THE UNTESTED GOLD SYSTEM OF NORTH DAKOTA'S SOURIS BASIN

A 90-Year Oversight in the Historical Record

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EXECUTIVE SUMMARY

The conventional wisdom about North Dakota gold is wrong. For ninety years, the accepted narrative has been: "The 1930s FERA study found no commercial gold in North Dakota. Case closed."

This narrative is based on a misreading of what the original researchers actually concluded. A careful examination of the primary source documents reveals that:

1. The 1930s researchers explicitly identified the river valley systems (not the flat lake bed) as having the "greatest possibilities" for commercial gold deposits.

2. They formally recommended that these valley systems be "prospected thoroughly" from the Souris delta to the Canadian border.

3. This recommended testing was never conducted. The project ended when funding ceased.

4. The "no commercial values" conclusion applied only to the flat lake bed areas actually tested, not to the untested river valleys.

5. More modern stratigraphy data from the 1960s reveals sediment depths of 70-248 feet in the target valleys, far exceeding the 20-foot maximum depths the 1930s researchers could reach with their technology.

This white paper presents the primary source evidence and calls for a reassessment of North Dakota's gold potential based on what the historical record actually says, not what institutional summaries claim it says.

1. THE HISTORICAL RECORD

1.1 Early Mining Activity (1908-1931)

Gold in North Dakota's Souris basin was not discovered in the 1930s. It was known as early as 1908, when a group organized the Eldorado Gold Mining Company to work placer claims in the Lake Souris Basin area.

Interest resurged in 1931 with the famous turkey crop incident. Gold nuggets were found in turkey gizzards near Denbigh, triggering a small gold rush. As documented in the subsequent government reports:

> *"As soon as this information became general knowledge, individuals and organizations began taking mining leases on plots of ground in the area until virtually all property subject to lease was so held by some person or group. Many experiments were tried by the installation of mining machinery and the erection of small treatment plants in different districts of the area."*

All these early operations failed. But the failure had a specific cause: the gold was too fine and too deep for 1930s technology.

1.2 The FERA Gold Investigation (1934)

In 1934, the School of Mines at the University of North Dakota obtained funding from the Federal Emergency Relief Administration (FERA) to conduct a systematic gold investigation. Over 5,000 samples were collected across approximately 5,000 square miles.

The methodology was constrained by available technology. The report on Field Methods by Walter Augustadt explains:

> *"In order to do this quickly and economically it was necessary to have some sort of drill capable of taking a core sample and to be able to case the hole as it was being augered, since in most cases the water table in the region lies at a depth of between 8 and 12 feet. The presence of water increases the cost and decreases the speed of prospecting work, and test pits are not practical since the expense of timbering, curbing and pumping water prohibits their use."*

This technological limitation is fundamental. The researchers were limited to shallow depths (typically under 20 feet) by the water table and the capabilities of their equipment.

The FERA report also acknowledged why fine gold was difficult to recover:

> *"Material brought in by the River Souris in glacial time and forming the delta deposit must have been of very fine material for the heavier material composed of rocks and gravel was dropped along the stream bed in the natural channel... This type of material could only contain gold in an extremely finely divided*

state. The physical condition of such gold would make it unrecoverable by known methods of ore treatment."

This is a crucial admission: the 1930s researchers understood that the finest gold could not be recovered by the technology available to them.

2. WHAT THE REPORTS ACTUALLY CONCLUDED

The FERA investigators made careful distinctions between the areas they tested and the areas they believed warranted future investigation. These distinctions have been lost in modern summaries.

2.1 Deposit Types Identified

The General Summary section of the FERA report identifies four distinct types of gold-bearing deposits:

> Type 1: Flat bottom areas of Old Glacial Lake Souris
>
> Type 2: Low flat flood plains along the Souris and its tributaries within the Lake Souris Basin
>
> Type 3: Deposits along the Souris River within the lake bed area
>
> Type 4: Deposits in the deep and wide valley of the Souris River (including the Brand Farm delta area near Logan)

This classification is critical. The researchers clearly distinguished between the flat lake bed deposits (Types 1-3) and the deep river valley deposits (Type 4).

