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Report on
Gravity Surveys

at the
Toanga Project

Kirkland Lake, Ontario

- August 2022 -

ClearView Geophysics Inc.

Report on
Gravity Surveys
at the
Toanga Project
Kirkland Lake, Ontario

On behalf of:

JoBina Resources Inc.
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Brampton, ON
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By:

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ClearView Ref.: AA0817
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1. Executive Summary

ClearView Geophysics Inc. was retained by **JoBina Resources Inc.** to complete a Gravity Survey on the Toanga Project located on Crown land in Morrisette Township. The centre of the survey is approximately 10 km northeast of downtown Kirkland Lake. All indicated UTM positioning is NAD83 Z17N.

This report provides the logistical and technical information related to the Gravity Survey which follows-up earlier work carried out along the same survey line (i.e., Line 2N) and in its immediate vicinity. According to historic records, there was minimal geologic mapping and geophysical surveying within the project area compared to just a few kilometres south. A few magnetics and IP/Resistivity surveys were carried out with poor or no follow-up of results.

ClearView Geophysics Inc. carried out high resolution cesium magnetics, VLF-EM (very low frequency electromagnetics), Spectral IP/Resistivity (induced polarization) and CSAMT (controlled source audio-frequency magneto-tellurics) surveys since 2012. The presently completed Gravity Survey is intended to further prioritize anomalies detected by those surveys, particularly deeper features that could be under arkose rocks of the Kewagama Group based on broad regional magnetics highs and lows within the project area.

The Gravity Survey was carried out along the entire length of Line 2N which was also surveyed and reported on with the other geophysical methods listed above. The *RTK-GPS Trimble R12* base station was located at the west end of the line. The gravity meter *Scintrex CG-6* base station was located on the west side of Lake Sesekinika and Hwy. 11. A 35W repeater radio was moved along the survey line to account for topographic obstructions. The *RTK-GPS Trimble R12i* rover antenna was also mounted on an extendable pole to ensure a clean radio-link between the base and rover GPS receivers. A *Garmin Montana 750i* hand-held GPS was used for navigation to each gravity station.

The gravimeter was setup on a small precise aluminum tripod and further leveled using the meter's internal electronics. Two readings were automatically collected at each station. Each reading was set for 60 seconds duration. The readings were monitored as acquired and if necessary restarted if deemed to noisy due to vibration. The RTK-GPS measurement for the 'height of instrument' was normally collected next. A measuring tape fastened to the RTK-GPS receiver pole was used to measure ground surface to the bottom of the gravimeter in decimal centimetres.

The *Scintrex CG-6* gravimeter completes many post-processing calculations internally, such as instrument drift and Earth-tide corrections. Post-processing calculations included adjusting the 'height of instrument' to the actual gravimeter sensor height so that Free Air and Bouguer corrections could be completed. Latitude corrections were also completed using the positioning data.

The gravimeter has its own internal GPS which was used to confirm gravimeter reading positions matched the RTK-GPS reading positions.

The Bouguer Gravity are presented as colour shaded and profiled data with postings for both the Bouguer Gravity and also for a flat-line presentation with a regional slope removed. This allowed for a better depiction of local variations where the strongest variations are at the ends of Line 2N. Local anomalies less than 0.50 mGal are between these areas.

A correlation between broad residual gravity lows and CSAMT resistivity high anomalies is seen in the data. VLF anomalies also correspond to residual gravity lows. These CSAMT and VLF anomalies could indicate silicification, faults and/or altered rocks. Several of the reported IP anomalies also correspond to gravity lows which could indicate sulphides within these silicified, faulted and/or altered zones.

A relatively strong gravity high zone that is associated with previously reported CSAMT, IP and VLF anomalies at the southeast end of Line 2N could indicate a mineralized contact between major geologic units with different bulk densities; that is, lower density rocks to the northwest and higher density rocks to the southeast. Other correlations between residual gravity high and CSAMT anomalies described in this report could indicate sources that extend to several hundred metres deep and possibly under the Kewagama Group rocks.

Forward modeling of these residual gravity anomalies can be done to test various source scenarios. Additional offset survey lines are recommended to allow for a gravity 3D inversion model. These parallel survey lines could also be resurveyed with other methods to help better prioritize exploration targets.

2. Introduction

ClearView Geophysics Inc. carried out a Gravity Survey for **JoBina Resources Inc.** at the Toanga Project. The purpose of the work was to map subsurface anomalies to guide follow-up economic mineral exploration. The fieldwork was completed in August 2022.

3. Location & Access

The work was carried out over Crown land within Morrissette Township near Kirkland Lake, Ontario. Survey line 2N is indicated in Figure 1. Access was by truck from Kirkland Lake along Airport Road to Nettie Lake Road and then to Pinetree Road which passes by stn.0 approximately 65 metres away. Line 2N pickets were originally established in 2016 at 50-metre intervals using a Garmin 62stc. Pickets were marked with flagging tape and labeled with permanent black marker on one or both sides of the pickets. Line 2N was refurbished in 2020 and again in 2022 for the present survey. All UTM positioning is NAD83 Zone 17N.

Weather was generally warm/sunny between 23C and 28C with mostly calm winds. Ground conditions where the measurements were taken were mature forested and dry. The west end of the survey line consists of cedar swamp. There was no nearby construction sites or other cultural features that could introduce seismic noise. It was not difficult to find solid ground at each station for the gravity meter tripod.

Figure 1: Line 2N Location Map.

