

PERSONAL PROPERTY MANUAL

Prepared by
Division of Property Taxation
Department of Local Affairs

After Review by the Advisory Committee to the Property
Tax Administrator and Approval by the State Board of Equalization
Pursuant to §§ 39-2-131 and
39-9-103(10), C.R.S.

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Preface

The Assessor Reference Library (ARL) Volume 5 is part of a series of manuals that address property valuation and assessment. ARL Volume 2 contains assessment procedures, processing policies, and legal references for administration of the assessor's office. ARL Volume 3 is the land valuation manual. ARL Volume 4, when published, will be the improved property valuation manual.

The purpose of ARL Volume 5 is to provide a reference source for appraisal and assessment policies and procedures for the valuation of personal property according to the Colorado Constitution and statutes.

Valuation and/or assessment issues not pertaining directly to the valuation of personal property may be referenced to one of the other ARL manuals, as appropriate.

Constitutional amendments or statutory changes that occur after the publication dates, shown at the bottom of each page, supersede the provisions of this manual.

ASSESSOR'S REFERENCE LIBRARY
VOLUME 5 - PERSONAL PROPERTY VALUATION MANUAL
CONTENTS CHECK LIST

The following list indicates all up-to-date sections and the order in which they should appear in your manual. Indicate any pages missing from your ARL Volume 5, Personal Property Valuation Manual, complete the name and address box on the opposite side of the form, fold the form so that the address for the Division of Property Taxation shows, staple, affix a stamp, and mail the completed form. **Bold typeface indicates updated material as of the June 2007 Statutory Advisory Committee hearing, effective upon publication.**

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Chapter 5	No change	Revised 1-07
Chapter 6	Pages 6.31-6.34	Revised 6-07
Chapter 6	All other pages, no change	Revised 1-07
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Glossary of Commonly Used Property Tax Abbreviations

AG	Attorney General
ARL	Assessors Reference Library
ASOP	Annual Statement of Property
BAA	Board of Assessment Appeals
BEL	Basic Equipment List
BIA	Best Information Available
BOE	Board of Equalization
BOCC	Board of County Commissioners
BRC	Business Records Corporation
CAA	Colorado Assessors Association
CACI	Colorado Association of Commerce and Industry
CAMA	Computer Automated Mass Appraisal
CASS	Colorado Agricultural Statistics Service
CATA	Colorado Association of Tax Appraisers
CBOE	County Board of Equalization
CBREA	Colorado Board of Real Estate Appraisers
CCI	Colorado Counties Incorporated
CCI	Colorado Customware Incorporated
CIC	Computer Information Concepts
CDOT	Colorado Department of Transportation
CLT	Cole-Layer-Trumbel
CML	Colorado Municipal League
COD	Coefficient of Dispersion
COV	Coefficient of Variation
CPEC	Colorado Public Expenditures Council
C.R.S.	Colorado Revised Statutes
DDA	Downtown Development Authority
DLG	Division of Local Government
DOLA	Department of Local Affairs
DPT	Division of Property Taxation
DURA	Denver Urban Renewal Authority
ECS	Eagle Computer Systems
EPA	Environmental Protection Agency
FIRREA	Financial Institutions Reform, Recovery, and Enforcement Act
FSA	USDA - Farm Service Agency (formerly ASCS)
GIS	Geographic Information System
GRI	Gross Rental Income
GRM	Gross Rent Multiplier
IAAO	International Association of Assessing Officers
LV	Land Value
MRA	Multiple Regression Analysis
NERF	Netback Expense Reporting Form
NOD	Notice of Determination
NOI	Net Operating Income
NOV	Notice of Valuation
NRCS	Natural Resource Conservation Service (formerly SCS)
OLLS	Office Legislative Legal Services
PIN	Parcel Identification Number
PPDS	Personal Property Declaration Schedule
PTA	Property Tax Administrator

Glossary of Commonly Used Property Tax Abbreviations (cont)

PUD	Planned Unit Development
RCN	Replacement Cost New
RCNLD	Replacement Cost New Less Depreciation
RPTD	Real Property Transfer Declaration
SBA	Small Business Administration
SBOE	State Board of Equalization
SNOD	Special Notice of Determination
SNOV	Special Notice of Valuation
SME	Special Mobile Equipment
SMI	Severed Mineral Interest
SMM	Special Mobile Machinery
SPSS	Statistical Package for the Social Sciences
SR	Sales Ratio
TD	Treasurer's Deed
TD-1000	Real Property Transfer Declaration
TIF	Tax Increment Finance District
URA	Urban Renewal Authority
USPAP	Uniform Standards of Professional Practice
WD	Warranty Deed

ARL VOLUME 5
PERSONAL PROPERTY MANUAL
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CHAPTER 1

APPLICABLE PROPERTY TAX LAWS

Chapter 1 discusses the legal basis for the valuation and assessment of all taxable personal property in Colorado. The assessor and taxpayer's responsibilities are explained and corresponding statutory references are included. Chapter 1 provides a broad overview of the entire manual. The remainder of the manual discusses the specific policies and techniques used to value personal property.

In addition, Chapter 1 provides an assessment calendar that lists the dates the law requires specific activities to occur. The calendar lists all assessment activities and notes statutory references. The Personal Property Assessment Calendar is found in **Addendum I-A, Personal Property Assessment Calendar**.

LEGAL BASIS

The Colorado Constitution and the Colorado Revised Statutes are the legal foundation upon which all valuations for assessment are determined. Taken together with valuation procedures and case law, the Constitution and statutes provide the necessary guidance for the valuation of all property for ad valorem (property tax) purposes.

The constitutional and statutory references in this manual are taken from the Colorado Revised Statutes. The Colorado Revised Statutes, commonly called the "Red Books," are published by Bradford Publishing Company, Denver, Colorado.

The Division of Property Taxation prints **ARL Volume 1 - LEGAL REFERENCE MANUAL** which provides copies of the relevant portions of the Constitution and an index of Constitutional and statutory citations. For questions involving legal interpretations or when litigation is involved, reference should always be made to the Colorado Revised Statutes (C.R.S.).

The ad valorem tax law in Colorado is specific in that it mandates the consideration of the three approaches to value in determining the value of personal property. The assessor should document the process by which the three approaches were considered and the reasons why a particular approach produced the most representative values for a class of property as required by § 39-1-103(5)(a), C.R.S., and Montrose Properties v Board of Assessment Appeals, 738 P.2d 396 (Colo. App. 1987).

However, the statutes also require that if the taxpayer has timely and properly filed the personal property declaration schedule, including costs of acquisition, installation, sales/use tax, and freight to the point of use, the cost approach shall establish the maximum value and the market or income approaches can only be used to establish value if they produce a lower value than the cost approach as required by § 39-1-103(13), C.R.S. The law is also specific in mandating which property is taxable and which is exempt.

ASSESSOR'S RESPONSIBILITY

The county assessor is the official who is responsible for the discovery, listing, classification, and valuation of all taxable property within each county, except public utility property which is the responsibility of the Division of Property Taxation (Division).

PROPERTY DISCOVERY

Discovery is the process whereby the assessor locates or discovers property to be valued. There are several techniques and sources of information useful to the assessor to accomplish the discovery of property. A complete discussion of the discovery process is found in **Chapter 2, Discovery, Listing, and Classification**.

