R	10	9	
1934.75	91.50	278.80	1478.3	797.5	490.7	-640.1	1.26	1.26	0.00	7000	30	0.80	9800	1927	1928	45R	10	9	
1944.19	91.80	279.60	1478.0	805.1	492.2	-649.5	2.71	0.95	2.54	7000	30	0.80	9800	1937	1938	45R	10	9	
1953.91	91.80	279.00	1477.7	812.8	493.8	-659.0	1.85	0.00	-1.85	7000	30	0.80	9800				10	11	
1963.43	90.90	277.80	1477.5	820.4	495.1	-668.5	4.73	-2.84	-3.78	11000	25	0.80	10500	1954	1955	160L	15	11	
1973.17	90.50	277.10	1477.4	828.0	496.4	-678.1	2.48	-1.23	-2.16	11000	25	0.80	10500	1964	1966	160L	15	11	
1982.88	91.00	276.60	1477.3	835.5	497.6	-687.8	2.18	1.54	-1.54	11000	25	0.80	10500	1974	1975	160L	15	11	
1992.40	91.40	276.20	1477.1	842.8	498.6	-697.2	1.78	1.26	-1.26	11000	25	0.80	10500				15	11	
2002.02	89.80	275.60	1477.0	850.2	499.6	-706.8	5.33	-4.99	-1.87	11000	25	0.80	10500	1993	1995	160L	15	11	
2011.74	89.50	275.00	1477.0	857.6	500.5	-716.5	2.07	-0.93	-1.85	11000	25	0.80	10500	2003	2005	150L	15	11	
2021.44	88.50	273.90	1477.2	864.8	501.3	-726.1	4.60	-3.09	-3.40	11000	25	0.80	10500	2013	2014	LS	15	11	
2030.96	87.80	273.40	1477.5	871.8	501.9	-735.6	2.71	-2.21	-1.58	11000	25	0.80	10500	2022	2024	170L	15	11	
2040.59	86.90	273.00	1477.9	878.9	502.4	-745.2	3.07	-2.80	-1.25	11000	25	0.80	10500	2032	2034	160L	15	11	
2050.22	86.30	271.90	1478.5	885.8	502.8	-754.8	3.90	-1.87	-3.43	11000	25	0.80	10500	2042	2043	160L	15	11	
2059.71	86.30	271.70	1479.1	892.6	503.1	-764.3	0.63	0.00	-0.63	11000	25	0.85	11200	2051	2053	170R	12	11	
2069.21	86.70	271.00	1479.7	899.4	503.3	-773.8	2.54	1.26	-2.21	11000	25	0.85	11200				12	11	
2078.84	86.30	270.50	1480.3	906.1	503.5	-783.4	1.99	-1.25	-1.56	11000	25	0.85	11200	2070	2071	170R	12	11	
2088.53	85.80	270.20	1481.0	912.9	503.5	-793.1	1.80	-1.55	-0.93	11000	25	0.85	11200	2079	2080	LS	12	11	
2098.26	86.10	270.40	1481.7	919.6	503.6	-802.8	1.11	0.92	0.62	11000	25	0.85	11200	2089	2091	160R	12	11	
2107.90	86.80	270.40	1482.3	926.4	503.6	-812.4	2.18	2.18	0.00	11000	25	0.85	11200	2099	2099	160R	12	11	
2117.53	88.00	270.20	1482.7	933.1	503.7	-822.0	3.79	3.74	-0.62	11000	25	0.85	11200				12	11	
2127.16	88.20	269.80	1483.0	939.8	503.7	-831.6	1.39	0.62	-1.25	21000		0.85	11200	2127	2127	160L	6	11	
2136.88	87.80	269.80	1483.3	946.5	503.7	-841.3	1.23	-1.23	0.00	11000	25	0.85	11200	2127	2129	160L	12	11	
2146.54	87.50	269.90	1483.7	953.2	503.6	-851.0	0.98	-0.93	0.31	11000	25	0.85	11200	2137	2139	160R	12	11	
2156.17	87.20	269.40	1484.2	959.8	503.6	-860.6	1.82	-0.93	-1.56	11000	25	0.85	11200	2147	2149	LS	12	11	
2165.74	87.40	269.60	1484.6	966.4	503.5	-870.2	0.89	0.63	0.63	11000	25	0.85	11200	2157	2159	LS	12	11	
2175.36	88.60	269.90	1485.0	973.0	503.4	-879.8	3.86	3.74	0.94	11000	25	0.85	11200				12	11	

sperry-sun

DRILLING SERVICES

Survey and Drilling Parameters

Customer : Intragaz Inc.
Well Name : Intragaz St. Flavien #14
Rig : Ralex #1 (RKB 144.54m)

Field : St. Flavien (Lic #2000FA230)
Location : #14
Job # : CX-HZ-01166

Page : 8

North Ref : True Declination : -17.23° VS Dir : 316.06° (from Wellhead)

WELLBORE SURVEY										DRILLING PARAMETERS										Comment
Measured Depth (m)	Incl Angle (deg)	Azi Dir (deg)	Vertical Depth (m)	Vertical Section (m)	Coordinates		DLS (°/30m)	Build Rate (°/30m)	Turn Rate (°/30m)	WOB (daN)	RPM	Flow Rate m³/min	Stand Pipe (kPa)	Orientation		Tool Face (deg)	ROP (m/hr)	BHA No. (#)		
					N/S (m)	E/W (m)								From (m)	To (m)					
2184.99	89.60	270.40	1485.1	979.7	503.5	-889.4	3.48	3.12	1.56	11000	25	0.85	11200				12	11	Extrapolated to bit	
2194.72	90.20	268.90	1485.1	986.4	503.4	-899.1	4.98	1.85	-4.62	11000	25	0.85	11200	2186	2186	HS	12	11		
2204.36	91.00	269.70	1485.0	993.0	503.3	-908.8	3.52	2.49	2.49	11000	25	0.85	11200	2196	2197	160L	12	11		
2213.99	90.90	268.50	1484.9	999.6	503.1	-918.4	3.75	-0.31	-3.74	11000	25	0.85	11200	2205	2206	LS	15	11		
2223.57	90.90	267.70	1484.7	1006.0	502.8	-928.0	2.50	0.00	-2.51	11000	25	0.85	11200	2222	2224	170R	15	11		
2233.28	91.80	267.50	1484.5	1012.4	502.4	-937.7	2.85	2.78	-0.62	11000	25	0.85	11200				15	11		
2242.92	91.60	266.70	1484.2	1018.8	501.9	-947.3	2.57	-0.62	-2.49	11000	25	0.85	11200				15	11		
2252.58	90.10	266.20	1484.1	1025.0	501.3	-956.9	4.91	-4.66	-1.55	21000		0.85	11200	2243	2245	LS	8	11		
														2252	2253	LS		11		
2262.25	90.10	265.50	1484.1	1031.2	500.6	-966.6	2.17	0.00	-2.17	11000	25	0.85	11200	2253	2254	LS	15	11		
2271.96	91.00	265.40	1484.0	1037.4	499.9	-976.3	2.80	2.78	-0.31	11000	25	0.85	11200				15	11		
2281.67	90.40	265.20	1483.8	1043.5	499.1	-985.9	1.95	-1.85	-0.62	21000		0.85	11200	2281	2282	160R	8	11		
2291.20	89.70	265.00	1483.8	1049.5	498.3	-995.4	2.29	-2.20	-0.63	11000	25	0.85	11200	2282	2282	160R	15	11		
2300.82	88.80	264.70	1484.0	1055.5	497.4	-1005.0	2.96	-2.81	-0.94	11000	25	0.85	11200	2292	2293	170R	15	11		
2310.47	87.90	264.20	1484.2	1061.5	496.5	-1014.6	3.20	-2.80	-1.55	11000	25	0.85	11200				15	11		
2320.00	86.80	264.40	1484.7	1067.4	495.5	-1024.1	3.52	-3.46	0.63	11000	25	0.85	11200	2311	2312	160R	15	11		
2329.43	85.70	264.30	1485.3	1073.3	494.6	-1033.5	3.51	-3.50	-0.32	11000	25	0.85	11200	2321	2323	LS	15	11		
2339.08	85.30	264.80	1486.1	1079.2	493.7	-1043.0	1.99	-1.24	1.55	11000	25	0.85	11200	2330	2331	150R	15	11		
2348.80	84.70	264.50	1486.9	1085.3	492.8	-1052.7	2.07	-1.85	-0.93	11000	25	0.85	11200	2340	2341	160R	15	11		
2358.43	84.60	264.70	1487.8	1091.3	491.9	-1062.2	0.69	-0.31	0.62	11000	25	0.85	11200	2350	2351	160R	15	11		
2368.08	85.20	264.50	1488.7	1097.2	491.0	-1071.8	1.97	1.87	-0.62	11000	25	0.85	11200	2360	2361	10L	10	11		
2377.70	86.70	264.70	1489.3	1103.2	490.1	-1081.3	4.72	4.68	0.62	11000	25	0.85	11200				10	11		
2387.43	87.50	264.30	1489.8	1109.3	489.1	-1091.0	2.76	2.47	-1.23	11000	25	0.85	11200				10	11		
2397.00	87.00	263.60	1490.3	1115.1	488.1	-1100.5	2.69	-1.57	-2.19	11000	25	0.85	11200				10	11		
2414.00	87.00	263.60	1491.2	1125.5	486.2	-1117.4	0.00	0.00	0.00									11		



INTRAGAZ ST-FLAVIEN # 14

ANNEXE 4

**RAPPORTS GÉOLOGIQUES JOURNALIERS
DAILY GEOLOGICAL REPORTS**



INTRAGAZ St-FLAVIEN #14

RAPPORT GEOLOGIQUE JOURNALIER No. 1

Date : 10 octobre 2000
Jour de forage : 16
Profondeur à 7.00 : 1257 m
Profondeur hier : 1149 m
Progression : 108 m
Formation : Québec City
Taux d'avancement moyen : 10 min/m
Déviations : 33,1°, **azimut** 324° à 1236,4 m
Géologues : Yves Duchaine et Carlos Gonzalez B.

DESCRIPTION GÉOLOGIQUE

1200m à 1257 mètres : Calcaire argileux surtout avec shale calcaireux avec calcite de fracture.

INFORMATIONS GÉNÉRALES

Pas d'avancement rapide

Indices de gaz : 41% à 1221 m, 53% à 1230, background : 13%

Opération à 7.00 h : débiter les opérations pour la sortie de l'assemblage de forage conventionnel.

Remarque : les échantillons de 0 à 250 mètres seront décrits plus tard.



INTRAGAZ St-FLAVIEN #14

RAPPORT GEOLOGIQUE JOURNALIER No. 2

Date : 11 octobre 2000
Jour de forage : 17
Profondeur à 7.00 : 1289 m
Profondeur hier : 1257 m
Progression : 32 m
Formation : Québec City
Taux d'avancement moyen : 10 min/m
DC factor : à suivre
Déviations : 35,9°, azimut 322° à 1266 m
Géologues : Yves Duchaine et Carlos Gonzalez B.

DESCRIPTION GÉOLOGIQUE

1257 mètres à 1285 mètres: Calcaire argileux surtout avec shale calcaireux avec calcite de fracture.

INFORMATIONS GÉNÉRALES

Pas d'avancement rapide
Indices de gaz : Trip gas 51% à 1257 m, background : 3.5%.
Max connection gas : 6.8 % à 1287 m
Opération à 7.00 h : Continue drilling
Lectures gamma ray enregistrés à partir de 1236 m (le détecteur est 22,66 mètres au dessus du trépan)
Remarque : les échantillons de 0 à 250 mètres seront décrits plus tard.



INTRAGAZ St-FLAVIEN #14

RAPPORT GEOLOGIQUE JOURNALIER No. 3

Date : 12 octobre 2000
Jour de forage : 18
Profondeur à 7.00 : 1400 m
Profondeur hier : 1289 m
Progression : 111 m
Formation : Chazy
Taux d'avancement moyen : 11,1 min/m
DC factor : 67.4 à 7,00 hr
Déviations : 35,9°, **azimut** 310° à 1373 m
Géologues : Yves Duchaine et Carlos Gonzalez B.

DESCRIPTION GÉOLOGIQUE

1290 à 1310 mètres: Calcaire argileux surtout avec shale calcaireux avec calcite de fracture. (pyrite à 1310 m)

1315 à 1335 m : Calcaire brun foncé surtout devenant brun clair par endroit un peu de calcaire

1340 à 1370 m : Calcaire brun foncé devenant plus argileux et shale calcaireux foncé. Quelques débris de fossiles, calcite de fracture.

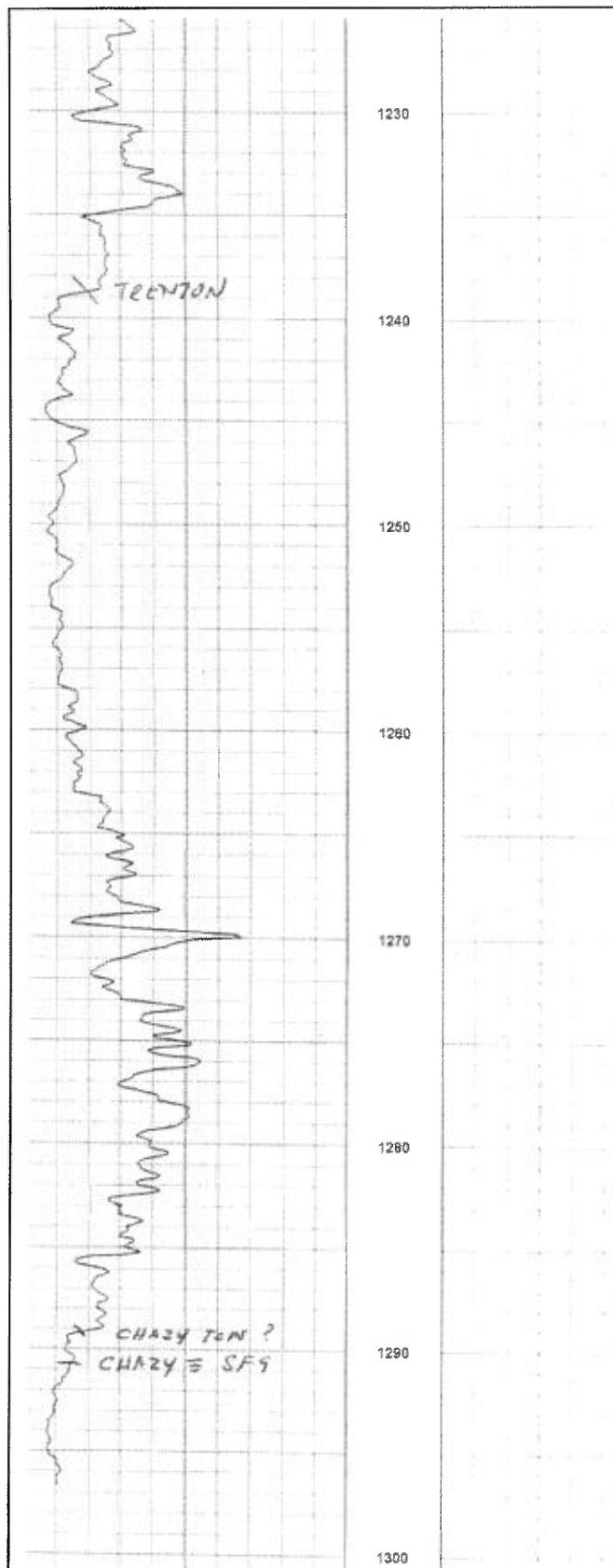
1375 à 1395m : Calcaire brun moyen avec quantité mineure de calcaire brun clair à blanchâtre.