4. Regional and Local Geological Settings

The following Figure 2 geologic overlay is derived from item 13 in Table 1 below. It indicates Blake River Group (Calc-alkalic basalt) rocks irregularly in contact with Kinojevis Group (Quartz feldspar porphyry, Tholeiitic basalt) rocks. Kewagama Group (Meta-arkose & arkose conglomerate) generally overlay Kinojevis Group rocks.

A large percentage of the Toanga Project area (e.g., along L2N) consists of Kewagama Group rocks which are generally deemed low priority for economic value. However, the possibly underlying Kinojevis Group rocks are of interest and therefore deep-exploring methods such as CSAMT are appropriate for discovering potential economic mineralization at the Toanga Project.

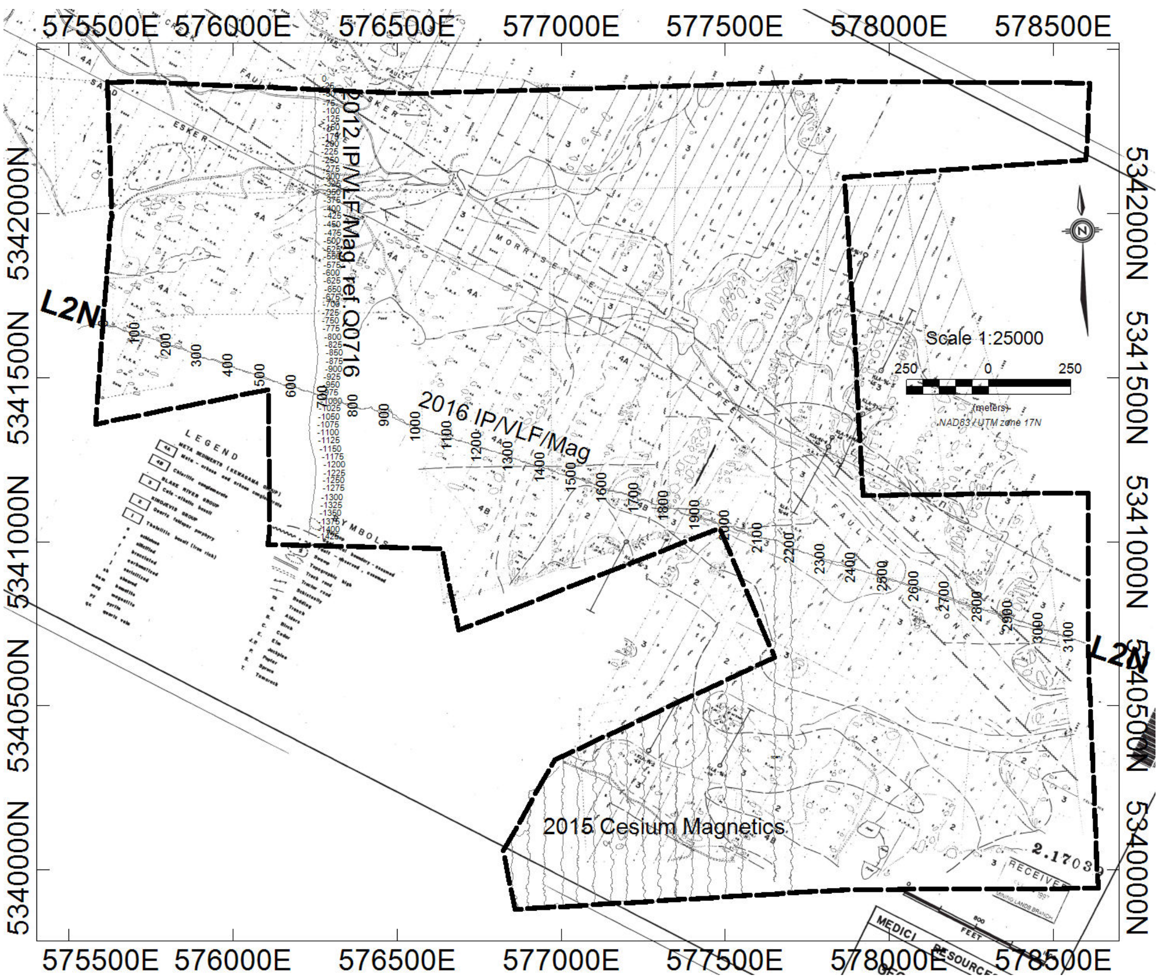


Figure 2: Regional and Local Geology Overlay, from Medici Resources Ltd.

5. Previous Work

Ontario Department of Mines Geological Report 84 (R.J. Rupert and H.L. Lovell), Geology of Bernhardt and Morrisette Townships, describes "conditions favourable for the discovery of copper, molybdenum, gold, nickel, and possibly asbestos. No mineral production has ever come from the map-area." Most of the historic prospecting for precious metals was in the southern half of these townships. Table 1 in Report 84 lists a number of reports from previous work carried out in these townships from the early 1900's through to the late 1960's.