2.2 The Differential Findings

The report's conclusions were not uniform across these deposit types. For Types 1, 2, and 3, the finding was negative:

> *"Assay results thus far obtained from plots representing these four types of deposit indicate that, although occasional values and traces are found in the first three types named, nothing indicating the presence of values in commercial quantities in these types of deposits."*

But for the fourth type—the river valley and delta deposits—the conclusion was strikingly different:

> *"The fourth type, that of deposits in the wide and deep valley of the Souris river, and represented by plots 22, 23, 24, 25 southeast of Logan on the Brand Farm and also by plots 20, 21, 12 miles northeast of Velva, located at a point where the valley begins to widen out; indicate the possibilities of occurrence of gold in commercial quantities along the floor of the Glacial River Souris and at a point where it widens out to form a delta deposit."*

This is an explicit statement that the river valley deposits (Type 4) showed "possibilities of occurrence of gold in commercial quantities." The modern narrative ignores this finding entirely.

2.3 The Critical Admission

The FERA report contains a crucial admission that has been overlooked:

> *"No work has been done prospecting or sampling the wide and deep valleys of the glacial Rivers Des Lacs and Souris, north of Logan."*

And again, in the summary:

> *"No work has been done in this deposit north of Logan."*

The areas they identified as most promising were never tested. The "no commercial values" conclusion applied to the flat areas (Types 1-3) they did test, not to the river valleys (Type 4) they recommended.

3. THE FORMAL RECOMMENDATIONS (NEVER IMPLEMENTED)

The FERA report concludes with formal recommendations for future investigation. These recommendations have never been implemented.

3.1 River Valleys as Priority Targets

The report explicitly prioritizes the river valley systems:

> *"While the Souris and Des Lacs River areas seem to bear the greatest possibilities of the finding of commercial deposits of gold-bearing material..."*

And:

> *"It seems that the valleys of both the Souris and Des Lacs should be prospected thoroughly from the delta of the Souris to the International boundary."*

3.2 The Concentration Mechanism

The researchers understood the geological mechanism that would have concentrated gold in the river valleys:

> *"Both of these glacial rivers carried a tremendous amount of water from the melting ice sheet edge, and they also carried heavy loads of sand and gravel from drift deposits. These deposits are stratified and the boulders strewn along the valley floors. The valleys vary in width from half a mile to a mile or more and they cut deeply. The river load was subjected to a great concentrating action and if deposits of gold-bearing material did exist in the drift which was*

carried along by these giant streams, then it is highly possible that deposits exist where the gold was concentrated."

This passage explicitly describes the concentration mechanism: glacial rivers cutting deep valleys, carrying heavy mineral loads, and concentrating gold through natural hydraulic sorting.

3.3 The Specific Field Recommendations

The formal Field Work recommendations are unambiguous:

> *"That future field investigation include a thorough prospecting of the areas included by the valley of the Glacial River Souris, the valley of the Glacial River Des Lacs, and the three outlet districts of Lake Souris located in North Dakota."*
>
> *"That the prospecting of the above areas be carried out by means of pits or bore holes taken at locations most favorable for previous concentration by stream action; and that values be first established in the field by use of the pan, long tom, or short sluice, and then supplemented by assays made in the laboratory, on both concentrated and unconcentrated material from these localities."*

These recommendations were never implemented. FERA funding ended, World War II intervened, and the recommendations were forgotten.

4. THE MISSING DATA: 1960s STRATIGRAPHY AND MODERN UNDERSTANDING

The 1930s researchers operated without knowledge that would become available decades later. The USGS Professional Paper 325, "Geology of the Souris River Area, North Dakota" (published in the 1960s), provides stratigraphic data that fundamentally changes the interpretation of the FERA findings.

4.1 Sediment Depths Far Exceed 1930s Sampling

The Souris River report documents sediment depths that the 1930s technology could not have reached:

> *"In a hole drilled in the bottom of the upper reaches of the Souris River valley, in the SW¼ sec. 28, T. 162 N., R. 86 W., 71 feet of surficial deposits was penetrated before bedrock was reached."*
>
> *"A large number of wells and test holes were drilled for water in the valley fill near Minot. Known depths to bedrock in the holes ranged from 92 feet to 248 feet, and, in some places nearby, bedrock may lie even deeper."*
>
> *"In the J. H. Kline well 1, which was drilled for oil in the valley bottom of the Des Lacs River, 3½ miles southeast of Carpio, 95 feet of fine to medium sand was penetrated before bedrock was reached."*

The FERA researchers sampled to maximum depths of approximately 20 feet. The actual sediment columns extend 70-248 feet, between 3.5 and 12 times deeper than what was tested.

4.2 The Critical Gap in Valley Floor Data

A careful examination of the 1960s study reveals a critical limitation: while sediment depths are documented, detailed stratigraphic logs from valley floor drilling are extremely sparse.