INFORMATIONS GÉNÉRALES

Sommet du Trenton à 1309,5 m TMD ou 1238,8 m TVD/KB (prévu à 1247 m)
Sommet du Chazy à 1374 m TMD ou 1290,7 m TVD/KB (prévu à 1290 m)
lorsque nous le comparons au même pick sur le SF9. Le gamma ray montre un saut à 1289,2 m qui peut être interprété comme le sommet du Chazy.
Pas d'avancement rapide
Indices de gaz : 1355 à 1358 m : 69%
background : 1288 à 1350 : 8%, 1350 à 1400 : 25%

Opération à 7.00 h : forage dans le Chazy
Correction : le détecteur est 21,32 mètres au dessus du trépan.

Remarque : les échantillons de 0 à 250 mètres seront décrits plus tard.





RAPPORT GEOLOGIQUE JOURNALIER No. 4

Date : 13 octobre 2000
Jour de forage : 19
Profondeur à 7.00 : 1523 m
Profondeur hier : 1400 m
Progression : 123 m
Formation : Chazy
Taux d'avancement moyen : 9,8 min/m
DC factor : 60.6 à 7,00 hr
Déviations : 48,3, azimut 299° à 1499,37m
Géologues : Yves Duchaine et Carlos Gonzalez B.

DESCRIPTION GÉOLOGIQUE

1400 à 1510m : Calcaire brun moyen et calcaire brun clair à blanchâtre présence en trace de pyrite et de matière organique. Présence de calcaire argileux brun foncé en quantité mineure.

INFORMATIONS GÉNÉRALES

Zone de faille de chevauchement rencontré dans le Chazy entre 1410 et 1435 m TMD ou 1319 à 1340 m TVD. Ajout net d'environ 7 mètres sur l'épaisseur du Chazy : à confirmer plus tard dans la journée.

Pas d'avancement rapide
Indice de gaz : 1467 : 45%
background : 1400 to 1523 m : 14 à 21%
Opération à 7.00 hr : forage dans le Chazy

Remarques : les échantillons de 0 à 250 mètres ont été examinés. Le sommet du Québec City (contact Klippe de la Chaudière) a été déterminé à 175 m.



INTRAGAZ St-FLAVIEN #14

RAPPORT GEOLOGIQUE JOURNALIER No. 5

Date : 14 Octobre 2000
Jour de forage : 20
Profondeur à 7.00 : 1565 m
Profondeur hier : 1523 m
Progression : 42 m
Formation : Beek A
Taux d'avancement moyen : 13min/m
DC factor : 52 à 7,00 hr
Déviation : 52.4°, azimuth 293.9° à 1547 m
Géologues : Yves Duchaine et Carlos Gonzalez B.

DESCRIPTION GÉOLOGIQUE

1523 à 1540 m : Calcaire brun moyen et calcaire brun clair à blanchâtre présence en trace de pyrite et de matière organique. Présente de calcaire argileux brun foncé en quantité mineure.

1540 à 1555 m : Calcaire brun moyen et calcaire brun clair à blanchâtre et dolomie légèrement calcareuse à très calcareuse blanc crème augmentant en proportion vers le bas.

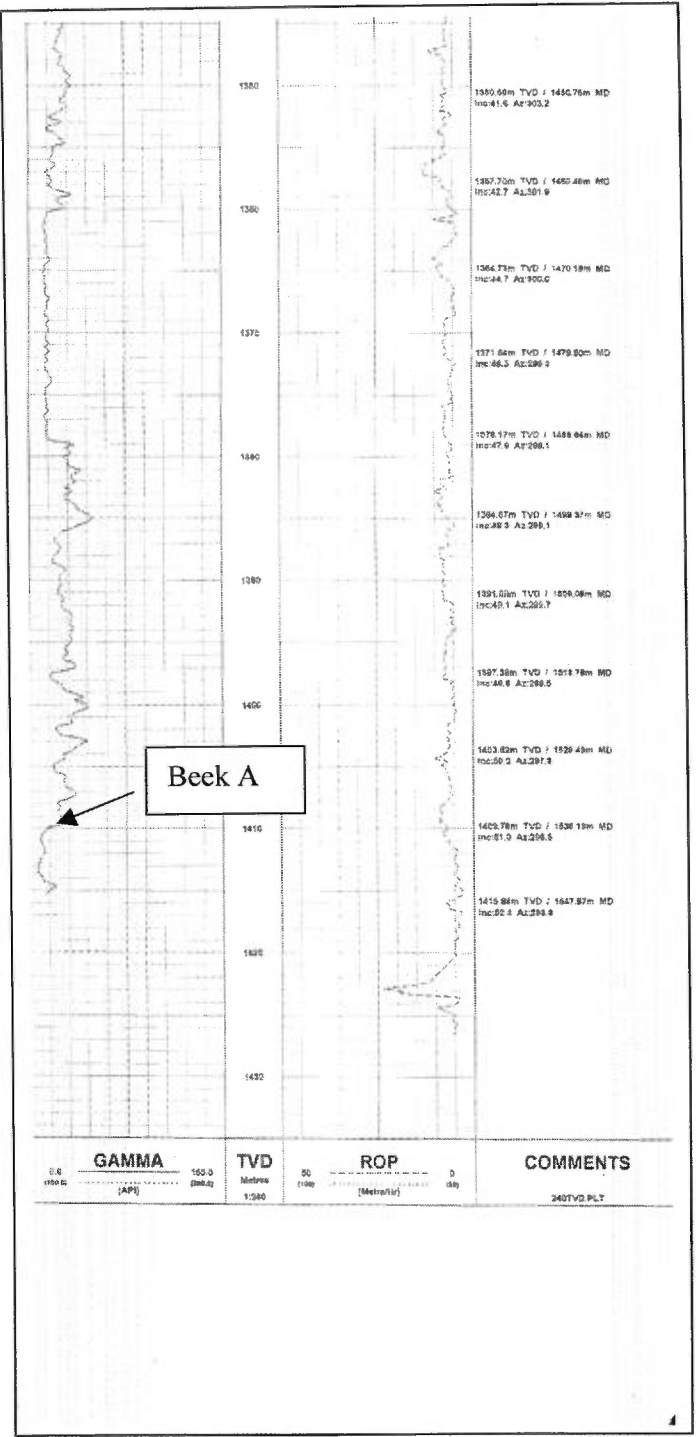
INFORMATIONS GÉNÉRALES

Sommet du Beekmantown A : 1409,8 m TVD, (1538,2 TMD) (1265,2 m) soit environ 7 mètres plus bas que prévu.

Pas d'avancement rapide
Indice de gaz : Trip gas 71 %
background : 1523 to 1565 m : 11 à 25%
Opération à 7.00 hr : forage dans le Beek A

Remarques :

Distance Bit – Gamma sensor : 19.39 m





INTRAGAZ St-FLAVIEN #14

RAPPORT GEOLOGIQUE JOURNALIER No. 6

Date : 15 Octobre 2000
Jour de forage : 21
Profondeur à 7.00 : 1659 m
Profondeur hier : 1565 m
Progression : 104 m
Formation : Beekmantown A
Taux d'avancement moyen : 12min/m
DC factor : 60,9 à 7,00 hr
Déviations : 70,8°, azimuth 289,4° à 1635,4 m
Géologues : Yves Duchaine et Carlos Gonzalez B.

DESCRIPTION GÉOLOGIQUE

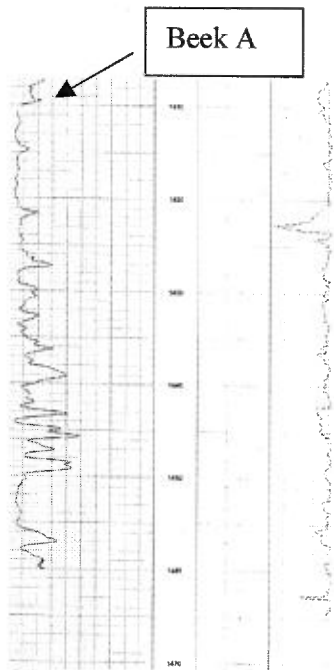
1565 m à 1659 m : Calcaire brun moyen et calcaire brun clair à blanchâtre et dolomie légèrement calcareuse à très calcareuse blanc crème. Proportion de siltstone augmentant vers la base (10%). Trace de grains de quartz.

INFORMATIONS GÉNÉRALES

Apparition d'une zone argileuse à 1457 m TVD ou 1634 n TMD. Présence possible d'une faille mineure qui résulterait en la perte de quelques mètres au niveau de la A. En conséquence, la zone B1 serait donc structuralement plus haute. Activité courante : calculer le rejet de la faille présumée.

Pas d'avancement rapide
Indice de gaz : 1622m 44%
background : 1565 to 1659 m : 15 à 21%
Opération à 7.00 hr : forage dans le Beekmantown A

Remarques :
Distance Bit – Gamma sensor : 19.39 m





INTRAGAZ St-FLAVIEN #14

RAPPORT GEOLOGIQUE JOURNALIER No. 7

Date : 16 Octobre 2000
Jour de forage : 22
Profondeur à 7.00 : 1677 m
Profondeur hier : 1659 m
Progression : 22 m
Formation : Beekmantown A
Taux d'avancement moyen : 12min/m
DC factor : 48,9 à 7,00 hr
Déviations : 75,4°, azimuth 289,1° à 1654,9 m
Géologues : Yves Duchaine et Carlos Gonzalez B.

DESCRIPTION GÉOLOGIQUE

1659m à 1677 m : Calcaire brun moyen et calcaire brun clair à blanchâtre et dolomie légèrement calcaireuse à très calcaireuse blanc crème en proportion égale (40-40). 20% de siltstone gris blanc verdâtre et trace de grains de quartz.

INFORMATIONS GÉNÉRALES

Il n'est pas évident que la présence d'une zone argileuse présente à 1457 m TVD ou 1634 m TMD serait due à une faille mineure qui résulterait en la perte de quelques mètres au niveau de la A. Elle pourrait être plutôt due à un changement de faciès local.

Pas d'avancement rapide
Indice de gaz : aucun
background : 1659 à 1677 m : décroissant de 22 à 8%
Opération à 7.00 hr : forage dans le Beekmantown A

Remarques :
Distance Bit – Gamma sensor : 19.39 m



INTRAGAZ St-FLAVIEN #14

RAPPORT GEOLOGIQUE JOURNALIER No. 8

Date : 21 Octobre 2000
Jour de forage : 27
Profondeur à 7.00 : 1683 m
Profondeur hier : 1677 m
Progression : 6 m
Formation : Beekmantown A
Taux d'avancement moyen : 20 min/m
DC factor : 62.4 à 7,00 hr
Déviations : 77,9°, **azimut** 288° à 1683 m (approximativement)
Géologues : Yves Duchaine et Carlos Gonzalez B.

DESCRIPTION GÉOLOGIQUE

1680 m : Dolomie légèrement calcaireuse à très calcaireuse, blanche à beige (30%), grès fin calcaireux, gris vert friable silteux (50%) , 10% de siltstone gris blanc verdâtre et 10% shale gris foncé. (contamination possible de grès)

INFORMATIONS GÉNÉRALES

La présence d'une zone argileuse présente à 1457 m TVD ou 1634 m TMD serait plutôt due à un changement de faciès local. À 1683 mètres la zone B1 serait située à 18 mètres à la vertical sous ce point

Pas d'avancement rapide
Indice de gaz : aucun
background : 1677 à 1683 m : 14%
Opération à 7.00 hr : forage dans le Beekmantown après la mise en place et cimentation du coffrage à 1677 m

Remarques :
Distance Bit – Gamma sensor : 18,84 m



INTRAGAZ St-FLAVIEN #14

RAPPORT GEOLOGIQUE JOURNALIER No. 8

Date : 21 Octobre 2000
Jour de forage : 27
Profondeur à 7.00 : 1683 m
Profondeur hier : 1677 m
Progression : 6 m
Formation : Beekmantown A
Taux d'avancement moyen : 20 min/m
DC factor : 62.4 à 7,00 hr
Déviations : 77,9°, azimuth 288° à 1683 m (approximativement)
Géologues : Yves Duchaine et Carlos Gonzalez B.

DESCRIPTION GÉOLOGIQUE

1680 m : Dolomie légèrement calcaireuse à très calcaireuse, blanche à beige (30%), grès fin calcaireux, gris vert friable silsteux (50%), 10% de siltstone gris blanc verdâtre et 10% shale gris foncé. (contamination possible de grès)

INFORMATIONS GÉNÉRALES

La présence d'une zone argileuse présente à 1457 m TVD ou 1634 m TMD serait plutôt due à un changement de faciès local. À 1683 mètres la zone B1 serait située à 18 mètres à la vertical sous ce point

Pas d'avancement rapide
Indice de gaz : aucun
background : 1677 à 1683 m : 14%
Opération à 7.00 hr : forage dans le Beekmantown après la mise en place et cimentation du coffrage à 1677 m

Remarques :
Distance Bit – Gamma sensor : 18,84 m



INTRAGAZ St-FLAVIEN #14

RAPPORT GEOLOGIQUE JOURNALIER No. 9

Date : 22 Octobre 2000
Jour de forage : 28
Profondeur à 7.00 : 1752 m
Profondeur hier : 1683 m
Progression : 69 m
Formation : Beekmantown B
Taux d'avancement moyen : 17 min/m
DC factor : 52,6 à 7,00 hr
Déviation : 87,1°, azimuth 283,8° à 1752 m
Géologues : Yves Duchaine et Carlos Gonzalez B.

DESCRIPTION GÉOLOGIQUE

1685 à 1735 m : Calcaire argileux brunâtre (60%), 20% de siltstone gris blanc verdâtre 10% calcaire blanc à beige (30%) et 10% shale gris foncé.

1735 m à 1752 m, 30 à 40 % de dolomie gris blanche, 60 à 70 % de calcaire brunâtre.

INFORMATIONS GÉNÉRALES

Toit du Beekmantown B à 1731 TMD ou -1333 m (1478,6 m)

Avancement rapide de 1718 à 1723 m a avec augmentation de gaz de 11% à 33%

Background : 11%

Opération à 7.00 hr : forage dans le Beekmantown



INTRAGAZ St-FLAVIEN #14

RAPPORT GEOLOGIQUE JOURNALIER No. 10

Date : 23 Octobre 2000
Jour de forage : 29
Profondeur à 7.00 : 1827 m
Profondeur hier : 1752 m
Progression : 75 m
Formation : Beekmantown B
Taux d'avancement moyen : 12 min/m
DC factor : 53,6 à 7,00 hr
Déviations : 89,8°, azimut 281,1 à 1809,7 m
Géologues : Yves Duchaine et Carlos Gonzalez B.

