GENERAL

HELIUM HUNT EXTENDED INTO MANITOBA PLAY

Helium is as hard to find as it is to contain To date, the only known free world production comes from the United States in a relatively small area centred at Amarillo, Texas

Recently, however, helium concentrates have been found in Saskatchewan, and at least two companies are moving ahead with plans to develop them

A third company has now been formed to try its luck in Manitoba Starting with 30-year-old records to a marginal helium find in a 100-foot well, Hemisphere Helium Corp plans a followup drilling program to this initial discovery on two recently acquired 200,000-acre reservations

The drilling is shallow, accessibility apparently good and the "requirements for the generation of helium are almost certainly present "

Canada s helium search is being extended to Manitoba

To undertake the initial play, Hemisphere Helium Corp Ltd (N P L) has entered into the largest known helium and natural gas acreage agreement in North America

The company has acquired from the Manitoba government two reservations comprising a total of 400,000 acres in the south central portion of the province with an areal extent of approximately 5 000 square miles on a checkerboard pattern

Each reservation is of 200 000 acres and required a refundible cash deposit of $25 000 and a $250 fee per reservation Rentals payable amount to one half cent per acre for the term of the reservation

Up to 50 percent of the area of any township may be converted to lease and in the event any sales are made from production, the government will take 12½ percent of the selling price as a royalty payment

Plans Drilling Program

The company has already selected its initial drilling locations and intends to commence drilling operations in the near future Exact location of the initial drillsite and drilling contractor have not been announced

Hemisphere Helium Corp is a private company (public to the degree required for a Manitoba incorporated company) owned by a group of Calgary oil men

The acreage acquired by the company situated immediately to the east and west of Lake Manitoba encompasses an area where natural gas seeps have been reported Analysis of gas encountered at a shallow depth in a well drilled several years ago indicated 08 percent helium and the balance nitrogen

A spokesman for the company said that requirements for the generation of helium are almost certainly present and trapping conditions are quite possibly present on its property He notes that oil and gas seeps have been reported along the shores of Lake Manitoba and that the base of the Palaeozoic is encountered between 1,000 and 3,000 feet in the general area

Helium accumulations can be found in sediments of any geologic age but hitherto appear to be most concentrated in Palaeozoic (Cambrian Ordovician Silurian and Devonian) formations, where presumably the breakdown of radioactive elements have been progressing for a longer period of time than in younger sediments

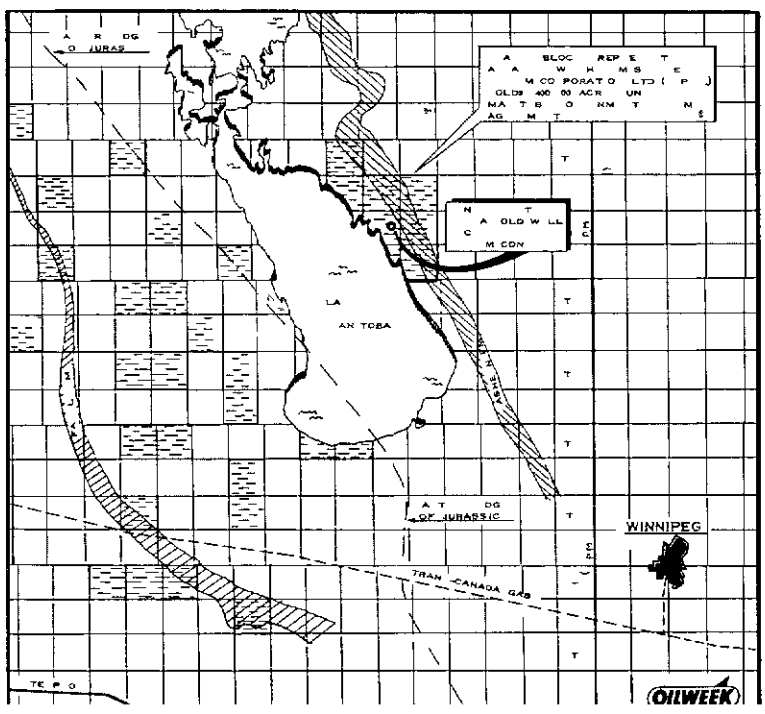
Accumulations of the gas need not be limited to shallow depths But since the diffusive qualities multiply with increases of temperature and pressure it is possible that the efficiency of the upper seal over the helium containing reservoir must increase proportionately with depth, until a critical point is reached At this point even the most efficient sedimentary rock seal might not be able to prevent the diffusion of helium

Up-Dip Edge Accumulation

Relating known facts to its own property, Hemisphere says Helium is often encountered in the ultimate up-dip feather edges of beds which extend into large sedimentary basins The potential helium and/or natural gas bearing beds underlying this prospect all extend up dip from the deeper Williston basin lying to the southwest ultimately wedging out against the Precambrian Shield

