



COST CLASSIFICATION IN OIL AND GAS INDUSTRY

Dr. Armayau Alhaji Sani

**Course : Oil and Gas
Accounting**

Course Code: ACC 404

Learning Objective

In this section, students are expected to learn the following:

1. Royalty Cost, Drilling Cost, Acquisition Costs
2. Development Cost
3. Exploration and Appraisal Costs
4. Production Costs
5. Supporting Facilities and Equipment Costs
6. Tangible and Intangible Costs

Cost Classification in Oil and Gas Sector



Acquisition Costs:

These are incurred to purchase, lease or otherwise acquire a property (whether proved or unproved). Example includes the cost of signature or lease bonuses, options to purchase or lease properties, brokerage, legal fees.

Example 1- Acquisition Cost

Sabrin and Shayma Ltd acquired a 620 acre unproved property. The company paid a lease bonus of \$250/acre and recording fees of \$100,000. The company also incurred legal fee amounting to \$30,000 and a signature bonus of 30% of total cost before signature bonus.

Required : Calculate the total acquisition cost and state the journal entry.



Example 2- Acquisition Cost

Kazhal and Bawar Company purchased land in fee for \$950,000. A qualified appraiser made the following estimate of the fair market values of the surface and mineral rights: Surface rights \$1,200,000, Mineral rights \$800,000.

The company also acquired additional 700 acre of proved property, the cost of acquisition include \$400 per acre, processing fee of one quarter value of total purchase fee.

Required : Calculate the total acquisition cost and state the journal entry for each acquisition.

- **Exploration and Appraisal Costs:** These are cost associated with geological, geophysical and other pre-drilling costs, remuneration. It also include costs of drilling. They also include depreciation, amortization and allocated operating costs of support equipment facilities.
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Development Costs: These are costs incurred to gain access to proved reserves and provide facilities for drilling, lifting, treating, gathering and storing oil and gas. They include depreciation and allocated operating costs of support equipment facilities

Example- Development Cost

Karzan and Sarbast Company drilled several successful exploratory wells on Lease A. As a result, Lease A was classified as a proved property, and the proved area was identified. The Company decided in 2018 to drill an additional well within the proved area.

Karzan and Sarbast Oil Company began installing flow lines. The flow lines cost \$300,000, and installation charges were \$25,000. They al

so paid \$240,000 for leasing the area, \$20,000 as legal fees during the acquisition of the mineral right. The company equally pays the contractor \$800,000, including IDC of \$750,000 and equipment costs totaling \$50,000. The well was plugged and abandoned for an additional \$20,000. Assume instead that the well was successful and that additional IDC of \$75,000 and equipment costs of \$200,000 were incurred to complete the well.

Required: Calculate the accurate development cost and make the appropriate journal entries in the book of Karzan and Sarbast for the relevant year.

Tangible Drilling Expenses:

- Casing (production and surface)
- Tubing
- Well head and subsurface
- Pumping units
- Tanks
- Separators
- Heater-treaters
- Engines and automotives
- Flow line
- Installation costs of equipment
- Sundry equipment

Intangible Drilling Expenses: Intangible Cost: This is cost that result in assets that have no physical properties, or assets that have physical properties but that cannot be salvaged at the end of an operation.

- Drilling contractors' charges
- Site preparation, roads, pits
- Bits, reamers, tools
- Labour
- Fuel, power and water
- Drill stem tests
- Coring analysis
- Geological and engineering
- Cementation
- Completion, fracturing, acidizing, perforating
- Rig transportation, erection and removal
- Overhead
- Other services

Calculation of Tangible and Intangible Cost

Oil Company, a joint venture operator, incurred the following costs in drilling an oil well. You are required to classify them into tangible and intangible drilling costs.

	\$
i. Drilling Service fee (on footage basis)	675,256
ii. Cost of clearing and grading unpaved roadways to the drill site	23,560
iii. Construction of overflow mud pits	56,700
iv. Surface casing used in the well	675,908
v. Services such as acidizing and testing	246,200
vi. Cementing services for casing	17, 890
vii. Tubing and control valves	57, 500
viii. Flow lines, tanks and treaters	116, 700
ix. Labour to install lines and tanks	26, 500

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Classification Con't

- **Production Costs:** These are costs incurred in lifting, treating, gathering and storing oil and gas in the reservoir. They include costs of personnel engaged in operation of wells and related equipment facilities, repair and maintenance of production facilities, materials, supplies, insurance, services and fuel consumed in successful operations. They also include allocated operating costs of support equipment facilities, but do not include DD&A of license acquisition, exploration and development costs and cost of decommissioning.