DESCRIPTION GÉOLOGIQUE

1752,5 à 1767,5 m : Dolomie gris blanche

1767,5 à 1790 m : 60% calcaire blanc (et clacite ?) et 40% dolomite gris blanche

1792,5 à 1825 m : 100% dolomite gris blanche

INFORMATIONS GÉNÉRALES

Gaz à la surface à 1796 m . Accroissement de gaz passant de 11% à 100% de 1785 m à 1797 m. Production en surface de 5mmcf/d approximativement.

Opération à 7.00 hr : forage dans le Beekmantown B1



INTRAGAZ St-FLAVIEN #14

RAPPORT GEOLOGIQUE JOURNALIER No. 11

Date : 24 Octobre 2000
Jour de forage : 30
Profondeur à 7.00 : 1951 m
Profondeur hier : 1827 m
Progression : 124 m
Formation : Beekmantown B
Taux d'avancement moyen : 10 min/m
DC factor : 60,6 à 7,00 hr
Déviations : 91,5°, **azimut** 278,8 à 1934,8 m
Géologues : Yves Duchaine et Carlos Gonzalez B.

DESCRIPTION GÉOLOGIQUE

1825 à 1951 m : 90-100% dolomite gris blanche avec accroissement de calcaire brunâtre entre 1862 à 1887 et 1900 à 1951 (entre 10 et 40% maximum)

INFORMATIONS GÉNÉRALES

Gaz à la surface avec un débit de 4 mmcf/d à 7 mmcf/d au cours du forage avec « trip gas » dépassant les 10 mmcf/d. Fin du forage à 1951 m (minuit) pour changer le trépan. Débit à la surface s'accroissant jusqu'à 20 mmcf/d lors de la sortie des tiges.

Forage en général très rapide en particulier dans les zones à 90% et plus de dolomie. Le ROP dépasse généralement les 10 m/h et dépasse les 20 m/h à 1839, 1846-54, 1856, 1895, 1898, 1900-08, 1914-16, 1925-30, 1945-47. À noter que le détecteur de gaz indique 100% de gaz depuis 1798 m

Opération à 7.00 hr : sortie des tiges pour changer le trépan (POOH).



INTRAGAZ St-FLAVIEN #14

RAPPORT GEOLOGIQUE JOURNALIER

Date : 25 octobre au 10 novembre 2000
Jour de forage : 31 au 10 novembre 2000
Profondeur à 7.00 : 1951 m
Profondeur hier : 1951 m
Progression : 0 m
Formation : Beekmantown B
Taux d'avancement moyen : nil
DC factor : nil
Déviation : 91,5 °, **azimut** 278,8 à 1934,8 m
Géologues : Yves Duchaine et Carlos Gonzalez B.

INFORMATIONS GÉNÉRALES

Dû à la productivité élevée du puits et les conditions « underbalanced » un équipement spécial a été requis pour sortir l'assemblage du puits afin de changer le trépan. Cette opération a nécessité plusieurs jours d'opération et aucun rapport géologique journalier n'est disponible durant cette période.



INTRAGAZ St-FLAVIEN #14

RAPPORT GEOLOGIQUE JOURNALIER No. 12

Date : 11 novembre 2000
Jour de forage : 48
Profondeur à 7.00 : 1965 m
Profondeur hier : 1951 m
Progression : 14 m
Formation : Beekmantown B
Taux d'avancement moyen : 4 min/m
DC factor : 68 à 7,00 hr
Déviation : 90,9°, **azimut** 278° à 1963,4 m
Géologues : Yves Duchaine et Carlos Gonzalez B.

DESCRIPTION GÉOLOGIQUE

1951 à 1965 : 80 à 90% dolomie gris blanche avec 10 à 20% de calcaire légèrement brunâtre. Trace de porosité intercrystalline dans les dolomies.

INFORMATIONS GÉNÉRALES

Gaz à la surface avec un débit de 7 mmcf/d à 8 mmcf/d au cours du forage.
Début du forage à 1951 m après 18 jours d'arrêt dû aux problèmes reliés à la sortie des tiges en condition « underbalanced » avec débit de gaz élevé.
Forage plus raide entre 1960 et 1964 : 3 min/m .

Opération à 7.00 hr : forage



INTRAGAZ St-FLAVIEN #14

RAPPORT GEOLOGIQUE JOURNALIER No. 13

Date : 12 novembre 2000
Jour de forage : 49
Profondeur à 7.00 : 2115 m
Profondeur hier : 1965 m
Progression : 150 m
Formation : Beekmantown B
Taux d'avancement moyen : 8 min/m
DC factor : 64 à 7,00 hr
Déviations : 86,8°, **azimut** 270° à 2107,9 m
Géologues : Yves Duchaine et Carlos Gonzalez B.

DESCRIPTION GÉOLOGIQUE

1951 à 2087,5m : Dolomie gris blanche peu calcareuse. Entre 2090 et 2115m présence de dolomie blanchâtre plus argileuse. Trace de porosité intercrystalline dans les à plusieurs niveaux entre 2000 et 2060 m.

INFORMATIONS GÉNÉRALES

Gaz à la surface avec un débit jusqu'à 16,5 mmcf/d.

Dans la zones de dolomie blanche avec possibilité de porosité intercrystalline, plusieurs zones d'avancement rapide en particulier entre 1995 et 2055 m. Les zones de dolomies argileuses se reflètent sur le gamma ray

Opération à 7.00 hr : forage



INTRAGAZ St-FLAVIEN #14

RAPPORT GEOLOGIQUE JOURNALIER No. 14

Date : 13 novembre 2000
Jour de forage : 50
Profondeur à 7.00 : 2260 m
Profondeur hier : 2115 m
Progression : 145 m
Formation : Beekmantown B
Taux d'avancement moyen : 6 min/m
DC factor : 58,4 à 7,00 hr
Déviation : 90,1° azimuth 266,2° à 2252,6 m
Géologues : Yves Duchaine et Carlos Gonzalez B.

DESCRIPTION GÉOLOGIQUE

2115 à 2200 m : Dolomie blanche légèrement grisâtre, argileuse et dolomie calcaireuse. De 2165 à 200 présence de calcaire dolomitique en faible quantité (5%).
De 2200 à 2260 : Dolomie blanche peu à pas calcaireuse et un peu de calcaire blanc (5%). Présence de porosité inter cristalline à 2215 et 2237 m.

INFORMATIONS GÉNÉRALES

Gaz à la surface avec un débit dépassant les 20 mmcf/d.

De 2196 à 2260 m, plusieurs zones à taux d'avancement rapide sous les 4 min/m si l'on compare avec un taux dépassant généralement les 6 min/m dans les zones précédentes.

Opération à 7.00 hr : forage



INTRAGAZ St-FLAVIEN #14

RAPPORT GEOLOGIQUE JOURNALIER No. 15

Date : 14 novembre 2000
Jour de forage : 51
Profondeur à 7.00 : 2295 m
Profondeur hier : 2260 m
Progression : 35 m
Formation : Beekmantown B
Taux d'avancement moyen : 3 min/m
DC factor : 53,3 à 7,00 hr
Déviation : 89,7° azimuth 265° à 2291,2 m
Géologues : Yves Duchaine et Carlos Gonzalez B.

DESCRIPTION GÉOLOGIQUE

2260 à 2295 m : Dolomie blanche peu à pas calcareuse et un peu de calcaire blanc (5%). Présence de porosité inter cristalline entre 2285 et 2290 m.

INFORMATIONS GÉNÉRALES

Gaz à la surface avec un débit dépassant les 13 mmcf/d.

Taux d'avancement élevé sur toute la zone.

Opération à 7.00 hr : forage (après avoir modifier une ligne de gaz de NorthLand)



INTRAGAZ St-FLAVIEN #14

RAPPORT GEOLOGIQUE JOURNALIER No. 16

Date : 15 novembre 2000
Jour de forage : 52
Profondeur à 7.00 : 2414 m (**PROFONDEUR TOTALE**)
Profondeur hier : 2295 m
Progression : 119 m
Formation : Beekmantown B
Taux d'avancement moyen : 8 min/m
DC factor : 43,3 à 7,00 hr
Déviation : 87,0 azimuth 264 ° à 2397 m
Géologues : Yves Duchaine et Carlos Gonzalez B.

DESCRIPTION GÉOLOGIQUE

De 2295,0 à 2342,5 m : Dolomie blanche peu à pas calcaireuse et un peu de calcaire blanc (10%). De 2345,0 à 2372,5 m : Dolomie blanche peu à pas calcaireuse et calcaire blanc à grisâtre (jusqu'à 50%). De 2372,5 à 2392,5 : dolomie blanche peu calcaireuse avec possibilité de porosité inter cristalline et un peu de calcaire.
De 2395 à 2414 m : dolomie blanche peu calcaireuse , aucune porosité visible.

INFORMATIONS GÉNÉRALES

Gaz à la surface avec un débit entre 5 et 6 mmcf/d. Le débit a été volontairement diminué en augmentant la pression de fond tout en maintenant les conditions « underbalanced ».

Quelques zones d'avancement rapide entre 2295 et 2302 m (6 min/m) et surtout entre 2371 et 2393m (4 à 5 min/m). La dernière portion du puits (entre 2393 et 2414m), le forage fut très lent (12 min/m).

Opération à 7.00 hr : fin du forage



INTRAGAZ ST-FLAVIEN # 14

ANNEXE 5

**DESCRIPTION GÉOLOGIQUE
GEOLOGICAL DESCRIPTION**

INTRAGAZ St-Flavien #14

Description des échantillons

Sample description

Par/By

Carlos Bedoya Gonzales (Datalog)

et/and

Yves Duchaine

Depth (m)	Description
15 m	40% Volc Breccia: Gr, w/ varic frags, sbblky, v hd 20 % Schist :Gr, v hd, banded w/ wh strks 40 % Sil Mdst-Sh: Gr, brn, v hd, blk, brkn frags, loc banded
15-20	40% Volc Breccia: Gr, w/ varic frags, sbblky, v hd 20 % Schist : gr, v hd, banded w/ wh calc strks 40 % Sil Mdst-Sh: gr, brn, v hd, blk, brkn frags, loc banded
20-25	20% Volc Breccia: Gr, w/ varic frags, sbblky, v hd 40 % Schist : gr, v hd, banded w/ wh calc strks 40 % Sil Mdst-Sh: gr, brn, v hd, blk, brkn frags, loc banded
25-30	Sil Sh : Dk brn, m gr, sil, v hd, blk, brkn frags, loc banded, conch fract
30-35	40% Sil Sh : Dk brn, blk/brn, fiss, v hd, sil. 30 % Schist : gr, v hd, banded w/ wh calc strks 30% Volc Breccia: Gr, w/ varic frags, sbblky, v hd
35-40	40% Sil Sh : Dk brn, blk/brn, fiss, v hd, sil. 30 % Schist : gr, v hd, banded w/ wh calc strks 30% Volc Breccia: Gr, w/ varic frags, sbblky, v hd
40-45	40% Sil Sh : Dk brn, blk/brn, fiss, v hd, sil. 30 % Schist : gr, v hd, banded w/ wh calc strks 30% Volc Breccia: Gr, w/ varic frags, sbblky, v hd
45-50	40% Sil Sh : Dk brn, blk/brn, fiss, v hd, sil. 30 % Schist : gr, v hd, banded w/ wh calc strks 30% Volc Breccia: Gr, w/ varic frags, sbblky, v hd
50-55	Sil Mdst: Gr, brn, v hd, sbblky-blky
55-60	Sil Mdst: Gr, brn, v hd, sbblky-blky

Depth (m)	Description
60-65	Sil Mdst: Gr, brn, v hd, sbblky-blky
65-70	80 % Volc Breccia: Gr, w/ varic frags, sbblky, v hd 20% Sil Mdst: Gr, brn, v hd, sbblky-blky
70-75	80 % Volc Breccia: Gr, w/ varic frags, sbblky, v hd 20% Sil Mdst: Gr, brn, v hd, sbblky-blky
75-80	70 % Volc Breccia: Gr, w/ varic frags, sbblky, v hd 30% Sil Mdst: Gr, brn, v hd, sbblky-blky
80-85	100% Sil Mdst: Gr, brn, v hd, sbblky-blky
85-90	70 % Volc Breccia: Gr, w/ varic frags, sbblky, v hd 30% Sil Mdst: Gr, brn, v hd, sbblky-blky
90-95	70 % Volc Breccia: Gr, w/ varic frags, sbblky, v hd 30% Sil Mdst: Gr, brn, v hd, sbblky-blky
95-100	80 % Volc Breccia: Gr, w/ varic frags, sbblky, v hd 20% Sil Mdst: Gr, brn, v hd, sbblky-blky
100-105	70 % Volc Breccia: Gr, w/ varic frags, sbblky, v hd 30% Sil Mdst: Gr, brn, v hd, sbblky-blky
105-110	40% Sil Sh : Dk brn, blk/brn, fiss, v hd, sil. 10 % Schist : gr, v hd, banded w/ wh calc strks 50% Volc Breccia: Gr, w/ varic frags, sbblky, v hd
110-115	70 % Volc Breccia: Gr, w/ varic frags, sbblky, v hd 30% Sil Mdst: Gr, brn, v hd, sbblky-blky.
115-120	70 % Volc Breccia: Gr, w/ varic frags, sbblky, v hd 30% Sil Mdst: Gr, brn, v hd, sbblky-blky.
120-125	80 % Volc Breccia: Gr, w/ varic frags, sbblky, v hd 20% Sil Mdst: Gr, brn, v hd, sbblky-blky
125-130	100% Volc Breccia: Gr, w/ varic frags, sbblky, v hd
130-135	50 % Volc Breccia: Gr, w/ varic frags, sbblky, v hd 50% Sil Mdst: Rd/brn, v hd, sbblky-blky.
135-140	50 % Volc Breccia: Gr, w/ varic frags, sbblky, v hd 50% Sil Mdst: Rd/brn, v hd, sbblky-blky.
140-145	50 % Volc Breccia: Gr, w/ varic frags, sbblky, v hd 50% Sil Mdst: Rd/brn, v hd, sbblky-blky.