PROPERTY LISTING

The assessor is required by § 39-5-101, C.R.S., to list all real and personal property located in the county on the assessment date.

A declaration schedule form, on which the taxpayer who owns more than \$2,500 in total actual value of personal property shall list all personal property, must be furnished to the taxpayer as soon after January 1 as practicable as required by § 39-5-107, C.R.S. Additional information regarding the listing of personal property is found in **Chapter 2, Discovery, Listing, and Classification**.

PROPERTY CLASSIFICATION

Property is defined by § 39-1-102(13), C.R.S., as both real and personal property.

Colorado statutes require that certain procedures be used for valuation of different kinds of property. Therefore, prior to valuation, the assessor classifies personal property based on the classification system established by the Division of Property Taxation.

All classes and subclasses established by the Division are listed in **ARL Volume 2, ADMINISTRATIVE AND ASSESSMENT PROCEDURES MANUAL, Chapter 7, Abstract of Assessment Instructions**.

REAL PROPERTY

Real property is defined in § 39-1-102(14), C.R.S. The definition may be paraphrased as all lands or interests in lands, all mines, quarries, minerals in and under the land, all rights and privileges thereunto, and improvements.

Improvements are defined in § 39-1-102(7), C.R.S. The definition may be paraphrased as all structures, buildings, fixtures, fences, and water rights erected on or affixed to land, whether or not title to such land has been acquired.

FIXTURES

Fixtures are defined in § 39-1-102(4), C.R.S. The definition may be paraphrased as those articles that were once movable chattels, but have become an accessory to or a part of real property by having been physically incorporated therein or annexed or affixed thereto. Fixtures include systems for the heating, air conditioning, ventilation, sanitation, lighting, and plumbing of a building. These systems will be collectively referred to as fixture systems.

Fixtures do not include machinery, equipment, or other articles related to a commercial or industrial operation, which are affixed to the real property for proper utilization of such articles. In addition, for property tax purposes only, fixtures do not include security devices and systems affixed to any residential improvements including, but not limited to security doors, security bars, and alarm systems. Refer to **Chapter 2, Discovery, Listing, and Classification**, for a more complete discussion of fixture systems.

PERSONAL PROPERTY

Personal property is defined in § 39-1-102(11), C.R.S. The definition may be paraphrased as everything which is the subject of ownership and which is not included in the term real property. Personal property includes machinery, equipment, and other articles related to the business of a commercial or industrial operation rather than components of fixture systems that are required for the proper operation of the improvements.

Taxable Personal Property

The assessor has the responsibility to determine if property is exempt from property taxation under Colorado law, except for property granted exemption by the Property Tax Administrator under §§ 39-3-106 through 39-3-113, and § 39-3-116, C.R.S. All personal property is taxable in Colorado unless specifically exempted by sections 3 to 6 of article X of the Colorado Constitution.

Exempt Personal Property

To be valid, the property tax exemption must be described in the Colorado Constitution. Several classes of personal property, both private and public, are listed in the Constitution as being exempt from property taxation. Colorado Constitutional exemptions are shown in four categories below. Applicable statutory citations follow these Constitutional exemption categories under the topic heading Statutory Exemptions by Category of Property.

Private Property:

Sections 3 to 6 of article X of the Colorado Constitution describe the following categories of private property as being exempt.

- Nonproducing unpatented mining claims
- Household furnishings not used to produce income at any time
- Personal effects not used to produce income at any time
- Inventories of merchandise, materials and supplies that are held by a business primarily for sale or consumption by the business
- Livestock
- Agricultural and livestock products

- Agricultural equipment used on a farm or ranch in the production of agricultural products
- Intangible personal property not owned by a state assessed public utility, e.g. stocks and bonds; copyrights, patents, trademarks, and other special privileges; franchises; contract rights and obligations; and operating software. Intangible personal property is exempted by 39-3-118, C.R.S. Certain intangible personal property, e.g. stocks and bonds, once was taxable, but its status was changed to exempt by Constitutional amendment. Computer software was exempted in 1990.

Certain classes of property in sections 3 to 6 of article X of the Colorado Constitution are exempt by definition and the assessor has the responsibility to determine whether or not property meets these criteria for exemption.

A complete discussion of the private exemptions described in the Colorado Constitution is found in **Chapter 2, Discovery, Listing, and Classification**.

Public Property:

Section 4 of article X of the Colorado Constitution exempts all personal property owned by the state, counties, cities, towns, other municipal corporations, and public libraries. The exemptions described in section 4 of article X of the Colorado Constitution include property owned by a political subdivision of the state, including school districts and special districts.

The property of the United States is exempt from all taxes imposed by the state of Colorado, including property taxes. The exemption of U. S. government property from state taxes is found in Section 4 of the Enabling Act. The Enabling Act allowed Colorado to enter the Union in 1876. Specific information about public property exemptions may be found in **ARL Volume 2, ADMINISTRATIVE AND ASSESSMENT PROCEDURES, Chapter 10, Exemptions**.

Property Dedicated to Religious Worship and Charitable Purposes:

Section 5 of article X of the Colorado Constitution authorizes the exemption of property used for religious worship, private nonprofit schools and charitable purposes. The taxpayer must prove qualification for exempt status after filing an application with the Property Tax Administrator as described in § 39-2-117, C.R.S. Specific definitions for property exemptions under the provisions of Section 5 of the Colorado Constitution are found in §§ 39-3-106 to 113 and 39-3-116, C.R.S. Any questions about these exemptions should be directed to the Division of Property Taxation, Exempt Property Section.

Self Propelled Equipment, Motor Vehicles, and Other Mobile Equipment:

All motor vehicles, wheeled trailers, semi-trailers, trailer coaches and mobile and self-propelled construction equipment are valued based upon a graduated specific ownership tax, which is imposed in lieu of ad valorem taxation as required by section 6 of article X of the Colorado Constitution and title 42 of the Colorado Revised Statutes.

Statutory Exemptions

The following is a reference list of categories of exempt property and their corresponding statutory citations.

Agricultural and livestock products	§ 39-3-121, C.R.S.
Agricultural equipment (farm and ranch)	§ 39-3-122, C.R.S.
Charitable property **	§ 39-3-108, C.R.S. § 39-3-109, C.R.S. § 39-3-110, C.R.S. § 39-3-111, C.R.S. § 39-3-111.5, C.R.S. § 39-3-112, C.R.S. § 39-3-112.5, C.R.S. § 39-3-113, C.R.S. § 39-3-116, C.R.S. § 39-3-105, C.R.S.
City or town property	
Consumable personal property	§ 39-3-119, C.R.S.
County fair property	§ 39-3-127, C.R.S.
County lease-purchase property	§ 30-11-104.1, C.R.S. § 30-11-104.2, C.R.S.
County owned property	§ 39-3-105, C.R.S.
Credit Union personal property	§ 11-30-123, C.R.S.
Household furnishings not producing income	§ 39-3-102, C.R.S.
Indian property (on reservation)	By Treaty
Intangible personal property	§ 39-3-118, C.R.S.
Inventories of merchandise and materials and supplies held for sale or consumption by a business	§ 39-3-119, C.R.S.
Livestock	§ 39-3-120, C.R.S.
Municipality leased property	§ 31-15-802, C.R.S.
Nonproducing Unpatented Mining Claims	§ 39-6-116, C.R.S.
Personal effects not producing income	§ 39-3-103, C.R.S.
Private school property **	§ 39-3-107, C.R.S.
Public library property	§ 39-3-105, C.R.S.
Religious worship property **	§ 39-3-106, C.R.S.