Classification Con't

Supporting Facilities and Equipment Costs: These are cost relating to trucks, drilling equipment, workshops, warehouses, camps division and field offices. Usually, these facilities and equipment serve one or more activity relation to acquisition, exploration, development and production. These costs are therefore capitalized and apportioned to the different activities

Method of Accounting in the Oil and Gas Industry

SEM is the method: This is the method where all exploration costs (namely acreage cost, costs of geological and geophysical surveys, cost of dry holes etc) are charged to expenses, while those that lead to discovery of reserves are capitalized.

Full cost method: FCM is a method in which all acquisition, exploration and development costs are capitalized whether they lead to the discovery of oil reserves or not. Proponents of FCM are of the view that finding commercially producible hydrocarbons is an overall objective that should not be evaluated on well-by-well basis, as such all costs incurred are part of the cost of whatever reserves are found, because the good must support the bad.

FULL COST VS SUCCESSFUL COST METHOD

Item	Successful Effort	Full Cost Method
Acquisition costs	Capital	Capital
G&G costs	Expense	Capital
Exploratory dry hole	Expense	Capital
Exploratory well, successful	Capital	Capital
Development dry hole	Capital	Capital
Development well, successful	Capital	Capital
Production costs	Expense	Expense
Amortization cost center	Property, field, or reservoir	Country

Example 1

Disina Oil Company began operations with the acquisition of a lease in Erbil forest, during the first year, the following costs and revenue were incurred

G&G costs	\$ 60,000
Acquisition costs	100,000
Exploratory dry holes	1,400,000
Exploratory wells, successful	800,000
Development costs	500,000
Production costs	50,000
DD&A expense	40,000 (SE) 90,000 (FC)
Revenue	250,000

Use the above information to prepare the financial statements of Disina Oil Company using full cost (FC) and successful efforts (SE) accounting methods .

Solution 1

- Income Statements

	Successful Efforts	Full Cost
Revenue	\$ 250,000	\$ 250,000
Expenses:		
G&G	\$ 60,000	\$ 0
Exploratory dry holes	1,400,000	0
Production costs	50,000	50,000
DD&A	40,000	90,000
Total expenses	1,550,000	140,000
Net income	\$(1,300,000)	\$ 110,000

Partial Balance sheet

- **Partial Balance Sheets**

	Successful Efforts	Full Cost
• G&G costs		\$ 60,000
• Acquisition costs	\$ 100,000	100,000
• Exploratory dry holes		1,400,000
• Exploratory wells, successful	800,000	800,000
• Development costs	500,000	500,000
• Total assets	1,400,000	2,860,000
• Less: Accumulated DD&A	(40,000)	(90,000)
• Net assets	\$ 1,360,000	\$2,770,000

Oil and Gas Income Statement –Full Cost Method

		\$0	\$0
Opening Stock	xx		
Production cost	XX	Export Sales	xx
Transportation Cost	XX	Local Sales	xx
Royalties	XX		
COAS	XX		
Closing Stock	xx		
COS	XX		
Gross Income from Operations	XX		
	XXX		XXX
salaries and Wage	XX	Gross Income from Operation b/d	XX
Loan interest	XX		
Bank interest	XX		
DD& A	XX		
Loss on exchange	XX		
Expenditure for purchase of Seismic data	XX		
Amortisation	XX		
Capitalized Expense Charged	XX		
Net Income from Operations	XX		
	XXX		XXX

The following information relates to Tishk Oil and GaS PLC for the year ended 31 December 2022. Its Trial Balance as of 31st December, 2022 is presented below

	\$000	\$000
Crude oil Inventory at 1/1/2022	13,400,000	
Export Sales		54,000,000
local sales		20,000,000
Production cost	18,000,000	
Transportation Cost	3,000,000	
Electricity	11,400,000	
salaries and Wage	600,000	
Loan interest	7,000,000	
Bank interest	3,400,000	
Insurance paid	2,400,000	
Depreciation for the year	4,500,000	
Other Income		10,000,000
	1,300,000	
Royalties	3,000,000	
Loss on exchange	16,000,000	
	84,000,000	84,000,000

You are also provided with the following additional information:

i) Closing stock of oil and gas as of 31st December 2022 \$2,400,000

ii) Accrued expenses as of 31st December 2022 amounted to \$2,500,000

i) Closing stock of oil and gas as at 31st December, 2022 \$1,200,000

(ii) Accrued expenses as at 31st December, 2022 amounted to \$3,500,700

(iii) Provision for decommissioning amounting to \$564, 2000 is to be provided.

(iv) DD& A is to be provided on proved oil and gas properties. Production during the year was 500,000 of oil and 600,000 mcf of gas. Reserves estimates of oil and gas at the beginning of the year (i.e. 1st January 2009) were: oil 5,000,000 bbls and gas 1,800,000 mcf, and the relative proportion of oil and gas is not expected to continue throughout the life of the property.

