Data Analysis of Petroleum Exploration Results

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Data Processing

Step 1)

Gathering

In a first phase, we have placed all raw Exploration Data in an Excel-workbook, without taking into account the different Sedimentary Petroleum Basins and Petroleum Systems found, for instance, in Indonesia, as depicted below:

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
Basin Name	Field Name	Status	Location	Year	Oil Recoverable (2P) Mb	Gas Recoverable (2P) Gcf	Condensate Recoverable (2P) Mb	Total Recoverable (2P) Mb	Oil in Place (2P) Mb	Gas in Place (2P) Gcf	Condensate in Place (2P) Mb	Total Place (2P) Mb	Oil Remaining (2P) Mb	Gas Remaining (2P) Gcf	Condensate Remaining (2P) Mb	Total Remaining (2P) Mb	Cumul Oil Production Year	Cumul Oil Production Gb	Cumul Gas Production Year	Cumul Gas Production Gcf	Cumul Cond Production Year	Cumul Cond Production Gb	Cumul Total Production Year	Cumul Total Production Gb
Banggai Basin	Donggi 1	Appraising	Onshore	2001		420	7	77		519	1000	86		420	7	77				0				0
Banggai Basin	Dongkala 1	Discovery	Offshore	1986		50		8		63		10		50		8				0				0
Banggai Basin	Maleo Raja 1	Discovery	Onshore	2004		235	5	44		280		47		235	5	44				0				0
Banggai Basin	Mantawa 1	Discovery	Offshore	1984		146		24		183		30		146		24				0				0
Banggai Basin	Matindok 1	Discovery	Onshore	1988		408		68		486		81		408		68				0				0
Banggai Basin	Minahaki	Discovery	Onshore	1998		108	1	19		130		22		108	1	19				0				0
Banggai Basin	Senoro	Appraising	Onshore	1999	6	3237	52	598	80	4710		865	6	3237	52	598				0				0
Banggai Basin	Sukamaju 1	Discovery	Onshore	2004		40	5	12		48		8		40	5	12				0				0
Banggai Basin	Tiaka	Producing	Offshore	1985	13	4		13	128	51		136	13	4		13		0		0				0
						0				0				0						0				
Barito Basin	Bagok 1	Discovery	Onshore	1986	1	0		1	4	0		4	1	0		1				0				0
Barito Basin	Kambitin	Temporaril	Onshore	1959	3	3		3	15	13		17	3	2		3	1996	0	1996	0				0
Barito Basin	Ngurit	Discovery	Onshore	1995		5		1		8		1		5		1				0				0
Barito Basin	Tanjung	Prod, impr	Onshore	1938	152	174		181	628	282		675	22	8		24	2005	129	2005	167				157
Barito Basin	Tanta	Temporaril	Onshore	1975	4	23		8	27	27		32	4	23		8				0				0
South Barito D	Bongkang 2	Discovery	Onshore	1983		50		8		0		0		50		8				0				0
South Barito D	Dahor South	Temporaril	Onshore	1989	4	2		4	15	8		16	3	2		4	1996	0	1996	0				0
South Barito D	Dahor Timur 1	Discovery	Onshore	1989	0	0		0	0	0		0	0	0		0				0				0
South Barito D	Jangkung 1	Discovery	Onshore	1992	1	0		1	5	0		5	1	0		1				0				0
South Barito D	Minyak Selatan	Discovery	Onshore	1998		3		1		6		1		3		1				0				0
South Barito D	Sei Jaing 1	Discovery	Onshore	1992	0	0		0	1	0		1	0	0		0				0				0
South Barito D	Tapian Timur	Producing	Onshore	1967	12	25		16	54	70		66	4	11		6	2005	8	2005	14				10
South Barito D	Warukin Selata	Producing	Onshore	1965	15	17		17	49	51		57	3	11		4	2002	12	2002	6				13
South Barito D	Warukin Tenga	Producing	Onshore	1975	2	2		2	10	8		12	1	2		1	2002	1	2002	0				1
						0				0				0						0				
Bintuni Basin	Jagiro 4	Discovery	Onshore	1982	0	0		0	0	0		0	0	0		0				0				0
Bintuni Basin	Mogoi	Producing	Onshore	1941	29	8		30	106	13		108	24	7		25	2002	5	2000	1				5
Bintuni Basin	Mogoi Deep 1	Discovery	Onshore	1996		750		125		1000		167		750		125				0				0
Bintuni Basin	Ofaweri	Discovery	Offshore	1992		546		91		680		113		546		91				0				0
Bintuni Basin	Roabiba	Discovery	Offshore	1990		569		95		686		114		569		95				0				0
Bintuni Basin	Vorwata	Developing	Offshore	1997		8335		1389		9471		1579		8335		1389				0				0
Bintuni Basin	Wasian	Temporaril	Onshore	1941	20	13		22	176	27		180	18	13		20	1960	2		0				2
Bintuni Basin	Wiriagar	Temporaril	Onshore	1981	4	0		4	12	0		12	2	0		2	2004	2		0				2
Bintuni Basin	Wiriagar Deep	Developing	Onshore/(	1994		4400		733		5362		894		4400		733				0				0
Bintuni Basin	Wos	Discovery	Offshore	1992		156		26		226		38		156		26				0				0
						0				0				0						0				
Central Sumatr	Akar	Discovery	Onshore	1978	0	0		0	2	0		2	0	0		0				0				0
Central Sumatr	Aman	Prod, impr	Onshore	1974	54	6		55	118	13		120	5	1		5	2005	48	2002	5				49
Central Sumatr	Ami	Producing	Onshore	1995	1	0		1	10	0		10	0	0		0	2005	0		0				0
Central Sumatr	Ami North	Producing	Onshore	2001	0	1		1	2	1		2	0	1		1	2005	0		0				0
Central Sumatr	Ampuh	Producing	Onshore	1981	19	0		19	103	10		104	3	0		3	2005	16		0				16
Central Sumatr	Andan	Prod, impr	Onshore	1941	7	0		7	14	1		14	1	0		1	2003	6	1995	0				6
Central Sumatr	Antara	Prod, impr	Onshore	1978	27	0		27	90	2		90	18	0		18	2005	9		0				9
Central Sumatr	Arak	Producing	Onshore	1977	20	0		20	57	0		57	20	0		20				0				0
Central Sumatr	Arca 1	Discovery	Onshore	2004	2	0		2		0		0	2	0		2				0				0
Central Sumatr	Asih	Producing	Onshore	1993	4	0		4	39	0		39	2	0		2	2005	2		0				2
Central Sumatr	Asih North	Producing	Onshore	2000	2	1		2	5	1		5	0	1		1	2005	1		0				1
Central Sumatr	Ayu	Temporaril	Onshore	1986	4	0		4	27	0		27	3	0		3	2002	2		0				2
Central Sumatr	Baganbelada Se	Discovery	Onshore	1976		2		0		2		0		2		0				0				0

According to the International Unities System, oil and condensate are expressed in Mb (Mega), that is to say, in million barrels (10^6 = 1 000 000 barrels). The gas reserves are given in Gcf (Giga), that is to say, in billion cubic feet (10^9 =1 000 000 000 cubic feet). A Tcf (Tera) of gas corresponds to 1000 Gcf of gas (10^{12} = 1 000 000 000 000) and is roughly equivalent 0.166 Gb, that is to say, 6 Tcf correspond roughly to 1 Gboe.

Step 2)

In a new sheet, which we have called "Sorting by Year", of the workbook, we sorted the interesting data to Exploration (Production data will be processed later) by Year of Discovery in ascending order, as depicted below:

A	B	C	D	E	F
Year of Discovery	Oil Recoverable (2P) Mb	Gas Recoverable (2P) Gcf	Condensate Recoverable (2P) Mb	Total Recoverable (2P) Mb	Number of Fields
1885	15	2		16	1
1888	1	0		1	1
1892	135	0		135	1
1892	16	0		16	1
1892	29	0		29	1
1893	27	0		27	1
1893	0	0		0	1
1894	0	0		0	1
1895	1	0		1	1
1896	10	0		10	1
1896	35	0		35	1
1896	4	0		4	1
1897	0	0		0	1
1897	0	0		0	1
1897	304	174		333	1
1897	36	2		36	1
1897	0	0		0	1
1897	0	0		0	1
1898	0	0		0	1
1898	0	0		0	1
1898	1	0		1	1
1899		10		2	1
1899	12	0		12	1
1899	70	0		70	1
1899	1	0		1	1
1899	3	30		8	1
1900	0	0		0	1
1900		0		0	1
1900	5	3	1	6	1
1900	5	95		20	1
1900	5	0		5	1
1900	2	55		11	1
1901	0	0		0	1
1901	2	0		2	1
1901	7	0		7	1
1902	7	0		7	1
1902	1	0		1	1
1902	29	0		29	1
1903	44	0		44	1
1903	4	0		4	1
1903	1	0		1	1
1903	0	0		0	1
1903	2	0		2	1
1903	1	0		1	1
1903	4	0		4	1
1903	10	0		10	1
1904	0	0		0	1
1904	0	0		0	1
1904	0	0		0	1

In Excel raw data, the reader can check what we did by selecting Year of Discovery (column E, step 1). Then, in Excel bar, choose Data and click in Sort. In the opened window:

a) *short by* - choose Year of Discovery (ascending).

Clicking in OK, you get the data sorted by Year of Discovery. Choosing the interesting parameters (see below) for our study, you get an Excel-sheet similar to the one illustrated at side.

In first part of our study, the interesting parameters are mainly:

a) Year of Discovery;
b) Recoverable (2P = Proven + Probable reserves) oil in Mb;
c) Recoverable (2P= Proven + Probable reserves) gas in Gcf;
d) Recoverable (2P= Proven + Probable reserves) condensate in Mb;
e) Total Recoverable Reserves (2P= Proven + Probable) in Mb;
f) Number of fields (discoveries).

Step 3)

In a new sheet of our workbook ("Subtotals"), we copied the sorted interesting data (step 2): (a) Recoverable Oil, (b) Recoverable Gas, (c) Recoverable Condensate, (d) Total Recovery and (e) Number of Fields (discoveries) and added Subtotals using function Sum, as depicted below:

A	B	C	D	E	F
Year of Discovery	Oil Recoverable (2P) Mb	Gas Recoverable (2P) Gcf	Condensate Recoverable (2P) Mb	Total Recoverable (2P) Mb	Number of Fields
1885	15	2		16	1
1885 Total	15	2	0	16	1
1888	1	0		1	1
1888 Total	1	0	0	1	1
1892	135	0		135	1
1892	16	0		16	1
1892	29	0		29	1
1892 Total	180	0	0	180	3
1893	27	0		27	1
1893	0	0		0	1
1893 Total	27	0	0	27	2
1894	0	0		0	1
1894 Total	0	0	0	0	1
1895	1	0		1	1
1895 Total	1	0	0	1	1
1896	10	0		10	1
1896	35	0		35	1
1896	4	0		4	1
1896 Total	49	0	0	49	3
1897	0	0		0	1
1897	0	0		0	1
1897	304	174		333	1
1897	36	2		36	1
1897	0	0		0	1
1897	0	0		0	1
1897 Total	340	176	0	369	6
1898	0	0		0	1
1898	0	0		0	1
1898	1	0		1	1
1898 Total	1	0	0	1	3
1899		10		2	1
1899	12	0		12	1
1899	70	0		70	1
1899	1	0		1	1
1899	3	30		8	1
1899 Total	86	40	0	92	5
1900	0	0		0	1
1900		0		0	1
1900	5	3	1	6	1
1900	5	95		20	1
1900	5	0		5	1
1900	2	55		11	1
1900 Total	17	152	1	43	6
1901	0	0		0	1
1901	2	0		2	1
1901	7	0		7	1
1901 Total	9	0	0	9	3
1902	7	0		7	1
1902	1	0		1	1

In Excel, go to Data and click in Subtotals. Then, in the opened window:

a) *at each change in* - choose Year of Discovery ;
b) *use function* - choose Sum ;
c) *add subtotals to* - and tick:

(i) Oil recoverable,
(ii) Gas recoverable,
(iii) Condensate recoverable,
(iv) Total recoverable and
(v) Number of Fields.

The upper part of the Excel sheet should be similar to the one illustrated here, at side.

Step 4)

In a new sheet ("Subtotals with Values"), we pasted subtotals (step 3) with values, as illustrated below:

A	B	C	D	E	F
Year of Discovery	Oil Recoverable (2P) Mb	Gas Recoverable (2P) Gcf	Condensate Recoverable (2P) Mb	Total Recoverable (2P) Mb	Number of Fields
1885	15	2		16	1
1885 Total	15	2	0	16	1
1888	1	0		1	1
1888 Total	1	0	0	1	1
1892	135	0		135	1
1892	16	0		16	1
1892	29	0		29	1
1892 Total	180	0	0	180	3
1893	27	0		27	1
1893	0	0		0	1
1893 Total	27	0	0	27	2
1894	0	0		0	1
1894 Total	0	0	0	0	1
1895	1	0		1	1
1895 Total	1	0	0	1	1
1896	10	0		10	1
1896	35	0		35	1
1896	4	0		4	1
1896 Total	49	0	0	49	3
1897	0	0		0	1
1897	0	0		0	1
1897	304	174		333	1
1897	36	2		36	1
1897	0	0		0	1
1897	0	0		0	1
1897 Total	340	176	0	369	6
1898	0	0		0	1
1898	0	0		0	1
1898	1	0		1	1
1898 Total	1	0	0	1	3
1899		10		2	1
1899	12	0		12	1
1899	70	0		70	1
1899	1	0		1	1
1899	3	30		8	1
1899 Total	86	40	0	92	5
1900	0	0		0	1

In Excel, to paste with values, you must selected the data of steps 3 (subtotals), go to **Edit** (Excel bar) and clicking in **Copy**.

Then, open a **New Workbook**, or a new sheet, go again to **Edit**, in the Excel bar, and choose **Paste Special**.

In the opened **Paste Special window**, choose **Values** and click in **OK**. All data will be copied in values and so, you can work with it.

NB: Clicking in cell **B9** of step 3, you will see, in the Formula Bar of Excel, the formula **"=SUBTOTAL (9;B6;B8)".** However, clicking in the cell **B9** of step 4, you will see a value of 179,67, that is to say, 180 (value).

