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RELATION

OF THE

State Department of Mines

TO THE

Public Welfare



R. M. LAMBIE, CHIEF
DEPARTMENT OF MINES
OF WEST VIRGINIA

1932

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State Department of Mines
MORGANTOWN, W. VA.

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THE RELATIONSHIP OF THE DEPARTMENT OF MINES TO THE PUBLIC WELFARE

(Address delivered by R. M. LAMBIE, Chief of Department of
Mines, to Mining Class, at West Virginia University,
Morgantown, July 13, 1932.)

Mr. Chairman, I am appreciative of your cordial invitation to speak here today to this assemblage of practical mining men who have recognized through their enlistment in these extension classes the desirability of acquiring advanced knowledge and greater learning about the practical problems of the basic industry of our State. There is none among you who required more instruction in learning the problems of production than myself and none has found greater satisfaction in seeking the acquirement of that knowledge in order that it may be imparted to those whom we serve and protect.

Coal's problems are numerous and complex, but they must be solved within the industry as the United States Coal Commission said ten years ago after a very exhaustive investigation into mining conditions. If the industry is to be used for legislative experimentation, recovery undoubtedly will be delayed until those unacquainted with its problems are convinced that their meddling with private business retards rather than accelerates the resumption of activities.

While the coal industry is in a chaotic condition and production has decreased to the lowest point in 25 years, yet we constantly hear the cry that the trouble with the coal industry is over-production. It is not over-production, but under-consumption. And yet, with knowledge of these facts, we find men in the legislative halls of this nation who insist that the government should control production. Senator Hatfield of West Virginia, who was Chairman of the Senate Sub-Committee, has just issued an adverse report on the Davis-Kelly Bill. This action, I am sure, will meet with the approval of the majority of mining men in West Virginia. His analysis of the Bill shows that he is fully aware of the fact

that its passage would be disastrous to the mining industry of his State, as well as many others. Of course, the coal mines of the nation have a potential capacity far beyond the nation's consuming power, unless fuel substitutes were abandoned; but, so has oil, so has cotton, wheat, copper, steel and the automotive industry and others, but no one hears a suggestion of federal control and regulation of these great industries.

Coal is suffering keenly at this time, because of the widespread contraction of industrial activities, but you may rest assured that an industry which provides more than half of the energy demand of a great nation cannot long remain inactive when other industries needing this power begin to operate. King Coal has not been dethroned. He holds the scepter of power that moves the wheels of industry. He awaits the awakening of the industrial kingdom that he may again serve as the greatest factor of our industrial life.

Coal mining is so closely related to the public welfare in West Virginia that it touches the hearthstone of every home. It gives direct employment to nearly 100,000 people. Its continued operation gives employment to an equal number on the railroads, in the lumber, iron and steel, manufacturing and other industries in the State. The butcher, the baker, the banker, the merchant, the wholesaler, the miller, and most every business, small and large, watch the reaction to every movement of the coal industry, whether friendly or adverse, because they are personally interested in its welfare. In evident distress, it assumes its load of taxation without demand for special favors, so that the schools may live and the orderly processes of government may function without fear or favor.

We have heard down here the wails of Pennsylvania that West Virginia has robbed that state of her natural markets because of large wage reductions and lower transportation costs. My personal friend, Walter Glasgow, Secretary of Mines in Pennsylvania, has recently given expression to that complaint. If he would inform himself on the freight rate structure, he would find that West Virginia mines are paying from 35 cents to upwards of \$1.00 more than the Pennsylvania mines on each ton of coal to reach these markets. Our wage scales, while they are below what miners and operators desire, are higher in many instances than those paid in the bituminous mines of Pennsylvania and our awards from the compensation fund to injured workmen are more liberal in West Virginia than they are in Pennsylvania.

But the real reason, if Secretary Glasgow will investigate, for West Virginia coal reaching distant markets will be found in the fact that there is an affinity for relentless application to work, possessed by the West Virginia miner and operator, that is rarely found. Knowing the advantages possessed by Pennsylvania in the freight rate structure and the physical factors in mining a seam of coal that is the most regular in the American continent, the operators and miners of West Virginia long since realized that they could meet these natural and artificial advantages of Pennsylvania producers only by giving the public carefully prepared luxury coals at moderate cost. The consuming markets get a quality coal from West Virginia, and consumers are usually sufficiently well advised to prefer a quality coal rather than something offered as a substitute, "supposedly just as good."

