INTRAGAZ S.E.C.

INDEPENDENT ASSESSMENT
(GAS STORAGE PROJECT PERFORMANCE)

ST. FLAVIEN

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Independent Assessment
(St. Flavien Gas Storage Project Performance)

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1. Introduction

GLJ Ltd. (GLJ) understands that Intragaz requires:

- an expert independent technical assessment regarding the proposed St. Flavien gas storage project to use the St. Flavien gas storage in peak shaving operations with a maximum withdrawal rate of 1.75 E^6m^3/d under Case 1 and 2.4 E^6m^3/d under Case 2. The objective of the mandate is to validate the deliverability forecast reflected in the Performance Notice (Avis de performance).

The primary focus of this technical assessment will be to audit the Intragaz simulation model of St. Flavien with respect to well performance and assess field gas deliverability forecasts.

The scope of work for the St. Flavien technical assessment would be:

- Review the St-Flavien underground storage description and current performance.
- Audit Intragaz's simulation runs in the GASMOD model with Intragaz' assistance.
- Validate the ability of the storage scheme to meet the delivery forecasts reflected in the Performance Notice while considering the equipment limitations; and
- Discussion of the results.

This report addresses the mandate's objectives.

2. Conclusions

GLJ has reviewed and audited the technical feasibility of the proposed gas storage scheme optimization at St. Flavien and concludes:

- The technical evaluation of the project by Intragaz using the GASMOD simulator is appropriate to provide high confidence estimates of future gas production and injection within the proposed operational limits of the prediction cases of the St. Flavien gas cycling scheme (the SFL project).
- The gas production forecasts for Cases 1 and 2 will surpass the minimum design criteria for peak load operation based on the GASMOD simulation results.
- The proposed change in the operation strategy of the SFL gas cycling scheme to a peak load system is proven effective at a gas production rate of 1.75 E^6m^3/d utilizing the gathering system.
- The peak production rate of 2.4 E^6m^3 has been simulated with a lower outlet station pressure of 7,300 kPa.
- The forecasts of both prediction cases were adequately addressed using the Intragaz GASMOD simulation model and confirmed to meet and exceed the operational schedule for the SFL project.
- GLJ has reviewed and assessed the particulars of the peak load conversion at the St. Flavien gas storage scheme and finds the proposal to be factually accurate.

3. St-Flavien Underground Storage Description and Current Performance

The St. Flavien gas field is located 45 kilometers southwest of Quebec City on the south shore of the St. Lawrence River (see Figure 1). The initial St. Flavien well was drilled by Shell in 1972 and the field began commercial production in 1980. Primary gas production came from clean dolomite in two members of the Beauharnois Formation at depths of 1,460 to 1,510 meters and 1,650 to 1,690 meters. Gas initially-in-place (GIIP) at St. Flavien was 263 10^6m^3, of which 161 10^6m^3 had been produced prior to conversion to gas storage.

The Beauharnois Formation of the Beekmantown Group had been used for gas storage. The Beauharnois Formation can be further subdivided down into members and sub-members. The target reservoirs for gas storage are the B1 and C4/C5 zones.

Following extensive feasibility studies and the drilling of additional wells, gas storage operations began in St. Flavien in 1998. For storage operations, the field contains 12 production wells and three observation wells. Numerical simulation models have been used by Intragaz to monitor ongoing operations and to predict future performance of the St. Flavien gas storage field under optimized development cases.

From its inception in March 1998 to the present, the St. Flavien gas storage project has operated successfully within its design as a base load operation. After initial injection of cushion gas volumes between March and October 1998, the storage project has gradually and systematically increased gas production rates through 2007. As illustrated in Figure 2, the production cycle is initiated in December through March of the annual cycle. The injection cycle generally extends from March through November. The post-2007 gas storage cycle has remained stable year-over-year. The pressure history over the duration of the gas storage scheme at St. Flavien is set out in Figure 3.