The following Table 1 summarizes pertinent work carried out within the Toanga Project Area since the 1970's. These files were downloaded from the Ministry of Energy, Northern Development and Mines website:

item	file_name	Date	Company	Contractor	Work_Done
1	HistoricClaims_Morrisette				28 historic claim maps
2	R084_LOVELL_MAP_REPORT	May 23, 1905	Ontario Dept. of Mines	Rupert & Lovell	Geology of Bernhardt and Morrisette Twp. Report 84
3	32D04NW0043	November, 1980	Rosario Resources Canada Ltd.		Geophysical and Geological Survey of Morrisette-Lebel-Arnold Twps.
4	OFR5356	June 3, 1905	Ontario Geological Survey		Open File Report 5356
5	INPUT_gndMAG_32D04NW0346	December 10, 1981	John T. Ward		Total Field Magnetic Survey
6	32D04NW0344_WEST SIDE BLOCK _ VLF	December 8, 1983	John T. Ward		Geonics EM16R VLF Resistivity Survey
7	Map_DDH1983_32D04NW0345	April 23, 1984	John T. Ward		Geological Report
8	32D04NW0341_DETAIL_WEST SIDE BLOCK	January 29, 1985	John T. Ward		BioGeochemical and Rock Assays
9	humus_Au_Cu_Assays_32D04NW8984	November, 1988	Medici Resources Ltd.		Au, Cu, As Soils assays
10	32D04NW0311	December, 1988	Medici Resources Ltd.	F.J. Sharpley	Report on Geological Mapping and Geochemistry Kirkland Lake Airport Property
11	32D04NW0314_LashbrookMag	February 6, 1989	Medici Resources Ltd.	Raymond L. Lashbrook	Report on Magnetics Surveys
12	32D04NW0302	April 1, 1989	Medici Resources Ltd.	Geoprobe Limited	Report on Maxi-Probe E.M. Survey
13	MEDICI_GEO_DDH	April, 1989	Medici Resources Ltd.	F.J. Sharpley	Geological Map, detailed
14	JVX_IP done by Frank & JoeMihelcic_32D04NW0305	March, 1992	Tech Explorations Limited	JVX Ltd.	Test Spectral IP Survey
15	32D04NW9052	November 5, 1993	Gold Insight Resources Ltd.	John P. Thompson	Report on Diamond Drilling…and Review of Available Data
16	32D04NW0250	October 6, 1994	Strike Minerals Inc.	S.J. Carmichael Consultants	A Report on the Medici Resources Limited Nettie Lake Property
17	32D04NW0001_Medici_IPSurvey_RemyBelanger	February 1, 1995	Strike Minerals Inc.	Gerard Lambert Geosciences	Report on ground geophysical investigations: IP Surveys
18	32D05SW0060	December 31, 1995	John P. Thompson & Associates	JVX Ltd.	Technical Review, A Logistical and Interpretive Report on Spectral IP Surveys
19	AP-96-1_DDH_32D04NW0379	June, 1996	Medici Resources Ltd.	F.J. Sharpley	Results from Borehole AP-96-1
20	MEDICI_DDH_GEOLOGY_32D04NW0383	November, 1996	Medici Resources Ltd.	F.J. Sharpley	Results from KLA-96 boreholes
21	32D04NW2033	December, 2001	Gold Insight Resources Ltd.	Douglas Robinson	Report on Magnetic Total Field Survey & Geological Survey
22	OFR6083	June 24, 1905	Ontario Geological Survey		Open File Report 6083 Report of Activities 2001
23	32D04NW2042	October, 2003	Gold Insight Resources Ltd.	Douglas Robinson	Report on Exploration Procedure, Development & Evaluation & Drill Proposal
24	20001736	September, 2005	Gold Insight Resources Ltd.	Douglas Robinson	Report on Exploration Procedure, Development & Evaluation & Drill Proposal
25	20001763	October, 2005	Gold Insight Resources Ltd.	Douglas Robinson	Report on Diamond Drilling
26	20000765	December, 2007	Gold Diamet Ltd.	Marc Boivin	Report on an Airborne Magnetic Survey
27	20005858	December 2, 2008	Gold Diamet Resources	P.A.R.Brown	Diamond Drill Report
28	Q0716 JoBina..._IP_Mag_VLF_Linecutting_Fall2012	Fall 2012	JoBina Resources Inc.	ClearView Geophysics Inc.	Report On Linecutting, Spectral IP, Magnetics, VLF, Sampling & Historic Data Review
29	Q0716_addendum	Fall 2012	JoBina Resources Inc.	ClearView Geophysics Inc.	Discussion of Results - Addendum
30	U0721 JoBina_ToangaProject_IP_Mag_VLF_Linecutting_2016	2015 & 2016	JoBina Resources Inc.	ClearView Geophysics Inc.	Report on Linecutting, Spectral IP, Magnetics, VLF & Historic Data Review
31	Y1230 JoBina _ CSAMT _ ToangaProject	December 2020	JoBina Resources Inc.	ClearView Geophysics Inc.	Report on CSAMT Surveys at the Toanga Project

Table 1: Pertinent Previous Work, since 1970's to present.

In summary, the historic geophysical surveys at the Toanga Project Area were limited to magnetics, electromagnetics (e.g., VLF, Maxi-Probe, EM16R) and IP/Resistivity. Despite the presence of long-wavelength magnetic features which indicate large deep sources, no deep-penetrating drillholes or sophisticated modern geophysical work has ever been completed within this area until the CSAMT survey completed in 2020 and the present gravity survey.

Previously established survey lines and drill/access roads are almost, if not nearly completely, grown in. Therefore, pre-GPS era geophysical and geological data are useful for review and guidance only. They generally need to be re-acquired where and if deemed necessary.

JoBina Resources Inc. reports ref.Q0716 (Fall 2012), ref.U0721 (2015 & 2016), and ref.Y1230 (2020) provide historic data reviews based on some of the sparsely pertinent local information derived from the above listed historical reports.

6. Personnel

Geophysicist/Party Chief:

Joe Mihelcic operated the instruments. He was responsible for the data quality, processed/plotted/interpreted the results and prepared this report.

7. Survey Parameters

The following Table 2 summarizes the equipment and configuration used. Figure 3 displays the transmitter setups relative to the survey grid.