School District lease-purchase property	§ 22-32-127(1)(b), C.R.S.
School District leased or rented property	§ 22-32-127(1)(b), C.R.S.
School District owned property	§ 39-3-105, C.R.S.
Software	§ 39-3-118, C.R.S.
Special District property	§ 39-3-105, C.R.S.
Special District lease-purchase property	§ 39-3-124, C.R.S.
State lease-purchase property	§ 39-3-124, C.R.S.
PP of \$2,500 total actual value or less per county	§ 39-3-119.5, C.R.S.
Until Personal Property is First Used by Current Owner	§ 39-3-118.5, C.R.S.
U. S. Government property	Enabling Act
Works of Art	§ 39-3-102, C.R.S. § 39-3-123, C.R.S.

** Exemption initially must be granted and then be reviewed annually by the Property Tax Administrator. Any questions regarding these exemptions should be directed to the Division of Property Taxation, Exempt Property Section.

VALUATION FOR ASSESSMENT

Appraisal of the current actual value of personal property is described in **Chapter 3, Valuation Procedures**.

LEVEL OF VALUE

The current actual value of personal property as of the assessment date must be adjusted to the level of value in effect for real property as required by §§ 39-1-104(10.2)(a) and (12.3)(a)(I), C.R.S.

The Division publishes adjustment factors to adjust the actual value of personal property to the level of value applicable for real property. The adjustment factors are found in **Chapter 4, Personal Property Tables**.

The assessor must use these adjustment factors to adjust all personal property valuations to the correct level of value as required by § 39-1-104(12.3)(a)(I), C.R.S.

ASSESSMENT RATE

In Colorado, the assessor must determine valuations for assessment, or assessed values. Assessed values are calculated using a percentage, i.e. an assessment rate. The property's actual value multiplied by the appropriate assessment rate results in assessed value.

The assessment rate for most property, including personal property, (but excluding residential real property, oil and gas leaseholds and lands, and producing mines) is 29 percent as required by section 3(1)(b) of article X of the Colorado Constitution.

SUSPICION OF REMOVAL

If at any time the treasurer believes that taxable personal property may be removed, dissipated, or distributed so that the taxes would not be collectible, the treasurer may immediately collect the taxes on such property. Upon request of the treasurer, the assessor must certify the current year's valuation of personal property that is under suspicion of removal as required by § 39-10-113(1)(a), C.R.S. If the mill levy for the current year has not been fixed and made, the mill levy for the previous year shall be used to determine the amount of taxes due.

VALUATION CERTIFICATION

The assessor has responsibilities concerning the certification of various values. These assessor responsibilities include the following:

1. Certification of values, including personal property values, to the taxing entities and the Division of Local Government as required by §§ 39-5-128(1), 39-5-121(2), and 39-1-111(5), C.R.S.
2. Certification of the value associated with personal property that the treasurer believes may be removed or transferred prior to payment of personal property taxes as required by § 39-10-113, C.R.S.
3. Delivery of the tax warrant as required by § 39-5-129, C.R.S.

TAX WARRANT

As soon after the taxes have been levied, but not later than January 10, the assessor must deliver the tax warrant to the county treasurer. The tax warrant is a public document and must be available for inspection by the public in the assessor's office.

The tax warrant contains the assessment roll which is a listing of the names of all taxpayers in the county, the class of their taxable property, its assessed valuation, the taxes levied against the property and the total amount of all property taxes levied in the county. The treasurer is required to collect all taxes listed in the tax warrant by § 39-5-129, C.R.S.

TAXPAYER'S RESPONSIBILITIES

The personal property owner has several statutory duties in the valuation and assessment of personal property. These range from the submission of the annual personal property declaration schedule, as required by § 39-5-108, C.R.S., to the final payment of the personal property taxes levied against the property as required by §§ 39-10-102 and 103, C.R.S. Taxpayers' statutory duties and requirements are referred to in the paragraphs below.

SUBMITTING THE PROPERTY DECLARATION SCHEDULE

The primary responsibility of the taxpayer is the submission of information regarding the taxpayer's property to the assessor. These responsibilities may be categorized into the following:

- Completion and submission of the declaration schedule
- Submission of additional information pertinent to the valuation of the property

The statutes describe filing requirements for both personal and real property taxpayers.

PERSONAL PROPERTY FILING REQUIREMENTS

Taxpayers owning more than \$2,500 in total actual value of personal property per county are required to complete and return the DS 056, Personal Property Declaration Schedule, to the assessor no later than April 15 of each year. The taxpayer must provide a list of all property owned or in the taxpayer's possession or under the taxpayer's control as of January 1. The property must be described in sufficient detail for the assessor to make a valuation as required by §§ 39-5-107, 108, 114, and 39-5-110(1), C.R.S.

Taxpayers may request an extension of ten or twenty days for filing the personal property declaration schedule. Any requests for extension must be made in writing by April 15. The fee for extension is two dollars per day for the number of days requested (\$20 or \$40), regardless of the number of schedules to be filed by the taxpayer as required by § 39-5-116, C.R.S.

Taxpayers may file a listing of leasehold improvements to real property owned by them rather than the lessor as permitted by § 39-5-102(1), C.R.S.

The Personal Property Declaration Schedule and any attachments to it are private, confidential documents as required by § 39-5-120, C.R.S.

FAILURE TO SUBMIT THE DS 056

When the taxpayer fails to return a declaration schedule required by statute by April 15, or if no request for extension was filed, or if the declaration is submitted after the last day of the extension period, the assessor shall impose a late filing penalty of 15 percent of the taxes due or \$50, whichever is less, pursuant to § 39-5-116, C.R.S.

The failure of the assessor to receive a declaration schedule required by statute does not invalidate an assessment based upon the "Best Information Available." Assessors may make valuations based upon the "Best Information Available" (BIA) as permitted by §§ 39-5-116 and 118, C.R.S. In Property Tax Administrator v. Production Geophysical et al., 860 P. 2d 514 (Colo. 1993), abatements for BIA values in excess of what should have been reported, had the taxpayer filed a declaration schedule, were disallowed.

However, if the following conditions are met, the taxpayer retains the right to file an abatement petition pursuant to § 39-10-114(1)(a)(I)(D), C.R.S.:

1. The taxpayer must have withdrawn from or failed to further pursue the available personal property protest and appeal remedies.
2. The assessor must have mailed a notice of determination concerning the protest.
3. The assessor must have performed an audit of the taxpayer's personal property that indicates an overvaluation of the property.

A complete discussion of BIA assessments is found in **Chapter 3, Valuation Procedures**.

FAILURE TO FULLY AND COMPLETELY DISCLOSE

A taxpayer who owns more than \$2,500 in total actual value of personal property per county fails to make full and complete disclosure if the taxpayer submits information on the declaration schedule that is false, erroneous, or misleading or fails to include all personal property owned by the taxpayer as described in § 39-5-116(2), C.R.S.