Step 5)

In a new sheet ("Sort Columns Descending"), we sorted, in descending order, the data of step 4, by columns, as depicted below:

Year of Discovery	Oil Recoverable (2P) Mb	Gas Recoverable (2P) Gcf	Condensate Recoverable (2P) Mb	Total Recoverable (2P) Mb	Number of Fields
Grand Total	28251	221391	7161	72310	1241
2006 Total	10	322	0	64	9
2005 Total	65	485	1	146	16
2004 Total	305	1336	13	541	18
2003 Total	110	3921	83	846	16
2002 Total	210	1821	2	516	21
2001 Total	509	3045	63	1080	28
2000 Total	114	7644	55	1443	25
1999 Total	96	5175	56	1015	23
1998 Total	418	2800	41	925	25
1997 Total	132	10066	3	1812	32
1996 Total	359	2818	29	858	27
1995 Total	117	2066	36	496	32
1994 Total	127	7045	0	1301	15
1993 Total	84	2869	44	606	25
1992 Total	98	6427	8	1177	33
1991 Total	131	9186	56	1718	29
1990 Total	52	1678	9	341	29
1989 Total	385	724	10	516	22
1988 Total	512	1725	19	819	35
1987 Total	271	1061	36	484	28
1986 Total	138	3662	84	833	30
1985 Total	167	1914	28	514	30
1984 Total	170	2770	36	668	41
1983 Total	235	1237	10	452	34
1982 Total	365	3476	34	978	47
1981 Total	229	2012	18	583	38
1980 Total	369	1523	6	629	44
1979 Total	238	1223	4	445	25
1978 Total	250	470	1	329	29
1977 Total	203	16902	4888	7909	26
1976 Total	359	1346	8	592	31
1975 Total	496	2053	42	880	34
1974 Total	1776	12472	190	4044	33
1973 Total	948	49366	48	9224	37
1972 Total	636	15622	152	3392	27
1971 Total	580	14880	730	3790	23

In Excel, to sort the data by columns, in descending order, you start to select the data of step 4 (subtotals with values) and copy them to a new workbook or others columns in the same sheet.

Then, with all columns selected, click in Data (Excel bar) and choose Sort.

On the opened window, sort by Year of Discovery in descending order and click OK.

All columns will be sorted in descending order in relation to the Year of Discovery, as illustrated at side.

Step 6)

In a new sheet (" Sorted Columns Ascending"), we sorted the columns data of step 4, in ascending order in relation to Year of Discovery, as pictured below:

A	B	C	D	E	F
Year of Discovery	Oil Recoverable (2P) Mb	Gas Recoverable (2P) Gcf	Condensate Recoverable (2P) Mb	Total Recoverable (2P) Mb	Number of Fields
1885 Total	15	2	0	16	1
1888 Total	1	0	0	1	1
1892 Total	180	0	0	180	3
1893 Total	27	0	0	27	2
1894 Total	0	0	0	0	1
1895 Total	1	0	0	1	1
1896 Total	49	0	0	49	3
1897 Total	340	176	0	369	6
1898 Total	1	0	0	1	3
1899 Total	86	40	0	92	5
1900 Total	17	152	1	43	6
1901 Total	9	0	0	9	3
1902 Total	38	0	0	38	3
1903 Total	66	0	0	66	8
1904 Total	35	0	0	35	5
1905 Total	2	0	0	2	3
1906 Total	270	1041	9	451	5
1907 Total	1	0	0	1	2
1908 Total	12	18	0	15	2
1909 Total	88	12	0	90	2
1910 Total	4	0	0	4	2
1912 Total	2	0	0	2	2
1913 Total	46	49	0	54	5
1914 Total	1	0	0	1	2
1915 Total	0	0	0	0	3
1916 Total	1	21	0	5	5
1917 Total	0	0	0	0	1
1919 Total	0	0	0	0	1
1921 Total	0	0	0	0	1
1922 Total	534	919	1	688	3
1923 Total	4	0	0	4	1
1925 Total	9	43	0	16	1
1926 Total	9	150	4	38	2
1927 Total	12	0	0	12	1
1928 Total	20	15	0	23	1
1929 Total	15	101	1	33	2
1930 Total	72	29	0	77	1

Do the same thing than in step 3, but sort the data in ascending order. In other words, select the data of step 4 (subtotals with values) and Copy it to a new workbook or others columns in the same sheet.

Then, with all columns selected, click in Data (Excel bar) and choose Sort.

On the opened window, sort by Year of Discovery, in ascending order and click OK.

All columns will be sorted in ascending order order in relation to the Year of Discovery, as illustrated at side, (uppermost part of the Excel sheet called "Sorted Columns Ascending").

Step 7)

In a new sheet ("Cleaning Data"), we cleaned the data obtained in steps 5 and 6. In fact, we removed in the column A, the term "Total" to get a sheet as illustrated below:

A	B	C	D	E	F
Year of Discovery	Oil Recoverable (2P) Mb	Gas Recoverable (2P) Gcf	Condensate Recoverable (2P) Mb	Total Recoverable (2P) Mb	Number of Fields
Grand	28251	221391	7161	72310	1241
2006	10	322	0	64	9
2005	65	485	1	146	16
2004	305	1336	13	541	18
2003	110	3921	83	846	16
2002	210	1821	2	516	21
2001	509	3045	63	1080	28
2000	114	7644	55	1443	25
1999	96	5175	56	1015	23
1998	418	2800	41	925	25
1997	132	10066	3	1812	32
1996	359	2818	29	858	27
1995	117	2066	36	496	32
1994	127	7045	0	1301	15
1993	84	2869	44	606	25
1992	98	6427	8	1177	33
1991	131	9186	56	1718	29
1990	52	1678	9	341	29
1989	385	724	10	516	22
1988	512	1725	19	819	35
1987	271	1061	36	484	28
1986	138	3662	84	833	30
1985	167	1914	28	514	30
1984	170	2770	36	668	41
1983	235	1237	10	452	34
1982	365	3476	34	978	47
1981	229	2012	18	583	38
1980	369	1523	6	629	44
1979	238	1223	4	445	25
1978	250	470	1	329	29
1977	203	16902	4888	7909	26
1976	359	1346	8	592	31
1975	496	2053	42	880	34
1974	1776	12472	190	4044	33
1973	948	49366	48	9224	37
1972	636	15622	152	3392	27
1971	580	14880	730	3790	23
1970	2193	4239	104	3004	22

To remove the term Total in the column A of the step 5, you must first Copy the data to a new workbook.

Then, select the column A and in Edit of the Excel-bar go to Find. In the open window:

- in *Find what*: write Total and choose Replace.

A new window opens:

- in *Find what*: leave Total,
- in *Replaced by*: leave empty,

and choose Replace All.

The column A of the new workbook appears without Total. Copy all columns to the original workbook.

Step 8)

In the same sheet ("Cleaning Data"), we sorted all columns in ascending order (Year of Discovery), as depicted below:

G	H	I	J	K	L
Year of Discovery	Oil Recoverable (2P) Mb	Gas Recoverable (2P) Gcf	Condensate Recoverable (2P) Mb	Total Recoverable (2P) Mb	Number of Fields
1885	15	2	0	16	1
1888	1	0	0	1	1
1892	180	0	0	180	3
1893	27	0	0	27	2
1894	0	0	0	0	1
1895	1	0	0	1	1
1896	49	0	0	49	3
1897	340	176	0	369	6
1898	1	0	0	1	3
1899	86	40	0	92	5
1900	17	152	1	43	6
1901	9	0	0	9	3
1902	38	0	0	38	3
1903	66	0	0	66	8
1904	35	0	0	35	5
1905	2	0	0	2	3
1906	270	1041	9	451	5
1907	1	0	0	1	2
1908	12	18	0	15	2
1909	88	12	0	90	2
1910	4	0	0	4	2
1912	2	0	0	2	2
1913	46	49	0	54	5
1914	1	0	0	1	2
1915	0	0	0	0	3
1916	1	21	0	5	5
1917	0	0	0	0	1
1919	0	0	0	0	1
1921	0	0	0	0	1
1922	534	919	1	688	3
1923	4	0	0	4	1
1925	9	43	0	16	1
1926	9	150	4	38	2
1927	12	0	0	12	1
1928	20	15	0	23	1
1929	15	101	1	33	2
1930	72	29	0	77	1
1931	263	370	10	335	4

Select all columns of step 7 and, in Excel-bar, go to Data and choose Sort.

In the opened window, sort by Year of Discovery in ascending order and click OK.

All columns will be sorted as in the picture at side.

Step 9)

Taking the number of New Field Wildcats (new raw Excel Exploration data) drilled per year, we copied them to a new sheet of our Indonesia workbook ("NFW") as illustrated below (on the left). Then, in the same Excel-sheet, we copied the columns A and B to the columns E and F and transform them in subtotals, as shown below (figure in right).

A	B	C
Year of Drilling	N° New Field Wildcats	
1884	1	
1885	1	
1885	1	
1888	1	
1888	1	
1891	1	
1891	1	
1891	1	
1891	1	
1891	1	
1891	1	
1891	1	
1891	1	
1891	1	
1891	1	
1892	1	
1892	1	
1892	1	
1892	1	
1892	1	
1892	1	

A	B	C	D	E	F
Year of Drilling	N° New Field Wildcats			Year of Drilling	N° New Field Wildcats
1884	1			1884	1
				1884 Total	1
1885	1			1885	1
1885	1			1885	1
				1885 Total	2
1888	1			1888	1
1888	1			1888	1
				1888 Total	2
1891	1			1891	1
1891	1			1891	1
1891	1			1891	1
1891	1			1891	1
1891	1			1891	1
1891	1			1891	1
1891	1			1891	1
1891	1			1891	1
1891	1			1891	1
1891	1			1891	1
				1891 Total	10
1892	1			1892	1
1892	1			1892	1
1892	1			1892	1
1892	1			1892	1
1892	1			1892	1
1892	1			1892	1

As previously in step 3, to add subtotals, you must start to select the copied columns (E, F). Then go to Data, in Excel bar, and click in Subtotals. In the opened window:

a) *at each change in* - choose Year of Discovery ;
b) *use function* - choose Sum;
c) *add subtotals to* - tick in

(i) N° New Field Wilcats

The upper part of the Excel-sheet should be similar to the one illustrated at side (on the right).

Step 10)

As in step 4, we pasted the subtotals of step 7 with values (Paste Special) and sorted them in decreasing order, as illustrated below (figure in the left). Then, as shown in the figure in the right, we cleaned the column G, that is to say, we removed the term "Total" and sorted the data by ascending Years of Drilling.

G	H	I
Year of Drilling	N° New Field Wildcats	
Grand Tota	4312	
2004 Total	43	
2003 Total	44	
2002 Total	46	
2001 Total	71	
2000 Total	78	
1999 Total	60	
1998 Total	76	
1997 Total	90	
1996 Total	71	
1995 Total	60	
1994 Total	50	
1993 Total	80	
1992 Total	88	
1991 Total	99	
1990 Total	82	
1989 Total	73	
1988 Total	91	
1987 Total	55	
1986 Total	74	
1985 Total	116	
1984 Total	118	
1983 Total	142	
1982 Total	138	
1981 Total	129	
1980 Total	116	
1979 Total	108	
1978 Total	98	
1977 Total	79	
1976 Total	107	
1975 Total	129	
1974 Total	143	
1973 Total	143	
1972 Total	109	
1971 Total	130	
1970 Total	79	
1969 Total	31	

G	H	I	J	K	L
Year of Drilling	N° New Field Wildcats			Year of Drilling	N° New Field Wildcats
Grand Tota	4312			1884	1
2004 Total	43			1885	2
2003 Total	44			1888	2
2002 Total	46			1891	10
2001 Total	71			1892	8
2000 Total	78			1893	6
1999 Total	60			1894	3
1998 Total	76			1895	23
1997 Total	90			1896	21
1996 Total	71			1897	42
1995 Total	60			1898	55
1994 Total	50			1899	76
1993 Total	80			1900	38
1992 Total	88			1901	16
1991 Total	99			1902	16
1990 Total	82			1903	23
1989 Total	73			1904	21
1988 Total	91			1905	11
1987 Total	55			1906	9
1986 Total	74			1907	9
1985 Total	116			1908	3
1984 Total	118			1909	5
1983 Total	142			1910	9
1982 Total	138			1911	11
1981 Total	129			1912	12
1980 Total	116			1913	6
1979 Total	108			1914	6
1978 Total	98			1915	16
1977 Total	79			1916	25
1976 Total	107			1917	7
1975 Total	129			1918	1
1974 Total	143			1919	5
1973 Total	143			1921	1
1972 Total	109			1922	3
1971 Total	130			1923	4
1970 Total	79			1925	15
1969 Total	31			1926	19

Select the subtotals of step 9, then copy (Edit /Copy) and paste them to a new workbook using Special Past /Values.

Then, sort them (Data /Sort) in a decreasing order in relation to Year of Discovery and Copy the results to the original workbook.

Step 11)

In the same sheet, we added a column with the Cumulative Number of New Field Wildcats, as depicted below:

M	N	O	P	Q	R
	Year of Drilling	N° New Field Wildcats	Cumulative N° New Field Wildcats		
	1884	1	1		
	1885	2	3		
	1888	2	5		
	1891	10	15		
	1892	8	23		
	1893	6	29		
	1894	3	32		
	1895	23	55		
	1896	21	76		
	1897	42	118		
	1898	55	173		
	1899	76	249		
	1900	38	287		
	1901	16	303		
	1902	16	319		
	1903	23	342		
	1904	21	363		
	1905	11	374		
	1906	9	383		
	1907	9	392		
	1908	3	395		
	1909	5	400		
	1910	9	409		
	1911	11	420		
	1912	12	432		
	1913	6	438		
	1914	6	444		
	1915	16	460		
	1916	25	485		
	1917	7	492		
	1918	1	493		
	1919	5	498		
	1921	1	499		
	1922	3	502		
	1923	4	506		
	1925	15	521		
	1926	19	540		

To achieve this step, you must start creating an adjacent column than you can name "Cumulative N° New Field Wildcats".

Then, you can create and apply a simple formula, as follows:

Using the columns and rows of our particular example, in P2 (column P, raw 2), the cumulative N° New Field Wildcats must be 1, that is to say, equal to the number of New Field Wildcats drilled in 1884, which is expressed in O2 (column O, raw 2). Subsequently, in P2 we must write he formula "= O2".