Gravity Meter:	• Scintrex CG-6.
Reading Configuration:	• 50-metre stations, standard flat tripod level. • Gravity base station located west of Lake Sesekinika: 554720E/5336733N Z17 (~22km from site)
Positioning:	RTK-GPS: • Trimble R12i Rover, R12 Base, 35W Repeater Radio. • GPS Base Receiver mounted on tripod near Stn.0, Repeater mounted on pole at Stn.200E moved to Stn.250E, Rover mounted on pole with retractable extension. • Garmin Montana 750i used for navigation
Total Coverage:	• 3150 metres

Table 2: Equipment, Configuration & Coverage

Table 3 and Table 4 summarize coverage and daily activities respectively. Figure 4 indicates the legacy and modern claims traversed by Line 2N:

Line	West End	East End	Distance
L2N	0E	3150E	3150 m

Table 3: Survey Grid Coverage.

Date	Task	Comment
Aug.6	Mobilization	Brampton to Lake Sesekinika.
Aug.7	…	…
Aug.8	Setup	Organize and prepare gear.
Aug.9	Survey	Setup base station and repeater near stn.0; survey to stn.263E.
Aug.10	Survey	Survey to Stn.1113E.
Aug.11	Survey	Survey to Stn.1515E - poor RTK_GPS repeater signal.
Aug.12	Survey	Moved repeater to Stn.200E and extended using retractable poles to over 10 metres height, Survey to Stn.2172E – poor RTK_GPS repeater signal past hills and cliffs.
Aug.13	Survey	Added extension rod to survey pole, Survey Stn.2232E - no RTK base signal.
Aug.14	Survey	Moved repeater to Stn.250E, surveyed to end line Stn.3150E, out of bush 11:05 pm.
Aug.15	Survey	Attempt redo reading at Stn.2177E, No RTK-GPS signal. Repaired broken repeater cable connection.
Aug.16	Survey, Demob	Resurveyed with gravity and GPS several poor RTK-GPS positions, packed out rover, repeater and base station gear.

Table 4: Daily Activities.

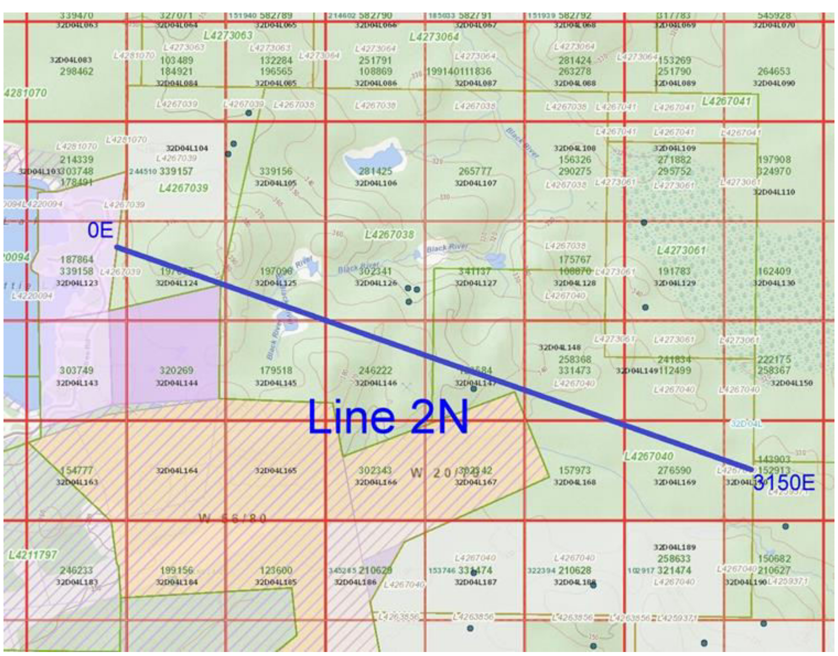


Figure 3: Claims Crossed by Line 2N.

8. Survey Method & Data Processing

The gravity survey was carried out with the CG-6 gravimeter. The instrument was leveled on a short tripod as close to the planned station as possible in the most open and firm ground area for best GPS satellite coverage and gravimeter stability. A Garmin Montana 750i hand-held GPS was used for navigation to each station. At least two consecutive gravimeter readings were automatically acquired at each station. Each reading was stacked over 60 seconds. The RTK-GPS receiver was used to measure the height of the gravimeter above ground surface. The lower part of the RTK-GPS receiver staff was marked with a metric measuring tape for height-of-instrument measurements. These elevation data were used for the Free Air and Bouguer corrections. Earth Tide corrections were done internally with the gravimeter GPS synchronized time.

The following equations were used for the Bouguer Gravity calculations indicated in the Geosoft file: <Gravity.gdb>

Free_Air: 0.3086*(Elevation+(InstrHeight/100)+.085+.06263-325)

Bouguer Cor: -(0.04193*2.67*(Elevation-325))

Latitude Corrections:

-(978032.7*(1+(0.0053024*sin(Lat*@PI/180)*sin(Lat*@PI/180))-0.0000058*(sin(2*Lat*@PI/180)*sin(2*Lat*@PI/180)))-980683.327298)

Bouguer_Gravity_DriftCorrected: CorrGrav+Free_Air+Bouguer_Cor+Lat_Cor+Drift

The Bouguer Gravity map is presented as colour shading and profiles in Appendix B, Plate, and in the Geosoft format file: <Gravity.map>.

The RTK-GPS base station was located next to L2N/Stn.0E. The RTK-GPS repeater was located first at the RTK-GPS base station on a tripod, then moved to L2N/Stn.150E on an extended pole and finally to L2N/Stn.200E on an extended pole. The gravity base station was located west of Lake Sesekinika.