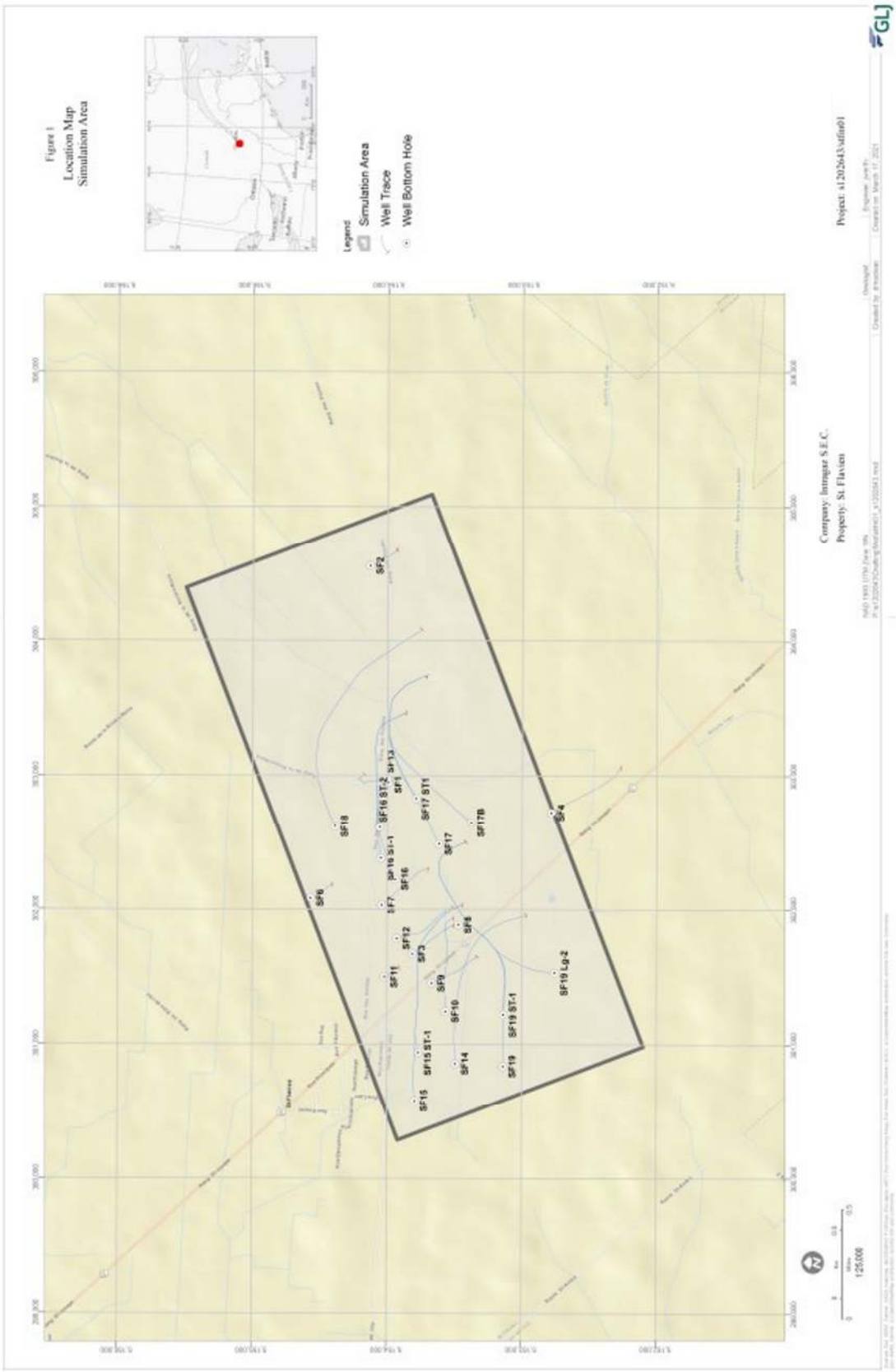
Figure 1
Location Map
Simulation Area
Legend
Simulation Area
Well Trace
Well Bottom Hole
Company: Intragaz S.E.C.
Property: St. Flavien
Project: s1202643\sfin01
SF2
SF4
SF6
SF7
SF8
SF9
SF10
SF11
SF12
SF13
SF14
SF15
SF16
SF16 ST-1
SF16 ST-2
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SF19 ST-1
SF19 Lg-2
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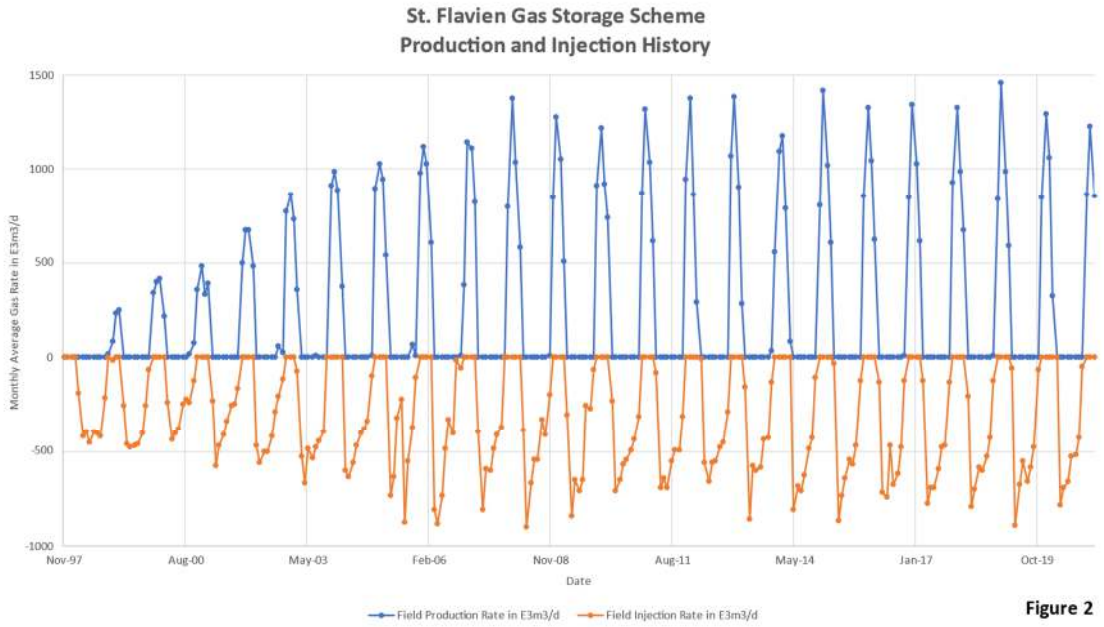