0 8 Percent Helium

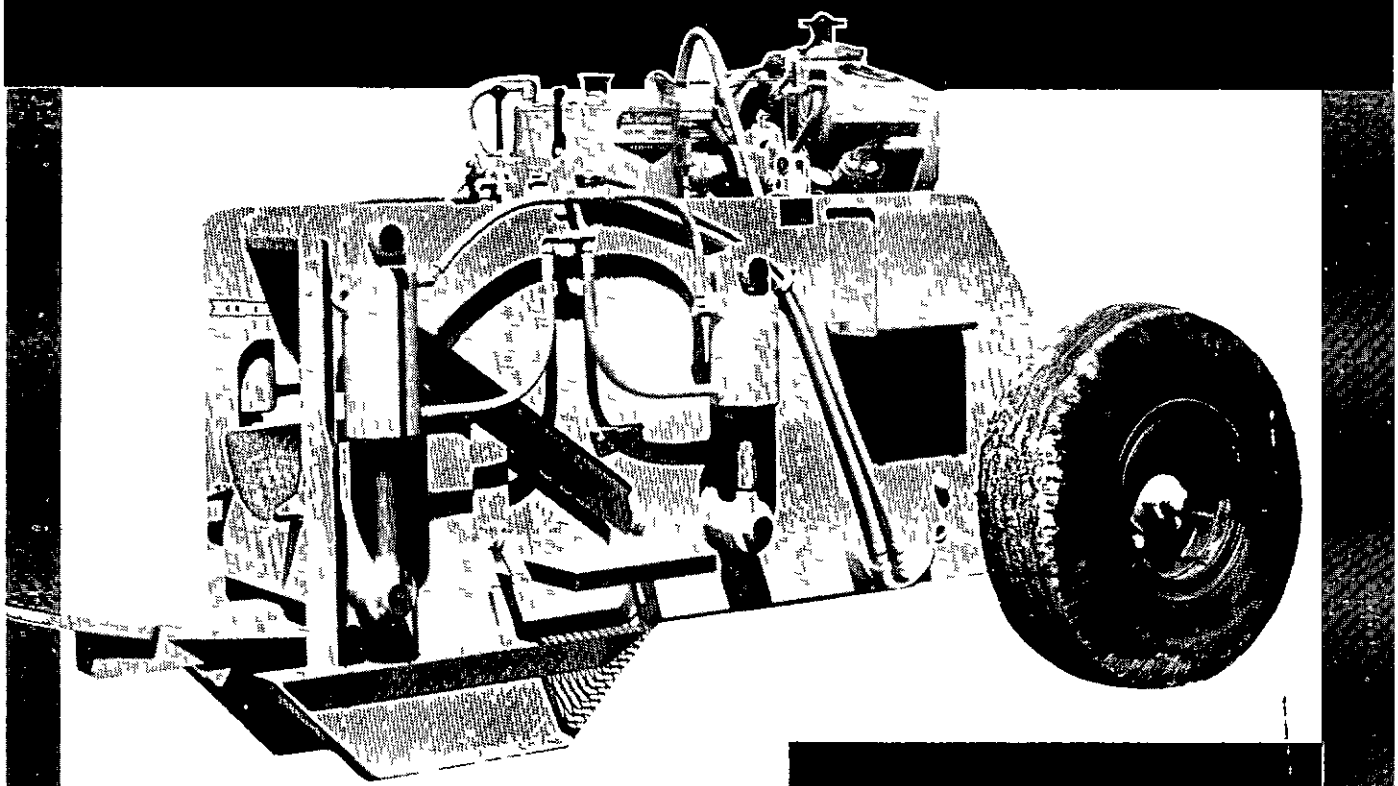
Presence of helium in the area was definitely estab



6" to 36" CROSE-PERRAULT

Vertical Hydraulic Bending Machines

They're compact, balanced—low enough to be hauled on a float through underpasses. They're safe and dependable—one man standing in one place uses only his hands to control everything. Made in three models, they're the most widely accepted Benders made and they're serviced by men who know bending.



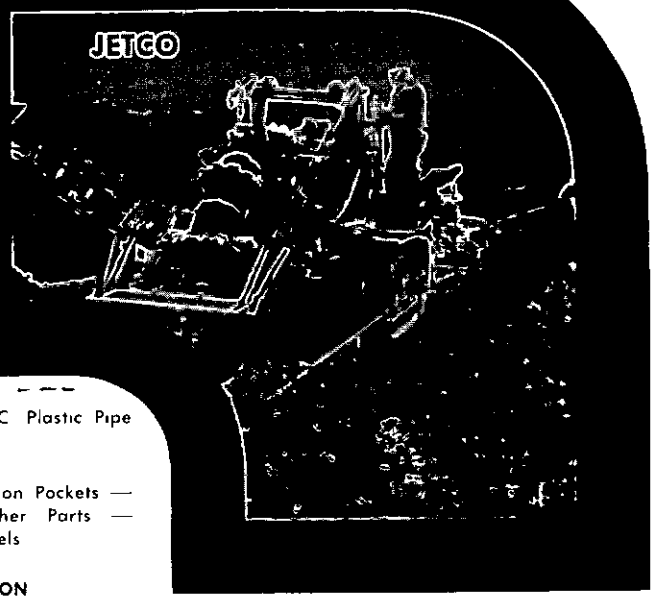
- PIN-UP SHOE CLAMP keeps the pipe round.
- WINCH expedites movement of pipe through machine and automatic raising and lowering of the pin-up shoe.
- OPERATOR works from two feet off the ground on the ditch side of the machine away from all dangerous traffic.
- THE LARGE model handles pipe from 22" to 36" in diameter.
- THE STANDARD model handles 16" to 30" diameter pipe.
- THE SMALL model takes care of the 6" to 20" diameter pipe.