However, in P3, we must write the formula "=O3+P2", since the cumulative N° of New field Wildcats is the sum of the wildcats drilled in 1884 and 1885.

The basic formula (in a given year, the cumulative number of wildcats, is the number of wildcats drilled in the year plus the sum of wildcats drilled in previous years) can be used for all cells of the column. For that selected P3, a large cross appears. Then, displace it§ to the lower right corner of the cell till a much thinner cross appears. Press down and displace it (a square appears) down to the last cell of the column. When you release the pressure, you automatically get the cumulative values of the cells, as illustrated at side.

Step 12)

In a new sheet ("Creaming"), we pasted the results of step 2, that is to say, we pasted the following columns:

(i) Year of Discovery,
(ii) Oil Recoverable,
(iii) Gas Recoverable,
(iv) Condensate Recoverable,
(v) Total Recoverable and
(vi) Number of Fields,

as depicted below:

A	B	C	D	E	F
Year of Discovery	Oil Recoverable (2P) Mb	Gas Recoverable (2P) Gcf	Condensate Recoverable (2P) Mb	Total Recoverable (2P) Mb	Number of Fields
1885	15	2	0	16	1
1888	1	0	0	1	1
1892	180	0	0	180	3
1893	27	0	0	27	2
1894	0	0	0	0	1
1895	1	0	0	1	1
1896	49	0	0	49	3
1897	340	176	0	369	6
1898	1	0	0	1	3
1899	86	40	0	92	5
1900	17	152	1	43	6
1901	9	0	0	9	3
1902	38	0	0	38	3
1903	66	0	0	66	8
1904	35	0	0	35	5
1905	2	0	0	2	3
1906	270	1041	9	451	5
1907	1	0	0	1	2
1908	12	18	0	15	2
1909	88	12	0	90	2
1910	4	0	0	4	2
1912	2	0	0	2	2
1913	46	49	0	54	5
1914	1	0	0	1	2
1915	0	0	0	0	3
1916	1	21	0	5	5
1917	0	0	0	0	1
1919	0	0	0	0	1
1921	0	0	0	0	1
1922	534	919	1	688	3
1923	4	0	0	4	1
1925	9	43	0	16	1

Select all columns of step 1. Then go to Edit and choose Copy. Open a new Excel-sheet in your workbook and Paste them in a conventional way, since you are copying values and not formulas.

Step 13)

In this step, we add to the sheet of the previous step (step 12) cumulative values of:

(i) Oil + Condensate, in Gb;
(ii) Gas, in Tcf, and
(iii) N° of Fields,

as depicted below:

G	H	I	J	K
	Cumul Oil+Condensate (2P) Gb	Cumulative Gas (2P) Tcf	Cumulative N° of Fields	
	0.02	0.00	1	
	0.02	0.00	2	
	0.20	0.00	5	
	0.22	0.00	7	
	0.22	0.00	8	
	0.22	0.00	9	
	0.27	0.00	12	
	0.61	0.18	18	
	0.61	0.18	21	
	0.70	0.22	26	
	0.72	0.37	32	
	0.73	0.37	35	
	0.76	0.37	38	
	0.83	0.37	46	
	0.86	0.37	51	
	0.87	0.37	54	
	1.14	1.41	59	
	1.15	1.41	61	
	1.16	1.43	63	
	1.25	1.44	65	
	1.25	1.44	67	
	1.25	1.44	69	
	1.30	1.49	74	
	1.30	1.49	76	
	1.30	1.49	79	
	1.30	1.51	84	
	1.30	1.51	85	
	1.30	1.51	86	
	1.30	1.51	87	
	1.83	2.43	90	
	1.84	2.43	91	
	1.85	2.47	92	

To calculate cumulative values you can use quite simple formulas. Start to create the column H (Cumul Oil+Condensate). The value in cell H2 must be the sum of the values of cells B2 and D2 divided by 1000 (to get Gb). Subsequently, the formula you must write in cell H2 must be "= (B2+D2)/1000". Similarly, the formula that you must write in cell H3, must be "= (B3+D3)/1000+H2".

Then, as in step 11, selecting the cell H3 a large cross appears. Displacing it to the lower right corner of the cell. A thinner cross appears. Press down and displace it (a square appears) to the bottom of the column. Releasing the pressure, automatically, you get all cumulative values, as illustrated at side.

The same procedure can be used for Cumulative Gas (Tcf) and Cumulative N° of Fields columns, using the following formulas: "= C2/100" for cell I2, "= C3/1000+I2" for cell I3 and "= F2" for cell J2 and "=F3+J2" for cell J3.

Step 14)

In this step we added three more columns to the previous sheet:

(a) Year of Drilling,

(b) N° of New Field Wildcats and

(c) Cumulative N° of New Field Wildcats,

as depicted below:

G	H	I	J	K	L	M	N	O
	Cumul Oil+Condensate (2P) Gb	Cumulative Gas (2P) Tcf	Cumulative N° of Fields		Year of Drilling	N° New Field Wildcats	Cumulative N° New Field Wildcats	
	0.02	0.00	1		1884	1	1	
	0.02	0.00	2		1885	2	3	
	0.20	0.00	5		1888	2	5	
	0.22	0.00	7		1891	10	15	
	0.22	0.00	8		1892	8	23	
	0.22	0.00	9		1893	6	29	
	0.27	0.00	12		1894	3	32	
	0.61	0.18	18		1895	23	55	
	0.61	0.18	21		1896	21	76	
	0.70	0.22	26		1897	42	118	
	0.72	0.37	32		1898	55	173	
	0.73	0.37	35		1899	76	249	
	0.76	0.37	38		1900	38	287	
	0.83	0.37	46		1901	16	303	
	0.86	0.37	51		1902	16	319	
	0.87	0.37	54		1903	23	342	
	1.14	1.41	59		1904	21	363	
	1.15	1.41	61		1905	11	374	
	1.16	1.43	63		1906	9	383	
	1.25	1.44	65		1907	9	392	
	1.25	1.44	67		1908	3	395	
	1.25	1.44	69		1909	5	400	
	1.30	1.49	74		1910	9	409	
	1.30	1.49	76		1911	11	420	
	1.30	1.49	79		1912	12	432	
	1.30	1.51	84		1913	6	438	
	1.30	1.51	85		1914	6	444	
	1.30	1.51	86		1915	16	460	
	1.30	1.51	87		1916	25	485	
	1.83	2.43	90		1917	7	492	
	1.84	2.43	91		1918	1	493	
	1.85	2.47	92		1919	5	498	

Copy the columns N (Year of Drilling), O (N° New Field Wildcats) and P (Cumulative N° New Field Wildcats) of sheet of step 9 (called "NFW") to the active sheet (step 13).

For columns N and O use a simple Copy/Paste, since you are copying values.

However, for column P, as it correspond to formulas, you must make a Paste Special. In other words, Copy it and Past it as Paste special to a new workbook. Then, copy the results, via normal paste, to the active Excel-sheet (Creaming, step 12).

Step 15)

In the same working sheet, we created a column (Q) for Discovery Years leaving a blank cell for the years of drilling without discovery. Then, we copied the columns:

H - Cumulative Oil + Condensate, and
I- Cumulative N° of New Field Wildcats and
J- Cumulative N° of Fields

to columns R and S, adjusting the Discovery Years with the Cumulative New Field Wildcats, as depict below.

P	Q	R	S	T	U	V
	Discovery Years	Cumulative Oil+Condensate (2P) Gb	Cumulative Gas (2P) Tcf	CumulativeN° of Fields		
	1885	0.02	0.00	1		
	1888	0.02	0.00	2		
	1892	0.20	0.00	5		
	1893	0.22	0.00	7		
	1894	0.22	0.00	8		
	1895	0.22	0.00	9		
	1896	0.27	0.00	12		
	1897	0.61	0.18	18		
	1898	0.61	0.18	21		
	1899	0.70	0.22	26		
	1900	0.72	0.37	32		
	1901	0.73	0.37	35		
	1902	0.76	0.37	38		
	1903	0.83	0.37	46		
	1904	0.86	0.37	51		
	1905	0.87	0.37	54		
	1906	1.14	1.41	59		
	1907	1.15	1.41	61		
	1908	1.16	1.43	63		
	1909	1.25	1.44	65		
	1910	1.25	1.44	67		
	1912	1.25	1.44	69		
	1913	1.30	1.49	74		
	1914	1.30	1.49	76		
	1915	1.30	1.49	79		
	1916	1.30	1.51	84		
	1917	1.30	1.51	85		
	1919	1.30	1.51	86		

To fill up the column of Discovery Years (column Q), that is to say, the years in which discoveries have been made, you combine the column A (Year of Discovery) with the column L (Year of Drilling) leaving a blank cell for the years of drilling without discovery.

Then, you just Copy the columns H, I and J, adjusting the values, in other words, leaving a blank cell for the years without discovery, as illustrated in figure at side.

NB: Do not confound Cumulative N° of Fields, that is to say, the cumulative number of discoveries, with Cumulative N° of New Field Wildcats, which correspond to the cumulative number of exploratory wells with or without HC discoveries.

Step 16)

Firstly, we copied the columns L (Year of Drilling) and N (Cumulative N° New Field Wildcats) to columns X and Y, as depicted in the left part of figure below. Secondly, we created the column (AA), which corresponds to Years (since the first discovery), in other words, since 1885. Then we copied and pasted, after adjustment, the following columns:

Column Y (Cumulative N° of New Field Wildcats) in column AB;
Column R (Cumulative Oil + Condensate) in column AC and column R corrected (see below) in column AD;
Column S (Cumulative Gas, in Tcf) in column AE and divided by 6 (in Gboe) in column AF and
Column T (Cumulative N° of Fields) in column AG.

as shown below in the right of the figure below.

W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG
	Year of Drilling	Cumulative N° New Field Wildcats		Years (since 1st Discovery)	Cumulative N° New Field Wildcats	Cumulative Oil+Condensate (2P) Gb	Cumulative Oil+Condensate Corrected (2P) Gb	Cumulative Gas (2P) Tcf	Cumulative Gas (2P) Tcf / 6	Cumulative N° of Fields
	1884	1		1885	3	0.02	0.02	0.00	0.00	1
	1885	3		1888	5	0.02	0.02	0.00	0.00	2
	1888	5		1891	15	0.02	0.02	0.00	0.00	2
	1891	15		1892	23	0.20	0.20	0.00	0.00	5
	1892	23		1893	29	0.20	0.22	0.00	0.00	7
	1893	29		1894	32	0.22	0.22	0.00	0.00	8
	1894	32		1895	55	0.22	0.22	0.00	0.00	9
	1895	55		1896	76	0.22	0.27	0.00	0.00	12
	1896	76		1897	118	0.27	0.61	0.18	0.03	18
	1897	118		1898	173	0.61	0.61	0.18	0.03	21
	1898	173		1899	249	0.61	0.70	0.22	0.04	26
	1899	249		1900	287	0.70	0.72	0.37	0.06	32
	1900	287		1901	303	0.72	0.73	0.37	0.06	35
	1901	303		1902	319	0.73	0.76	0.37	0.06	38
	1902	319		1903	342	0.76	0.83	0.37	0.06	46
	1903	342		1904	363	0.83	0.86	0.37	0.06	51
	1904	363		1905	374	0.86	0.87	0.37	0.06	54
	1905	374		1906	383	0.87	1.14	1.41	0.24	59
	1906	383		1907	392	1.14	1.15	1.41	0.24	61
	1907	392		1908	395	1.15	1.16	1.43	0.24	63
	1908	395		1909	400	1.16	1.25	1.44	0.24	65
	1909	400		1910	409	1.25	1.25	1.44	0.24	67
	1910	409		1911	420	1.25	1.25	1.44	0.24	67
	1911	420		1912	432	1.25	1.25	1.44	0.24	69
	1912	432		1913	438	1.25	1.30	1.49	0.25	74
	1913	438		1914	444	1.30	1.30	1.49	0.25	76
	1914	444		1915	460	1.30	1.30	1.49	0.25	79
	1915	460		1916	485	1.30	1.30	1.51	0.25	84
	1916	485		1917	492	1.30	1.30	1.51	0.25	85
	1917	492		1918	493	1.30	1.30	1.51	0.25	85
	1918	493		1919	498	1.30	1.30	1.51	0.25	86
	1919	498		1921	499	1.30	1.30	1.51	0.25	87

The readjustments of columns R, S and T are necessary and quite evident. Indeed, in a year without discoveries, you need to write in each blank cell of these columns, respectively, (i) the Cumulative Oil + Gas, (ii) the Cumulative Gas and (iii) the Cumulative Number of Fields of the previous year with discoveries, as shown in the figure at side.

Sometimes is quite frequent find evident errors in the raw data, particularly in the amount of HC recoverable, and subsequently, in the cumulative columns. In our case, was imperative to correct the column "Cumulative Oil + Condensate", because, for 1977, oil + condensate reserves are wrong by factor of 1000 (there are no discovery, in Salawati basin, with 4 Gb of recoverable reserves).

With all these data gathered and processed in our Indonesia Excel workbook, we can make several displays which can help the explorationists working in so mature petroleum basins.