Specifications for the instruments used are provided in Appendix A.

9. Problems & Logistical Issues

The repeater antenna was moved from the base station tripod location to extendable poles that were secured against trees for maximum height. Similarly, the rover RTK-GPS receiver pole was mounted on an extendable rod. The repeater antenna coax cable extension had a broken connector that was replaced. These adjustments allowed the survey to be completed with required vertical precisions.

10. Discussion of Results

The Bouguer Gravity are presented in the Plate, Appendix B. The UTM-referenced presentation shows the colour shading and profile for the drift corrected results. The flat-line presentation located below is the Bouguer Gravity minus the regional slope indicated in the upper UTM-positioned format. Anomalies from previously completed ClearView Geophysics Inc. reports are also posted on this presentation. A detailed discussion of the results for each of these anomalies can be found in the ClearView Geophysics Inc. reports listed in Table 1.

The strongest residual responses are at the start and end of the survey line. Between these areas, the residual variations are less than 0.50 mGal. The filtered brown dashed line presented in the flat-line Residual Bouguer Gravity presentation of the Plate indicates a number of broad gravity high and gravity low regions.

Broad residual gravity lows correspond with CSAMT resistivity high anomalies **R2** through **R6** in the west and CSAMT anomalies **R8** and **R9** in the east. VLF anomalies **V2** and **V3** also correspond to residual gravity lows. These CSAMT and VLF anomalies could indicate silicification, faults and/or altered rocks. IP anomalies **H, G, K**, **L** and **M** also correspond to gravity lows which could indicate sulphides within these silicified, faulted and/or altered zones.

Broad residual gravity highs correspond with CSAMT resistivity high anomalies **R1**, **R7** and **R10.** VLF anomaly **V4** and IP anomaly **N** corresponds to a relatively strong gravity high zone located at the southeast end of L2N. This could indicate a mineralized contact between major geologic units with different bulk densities – lower density rocks to the northwest and higher density rocks to the southeast. IP anomalies **I** and **J** located within a residual gravity high at CSAMT anomaly **R7** could indicate a relatively dense mineralized structure that could extend to several hundred metres deep based on the CSAMT and broad gravity high results.

Magnetic anomaly **M4** is located between residual gravity high and gravity low zones. This could indicate a significant geologic contact between different rock types at **M4**.

11. Conclusions and Recommendations

The gravity results over Line 2N complement the previously reported geophysical survey results. The sources for the broader gravity low and highs are likely quite deep and in the west possibly sourced under the Kewagama Group (e.g., arkose rocks). Higher frequency residual Bouguer gravity results presented in the plate (Appendix B) could result from survey data limitations but they could also indicate nearer surface variations in rock types, structures and mineralization.

Additional parallel or subparallel survey lines are recommended in order to allow for a gravity 3D inversion model that could be used to estimate source depths. These parallel survey lines could also be resurveyed with other methods to help better prioritize exploration targets. Forward modeling of the data presented here could also help to identify their potential sources.

If there are any questions about the surveys or the interpretation, please do not hesitate to contact the undersigned.

Sincerely,

ClearView Geophysics Inc.

Per:

This signature and stamp are scanned images held on file by ClearView Geophysics Inc. The signatory consents to their use only for the purpose of this document.

Joe Mihelcic, P.Eng., M.B.A.
Geophysicist/President

LICENSED PROFESSIONAL ENGINEER
November 30, 2022
J. F. MIHELCIC
PROVINCE OF ONTARIO

CLEARVIEW GEOPHYSICS INC.
ONTARIO CORPORATION

12. Statement of Qualifications, Joe Mihelcic

I, Joe Mihelcic, hereby certify that:

1) I am a geophysicist with business office at 12 Twisted Oak Street, Brampton, Ontario L6R 1T1.

2) I am the owner of ClearView Geophysics Inc., a company performing geophysical surveys and related services.

3) I am a graduate of Queen's University in Applied Science, Geological Engineering (B.Sc. 1988) and of Ivey Business School (M.B.A. 1995).

4) I am a Professional Engineer member in Ontario, Saskatchewan, New Brunswick and Newfoundland-Labrador. I am also a Professional Geoscientist in Nova Scotia, Nunavut/NWT, and Newfoundland-Labrador, with Special Authorization Temporary Permits issued in Quebec.

5) I and my wife Sabina Mihelcic are full owners of JoBina Resources Inc., a private Ontario corporation.

6) I have practiced my profession since 1986.

Signed___________________

Joe Mihelcic, P.Eng., M.B.A.
Brampton, Ontario
November 30, 2022

13. References

ClearView Geophysics Inc. *Report on Linecutting, Spectral IP, Magnetics, VLF, Sampling & Historic Data Review,* Fall 2012.

ClearView Geophysics Inc. *Report on Linecutting, Spectral IP, Magnetics, VLF, Sampling & Historic Data Review – Addendum,* Fall 2012.

ClearView Geophysics Inc. *Report on Linecutting, Spectral IP, Magnetics, VLF & Historic Data Review,* 2015 & 2016.

ClearView Geophysics Inc. *Report on CSAMT Surveys,* December 2020.

Medici Resources Ltd. *Medici_Geo_DDH.pdf,* April 1989.

Ontario Department of Mines. *Geology of Bernhardt and Morrisette Townships By R.J. Rupert and H.L. Lovell,* Geological Report 84, Toronto, 1970.

Scintrex Ltd. *CG-6 Autograv Gravity Meter Operation Manual,* Rev.B, March 2018.