Figure 2

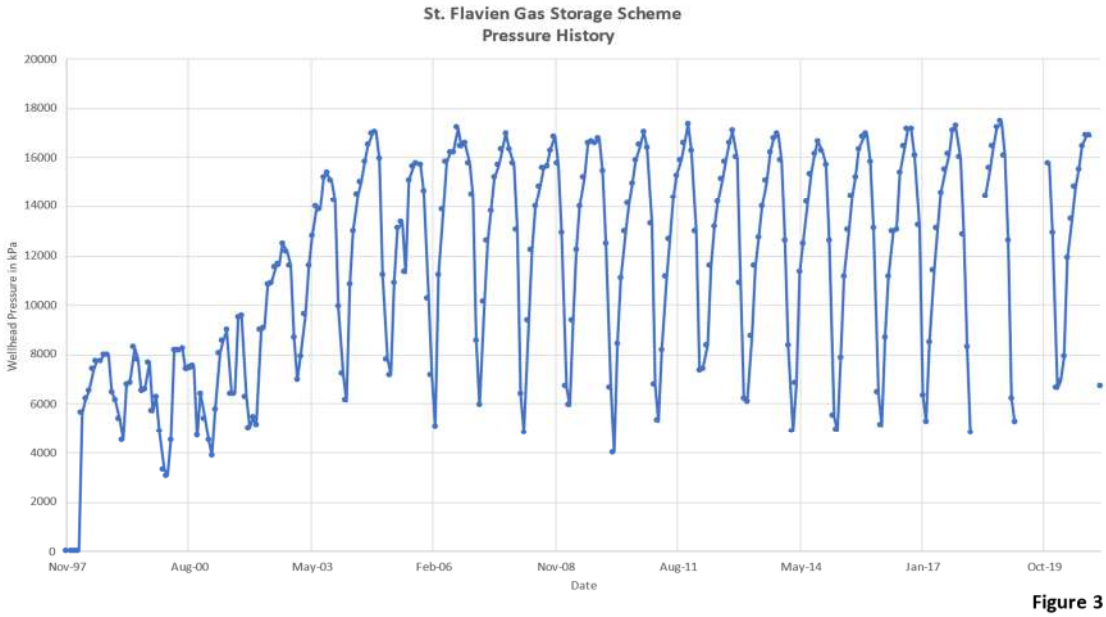

Figure 3

4. The Objective

St. Flavien optimization project (Peak shaving cases of 1.75 E^6m^3/d and 2.4 E^6m^3/d)

In 2020, discussions with Énergir resulted in a project aimed at optimizing the St. Flavien storage for peak shaving under two cases:

- Case 1: Maximum withdrawal rate of 1.75 E^6m^3/d
  - This case is limited by the existing gathering system capacity.
  - Addition of a 3,800 hp compression unit and other equipment. Existing compressors would provide a full 100 percent back-up.
- Case 2: Maximum withdrawal rate of 2.4 E^6m^3/d
  - Same as Case 1 but with a lower outlet station pressure of 7,300 kPa resulting from the addition by Energir of a new pipeline.

The project involved the analysis and prediction forecast for the continuation of existing gas cycling operations (the Base Case), Case 1 and Case 2.

The Base Case: Current use as Base load storage (maximum withdrawal of 1.52 E^6m^3/d)

Gas cycling operation started in 1998 using the initial vertical wells and the existing 219.1 mm pipeline between the Saint-Nicolas and St-Flavien facilities.

From 2000 to 2004 the field development continued with the excellent results of the horizontal wells (SF-14 to SF-19) and the optimization of the storage then focused on increasing the level of working gas and base load deliverability.

The last phase of development was the addition of the C-2 compressor with improvements to the facilities in 2005 that resulted in the current 120 E^6m^3 working gas volume. The current withdrawal profile, which was designed to allow the full withdrawal of the 120 E^6m^3 working gas volume during the withdrawal season, has a maximum withdrawal capacity of 1.52 E^6m^3/d in January, with decreasing plateaus during the rest of the withdrawal season.

5. Prediction of Gas Cycling Forecasts

GASMOD Description

GASMOD is a fully integrated gas reservoir/multi-phase gathering system simulator. The simulator is capable of modelling large and small gas properties with 3D reservoirs, vertical/horizontal wells, facilities and gathering systems.

The St. Flavien field was modeled as a full 3D model with an integrated pipeline model of the surface gathering systems and facilities. The model description and reservoir grid system are based on data from Intragaz and the previous built simulation model by Intragaz. This latter model (Petroleum WorkBench,, SimBest II module) was used to provide the model grid arrays and grid modifications for the GASMOD initialization.

The GASMOD reservoir component was designed to encompass a three-layer grid system over the St. Flavien field using an areal grid of 73x 38 grid blocks. The area of the grid system is set out in Figure 1. Minimum grid size was specified at 50 m x 50 m throughout the core area of the project with larger grid dimensions on the periphery of the grid system. The vertical description of the project was accomplished with Layer 1 representing the B1 unit and Layer 3 assigned to the C4-C5 units. Layer 2 was an empty separation unit.

A constant water saturation of 9 percent was assigned in the reservoir grid. Porosity and permeability grid values were assigned based on the previous model. The initial reservoir pressure of 13,300 kPa was assigned to both reservoir grid layers.

The validity of the application of the GASMOD model to predict future behavior of the project is illustrated through the match of the production and injection rates, and the observed well head pressures over the entire duration of the gas cycling history as shown in Figures 4 through 7.