Pipeline Construction Equipment and Supplies

crose-perrault
PIPE LINE CONSTRUCTION EQUIPMENT AND SUPPLIES
CANADA LTD

4490 103 Street
Edmonton Alberta
Phone GE 9 2096

36 Racine Road
Toronto Ontario
Phone CH 4 9571



Top Left
SCEPTER — P V C Plastic Pipe and Fittings

Top Right
JETCO — Weld on Pockets — Teeth — Trencher Parts — Buckets — Wheels

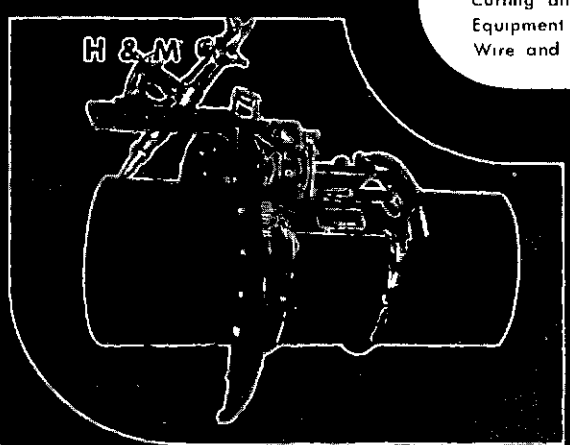
Left
T D WILLIAMSON SHORTSTOPP — Plugging Machine Economical and Effective Way to Stop Off Piping Under Pressure

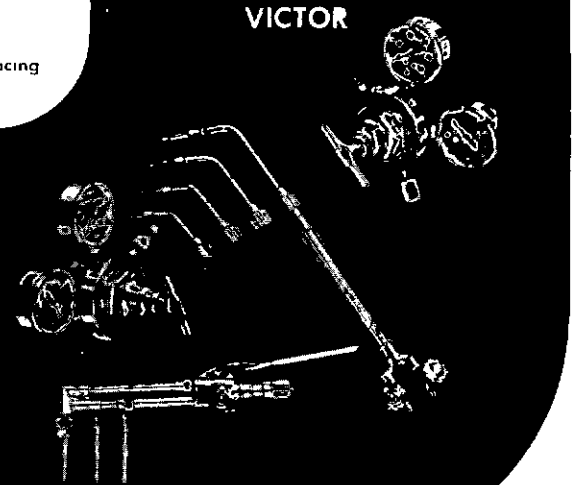
CESSCO

Complete stock of PIPELINE EQUIPMENT AND SUPPLIES

Bottom Left
H & M — Pipe Beveling and Cutting Machines

Bottom Right
VICTOR — Cutting and Welding Equipment — Hard Surfacing Wire and Rod — Repairs





CANADIAN EQUIPMENT SALES & SERVICE CO. LTD.

Pipeline Equipment Division • Oil and Gas Production Equipment Division • Manufacturing Division

Head Office & Plant 7310 99th St Edmonton Offices at Calgary Estevan Chatham Vancouver Brampton

CESSCO
CANADIAN EQUIPMENT SALES AND SERVICE CO LTD

lished in early 1930 Gas analyses conducted by the Department of the Interior of a well drilled in SW¼ Sec 15 20-6 W 1 showed no hydrocarbons or carbon dioxide present, 08 percent helium and 99 92 percent nitrogen The well was drilled to total depth 100 feet

Growing Demand

If helium is found, Hemisphere is confident a market can be found too The demand for the gas exceeds the supply and is steadily increasing because of the requirements of missile programs, atomic energy installations, shielded arc welding, the field of cryogenics etc

Says Hemisphere The producer of helium in western Canada would find a ready market in the United Kingdom and Europe It has been reliably reported that an immediate market for western Canadian helium in the amount of 60 million cubic feet per annum is available in the UK and Europe One of the primary consumers would be the UK Atomic Energy Authority

Such a market would be reached says Hemisphere, via Fort William-Port Arthur and the Great Lakes, probably through a pipeline from the producing areas

About 75 percent of the cost of helium to the consumer is in transportation—one cubic foot of helium requires one pound of container

At present special railway tank cars transport over 80 percent of the helium shipped The rest is moved in standard compressed gas cylinders and in truck semi trailers A typical tank car is constructed of steel cylinders 18 inches in outside diameter and 30 feet long and mounted on six banks of five cylinders each in a specially constructed frame Capacities depending on pressure, range from 215,000 cubic feet to 300 000 cubic feet An empty tank car weighs about 200 000 pounds and another 2,000 to 3 000 when full Built at an individual cost of $90 000 each the tank cars have limited commercial appeal—in fact the U S Bureau of Mines owns every one in existence