Appendix A – Instrument Specifications

CG-6 Autograv™ Technical Specifications

Tablet computer and CG-6 Autograv™ specifications are subject to change without notice

Sensor Type	Fused quartz using electrostatic nulling
Reading Resolution	0.1 microGal
Standard Deviation	<5 microGal
Operating Range	World-wide (8,000 mGal without resetting)
Residual Drift	<20 microGal/day
Uncompensated Drift	<200 microGal/day
Range of Automatic Tilt Compensation	±200 arcseconds
Tares	Typically <5 microGal for shock up to 20G
Automated Corrections	Tide, instrument tilt, temperature, drift
Data Output Rate	User selectable up to 10 Hz
GPS Accuracy	2.5m typical accuracy
Touch-Free Operation	Handheld Tablet Computer with Bluetooth
Battery Capacity	2 x 6.8 Ah (10.8V) rechargeable lithium smart batteries. Full day operation at 25°C (77°F)
Power Consumption	5.2 Watts at 25°C (77°F)
Operating Temperature	-40°C to +45°C (-40°F to 113°F) Optional high temp version to +55C (131°F)
Digital Data Output	USB and Bluetooth
Dimensions	21.5 cm (H) x 21 cm x 24 cm (8.5 in x 8.2 in x 9.4 in)
Weight	5.2 kg (11.5 lbs) including batteries
Standard System Contains	CG-6 Autograv™ Gravity Meter CG-6 Tripod 2 Rechargeable Smart Batteries Battery Charger Power Supply and USB Cable Transportation Case Shoulder Strap User Manual Quick Start Guide Carrying Bag Plug Adaptor Kit Spare Parts Kit
Shipping weight and dimensions	97cm x 60 x 55 (H) (38in x 24 x 22 (H)), 26 kg, (60 lb).

Available Options and Accessories	High-Temperature (HT) Meter Upgrade Tablet computer + accessories LynxLG Software 12V External Power Supply Cable Cold Weather Kit Seco Backpack Spare Meter Batteries Spare Tablet Computer Batteries Trident Gradient Tripod Spare Battery Holder Assembly Extended Legs Tripod

Location of the CG-6 Autograv™ Sensor

The following picture shows the location of the CG-6 Autograv™ sensor.

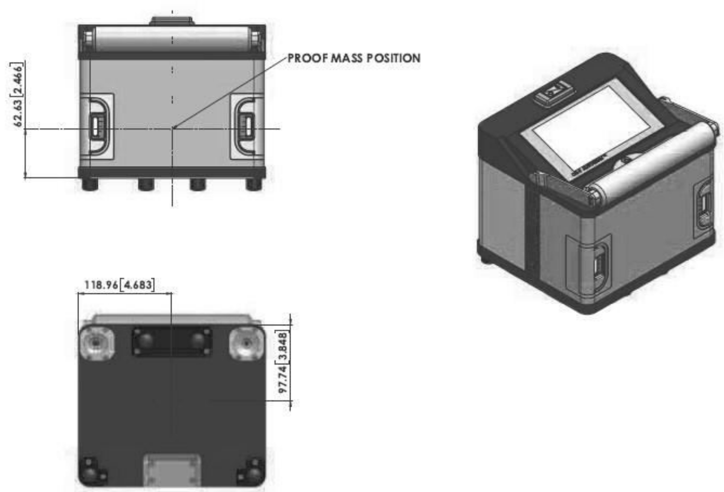


Figure 6-1 The CG-6 AutogravTM sensor location

PERFORMANCE SPECIFICATIONS		
GNSS MEASUREMENTS		
	Constellation agnostic, flexible signal tracking, improved positioning in challenging environments[1] and inertial measurement integration with Trimble ProPoint GNSS technology.	
	Increased measurement and stakeout productivity and traceability with Trimble TIP™ technology IMU-based tilt compensation	
	Advanced Trimble Custom Survey GNSS chips with 672 channels	
	Reduced downtime due to loss of radio signal or cellular connectivity with Trimble xFill technology	
	Signals tracked simultaneously	GPS: L1C, L1C/A, L2C, L2E, L5 GLONASS: L1C/A, L1P, L2C/A, L2P, L3 SBAS (WAAS, EGNOS, GAGAN, MSAS): L1C/A, L5 Galileo: E1, E5A, E5B, E5 AltBOC, E6[2] BeiDou: B1, B1C, B2, B2A, B2B, B3 QZSS: L1C/A, L1S, L1C, L2C, L5, L6 NavIC (IRNSS): L5 L-band: Trimble RTX™ Corrections
	Iridium filtering above 1616 MHz allows antenna to be used up to 20 m away from iridium transmitter	
	Japanese LTE filtering below 1510 MHz allows antenna to be used up to 100 m away from Japanese LTE cell tower	
	Digital Signal Processor (DSP) techniques to detect and recover from spoofed GNSS signals	
	Advanced Receiver Autonomous Integrity Monitoring (RAIM) algorithm to detect and reject problem satellite measurements to improve position quality	
	Improved protection from erroneous ephemeris data	
	Positioning Rates	1 Hz, 2 Hz, 5 Hz, 10 Hz, and 20 Hz
POSITIONING PERFORMANCE[3]		
STATIC GNSS SURVEYING		
High-Precision Static		
	Horizontal	3 mm + 0.1 ppm RMS
	Vertical	3.5 mm + 0.4 ppm RMS
Static and Fast Static		
	Horizontal	3 mm + 0.5 ppm RMS
	Vertical	5 mm + 0.5 ppm RMS
REAL TIME KINEMATIC SURVEYING		
Single Baseline <30 km		
	Horizontal	8 mm + 1 ppm RMS
	Vertical	15 mm + 1 ppm RMS
Network RTK[4]		
	Horizontal	8 mm + 0.5 ppm RMS
	Vertical	15 mm + 0.5 ppm RMS
RTK start-up time for specified precisions[5]		2 to 8 seconds
TRIMBLE INERTIAL PLATFORM (TIP) TECHNOLOGY		
TIP Compensated Surveying[6]		
	Horizontal	RTK + 5 mm + 0.4 mm/° tilt (up to 30°) RMS
	Horizontal	RTX + 5 mm + 0.4 mm/° tilt (up to 30°) RMS
IMU Integrity Monitor	Bias monitoring	Temperature, age and shock
TRIMBLE RTX CORRECTION SERVICES		
CenterPoint RTX[7]		
	Horizontal	2 cm RMS
	Vertical	5 cm RMS
	RTX convergence time for specified precisions in Trimble RTX Fast regions	<1 min
	RTX convergence time for specified precisions in non RTX Fast regions	<15 min
	RTX QuickStart convergence time for specified precisions	<1 min
TRIMBLE xFILL[8]		
	Horizontal	RTK[9] + 10 mm/minute RMS
	Vertical	RTK[9] + 20 mm/minute RMS
TRIMBLE xFILL PREMIUM[8]		
	Horizontal	3 cm RMS
	Vertical	7 cm RMS
CODE DIFFERENTIAL GNSS POSITIONING		
	Horizontal	0.25 m + 1 ppm RMS
	Vertical	0.50 m + 1 ppm RMS
	SBAS[10]	typically <5 m 3DRMS