St. Flavien GASMOD History Match
Gas Production Rate and Pressure
2011-2015

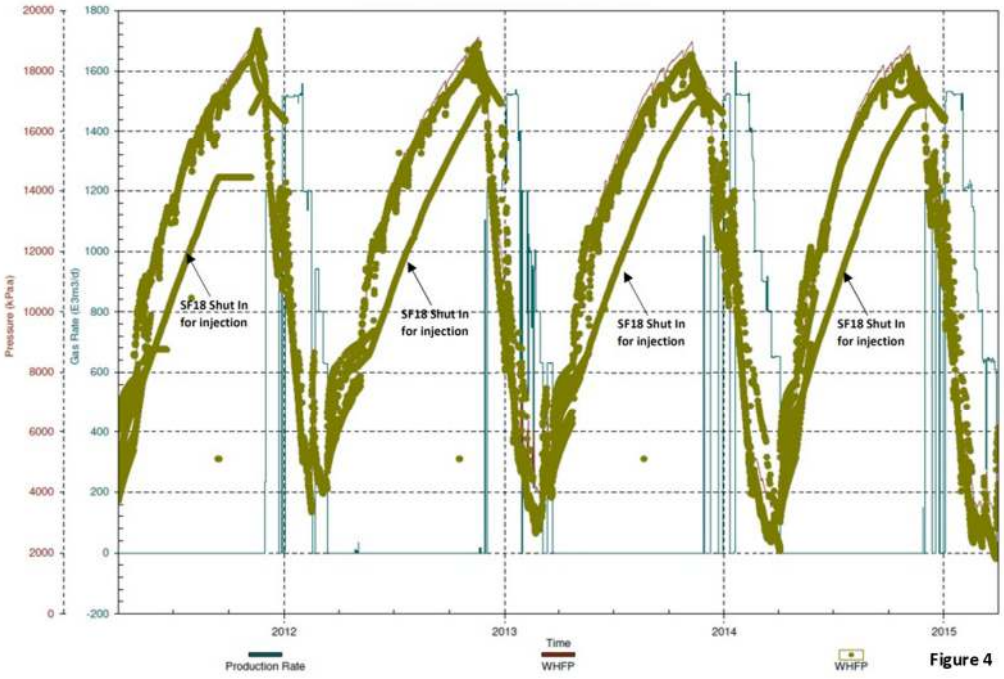

Figure 4

St. Flavien GASMOD History Match
Gas Production Rate and Pressure
2016-2020

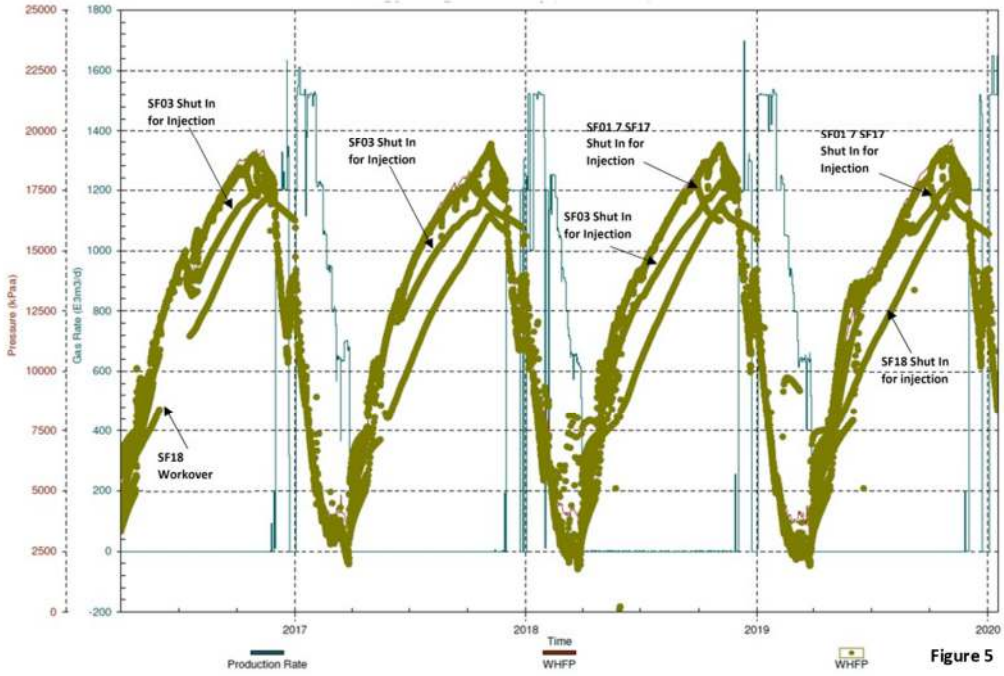

Figure 5

St. Flavien GASMOD History Match
Gas Injection Rate and Pressure
2012-2015

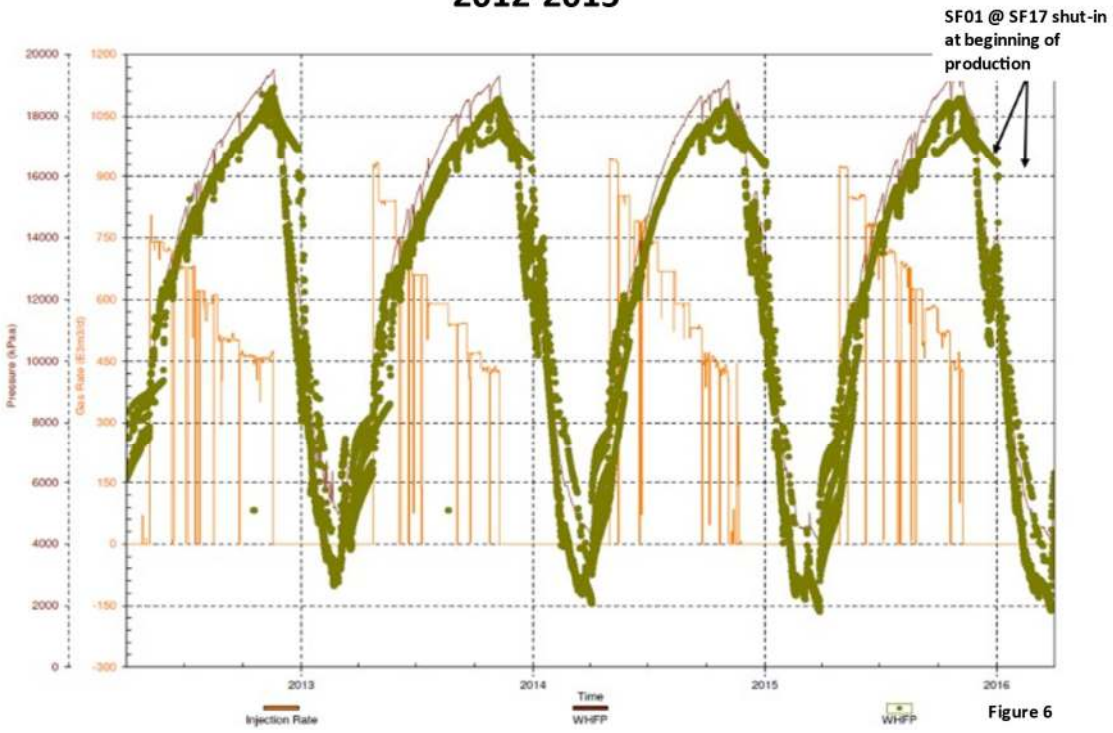

Figure 6

St. Flavien GASMOD History Match
Gas Injection Rate and Pressure
2016-2020

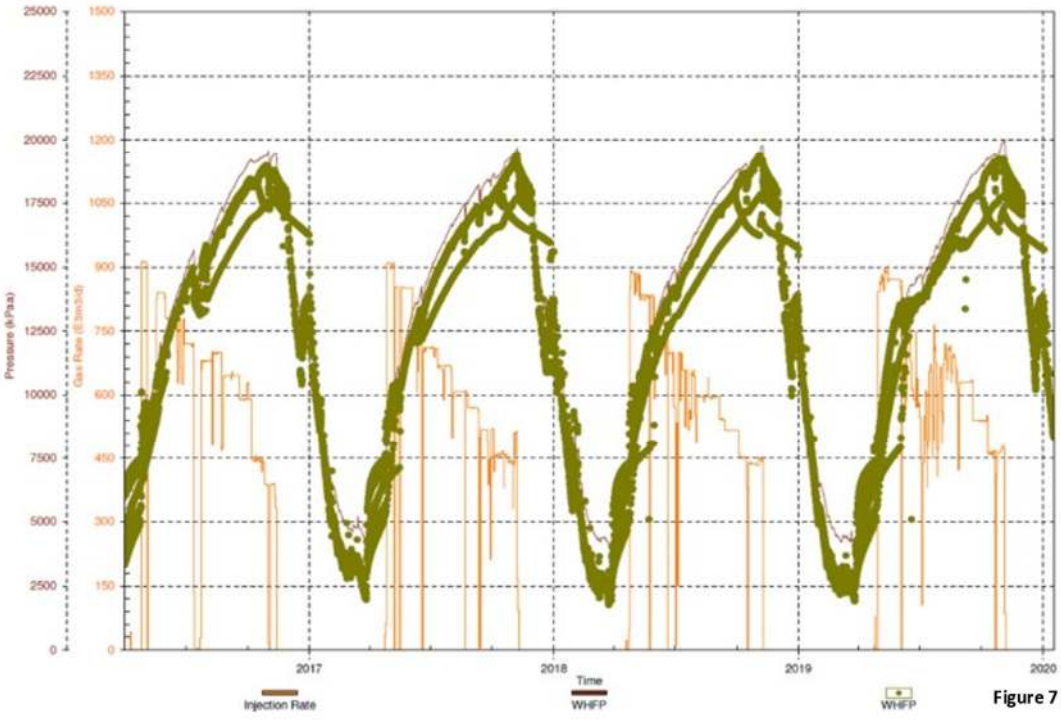

Figure 7

Base Case Prediction

The base case forecast reflects actual operation based on a continuous withdrawal. The gas withdrawal schedule is set out in the following table.

St. Flavien Gas Storage Peak Load Project
Base Case Forecast - Continued Historical Operation

Start Date	Duration days	Gas Rate E^3m^3/d	Pressure MPa	Cum.Gas Production, E^6m^3
01-Dec	22	1.2	16.4	26.4
23-Dec	10	0	13.0	26.4
02-Jan	29	1.52	13.5	70.5
31-Jan	14	1.2	6.6	87.3
14-Feb	7	1.05	4.6	94.6
21-Feb	7	0.94	4.0	101.2
28-Feb	7	0.8	3.2	106.8
07-Mar	20	0.635	3.6	119.5
27-Mar	1	0.49	3.5	120.0