Depth (m)	Description
145-150	10% Sil Mdst : Dk brn, blk/brn, fiss, v hd, sil. Loc w/ calcite veins 50 % Schist : Gr, v hd, banded w/ wh calc strks 40% Volc Breccia: Gr, w/ varic frags, sbblky, v hd
150-155	10% Sil Mdst : Dk brn, blk/brn, fiss, v hd, sil. Loc w/ calcite veins 50 % Schist : Gr, v hd, banded w/ wh calc strks 40% Volc Breccia: Gr, w/ varic frags, sbblky, v hd
155-160	50% Sil Mdst : Dk brn, blk/brn, fiss, v hd, sil. Loc w/ calcite veins 50% Volc Breccia: Gr, w/ varic frags, sbblky, v hd
160-165	50% Sil Mdst : Dk brn, blk/brn, fiss, v hd, sil. Loc w/ calcite veins 50% Volc Breccia: Gr, w/ varic frags, sbblky, v hd
165-170	50% Sil Mdst : Dk brn, blk/brn, fiss, v hd, sil. Loc w/ calcite veins 30% Volc Breccia: Gr, w/ varic frags, sbblky, v hd 20% Sil Sh : Dk brn, blk/brn, fiss, v hd, sil.
170-175	20% LMST: Brn/blk, mod hd, sbplty-sbplty 50% Sil Mdst : Dk brn, blk/brn, fiss, v hd, sil. Loc w/ calcite veins 30% Volc Breccia: Gr, w/ varic frags, sbblky, v hd
175-180	SH: V dk brn, sbfiss-fiss, mod calc, sbplty, occ banded w/gr/gy.
180-185	SH: V dk brn, sbfiss-fiss, mod calc, sbplty, occ banded w/gr/gy, loc mcpyr.
185-190	SH: V dk brn, sbfiss-fiss, mod calc, sbplty, occ banded w/gr/gy, loc mcpyr.
190-195	SH: V dk brn, sbfiss-fiss, mod calc, sbplty, occ banded w/gr/gy, loc mcpyr.
195-200	SH: V dk brn, sbfiss-fiss, mod calc, sbplty, occ banded w/gr/gy, loc mcpyr.
200-205	SH: v dk

Depth (m)	Description
1195-1200	SHLY LMST : Brn/ blk, blk/gy, mod consol, sbplty- sbfiss, occ bec calc sh (30%), occ w/ calcite veins (wh) and Lmst veins and inclusions (v lt brn).
1200-1205	SHLY LMST : Brn/ blk, blk/gy, mod consol, sbplty- sbfiss, occ bec calc sh (30%), occ w/ calcite veins (wh) and Lmst veins and inclusions (v lt brn).
1205-1210	SHLY LMST : Blk, /gy/ blk, mod consol, sbplty- sbfiss, occ bec calc sh (30%), occ w/ calcite veins (wh) and Lmst veins and inclusions (v lt brn). TR : Slickensides
1210-1215	SHLY LMST : Blk/gy, blk, mod consol-mod hd, sbplty- sbfiss, occ bec calc sh (30%), occ w/ calcite veins (wh) and Lmst veins and inclusions (v lt brn).
1215-1220	SHLY LMST : Blk/gy, blk, mod consol-mod hd, sbplty- sbfiss, occ bec calc sh (30%), occ w/ calcite veins (wh) and Lmst veins and inclusions (v lt brn).
1220-1225	SHLY LMST : Blk/gy, blk, mod consol-mod hd, sbplty- sbfiss, occ bec calc sh (30%), occ w/ calcite veins (wh) and Lmst veins and inclusions (v lt brn). TR : Slickensides
1225-1230	SHLY LMST : Blk, gy/blk, mod consol-mod hd, sbplty- sbfiss, occ bec calc sh (30%), occ w/ calcite veins (wh) and Lmst veins and inclusions (v lt brn). TR : Slickensides
1230-1235	SHLY LMST : Blk, gy/blk, mod consol-mod hd, sbplty- sbfiss, occ bec calc sh (30%), occ w/ calcite veins (wh) and Lmst veins and inclusions (v lt brn). TR : Slickensides
1235-1240	SHLY LMST : Blk, gy/blk, mod consol-mod hd, sbplty- sbfiss, occ bec calc sh (30%), occ w/ calcite veins (wh) and Lmst veins and inclusions (v lt brn).
1240-1245	SHLY LMST : Blk, gy/blk, mod consol-mod hd, sbplty- sbfiss, occ bec calc sh (30%), occ w/ calcite veins (wh) and Lmst veins and inclusions (v lt brn).

Depth (m)	Description
1245-1250	SHLY LMST : Blk, gy/blk, mod consol-mod hd, sbplty- sbfiss, occ bec calc sh (30%), occ w/ calcite veins (wh) and Lmst veins and inclusions (v lt brn).
1257 (spot)	SHLY LMST : Blk, gy/blk, mod consol-mod hd, sbplty- sbfiss, occ bec calc sh (30%), occ w/ calcite veins (wh) and Lmst veins and inclusions (v lt brn).
1255-1260	SHLY LMST : Blk, gy/blk, mod consol-mod hd, sbplty- sbfiss, occ bec calc sh (30%), occ w/ calcite veins (wh) and Lmst veins and inclusions (v lt brn).
1260-1265	SHLY LMST: Blk, gy/blk, brn/blk, mod hd to hd, sbplty-sbfiss, occ bec calc shle (30%), occ w/ calcite veins, occ mcpyr. TR: Slickensides
1265-1270	SHLY LMST: Blk, gy/blk, brn/blk, mod hd to hd, sbplty-sbfiss, occ bec calc shle (30%), occ w/ calcite veins, occ mcpyr. TR: Slickensides
1270-1275	SHLY LMST: Blk, gy/blk, brn/blk, mod hd to hd, sbplty-sbfiss, occ bec calc shle (30%), occ w/ calcite veins, occ mcpyr. TR: Slickensides
1275-1280	SHLY LMST: Blk, gy/blk, brn/blk, mod hd to hd, sbplty-sbfiss, occ bec calc shle (30%), occ w/ calcite veins, occ mcpyr. TR: Slickensides
1280-1285	SHLY LMST: Brn/blk to blk, mnr m lt brn (LMST), mod hd, sbplty-sbfiss, loc sbelong, occ bec calc sh (30%), occ w/calcite veins, loc mcpyr.
1285-1290	SHLY LMST: Brn/blk to blk, mnr m lt brn (LMST), mod hd, sbplty-sbfiss, loc sbelong, occ bec calc sh (30%), occ w/calcite veins, loc mcpyr.
1290-1295	SHLY LMST: Brn/blk to blk, mnr m lt brn (LMST), mod hd, sbplty-sbfiss, loc sbelong, occ bec calc sh (30%), occ w/calcite veins, loc mcpyr.
1295-1300	SHLY LMST: Brn/blk to blk, mnr m lt brn (LMST), mod hd, sbplty-sbfiss, loc sbelong, occ bec calc sh (30%), occ w/calcite veins, loc mcpyr.
1300-1305	SHLY LMST: Brn/blk to blk, mnr m lt brn (LMST), mod hd, sbplty-sbfiss, loc sbelong, occ bec calc sh (30%), occ w/calcite veins, loc mcpyr. TR: Fossils in LMST

Depth (m)	Description
1305-1310	SHLY LMST: Brn/blk to blk, mn'r m lt brn (LMST), mod hd, sbplty-sbfiss, loc sbelong, occ bec calc sh (30%), occ w/calcite veins, loc mcpyr. TR: Fossils in LMST
1310-1315	LMST: Brn/blk to blk, mn'r m lt brn, mod hd, sbplty-sbfiss, loc sbelong, occ bec calc sh (30%), occ w/calcite veins, loc mcpyr. TR: Fossils
1315-1320	LMST: Brn/blk to blk, mn'r m lt brn, mod hd, sbplty-sbfiss, loc sbelong, occ bec calc sh (30%), occ w/calcite veins, loc mcpyr. TR: Fossils
1320-1325	LMST: Brn/blk, dk brn, loc m lt brn, loc sbfiss, loc sbelong & blk, loc wh and blk (shly lmst)
1325-1330	LMST: Brn/blk, dk brn, loc m lt brn, loc sbfiss, loc sbelong & blk, loc wh and blk (shly lmst)
1330-1335	LMST: Brn/blk, dk brn, loc m lt brn, v hd, loc sbfiss, loc sbelong & blk, loc wh and blk (shly lmst)
1335-1340.1	LMST: Brn/blk, dk brn, loc m lt brn, loc wh/brn & v lt brn, v hd, loc sbfiss & sbelong & blk, occ shly lmst
1340-1345	LMST: Brn/blk, dk brn, loc m lt brn, loc wh/brn & v lt brn, v hd, loc sbfiss & sbelong & blk, occ shly lmst.
1345-1350	LMST: Brn/blk, dk brn, loc m lt brn, loc wh/brn & v lt brn, v hd, loc sbfiss & sbelong & blk, occ shly lmst
1350-1355	LMST: Brn/blk, blk, v dk brn, loc m lt brn, loc wh/brn & v lt brn, v hd, loc sbfiss & sbelong & blk, occ shly lmst. Occ w/ fossils. Loc w/ calcite filling fractures.
1355-1360	LMST: Brn/blk - blk, v dk brn, loc m lt brn, loc wh/brn, v hd, loc sbfiss & sbelong & blk, occ shly lmst. Occ w/ fossils. Loc w/ calcite filling fractures
1360-1365	LMST: Brn/blk, v dk brn, loc m-lt brn, loc wh, v hd, sbplty & sbelong, loc bec calc sh (30%), occ w/ calcite veins, loc mcpyr.
1365-1370	LMST: Brn/blk, v dk brn, loc m-lt brn, loc wh, v hd, sbplty & sbelong, loc bec calc sh (30%), occ w/ calcite veins, loc mcpyr.
1370-1375	LMST: Brn/blk, v dk brn, loc m-lt brn, loc wh, v hd, sbplty & sbelong, loc bec calc sh (30%), occ w/ calcite veins, loc mcpyr.

Depth (m)	Description
1375-1380	LMST: Brn/blk, v dk brn, loc m-lt brn, loc wh, v hd, sbplty & sbelong, loc bec calc sh (30%), occ w/ calcite veins, loc mcpyr.
1380-1385	LMST: M-m lt brn, m lt brn/gy, mnw wh/ brn, sh, v hd- mod consol, sbblky-sbplty& sbelong, loc bec calc sh (30%), occ w/ calcite veins, loc mcpyr.
1385-1390	LMST: M-m lt brn, m lt brn/gy, mnw wh/ brn, sh, v hd- mod consol, sbblky-sbplty& sbelong, loc bec calc sh (30%), occ w/ calcite veins, loc mcpyr.
1390-1395	LMST: M-m lt brn, m lt brn/gy, mnw wh/ brn, sh, v hd- mod consol, sbblky-sbplty& sbelong, loc bec calc sh (30%), occ w/ calcite veins, loc mcpyr.
1395-1400	LMST: Dk brn, brn/blk, m brn/gy, loc lt brn, occ wh/brn, wh/gy, v hd- occ mod consol, sbblky-loc sbplty, loc shly lmst (blk).
1400-1405	LMST: Dk brn, brn/blk, m brn/gy, loc lt brn, occ wh/brn, wh/gy, v hd- occ mod consol, sbblky-loc sbplty, loc shly lmst (blk).
1405-1410	LMST: Dk brn, brn/blk, m brn/gy, loc lt brn, occ wh/brn, wh/gy, v hd- occ mod consol, sbblky-loc sbplty, loc shly lmst (blk).
1410-1420	LMST: Dk brn, brn/blk, m brn/gy, loc lt brn, occ wh/brn, wh/gy, v hd- occ mod consol, sbblky-loc sbplty, loc shly lmst (blk).
1420-1425	LMST: Dk brn, brn/blk, m brn/gy, loc lt brn, occ wh/brn, wh/gy, v hd- occ mod consol, sbblky-loc sbplty, loc shly lmst (blk).
1425-1430	LMST: Dk brn, brn/blk, m brn/gy, loc lt brn, occ wh/brn, wh/gy, v hd- occ mod consol, sbblky-loc sbplty, loc shly lmst (blk).
1430-1435	LMST: M br/gy, dk brn, br/blk, loc lt brn, occ wh/brn, wh/gy, v hd, occ mod consol, sbblky-loc sbplty, loc shly lmst (blk).
1435-1440	SHLY LMST (60%): Blk, dk brn/blk, loc m brn & wh/brn, mod consol, sbplty-sbblky. LMST (40%): M br/gy, dk brn, br/blk, loc lt brn, occ wh/brn, wh/gy, v hd, occ mod consol, sbblky
1440-1445	LMST: Dk brn, brn/blk, m brn/gy, loc lt brn, occ wh/brn, wh/gy, hd- occ mod consol (wh), sbblky-loc sbplty, loc shly LMST (blk), loc mcpyr & w/ org mat incl.

Depth (m)	Description
1445-1450	LMST: Dk brn, brn/blk, m brn/gy, loc lt brn, occ wh/brn, wh/gy, hd-occ mod consol (wh), sbblky-loc sbplty, loc shly LMST (blk).
1450-1455	LMST: Dk brn, brn/blk, m brn/gy, loc lt brn, occ wh/brn, wh/gy, hd-occ mod consol (wh), sbblky-loc sbplty, loc shly LMST (blk), loc mcpyr.
1455-1460	LMST: Dk brn, brn/blk, m brn/gy, loc lt brn, occ wh/brn, wh/gy, hd-occ mod consol (wh), sbblky-loc sbplty, loc shly LMST (blk), loc mcpyr.
1460-1465	LMST: Dk brn, brn/blk, m brn/gy, loc lt brn, occ wh/brn, wh/gy, hd-occ mod consol (wh), sbblky-loc sbplty, loc shly LMST (blk), loc mcpyr.
1465-1470	LMST: M dk brn., m dk brn/gy, wh/gy, wh, v hd, loc mod consol (wh), sbblky.
1470-1475	LMST: M dk brn., m dk brn/gy, wh/gy, wh, v hd, loc mod consol (wh), sbblky.
1475-1480	LMST: M dk brn., m dk brn/gy, wh/gy, wh, v hd, loc mod consol (wh), sbblky.
1480-1485	LMST: M brn, m brn/gy, wh/gy, wh, v hd, sbblky, loc mod consol (wh), sbfiss.
1485-1490	LMST: M brn, m brn/gy, wh/gy, wh, v hd, sbblky, loc mod consol (wh), sbfiss
1490-1495	LMST: M brn, m brn/gy, wh/gy, wh, v hd, sbblky, loc mod consol (wh), sbfiss. TR: Dolomite
1495-1500	LMST: : M brn, m brn/gy, wh/gy, wh, v hd, sbblky, loc mod consol (wh), sbfiss. TR: Dolomite
1500-1505	LMST: M brn, m brn/gy, occ wh/brn, v hd, sblky-sbplty, loc bec shly lmst.
1505-1510	LMST: M brn, m brn/gy, occ wh/brn, v hd, sblky-sbplty, loc bec shly lmst.
1510-1515	LMST: M brn, m brn/gy, occ wh/brn, v hd, sblky-sbplty, loc bec shly lmst.