A 400 mile pipeline is currently under construction in the U S to carry crude helium from Bushton Kansas to Amarillo Texas It will be the first helium line ever built in the free world

According to the Bureau of Mines all materials for the new pipeline must meet rigorous specifications to ensure that it is leakproof It points out that helium can escape through openings so small that a quart of air would not pass through them in 2 000 years

Helium is a valuable gas, and it became more so recently when the USBM upped the base price from $19 00 per mcf to $35 00 per mcf

When it was first produced on a commercial scale (1921) it sold for $525 17 per mcf Improved technology and increased production reduced the selling price to $14 30 per mcf by 1930 During World War II the selling price dropped to a low of $5 36 per mcf only to increase to $12 95 per mcf by 1949

Since 1954 and until the recent price hike helium was sold to U S federal agencies for $15 50 per mcf and for medical, scientific and commercial use at $19 00 per mcf All prices are f o b production plant

Hemisphere is now the third company in Canada racing to cash in on the lucrative helium market

International Helium Co has announced plans for an extraction plant in southwest Saskatchewan (OILWEEK October 12, 1961), and British American Oil Co is also understood to have development plans for the same area, though no details have been announced on this latter program

Steel Company Signs Contract To Use Gas in Blast Furnaces

The Steel Company of Canada, satisfied with recently conducted experiments, has signed a contract with United Gas Ltd, Hamilton to take up to 17 mmcf/d gas and an additional 12 mmcf/d on an interruptable basis over the next five years

The gas will be supplied through a 16 inch 40 mmcf/d transmission line financed two thirds by United Gas and one-third by Stelco The original deal called for Stelco's portion of the cost to be refunded when a five year supply contract was signed (OILWEEK, July 3, 1961)

The iron and steel business has been viewed as possibly the largest potential market for Canadian gas for some time, and Stelco's successful experiments are considered a significant development in this direction Future expansion of the market however depends on many factors not least of all price

A spokesman for Stelco told OILWEEK that the company's equipment was flexible and could use a number of different fuels in its smelting processes At present natural gas was the fourth most important fuel source—after fuel oil, coke and coke gas—but there was nothing to say the emphasis would not change We could, for instance, double our use of fuel oil in the next five years and still use a comparable amount of natural gas

United's contract calls for it to supply Stelco with a firm load of 9 5 mmcf/d on a year round basis and an additional six mmcf/d for seven months of the year A further clause in the contract permits Stelco to up its take to a maximum of 16 mmcf/d on a year round basis plus an additional 12 mmcf/d interruptable

Stelco is experimenting with other types of fuel including solids for use in its furnaces and it is not prepared to say at this time which it finds the most satisfactory One thing that favours natural gas is its low sulphur content We use some sulphur in our processes, says Stelco but we like to put it in ourselves

Texaco Canada To Expand Its Petrochemical Production

Texaco Canada Limited has announced plans for the expansion of its petrochemical facilities at Port Credit, Ontario

A C Farquharson vice president refining said equipment for the production of nitration grade toluene and xylenes would be installed by late summer High purity normal hexane will also be produced and provision is being made for the production of several other special solvents and petrochemicals, he added

The products will be manufactured for the paint adhesive, explosive, insecticide and vegetable oil industries

Texaco Canada recently entered the petrochemical field with the construction of a $2 million plant at Port Credit for the manufacture of high purity benzene from petroleum This plant went on stream last summer with an initial charge rate of 1 500 b/d

The company is also expanding the rated capacity of its Regent refinery at Port Credit from 26,000 to 35,000 b/d with the new units scheduled to go on stream in mid year

HELIUM

Portage la Prairie No. 1 (3-9-12-7 WPM) Analysed by Mines Branch Ottawa, Fuel Research Laboratories

July 31/54 He 5.44%
Feb 23/60 – He = 3.58%
See supplementary file

Mr. Gobert reports helium show.
During the first test helium was reported at 5%.
A few years later on a second test the percentage was 3.38%.

This well was not shut in and has flowed gas for a number of years.

Lundar Area

Kreton Lundar 8-23-20-6 WPM →

Department of the Interior - Calgary - Gas Analysis
H.A.Jukes
Test No. G-11-29 June 25, 1929 Depth 100'

	%
Ethane	0.0
Methane	0.0
Carbon dioxide	0.0
Oxygen	0.0
Nitrogen (by difference)	100.0

Remarks: This sample of gas appears to be pure non atmospheric nitogen and shows none of the above constituents commonly found in natural gas.

Department of the Interior - Calgary - Gas Analysis
H.A.Jukes
Test No. G-3-30 July 19, 1930

	%
Hydrocarbons	0.0
Carbon dioxide	0.0
Helium	0.08
Nitrogen (by difference)	99.92
	100.00

Division of Fuels - Canada Department of Mines and Resources - Ottawa
Sample collected: September 25, 1939
Tested: October 11, 1939

	% by volume
Carbon dioxide	0.5
Oxygen	0.5
Hydrocarbons	Trace
Helium	0.0
Nitrogen (by difference)	99.0
	100.0

Lundar Area continued

As a result of the 1939 test Frank Shepherd stated that on the basis of the Ottawa letter he felt that there wasn't any helium in the Lundar area. He referred to nitrogen found in wells and pits in the Winnipeg area.