28-Mar	1	0	5.0	120.0

The gas production and wellhead pressure forecast are illustrated in Figure 8. The SFL project is shown to be capable of gas delivery over the entire duration of the gas cycling production schedule for a total of 120 E^6m^3.

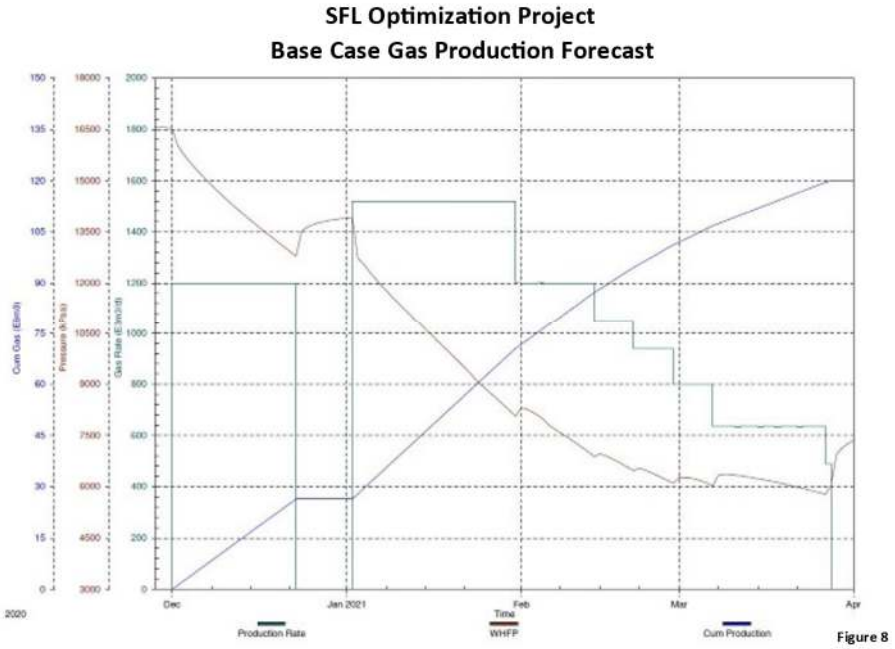

Figure 8

Case 1 – Peak Load Production Cycle at 1.75 E^6m^3/d

Case 1 was designed to establish the maximum gas production rate under peak loading operation through the existing surface gathering system. The addition of the 3,800 hp compressor is intended to enhance the operational performance of the scheme with the existing compressors available as backup. The gas rate forecast was specified with a maximum gas rate of 1.75 E^6m^3/d for the production of the initial 90 E^6m^3 from the project. The remaining 30 E^6m^3 of working gas volume was to be produced between a minimum rate of 0.6 E^6m^3/d and up to a maximum of rate of 1.2 E^6m^3/d. The design forecast must meet the Performance Notice for Case 1 as illustrated in Figure 9 courtesy of Intragaz.