If any such taxpayer, to whom one or more declaration schedules have been mailed or upon whom the assessor has called and left one or more schedules, fails to complete and return a personal property declaration schedule to the assessor by the next April 15, the assessor shall impose a late filing penalty of fifty dollars or, if a lesser amount, fifteen (15) percent of the amount of tax due on the valuation for assessment determined for the personal property for which any delinquent schedule or schedules are required to be filed, as provided for in § 39-5-116(1), C.R.S.

If any taxpayer, to whom two successive declaration schedules have been mailed or upon whom the assessor has called and left one or more schedules, fails to make a full and complete disclosure of personal property, the assessor shall apply a late filing penalty as provided for in § 39-5-116(1), C.R.S., and upon discovery, determine the actual value of such undisclosed property on the basis of the "Best Information Available" (BIA).

When, after the BIA assessment has been determined, a complete rendition of such property is made and in the event that the BIA value omitted the actual value of certain personal property, the assessor may impose a penalty of not more than 25 percent of the omitted personal property's assessed value as provided for in § 39-5-116(2), C.R.S.

A penalty valuation can be applied only once, i.e. when it is discovered that the taxpayer failed to make a full and complete disclosure of specific omitted personal property. It is the assessor's responsibility to identify the omitted personal property and its assessed value in the event of a taxpayer appeal of the penalty valuation.

The assessor must notify the taxpayer of the failure to make full and complete disclosure and allow the taxpayer ten days from the date of notification to comply as required by § 39-5-116, C.R.S. Additionally, the percentage of omitted assessed value applied as a penalty should be documented as county policy and applied consistently throughout the county.

Further information on full and complete disclosure is found in **Chapter 3, Valuation Procedures**.

DECLARATION SCHEDULE INFORMATION

The Division recommends when taxpayers make a full and complete disclosure, especially for their first filing to the assessor, they submit a complete itemized list of all personal property owned by them, in their possession, or under their control on the assessment date. The information submitted by the taxpayer should include the following:

- Whether Property is New or Used (year of manufacture, if known)
- Year Acquired, and Cost Data
- Market and Income Data (if available)
- Apportionment Data
- Proration Data

Year Acquired and Cost Data

The year of acquisition and original installed cost are very helpful to the assessor in valuing personal property using the cost approach. The information for year acquired and original installed cost may be available from the taxpayer's financial records. Procedures for acquiring cost information required by the assessor from the taxpayer are found in **Chapter 2, Discovery, Listing, and Classification**.

Market and Income Data

Market Data:

The taxpayer may submit market information, or comparable sales information, if it is available. Under § 39-5-115(1), C.R.S., the assessor may request market information from the taxpayer. However, if the taxpayer does not regularly buy and sell property in the equipment marketplace, no market data may be forthcoming. The failure of the taxpayer to submit market information does not excuse the assessor from gathering market data where it does exist, nor from giving appropriate consideration to the market approach.

Refer to **Chapter 3, Valuation Procedures** for the procedures used by assessors to complete the market approach.

Income Data:

When the income stream attributable to the personal property can be determined, the taxpayer should submit income and expense information to the assessor. The largest subclass of personal property subject to valuation by the income approach is leased or rented equipment.

Section I of the DS 056 declaration schedule provides a place for taxpayers to file income information for leased equipment.

Under § 39-5-115, C.R.S., the assessor may request income and expense information from the taxpayer. However, if the taxpayer does not regularly rent or lease personal property, no income data may be forthcoming. Actual income data submitted by taxpayers is used by assessors to establish the economic rent of equipment. This economic rent may be applied to all similar equipment in order to determine value by the income approach. Refer to **Chapter 3, Valuation Procedures** for the procedures used by assessors to complete the income approach. The failure of the taxpayer to submit income and expense information does not excuse the assessor from gathering income data where it does exist, nor from giving appropriate consideration to the income approach.

Apportionment of Personal Property Valuation

Several situations require the apportionment, or division, of personal property value between two or more counties. The value of movable or portable equipment owned by a business that is typically used in more than one county during a year must be apportioned among those counties as required by § 39-5-113, C.R.S. This movable or portable personal property apportionment does not apply to special mobile machinery that is Class F personal property. Class F personal property is subject to specific ownership tax, in lieu of personal property taxes, as required by section 6 of article X of the Colorado Constitution.

Also, skid mounted oil and gas drilling rigs are subject to apportionment of their value according to their locations during the previous calendar year as required by § 39-5-113.5, C.R.S. This does not include self-propelled drilling rigs that are Class F personal property. No apportionments of personal property, other than those described below, are allowed. Specific procedures and examples for the apportionment of values are found in **Chapter 7, Special Issues**.

Movable or Portable Equipment:

Owners of movable or portable equipment, which in the ordinary course of business is likely to be located in more than one county during the current assessment year, must provide the assessor with the following information as required by § 39-5-113, C.R.S. This type of equipment does not include skid-mounted oil and gas drilling rigs.

1. Description of the equipment
2. Serial number of the equipment
3. Counties in which such equipment will be located during the year
4. Estimated number of days that the property will be located in each county

The specific procedures for the apportionment of movable equipment are found in **Chapter 7, Special Issues**.

Skid Mounted Oil and Gas Drilling Rigs:

Taxpayers owning skid mounted oil and gas drilling rigs, which operated in the state during the previous calendar year, must submit the following information to the assessor as required by § 39-5-113.3, C.R.S.:

- Descriptions of all such drilling rigs located in each county during the preceding calendar year
- Drilling logs for each rig, describing the locations in the state where the rig was used and the number of days that it was used at each location
- An inventory of the rig's equipment, sufficient to determine a value, must be submitted to the first county in the state in which the rig was located

The specific procedures for the apportionment of skid mounted oil and gas drilling rigs are found in **Chapter 7, Special Issues**.

The repeal of personal property prorations described below does not affect the apportionment of movable equipment as provided for in § 39-5-113, C.R.S.; the apportionment of skid mounted oil and gas drilling rigs as provided for in § 39-5-113.3; or the proration of Works of Art as provided for in § 39-5-113.5, C.R.S. Movable equipment can only be valued for the days it is traveling in or was located within Colorado. Skid mounted drilling rigs can only be valued for the days they were traveling in, were operating within, or were stacked within Colorado.

Proration of Personal Property Valuation

Proration means the proportional valuation of property for assessment purposes based upon the number of days that the property is taxable compared to the full calendar year. As of January 1, 1996, the only proration of personal property that is allowed under Colorado statutes is for Works of Art as defined in § 39-1-102(18), C.R.S., and as described in **Chapter 7, Special Issues**. If other taxable personal property was located in Colorado on the assessment date, it is taxable for the entire assessment year, providing that, if it was newly acquired, it was put into use as of the assessment date. If it was not put into use as of the assessment date, it cannot be taxed until the next assessment year.

Personal property is valued as of the assessment date and is valued for the entire year regardless of any destruction, conveyance, relocation, or change in taxable status, § 39-5-104.5, C.R.S. Personal property removed during the assessment year is taxable for the entire year, § 39-5-104.5, C.R.S. Whenever taxable personal property is brought into the state after the assessment date, the taxpayer must complete a personal property declaration and file it with the assessor if the total actual value of all of the taxable personal property owned by the taxpayer is over \$2,500 per county, § 39-5-110, C.R.S. The owner of any taxable personal property removed from the state is liable for the entire tax obligation, § 39-5-110(2), C.R.S.