April 28, 1929

Gas analysed at the University of Manitoba and Department of Interior reported pure nitorgen; later analysis in the government lab. showed 92.08% nitrogen and 0.08% helium

Western Gypsum (Hole E-13)

Portage la Prairie area.
Gypsum test hole: NE 35-12-7 WPM October 1960
Depth: 194 - 200 Jurassic Amaranth
Red Beds

	Volume %
Combustibles (as Methane)	0.69
Helium	1.19
Nitrogen	97.37
Carbon dioxide	0.20
Oxygen	0.55
	100.00

Specific Gravity (Air = 1) measured 0.955
(Moisture free as samples) calculated 0.956

Virden Area

Calstan Daly 15-18-10-27

	Gas volume %	
	Duperow 3005-18	Souris River 3499-3511
Nitrogen	94.3	96.6
Oxygen	0.0	0.6
Hydrogen	0.1	0.1
Methane	5.3	2.4
Ethane	0.1	0.1
Propane	0.0	0.1
Helium	0.2	0.1

Note "Part of the Helium shown may not be native to the gas samples because Helium is used to purge the mass spectrometer equipment and Traces of its spectrum may remain in the unit indefinitely"

HELIUM

South of Manitou

Mr. Gobert reported helium in the following well:
Commonwealth Manitou 8-26-2-9

Gas reported in SE¼ 23-2-9 (7 miles South, 15° west of town of Manitou)
Drilled: 1907 T. D. 925'
- strong flow of gas between the depths of 675' and 716'
Pressure gauge = 55 pounds. When the gauge was removed and the gas allowed to escape for a period of 5 minutes, the pressure dropped of 10 pounds. Gas ignited.

Gas at 716':when first drilled showed an initial pressure of 300 pounds

Above in the Cfetaceous shales.

Barbara Bannatyne

Province of Manitoba

Information Section

DEPT OF PROVINCIAL SECRETARY
ROOM 137 — PHONE WH 6 7439
LEGISLATIVE BUILDING
WINNIPEG 1, MANITOBA

Date February 25, 1966

OIL, GAS AND HELIUM
SEARCH IN INTERLAKE

Exploration for oil and natural gas, and helium in two reservations totalling about 400,000 acres of crown land in the Interlake area centering on Lake St Martin is to be undertaken

Mines and resources minister Hon Sterling Lyon, Q C., said that Paradise Petroleums Limited, of Calgary nad been granted exploration rights in this so far unexplored area. The agreement between the company and the government stipulated that, in addition to exploration fees, the company should post bond in the amount of $40,000 to guarantee performance of the company's obligations.

The company is obligated to drill one or more structure test holes on each of the two reservations The agreement gives the company exploration rights for 12 months annd may be extended another six months At the end of the agreement period the company will be entitled to apply for oil and natural gas, and helium leases In the event of any of these products being discovered, leases must be applied for within 90 days of such discovery

Life of any leases subsequently awarded would for nine years and after that for as long as any of the three products were being produced Regulations now state that royalty for helium, previously not listed would be the standard 12½ per cent of the selling price, as is the case for oil and natural gas. The company is also required to furnish geological and drilling reports.