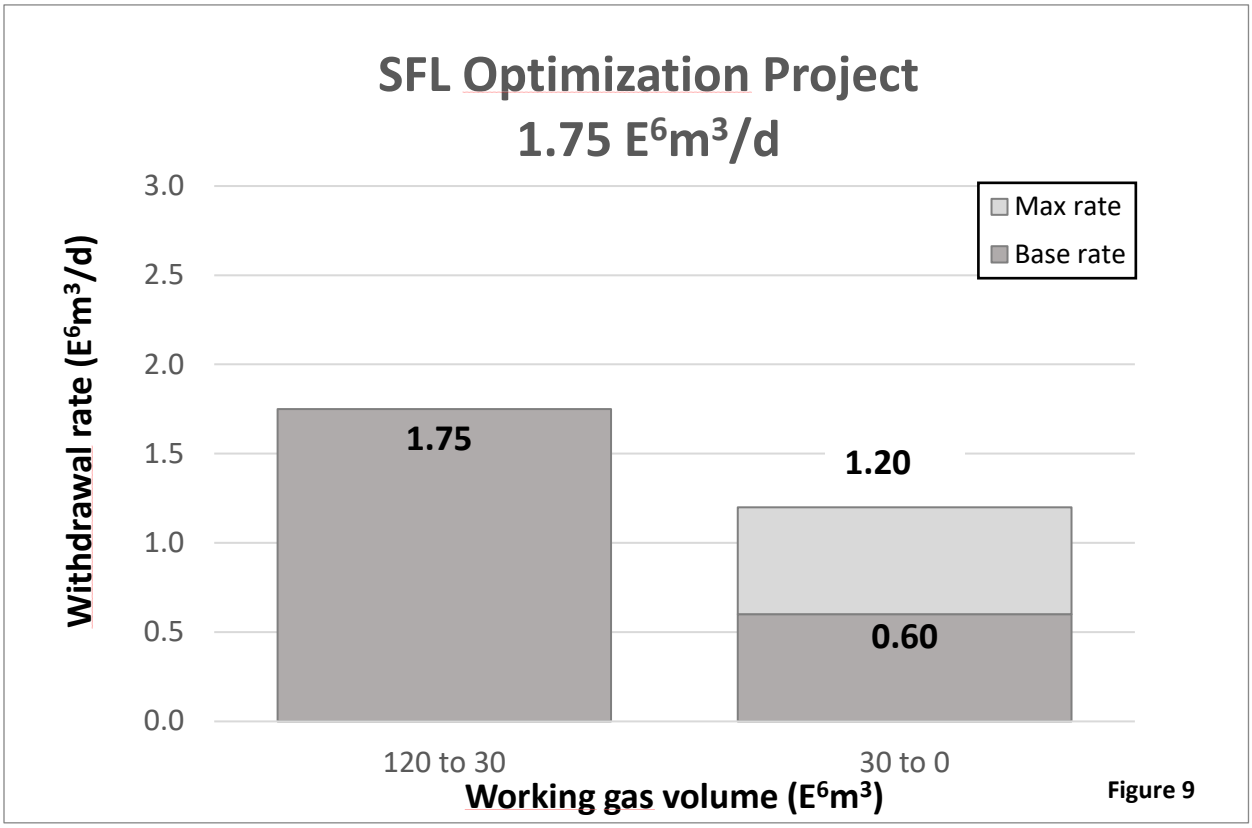

Figure 9

The critical element in this forecast is the duration of the reservoir recovery period between each maximum production rate. The SFL project cannot deliver gas at the continuous design rate of 1.75 E^6m^3/d over the entire 90 E^6m^3 period without build-up periods to allow recovery of reservoir pressure in between each individual production period at the peak rate. This feature of the Case 1 peak load prediction is illustrated in Figure 10.