Depth (m)	Description
1515-1520	LMST: M brn, m brn/gy, occ wh/brn, v hd, sblky-sbplty, loc bec shly lmst, loc mcpyr & w/ foss incl.
1520-1525	LMST: M brn, m brn/gy, occ wh/brn, v hd, sblky-sbplty, loc bec shly lmst, loc mcpyr & w/ foss incl.
1525-1530	LMST: M brn, m brn/gy, occ wh/brn, v hd, sblky-sbplty, loc bec shly lmst, loc mcpyr & w/ foss incl.
1530-1535	LMST: M brn, m brn/gy, occ wh/brn, v hd, sblky-sbplty, loc bec shly lmst, loc mcpyr & w/ foss incl.
1535-1537.5	LMST: M brn, m brn/gy, occ wh/brn, v hd, sblky-sbplty, loc bec shly lmst, loc mcpyr & w/ foss incl.
1537.5-1540	LMST: M brn, m brn/gy, occ wh/brn, v hd, sblky-sbplty, loc bec shly lmst, loc mcpyr & w/ foss incl.
1540-1542.5	LMST: Pred wh/brn, m brn, m brn/gy, v hd, sbblky-sbplty, occ w/ foss incl (oolites). 50 % Dolomitic LMST: Wh, mlky wh, sbplty-plty, mod consol, suc text
1542.5-1545	LMST: Pred wh/brn, m brn, m brn/gy, v hd, sbblky-sbplty, occ w/ foss incl (oolites). 50 % Dolomitic LMST; mlky wh, sbplty-plty, mod consol, suc text
1545-1547.5	LMST: Pred wh/brn, m brn, m brn/gy, v hd, sbblky-sbplty, occ w/ foss incl (oolites). 50 % Dolomitic LMST; mlky wh, sbplty-plty, mod consol, suc text
1547.5-1550	LMST: Pred wh/brn, m brn, m brn/gy, v hd, sbblky-sbplty, occ w/ foss incl (oolites). 50 % Dolomitic LMST; mlky wh, sbplty-plty, mod consol, suc text
1550-1555	LMST: Pred wh/brn, m brn, m brn/gy, v hd, sbblky-sbplty, occ w/ foss incl (oolites). 50 % Dolomitic LMST: Mlky wh, sbplty-plty, mod consol, suc text
1555-1560	Dolomite: 50% Mlky wh, sbplty-plty, mod consol, suc text. LMST: 40% Pred wh/brn, m brn, m brn/gy, v hd, sbblky-sbplty. 10% Shly Lmst: Dk brn, m dk brn/gy, mod consol, sbplty.

Depth (m)	Description
1560-1565	Dolomite: 50% Milky wh, sbplty-plty, mod consol, suc text. LMST: 40% Pred wh/brn, m brn, m brn/gy, v hd, sbblky-sbplty. 10% Shly Lmst: Dk brn, m dk brn/gy, mod consol, sbplty.
1565-1570	Dolomite: 50% Milky wh, sbplty-plty, mod consol, suc text. LMST: 40% Pred wh/brn, m brn, m brn/gy, v hd, sbblky-sbplty. 10% Shly Lmst: Dk brn, m dk brn/gy, mod consol, sbplty.
1570-1575	Dolomite: 80% wh, gy/wh, v lt gr, gr/wh, mod consol-consol, sbblky, suc text. LMST: 20% Pred wh/brn, m brn, m brn/gy, v hd, sbblky-sbplty. TR: Shly Lmst: Dk brn, m dk brn/gy, mod consol, sbplty.
1575-1580	Dolomite: 60% wh, gy/wh, v lt gr, gr/wh, mod consol-consol, sbblky, suc text. LMST: 30% Pred wh/brn, m brn, m brn/gy, v hd, sbblky-sbplty. 10 %: Shly Lmst: Dk brn, m dk brn/gy, mod consol, sbplty. TR: M grn qtz.
1580-1585	Dolomite: 60% wh, gy/wh, v lt gr, gr/wh, mod consol-consol, sbblky, suc text. LMST: 30% Pred wh/brn, m brn, m brn/gy, v hd, sbblky-sbplty. 10 %: Shly Lmst: Dk brn, m dk brn/gy, mod consol, sbplty.
1585-1590	Dolomite: 60% wh, gy/wh, v lt gr, gr/wh, mod consol-consol, sbblky, suc text. Dol LMST: 30% Pred wh/brn, m brn, m brn/gy, v hd, sbblky-sbplty. 10 %: Shly Lmst: Dk brn, m dk brn/gy, mod consol, sbplty.
1590-1595	Dolomite: 40% wh, gy/wh, v lt gr, gr/wh, mod consol-consol, sbblky, suc text. LMST: 50% Pred wh/brn, m brn, m brn/gy, v hd, sbblky-sbplty. 10 %: Shly Lmst: Dk brn, m dk brn/gy, mod consol, sbplty.
1595-1600	Dolomite: 40% wh, gy/wh, v lt gr, gr/wh, mod consol-consol, sbblky, suc text. LMST: 40% Pred wh/brn, m brn, m brn/gy, v hd, sbblky-sbplty. 20 %: Shly Lmst: Dk brn, m dk brn/gy, mod consol, sbplty.
1600-1605	Dolomite: 40% wh, gy/wh, v lt gr, gr/wh, mod consol-consol, sbblky, suc text. LMST: 40% Pred wh/brn, m brn, m brn/gy, v hd, sbblky-sbplty. 10 %: Shly Lmst: Dk brn, m dk brn/gy, mod consol, sbplty. 10%: SLTST: Gr/gy, m lt gy, hd, sil, loc calc.

Depth (m)	Description
1605-1610	Dolomite: 40% wh, gy/wh, v lt gr, gr/wh, mod consol-consol, sbblky, suc text. LMST: 50% Pred wh/brn, m brn, m brn/gy, v hd, sbblky-sbplty. 10 %: Shly Lmst: Dk brn, m dk brn/gy, mod consol, sbplty. TR: M grain qtz.
1610-1615	Dolomite: 60% wh, gy/wh, v lt gr, gr/wh, mod consol-consol, sbblky, suc text. LMST: 20% Pred wh/brn, m brn, m brn/gy, v hd, sbblky-sbplty. 10 %: Shly Lmst: Dk brn, m dk brn/gy, mod consol, sbplty. 10%: SLTST: Gr/gy, m lt gy, hd, sil, loc calc.
1615-1620	Dolomite: 60% wh, gy/wh, v lt gr, gr/wh, mod consol-consol, sbblky, suc text. Dol LMST: 20% Pred wh/brn, m brn, m brn/gy, v hd, sbblky-sbplty. 10 %: Shly Lmst: Dk brn, m dk brn/gy, mod consol, sbplty. 10%: SLTST: Gr/gy, m lt gy, hd, sil, loc calc.
1620-1625	Dolomite: 40% wh, gy/wh, v lt gr, gr/wh, mod consol-consol, sbblky, suc text. Dol LMST: 40% Pred wh/brn, m brn, m brn/gy, v hd, sbblky-sbplty. 20%: SLTST: Gr/gy, m lt gy, hd, sil, loc calc.
1625-1630	Dolomite: 50% wh, gy/wh, v lt gr, gr/wh, mod consol-consol, sbblky, suc text. Dol LMST: 40% Pred wh/brn, m brn, m brn/gy, v hd, sbblky-sbplty. 10 %: Shly Lmst: Dk brn, m dk brn/gy, mod consol, sbplty.
1630-1635	Dolomite: 60% wh, gy/wh, v lt gr, gr/wh, mod consol-consol, sbblky, suc text. Dol LMST: 30% Pred wh/brn, m brn, m brn/gy, v hd, sbblky-sbplty. 10%: SLTST: Gr/gy, m lt gy, hd, sil, sbblky, sl calc.
1635-1640	Dolomite: 50% wh, gy/wh, v lt gr, gr/wh, mod consol-consol, sbblky, suc text. Dol LMST: 30% Pred wh/brn, m brn, m brn/gy, v hd, sbblky-sbplty. 20%: SLTST: Gr/gy, m lt gy, hd, sil, sbblky, sl calc.
1640-1645	Dolomite: 70% wh, gy/wh, v lt gr, gr/wh, mod consol-consol, sbblky, suc text. Dol LMST: 20% Pred wh/brn, m brn, m brn/gy, v hd, sbblky-sbplty. 10%: SLTST: Gr/gy, m lt gy, hd, sil, sbblky, sl calc.
1645-1650	Dolomite: 50% wh, gy/wh, v lt gr, gr/wh, mod consol-consol, sbblky, suc text. Dol LMST: 30% Pred wh/brn, m brn, m brn/gy, v hd, sbblky-sbplty. 20%: SLTST: Gr/gy, m lt gy, hd, sil, sbblky, sl calc.

Depth (m)	Description
1650-1655	Dolomite: 40% wh, gy/wh, v lt gr, gr/wh, mod consol-consol, sbblky, sucr text. Dol LMST: 40% Pred wh/brn, m brn, m brn/gy, v hd, sbblky-sbplty. 20%: SLTST: Wh/gy, wh/gr, wh, hd, sil, sbplty-sbblky, loc sndy sl calc.
1655-1660	Dolomite: 40% wh, gy/wh, v lt gr, gr/wh, mod consol-consol, sbblky, sucr text. LMST: 40% Pred wh/brn, m brn, m brn/gy, v hd, sbblky-sbplty. 20%: SLTST: Wh/gy, wh/gr, wh, hd, sil, sbplty-sbblky, loc sndy sl calc.
1660-1665	Dolomite: 40% wh, gy/wh, v lt gr, gr/wh, mod consol-consol, sbblky, sucr text. LMST: 40% Pred wh/brn, m brn, m brn/gy, v hd, sbblky-sbplty. 20%: SLTST: Wh/gy, wh/gr, wh, hd, sil, sbplty-sbblky, loc sndy sl calc.
1665-1667.5	Dolomite: 40% wh, gy/wh, v lt gr, gr/wh, mod consol-consol, sbblky, sucr text. LMST: 40% Pred wh/brn, m brn, m brn/gy, v hd, sbblky-sbplty. 20%: SLTST: Wh/gy, wh/gr, wh, hd, sil, sbplty-sbblky, loc sndy sl calc.
1667.5-1670	Dolomite: 40% wh, gy/wh, v lt gr, gr/wh, mod consol-consol, sbblky, sucr text. LMST: 40% Pred wh/brn, m brn, m brn/gy, v hd, sbblky-sbplty. 20%: SLTST: Wh/gy, wh/gr, wh, hd, sil, sbplty-sbblky, loc sndy sl calc.
1670-1672.5	Dolomite: 40% wh, gy/wh, v lt gr, gr/wh, mod consol-consol, sbblky, sucr text. LMST: 40% Pred lt/brn, m brn, m brn/gy, v hd, sbblky-sbplty. 20%: SLTST: Wh/gy, wh/gr, wh, hd, sil, sbplty-sbblky, loc sndy sl calc.
1672.5-1675	Dolomite: 30% wh, gy/wh, v lt gr, gr/wh, mod consol-consol, sbblky, sucr text. LMST: 60% Pred lt/brn, m brn, m brn/gy, v hd, sbblky-sbplty. 10%: SLTST: Wh/gy, wh/gr, wh, hd, sil, sbplty-sbblky, loc sndy sl calc.
1675-1677	Dolomite: 30% wh, gy/wh, v lt gr, gr/wh, mod consol-consol, sbblky, sucr text. LMST: 60% Pred lt/brn, m brn, m brn/gy, v hd, sbblky-sbplty. 10%: SLTST: Wh/gy, wh/gr, wh, hd, sil, sbplty-sbblky, loc sndy sl calc.

- 1677-1680 30 % Dolomite: wh, gy/wh, v lt gr, gr/wh, mod consol-consol, sbblky, sucr text.
10%: SLTST: Wh/gy, wh/gr, wh, hd, sil, sbplty-sbblky, loc sndy sl calc.
60% Sandstone: Qtz-calc, f gr, m gr/gy, drty, occ slty, loc mcpyr.
TR: Chrt
** Possibly contaminated*
- 1680-1685 60% LMST: M brn/gy, lt brn, v hd
20% Dolomite: Wh, gy/wh, v lt gr, gr/wh, mod consol-consol, sbblky, sucr text.
20%: SLTST: Wh/gy, wh/gr, wh, hd, sil, sbplty-sbblky, loc sndy sl calc.
- 1685-1690 60% LMST: M brn/gy, lt brn, v hd, sbblky.
30% Dolomite: Wh, gy/wh, v lt gr, gr/wh, mod consol-consol, sbblky, sucr text.
10%: SLTST: Wh/gy, wh/gr, wh, hd, sil, sbplty-sbblky, loc sndy sl calc.
- 1690-1692.5 70 % Shly LMST: M brn/gy, m gy, v hd, drty.
20% Dolomite: Wh, gy/wh, v lt gr, gr/wh, mod consol-consol, sbblky, sucr text.
10%: SLTST: Wh/gy, wh/gr, wh, hd, sil, sbplty-sbblky, loc sndy sl calc.
- 1692.5-1695 70 % Shly LMST: Wh/gy, dk gy, v hd, drty
20% Dolomite: Wh, gy/wh, v lt gr, gr/wh, mod consol-consol, sbblky, sucr text.
10%: SLTST: Wh/gy, wh/gr, wh, hd, sil, sbplty-sbblky, loc sndy sl calc
TR: SST
- 1695-1697.5 70 % Shly LMST: Wh/gy, dk gy, v hd, drty
20% Dolomite: Wh, gy/wh, v lt gr, gr/wh, mod consol-consol, sbblky, sucr text.
10%: SLTST: Wh/gy, wh/gr, wh, hd, sil, sbplty-sbblky, loc sndy sl calc
- 1697.5-1700 70 % Shly LMST: Wh/gy, dk gy, v hd, drty
20% Dolomite: Wh, gy/wh, v lt gr, gr/wh, mod consol-consol, sbblky, sucr text.
10%: SLTST: Wh/gy, wh/gr, wh, hd, sil, sbplty-sbblky, loc sndy sl calc
- 1700-1702.5 50 % Shly LMST: Wh/gy, dk gy, v hd, drty
30% Dolomitic LMST: Dk gy, drty, v hd.
10% Dolomite: Wh, gy/wh, v lt gr, gr/wh, mod consol-consol, sbblky, sucr text.
10%: SLTST: Wh/gy, wh/gr, wh, hd, sil, sbplty-sbblky, loc sndy sl calc

Depth (m)	Description
1702.5-1705	LMST: 20%: wh/gy, hd. Shly LMST 60%: Wh/gy, dk gy, v hd, drty 10% Dolomite: Wh, gy/wh, v lt gr, gr/wh, mod consol-consol, sbbiky, suc text.
1705-1707.5	LMST: 20%: wh/gy, hd. Shly LMST 60%: Wh/gy, dk gy, v hd, drty 10% Dolomite: Wh, gy/wh, v lt gr, gr/wh, mod consol-consol, sbbiky, suc text. 10%: SLTST: Wh/gy, wh/gr, wh, hd, sil, sbply-sbbiky, loc sndy sl calc
1707.5-1710	Shly LMST 80%: Wh/gy, dk gy, v hd, drty Dolomite: 10% Sltst: 10%
1710-1712.5	Shly LMST: 100% V drty – Dolomitic
1712.5-1715	Shly LMST: 100% V drty – Dolomitic
1715-1717.5	Shly LMST: 100% V drty – Dolomitic
1717.5-1720	LMST: 20% V drty. Shly LMST: 80% Drty, dk gy. TR: Dol & Sltst
1720-1722.5	LMST: 20% V drty. Shly LMST: 80% Drty, dk gy. TR: Dol & Sltst
1722.5-1725	LMST: 20% V drty. Shly LMST: 80% Drty, dk gy. TR: Dol & Sltst
1725-1727.5	Shly LMST: 80 % Wh/gy, dk gy, v hd, drty Dol: 20 %: V drty. TR: Sltst
1727.5-1730	Shly LMST: 90 % Wh/gy, dk gy, v hd, drty Dol: 10 %: V drty.
1730-1732.5	LMST: 30% Shly LMST: 60 % Wh/gy, dk gy, v hd, drty Dol 10%: Wh, gy/wh, v lt gr, gr/wh, mod consol-consol, sbbiky, suc text.