Except for the proration of Works of Art and except for movable equipment and skid mounted oil and gas drilling rigs both of which are apportioned, personal property exempt on the assessment date retains its exempt status for the entire assessment year. These requirements do not affect the proration of real property.

If proration of personal property value is not specifically allowed by statute, no proration may be applied. Procedures and an example for the proration of Works of Art changing taxable status are found in **Chapter 7, Special Issues**.

Collection of Taxes on Property Moving Out of One County to Another

It is common practice for the treasurer to collect estimated taxes on personal property, for the entire year, if it is to be moved to another county within the state. This is due to the following reasons:

- There is no statutory provision to prorate or apportion the value of this property.
- There is no statutory provision to reassess this property on its arrival to the next county.
- The treasurer cannot be certain that once the property leaves the county it will remain in the state. Once personal property leaves the state, collection of taxes can be virtually impossible.

ADDITIONAL INFORMATION

The assessor may request additional information from the taxpayer at any time before or after April 15. The taxpayer must furnish the information requested by the assessor as required by § 39-5-115, C.R.S.

If any taxpayer refuses to furnish information to the assessor or refuses to be interviewed or answer questions asked by the assessor, the assessor may petition the district court to cite the taxpayer. The court may, at its discretion, require the taxpayer to furnish such information as requested by the assessor as controlled by § 39-5-119, C.R.S.

TAXPAYER APPEALS PROCEDURES

Owners of taxable personal property are given many opportunities to have their personal property valuations reviewed and appealed. The steps necessary for proper review and appeal are commonly referred to as "taxpayers' administrative remedies." These steps must be adhered to by both the assessor and taxpayer to ensure the taxpayer's statutory due process rights. It is the taxpayer's responsibility to initiate and pursue these administrative remedies. The assessor must make every attempt to inform the taxpayer of the methods used to value the personal property as required by § 39-5-121.5, C.R.S.

A complete discussion of the rights of the taxpayer and the steps of the administrative appeals procedure are found in **ARL Volume 2, ADMINISTRATIVE AND ASSESSMENT PROCEDURES MANUAL, Chapter 5, Taxpayer Administrative Remedies.**

The specific sequence of events and the statutory references for owners of personal property are found in the assessment calendar in **Addendum I-A, Personal Property Assessment Calendar.**

NOTICE OF VALUATION

The administrative remedies process starts with the mailing of the Notice of Valuation (NOV), which lists the previous year's total actual value, the current year's total actual value and the amount of such adjustment in value. The NOV's for personal property are mailed no later than June 15th.

Pursuant to section 20(8)(c) of article X of the Colorado Constitution, NOV's must be mailed by the assessor to each personal property owner every year. It is the taxpayer's responsibility to review the NOV and pursue the following administrative remedies if the taxpayer disagrees with the value assigned to the personal property by the assessor.

ASSESSOR HEARING

To receive a hearing before the assessor between June 15 and July 5, the owner or the owner's agent must file a protest with the assessor. The taxpayer may contact the assessor in person or in writing and request a review. All mailed protests are considered timely filed if they are postmarked by June 30, or the next business day if June 30 falls on a holiday or weekend. All protests made in person are timely filed if they are made no later than July 5, or the next business day if July 5 falls on a holiday or weekend, as controlled by § 39-5-121(1.5), C.R.S.

Whenever possible, the owner of the personal property must contact the assessor. If a representative or agent is used by the owner, a letter of authorization or other document that conveys agency authorization from the owner or the owner's authorized agent must be obtained.

Owners acquiring personal property after January 1 of the current assessment year have the right to file a protest of the value the assessor has assigned to the newly acquired personal property. In such cases, the assessor should schedule a physical inspection of the property as soon as possible and use the list of property obtained during the inspection to determine its correct actual value.

Any written protest or objection to valuation received during the protest period must be answered with a Notice of Determination. The assessor must respond in writing to any personal property protest no later than July 10. Justification for the assessor's decision must be included as required by § 39-5-122, C.R.S.

APPEAL OF COUNTY ASSESSOR'S DETERMINATION TO CBOE

If a taxpayer is not satisfied with the assessor's valuation determination and the taxpayer files an appeal to the County Board of Equalization (CBOE), either in a letter postmarked or by appearing in person no later than July 20, the right to an appeal before the CBOE is guaranteed. If July 20 falls on a holiday or weekend and the letter is postmarked or the taxpayer appears in person the next business day, an appeal before the CBOE also is guaranteed.

Beginning on July 1, the CBOE will sit to hear appeals from value determinations made by the assessor. The taxpayer must be notified of these hearings, must be given the opportunity to attend, and must be allowed to present witnesses and other evidence. The CBOE must conclude hearings and render value decisions on or before August 5th and must mail their determination within five business days of making their decision. The assessor or a representative of the assessor shall be present at hearings on appeal as required by § 39-8-104, 106 and 107, C.R.S.

APPEAL OF THE CBOE'S VALUATION DETERMINATION

Valuation determinations made by the CBOE may be appealed by the taxpayer in one of three ways.

Arbitration Process

The taxpayer may choose to use the binding arbitration procedure instead of appealing to the BAA or to the district court. No appeals from the decision of the arbitrator are permitted pursuant to §§ 39-8-108(4) and 108.5, C.R.S.

Specific arbitration procedures may be found in the **ARL Volume 2, ADMINISTRATIVE AND ASSESSMENT PROCEDURES MANUAL, Chapter 5, Taxpayer Administrative Remedies** or may be obtained from the county commissioner's office in each county.

Board of Assessment Appeals

When taxpayers disagree with the decision of the CBOE, they may file an appeal with the Board of Assessment Appeals (BAA). The hearing is a de novo hearing meaning that it is a new hearing based upon evidence submitted at the hearing. The CBOE and the taxpayer both present cases for the record before the BAA pursuant to § 39-8-108(1), C.R.S.

District Court

The taxpayer may appeal the decision of the CBOE to the district court of the county wherein the property is located. The hearing before the district court is a trial de novo and each party must present its case for the record as required by § 39-8-108(1), C.R.S.

Court of Appeals

If the petitioner has appealed to the Board of Assessment Appeals and the decision is against the petitioner he may, not later than 45 days after the decision, petition the court of appeals for judicial review.

If the petitioner has appealed to the district court and the decision is against the petitioner, the petitioner may seek review by the court of appeals upon filing for such review according to the Colorado appellate rules as controlled by §§ 39-8-108(3) and 24-4-106(9), C.R.S.

See September listings for county appeal rights in **Addendum I-A, Personal Property Assessment Calendar**.

ABATEMENT OR REFUND

Taxpayers who do not exercise the statutory rights listed above may petition for a change in valuation through the abatement or refund procedure. Abatements may be granted in cases of overvaluation as allowed by §§ 39-10-114(1)(a)(I)(A) and (D), C.R.S., but cannot be granted if the valuation was protested during the assessment year in question, or if the declaration was not filed pursuant to §§ 39-5-107 and 108, C.R.S. However, if the following conditions are met, the taxpayer retains the right to file an abatement petition pursuant to § 39-10-114(1)(a)(I)(D), C.R.S.:

1. The taxpayer must have withdrawn from or failed to further pursue the available personal property protest and appeal remedies, and
2. The assessor must have mailed a notice of determination concerning the protest, and
3. The assessor must have performed an audit of the taxpayer's personal property that indicates an overvaluation of the property.