The same wails of distress over loss of markets have been repeated in Pennsylvania since prior to the Civil War. An old West Virginia paper, published in 1859, shown me a few days ago carried a wail that Kanawha coal shipped and sold down the river before a railroad penetrated West Virginia was supplanting Pittsburgh coal in Cincinnati. When our Pennsylvania competitors think in terms of efficiency, rather than spending their time and money seeking greater artificial advantages in the form of freight rates, they will begin to comprehend why the West Virginia miner and operator have been able to secure a few markets in competing territory by over-coming the existing adverse conditions under which they are required to compete.

My friends and associates, my greater personal interest in coal mining is in the welfare and security of those who are employed in the mines. It is in their interest and in the interest of their families that I have sought to make the mines a safer place in which to labor and to impress upon this underground army of 100,000 men that our goal cannot be attained without their co-operation.

It is now my privilege to advise you and the other thousands who toil with you in the mines that during the past year we have made the best safety record since West Virginia became an important factor in our nation's production of coal. Our fatality record was lowered to the point where we produced 311,000 tons per fatality, while the average production per fatal accident since 1883 is only 221,000 tons. At the beginning of 1920, when I became Chief, the average production per fatality inside the mines from 1883 to 1918, inclusive, was 177,950 tons, compared to an

average per fatality of 221,000 tons from the years 1883 to 1931. There has been for the past twelve years a decided trend towards accident prevention and we believe that the organization of many district mining institutes and the formation of hundreds of safety clubs have been definite factors in bringing about greater safety in and about our mines. We are not satisfied with that record, but we are encouraged. However, I do not take the credit for that record. Had I not been preceded by men of the intelligence and courage and practical knowledge as Oscar Veazey, David Harr, Houghton Robson, James W. Paul, John Laing, Earl A. Henry, and Joe Heatherman, there could have been no reduction in the toll of accidents. They were men of thought and vision who recognized the necessity of planning for the conservation of human life.

The year 1932 represents the bi-centennial of the birth of George Washington. The year 1933 will be the semi-centennial of the birth of regulatory supervision of the coal mines in West Virginia. The present State Department of Mines had its origin in West Virginia on the birthday of George Washington on February 22, 1883, just twenty years after the admission of West Virginia to the Union when the Legislature passed a bill "regulating the working and proper ventilation and drainage of coal mines, and providing for the appointment of a mine inspector." It has always been a source of gratification to me that my home county, Fayette, furnished the author and sponsor of the bill providing for the supervision of mine safety work. The patron of this measure was Hon. L. D. Isbell, then a young lawyer, a member of the House of Delegates from Fayette County. He introduced his bill in the House of Delegates, saw it passed by a vote of 36 to 17, compromised to meet the objections of the Senate, and saw it enacted into law. The young author later moved to Huntington, practiced law in that city, was elected as a Judge of a Cabell Court, and after a long life of service to his fellow men, this apostle of safety succumbed to a hit-and-run driver who struck him down on the streets of his city.

Oscar Veazey, of Kanawha County, was the first mine inspector in West Virginia, appointed by Governor Jacob B. Jackson. I saw him at his home in Pratt a year or more before he died. He had been an invalid for years, but remained alert in all his senses and was confident of ultimate recovery. Mr. Veazey's inspection of mines began in September 1883, when the act became effective. He began his inspection at Raymond City, on the Kanawha River, which is still in operation, and worked each mine eastwardly to

Quinimont on New River, in Fayette County. From Fayette, he went to Piedmont in Mineral County; West to Parkersburg; North to Grafton; thence to Wheeling and up the Ohio River to all the mines in what he termed the Panhandle; then down the Ohio River to the mines in Mason County.

Regardless of this strenuous journey of inspection, Mr. Veazey said "there was quite a newspaper racket in January 1884 over what was supposed to be my neglect of duty, as I had not, at that time, gotten to the mines of the upper portion of the State." Mr. Veazey in that report was most human. He said, he did not blame the miners for the complaints, because in some instances there was just complaint, "but as I learned while in that district," he said, "a great deal, if not the greatest part of the complaint about the neglect of the inspector came from parties who failed to secure the appointment." Human nature and human emotions, if you will permit me to observe, have changed little since the early creation of this department.