(v) All capitalized costs and intangible oil and gas assets are to be amortized at the rate of 10% per annum.

(vi) The Director's proposed a dividend of 2, 000,000 on shares and Petroleum Profit Tax is to be calculated at the rate of 70%.

(vii) All workings are to be made to the nearest Naira

- Required: Prepare the income Statement of Tishk Oil and Gas Company for the year 2022 using full cost method

The following information relates to Erbil Oil and Gas Nigeria PLC for the year ended 31 December 2009. Its Trial Balance as of 31st December, 2009 is presented below

	\$000	\$000
Crude oil Inventory at 1/1/2009	6700000	
Export Sales		50,000,000
local sales		10,000,000
Production cost	9,000,000	
Transportation Cost	1,500,000	
Intangible oil and Gas Assets	117,000,000	
salaries and Wage	300,000	
Prove oil and gas properties	13,500,000	
Unproved oil and gas reserve	8,300,000	
Accumulative DD&A		5,200,500
Loan interest	3,500,000	
Bank interest	1,700,000	
Geological and Geophysical	800,000	
Exploratory Well: Successful	15,672,000	
Unscuessful	2,250,000	
Development Well	20,567,000	
Well in Progress	11,570,000	
Expenditure for purchase of Seismic data	683,650	
Royalties	1,500,000	
Derivatives financial instrument		500,800
Loss on exchange	1,450,000	
Trade and other receivables	3,500,000	
Derivatives financial instrument	2,503,200	
Cash and Cash Equivelent	500,000	
Trade and other payables		7,500,000
Investment in Subsidiaries	14,500,000	
Other current Assets	50,250,100	
Share Capital		203,634,650
Share Premium		9,850,000
Other Reserves		560,000
	287,245,950	287,245,950

- The following Additional Information are also available;
1. Closing stock of oil and gas as at 31st December, 2009 \$1,200,000
 2. Accrued expenses as at 31st December, 2009 amounted to \$3,500,000
 3. Provision for decommissioning amounting to \$565, 000 is to be provided.
 4. DD& A is to be provided on proved oil and gas properties.
 5. Production during the year was 500,000
 6. Reserves estimates of oil and gas at the beginning of the is 5,000,000 bbls
 7. All capitalized costs and intangible oil and gas assets are to be amortized at the rate of 10% per annum.
 8. The Director proposed a dividend of \$2 000,000 on shares and Petroleum Profit Tax is to be calculated at the rate of 30%.

Required: Prepare the income Statement and the Balance Sheet of Tishk Oil and Gas Company for the year 2009 using full cost method

TISHK OIL AND GAS COMPANY

Income Statement for the year ended 31 December, 2009

Opening Stock	6,700,000	Export Sales	5000000
Production cost	9,000,000	local sales	10,000,000
Transportation Cost	1500000		
Royalties	1500000		
COAS	18,700,000		
Closing Stock	1,200,000		
COS	17,500,000		
Gross Income from Operations	42,500,000		
	60,000,000		60,000,000
salaries and Wage	300,000	Gross Income from Opration b/d	42,500,000
Loan interest	3,500,000		
Bank interest	1,700,000		
DD& A	829,950		
Loss on exchange	1,450,000		
Expenditure for purchase of Seismic data	683,650		
Accrued Expenses	3,500,000		
Provision for Decommissioning	565,000		
Intangible cost	11,700,000		
Capitalized Expense Charged	3,928,900		
	28,157,500		
Net Income from Operations			14,342,500
	42,500,000		42,500,000
Petroleum Profit Tax	4302750		
Propossed Dividend	2000000		
Net Income After tax	8,039,750		

TISHK Oil and Gas Company

Statement of Financial Position for the year ended 31st December, 2009

Share Capital	203634650	Fixed Assets				
	\$0.000		000	0000		\$0.000
Reserve		Proved oil and Gas Assets	13,500,000	6,030,450	7,469,550	
Share premium	9850000	Unproved Properties	8,300,000	-	8,300,000	
Other reserves	560000	Intangible Assets	117,000,000	11,700,000	105,300,000	
P&L a/c balance	8,039,750	Other Capitalized Cost	39,289,000	3,928,900	35,360,100	
		Wells in Progress	11,570,000		11,570,000	
					167,999,650	
Current Liabilities		Investment				
Accrued expense	3,500,000	Derivative financial instruments			2,503,200	
Provision for Decomissioning	565,000	Investments in subsidiaries			14,500,000	
Derivative Financial Statement	500800					
Trade and other payables	7,500,000					
Petroleum profit tax	4,302,750	Current Assets				
Proposed dividend	2,000,000	Stock		1,200,000		
		Trade and other Receivables		3,500,000		
		Cash and Cash Equivelent		500,000		
		Other Current Assets		50,250,100	55,450,100	
	240,452,950				240,452,950	