Depth (m)	Description
1732.5-1735	LMST: 40% Shly LMST: 40 % Wh/gy, dk gy, v hd, drty Dol 20%: Wh, gy/wh, v lt gr, gr/wh, mod consol-consol, sbblky, sucr text.
1735-1737.5	LMST: 70% Lt br/wh Dol 30%: Wh, wh/brn, mod consol-consol, sbblky, sucr text.
1737.5-1740	LMST: 50% Lt br/wh Dol 50%: Wh, wh/brn, mod consol-consol, sbblky, sucr text.
1740-1742.5	LMST: 50% Lt br/wh Dol 50%: Wh, wh/brn, mod consol-consol, sbblky, sucr text.
1742.5-1745	LMST: 50% Lt br/wh Dol 50%: Wh, wh/brn, mod consol-consol, sbblky, sucr text.
1745-1747.5	LMST: 80% Lt br/wh Dol 20%: Wh, wh/brn, mod consol-consol, sbblky, sucr text. TR: Shly LMST-Sltst
1747.5-1750	LMST: 80% Lt brn, wh/brn., v hd. Dol 20%: Wh, wh/brn, mod consol-consol, sbblky, sucr text.
1750-1752.5	LMST: 70% Lt brn, wh/brn., v hd. Dol 30%: Wh, wh/brn, mod consol-consol, sbblky, sucr text.
1752.5-1755	LMST: 50% Lt br/wh Dol 50%: Wh, wh/brn, mod consol-consol, sbblky, sucr text. TR: Calcite
1755-1757.5	LMST: 50% Lt br/wh Dol 50%: Wh, wh/brn, mod consol-consol, sbblky, sucr text. TR: Calcite
1757.5-1760	40% LMST: Brn/wh, wh/brn, occ wh, hd, sbblky, G efferv. 60% Dolomite: Brn/wh, wh, mod hd, F efferv.
1760-1762.5	50% LMST: Brn/wh, wh/brn, occ wh, hd, sbblky, G efferv. 50% Dolomite: Brn/wh, wh, mod hd, F efferv.
1762.5-1765	50% LMST: Brn/wh, wh/brn, occ wh, hd, sbblky, G efferv. 50% Dolomite: Brn/wh, wh, mod hd, F efferv.
1765-1767.5	30% LMST: Brn/wh, wh/brn, occ wh, hd, sbblky, G efferv. 70% Dolomite: Brn/wh, wh, mod hd, F efferv.

Depth (m)	Description
1767.5-1770	70% LMST: Brn/wh, wh/brn, occ wh, hd, sbblky, G efferv. 30% Dolomite: Brn/wh, wh, mod hd, F efferv.
1770-1772.5	80% LMST: Brn/wh, wh/brn, occ wh, hd, sbblky, G efferv. 20% Dolomite: Brn/wh, wh, mod hd, F efferv.
1772.5-1775	70% LMST: Brn/wh, wh/brn, occ wh, hd, sbblky, G efferv. 30% Dolomite: Brn/wh, wh, mod hd, F efferv.
1775-1777.5	80% LMST: Brn/wh, wh/brn, occ wh, hd, sbblky, G efferv. 20% Dolomite: Brn/wh, wh, mod hd, F efferv.
1777.5-1780	80% LMST: Brn/wh, wh/brn, occ wh, hd, sbblky, G efferv. 20% Dolomite: Brn/wh, wh, mod hd, F efferv.
1780-1782.5	70% LMST: Brn/wh, wh/brn, occ wh, hd, sbblky, G efferv. 30% Dolomite: Brn/wh, wh, mod hd, F efferv.
1782.5-1785	70% LMST: Brn/wh, wh/brn, occ wh, hd, sbblky, G efferv. 30% Dolomite: Brn/wh, wh, mod hd, F efferv.
1785-1787.5	70% LMST: Brn/wh, wh/brn, occ wh, hd, sbblky, G efferv. 30% Dolomite: Brn/wh, wh, mod hd, F efferv.
1787.5-1790	60% LMST: Brn/wh, wh/brn, occ wh, hd, sbblky, G efferv. 40% Dolomite: Brn/wh, wh, mod hd, F efferv.
1790-1792.5	60% LMST: Brn/wh, wh/brn, occ wh, hd, sbblky, G efferv. 40% Dolomite: Brn/wh, wh, mod hd, F efferv.
1792.5-1795	50% LMST: Brn/wh, wh/brn, occ wh, hd, sbblky, G efferv. 50% Dolomite: Brn/wh, wh, mod hd, F efferv.
1795-1797.5	20% LMST: Brn/wh, wh/brn, occ wh, hd, sbblky, G efferv. 80% Dolomite: Brn/wh, wh, mod hd, F efferv.
1797.5-1800	100% Dolomite: Gy/wh, v hd, sbblky-blky. Porosity visible
1800-1802.5	100% Dolomite: Gy/wh, v hd, sbblky-blky. Porosity visible
1802.5-1805	100% Dolomite: Gy/wh, v hd, sbblky-blky. Porosity visible
1805-1807.5	100% Dolomite: Gy/wh, v hd, sbblky-blky. Porosity visible
1807.5-1810	100% Dolomite: Gy/wh, v hd, sbblky-blky. Porosity visible
1810-1812.5	100% Dolomite: Gy/wh, v hd, sbblky-blky. Porosity visible
1812.5-1815	100% Dolomite: Gy/wh, v hd, sbblky-blky. Porosity visible

Depth (m)	Description
1815-1817.5	100% Dolomite: Gy/wh, v hd, sbblky-blky. Porosity visible
1817.5-1820	100% Dolomite: Gy/wh, v hd, sbblky-blky. Porosity visible
1820-1822.5	100% Dolomite: Gy/wh, v hd, sbblky-blky. Porosity visible
1822.5-1825	100% Dolomite: Gy/wh, v hd, sbblky-blky. Porosity visible
1825-1827.5	100% Dolomite: Gy/wh, v hd, sbblky-blky. Porosity visible tr of calcite.
1827.5-1830	100% Dolomite: Gy/wh, v hd, sbblky-blky. Porosity visible
1830-1832.5	100% Dolomite: Gy/wh, v hd, sbblky-blky. Porosity visible
1832.5-1835	100% Dolomite: Gy/wh, v hd, sbblky-blky. Porosity visible
1835-1837.5	100% Dolomite: Gy/wh, v hd, sbblky-blky. Porosity visible
1837.5-1840	100% Dolomite: Gy/wh, v hd, sbblky-blky. Porosity visible
1840-1842.5	100% Dolomite: Gy/wh, v hd, sbblky-blky. Porosity visible
1842.5-1845	100% Dolomite: Gy/wh, v hd, sbblky-blky. Porosity visible
1845-1847.5	90% Dolomite: Gy/wh, v hd, sbblky-blky. Porosity visible 10% LMST: Brn/wh, occ wh, hd, sbblky, G efferv.
1847.5-1850	85% Dolomite: Gy/wh, v hd, sbblky-blky. 15% LMST: Brn/wh, occ wh, hd, sbblky, G efferv.
1850-1852.5	90% Dolomite: Gy/wh, v hd, sbblky-blky. 10% LMST: Brn/wh, occ wh, hd, sbblky, G efferv.
1852.5-1855	90% Dolomite: Gy/wh, v hd, sbblky-blky. 10% LMST: Brn/wh, occ wh, hd, sbblky, G efferv.
1855-1857.5	90% Dolomite: Gy/wh, v hd, sbblky-blky. 10% LMST: Brn/wh, occ wh, hd, sbblky, G efferv.
1857.5-1860	80% Dolomite: Gy/wh, v hd, sbblky-blky. 20% LMST: Brn/wh, occ wh, hd, sbblky, G efferv.
1860-1862.5	50% Dolomite: Gy/wh, v hd, sbblky-blky. 50% LMST: Brn/wh, occ wh, hd, sbblky, G efferv.
1862.5-1865	40% Dolomite: Gy/wh, v hd, sbblky-blky. 60% LMST: Brn/wh, occ wh, hd, sbblky, G efferv.

Depth (m)	Description
1865-1867.5	70% Dolomite: Gy/wh, v hd, sbblky-blky. 30% LMST: Brn/wh, occ wh, hd, sbblky, G efferv.
1867.5-1870	70% Dolomite: Gy/wh, v hd, sbblky-blky. 30% LMST: Brn/wh, occ wh, hd, sbblky, G efferv.
1870-1872.5	60% Dolomite: Gy/wh, v hd, sbblky-blky. 40% LMST: Brn/wh, occ wh, hd, sbblky, G efferv.
1872.5-1875	60% Dolomite: Gy/wh, v hd, sbblky-blky. 40% LMST: Brn/wh, occ wh, hd, sbblky, G efferv.
1875-1877.5	60% Dolomite: Gy/wh, v hd, sbblky-blky. 40% LMST: Brn/wh, occ wh, hd, sbblky, G efferv.
1877.5-1880	60% Dolomite: Gy/wh, v hd, sbblky-blky. 40% LMST: Brn/wh, occ wh, hd, sbblky, G efferv.
1880-1882.5	85% Dolomite: Gy/wh, v hd, sbblky-blky. 15% LMST: Brn/wh, occ wh, hd, sbblky, G efferv.
1882.5-1885	85% Dolomite: Gy/wh, v hd, sbblky-blky. 15% LMST: Brn/wh, occ wh, hd, sbblky, G efferv.
1885-1887.5	60% Dolomite: Gy/wh, v hd, sbblky-blky. 40% LMST: Brn/wh, occ wh, hd, sbblky, G efferv.
1887-1890	70% Dolomite: Gy/wh, v hd, sbblky-blky. 30% LMST: Brn/wh, occ wh, hd, sbblky, G efferv.
1890-1892.5	80% Dolomite: Gy/wh, v hd, sbblky-blky. 20% LMST: Brn/wh, occ wh, hd, sbblky, G efferv.
1892.5-1895	80% Dolomite: Gy/wh, v hd, sbblky-blky. 20% LMST: Brn/wh, occ wh, hd, sbblky, G efferv.
1895-1897.5	80% Dolomite: Gy/wh, v hd, sbblky-blky. 20% LMST: Brn/wh, occ wh, hd, sbblky, G efferv.
1897.5-1900	70% Dolomite: Gy/wh, v hd, sbblky-blky. 30% LMST: Brn/wh, occ wh, hd, sbblky, G efferv.
1900-1902.5	60% Dolomite: Gy/wh, v hd, sbblky-blky. 40% LMST: Brn/wh, occ wh, hd, sbblky, G efferv.
1902.5-1905	70% Dolomite: Gy/wh, v hd, sbblky-blky. 30% LMST: Brn/wh, occ wh, hd, sbblky, G efferv.

Depth (m)	Description
1905-1907.5	85% Dolomite: Gy/wh, v hd, sbblky-blky. 15% LMST: Brn/wh, occ wh, hd, sbblky, G efferv.
1907.5-1910	70% Dolomite: Gy/wh, v hd, sbblky-blky. 30% LMST: Brn/wh, occ wh, hd, sbblky, G efferv.
1910-1912.5	70% Dolomite: Gy/wh, v hd, sbblky-blky. 30% LMST: Brn/wh, occ wh, hd, sbblky, G efferv.
1912.5-1915	80% Dolomite: Gy/wh, v hd, sbblky-blky. 20% LMST: Brn/wh, occ wh, hd, sbblky, G efferv.
1915-1917.5	80% Dolomite: Gy/wh, v hd, sbblky-blky. 20% LMST: Brn/wh, occ wh, hd, sbblky, G efferv.
1917.5-1920	80% Dolomite: Gy/wh, v hd, sbblky-blky. 20% LMST: Brn/wh, occ wh, hd, sbblky, G efferv.
1920-1922.5	80% Dolomite: Gy/wh, v hd, sbblky-blky. 20% LMST: Brn/wh, occ wh, hd, sbblky, G efferv.
1922.5-1925	90% Dolomite: Gy/wh, v hd, sbblky-blky. 10% LMST: Brn/wh, occ wh, hd, sbblky, G efferv.
1925-1927.5	90% Dolomite: Gy/wh, v hd, sbblky-blky. 10% LMST: Brn/wh, occ wh, hd, sbblky, G efferv.
1927.5-1930	70% Dolomite: Gy/wh, v hd, sbblky-blky. 30% LMST: Brn/wh, occ wh, hd, sbblky, G efferv.
1930-1932.5	70% Dolomite: Gy/wh, v hd, sbblky-blky. 30% LMST: Brn/wh, occ wh, hd, sbblky, G efferv.
1932.5-1935	80% Dolomite: Gy/wh, v hd, sbblky-blky, some visible porosity. 20% LMST: Brn/wh, occ wh, hd, sbblky, G efferv.
1935-1937.5	60% Dolomite: Gy/wh, v hd, sbblky-blky, some visible porosity. 40% LMST: Brn/wh, occ wh, hd, sbblky, G efferv.
1937.5-1940	80% Dolomite: Gy/wh, v hd, sbblky-blky, some visible porosity. 20% LMST: Brn/wh, occ wh, hd, sbblky, G efferv.
1940-1942.5	80% Dolomite: Gy/wh, v hd, sbblky-blky, some visible porosity. 20% LMST: Brn/wh, occ wh, hd, sbblky, G efferv.
1942.5-1945	90% Dolomite: Gy/wh, v hd, sbblky-blky, some visible porosity. 10% LMST: Brn/wh, occ wh, hd, sbblky, G efferv.