REFUND OF INTEREST

With two exceptions, interest accrues from the date the taxes are paid pursuant to § 39-10-114(1)(b), C.R.S.

1. Refund interest is not included in a refund of prior years' taxes in cases involving an error made by a taxpayer in completing personal property schedules pursuant to article 5 of title 39, C.R.S.
2. Regarding refunds involving errors or omissions made by a taxpayer in completing statements pursuant to article 7 of title 39, C.R.S., interest accrues from the date a complete abatement petition is filed if the county pays the refund within the timeframe described in § 39-10-114(1)(a)(I)(B), C.R.S., which could be as long as the payment of property taxes for the year the final determination is made. For example, the taxes for property tax year 2003 are due in 2004. The refund on a petition on which the decision to approve occurs in 2003 could be paid in 2004 after consultation with the affected taxing entities.

Abatement, cancellation of taxes.

(1)(b) Any taxes illegally or erroneously levied and collected, and delinquent interest thereon, shall be refunded pursuant to this section, together with refund interest at the same rate as that provided for delinquent interest set forth in section 39-10-104.5; except that refund interest shall not be paid if the taxes were erroneously levied and collected as a result of an error made by the taxpayer in completing personal property schedules pursuant to the provision of Article 5 of this title. Said refund interest shall accrue only from the date payment of taxes and delinquent interest thereon was received by the treasurer from the taxpayer; except that refund interest shall accrue from the date a complete abatement petition is filed if the taxes were erroneously levied and collected as a result of an error or omission made by the taxpayer in completing the statements required pursuant to the provisions of article 7 of this title and the county pays the abatement or refund within the time frame set forth in sub-subparagraph (B) of subparagraph (I) of paragraph (a) of this subsection (1). Refund interest on abatements or refunds made pursuant to the sub-subparagraph (F) of subparagraph (I) of paragraph (a) of this subsection (1) shall only accrue on taxes paid for the two latest years of illegal or erroneous assessment. (emphasis added)

§ 39-10-114, C.R.S.

A discussion of the abatement procedure is found in **ARL Volume 2, ADMINISTRATIVE AND ASSESSMENT PROCEDURES MANUAL, Chapter 5, Taxpayer Administrative Remedies.**

COLORADO STATE TAX REFUND FOR BUSINESSES PROGRAM

(Based on Personal Property Tax Timely Paid)

In 2000, the Colorado Legislature enacted House Bill 00-1145 to refund excess tax revenues to qualified personal property taxpayers. In 2001, the Colorado Legislature passed House Bill 01-1287, which amended the original 2000 legislation. Based on the legislation any taxpayer that paid business personal property tax qualifies for a tax refund. However, the refund is only issued during years in which the State Controller certifies that state revenues exceed the fiscal limitations imposed by TABOR by one hundred seventy million dollars or more.

Section 39-22-124(4.5), C.R.S., states:

Tax credit against state taxes

(4.5) The amount of the credit against state taxes to be refunded under this section during any state fiscal year commencing on or after July 1, 2001, for each qualified taxpayer shall be an amount equal to:

(a) Sixteen percent of the aggregate amount of personal property tax paid by the qualified taxpayer to all taxing jurisdictions in the state fiscal year immediately preceding the state fiscal year in which the credit is refunded; plus

(b) Except as otherwise provided in subparagraph (III) of paragraph (b) of subsection (5) of this section, the lesser of eighty-four percent of the aggregate amount of personal property tax paid by the qualified taxpayer to all taxing jurisdictions in the immediately preceding state fiscal year or five hundred eighty-eight dollars.

§ 39-22-124, C.R.S.

The maximum refund will be automatically sent out by the Colorado Department of Revenue by November 30 provided that the taxpayers have included their Federal Employer's Identification Number (FEIN) or Social Security Number (SSN) on the personal property declaration schedule filed with the county assessor. If taxpayers have not provided the county assessor with their FEIN or SSN but they have timely paid their personal property taxes, they will automatically receive the minimum refund of 16 percent of personal property taxes paid.

For taxpayers providing their FEIN or SSN on the declaration schedule filed with the county assessor, the amount of the rebate will be calculated as follows:

100 percent of the first \$700 paid by the personal property taxpayer, plus
16 percent of the amount remaining above \$700.

If the taxpayer has paid less than \$700 in taxes, a refund for the entire amount paid will be issued.

There are specific requirements that must be met to receive the refund. There are also appeal procedures enacted by HB01-1287 for taxpayers that believe the amount they were refunded was incorrect. Please access the Department of Revenue website at www.taxcolorado.com or call (303) 238-7378 for additional information.

Since the business personal property tax refund was allowed based on excess revenues and "Referendum C" (passed in November of 2005) has allowed the state to retain those excess revenues for other designated purposes, there will not be a business personal property tax based refund for the fiscal years ending June 30, 2006 through 2010. For additional information go to the following website: www.dola.colorado.gov/dpt and click on DPT News and then on the "Business Personal Property Tax Refund."

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ADDENDUM I-A, PERSONAL PROPERTY ASSESSMENT CALENDAR

<u>DATE</u>	<u>ACTIVITY</u>	<u>COLORADO REVISED STATUTE</u>
JANUARY		
<u>January 1</u> , Noon	Assessment date for all taxable property.	§ 39-1-105
<u>January 1</u> , Noon	Lien of general taxes for current year attaches.	§ 39-1-107
<u>January 1</u>	Property taxes for the prior year become due and payable. Optional payment dates are: April 30, full payment; the last day in February and June 15, half-payments	§ 39-10-102(1)(b)(I) § 39-10-104.5
As soon after <u>January 1</u> as practicable	Assessor mails or delivers two personal property schedules.	§ 39-5-108
Not later than <u>January 10</u>	Assessor delivers tax warrant to treasurer.	§ 39-5-129
APRIL		
Prior or subsequent to <u>April 15</u>	Assessor may require additional information from owners of taxable property.	§ 39-5-115
Not later than <u>April 15</u>	Taxpayers return personal property schedules to assessor, including works of art display statement.	§ 39-5-108 § 39-5-113.5(1)
Not later than <u>April 15</u>	Taxpayers may request extension of 10 or 20 days for filing personal property schedule.	§ 39-5-116(1)
Not later than <u>April 15</u>	Owners and operators of producing mines file statement with the assessor.	§ 39-6-106
Not later than <u>April 15</u>	Owners and operators of oil and gas leaseholds file statement with assessor.	§ 39-7-101
Subsequent to <u>April 15</u>	Assessor determines personal property values from best information available and imposes a penalty for taxpayers failing to file.	§ 39-5-116