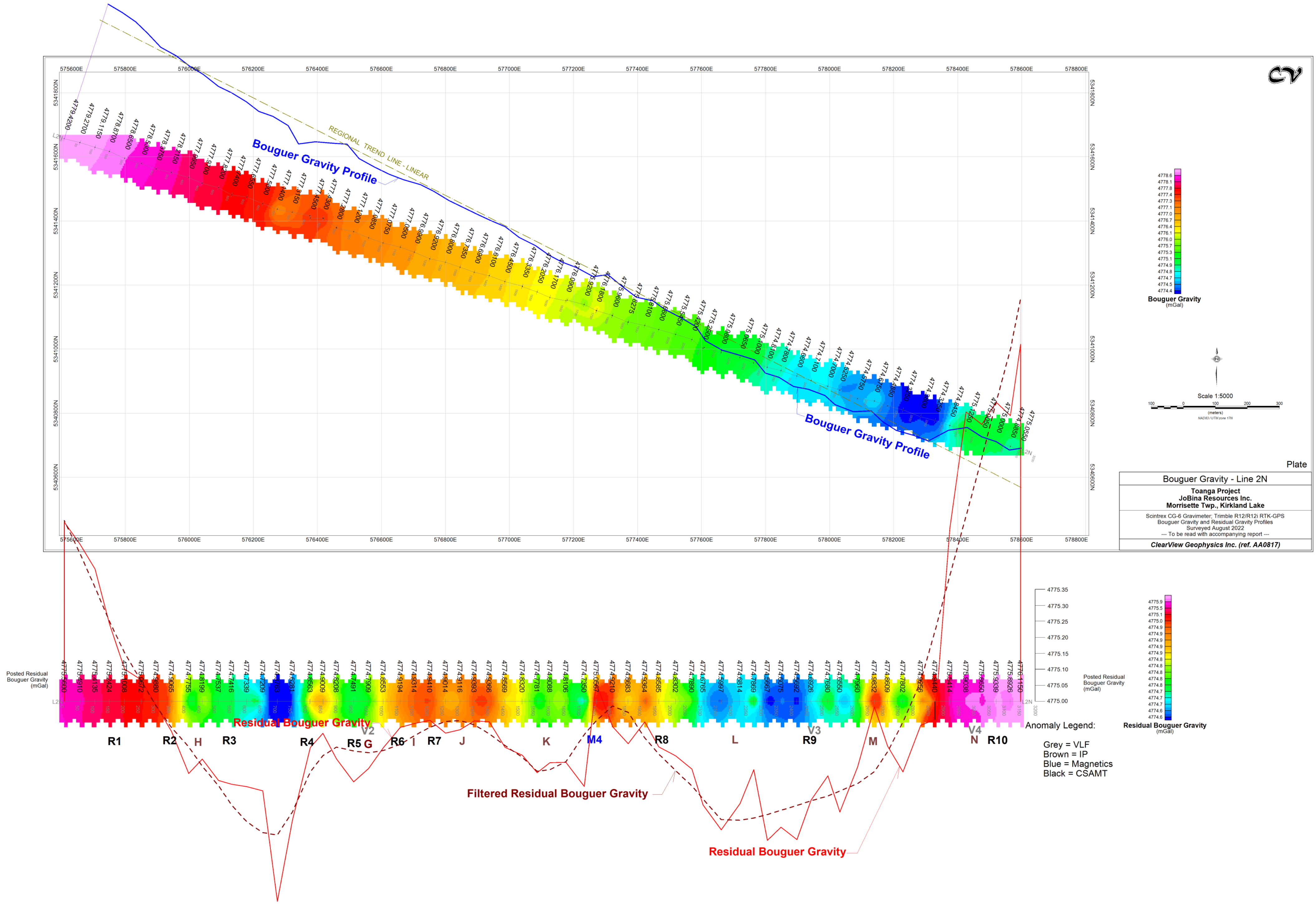
HARDWARE		
PHYSICAL		
Dimensions (W×H)	11.9 cm x 13.6 cm (4.6 in x 5.4 in)	
Weight	1.12 kg (2.49 lb) with internal battery, internal radio with UHF antenna, 3.95 kg (8.71 lb) items above plus range pole, Trimble TSC7 controller & bracket	
Temperature[11]		
	Operating	−40 °C to +65 °C (−40 °F to +149 °F)
	Storage	−40 °C to +75 °C (−40 °F to +167 °F)
Humidity		100%, condensing
Ingress protection		IP67 dustproof, protected from temporary immersion to depth of 1 m (3.28 ft)
Shock and vibration (Tested and meets the following environmental standards)		
	Shock	Non-operating: Designed to survive a 2 m (6.6 ft) pole drop onto concrete. Operating: to 40 G, 10 msec, sawtooth
	Vibration	MIL-STD-810F, FIG.514.5C-1
ELECTRICAL		
	Power 11 to 24 V DC external power input with over-voltage protection on Port 1 and Port 2 (7-pin Lemo)	
	Rechargeable, removable 7.4 V, 3.7 Ah Lithium-ion smart battery with LED status indicators	
	Power consumption is 4.2 W in RTK rover mode with internal radio[12]	
Operating times on internal battery[13]		
	450 MHz receive only option	6.5 hours
	450 MHz receive/transmit option (0.5 W)	6.0 hours
	450 MHz receive/transmit option (2.0 W)	5.5 hours
	Cellular receive option	6.5 hours
COMMUNICATIONS AND DATA STORAGE		
Serial	3-wire serial (7-pin Lemo)	
USB v2.0	Supports data download and high speed communications	
Radio modem	Fully Integrated, sealed 450 MHz wide band receiver/transmitter with frequency range of 403 MHz to 473 MHz, support of Trimble, Pacific Crest, and SATEL radio protocols:	
	Transmit power	2 W
	Range	3–5 km typical / 10 km optimal[14]
Cellular[15]	Integrated, 3.5 G modem, HSDPA 7.2 Mbps (download), GPRS multi-slot class 12, EDGE multi-slot class 12, Penta-band UMTS/HSDPA (WCDMA/FDD) 800/850/900/1900/2100 MHz, Quad-band EGSM 850/900/1800/1900 MHz, GSM CSD, 3GPP LTE	
Bluetooth	Fully integrated, fully sealed 2.4 GHz communications port (Bluetooth)[16]	
Wi-Fi	802.11 b,g, access point and client mode, WPA/WPA2/WEP64/WEP128 encryption	
I/O ports	Serial, USB, TCP/IP, IBSS/NTRIP, Bluetooth	
Data storage	6 GB internal memory	
Data format	CMR+, CMRx, RTCM 2.1, RTCM 2.3, RTCM 3.0, RTCM 3.1, RTCM 3.2 input and output	
	24 NMEA outputs, GSOF, RT17 and RT27 outputs, 1 PPS output	
WEBUI		
	Offers simple configuration, operation, status, and data transfer	
	Accessible via Wi-Fi, Serial, USB, and Bluetooth	
SUPPORTED CONTROLLERS & FIELD SOFTWARE		
	Trimble TSC7, Trimble T10, Trimble T7, Android and iOS devices running supported apps	
	Trimble Access 2020.10 or later	
AUGMENTED REALITY		
	Supports outdoor augmented reality capabilities through Trimble SiteVision running on the Trimble TSC7 controller	
CERTIFICATIONS		
	FCC Part 15 (Class B device), 24, 32; CE Mark; RCM; PTCRB; BT SIG	