Indonesia HC Results Data Analysis

Carlos Cramez
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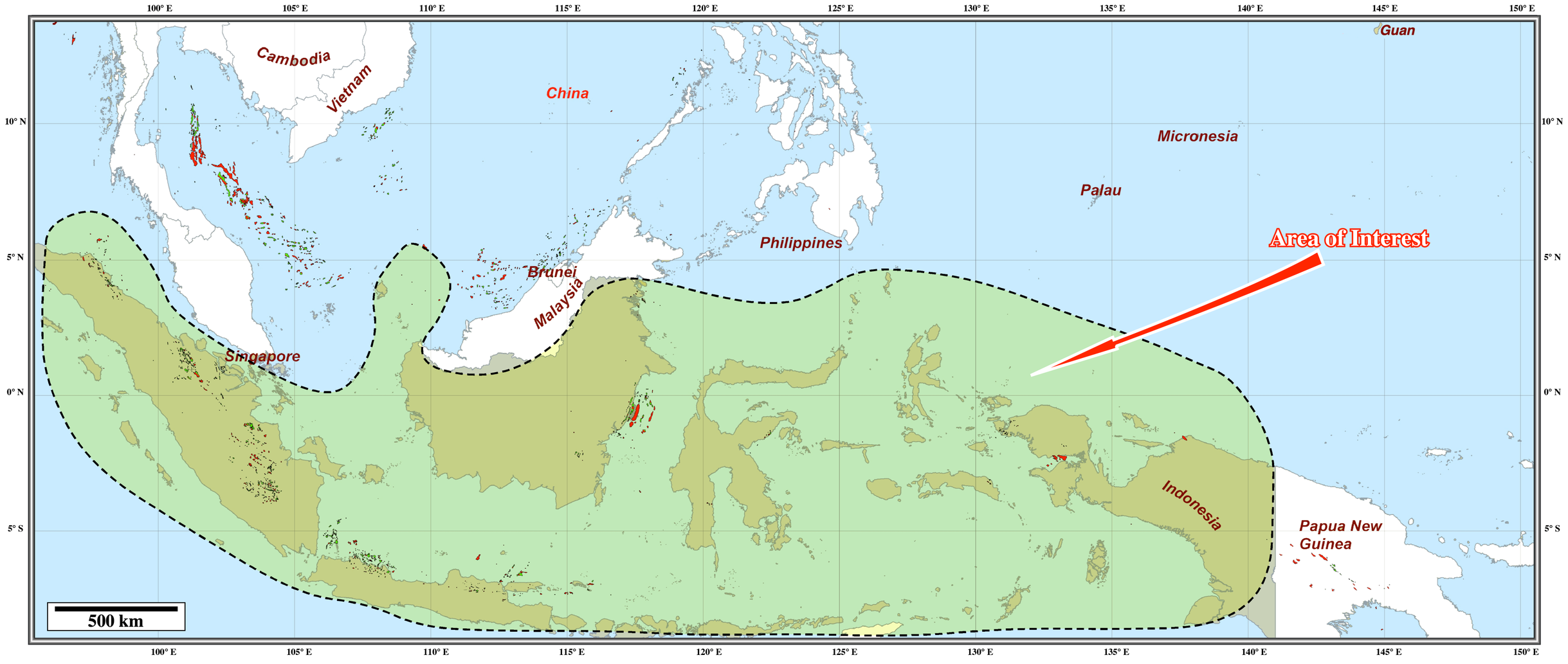
Indonesia Exploration Realm

(Area of Interest)



N.B. - Note that in the the following plates different Petroleum Systems are taken into account.

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Indonesia Raw Data

Year of Discovery	Oil Recoverable (2P) Mb	Gas Recoverable (2P) Gcf	Condensate Recoverable (2P) Mb	Total Recoverable (2P) Mb	Number of Fields	Cumul Oil+Condensate (2P) Gb	Cumulative Gas (2P) Tcf	Cumulative N° of Fields
1885	15	2	0	16	1	0,02	0,00	1
1888	1	0	0	1	1	0,02	0,00	2
1892	180	0	0	180	3	0,20	0,00	5
1893	27	0	0	27	2	0,22	0,00	7
1894	0	0	0	0	1	0,22	0,00	8
1895	1	0	0	1	1	0,22	0,00	9
1896	49	0	0	49	3	0,27	0,00	12
1897	340	176	0	369	6	0,61	0,18	18
1898	1	0	0	1	3	0,61	0,18	21
1899	86	40	0	92	5	0,70	0,22	26
1900	17	152	1	43	6	0,72	0,37	32
1901	9	0	0	9	3	0,73	0,37	35
1902	38	0	0	38	3	0,76	0,37	38
1903	66	0	0	66	8	0,83	0,37	46
1904	35	0	0	35	5	0,86	0,37	51
1905	2	0	0	2	3	0,87	0,37	54
1906	270	1041	9	451	5	1,14	1,41	59
1907	1	0	0	1	2	1,15	1,41	61
1908	12	18	0	15	2	1,16	1,43	63
1909	88	12	0	90	2	1,25	1,44	65
1910	4	0	0	4	2	1,25	1,44	67
1912	2	0	0	2	2	1,25	1,44	69
1913	46	49	0	54	5	1,30	1,49	74
1914	1	0	0	1	2	1,30	1,49	76
1915	0	0	0	0	3	1,30	1,49	79
1916	1	21	0	5	5	1,30	1,51	84
1917	0	0	0	0	1	1,30	1,51	85
1919	0	0	0	0	1	1,30	1,51	86
1921	0	0	0	0	1	1,30	1,51	87
1922	534	919	1	688	3	1,83	2,43	90
1923	4	0	0	4	1	1,84	2,43	91
1925	9	43	0	16	1	1,85	2,47	92
1926	9	150	4	38	2	1,86	2,62	94
1927	12	0	0	12	1	1,87	2,62	95
1928	20	15	0	23	1	1,89	2,64	96
1929	15	101	1	33	2	1,91	2,74	98
1930	72	29	0	77	1	1,98	2,77	99
1931	263	370	10	335	4	2,25	3,14	103
1932	469	358	0	529	2	2,72	3,50	105
1934	34	15	0	36	2	2,76	3,51	107
1935	3	1	0	4	1	2,76	3,51	108
1936	84	270	2	131	5	2,85	3,78	113
1937	213	438	2	288	5	3,06	4,22	118
1938	191	850	8	341	5	3,26	5,07	123
1939	158	305	2	211	8	3,42	5,37	131
1940	282	798	5	420	8	3,71	6,17	139
1941	2939	2484	24	3377	11	6,67	8,66	150
1943	21	41	0	28	1	6,69	8,70	151
1944	4893	156	51	4970	1	11,63	8,85	152
1946	37	22	0	40	1	11,67	8,88	153
1949	9	57	1	19	1	11,68	8,93	154
1950	59	236	2	100	3	11,74	9,17	157
1951	196	308	9	256	5	11,95	9,48	162
1952	364	16	0	367	3	12,31	9,49	165
1953	12	85	1	27	1	12,32	9,58	166
1954	42	88	0	57	2	12,36	9,67	168
1955	662	140	14	699	2	13,04	9,81	170
1956	68	248	0	110	1	13,11	10,05	171
1958	44	1135	1	233	5	13,15	11,19	176
1959	292	34	0	298	2	13,45	11,22	178
1960	0	1	0	0	1	13,45	11,22	179
1961	2	7	0	3	1	13,45	11,23	180
1962	0	30	0	5	1	13,45	11,26	181
1964	409	100	0	426	1	13,86	11,36	182
1965	50	80	0	63	3	13,91	11,44	185
1966	0	461	2	79	1	13,91	11,90	186
1967	12	25	0	16	1	13,92	11,93	187
1968	424	732	59	605	6	14,40	12,66	193
1969	597	1353	5	827	9	15,01	14,01	202
1970	2193	4239	104	3004	22	17,30	18,25	224
1971	580	14880	730	3790	23	18,61	33,13	247
1972	636	15622	152	3392	27	19,40	48,75	274
1973	948	49366	48	9224	37	20,40	98,12	311
1974	1776	12472	190	4044	33	22,36	#####	344
1975	496	2053	42	880	34	22,90	#####	378
1976	359	1346	8	592	31	23,27	#####	409
1977	203	16902	4888	7909	26	28,36	#####	435
1978	250	470	1	329	29	28,61	#####	464
1979	238	1223	4	445	25	28,85	#####	489
1980	369	1523	6	629	44	29,23	#####	533
1981	229	2012	18	583	38	29,48	#####	571
1982	365	3476	34	978	47	29,87	#####	618
1983	235	1237	10	452	34	30,12	#####	652
1984	170	2770	36	668	41	30,33	#####	693
1985	167	1914	28	514	30	30,52	#####	723
1986	138	3662	84	833	30	30,74	#####	753
1987	271	1061	36	484	28	31,05	#####	781
1988	512	1725	19	819	35	31,58	#####	816
1989	385	724	10	516	22	31,98	#####	838
1990	52	1678	9	341	29	32,04	#####	867
1991	131	9186	56	1718	29	32,22	#####	896
1992	98	6427	8	1177	33	32,33	#####	929
1993	84	2869	44	606	25	32,46	#####	954
1994	127	7045	0	1301	15	32,59	#####	969
1995	117	2066	36	496	32	32,74	#####	1001
1996	359	2818	29	858	27	33,13	#####	1028
1997	132	10066	3	1812	32	33,26	#####	1060
1998	418	2800	41	925	25	33,72	#####	1085
1999	96	5175	56	1015	23	33,87	#####	1108
2000	114	7644	55	1443	25	34,04	#####	1133
2001	509	3045	63	1080	28	34,61	#####	1161
2002	210	1821	2	516	21	34,83	#####	1182
2003	110	3921	83	846	16	35,02	#####	1198
2004	305	1336	13	541	18	35,34	#####	1216
2005	65	485	1	146	16	35,40	#####	1232
2006	10	322	0	64	9	35,41	#####	1241
Grand	28251	221391	7161	72310	1241			

Year of Drilling	N° New Field Wildcats	Cumulative N° New Field Wildcats
1884	1	1
1885	2	3
1888	2	5
1891	10	15
1892	8	23
1893	6	29
1894	3	32
1895	23	55
1896	21	76
1897	42	118
1898	55	173
1899	76	249
1900	38	287
1901	16	303
1902	16	319
1903	23	342
1904	21	363
1905	11	374
1906	9	383
1907	9	392
1908	3	395
1909	5	400
1910	9	409
1911	11	420
1912	12	432
1913	6	438
1914	6	444
1915	16	460
1916	25	485
1917	7	492
1918	1	493
1919	5	498
1921	1	499
1922	3	502
1923	4	506
1925	15	521
1926	19	540
1927	8	548
1928	5	553
1929	10	563
1930	31	594
1931	6	600
1932	3	603
1933	10	613
1934	10	623
1935	17	640
1936	25	665
1937	25	690
1938	31	721
1939	32	753
1940	44	797
1941	37	834
1942	2	836
1943	2	838
1944	1	839
1946	2	841
1948	3	844
1949	11	855
1950	24	879
1951	13	892
1952	8	900
1953	5	905
1954	16	921
1955	9	930
1956	12	942
1957	13	955
1958	8	963
1959	9	972
1960	7	979
1961	5	984
1962	1	985
1963	10	995
1964	16	1011
1965	10	1021
1966	7	1028
1967	10	1038
1968	28	1066
1969	31	1097
1970	79	1176
1971	130	1306
1972	109	1415
1973	143	1558
1974	143	1701
1975	129	1830
1976	107	1937
1977	79	2016
1978	98	2114
1979	108	2222
1980	116	2338
1981	129	2467
1982	138	2605
1983	142	2747
1984	118	2865
1985	116	2981
1986	74	3055
1987	55	3110
1988	91	3201
1989	73	3274
1990	82	3356
1991	99	3455
1992	88	3543
1993	80	3623
1994	50	3673
1995	60	3733
1996	71	3804
1997	90	3894
1998	76	3970
1999	60	4030
2000	78	4108
2001	71	4179
2002	46	4225
2003	44	4269
2004	43	4312
Total	4312	8624

Discovery Years	Cumulative Oil+Condensate (2P) Gb	Cumulative Gas (2P) Tcf	Cumulative N° of Fields
1885	0,02	0,00	1
1888	0,02	0,00	2
1892	0,20	0,00	5
1893	0,22	0,00	7
1894	0,22	0,00	8
1895	0,22	0,00	9
1896	0,27	0,00	12
1897	0,61	0,18	18
1898	0,61	0,18	21
1899	0,70	0,22	26
1900	0,72	0,37	32
1901	0,73	0,37	35
1902	0,76	0,37	38
1903	0,83	0,37	46
1904	0,86	0,37	51
1905	0,87	0,37	54
1906	1,14	1,41	59
1907	1,15	1,41	61
1908	1,16	1,43	63
1909	1,25	1,44	65
1910	1,25	1,44	67
1912	1,25	1,44	69
1913	1,30	1,49	74
1914	1,30	1,49	76
1915	1,30	1,49	79
1916	1,30	1,51	84
1917	1,30	1,51	85
1919	1,30	1,51	86
1921	1,30	1,51	87
1922	1,83	2,43	90
1923	1,84	2,43	91
1925	1,85	2,47	92
1926	1,86	2,62	94
1927	1,87	2,62	95
1928	1,89	2,64	96
1929	1,91	2,74	98
1930	1,98	2,77	99
1931	2,25	3,14	103
1932	2,72	3,50	105
1934	2,76	3,51	107
1935	2,76	3,51	108
1936	2,85	3,78	113
1937	3,06	4,22	118
1938	3,26	5,07	123
1939	3,42	5,37	131
1940	3,71	6,17	139
1941	6,67	8,66	150
1943	6,69	8,70	151
1944	11,63	8,85	152
1946	11,67	8,88	153
1949	11,68	8,93	154
1950	11,74	9,17	157
1951	11,95	9,48	162
1952	12,31	9,49	165
1953	12,32	9,58	166
1954	12,36	9,67	168
1955	13,04	9,81	170
1956	13,11	10,05	171
1958	13,15	11,19	176
1959	13,45	11,22	178
1960	13,45	11,22	179
1961	13,45	11,23	180
1962	13,45	11,26	181
1964	13,86	11,36	182
1965	13,91	11,44	185
1966	13,91	11,90	186
1967	13,92	11,93	187
1968	14,40	12,66	193
1969	15,01	14,01	202
1970	17,30	18,25	224
1971	18,61	33,13	247
1972	19,40	48,75	274
1973	20,40	98,12	311
1974	22,36	110,59	344
1975	22,90	112,64	378
1976	23,27	113,99	409
1977	28,36	130,89	435
1978	28,61	131,36	464
1979	28,85	132,58	489
1980	29,23	134,11	533
1981	29,48	136,12	571
1982	29,87	139,59	618
1983	30,12	140,83	652
1984	30,33	143,60	693
1985	30,52	145,52	723
1986	30,74	149,18	753
1987	31,05	150,24	781
1988	31,58	151,96	816
1989	31,98	152,69	838
1990	32,04	154,37	867
1991	32,22	163,55	896
1992	32,33	169,98	929
1993	32,46	172,85	954
1994	32,59	179,89	969
1995	32,74	181,96	1001
1996	33,13	184,78	1028
1997	33,26	194,84	1060
1998	33,72	197,64	1085
1999	33,87	202,82	1108
2000	34,04	210,46	1133
2001	34,61	213,51	1161
2002	34,83	215,33	1182
2003	35,02	219,25	1198
2004	35,34	220,58	1216
2005	35,40	221,07	1232
2006	35,41	221,39	1241