Our modern mining men will be interested in knowing that in the 62 mines between *Jerome* City in Putnam County, and Quinimont at the eastern edge of Fayette County, all designated as Kanawha District, all ventilation was natural, except where there were furnaces. In a few instances a fire basket and a steam jet were employed. All the drainage was natural except in six instances where steam pumps were used. The best report on ventilation made by the inspector was "fair," except in one instance where he reported "good." In the 67 mines of the northern district Mr. Veazey found only one fan in existence, which was at the Moundsville shaft. It was the first mine in West Virginia using a fan and the ventilation here was reported "very good." The inspector suggested this method of ventilation for other mines.

On December 31, 1884, Veazey reported the existing law as being very inadequate, reciting that it would keep an inspector constantly going to inspect the mines in one district each six months. He appended a bill proposing the appointment of a chief inspector and two district inspectors. These recommendations were followed by subsequent administrations, and the Department of Mines was eventually created. There are now 25 inspection districts in the State with an average production of 4 million tons for each inspector.

Since the establishment of inspection service in the mines of West Virginia, it is my estimate that 350,000 acres of coal have been removed. Our reports from 1897 to 1930, inclusive, show that 320,-

000 acres have been mined. It is almost impossible to conceive that so vast an area of coal beneath the surface of the earth has been extracted. While subsidence of strata above has closed several thousands of acres of this underground man-made cavern, the abandoned area of our operating mines is growing daily. As a matter of fact, 15,261 acres of coal were removed during the year 1931. We estimate that 6,500 acres were removed in pillar workings alone. The recovery of pillars in West Virginia constitutes a great menace because of the fact that most of these pillars have stood for a period of many years. The roof is usually badly broken and the hazard of pillar mining is generally two to three times greater than that of new development. West Virginia has probably as high a rate of coal extraction as any other state. In fact, many states do not attempt the taking out of pillars, which constitutes a tremendous loss of coal. While it is true that the exposure hazard to the workmen is greater in pillar workings than advance mining, yet it is usually the most experienced men who are selected to do this work. They are also more closely supervised by the mine officials, and the mine inspectors visit pillar mines much oftener than those without pillar extraction.

I have heard the suggestion from some that the work of the Department of Mines has decreased because of the closing of many mines. Those who entertain that opinion fail to take into consideration that economic reasons have impelled greater concentration in mining in recent years. The same company that operated ten mines during War days is now producing more coal from a single mine. As an example, two mines in West Virginia produced more coal in 1931 than all of the mines in the State of Maryland produced during that year. Furthermore, West Virginia had thirty mines which produced in excess of 20,000,000 tons of coal in 1931, which is equal to the tonnage of the whole State of Ohio for the same year. Our prosperity depends very largely on coal and the Department of Mines is always ready and willing to do anything within its power to help maintain as high a production of coal as possible, consistent with maximum safety to our workmen. There is at the present time twice the amount of excavated area underground in the mines of West Virginia than there was when I became Chief of this Department in 1920, therefore, I say that the mining hazard has doubled in the past twelve years.

This character of work of development has increased the work of the inspection force. It means larger areas of abandoned places in operating mines which the inspector must visit in his quest for

hazards that endanger the lives of those employed in the operating sections of the mines.

The Department of Mines today is in reality a department of mineral resources and should be so named, for under successive amendments of the law, the scope and jurisdiction of the department has been extended over sand mines, limestone quarries, fire clay, pulp stone, gravel pits, marl pits, shale mines and dolomite quarries. West Virginia has some of the most up to date operations in our quarry section. Four thousand men are directly employed in this division of our department. We have had the greatest cooperation possible from men and management, and I am happy to record that the accident prevention campaign has been taken up with great enthusiasm and we have an outstanding record in this form of underground and open surface excavations.

In 1929 the Legislature vested in the Department of Mines supervision of the location of all old and new oil and gas wells, the plugging of these wells and the drilling of wells through the coal strata. On July 1, 1932, the oil and gas division had issued 1,448 permits to drill, received and checked reports on the plugging of 1,139 wells and has approved 514 pillar plans where it was proposed to penetrate the coal seams.