Depth (m)	Description
1945-1947.5	90% Dolomite: Gy/wh, v hd, sbblky-blky, some visible porosity. 10% LMST: Brn/wh, occ wh, hd, sbblky, G efferv.
1947.5-1950	80% Dolomite: Gy/wh, v hd, sbblky-blky, some visible porosity. 20% LMST: Brn/wh, occ wh, hd, sbblky, G efferv.
1950-1951	90% Dolomite: Gy/wh, v hd, sbblky-blky, some visible porosity. 10% LMST: Brn/wh, occ wh, hd, sbblky, G efferv.
1951-1952.5	<i>Sample contaminated: taken after 18 days of shut down (contamination from cavings and brown lime used in the mud system).</i>
1952.5-1955	90% Dolomite: Gy/wh, v hd, sbblky-blky, some visible porosity. 10% LMST: Brn/wh, occ wh, hd, sbblky, G efferv.
1955-1957.5	80% Dolomite: Gy/wh, v hd, sbblky-blky, sucrtxt, some visible porosity. 20% LMST: Brn/wh, occ wh, hd, sbblky, G efferv.
1957.5-1960	80% Dolomite: Gy/wh, v hd, sbblky-blky, sucrtxt, some visible porosity. 20% LMST: Brn/wh, occ wh, hd, sbblky, G efferv.
1960-1962.5	90% Dolomite: Gy/wh, v hd, sbblky-blky, sucrtxt, some visible porosity. 10% LMY DOL: wh/brn, occ wh, hd, sbblky, mod efferv.
1962.5-1965	90% Dolomite: Gy/wh, v hd, sbblky-blky, sucrtxt, some visible porosity. 10% LMY DOL: wh/brn, occ wh, hd, sbblky, mod efferv.
1965-1967.5	90% Dolomite: Gy/wh, v hd, sbblky-blky, sucrtxt, some visible porosity. 10% LMY DOL: wh/brn, occ wh, hd, sbblky, mod efferv.
1967.5-1970	95% Dolomite: Gy/wh, v hd, sbblky-blky, sucrtxt. 5% LMY DOL: wh/brn, occ wh, hd, sbblky, mod efferv.
1970-1972.5	95% Dolomite: Gy/wh, v hd, sbblky-blky, sucrtxt. 5% LMY DOL: wh/brn, occ wh, hd, sbblky, mod efferv.
1972.5-1975	95% Dolomite: Gy/wh, v hd, sbblky-blky, sucrtxt. 5% LMY DOL: wh/brn, occ wh, hd, sbblky, mod efferv.
1975-1977.5	95% Dolomite: Gy/wh, v hd, sbblky-blky, sucrtxt. 5% LMY DOL: wh/brn, occ wh, hd, sbblky, mod efferv.

Depth (m)	Description
1977.5-1980	95% Dolomite: Gy/wh, v hd, sbblky-blky, sucrtxt. 5% LMY DOL: wh/brn, occ wh, hd, sbblky, mod efferv.
1980-1982.5	90% Dolomite: Gy/wh, v hd, sbblky-blky, sucrtxt. 10% LMY DOL: wh/brn, occ wh, hd, sbblky, mod efferv.
1982.5-1985	90% Dolomite: Gy/wh, v hd, sbblky-blky, sucrtxt. 10% LMY DOL: wh/brn, occ wh, hd, sbblky, mod efferv.
1985-1987.5	90% Dolomite: Gy/wh, v hd, sbblky-blky, sucrtxt. 10% LMY DOL: wh/brn, occ wh, hd, sbblky, mod efferv.
1987.5-1990	85% Dolomite: Gy/wh, v hd, sbblky-blky, sucrtxt. 15% LMY DOL: wh/brn, occ wh, hd, sbblky, mod efferv.
1990-1992.5	95% Dolomite: Gy/wh, v hd, sbblky-blky, sucrtxt. 10% LMY DOL: wh/brn, occ wh, hd, sbblky, mod efferv.
1992.5-1995	95% Dolomite: Gy/wh, v hd, sbblky-blky, sucrtxt. 5% LMY DOL: wh/brn, occ wh, hd, sbblky, mod efferv.
1995-1997.5	95% Dolomite: Gy/wh, v hd, sbblky-blky, sucrtxt. 5% LMY DOL: wh/brn, occ wh, hd, sbblky, mod efferv.
1997.5-2000	90% Dolomite: Gy/wh, v hd, sbblky-blky, sucrtxt. 10% LMY DOL: wh/brn, occ wh, hd, sbblky, mod efferv.
2000-2002.5	90% Dolomite: Gy/wh, v hd, sbblky-blky, sucrtxt. 10% LMY DOL: wh/brn, occ wh, hd, sbblky, mod efferv.
2002.5-2005	90% Dolomite: Gy/wh, v hd, sbblky-blky, sucrtxt. 10% LMY DOL: wh/brn, occ wh, hd, sbblky, mod efferv.
2005-2007.5	95% Dolomite: Gy/wh, v hd, sbblky-blky, sucrtxt. 5% LMY DOL: wh/brn, occ wh, hd, sbblky, mod efferv.
2007.5-2010	90% Dolomite: Gy/wh, v hd, sbblky-blky, sucrtxt. 10% LMY DOL: wh/brn, occ wh, hd, sbblky, mod efferv.
2010-2012.5	90% Dolomite: Gy/wh, v hd, sbblky-blky, sucrtxt, some porosity. 10% LMY DOL: wh/brn, occ wh, hd, sbblky, mod efferv.
2010-2012.5	95% Dolomite: Gy/wh, v hd, sbblky-blky, sucrtxt, some porosity. 5% LMY DOL: wh/brn, occ wh, hd, sbblky, mod efferv.
2012.5-2015	95% Dolomite: Gy/wh, v hd, sbblky-blky, sucrtxt, some porosity. 5% LMY DOL: wh/brn, occ wh, hd, sbblky, mod efferv.

Depth (m)	Description
2015-2017.5	95% Dolomite: Gy/wh, v hd, sbblky-blky, sucrtxt, some porosity. 5% LMY DOL: wh/brn, occ wh, hd, sbblky, mod efferv.
2017.5-2020	95% Dolomite: Gy/wh, v hd, sbblky-blky, sucrtxt, some porosity. 5% LMY DOL: wh/brn, occ wh, hd, sbblky, mod efferv.
2020-2022.5	90% Dolomite: Gy/wh, v hd, sbblky-blky, sucrtxt, some porosity. 10% LMY DOL: wh/brn, occ wh, hd, sbblky, mod efferv.
2022.5-2025	95% Dolomite: Gy/wh, v hd, sbblky-blky, sucrtxt, some porosity. 5% LMY DOL: wh/brn, occ wh, hd, sbblky, mod efferv.
2025-2027.5	95% Dolomite: Gy/wh, v hd, sbblky-blky, sucrtxt, some porosity. 5% LMY DOL: wh/brn, occ wh, hd, sbblky, mod efferv.
2027.5-2030	95% Dolomite: Gy/wh, v hd, sbblky-blky, sucrtxt, some porosity. 5% LMY DOL: wh/brn, occ wh, hd, sbblky, mod efferv.
2030-2032.5	90% Dolomite: Gy/wh, v hd, sbblky-blky, sucrtxt, some porosity. 10% LMY DOL: wh/brn, occ wh, hd, sbblky, mod efferv.
2032.5-2035	95% Dolomite: Gy/wh, v hd, sbblky-blky, sucrtxt, some porosity. 5% LMY DOL: wh/brn, occ wh, hd, sbblky, mod efferv.
2035-2037.5	95% Dolomite: Gy/wh, v hd, sbblky-blky, sucrtxt, some porosity. 5% LMY DOL: wh/brn, occ wh, hd, sbblky, mod efferv.
2037.5-2040	90% Dolomite: Gy/wh, v hd, sbblky-blky, sucrtxt, trace of porosity. 10% LMY DOL: wh/brn, occ wh, hd, sbblky, mod efferv.
2040-2042.5	90% Dolomite: Gy/wh, v hd, sbblky-blky, sucrtxt, trace of porosity. 10% LMY DOL: wh/brn, occ wh, hd, sbblky, mod efferv.
2042.5-2045	95% Dolomite: Gy/wh, v hd, sbblky-blky, sucrtxt, trace of porosity. 5% LMY DOL: wh/brn, occ wh, hd, sbblky, mod efferv.
2045-2047.5	95% Dolomite: Gy/wh, v hd, sbblky-blky, sucrtxt, trace of porosity. 5% LMY DOL: wh/brn, occ wh, hd, sbblky, mod efferv.
2047.5-2050	95% Dolomite: Gy/wh, v hd, sbblky-blky, sucrtxt, trace of porosity. 5% LMY DOL: wh/brn, occ wh, hd, sbblky, mod efferv.
2050-2052.5	95% Dolomite: Gy/wh, v hd, sbblky-blky, sucrtxt, trace of porosity. 5% LMY DOL: wh/brn, occ wh, hd, sbblky, mod efferv.
2052.5-2055	95% Dolomite: Gy/wh, v hd, sbblky-blky, sucrtxt, trace of porosity. 5% LMY DOL: wh/brn, occ wh, hd, sbblky, mod efferv.

Depth (m)	Description
2057.5-2060	95% Dolomite: Gy/wh, v hd, sbblky-blky, sucr txt, trace of porosity. 5% LMY DOL: wh/brn, occ wh, hd, sbblky, mod efferv.
2060-2062.5	90% Dolomite: Gy/wh, v hd, sbblky-blky, sucr txt, trace of porosity. 5% LMY DOL: wh/brn, occ wh, hd, sbblky, mod efferv.
2062.5-2065	90% Dolomite: Gy/wh, v hd, sbblky-blky, sucr txt, trace of porosity. 10% LMY DOL: wh/brn, occ wh, hd, sbblky, mod efferv.
2065-2067.5	95% Dolomite: Gy/wh, v hd, sbblky-blky, sucr txt. 5% LMY DOL: wh/brn, occ wh, hd, sbblky, mod efferv.
2067.5-2070	90% Dolomite: Gy/wh, v hd, sbblky-blky, sucr txt. 10% LMY DOL: wh/brn, occ wh, hd, sbblky, mod efferv.
2070-2072.5	90% Dolomite: Gy/wh, v hd, sbblky-blky, sucr txt. 10% LMY DOL: wh/brn, occ wh, hd, sbblky, mod efferv.
2072.5-2075	85% Dolomite: Gy/wh, v hd, sbblky-blky, sucr txt. 15% LMY DOL: wh/brn, occ wh, hd, sbblky, mod efferv.
2075-2077.5	85% Dolomite: Gy/wh, v hd, sbblky-blky, sucr txt. 15% LMY DOL: wh/brn, occ wh, hd, sbblky, mod efferv.
2077.5-2080	90% Dolomite: Gy/wh, v hd, sbblky-blky, sucr txt. 10% LMY DOL: wh/brn, occ wh, hd, sbblky, mod efferv.
2080-2082.5	90% Dolomite: Gy/wh, v hd, sbblky-blky, sucr txt. 10% LMY DOL: wh/brn, occ wh, hd, sbblky, mod efferv.
2082.5-2085	90% Dolomite: Gy/wh, v hd, sbblky-blky, sucr txt. 10% LMY DOL: wh/brn, occ wh, hd, sbblky, mod efferv.
2085-2087.5	90% Dolomite: Gy/wh, v hd, sbblky-blky, sucr txt. 10% LMY DOL: wh/brn, occ wh, hd, sbblky, mod efferv.
2087.5-2090	75% Arg dolomite: Gy/wh, v hd, sbblky-blky. 25% LMY DOL: gry/wh, hd, sbblky, mod efferv.
2090-2092.5	75% Arg dolomite: Gy/wh, v hd, sbblky-blky. 25% LMY DOL: gry/wh, hd, sbblky, mod efferv.
2092.5-2095	75% Arg dolomite: Gy/wh, v hd, sbblky-blky. 25% LMY DOL: gry/wh, hd, sbblky, mod efferv.
2095-2097.5	75% Arg dolomite: Gy/wh, v hd, sbblky-blky. 25% LMY DOL: gry/wh, hd, sbblky, mod efferv.

Depth (m)	Description
2097.5-2100	90% Arg dolomite: Gy/wh, v hd, sbblky-blky. 10% LMY DOL: gry/wh, hd, sbblky, mod efferv.
2100-2102.5	90% Arg dolomite: Gy/wh, v hd, sbblky-blky. 10% LMY DOL: gry/wh, hd, sbblky, mod efferv.
2102.5-2105	90% Arg dolomite: Gy/wh, v hd, sbblky-blky. 10% LMY DOL: gry/wh, hd, sbblky, mod efferv.
2105-2107.5	90% Arg dolomite: Gy/wh, v hd, sbblky-blky. 10% LMY DOL: gry/wh, hd, sbblky, mod efferv.
2107.5-2110	80% Arg dolomite: Gy/wh, v hd, sbblky-blky. 20% LMY DOL: gry/wh, hd, sbblky, mod efferv.
2110-2112.5	80% Arg dolomite: Gy/wh, v hd, sbblky-blky. 20% LMY DOL: gry/wh, hd, sbblky, mod efferv.
2112.5-2115	80% Arg dolomite: Gy/wh, v hd, sbblky-blky. 20% LMY DOL: gry/wh, hd, sbblky, mod efferv.
2115-2117.5	80% Arg dolomite: Gy/wh, v hd, sbblky-blky. 20% LMY DOL: gry/wh, hd, sbblky, mod efferv.
2117.5-2120	85% Arg dolomite: Gy/wh, v hd, sbblky-blky. 15% LMY DOL: gry/wh, hd, sbblky, mod efferv.
2120-2122.5	85% Arg dolomite: Gy/wh, v hd, sbblky-blky. 15% LMY DOL: gry/wh, hd, sbblky, mod efferv.
2122.5-2125	60% Arg dolomite: Gy/wh, v hd, sbblky-blky. 40% LMY DOL: gry/wh, hd, sbblky, mod efferv.
2125-2127.5	80% Arg dolomite: Gy/wh, v hd, sbblky-blky. 20% LMY DOL: gry/wh, hd, sbblky, mod efferv.
2127.5-2130	80% Arg dolomite: Gy/wh, v hd, sbblky-blky. 20% LMY DOL: gry/wh, hd, sbblky, mod efferv.
2130-2132.5	85% Arg dolomite: Gy/wh, v hd, sbblky-blky. 15% LMY DOL: gry/wh, hd, sbblky, mod efferv.
2132.5-2135	85% Arg dolomite: Gy/wh, v hd, sbblky-blky. 15% LMY DOL: gry/wh, hd, sbblky, mod efferv.
2135-2137.5	85% Arg dolomite: Gy/wh, v hd, sbblky-blky. 15% LMY DOL: gry/wh, hd, sbblky, mod efferv.