Year of Drilling	Cumulative N° New Field Wildcats
1884	1
1885	3
1888	5
1891	15
1892	23
1893	29
1894	32
1895	55
1896	76
1897	118
1898	173
1899	249
1900	287
1901	303
1902	319
1903	342
1904	363
1905	374
1906	383
1907	392
1908	395
1909	400
1910	409
1911	420
1912	432
1913	438
1914	444
1915	460
1916	485
1917	492
1918	493
1919	498
1921	499
1922	502
1923	506
1925	521
1926	540
1927	548
1928	553
1929	563
1930	594
1931	600
1932	603
1933	613
1934	623
1935	640
1936	665
1937	690
1938	721
1939	753
1940	797
1941	834
1942	836
1943	838
1944	839
1946	841
1948	844
1949	855
1950	879
1951	892
1952	900
1953	905
1954	921
1955	930
1956	942
1957	955
1958	963
1959	972
1960	979
1961	984
1962	985
1963	995
1964	1011
1965	1021
1966	1028
1967	1038
1968	1066
1969	1097
1970	1176
1971	1306
1972	1415
1973	1558
1974	1701
1975	1830
1976	1937
1977	2016
1978	2114
1979	2222
1980	2338
1981	2467
1982	2605
1983	2747
1984	2865
1985	2981
1986	3055
1987	3110
1988	3201
1989	3274
1990	3356
1991	3455
1992	3543
1993	3623
1994	3673
1995	3733
1996	3804
1997	3894
1998	3970
1999	4030
2000	4108
2001	4179
2002	4225
2003	4269
2004	4312

Years (since 1st Discovery)	Cumulative N° New Field Wildcats	Cumulative Oil+Condensate (2P) Gb	Cumulative Oil+Condensate Corrected (2P) Gb	Cumulative Gas (2P) Tcf	Cumulative Gas (2P) Tcf / 6	Cumulative N° of Fields
1885	3	0,02	0,02	0,00	0,00	1
1888	5	0,02	0,02	0,00	0,00	2
1891	15	0,02	0,02	0,00	0,00	2
1892	23	0,20	0,20	0,00	0,00	5
1893	29	0,20	0,22	0,00	0,00	7
1894	32	0,22	0,22	0,00	0,00	8
1895	55	0,22	0,22	0,00	0,00	9
1896	76	0,22	0,27	0,00	0,00	12
1897	118	0,27	0,61	0,18	0,03	18
1898	173	0,61	0,61	0,18	0,03	21
1899	249	0,61	0,70	0,22	0,04	26
1900	287	0,70	0,72	0,37	0,06	32
1901	303	0,72	0,73	0,37	0,06	35
1902	319	0,73	0,76	0,37	0,06	38
1903	342	0,76	0,83	0,37	0,06	46
1904	363	0,83	0,86	0,37	0,06	51
1905	374	0,86	0,87	0,37	0,06	54
1906	383	0,87	1,14	1,41	0,24	59
1907	392	1,14	1,15	1,41	0,24	61
1908	395	1,15	1,16	1,43	0,24	63
1909	400	1,16	1,25	1,44	0,24	65
1910	409	1,25	1,25	1,44	0,24	67
1911	420	1,25	1,25	1,44	0,24	67
1912	432	1,25	1,25	1,44	0,24	69
1913	438	1,25	1,30	1,49	0,25	74
1914	444	1,30	1,30	1,49	0,25	76
1915	460	1,30	1,30	1,49	0,25	79
1916	485	1,30	1,30	1,51	0,25	84
1917	492	1,30	1,30	1,51	0,25	85
1918	493	1,30	1,30	1,51	0,25	85
1919	498	1,30	1,30	1,51	0,25	86
1921	499	1,30	1,30	1,51	0,25	87
1922	502	1,30	1,83	2,43	0,41	90
1923	506	1,83	1,84	2,43	0,41	91
1925	521	1,84	1,85	2,47	0,41	92
1926	540	1,85	1,86	2,62	0,44	94
1927	548	1,86	1,87	2,62	0,44	95
1928	553	1,87	1,89	2,64	0,44	96
1929	563	1,89	1,91	2,74	0,46	98
1930	594	1,91	1,98	2,77	0,46	99
1931	600	1,98	2,25	3,14	0,52	103
1932	603	2,25	2,72	3,50	0,58	105
1933	613	2,72	2,72	3,50	0,58	105
1934	623	2,72	2,76	3,51	0,59	107
1935	640	2,76	2,76	3,51	0,59	108
1936	665	2,76	2,85	3,78	0,63	113
1937	690	2,85	3,06	4,22	0,70	118
1938	721	3,06	3,26	5,07	0,84	123
1939	753	3,26	3,42	5,37	0,90	131
1940	797	3,42	3,71	6,17	1,03	139
1941	834	3,71	6,67	8,66	1,44	150
1942	836	6,67	6,67	8,66	1,44	150
1943	838	6,67	6,69	8,70	1,45	151
1944	839	6,69	11,63	8,85	1,48	152
1946	841	11,63	11,67	8,88	1,48	153
1948	844	11,67	11,67	8,88	1,48	153
1949	855	11,67	11,68	8,93	1,49	154
1950	879	11,68	11,74	9,17	1,53	157
1951	892	11,74	11,95	9,48	1,58	162
1952	900	11,95	12,31	9,49	1,58	165
1953	905	12,31	12,32	9,58	1,60	166
1954	921	12,32	12,36	9,67	1,61	168
1955	930	12,36	13,04	9,81	1,63	170
1956	942	13,04	13,11	10,05	1,68	171
1957	955	13,11	13,11	10,05	1,68	171
1958	963	13,11	13,15	11,19	1,86	176
1959	972	13,15	13,45	11,22	1,87	178
1960	979	13,45	13,45	11,22	1,87	179
1961	984	13,45	13,45	11,23	1,87	180
1962	985	13,45	13,45	11,26	1,88	181
1963	995	13,45	13,45	11,26	1,88	181
1964	1011	13,45	13,86	11,36	1,89	182
1965	1021	13,86	13,91	11,44	1,91	185
1966	1028	13,91	13,91	11,90	1,98	186
1967	1038	13,91	13,92	11,93	1,99	187
1968	1066	13,92	14,40	12,66	2,11	193
1969	1097	14,40	15,01	14,01	2,33	202
1970	1176	15,01	17,30	18,25	3,04	224
1971	1306	17,30	18,61	33,13	5,52	247
1972	1415	18,61	19,40	48,75	8,13	274
1973	1558	19,40	20,40	98,12	16,35	311
1974	1701	20,40	22,36	110,59	18,43	344
1975	1830	22,36	22,90	112,64	18,77	378
1976	1937	22,90	23,27	113,99	19,00	409
1977	2016	23,27	23,74	130,89	21,82	435
1978	2114	28,36	23,99	131,36	21,89	464
1979	2222	28,61	24,23	132,58	22,10	489
1980	2338	28,85	24,61	134,11	22,35	533
1981	2467	29,23	24,86	136,12	22,69	571
1982	2605	29,48	25,25	139,59	23,27	618
1983	2747	29,87	25,50	140,83	23,47	652
1984	2865	30,12	25,71	143,60	23,93	693
1985	2981	30,33	25,90	145,52	24,25	723
1986	3055	30,52	26,12	149,18	24,86	753
1987	3110	30,74	26,43	150,24	25,04	781
1988	3201	31,05	26,96	151,96	25,33	816
1989	3274	31,58	27,36	152,69	25,45	838
1990	3356	31,98	27,42	154,37	25,73	867
1991	3455	32,04	27,61	163,55	27,26	896
1992	3543	32,22	27,71	169,98	28,33	929
1993	3623	32,33	27,84	172,85	28,81	954
1994	3673	32,46	27,97	179,89	29,98	969
1995	3733	32,59	28,12	181,96	30,33	1001
1996	3804	32,74	28,51	184,78	30,80	1028
1997	3894	33,13	28,64	194,84	32,47	1060
1998	3970	33,26	29,10	197,64	32,94	1085
1999	4030	33,72	29,25	202,82	33,80	1108
2000	4108	33,87	29,42	210,46	35,08	1133
2001	4179	34,04	29,99	213,51	35,58	1161
2002	4225	34,61	30,21	215,33	35,89	1182
2003	4269	34,83	30,40	219,25	36,54	1198
2004	4312	35,02	30,72	220,58	36,76	1216
		35,34	30,78	221,07	36,84	1232
		35,40	30,79	221,39	36,90	1241
	4500					
	5000					
	5500					
	6000					
	6500					
	7000					
	7500					
	8000					
	8500					
	9000					

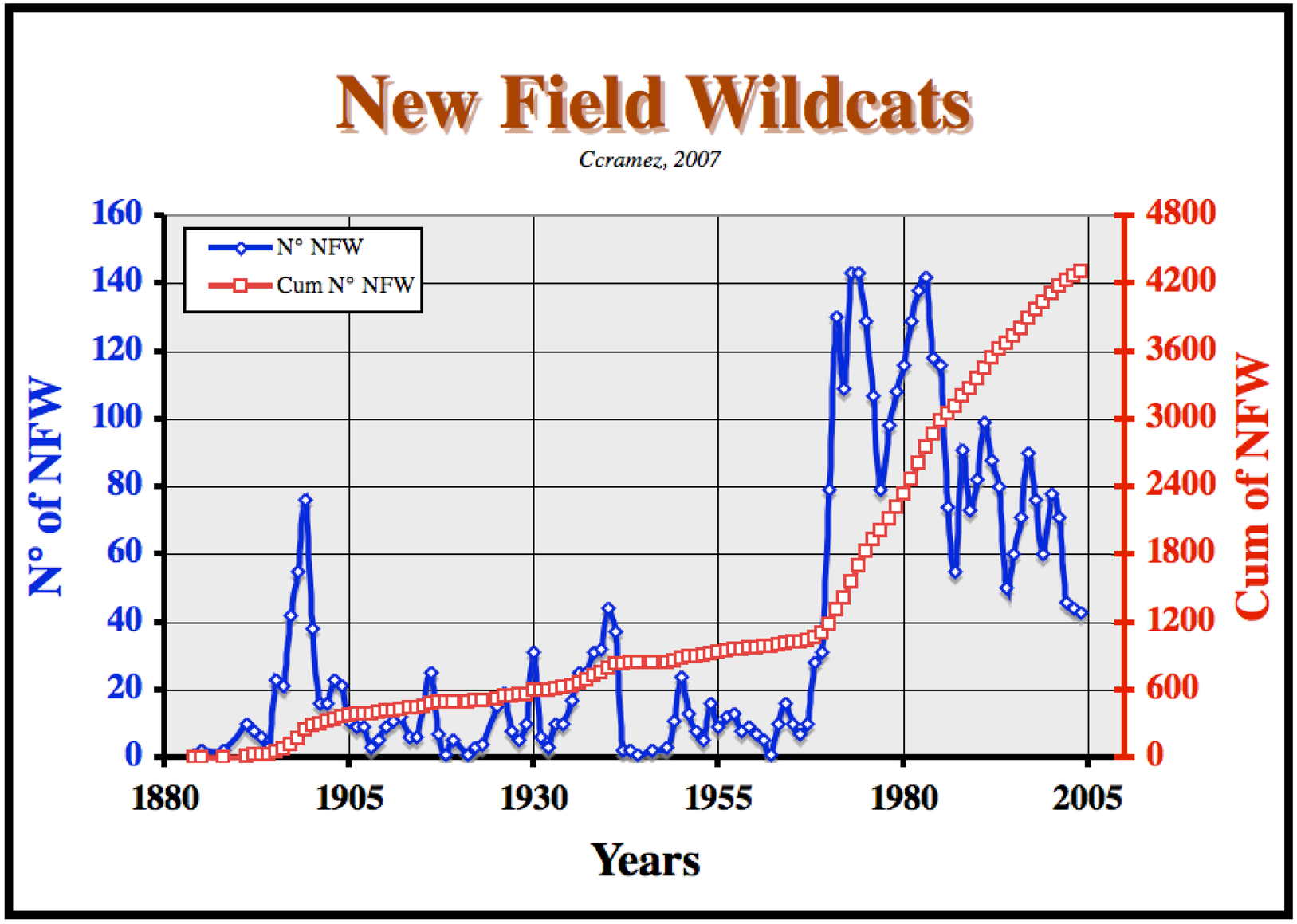
Year of Discovery	Number of Fields	Cumulative N° of Fields
1884	0	0
1885	1	1
1886	0	1
1887	0	1
1888	1	2
1889	0	2
1890	0	2
1891	0	2
1892	3	5
1893	2	7
1894	1	8
1895	1	9
1896	3	12
1897	6	18
1898	3	21
1899	5	26
1900	6	32
1901	3	35
1902	3	38
1903	8	46
1904	5	51
1905	3	54
1906	5	59
1907	2	61
1908	2	63
1909	2	65
1910	2	67
1911	0	67
1912	2	69
1913	5	74
1914	2	76
1915	3	79
1916	5	84
1917	1	85
1918	0	85
1919	1	86
1920	0	86
1921	1	87
1922	3	90
1923	1	91
1925	1	92
1926	2	94
1927	1	95
1928	1	96
1929	2	98
1930	1	99
1931	4	103
1932	2	105
1933	0	105
1934	2	107
1935	1	108
1936	5	113
1937	5	118
1938	5	123
1939	8	131
1940	8	139
1941	11	150
1942	0	150
1943	1	151
1944	1	152
1945	0	152
1946	1	153
1947	0	153
1948	0	153
1949	1	154
1950	3	157
1951	5	162
1952	3	165
1953	1	166
1954	2	168
1955	2	170
1956	1	171
1957	0	171
1958	5	176
1959	2	178
1960	1	179
1961	1	180
1962	1	181
1963	0	181
1964	1	182
1965	3	185
1966	1	186
1967	1	187
1968	6	193
1969	9	202
1970	22	224
1971	23	247
1972	27	274
1973	37	311
1974	33	344
1975	34	378
1976	31	409
1977	26	435
1978	29	464
1979	25	489
1980	44	533
1981	38	571
1982	47	618
1983	34	652
1984	41	693
1985	30	723
1986	30	753
1987	28	781
1988	35	816
1989	22	838
1990	29	867
1991	29	896
1992	33	929
1993	25	954
1994	15	969
1995	32	1001
1996	27	1028
1997	32	1060
1998	25	1085
1999	23	1108
2000	25	1133
2001	28	1161
2002	21	1182
2003	16	1198
2004	18	1216
2005	16	1232
2006	9	1241