When the drilling of oil and gas wells was placed under the regulatory control of the Department on June 1, 1929, it was estimated by the State Geological Survey that 64,000 wells had been drilled in West Virginia and that 34,000 wells were then being operated as oil and gas producers. No record of many of these abandoned wells exists and some of them remain a standing menace to safety as our coal extraction continues. It is our task to secure the records of these 34,000 operating wells and when they are abandoned to have them plugged according to law.

We are extremely proud of our relationship with the oil and gas industry, because up until three years ago there were no regulations covering these important resources. We have had almost unanimous approval of all operating companies within this State. A condition without parallel in modern industry.

It is most unfortunate that this State, with its high quality oil and its tremendous volume of gas, did not have State regulations many years ago. If it had, billions of dollars of oil and gas would have been conserved for future posterity instead of having been wasted as is shown here by these records.

The foregoing proves conclusively that the functions of the Department of Mines are extraordinary, as all of our work is directly

concerned with the conservation of life, limb and property. Therefore, our dealings with the people of our State are different from that of any other department. The engineering features of our work and the rulings mean much more than just a matter of law. They may mean a greater exposure hazard to the men if conditions are not properly understood and the correct safeguards provided. The attitude of this department is, and has been during my incumbency, and will continue to be that of "friendly direction." We have been most successful with this policy in the past and expect greater results in the future.

The Department of Mines concerns itself with all things that affect the welfare of those who come within the scope of our jurisdiction. As an example, I personally appeared before Examiner Bardwell, of the Inter-State Commerce Commission, in behalf of West Virginia when that Commission was asked to further the widening of the freight differential on the shipment of coal from our mines to consuming points of the nation. We took the stand that any effort made to lessen our production was not a threat to the welfare of our people but would also result in an increased hazard to our men. All of which we earnestly opposed and will continue to do so.

Today the department is confronted with the most unusual condition in the history of coal mining, as a great many companies are operating their mines for the sole purpose of giving employment to their workmen. A great amount of coal is being sold at a loss, but the operators recognizing the sterling qualities of their workmen and realizing that men of their type prefer work rather than the "dole," are willing to sacrifice any profits, as well as depleting their property, that their employees and families may receive the necessities of life. Where conditions such as these exist it is easy to understand that the problems affecting life and limb are greatly increased, because there is not a sufficient return to maintain all equipment and mining conditions in and about the mines in the same manner that these were maintained during the high priced period. However, this is greatly off set by the keen desire of workmen and officials to pay closer attention to safe practices. It is a situation which calls for coordinated effort properly directed and the mining men of West Virginia are tackling the problem unselfishly and courageously.

During the past two years our problems have been intensified because of the necessary curtailment and in some cases abolishment of the safety departments of many operating companies, and this

department thoroughly understands that this action was most reluctantly undertaken by the operators. However, to them and to you let me say that this department willingly accepts the increased burden and responsibility and will, to the best of our ability and with the facilities at our command, give to the great industries under our jurisdiction the best service possible.

You willingly gave to the State the benefits during the years of prosperity, therefore, in your years of adversity this department assures you that all its rulings will be made with the intention of being helpful and they will be based on common sense and proper mining and business practices.

We hope that the depression will end in the near future and we will again have that continuity of happiness and prosperity in the homes of all West Virginians.