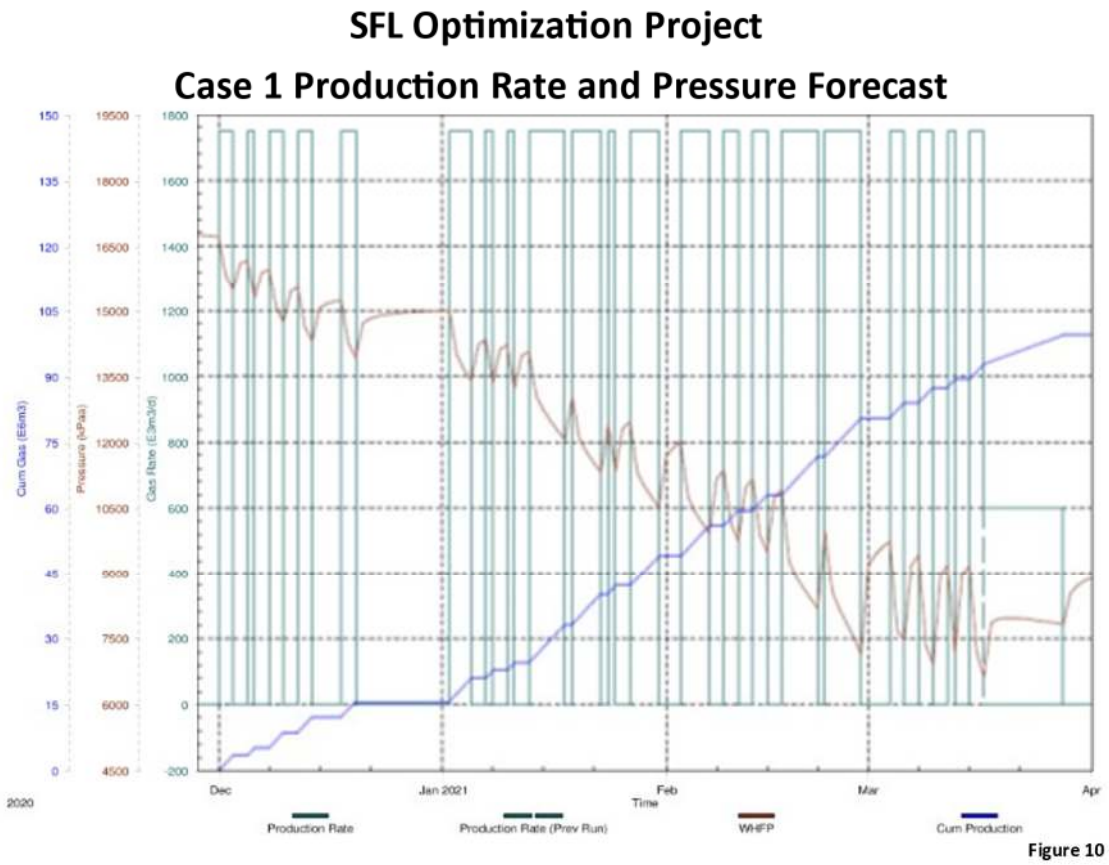

Figure 10

In the Case 1 forecast, the schedule is based on the high demand winter experienced in 2013-2014. There are 21 successive production periods at 1.75 E^6m^3/d of duration ranging from 1 to 5 days. Each production period in the forecast is followed by a buildup period with durations varying between 1 to 4 days apart from the seasonal 13-day shut-in over the Christmas holiday period. The design rate of 1.75 E^6m^3/d extends to the 16th of March at which time the remaining working gas volume is 27.25 E^6m^3. The final cumulative gas production volume over the entire duration of the Case 1 forecast is predicted to be 99.4 E^6m^3.

Case 2 – Peak Load Production Cycle at 2.40 E^6m^3/d with an Outlet Station Pressure of 7,300 kPa

The Case 2 forecast was designed to establish the maximum gas production rate under peak loading operation through the same surface facility as Case 1 and gathering system with a lower outlet station pressure of 7,300 kPa. The design gas rate forecast must meet Performance Notice as follows:

- The first 50 E^6m^3 of working gas can be withdrawn at 2.4 E^6m^3/d.
- Between 70 to 45 E^6m^3 remaining working gas the minimum withdrawal rate is 2.0 E^6m^3/d (with a maximum of 2.4 E^6m^3/d).
- Between 45 to 30 E^6m^3 remaining working gas, the minimum withdrawal rate is 1.2 E^6m^3/d (with a maximum of 2.0 E^6m^3/d).
- The last 30 E^6m^3 can be withdrawn at a minimum of 0.6 E^6m^3/d and up to 1.2 E^6m^3/d.

The design forecast as per the Performance Notice for Case 2 is illustrated in Figure 11 courtesy of Intragaz.

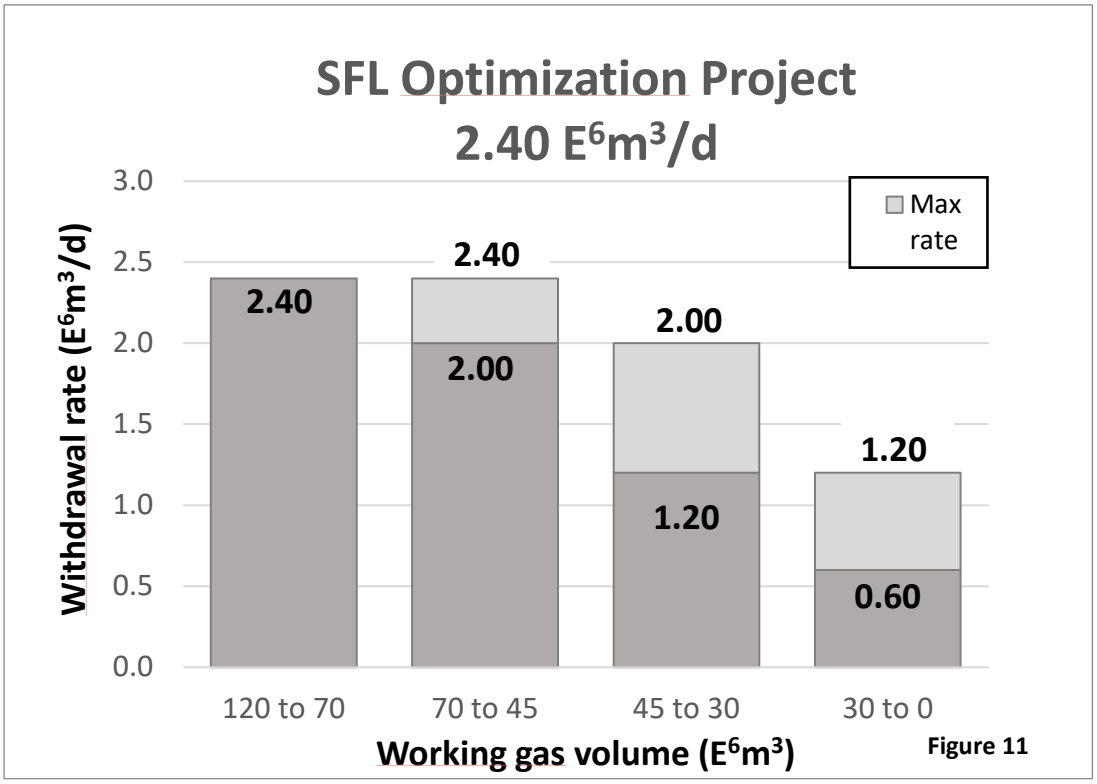

Figure 11

In the Case 2 forecast, the schedule is based on the high demand winter experienced in 2013-2014. The forecast for Case 2 is illustrated in Figure 12 and features 24 production periods (13 periods at 2.4 E^6m^3/d) of duration ranging from 1 to 5 days. Separating the gas rate periods, the forecast includes 20 build ups of duration ranging from 1 to 4 days except for a 14 day build up period over the scheduled Christmas holiday break.