Year	Total Res (Mb)	Cum Total Rec (Gb)
1885	16	0,02
1886	0	0,02
1887	0	0,02
1888	1	0,02
1889	0	0,02
1890	0	0,02
1891	0	0,02
1892	180	0,20
1893	27	0,22
1894	0	0,22
1895	1	0,22
1896	49	0,27
1897	369	0,64
1898	1	0,64
1899	92	0,74
1900	43	0,78
1901	9	0,79
1902	38	0,82
1903	66	0,89
1904	35	0,93
1905	2	0,93
1906	451	1,38
1907	1	1,38
1908	15	1,40
1909	90	1,49
1910	4	1,49
1911	0	1,49
1912	2	1,49
1913	54	1,55
1914	1	1,55
1915	0	1,55
1916	5	1,55
1917	0	1,55
1918	0	1,55
1919	0	1,55
1920	0	1,55
1921	0	1,55
1922	688	2,24
1923	4	2,24
1924	0	2,24
1925	16	2,26
1926	38	2,30
1927	12	2,31
1928	23	2,33
1929	33	2,37
1930	77	2,44
1931	335	2,78
1932	529	3,31
1934	36	3,34
1935	4	3,35
1936	131	3,48
1937	288	3,76
1938	341	4,10
1939	211	4,31
1940	420	4,73
1941	3377	8,11
1942	0	8,11
1943	28	8,14
1944	4970	13,11
1945	0	13,11
1946	40	13,15
1949	19	13,17
1950	100	13,27
1951	256	13,53
1952	367	13,89
1953	27	13,92
1954	57	13,98
1955	699	14,67
1956	110	14,78
1958	233	15,02
1959	298	15,32
1960	0	15,32
1961	3	15,32
1962	5	15,33
1964	426	15,75
1965	63	15,81
1966	79	15,89
1967	16	15,91
1968	605	16,51
1969	827	17,34
1970	3004	20,35
1971	3790	24,14
1972	3392	27,53
1973	9224	36,75
1974	4044	40,80
1975	880	41,68
1976	592	42,27
1977	7909	50,18
1978	329	50,50
1979	445	50,95
1980	629	51,58
1981	583	52,16
1982	978	53,14
1983	452	53,59
1984	668	54,26
1985	514	54,77
1986	833	55,61
1987	484	56,09
1988	819	56,91
1989	516	57,42
1990	341	57,77
1991	1718	59,48
1992	1177	60,66
1993	606	61,27
1994	1301	62,57
1995	496	63,06
1996	858	63,92
1997	1812	65,73
1998	925	66,66
1999	1015	67,67
2000	1443	69,12
2001	1080	70,20
2002	516	70,71
2003	846	71,56
2004	541	72,10
2005	146	72,25
2006	64	72,31

Years	Cum O+C (Gb)	Cum O+C (Gb) Corrected	Cum Gas (Gboe)
1884	0,02	0,02	0,00
1885	0,02	0,02	0,00
1886	0,02	0,02	0,00
1887	0,02	0,02	0,00
1888	0,02	0,02	0,00
1889	0,02	0,02	0,00
1890	0,02	0,02	0,00
1891	0,20	0,20	0,00
1892	0,20	0,22	0,00
1893	0,22	0,22	0,00
1894	0,22	0,22	0,00
1895	0,22	0,27	0,00
1896	0,27	0,61	0,03
1897	0,61	0,61	0,03
1898	0,61	0,70	0,04
1899	0,70	0,72	0,06
1900	0,72	0,73	0,06
1901	0,73	0,76	0,06
1902	0,76	0,83	0,06
1903	0,83	0,86	0,06
1904	0,86	0,87	0,06
1905	0,87	1,14	0,24
1906	1,14	1,15	0,24
1907	1,15	1,16	0,24
1908	1,16	1,25	0,24
1909	1,25	1,25	0,24
1910	1,25	1,25	0,24
1911	1,25	1,25	0,24
1912	1,25	1,30	0,25
1913	1,30	1,30	0,25
1914	1,30	1,30	0,25
1915	1,30	1,30	0,25
1916	1,30	1,30	0,25
1917	1,30	1,30	0,25
1918	1,30	1,30	0,25
1919	1,30	1,30	0,25
1920	1,30	1,30	0,25
1921	1,30	1,83	0,41
1922	1,83	1,84	0,41
1923	1,84	1,85	0,41
1924	1,84	1,85	0,41
1925	1,85	1,86	0,44
1926	1,86	1,87	0,44
1927	1,87	1,89	0,44
1928	1,89	1,91	0,46
1929	1,91	1,98	0,46
1930	1,98	2,25	0,52
1931	2,25	2,72	0,58
1932	2,72	2,72	0,58
1933	2,72	2,76	0,59
1934	2,76	2,76	0,59
1935	2,76	2,85	0,63
1936	2,85	3,06	0,70
1937	3,06	3,26	0,84
1938	3,26	3,42	0,90
1939	3,42	3,71	1,03
1940	3,71	6,67	1,44
1941	6,67	6,67	1,44
1942	6,67	6,69	1,45
1943	6,69	6,69	1,45
1944	11,63	11,63	1,48
1945	11,63	11,67	1,48
1946	11,67	11,67	1,48
1947	11,67	11,67	1,48
1948	11,67	11,67	1,48
1949	11,68	11,68	1,49
1950	11,74	11,74	1,53
1951	11,95	11,95	1,58
1952	12,31	12,31	1,58
1953	12,32	12,32	1,60
1954	12,36	12,36	1,61
1955	13,04	13,04	1,63
1956	13,11	13,11	1,68
1957	13,11	13,11	1,68
1958	13,15	13,15	1,86
1959	13,45	13,45	1,87
1960	13,45	13,45	1,87
1961	13,45	13,45	1,87
1962	13,45	13,45	1,88
1963	13,45	13,45	1,88
1964	13,86	13,86	1,89
1965	13,91	13,91	1,91
1966	13,91	13,91	1,98
1967	13,92	13,92	1,99
1968	14,40	14,40	2,11
1969	15,01	15,01	2,33
1970	17,30	17,30	3,04
1971	18,61	18,61	5,52
1972	19,40	19,40	8,13
1973	20,40	20,40	16,35
1974	22,36	22,36	18,43
1975	22,90	22,90	18,77
1976	23,27	23,27	19,00
1977	28,36	23,74	21,82
1978	28,61	23,99	21,89
1979	28,85	24,23	22,10
1980	29,23	24,61	22,35
1981	29,48	24,86	22,69
1982	29,87	25,25	23,27
1983	30,12	25,50	23,47
1984	30,33	25,71	23,93
1985	30,52	25,90	24,25
1986	30,74	26,12	24,86
1987	31,05	26,43	25,04
1988	31,58	26,96	25,33
1989	31,98	27,36	25,45
1990	32,04	27,42	25,73
1991	32,22	27,61	27,26
1992	32,33	27,71	28,33
1993	32,46	27,84	28,81
1994	32,59	27,97	29,98
1995	32,74	28,12	30,33
1996	33,13	28,51	30,80
1997	33,26	28,64	32,47
1998	33,72	29,10	32,94
1999	33,87	29,25	33,80
2000	34,04	29,42	35,08
2001	34,61	29,99	35,58
2002	34,83	30,21	35,89
2003	35,02	30,40	36,54
2004	35,34	30,72	36,76
2005	35,40	30,78	36,84

Year	Oil (2P) Mb	Cond (2P) Mb	Gas (2P) Gcf	NFW	Gas (2P) Tcf
1884	0	0	0	1	0,00
1885	15	0	2	2	0,00
1886	0	0	0	0	0,00
1887	0	0	0	0	0,00
1888	1	0	0	2	0,00
1889	0	0	0	0	0,00
1890	0	0	0	0	0,00
1891	0	0	0	10	0,00
1892	180	0	0	8	0,00
1893	27	0	0	6	0,00
1894	0	0	0	3	0,00
1895	1	0	0	23	0,00
1896	49	0	0	21	0,00
1897	340	0	176	42	0,18
1898	1	0	0	55	0,00
1899	86	0	40	76	0,04
1900	17	1	152	38	0,15
1901	9	0	0	16	0,00
1902	38	0	0	16	0,00
1903	66	0	0	23	0,00
1904	35	0	0	21	0,00
1905	2	0	0	11	0,00
1906	270	9	1041	9	1,04
1907	1	0	0	9	0,00
1908	12	0	18	3	0,02
1909	88	0	12	5	0,01
1910	4	0	0	9	0,00
1911	0	0	0	11	0,00
1912	2	0	0	12	0,00
1913	46	0	49	6	0,05
1914	1	0	0	6	0,00
1915	0	0	0	16	0,00
1916	1	0	21	25	0,02
1917	0	0	0	7	0,00
1918	0	0	0	1	0,00
1919	0	0	0	5	0,00
1920	0	0	0	0	0,00
1921	0	0	0	1	0,00
1922	534	1	919	3	0,92
1923	4	0	0	4	0,00
1924	0	0	0	0	0,00
1925	9	0	43	15	0,04
1926	9	4	150	19	0,15
1927	12	0	0	8	0,00
1928	20	0	15	5	0,01
1929	15	1	101	10	0,10
1930	72	0	29	31	0,03
1931	263	10	370	6	0,37
1932	469	0	358	3	0,36
1933	0	0	0	10	0,00
1934	34	0	15	10	0,02
1935	3	0	1	17	0,00
1936	84	2	270	25	0,27
1937	213	2	438	25	0,44
1938	191	8	850	31	0,85
1939	158	2	305	32	0,30
1940	282	5	798	44	0,80
1941	2939	24	2484	37	2,48
1942	0	0	0	2	0,00
1943	21	0	41	2	0,04
1944	4893	51	156	1	0,16
1945	0	0	0	0	0,00
1946	37	0	22	2	0,02
1947	0	0	0	0	0,00
1948	0	0	0	3	0,00
1949	9	1	57	11	0,06
1950	59	2	236	24	0,24
1951	196	9	308	13	0,31
1952	364	0	16	8	0,02
1953	12	1	85	5	0,09
1954	42	0	88	16	0,09
1955	662	14	140	9	0,14
1956	68	0	248	12	0,25
1957	0	0	0	13	0,00
1958	44	1	1135	8	1,13
1959	292	0	34	9	0,03
1960	0	0	1	7	0,00
1961	2	0	7	5	0,01
1962	0	0	30	1	0,03
1963	0	0	0	10	0,00
1964	409	0	100	16	0,10
1965	50	0	80	10	0,08
1966	0	2	461	7	0,46
1967	12	0	25	10	0,02
1968	424	59	732	28	0,73
1969	597	5	1353	31	1,35
1970	2193	104	4239	79	4,24
1971	580	730	14880	130	14,88
1972	636	152	15622	109	15,62
1973	948	48	49366	143	49,37
1974	1776	190	12472	143	12,47
1975	496	42	2053	129	2,05
1976	359	8	1346	107	1,35
1977	203	4888	16902	79	16,90
1978	250	1	470	98	0,47
1979	238	4	1223	108	1,22
1980	369	6	1523	116	1,52
1981	229	18	2012	129	2,01
1982	365	34	3476	138	3,48
1983	235	10	1237	142	1,24
1984	170	36	2770	118	2,77
1985	167	28	1914	116	1,91
1986	138	84	3662	74	3,66
1987	271	36	1061	55	1,06
1988	512	19	1725	91	1,73
1989	385	10	724	73	0,72
1990	52	9	1678	82	1,68
1991	131	56	9186	99	9,19
1992	98	8	6427	88	6,43
1993	84	44	2869	80	2,87
1994	127	0	7045	50	7,04
1995	117	36	2066	60	2,07
1996	359	29	2818	71	2,82
1997	132	3	10066	90	10,07
1998	418	41	2800	76	2,80
1999	96	56	5175	60	5,18
2000	114	55	7644	78	7,64
2001	509	63	3045	71	3,04
2002	210	2	1821	46	1,82
2003	110	83	3921	44	3,92
2004	305	13	1336	43	1,34
2005	65	1	485		0,48
2006	10	0	322		0,32