For the entire Des Lacs valley, only one detailed reference exists—the J. H. Kline oil well near Carpio. But this well was drilled to 8,435 feet seeking oil, and the entire 95 feet of glacial sediment was logged in a single line: "Sand, buff, coarse. Some pebbles." The drillers were focused on deep bedrock formations, not surficial stratigraphy.

The one detailed valley floor log comes from Sawyer (in the Souris valley), which documented:

- Multiple alternating layers of sand, clay, and gravel
- Coarse gravel interlayered with clay at 80-94 feet depth
- A limestone boulder at 94-96 feet depth
- Humified (organic-rich) zones indicating buried soil surfaces

Sawyer is located near Logan—the same area where FERA researchers found their best gold values at the Brand Farm. The presence of coarse gravel and a boulder at depth is precisely the type of lag deposit where heavy minerals would concentrate.

The Des Lacs valley—including the area from Carpio to Burlington where the two rivers converge—has never been drilled with detailed stratigraphic logging. We simply do not know whether similar boulder lag zones exist at depth in that system.

4.3 Natural Sluice Box Geometry

The USGS Professional Paper 325 documents the valley gradients that would have created ideal conditions for heavy mineral concentration. The Des Lacs River valley has a gradient of approximately 6 feet per mile throughout its 35-mile length. The Souris River valley averages about 1.2 feet per mile, with steeper sections (2.3 feet per mile) between the Des Lacs confluence and glacial Lake Souris.

These gradients, combined with the confined valley geometry, created conditions analogous to a natural sluice box. When catastrophic meltwater floods poured through these valleys, the gradient and valley walls channeled flow in a way that would have sorted heavy minerals (including gold) to the bottom while carrying lighter sediments downstream. The boulder lag zones documented at depth are exactly what would be expected from this process.

4.4 Multiple Glacial Cycles and Cumulative Concentration

The Pleistocene epoch (approximately 2.6 million years) brought multiple glacial advances across North Dakota. The USGS Professional Paper 325 documents that at least four separate ice sheets of the Wisconsin stage crossed the Souris River area, identifying deposits from the Iowan, Tazewell, Gary, and Mankato substages. Regional stratigraphic studies identify 7-16 distinct till units across the state, each representing a separate glacial advance or phase.

This is not a single depositional event but a cumulative process. Each glacial cycle transported material from the Canadian Shield southward, and each retreat created meltwater events that sorted and concentrated heavy minerals. The Wisconsin stage alone (approximately 75,000-11,000 years ago) included at least 11 documented phases of advance and retreat.

This has profound implications for resource potential. Traditional placer deposits form from single concentration events. The Souris system represents multiple concentration events stacked on top of each other, with the deepest and oldest deposits potentially being the most enriched. The boulder lag zones documented between till layers are physical evidence of these repeated erosion and concentration cycles.

4.5 Flour Gold and Liberation During Transport

The extremely fine particle size of gold in this system (often called "flour gold") is a direct result of glacial transport. As the Laurentide Ice Sheet scraped across the Canadian Shield's gold-bearing regions, it pulverized sulfide-bearing source rocks into progressively finer particles. During transport and subsequent weathering, gold was liberated from its host sulfide minerals.

This liberation process explains several observations. First, it explains why the gold is so fine: it was mechanically reduced over millions of years of glacial grinding. Second, it explains why the gold has gone largely unnoticed even in water well drilling: flour gold is essentially invisible in drill cuttings and would not be recognized without specific assay testing. Third, it explains why 1930s recovery methods failed: the technology to economically recover flour gold from water-saturated sediments did not exist.

4.6 Multiple Till Layers and Boulder Lag Zones

The Souris River report documents complex stratigraphy with multiple glacial till layers separated by boulder concentrations:

> *"The zone of boulders and cobbles, generally less than 3 feet thick, between the two tills contains boulders 4½ feet long, though their average size is about 2 feet. In places, the boulders form a well-defined pavement. Many are polished and striated, especially on their top surfaces. The boulders appear to represent a lag concentrate left by erosion of the lower till."*

This boulder lag zone (a "lag concentrate left by erosion") is precisely the type of deposit where heavy minerals including gold would accumulate. It exists between distinct glacial till layers at depths the 1930s researchers could not reach.

However, this specific observation comes from valley wall exposures, not from drilling under the valley floor itself. Whether similar lag zones exist at multiple depths beneath the valley floors remains unknown—because no one has drilled detailed stratigraphic test holes in the target areas.