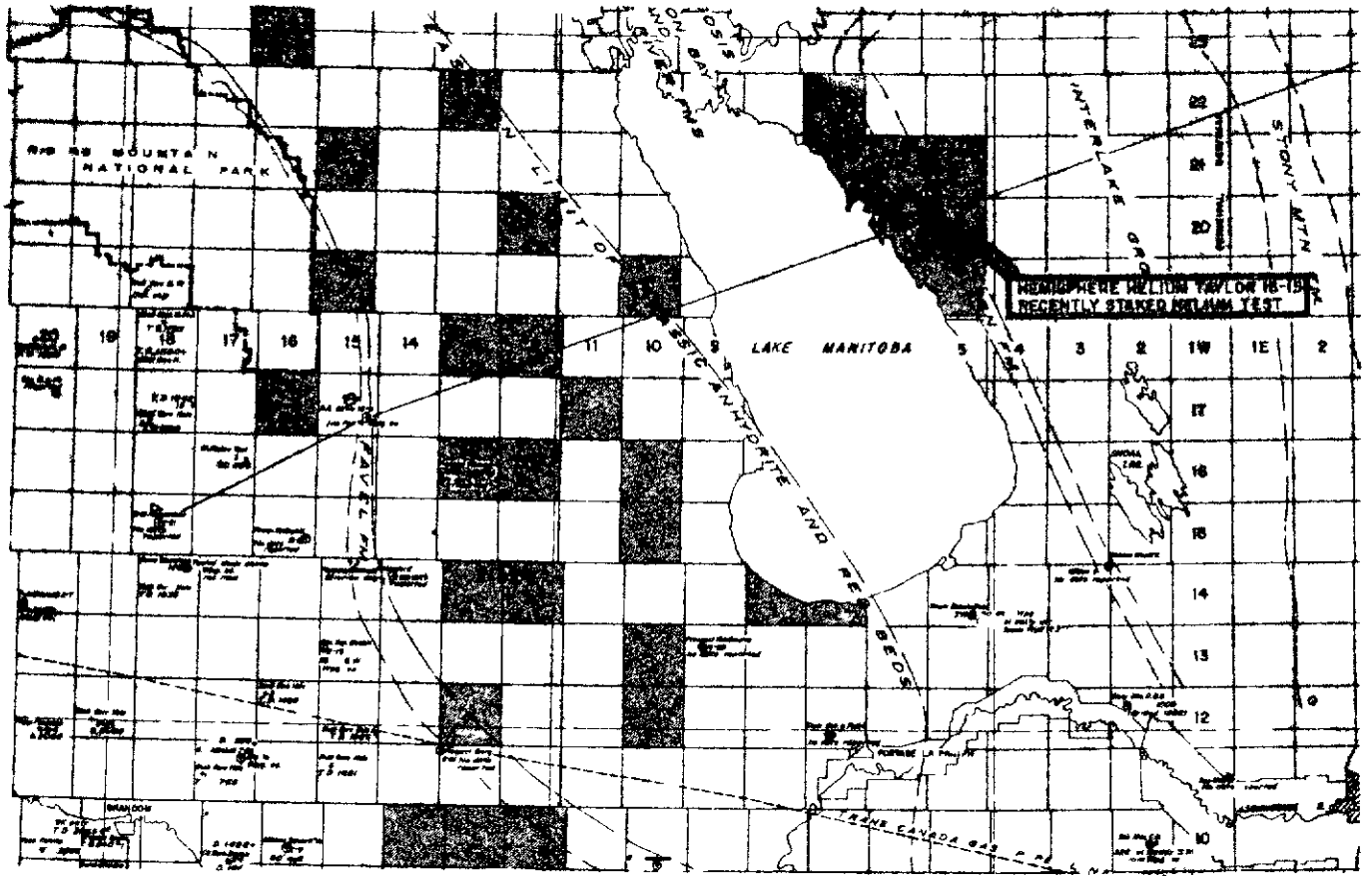
-30-

Orig. on: Minerals - Oil and Gas,
- Helium

DISCOVERIES

■ Discoveries located by number on map, pages 13 and 14.

Search for helium has spread to Manitoba



For the first time in many years western Canadian exploration activity was highlighted by an announcement concerning the province of Manitoba An entirely new concept in the province's petroleum and natural gas industry has been started by a pair of companies seeking helium gases

Hemisphere Helium Corporation Ltd NPL a Calgary based private company, has been joined in an exploration program by Lewis Dillman independent oil operator of Regina and president of Peerless Canadian Explorations Ltd This unique program for Manitoba, where natural gas production much less Helium success has as yet not been found in commercial quantities will be carried out on the shores of Lake Manitoba 70 miles northwest of Winnipeg and 300 miles east of Helium play' in Saskatchewan

The first location will be taken down by Peerless on lands secured under farmout agreement from Hemisphere Helium Hemisphere earlier obtained the large block of helium and natural gas rights from the Manitoba government Those lands cover rights to 400 000 acres in the vicinity of Lake Manitoba and are covered by two separate permits By drilling the well and carrying out certain other obligations Peerless will have earned a 50 per cent interest in the well and lands

Location for the first tests Hemisphere Helium Taylor 16-15 will be on lsd 16 15 20-6W1 (ground elevation 825 feet) It is less than ¾ mile north north east of a shallow-test drilled way back in 1930 at which inert gas was found at a depth of near 100 feet and which when analyzed was found to contain 99 92 per cent nitrogen and 08 per cent helium

In addition the hole is 40 miles north northwest of the Cal Standard Woodlands No 1 exploratory dry hole (the closest previous deep test) and 70 miles northeast of an area in which Shell and British American carried out a fair amount of core hole and exploration drilling Another venture Lundar Diamond Drill Hole No 1, was taken to a depth of 1 000 feet before abandonment and with no tests reported

The new hole will be taken to a depth of 1 000 feet in order to test the Winnipeg horizon Sedco Exploration Ltd has been awarded contract for the test

The lands involved in the program are for a term of 2½ years and require the expenditure of $100 000 in structure test holes to the base of the Palaeozoic which in this area occurs no deeper than 3 000 feet For carrying out the work up to 50 per cent of the area in any township may be acquired as leases either rectangular or square and where possible to contain eight or nine sections respectively The rights are subject to a 12½ per cent royalty on the selling price

INTER-DEPARTMENTAL MEMORANDUM

PROVINCE OF MANITOBA

DATE March 25, 1960.

FROM [redacted]hief Mining Engineer

TO Director of Mines

Att: Mr. J. S. Richards

SUBJECT Helium Occurrences -

San Antonio Gold Mines Limited.

A high pressure gas and water flow was encountered in a flat diamond drill hole in 2603 cross-cut, 26th level (approximately 4000 feet depth) in 1953.

A sample sent to the Fuel Research Laboratories, Ottawa, (Lab. No. 853-53,) March 14th, 1953, showed Specific Gravity 0.899 and Helium content 7.36 percent by volume.