Indonesia Exploration Results



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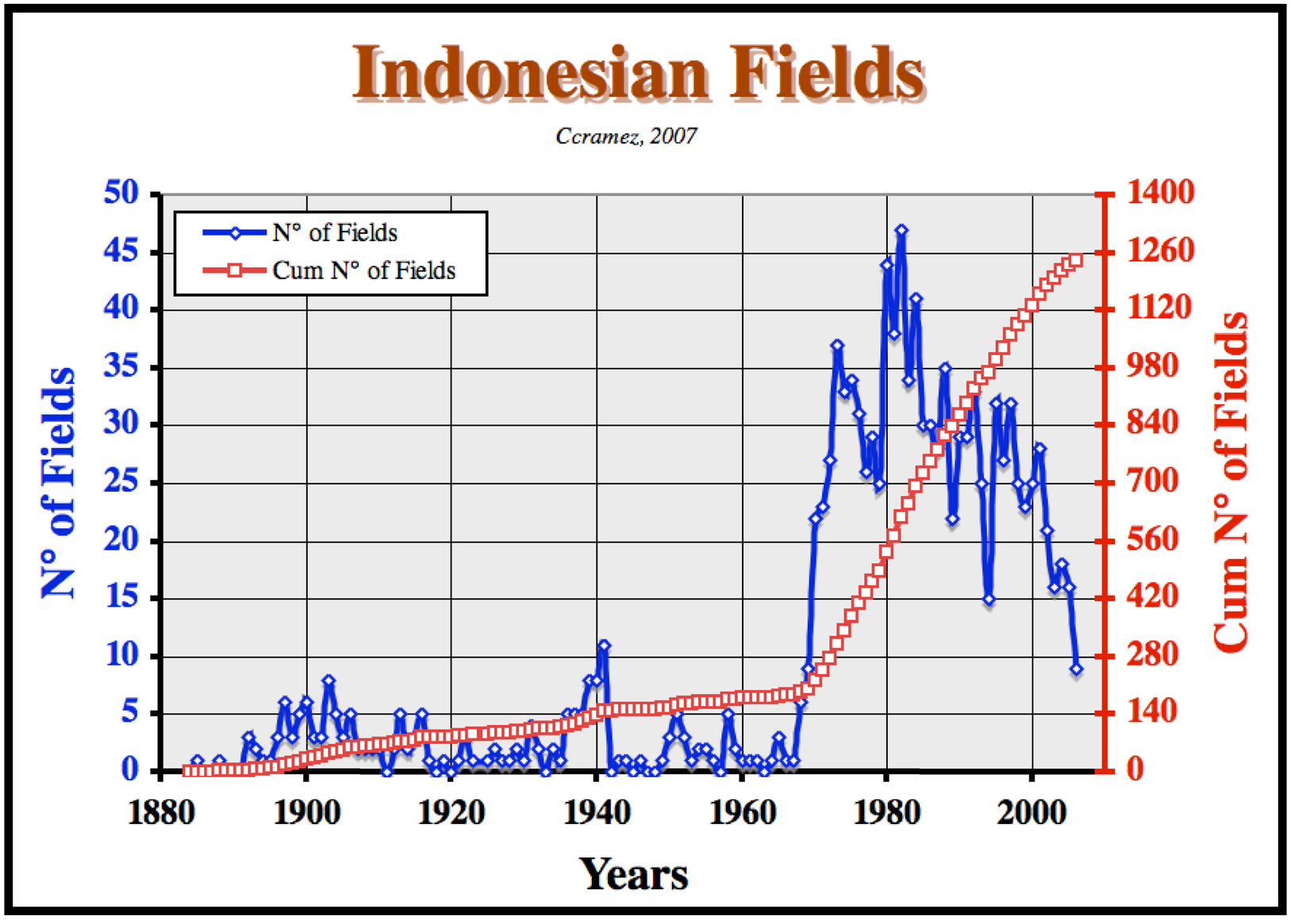
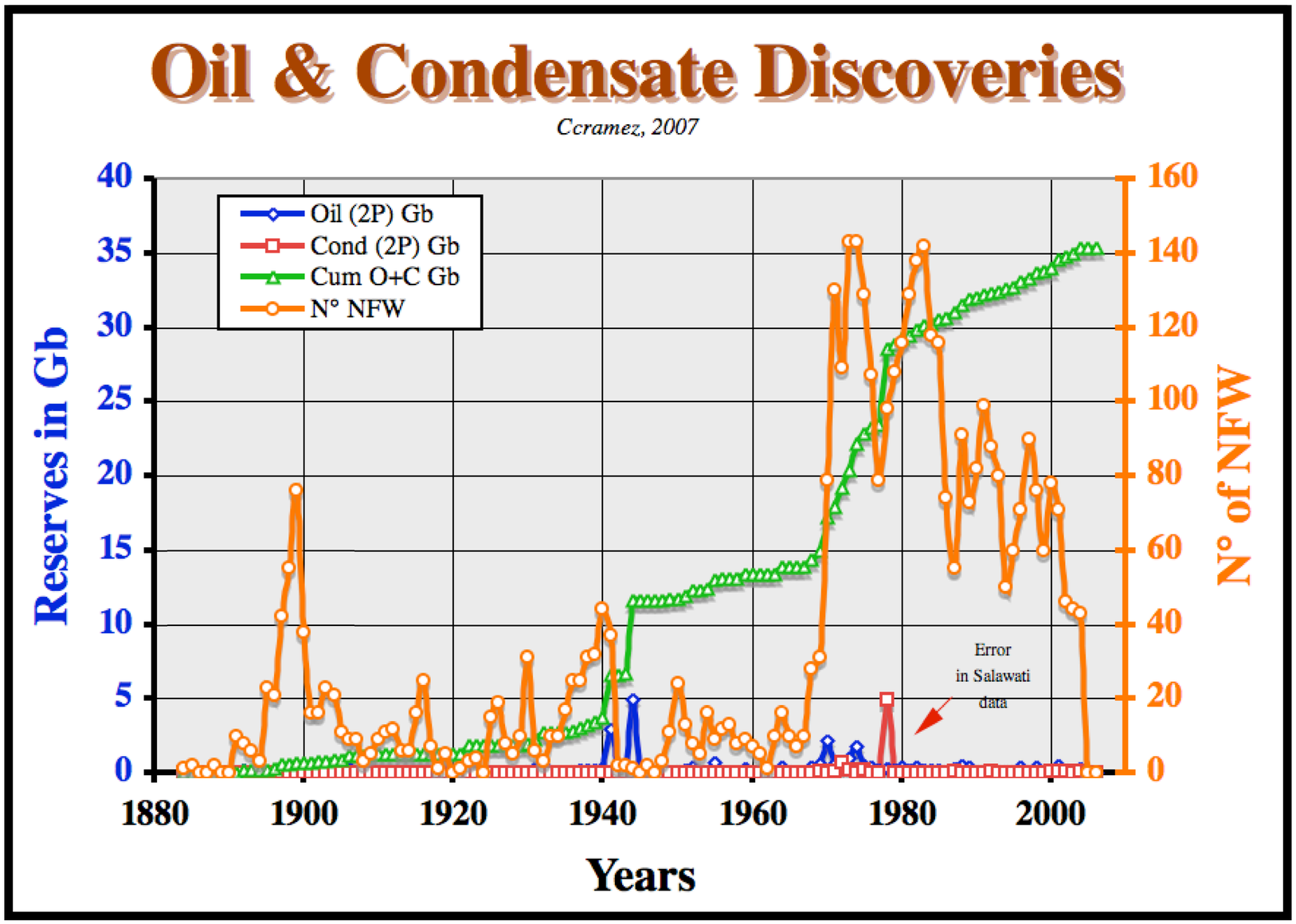


Indonesia Exploration Results



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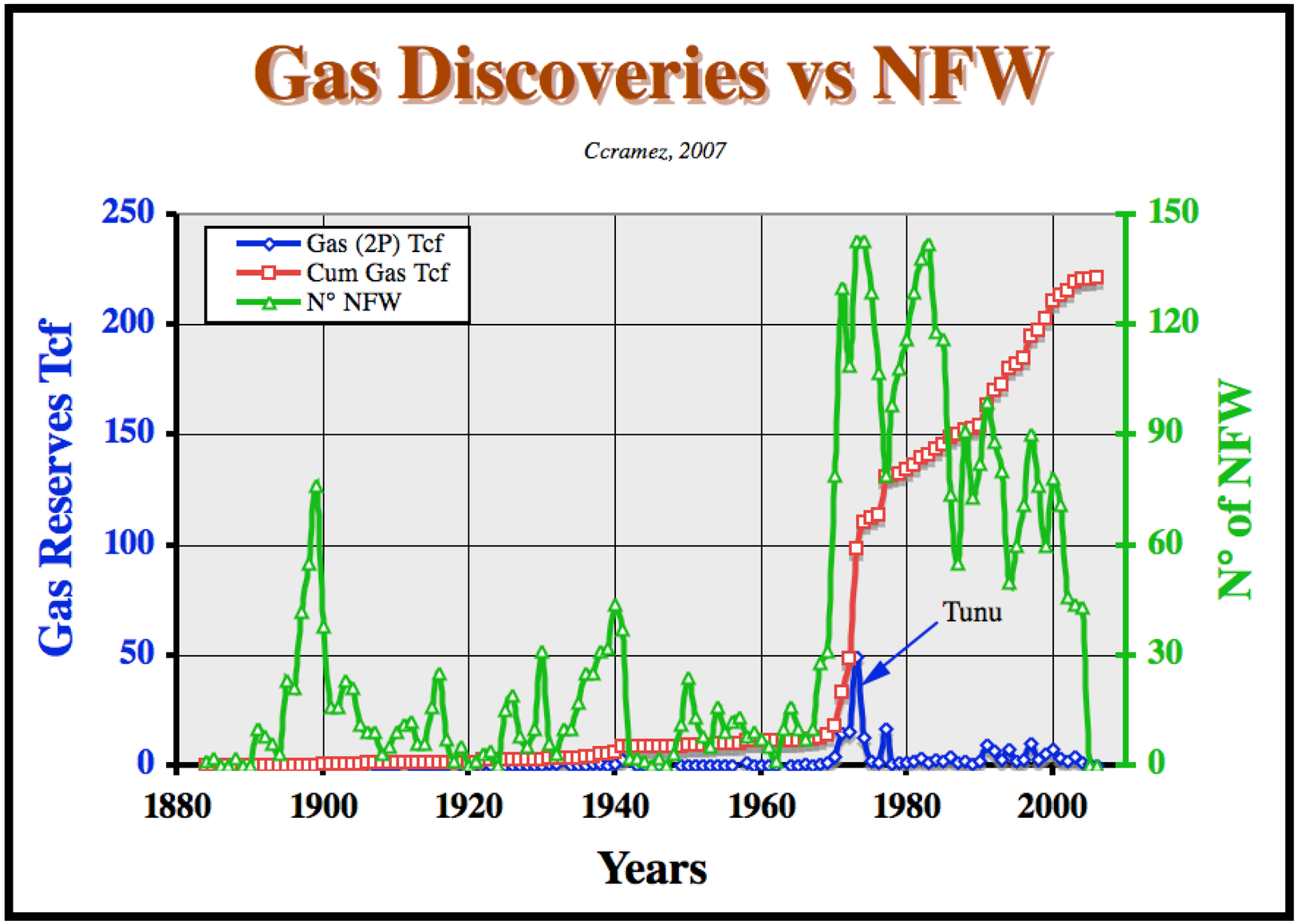

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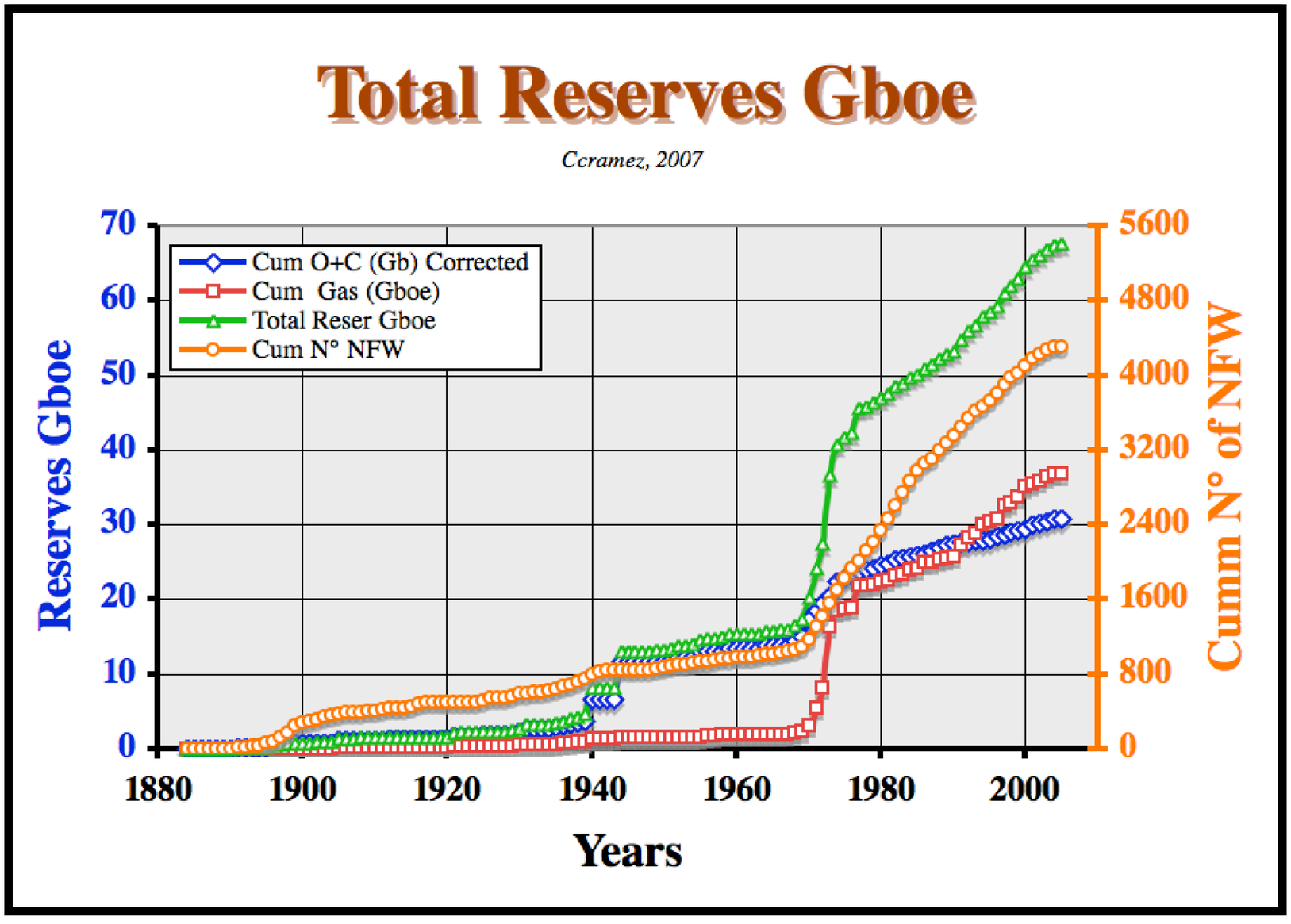