<u>DATE</u>	<u>ACTIVITY</u>	<u>COLORADO REVISED STATUTE</u>
MAY		
On or before <u>May 1</u>	Assessor gives public notice of hearings on real and personal property.	§ 39-5-122(1)
JUNE		
Not later than <u>June 15</u>	Assessor sends notice of valuation, together with a protest form, for personal property, drilling rig valuations, and valuation of producing and nonproducing mines and oil and gas leaseholds and lands to taxpayer.	Article X, Section 20, Colorado Constitution § 39-5-121(1.5) § 39-6-111.5 § 39-5-113.3(2) § 39-7-102.5
Beginning on <u>June 15</u>	Assessor sits to hear all objections concerning personal property and valuation of producing and nonproducing mines and oil and gas leaseholds and lands valuation	§ 39-5-122(1) § 39-6-111.5 § 39-7-102.5
Not later than <u>June 30</u>	Taxpayer mails notice of personal property protest and protests of the valuation of producing and nonproducing mines and oil and gas leaseholds and lands to assessor. (Postmarked no later than June 30)	§ 39-5-121(1.5) § 39-6-111.5 § 39-7-102.5 §39-5-122
JULY		
Prior to <u>July 1</u>	County board of equalization publishes notice of sitting to review assessment roll and hear appeals on real and personal property valuations.	§ 39-8-104
Beginning on <u>July 1</u>	County board of equalization sits to hear appeals on real and personal property valuations.	§ 39-8-104
By <u>July 5</u>	Assessor concludes personal property hearings.	§ 39-5-122(4)
Not later than <u>July 5</u>	Taxpayer notifies assessor in person of personal property protest.	§ 39-5-121(1.5) §39-5-122
On or before <u>July 10</u>	Assessor mails two copies of the notice of determination of protests for valuation of personal property, producing and nonproducing mines, and oil and gas leaseholds and lands to taxpayer.	§ 39-5-122(2) § 39-5-113.3(2) § 39-6-111.5 § 39-7-102.5

<u>DATE</u>	<u>ACTIVITY</u>	<u>COLORADO REVISED STATUTE</u>
<u>July 15</u>	Assessor reports to county board of equalization the assessed value of all taxable personal property in the county, movable equipment that was apportioned with other counties, a list of all people who failed to file a declaration schedule and the action in each case, and a list of all personal property protests and the action in each case.	§ 39-8-105(2)
On or before <u>July 20 of that year</u>	Taxpayer mails one copy of assessor's determination of the protest of personal property, producing and nonproducing mines, and oil and gas leaseholds and lands valuation to county board of equalization. Protests bearing postmarks on or before this date constitute proper filing.	§ 39-8-106(1)(a) § 39-6-111.5 § 39-7-102.5
AUGUST		
Not later than <u>August 5 of that year</u>	County board of equalization concludes hearings and renders decisions on real and personal property appeals.	§ 39-8-107(2)
<u>Within five business days of rendering decision</u>	County board of equalization mails decisions on real and personal property appeals.	§ 39-8-107(2)
Not later than <u>30 days</u> after decision of county board of equalization is mailed	Appeals from county board of equalization decisions must be filed with Board of Assessment Appeals, district court, or the county commissioners for a binding arbitration hearing.	§ 39-8-108(1)
Not later than <u>August 25</u>	Assessor transmits abstract to Administrator. Assessor reports assessed value in the county, each municipality, and each school district by class and subclass on form prescribed by the Administrator. Assessor also reports the assessed value of new construction, destroyed property, and net change in volume of minerals and oil and gas production. (For counties that elect to use the alternate appeals procedure, the deadline is November 21.)	§ 39-2-115(1)(a) § 39-5-123

<u>DATE</u>	<u>ACTIVITY</u>	<u>COLORADO REVISED STATUTE</u>
Not later than <u>August 25</u>	Assessor notifies each taxing entity, the Division of Local Government, and the Department of Education of the total assessed value of real and personal property within the entity, and the exceptions to the 5.5 percent property tax revenue limitation. (See 39-5-121(2)(a), C.R.S., for specifics.)	§ 39-5-121(2)(a) § 39-5-128(1)
SEPTEMBER		
Not later than <u>September 1</u>	Treasurer provides the assessor the required data for all qualified taxpayers who were required to report personal property, including state assessed companies. (This information is required <u>only</u> if state revenues are in excess of the fiscal limitations imposed by TABOR by \$170 million or more.)	§ 39-22124(5)(b)(II)(A)
<u>September 15</u>	Final report of the annual valuation for assessment study is submitted to the General Assembly and the State Board of Equalization.	§ 39-1-104(16)(a)
Not later than <u>45 days</u> after decision of Board of Assess- ment Appeals	Taxpayer appeals to court of appeals.	§ 39-8-108(2) § 24-4-106(11)
Not later than <u>45 days</u> after decision of Board of Assess- ment Appeals	County appeals to court of appeals. (if BAA recommends that its decision is a matter of statewide concern or has resulted in a significant decrease in the assessed valuation of the county)	§ 39-8-108(2) § 24-4-106(11)
Not later than <u>30 days</u> after decision of Board of Assess- ment Appeals	County appeals to court of appeals. (if judicial review is sought for alleged procedural errors or errors of law)	§ 39-8-108(2)
Not later than <u>30 days</u> after decision of Board of Assess- ment Appeals	County appeals to court of appeals. (if BAA makes no recommendation on statewide concern or there is no significant valuation decrease as a result of the BAA decision)	§ 39-8-108(2)

<u>DATE</u>	<u>ACTIVITY</u>	<u>COLORADO REVISED STATUTE</u>
Not later than <u>30 days</u> after final decision of Property Tax Administrator	Appeals from orders and decisions of the Administrator must be filed with Board of Assessment Appeals.	§ 39-2-125(1)(b)(I)
OCTOBER		
Not later than October 1	Assessor provides the Department of Revenue the required data for all qualified taxpayers who were required to report personal property, including state assessed companies. The assessor is not required to provide this data if the treasurer furnishes the data directly to the Department of Revenue. (This information is required <u>only</u> if state revenues are in excess of the fiscal limitations imposed by TABOR by \$170 million or more.)	§ 39-22-124(5)(b)(I)(A)
NOVEMBER		
Not later than November 21	Assessor transmits abstract to Administrator. Assessor reports assessed value in the county, each municipality, and each school district by class and subclass on form prescribed by the Administrator. Assessor also reports the assessed value of new construction, destroyed property, and net change in volume of minerals and oil and gas production. (For counties that elect to use the alternate appeals procedure.)	§ 39-5-123
DECEMBER		
Prior to <u>December 10</u>	Assessor transmits a single notification to board of county commissioners, other taxing entities, Division of Local Government and the Department of Education if value changes were made after August 25 certification of values.	§ 39-1-111(5)

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CHAPTER 2

DISCOVERY, LISTING, AND CLASSIFICATION

Three administrative steps must be taken by the assessor prior to determining the value of personal property. These steps are discovery of previously unlisted personal property, creation of an accurate listing of taxable personal property, and proper classification of the property. The assessor must ensure that effective office procedures exist to complete these steps, so that all taxable property will be properly assessed for property tax purposes.

DISCOVERY AND LISTING OF PERSONAL PROPERTY

One of the most difficult jobs for a county assessor is the discovery of personal property. However, good discovery practices will yield positive results in accurate property records and assessments.

OVERVIEW

Personal property discovery must be an ongoing task because personal property is movable and may leave the county faster than the assessor can discover it. A thorough program of discovery must be created and maintained to ensure accurate property listings. Inaccurate property listings mean that certain personal property owners may escape paying their property taxes which results in a heavier tax burden on the taxpayers who do pay.

The personal property listing process begins by setting up account records in the assessor's office for businesses owning taxable personal property. A check should be made against existing office records to determine if a new business is filing under another name and/or at another location. An assessor's staff member should call or visit the property owner to gather any necessary information for this listing process.