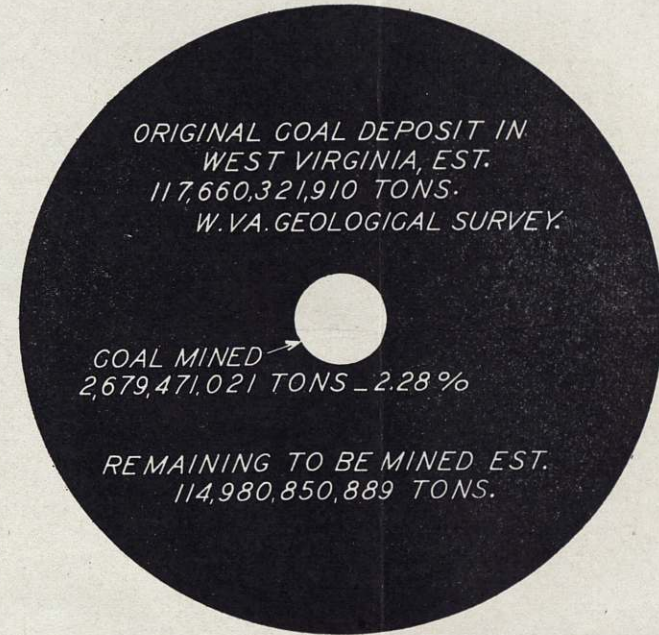
COAL, OIL AND GAS

On the opposite page will be found diagrams showing the production of coal, oil and gas for the years in which records were kept. These diagrams are self-explanatory and need but one note of explanation. Heretofore the department has used the estimation of 161,192,641,984 tons as the original coal deposit. This included all seams within the state, and contained seams which are deemed by geological authorities as not being workable under present conditions. We have deducted this estimated quantity from the total amount and have used as a basis for this diagram the net amount of available coal from the seams workable at this time.

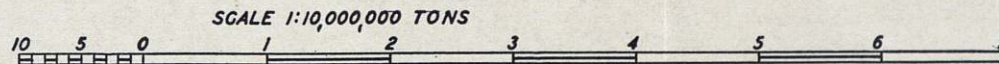
YEAR	TONNAGE
1863	444 648
1864	454 888
1865	487 897
1866	512 068
1867	589 360
1868	609 227
1869	603 148
1870	608 878
1871	618 830
1872	700 000
1873	1 000 000
1874	1 120 000
1875	1 120 000
1876	896 000
1877	1 120 000
1878	1 120 000
1879	1 400 000
1880	1 829 844
1881	1 680 000
1882	2 240 000
1883	2 335 833
1884	3 360 000
1885	3 367 062
1886	3 598 664
1887	4 881 620
1888	1 624 710
1889	5 114 882
1890	6 321 220
1891	8 155 202
1892	8 710 878
1893	10 929 020
1894	10 559 433
1895	11 058 991
1896	13 369 964
1897	12 960 528
1898	16 010 024
1899	18 200 168
1900	21 153 340
1901	22 725 590
1902	26 162 217
1903	25 663 342
1904	30 222 288
1905	35 283 392
1906	41 891 891
1907	44 845 148
1908	44 091 051
1909	46 697 018
1910	59 274 553
1911	60 517 168
1912	66 731 587
1913	69 182 794
1914	73 677 059
1915	71 812 918
1916	89 165 774
1917	89 383 450
1918	90 766 637
1919	84 980 552
1920	89 590 274
1921	90 452 996
1922	79 394 787
1923	97 475 177
1924	103 325 960
1924	53 244 671
1925	123 061 985
1926	144 603 574
1927	146 088 121
1928	133 866 587
1929	139 297 946
1930	122 429 767
1931	102 698 420
TOTAL	2 679 471 021

DIAGRAM SHOWING GOAL PRODUCTION
 IN THE STATE OF
WEST VIRGINIA
 COMPILED FOR THE TIME AND FROM THE SOURCES INDICATED.

R. M. Lambie
 CHIEF OF DEPARTMENT OF MINES.



TONNAGE EXPRESSED IN NET TONS OF 2000 POUNDS.
 ARRANGED AND DRAWN BY *L. M. Brown* G.E., E.M.
 INSPECTOR OIL AND GAS DIVISION.
 CHARLESTON, WEST VIRGINIA, JUNE 20, 1932.



YEAR	BARRELS
1859-76	3 000 000
1876	120 000
1877	172 000
1878	180 000
1879	180 000
1880	179 000
1881	151 000
1882	128 000
1883	126 000
1884	90 000
1885	91 000
1886	102 000
1887	145 000
1888	119 448
1889	544 113
1890	492 578
1891	2 406 218
1892	3 810 086
1893	8 445 412
1894	8 577 624
1895	8 120 125
1896	10 019 770
1897	13 090 045
1898	13 615 101
1899	13 910 630
1900	16 195 675
1901	14 177 126
1902	13 513 345
1903	12 899 395
1904	12 544 686
1905	11 578 110
1906	10 120 935
1907	9 095 296
1908	9 523 176
1909	10 745 092
1910	11 735 071
1911	9 795 464
1912	12 128 962
1913	11 567 299
1914	9 680 033
1915	9 264 798
1916	8 731 184
1917	8 379 285
1918	7 866 628
1919	9 052 915
1920	8 075 000
1921	7 941 911
1922	7 521 000
1923	7 010 000
1924	5 920 000
1925	5 776 000
1926	5 946 000
1927	6 023 000
1928	5 661 000
1929	5 574 000
1930	5 071 000
1931	4 472 000
TOTAL	37 151 853 6