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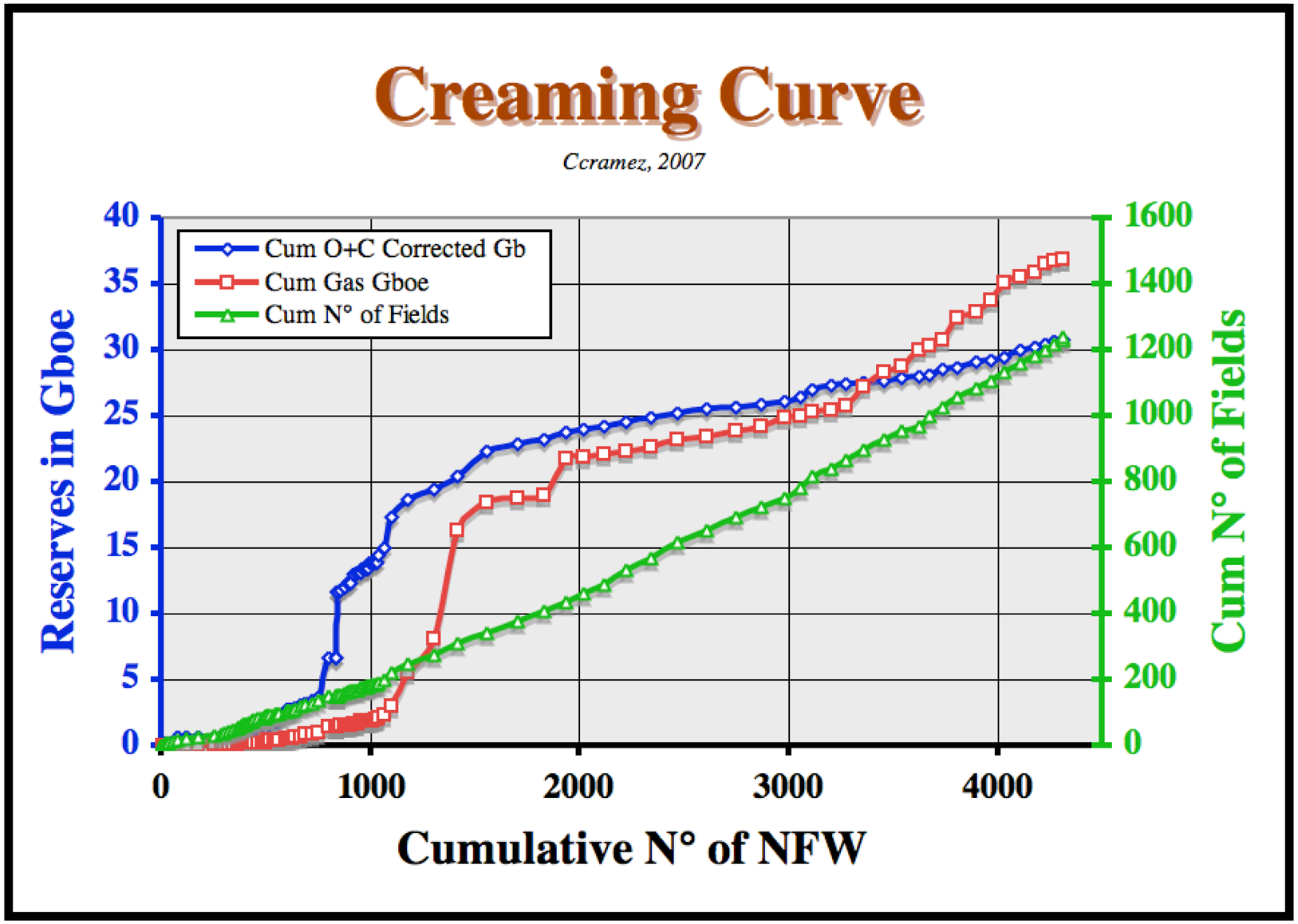
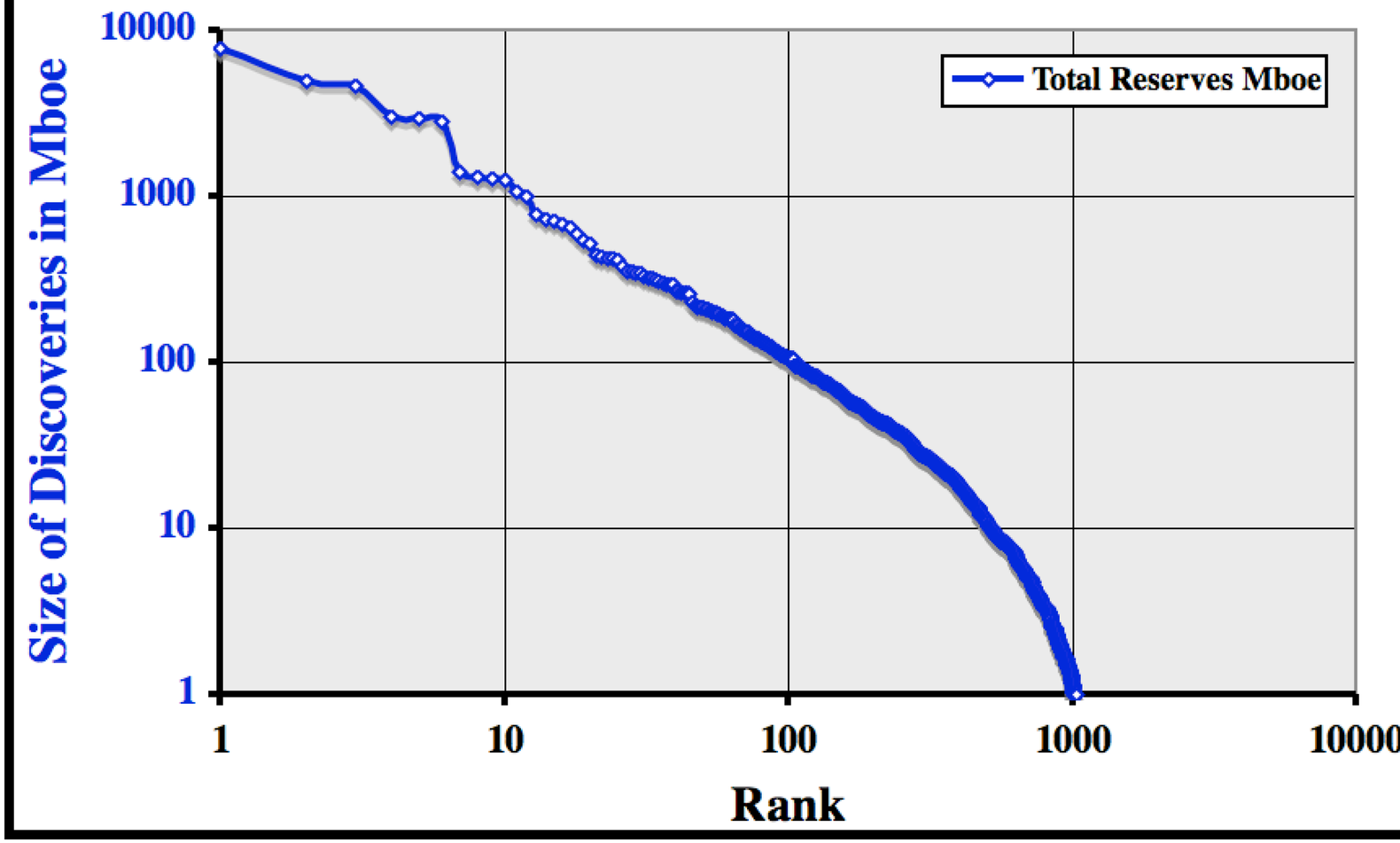


Indonesia Exploration Results

Size of Discoveries vs Rank

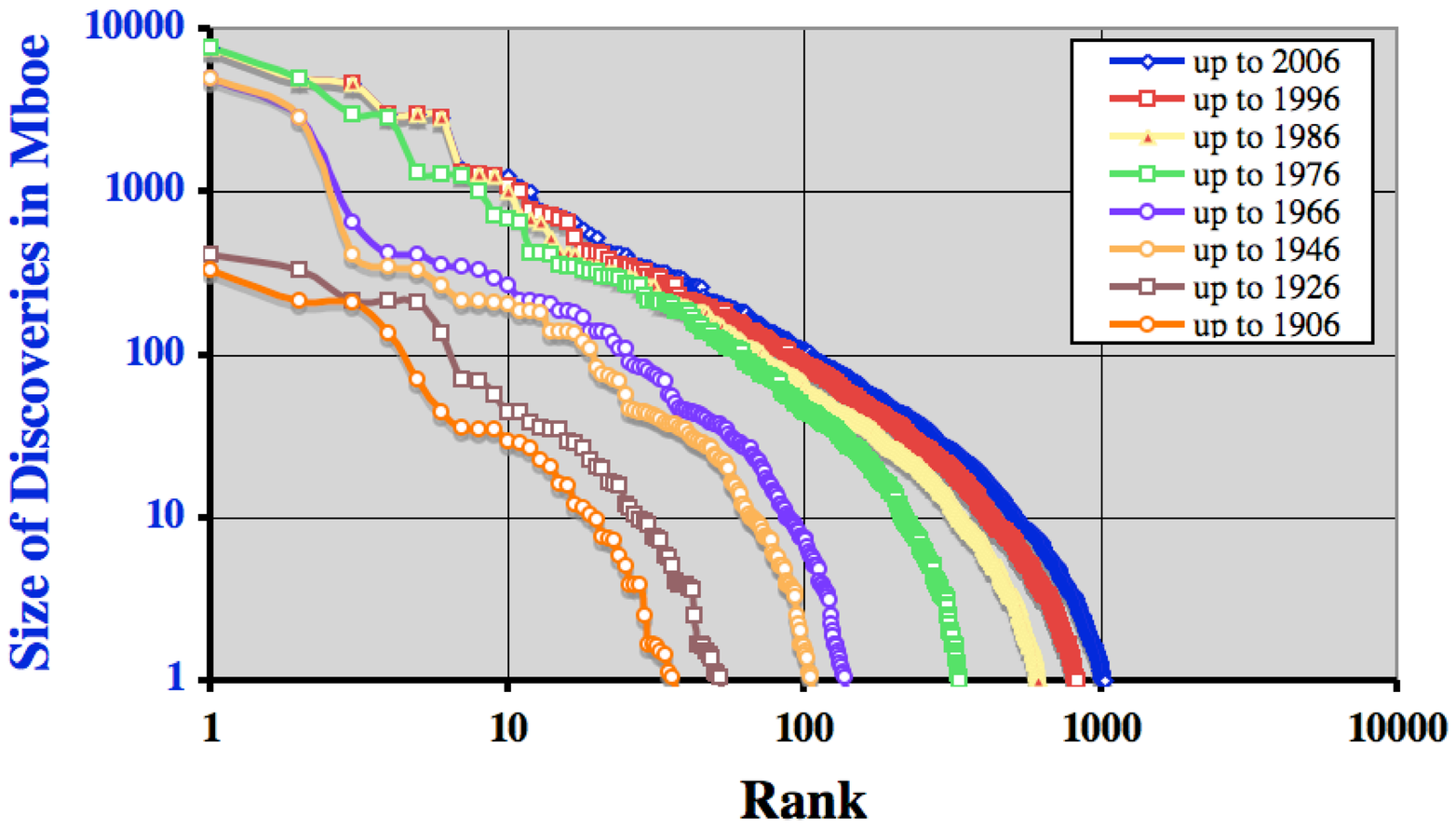
Ccramez, 2007



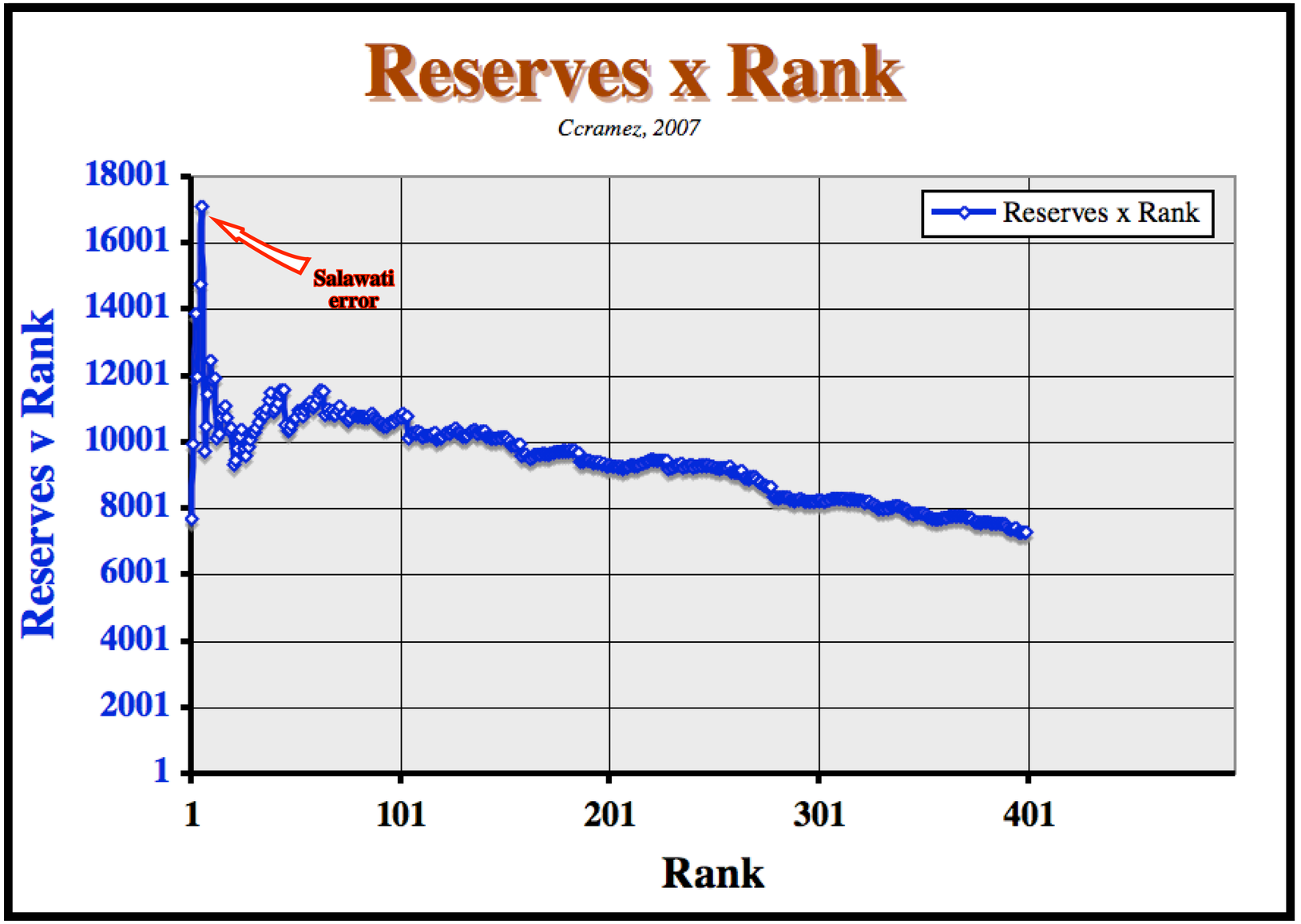
Indonesia Exploration Results

Size of Discoveries vs Rank

Ccramez, 2007



Indonesia Exploration Results



Indonesia Exploration Results

Cumulative Production

Ccramez, 2007