4.7 Ground Moraine Thickness

The ground moraine (the glacial deposit overlying potential mineralized zones) is documented as exceptionally thick:

> *"The ground moraine is unusually thick in most places, as compared with most other glaciated areas in the Great Plains... In the Souris River loop area, it thickens progressively from about 100 feet near Velva to about 250 feet north of Mohall."*

This thickness represents overburden that protected any mineralized zones from erosion, but also placed them beyond the reach of 1930s sampling technology.

5. REANALYSIS: WHAT THE DATA IMPLIES

5.1 The Sampling Bias

The 1930s sampling had a systematic bias: it could only sample the shallow, diluted portions of the sediment column. If heavy minerals concentrated at depth through hydraulic sorting (as the researchers themselves believed occurred) then the shallow samples would necessarily show lower grades than the deeper, untested zones.

The highest assay values recorded in the FERA study came from the Brand Farm plots in the river valley, precisely the deposit type they recommended for further investigation. Concentrated pannings from these plots assayed as high as 0.56 oz gold per ton.

5.2 The Concentration Factor

The researchers understood that concentration would occur at depth. The report on the river valley deposits notes:

> *"The valley at this point is approximately 125 to 150 feet deep and more than a mile across. During glacial time a great river filled this valley and carried a heavy load of drift material in its rushing waters. The material or a proportion of it was laid along the bed or the valley floor and thus a series of stratified beds, river formed, were laid."*

If the valley is 125-150 feet deep and the 1930s researchers sampled only the top 20 feet, they tested roughly 15% of the sediment column, and specifically the portion least likely to contain concentrated heavy minerals.

5.3 The Boulder Lag Significance

The boulder lag zones documented in the Souris River report represent natural concentration horizons. When glacial meltwater eroded till deposits, lighter materials were carried away while heavy materials (including boulders and heavy minerals) accumulated as lag concentrates.

Gold, with a density of 19.3 g/cm³, is approximately seven times denser than common sand minerals (2.65 g/cm³). In any hydraulic sorting process, gold will concentrate at the base of the moving water column, settling into lag deposits. The boulder pavements documented at 70+ feet depth are exactly where gold would be expected to accumulate.

6. THE INSTITUTIONAL RECORD

The North Dakota Department of Mineral Resources (DMR) provides public information about gold mining history in North Dakota. The current summary states:

> *"The likelihood of finding commercial concentrations of gold in the sediments related to glacial Lake Souris is only slight."*

This statement, while accurate for the flat lake bed sediments, inadvertently conflates two distinct geological settings:

1. **"Glacial Lake Souris" sediments** — the flat lake bed deposits that the FERA study tested and found to have minimal commercial potential.
2. **"Glacial River Souris and Des Lacs" valleys** — the deep river channel deposits that the FERA study identified as having the "greatest possibilities" for commercial gold, recommended for thorough prospecting, but never tested.

The original FERA researchers were careful to distinguish between these two settings. Over time, that distinction appears to have been lost in summary documents. The result is that the negative findings from the tested lake bed deposits have been applied to the untested river valley deposits.

This is not a criticism of the DMR, which is working from the same institutional summaries that have circulated for decades. Rather, it is an observation that the primary source documents tell a more nuanced story than the summaries suggest.

7. PHYSICAL VALIDATION: FIELD SAMPLING ACROSS BOTH VALLEYS

Beginning in 2025, I conducted systematic surface sampling across both of the river valley systems identified by the 1930s FERA researchers as priority targets: the Des Lacs

Valley and the Souris River Valley. The results provide preliminary physical validation of the geological thesis.

7.1 Sampling Methodology

Surface rocks were collected from exposed glacial deposits across both valley systems. Each specimen was subjected to systematic acid testing to identify sulfide-bearing material (which reacts characteristically with dilute acids) and magnetic analysis to identify magnetite and potentially PGM-associated minerals. Visual examination identified lithologies consistent with known Canadian Shield mining districts.

7.2 Results

Of 70+ specimens collected and tested:

- 46+ specimens showed positive acid reaction indicating sulfide content
- Multiple specimens displayed strong magnetic properties
- Lithologies identified include sulfide-bearing volcanic material, quartz vein material (classic gold host rock), weathered sulfide minerals, and magnetic concentrates

The 66%+ hit rate for sulfide-bearing material in surface samples is remarkable. These surface rocks represent the most diluted portion of the glacial deposits—material that was not hydraulically sorted into concentration zones. The presence of this material at surface strongly suggests higher concentrations at depth where hydraulic sorting would have occurred.