Depth (m)	Description
2137.5-2140	85% Arg dolomite: Gy/wh, v hd, sbblky-blky. 15% LMY DOL: gry/wh, hd, sbblky, mod efferv.
2140-2142.5	90% Arg dolomite: Gy/wh, v hd, sbblky-blky. 10% LMY DOL: gry/wh, hd, sbblky, mod efferv.
2142.5-2145	90% Arg dolomite: Gy/wh, v hd, sbblky-blky, some porosity 10% LMY DOL: gry/wh, hd, sbblky, mod efferv.
2145-2147.5	90% Arg dolomite: Gy/wh, v hd, sbblky-blky. 10% LMY DOL: gry/wh, hd, sbblky, mod efferv.
2147.5-2150	90% Arg dolomite: Gy/wh, v hd, sbblky-blky. 10% LMY DOL: gry/wh, hd, sbblky, mod efferv.
2150-2152.5	90% Arg dolomite: Gy/wh, v hd, sbblky-blky. 10% LMY DOL: gry/wh, hd, sbblky, mod efferv.
2152.5-2155	90% Arg dolomite: Gy/wh, v hd, sbblky-blky. 10% LMY DOL: gry/wh, hd, sbblky, mod efferv.
2155-2157.5	90% Arg dolomite: Gy/wh, v hd, sbblky-blky. 10% LMY DOL: gry/wh, hd, sbblky, mod efferv.
2157.5-2160	90% Arg dolomite: Gy/wh, v hd, sbblky-blky. 10% LMY DOL: gry/wh, hd, sbblky, mod efferv.
2160-2162.5	90% Arg dolomite: Gy/wh, v hd, sbblky-blky. 10% LMY DOL: gry/wh, hd, sbblky, mod efferv.
2162.5-2165	95% Arg dolomite: Gy/wh, v hd, sbblky-blky. 5% LMY DOL: gry/wh, hd, sbblky, mod efferv.
2165-2167.5	95% Arg dolomite: Gy/wh, v hd, sbblky-blky. 5% LMY DOL: gry/wh, hd, sbblky, mod efferv.
2167.5-2170	100% Arg dolomite: Gy/wh, v hd, sbblky-blky.
2170-2172.5	95% Arg dolomite: Gy/wh, v hd, sbblky-blky. 5% LMY DOL: gry/wh, hd, sbblky, mod efferv.
2172.5-2175	90% Arg dolomite: Gy/wh, v hd, sbblky-blky. 10% LMY DOL: gry/wh, hd, sbblky, mod efferv.
2175-2177.5	90% Arg dolomite: Gy/wh, v hd, sbblky-blky. 10% LMY DOL: gry/wh, hd, sbblky, mod efferv.

Depth (m)	Description
2177.5-2180	100% Arg dolomite: Gy/wh, v hd, sbblky-blky.
2180-2182.5	100% Arg dolomite: Gy/wh, v hd, sbblky-blky.
2182.5-2185	100% Arg dolomite: Gy/wh, v hd, sbblky-blky
2185-2187.5	95% Arg dolomite: Gy/wh, v hd, sbblky-blky. 5% LMY DOL: gry/wh, hd, sbblky, mod efferv.
2187.5-2190	85% Arg dolomite: Gy/wh, v hd, sbblky-blky. 15% LMY DOL: gry/wh, hd, sbblky, mod efferv.
2190-2192.5	85% Arg dolomite: Gy/wh, v hd, sbblky-blky. 15% LMY DOL: gry/wh, hd, sbblky, mod efferv.
2192.5-2195	85% Arg dolomite: Gy/wh, v hd, sbblky-blky. 15% LMY DOL: gry/wh, hd, sbblky, mod efferv.
2195-2197.5	85% Arg dolomite: Gy/wh, v hd, sbblky-blky. 15% LMY DOL: gry/wh, hd, sbblky, mod efferv.
2197.5-2200	100% Arg dolomite: Gy/wh, v hd, sbblky-blky bec less arg.
2200-2202.5	100% Arg dolomite: Gy/wh, v hd, sbblky-blky bec less arg.
2202.5-2207.5	No sample
2207.5-2210	100% Sl arg dolomite: Gy/wh, v hd, sbblky-blky.
2210-2212.5	100% Sl arg dolomite: Gy/wh, v hd, sbblky-blky
2212.5-2215	90% Sl arg dolomite: Gy/wh, v hd, sbblky-blky, some porosity. 10% Dol LM: gry/wh, hd, sbblky, mod efferv.
2215-2217.5	100% Sl arg dolomite: Gy/wh, v hd, sbblky-blky, some porosity.
2217.5-2220	100% Sl arg dolomite: Gy/wh, v hd, sbblky-blky.
2220-2222.5	100% Sl arg dolomite: Gy/wh, v hd, sbblky-blky, some porosity.
2222.5-2225	100% Sl arg dolomite: Gy/wh, v hd, sbblky-blky, some porosity.
2225-2227.5	100% Sl arg dolomite: Gy/wh, v hd, sbblky-blky.
2227.5-2230	90% V sl arg and calc dolomite: Gy/wh, v hd, sbblky-blky, 10% Dol LM: gry/wh, hd, sbblky, G efferv.

Depth (m)	Description
2230-2232.5	90% V sl arg and calc dolomite: Gy/wh, v hd, sbblky-blky, 10% Dol LM: gry/wh, hd, sbblky, G efferv.
2232.5-2235	90% V sl arg and calc dolomite: Gy/wh, v hd, sbblky-blky, 10% Dol LM: gry/wh, hd, sbblky, G efferv.
2235-2237.5	90% V sl arg and calc dolomite: Gy/wh, v hd, sbblky-blky, some porosity visible 10% Dol LM: gry/wh, hd, sbblky, G efferv.
2237.5-2240	90% Sl calc dolomite: wh, v hd, sbblky-blky, 10% LMST: wh, hd, sbblky, G efferv.
2240—2242.5	90% Sl calc dolomite: wh, v hd, sbblky-blky, 10% LMST: wh, hd, sbblky, G efferv.
2242.5-2245	90% Sl calc dolomite: wh, v hd, sbblky-blky, 10% LMST: wh, hd, sbblky, G efferv.
2245-2247.5	100% Sl calc dolomite: wh, v hd, sbblky-blky, some visible porosity.
2247.5-2250	100% Sl calc dolomite: wh, v hd, sbblky-blky, some visible porosity.
2250-2252.5	100% Sl calc dolomite: wh, v hd, sbblky-blky, some visible porosity.
2252.5-2255	100% Sl calc dolomite: wh, v hd, sbblky-blky.
2255-2257.5	95% Sl calc dolomite: wh, v hd, sbblky-blky. 5% LMST: wh, hd, sbblky, G efferv.
2257.5-2260	95% Sl calc dolomite: wh, v hd, sbblky-blky, some visible porosity. 10% LMST: wh, hd, sbblky, G efferv.
2260-2262.5	95% Sl calc dolomite: wh, v hd, sbblky-blky. 5% LMST: wh, hd, sbblky, G efferv.
2262.5-2265	95% Sl calc dolomite: wh, v hd, sbblky-blky. 5% LMST: wh, hd, sbblky, G efferv.
2265-2267.5	95% Sl calc dolomite: wh, v hd, sbblky-blky, trace of porosity? 5% LMST: wh, hd, sbblky, G efferv.
2267.5-2270	95% Sl calc dolomite: wh, v hd, sbblky-blky. 5% LMST: wh, hd, sbblky, G efferv.
2270-2272.5	95% Sl calc dolomite: wh, v hd, sbblky-blky. 5% LMST: wh, hd, sbblky, G efferv.

Depth (m)	Description
2272.5-2275	95% Sl calc dolomite: wh, v hd, sbblky-blky. 5% LMST: wh, hd, sbblky, G efferv.
2275-2277.5	95% Sl calc dolomite: wh, v hd, sbblky-blky. 5% LMST: wh, hd, sbblky, G efferv.
2277.5-2280	95% Sl calc dolomite: wh, v hd, sbblky-blky, trace of porosity. 5% LMST: wh, hd, sbblky, G efferv.
2282.5-2285	95% Sl calc dolomite: wh, v hd, sbblky-blky, trace of porosity. 5% LMST: wh, hd, sbblky, G efferv.
2285-2287.5	100% Sl calc dolomite: wh, v hd, sbblky-blky, trace of porosity.
2287.5-2290	95% Sl calc dolomite: wh, v hd, sbblky-blky, trace of porosity. 5% LMST: wh, hd, sbblky, G efferv.
2290-2292.5	95% Sl calc dolomite: wh, v hd, sbblky-blky, trace of porosity. 5% LMST: wh, hd, sbblky, G efferv.
2292.5-2295	95% Sl calc dolomite: wh, v hd, sbblky-blky. 5% LMST: wh, hd, sbblky, G efferv.
2295-2297.5	100% Sl calc dolomite: wh, v hd, sbblky-blky.
2297.5-2300	100% Sl calc dolomite: wh, v hd, sbblky-blky.
2300-2302.5	100% Sl calc dolomite: wh, v hd, sbblky-blky.
2302.5-2305	100% Sl calc dolomite: wh, v hd, sbblky-blky.
2305-2307.5	100% Sl calc dolomite: wh, v hd, sbblky-blky.
2307.5-2310	100% Sl calc dolomite: wh, v hd, sbblky-blky.
2310-2312.5	100% Sl calc dolomite: wh, v hd, sbblky-blky.
2312.5-2315	90% Sl calc dolomite: wh, v hd, sbblky-blky. 10% LMST: wh, hd, sbblky, G efferv.
2315-2317.5	90% Sl calc dolomite: wh, v hd, sbblky-blky. 10% LMST: wh, hd, sbblky, G efferv.
2317.5-2320	100% Sl calc dolomite: wh, v hd, sbblky-blky, poss of porosity
2320-2322.5	95% Sl calc dolomite: wh, v hd, sbblky-blky. 5% LMST: wh, hd, sbblky, G efferv.

Depth (m)	Description
2322.5-2325	95% Sl calc dolomite: wh/gy, v hd, sbblky-blky. 5% LMST: wh, hd, sbblky, G efferv.
2325-2327.5	95% Sl calc dolomite: wh, v hd, sbblky-blky. 5% LMST: wh, hd, sbblky, G efferv.
2327.5-2330	90% Calc dolomite: wh, v hd, sbblky-blky. 10% LMST: wh, hd, sbblky, G efferv.
2330-2332.5	90% Sl calc dolomite: wh, v hd, sbblky-blky. 10% LMST: wh, hd, sbblky, G efferv.
2332.5-2335	95% Sl calc dolomite: wh, v hd, sbblky-blky. 5% LMST: wh, hd, sbblky, G efferv.
2335-2337.5	90% Sl calc dolomite: wh, v hd, sbblky-blky. 10% LMST: wh/gy, hd, sbblky, G efferv.
2337.5-2340	90% Sl calc dolomite: wh, v hd, sbblky-blky. 10% LMST: wh/gy, hd, sbblky, G efferv.
2340-2342.5	85% Sl calc dolomite: wh, v hd, sbblky-blky. 15% LMST: wh/gy, hd, sbblky, G efferv.
2342.5-2345	60% Sl calc dolomite: wh, v hd, sbblky-blky. 40% LMST: wh/gy, hd, sbblky, G efferv.
2345-2347.5	55% Sl calc dolomite: wh, v hd, sbblky-blky. 45% LMST: wh/gy, hd, sbblky, G efferv.
2347.5-2350	50% Sl calc dolomite: wh, v hd, sbblky-blky. 50% LMST: wh/gy, hd, sbblky, G efferv.
2350-2352.5	50% Sl calc dolomite: wh, v hd, sbblky-blky. 50% LMST: wh/gy, hd, sbblky, G efferv.
2352.5-2355	45% Sl calc dolomite: wh, v hd, sbblky-blky. 55% LMST: wh/gy, hd, sbblky, G efferv.
2355-2357.5	45% Sl calc dolomite: wh, v hd, sbblky-blky. 55% LMST: wh/gy, hd, sbblky, G efferv.
2357.5-2360	45% Sl calc dolomite: wh, v hd, sbblky-blky. 55% LMST: wh, hd, sbblky, G efferv.
2360-2362.5	50% Sl calc dolomite: wh, v hd, sbblky-blky. 50% LMST: wh/gy, hd, sbblky, G efferv.

Depth (m)	Description
2362.5-2365	50% SI calc dolomite: wh, v hd, sbblky-blky. 50% LMST: wh/gy, hd, sbblky, G efferv.
2365-2367.5	50% SI calc dolomite: wh, v hd, sbblky-blky. 50% LMST: wh/gy, hd, sbblky, G efferv.
2367.5-2370	60% SI calc dolomite: wh, v hd, sbblky-blky. 40% LMST: wh/gy, hd, sbblky, G efferv.
2370-2372.5	85% SI calc dolomite: wh, v hd, sbblky-blky. 15% LMST: wh/gy, hd, sbblky, G efferv.
2372.5-2375	95% SI calc dolomite: wh, v hd, sbblky-blky. 5% LMST: wh/gy, hd, sbblky, G efferv.
2375-2377.5	95% SI calc dolomite: wh, v hd, sbblky-blky. 5% LMST: wh/gy, hd, sbblky, G efferv.
2377.5-2380	95% SI calc dolomite: wh, v hd, sbblky-blky, porosity visible. 5% LMST: wh/gy, hd, sbblky, G efferv.
2380-2382.5	95% SI calc dolomite: wh, v hd, sbblky-blky, porosity visible. 5% LMST: wh/gy, hd, sbblky, G efferv.
2382.5-2385	95% SI calc dolomite: wh, v hd, sbblky-blky, porosity visible. 5% LMST: wh/gy, hd, sbblky, G efferv.
2385-2387.5	95% SI calc dolomite: wh, v hd, sbblky-blky, porosity visible. 5% LMST: wh/gy, hd, sbblky, G efferv.
2387.5-2390	100% SI calc dolomite: wh, v hd, sbblky-blky, porosity visible.
2390-2392.5	100% SI calc dolomite: wh, v hd, sbblky-blky, porosity visible.
2392.5-2395	100% SI calc dolomite: wh, v hd, sbblky-blky.
2395-2397.5	100% SI calc dolomite: wh, v hd, sbblky-blky.
2397.5-2400	95% SI calc dolomite: wh, v hd, sbblky-blky. 5% LMST: wh/gy, hd, sbblky, G efferv.
2400-2402.5	95% SI calc dolomite: wh, v hd, sbblky-blky. 5% LMST: wh/gy, hd, sbblky, G efferv.
2402.5-2405	100% SI calc dolomite: wh, v hd, sbblky-blky.
2405-2405.7	100% SI calc dolomite: wh, v hd, sbblky-blky.

Depth (m)	Description
2407.5-2410	90% SI calc dolomite: wh, v hd, sbblky-blky. 10% LMST: wh/gy, hd, sbblky, G efferv.
2410-2412.5	90% SI calc dolomite: wh, v hd, sbblky-blky. 10% LMST: wh/gy, hd, sbblky, G efferv.
2412.5-2414	90% SI calc dolomite: wh, v hd, sbblky-blky. 10% LMST: wh/gy, hd, sbblky, G efferv.

List of abbreviations

Becoming: bec
Black: blk
Blocky: blk_y
Broken: brkn
Brown: brn

Calcareous: calc
Chert: chrt
Consolidated: consol
Conchoideal: conch
Consolidated : consol

Dark: dk
Dirty : drty
Dolomite : Dol

Effervescence: Efferv

Fissile: fiss

Fossiles: foss
Fracture: fract
Fragments: frags

Grain: grn
Good: G
Green: gr
Greenish: gr/
Grey: gy

Hard: hd

Inclusions: incl

Limestone: LMST
Locally: loc

Material: mat
Moderately: mod
Micropyrilic: mcpyr
Mudstone: Mdst

Occasionally: occ
Oolites: ool
Organic: org

Quartz: qtz

Red: rd
Reddish: rd/

Sandstone: Sst
Sandy: sndy
Shale: Sh
Shaly: shly
Siliceous: Sil
Siltstone : Sltst
Silty: slty
Slightly: sl
Streaks: strks
Subblocky: sbblky
Subelongated: sbelong
Subplaty: sbply
Succrosic: Suc

Traces: Tr
Texture: text
Volcanic: volc
Varicolored: varic
Very: v

White: wh
With: w/