Trimble R12i RTK GPS

Garmin Montana 700i & 750i Specifications

General	
PHYSICAL DIMENSIONS	3.6" x 7.2" x 1.3" (9.19 x 18.30 x 3.27 cm)
TOUCHSCREEN	✓
DISPLAY SIZE	2.55"W x 4.25"H (6.48 x 10.80 cm); 5" diag (12.70 cm)
DISPLAY RESOLUTION	480 x 800 pixels
DISPLAY TYPE	WVGA transflective, dual orientation
WEIGHT	14.5 oz (410 g) with included lithium-ion battery pack
BATTERY TYPE	rechargeable lithium-ion (included)
BATTERY LIFE	GPS Mode: up to 18 hours GPS Mode, 10 min Tracking: up to 18 hours Expedition Mode: up to 330 hours Expedition Mode, 30 min Tracking: up to 300 hours
WATER RATING	IPX7
MIL-STD-810	yes (thermal, shock, water, vibe)
HIGH-SENSITIVITY RECEIVER	✓
INTERFACE	high speed micro USB and NMEA 0183 compatible
MEMORY/HISTORY	16 GB (user space varies based on included mapping)

Appendix B – Plate



Bouguer Gravity Profile
REGIONAL TREND LINE - LINEAR
Bouguer Gravity (mGal)
Scale 1:5000
(meters)
Plate
Bouguer Gravity - Line 2N
Toanga Project
JoBina Resources Inc.
Morrisette Twp., Kirkland Lake
Scintrex CG-6 Gravimeter; Trimble R12/R12i RTK-GPS
Bouguer Gravity and Residual Gravity Profiles
Surveyed August 2022
--- To be read with accompanying report ---
ClearView Geophysics Inc. (ref. AA0817)
Posted Residual Bouguer Gravity (mGal)
Residual Bouguer Gravity
Filtered Residual Bouguer Gravity
R1
R2
H
R3
R4
V2
R5
G
R6
I
R7
J
K
M4
R8
L
V3
R9
M
V4
N
R10
Anomaly Legend:
Grey = VLF
Brown = IP
Blue = Magnetics
Black = CSAMT
Residual Bouguer Gravity (mGal)