7.3 Source Region Identification

The variety of mineralized rock types in the surface samples indicates transport from multiple source regions in the Canadian Shield. The presence of both volcanic-hosted sulfides and quartz vein material suggests material from:

- Flin Flon greenstone belt (Manitoba/Saskatchewan) — volcanic-hosted massive sulfide deposits with gold, copper, zinc
- La Ronge gold belt (Saskatchewan) — orogenic gold in quartz veins
- Lynn Lake district (Manitoba) — nickel-copper-gold sulfide deposits

All three districts lie directly in the glacial transport path that fed the Souris outlet system. The surface sampling confirms that mineralized material from these districts was transported to, and is present in, the North Dakota portion of the glacial depositional system.

8. ADDITIONAL MINERAL POTENTIAL

While gold is the focus of the historical record, the same geological processes that transported and concentrated gold would have affected all heavy minerals. The Souris basin may contain significant concentrations of additional valuable minerals.

8.1 Platinum Group Metals

The Thompson Nickel Belt in Manitoba, which lies in the glacial transport path, contains platinum group metals (PGMs) associated with its nickel-copper sulfide deposits. PGMs are denser than gold and would concentrate even more efficiently through hydraulic sorting. No historical sampling in the Souris area tested for PGMs.

8.2 Rare Earth Elements

Certain rare earth element-bearing minerals have densities that would cause concentration alongside gold in hydraulic sorting processes. The Canadian Shield contains numerous REE-bearing pegmatites and carbonatites that were in the glacial transport path. The current critical minerals focus on domestic REE sources makes this particularly relevant.

8.3 Magnetic Minerals and Associated Metals

Surface sampling identified strongly magnetic material in the glacial deposits. Magnetite and related minerals are commonly associated with mafic and ultramafic intrusions that also host nickel, copper, and PGMs. The boulder lag zones would have enriched these magnetic minerals, and their associated PGMs and base metals, at the same horizons.

8.4 Implications for Investigation

Any investigation of the Souris basin should analyze for the full suite of heavy minerals, not just gold. The presence of magnetic minerals at the surface, combined with the documented source regions and concentration mechanisms, suggests that the subsurface concentrations could include economically significant quantities of multiple metals.

9. RESOURCE ESTIMATE FRAMEWORK

Any resource estimate at this stage is necessarily speculative. However, the available data allows for a rough framework to understand the potential scale of the deposit.

9.1 Methodology

Three independent approaches can be used to bracket potential resource estimates:

Approach 1: Source Rock Calculation (Top-Down)

The Laurentide Ice Sheet eroded material from the Canadian Shield over multiple glacial cycles. The Flin Flon district alone has produced 3.6 million ounces of gold; La Ronge's Seabee mine over 600,000 ounces. These represent only the economically extracted portions of much larger mineralized systems.

Conservative estimates suggest the glaciers liberated 500 million to 2 billion ounces of gold-bearing material from these districts over the full Pleistocene. If 10-20% was captured in the Souris outlet system and subsequently concentrated by hydraulic sorting, the resulting deposit could range from 50 to 400 million ounces.

Approach 2: Volume × Grade (Bottom-Up)

This is straightforward math. The Souris and Des Lacs valleys combined represent approximately 100+ miles of channel length, averaging 0.5 to 1 mile wide, with sediment depths of 70-248 feet. Conservative estimates yield approximately 8-10 billion cubic yards of sediment, or roughly 10-12 billion tons of material.

At the minimum documented surface grade of 0.005 oz/ton (from FERA sampling), this yields 50-60 million ounces. At 0.01 oz/ton, it yields 100-120 million ounces. At grades expected in concentrated boulder lag zones (0.03-0.05 oz/ton), the total climbs to 300-500+ million ounces.

Approach 3: Surface Extrapolation (Multiplier)

The 1930s FERA study documented a 13% hit rate for gold across approximately 990 square miles. That's roughly 130 square miles of gold-bearing ground at surface. But they only sampled the top 20 feet.

Modern stratigraphy shows potential concentration zones at depth (18-25 feet, 35-45 feet, and 70+ feet). If each zone contains similar or better mineralization than surface samples, single-layer estimates undercount by a factor of 3-4x. Applied to even conservative base estimates, this pushes totals into the hundreds of millions of ounces.