DIAGRAM SHOWING OIL PRODUCTION

IN THE STATE OF

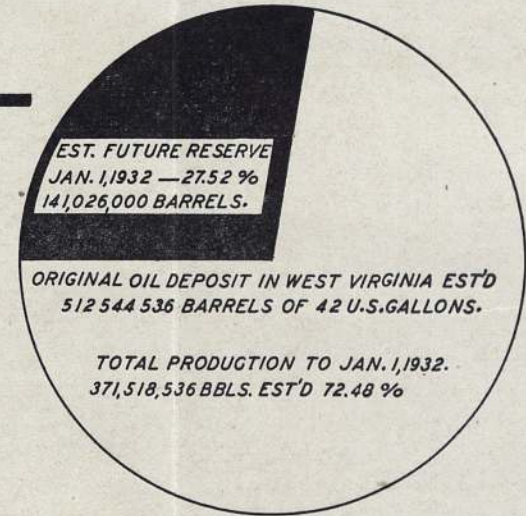
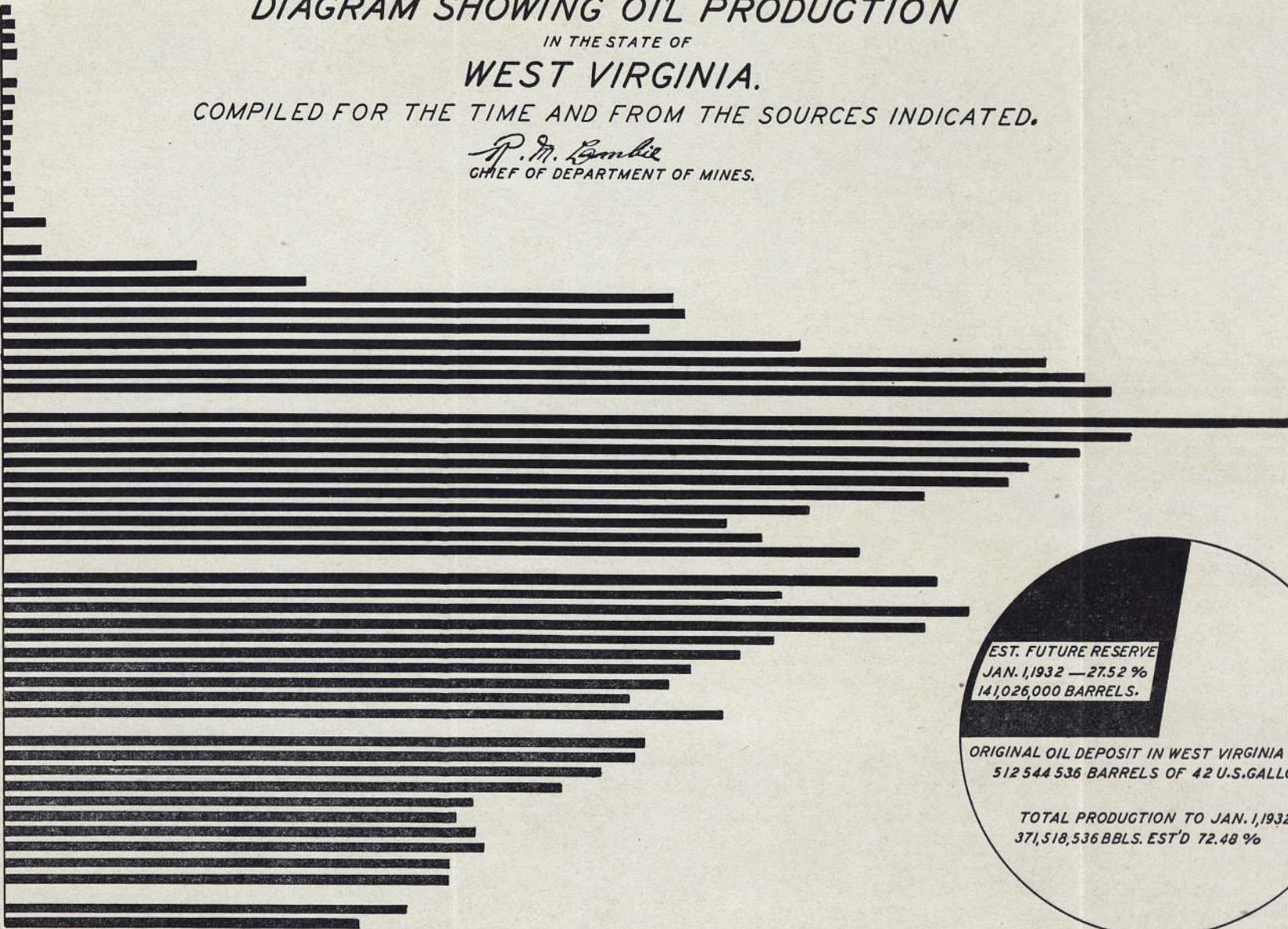
WEST VIRGINIA.