A similar occurrence in 1954, in a drill hole in the same area, with very high pressure, gave about 1000 cu. ft. of gas and 36000 gals. of water per day for a few days. A sample (Lab. No. 2788-54, December 3rd, 1954) showed Specific Gravity 0.737 and Helium content 26.95 percent by volume.

Both occurrences were in the diabase, one near the sedimentary contact. Both holes were plugged and gas and water drained off. A water analysis from the first hole is on file. A mine level plan showing the location of these occurrences is also on file.

Inco - Moak Lake Mine

Several gas occurrences in diamond drill holes were sampled in 1956, primarily for Methane. Five samples had Helium determinations made, the amounts varying from 0.94 to 3.53 percent.

Inco - Thompson Mine

There have been several gas occurrences in drill holes, again primarily Methane. One sample in 1959 showed 1.56 percent Helium.

R. H. Junker.

fy

DEPARTMENT OF MINES & NATURAL RESOURCES

MAR 25 1960

DIRECTOR OF MINES

March 28, 1960.

Mr. A. M. Tedford, Chief,
Chemicals Division, Commodities Branch,
Department of Trade and Commerce,
Wellington Street,
Ottawa, Canada.

Dear Mr. Tedford:

In response to a request from Mr. A. Ignatieff, Chief, Fuels and Mining Practice Division, Department of Mines & Technical Surveys, I am pleased to supply the following comments relative to helium developments in Manitoba.

As you may have already been advised by Mr. Ignatieff, a sample of gas, from the Coutts Prairie No. 1 well, S.W. ¼ 9-12-7 W.P.M., analyzed by the Fuel Research Laboratories, gave 3.58 per cent helium by volume. An earlier sample from the same source gave slightly in excess of 5 per cent. There are, as yet, no other developments in this field; no exploration permits or leases for helium have, as yet, been issued by this Department. However, we are presently negotiating with a party interested in the exploration for helium and an exploration permit, or reservation, may be issued. I would request that this information be kept confidential for the present.

In case it is of any interest, the following is a brief outline of gas occurrences underground in hard-rock mines containing helium:-

1. San Antonio Gold Mines Limited, Bissett — High pressure gas and water flow approximately 4,000 feet underground, in 1953 - Analysis (Fuel Research Laboratories, Lab. No. 853-53) - 7.36% helium.

2. San Antonio Gold Mines Limited, Bissett — A similar occurrence in 1954; a flow for several days of 1,000 cu. ft. of gas and 3,600 gals. of water. Gas analysis Lab. No. 2768-54 - 26.95% helium.

3. The International Nickel Company of Canada, Limited, Moak Lake mine — Five samples of gas from diamond drill holes, in 1956, yielded helium analyses varying from 0.94% to 3.53%.

4. The International Nickel Company of Canada, Limited, Thompson mine — One sample of gas from a drill hole, in 1959, gave an analysis of 1.56% helium.

Should you desire, we will be pleased to keep you advised of any new developments.

Yours very truly,

J. S. Richards,
Director of Mines.

JSR:lcm

c.c. Mr. A. Ignatieff, Chief,
Fuels and Mining Practice Division,
Mines Branch,
Dept. of Mines & Technical Surveys,
Ottawa, Canada.

Mr. J. G. Cowan, Q.C.,
Deputy Minister,

Mr. M. J. Gobert,
Senior Petroleum Engineer.

MINES BRANCH — DIVISION OF FUELS — CANADA DEPARTMENT OF MINES AND TECHNICAL SURVEYS

QUOTE FILE 599-60

FUEL RESEARCH LABORATORIES

OTTAWA November 24, 1960.

REPORT OF ANALYSIS

Sample of natural gas submitted by Mr. J. S. Richards, Director of Mines, Department of Mines and Natural Resources, Box 42, Legislative Building, Winnipeg, Manitoba, as per letter dated October 25, 1960, addressed to Chief, Fuels and Mining Practice Division.

ANALYSIS OF NATURAL GAS

ORIGIN

Field -

Well: Exploratory hole drilled for gypsum

Location N.E. Cor., Sec. 35, Twp. 12, Rge. 7, W.P.M.

Producing Depth 194-200 feet

Producing Zone. Jurassic Amaranth Red Beds

Province: Manitoba

Sample from Manitoba Department of Mines and Natural Resources.

Date Sampled. October, 1960.

Method of Sampling: Positive Salt Water Displacement.

COMPOSITION AS SAMPLED

	Volume Percent
Combustibles (as Methane)	0.69
Helium	1.19
Nitrogen	97.37
Carbon Dioxide	0.20
Oxygen	0.55
Total	100.00

Specific Gravity (air = 1) (moisture free as sampled)

Measured 0.955
Calculated 0.956

Reported by: R.G. Draper

R.G. Draper

A. Ignatieff, Chief,
Fuels and Mining Practice Division.

MINES BRANCH
DIVISION OF FUELS

QUOTE FILE 158-60

FUEL RESEARCH LABORATORIES

March 31, 1960

REPORT OF ANALYSIS

Sample of Natural Gas submitted by Mr. J.S. Richards, Director of Mines, Department of Mines and Natural Resources, Box 42, Legislative Building, Winnipeg, 1, Manitoba, as per letter, dated 21st March 1960 addressed to Chief, Division of Fuels and Mining Practice.