9.2 Range Estimate

Based on these approaches, a preliminary resource range might be:

> **Conservative:** 50 million ounces gold equivalent (valley systems only, minimum grades, conservative assumptions)
>
> **Moderate:** 150-250 million ounces gold equivalent (full outlet system, multiple concentration zones)
>
> **Optimistic:** 500+ million ounces gold equivalent (regional system including extensions, high-grade boulder lag zones)

At current gold prices over $4,000 per ounce, even the conservative estimate would represent over $200 billion in gross metal value. The moderate case would exceed $700 billion to $1 trillion.

9.3 Important Caveats

These estimates are provided only to illustrate the potential scale of the opportunity. They are not NI 43-101 compliant resource estimates and should not be relied upon for investment decisions. The only way to validate these projections is through systematic drilling of the target valleys to appropriate depths.

What the estimates do demonstrate is that even conservative scenarios represent a deposit of potentially national significance. The recommendation to investigate is not based on speculative resource numbers but on the clear historical record: the FERA researchers identified these valleys as the priority target, recommended they be tested, and that testing was never done.

10. RECOMMENDATION

Based on the evidence presented in this paper, I recommend:

10.1 Correct the Institutional Record

The North Dakota DMR website should be updated to accurately reflect what the original FERA study concluded, including the explicit recommendation that the river valley systems be prospected, and the acknowledgment that this recommended work was never conducted.

10.2 Conduct the Recommended Investigation

The specific areas identified by the 1930s researchers should finally be tested:

- The valley of the Glacial River Souris from northeast of Velva to the Canadian border
- The valley of the Glacial River Des Lacs from its confluence with the Souris to the Canadian border
- The outlet channels of glacial Lake Souris (including the Velva, Lake Hester, Verendrye, and Girard Lake channels)

10.3 Sample to Appropriate Depths

Modern drilling technology can reach the depths documented in the Souris River report (70-248 feet). Any investigation should sample through the full sediment column, with particular attention to:

- Boulder lag zones between till units
- Contacts between glacial units
- The base of the sediment column above bedrock

10.4 Analyze for Full Mineral Suite

Given the polymetallic nature of the source regions and the evidence of magnetic minerals in surface samples, any investigation should analyze for gold, silver, platinum group metals, rare earth elements, and base metals. The same concentration mechanisms that enriched gold would have enriched all heavy minerals.

10.5 Federal Alignment

This investigation aligns with federal critical minerals priorities. The same glacial transport and concentration mechanisms that deposited gold also deposited other heavy minerals including rare earth element-bearing minerals. A systematic investigation of the Souris basin could identify domestic sources of critical minerals currently sourced primarily from foreign suppliers.

CONCLUSION

The historical record tells a clear story. In the 1930s, FERA researchers conducted the most comprehensive gold survey ever undertaken in North Dakota. Their findings were nuanced:

The river valley deposits showed "possibilities of occurrence of gold in commercial quantities." The researchers explicitly recommended that both the Souris and Des Lacs valleys be "prospected thoroughly" from the delta to the Canadian border. They identified these valley systems as having the "greatest possibilities" for commercial gold.

That recommended investigation was never conducted. FERA funding ended, World War II intervened, and the recommendations were forgotten. For 90 years, North Dakota's gold potential has been dismissed based on findings from the flat lake bed, while the river valleys that showed the most promise have remained untested.

The 1960s stratigraphy data reveals that the sediments in these valleys extend 70-248 feet deep, far beyond what the 1930s technology could sample. Yet even those studies provide limited data on the valley floors themselves—the one detailed valley log (from Sawyer) shows exactly the layered stratigraphy with coarse gravel and boulder lag deposits where gold concentration would occur. The Des Lacs valley has never been properly characterized at depth.

Regional Pleistocene studies document multiple glacial cycles over hundreds of thousands of years, creating a multi-layered concentration system unprecedented in typical placer geology. The boulder lag zones documented in valley wall exposures are precisely where heavy mineral concentration would occur—but whether similar zones exist at multiple depths beneath the valley floors remains unknown.

My own surface sampling across both the Des Lacs and Souris River valleys has confirmed the presence of mineralized source material from multiple Canadian Shield mining districts. The variety of rock types (sulfide-bearing volcanic material, quartz vein gold host rock, weathered sulfides, magnetic PGM-associated material) indicates comprehensive glacial transport from across the entire mineral-producing region. This is not just a potential gold deposit; it is a polymetallic heavy mineral system that could include platinum group metals, rare earth elements, and base metals.

The recommendation is simple: complete the investigation that was recommended 90 years ago. Use modern drilling technology to sample the river valley systems to appropriate depths. Test the hypothesis that the 1930s researchers identified but could not evaluate.

The historical record speaks for itself. It's time to finish what the 1930s geologists started.