COMPILED FOR THE TIME AND FROM THE SOURCES INDICATED.

P. M. Lambie
CHIEF OF DEPARTMENT OF MINES.

WEST VIRGINIA GEOLOGICAL SURVEY—1924 'BLUE BOOK' BY JOHN T. HARRIS

U.S.G.S.



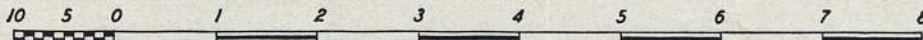
EST. FUTURE RESERVE
JAN. 1, 1932 — 27.52 %
14,102,600 BARRELS.

ORIGINAL OIL DEPOSIT IN WEST VIRGINIA EST'D
37,151,853.6 BARRELS OF 42 U.S. GALLONS.

TOTAL PRODUCTION TO JAN. 1, 1932.
37,151,853 BBL. EST'D 72.48 %

ARRANGED AND DRAWN BY *L. M. Brown* G.E., E.M.
INSPECTOR OIL AND GAS DIVISION
CHARLESTON WEST VIRGINIA JULY 6, 1932.

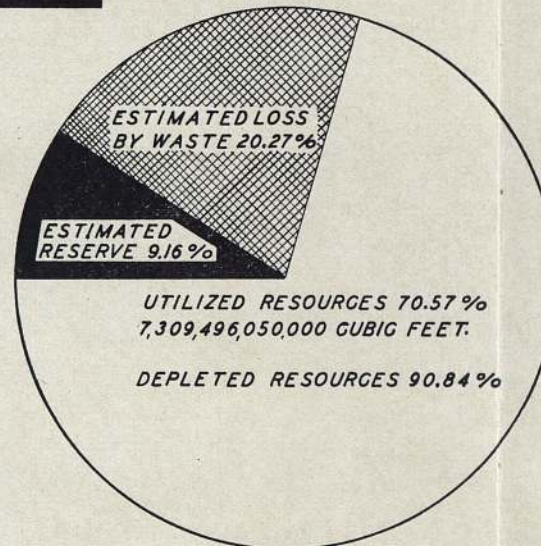
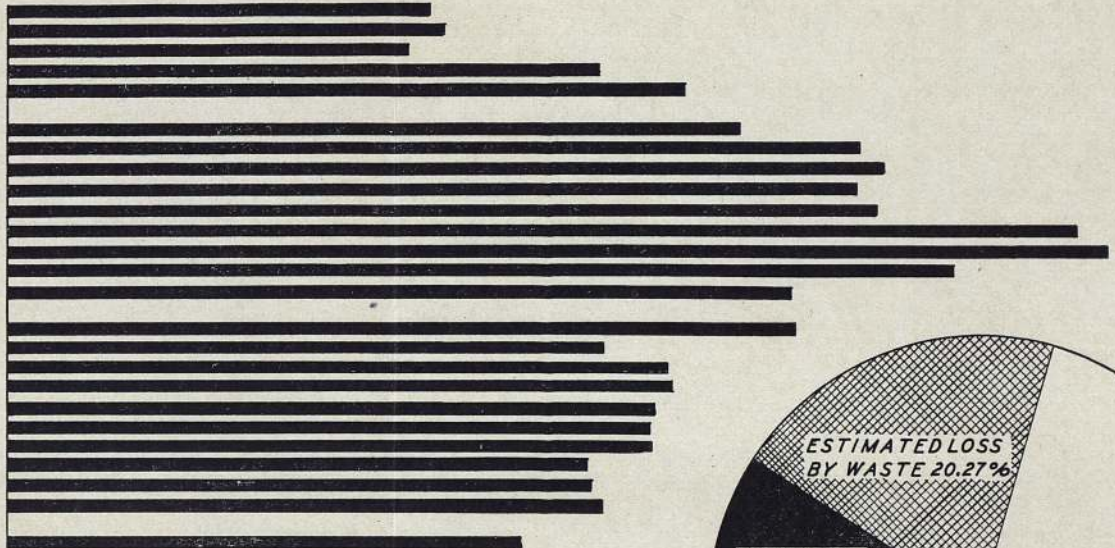
SCALE 1:1000000 BARRELS