As shown in Figure 12, the gas rate of 2.4 E^6m^3/d was maintained until the 3rd of February with a cumulative gas production of 64.8 E^6m^3 and a remaining working gas volume of 55.2 E^6m^3. This behavior is well beyond the initial stage development of the Case 2 production schedule.

The second gas rate period of 2.0 E^6m^3/d was maintained until February 18th with a remaining working gas volume of 41.2 E^6m^3. The final gas rate period in the forecast of 1.5 E^6m^3 is terminated on March 16th with a remining working gas volume of 18.7 E^6m^3. Cumulative gas production is estimated to be 108 E^6m^3 over the entire duration of the Case 2 forecast.

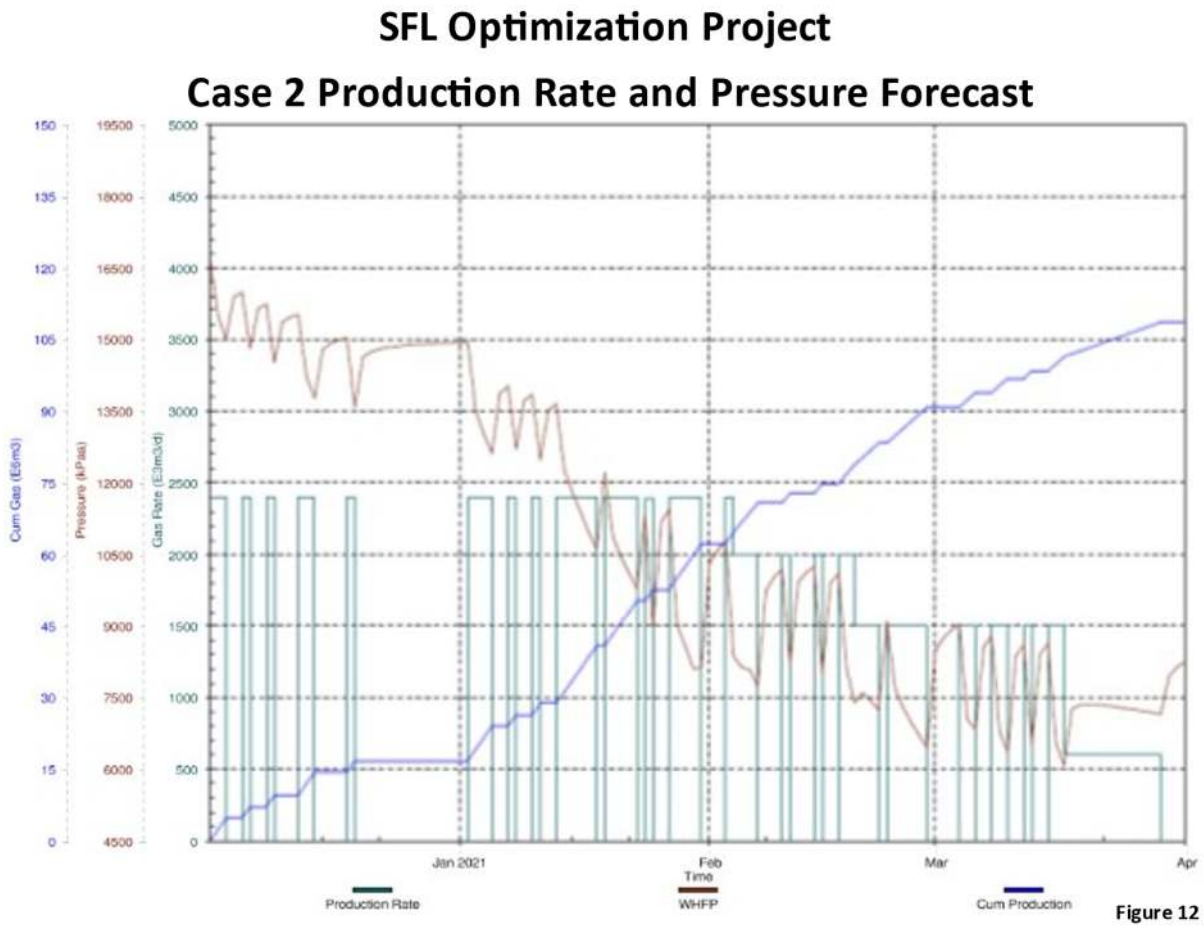

Figure 12

6. Discussion

The technical evaluation of the project by Intragaz using the GASMOD simulator is appropriate to provide high confidence estimates of future gas production and injection within the proposed operational parameters of the prediction cases of the SFL gas cycling scheme.

The gas production forecasts based on the Performance Notice for Case 1 and Case 2 will surpass the minimum design criteria for peak load operation based on the GASMOD simulation results.

The proposed change in the operation strategy of the SFL gas cycling scheme to a peak load system is proven effective at a gas production rate of 1.75 E^6m^3/d utilizing the existing surface gathering system. The peak production rate of 2.4 E^6m^3/d has been simulated with a lower outlet station pressure which requires a lower outlet station pressure of 7,300 kPa.

The forecasts of both prediction cases were adequately addressed using the Intragaz GASMOD simulation model and confirmed to meet and exceed the design operational schedule for the SFL project.

GLJ has reviewed the particulars of the peak load project and finds the proposal to be factually accurate.