ANALYSIS OF NATURAL GAS

Field: -

Province: Manitoba

Well: Commonwealth Manitou #1

Sample from: Manitoba Dept. of Mines & Natural Resources

Location: Lsd.2, Sec.22, Twp.2, Rge.9, ^{W}PM

Depth to producing zone: 714 feet

Method of Sampling: Positive Salt Water Displacement

Total Depth: 1200 feet

Composition as Sampled

Methane, % by volume	87.53
Higher hydrocarbons, % by volume	trace
Nitrogen, % by volume	12.23
Carbon dioxide, % by volume8	0.20
Helium, % by volume	0.043

Remarks: Bomb pressure 2 p.s.i. when received.
Bomb returned via CPX, 30 March, 1960

Reported by: A.Yates

D S Montgomery for

A. Ignatieff, Chief,
Fuels & Mining Practice Division

MINES BRANCH
DIVISION OF FUELS

CANADA
DEPARTMENT
OF
MINES AND TECHNICAL SURVEYS

FUEL RESEARCH LABORATORIES
OTTAWA

Lab. No. 76-60
QUOTE TICE

Feb. 23, 1960

REPORT OF ANALYSIS

Sample of natural gas submitted by Mr. M. J. Gobert, Dept. of Mines and Natural Resources, Manitoba as per letter dated Feb. 9, 1960 addressed to Chief, Division of Fuels.

Laboratory No: 76-60

Sample Identification: Well - Coutts Prairie No. 1
Location - SW/4 - Sec 9 - Twp 12 - Rge 7 - WPM

Details of Analysis:

Helium, % by volume	3.58

Reported by: R.G.Draper

A. Ignatieff, Chief,
Fuels & Mining Practice Div.

DL
FORM M B 7F—2528

Lab. No. 200-59

QUOTE FILE

MINES BRANCH
DIVISION OF FUELS

CANADA
DEPARTMENT
OF
MINES AND TECHNICAL SURVEYS

FUEL RESEARCH LABORATORIES

OTTAWA 31 July 1959.

REPORT OF ANALYSIS

A sample of natural gas submitted by Mr. M.J. Gobert, Department of Mines and Natural Resources, Manitoba per letter dated 8 June 1959 addressed to the Division of Fuels.

Laboratory No.: 200-59

Sample Identification - Well - Coutts Portage No. 1

Location: SW/4-Sec.9-Twp.12-Rge.7-WPM.

Details of Analysis:

Oxygen	1.39
Helium	5.44
Nitrogen (by diff)	93.17

Remarks:

Reported by: A. Yates.

for A. Ignatieff,
Chief, Division of Fuels.

FORM M.B. 75—2528

CALIFORNIA RESEARCH CORPORATION
San Francisco, Cal.,
March 2, 1951.

MASS SPECTROMETER ANALYSIS
GAS SAMPLES FROM
DELL 15-18 HILL, MANITOBA

THE CALIFORNIA STANDARD COMPANY
Attention Mr. G. L. Knox

In accordance with the letter of January 17 from Mr. C. D. Sims to Mr. A. L. Lyman the gas samples sent to the Richmond Laboratory have been analyzed by mass spectrometer with the following results

Sample Container	No. 1	No. 2
Test Interval	3005-3018'	3499-3511'
Analysis	Gas Vol.%	Gas Vol. %
Nitrogen	94.3	96.6
Oxygen	0.0	0.6
Hydrogen	0.1	0.1
Methane	5.3	2.4
Ethane	0.1	0.1
Propane	0.0	0.1
Helium	0.2	0.1
	100.0	100.0

You will note that the helium content is quite low in both samples. Moreover, part of the helium shown may not be native to the gas samples because helium is used to purge the mass spectrometer equipment and traces of its spectrum may remain in the unit indefinitely. Thus the figures shown represent the maximums that could be present in the samples.

As a matter of interest the helium contents of gases processed in the three extraction plants in Kansas and Texas, either in operation at the present time or scheduled to be placed on stream shortly, vary from 1% to 1.8% These gases are all high in hydrocarbon content and residue from the helium extraction process is delivered to utility sales lines. A stand-by plant in Shiprock, New Mexico, has as its source of supply a nonflammable gas containing only 16% of hydrocarbons but 8% of helium.

Since the helium content of your samples appeared to be well below commercial limits no effort was made to refine the results. If for any reason, however, you wish more accurate determinations we shall be glad to make them if you will send us additional samples. Also, as you may know, the U.S. Bureau of Mines conducts a continuing survey of natural gas from new sources as a means of locating and obtaining information on possible additional reserves of helium-bearing gas. Analyses are run at Amarillo, Texas. We do not know what special arrangements might be involved in the case of Canadian samples but assume that your local government representatives would know.

The containers in which your samples were received are being returned at once.

E. G. GAYLORD

PROVINCE OF MANITOBA

FILE BACK COVER No.

FROM

TO General Correspondence topic analysis reports

SUBJECT :-

[redacted]

HELIUM

IN

MANITOBA

PS-f-38