ESTIMATED FUTURE OIL RESERVE JAN. 1, 1922,	BARRELS.
U.S.G.S. AND A.A.P.G.	200 000 000
PRODUCTION TO JAN. 1, 1922,	312 544 536
ESTIMATED ORIGINAL OIL DEPOSIT,	512 544 536
PRODUCTION TO JAN. 1, 1932,	37 151 853 6
EST. FUTURE OIL RESERVE JAN. 1, 1932,	14 102 600



YEAR.	CUBIC FEET.	VALUE.
1885-05-2391 397 244 000	43 679 512	
1906	119 400 392 000	13 735 343
1907	122 687 236 000	16 670 962
1908	112 181 278 000	14 837 130
1909	166 435 092 000	17 538 565
1910	190 705 869 000	23 816 553
1911	206 890 576 000	28 435 937
1912	239 006 682 000	33 324 475
1913	245 453 985 000	34 164 850
1914	238 740 162 000	35 076 755
1915	244 004 559 000	36 424 263
1916	299 318 907 000	47 603 396
1917	308 617 101 000	57 389 161
1918	265 160 917 000	41 324 365
1919	219 886 837 000	50 000 000
1920	221 266 699 000	78 098 225
1921	167 227 696 000	60 760 838
1922	184 677 588 000	69 203 756
1923	186 678 130 000	70 000 000
1924	182 285 000 000	68 000 000
1925	180 345 000 000	70 903 000
1926	180 223 000 000	76 396 000
1927	162 375 000 000	67 994 000
1928	163 018 000 000	72 265 000
1929	167 333 000 000	73 793 000
1930	144 180 000 000	



ESTIMATED PRODUCTION 1885-1905	2 391 397 244 000
PRODUCTION 1906 TO 1921, INCLUSIVE	3 366 983 988 000
ESTIMATED PRODUCTION TO JAN. 1, 1922	5 758 381 232 000
ESTIMATED LOSS BY WASTE	2 100 000 000 000
TOTAL DEPLETION TO JAN. 1, 1922	7 858 381 232 000
ESTIMATED FUTURE RESERVE JAN. 1, 1922	2 500 000 000 000
ESTIMATED ORIGINAL NATURAL GAS SUPPLY	10 358 381 232 000
ESTIMATED FUTURE RESERVE JAN. 1, 1922	2 500 000 000 000
PRODUCTION JAN. 1, 1922 TO JAN. 1, 1931	1 551 114 718 000
ESTIMATED FUTURE RESERVE JAN. 1, 1931	948 885 282 000

NOTE: THE FOREGOING IS BASED ON ESTIMATES MADE BY THE WEST VIRGINIA GEOLOGICAL SURVEY IN 1922 AND SHOWN IN THE 1924 "BLUE BOOK" BY JOHN T. HARRIS, AND ON SUBSEQUENT PRODUCTION. MORE RECENT DEVELOPMENTS, HOWEVER, INDICATE A MUCH LARGER RESERVE.

DIAGRAM SHOWING NATURAL GAS PRODUCTION IN THE STATE OF WEST VIRGINIA

COMPILED FOR THE TIME AND FROM THE SOURCES INDICATE HEREON.

R. M. Embie
CHIEF OF DEPARTMENT OF MINES.

ARRANGED AND DRAWN BY *P. M. Brown* G. E., E. M.
INSPECTOR OIL AND GAS DIVISION.
CHARLESTON WEST VIRGINIA JULY 11, 1932.

SCALE 1:30,000,000,000 CUBIC FEET.