The following information relates to Duhuk Oil and Gas PLC for the year ended 31 December 2023.
Its Trial Balance as of 31st December, 2023 is presented below

Particulars	DR	CR
Crude oil Inventory at 1/1/2023	3,350,000	-
Export Sales	-	25,000,000
Local Sales	-	5,000,000
Production Cost	4,500,000	-
Transportation cost	750,000	-
Intangible oil and gas assets	58,500,000	-
Salaries and wages	150,000	-
Proved oil and gas properties	6,750,000	-
Unproved oil and gas properties	4,150,100	-
Accumulated DD&A: Oil and Gas Assets	-	2,600,250
Loan Interest	1,750,000	-
Bank interest	850,000	-
Geological and geophysical costs	400,000	-
Exploratory wells: Successful	7,783,500	-
Unsuccessful	1,125,000	-
Development wells	10,283,500	-
Wells in Progress	5,785,000	-
Expenditure for purchase of seismic data	341,825	-
Royalties	750,000	-
Derivative financial instruments	-	250,400
Loss on exchange	725,000	-
Trade and other receivables	1,750,000	-
Derivative financial instruments	1,251,600	-
Cash and cash equivalents	250,000	-
Trade and other payables	-	3,750,000
Investments in subsidiaries	7,250,000	-
Other current assets	25,125,050	-
Share capital	-	100,067,425
Share premium	-	4,925,000
Other reserves	-	1,977,500
	143,570,575	143,570,575

The following Additional Information are also available.

(1) Closing stock of oil and gas as at 31st December, 2023, \$600,000

(2) Accrued expenses as at 31st December, 2023 amounted to \$2000,000

(3) The Director's proposed a dividend of \$850,000 on shares and the Petroleum Profit Tax is to be calculated at the rate of 25%.

(4) DD& A is to be provided on proven oil and gas properties.

(5.) Production during the year was 500,000 and the salvage value of the equipment at the end of its terminal period is 10% of Proved properties value

(6.) Reserves estimates of oil and gas at the beginning of the is 5,000,000 bbls

(7) All capitalized costs and intangible oil and gas assets are to be amortized at the rate of 15% per annum

• Required:

Use the Successful Effort Method to prepare the Income Statement and Statement of Financial Position for the year ended 31 st December, 2023.

TISHK OIL AND GAS COMPANY

Income Statement for the year ended 31 December, 2023

Opening Stock	3,350,000	Export Sales	25,000,000
Production cost	4,500,000	local sales	5,000,000
Transportation Cost	750,000		
Royalties	750,000		
COAS	9,350,000		
Closing Stock	600,000		
COS	8,750,000		
Gross Income from Operations	21,250,000		
	30,000,000		30,000,000
salaries and Wage	150,000	Gross Income b/d	21,250,000
Loan interest	1,750,000		
Bank interest	850,000		
DD& A	347,475		
Loss on exchange	725,000		
Expenditure for purchase of Seismic data	341,825		
Accrued Expenses	2,000,000		
Intangible cost	8,775,000		
Capitalized Expense Charged	2,710,050		
Geological and geophysical costs	400,000		
Unsuccessful exploratory well	1,125,000	Gross Loss	
	19,174,350		
Net Income	2,075,650		
	21,250,000		21,250,000
Petroleum Profit Tax @ 25	518,913	Net Income b/d	2,075,650
Proposed Dividend	850,000		
p and Loss A/c	706,738		
	2,075,650		2,075,650

DUHUK Oil and Gas Company							
Statement of Financial Position for the year ended 31st December, 2023							
Share Capital			100067425	Fixed Assets			
					000	0000	\$0.000
Reserve				Proved oil and Gas Assets	6,750,000	2,947,725	3,802,275
Share premium			4925000	Unproved Properties	4,150,100		4,150,100
Other reserves			1977500	Intangible Assets	58,500,000	8,775,000	49,725,000
P&L a/c balance			706,737.50	Other Capitalized Cost	18,067,000	2,710,050	15,356,950
				Wells in Progress	5,785,000	-	5,785,000
					-		
Current Liabilities				Investment	-		-
Accrued expense			2000000	Derivative financial instruments			1,251,600
				Investments in subsidiaries	-		7,250,000
					-		
Derivative Financial Statement			250400				
Trade and other payables			3750000		-		
Petroleum profit tax			518,912.50	Current Assets	-		
Proposed dividend			850,000.00	Stock	-	600,000	
				Trade and other Receivables	-	1,750,000	
				Cash and Cash Equivelent	-	250,000	
				Other Current Assets	-	25,125,050	27,725,050
			115,045, 975		-		115,045,975