DECLARATION SCHEDULE

A primary source of personal property discovery is the annual declaration schedule. After the names of the businesses or owners have been recorded in the personal property account records, two declaration schedules are mailed.

It is especially important that owners of personal property located in the county on the January 1 assessment date receive the declaration schedules as soon after January 1 as possible. As noted in **Chapter 1, Applicable Property Tax Laws**, each person who owns more than \$2,500 in total actual value of personal property per county on the assessment date must file a declaration schedule no later than April 15. This allows the mailing of a Notice of Valuation to these taxpayers by June 15.

However, a Special Notice of Valuation can be mailed at any time during the year. In this way the assessor preserves the rights of the taxpayer in the appeals process and presents a complete assessment roll to the County Board of Equalization in July.

In cases where property was in the county on the assessment date, but discovered after April 15, the assessor must still assess the property pursuant to §§ 39-5-110(1) and 125, C.R.S. It is Division policy that, in these cases, the taxpayer must be notified of the value via the Special Notice of Valuation and a thirty-day period must be given to the taxpayer to protest any personal property valuation made after June 15.

In addition to being a major discovery tool available to the assessor, the declaration schedule is the primary method used by the taxpayer to provide an original listing of personal property to the assessor. The taxpayer who owns more than \$2,500 in total actual value of personal property per county must report all personal property owned by, in the possession of, or under the control of the taxpayer on January 1 to the assessor.

Property that is fully depreciated, but still is used in the business must be declared and listed as owned by the taxpayer. Property acquired prior to the January 1 assessment date, but not put into use until after January 1, should be declared for the following assessment year. For a complete discussion of "Assets in Storage" that have been stored after their use, refer to **Chapter 7, Special Issues**. Property leased from others and used in the business must be declared and the name and address of the lessor noted in the leased equipment area on the declaration schedule.

The taxpayer must completely describe all listed personal property so that the assessor can correctly classify and value it. The importance of accurate, detailed property descriptions cannot be overstated. The assessor cannot properly consider the cost, market, or income approaches to appraisal unless a very clear description has been obtained. General property descriptions such as "equipment" or "furniture and fixtures" are not acceptable because they do not sufficiently describe the property.

Information contained on the declaration schedules is often transferred directly to the appraisal records for analysis. The declaration schedule then becomes a part of the taxpayer's permanent account valuation file.

RECORDED DOCUMENTS AND OTHER DISCOVERY SOURCES

Publicly recorded documents, such as real estate deeds, may also be useful in discovering personal property. Any evidence, such as notations on the TD-1000 real property transfer declaration or sales/use tax records from the Department of Revenue, which may be submitted to the clerk and recorder as proof of personal property that is included in a real property sale, can be used in the discovery process pursuant to §§ 39-13-102(5)(a) and 39-14-102, C.R.S.

Leases and bills of sale are useful in helping the assessor to discover personal property. These documents often will list specific pieces of property leased or sold from which the assessor can make an assessment even if the taxpayer does not file a declaration schedule. Leases may be recorded in the county clerk's office.

There are several other sources of information for the assessor to use in the discovery of personal property:

Federal Government Records

Bankruptcy filings
Lease records

State Government Records

Business licenses (sales/use tax)
Corporation filings
Trade name affidavits
State lease records

Local Government Records

Business licenses (city or county)
Permits (sign or building)
Lease records
Recorded real property conveyance documents for new owner/operators

Business Records and Publications

Business (City) or personal directories
Telephone directories
Trade journals
Utility hookups or disconnects

Media Sources

Newspaper articles and advertising
Radio and TV commercials
Real estate newsletters

Other

Location inspections, taxpayer visits, area canvasses
Voluntary filings by property owners

A complete discovery program uses all of these tools to find personal property that has not as yet been listed on the assessment roll. Most counties have an annual cycle in which one or more of these sources are reviewed, at different times of the year, to monitor any changes in the number of businesses or the locations of personal property.

OBTAINING DEPRECIATION INFORMATION

There is a provision in Colorado Revised Statutes that allows county assessors to obtain Colorado income tax returns for business taxpayers, including depreciation information, from the Colorado Department of Revenue (DOR).

Reports and returns.

(7) Notwithstanding the provisions of this section, the executive director of the department of revenue shall supply any county assessor of the state of Colorado or his representative with information relating to ad valorem tax assessments or valuation of property within his county and, in his discretion, may permit the commissioner of internal revenue of the United States, or the proper official of any state imposing a similar tax, or the authorized representative of either to inspect the reports and returns of taxes covered by this article.

(10) Notwithstanding the provisions of this section, the executive director of the department of revenue shall supply any county assessor of the state of Colorado or his representative with information obtained through audit of reports and returns covered by this article dealing with such taxpayers' ability to pay or to properly accrue any ad valorem tax collected by such county assessor.

§ 39-21-113, C.R.S.

Discussions with DOR representatives indicated the following procedures should be used by assessors in obtaining DOR tax return information.

1. Prepare a cover letter, on county letterhead, requesting under authority of §§ 39-21-113 (7) and (10), C.R.S., taxpayer income tax returns for the tax years under review by your office. Make sure that you include sufficient information about the tax years, taxpayer's name, trade name, location, etc., so that the DOR can locate the appropriate records.
2. Attach a DR 5714 (09/01) Request For Copy form completed by you to the best of your ability. Copies of this form can be directly obtained from the DOR website at www.taxcolorado.com.
3. Mail both the letter and the completed form to:
 Colorado Department of Revenue
 1375 Sherman Street
 Denver, Colorado 80261
 Copying cost: 1 – 20 Free, each additional page is \$.75.
 (303) 238-7378

NOTE: Please note that any tax return information you obtain from DOR must remain confidential in the same manner as the personal property declaration schedule and accompanying exhibits, pursuant to § 39-21-113(4), C.R.S.

OBTAINING NEW SALES TAX ACCOUNT LISTINGS

DOR makes available to the counties sales tax records of their vendors. Counties that impose a sales tax have access to this information through the DOR website “Local Government Sales Tax Information System.” This is a secured site and you will need to contact the county finance office to request any sales tax information.

For those counties that do not impose a sales tax, the DOR provides a monthly report of new sales tax accounts within their counties.

Information from the reports is considered confidential by DOR. The designated county officer must sign a Memorandum of Understanding On Confidential Data form developed by the DOR pledging to keep the data confidential except for county purposes. According to DOR representatives, this report cannot be shown to the general public or posted for public inspection.

This report appears to be a good preliminary discovery source of new businesses that are operating or plan to operate within the county. The county assessor should first attempt to find out which county official is receiving this report. If unsure, you can contact the Local Government Support Unit at localgovsupport@spike.dor.state.co.us. You can also access information from the DOR website at www.taxcolorado.com.

NOTE: Remember, any sales tax information you obtain from the DOR must remain confidential in the same manner as the personal property declaration schedule and accompanying exhibits, pursuant to § 39-21-113(4), C.R.S.

Review of Property Account Files and Records

All property declaration schedules, supporting data, and correspondence contained in the taxpayer's files should be carefully reviewed before the initial telephone call. Also, any previous performance analysis contained in the file should be reviewed. These reviews allow the assessor to become familiar with the business so that records relevant to past problems can initially be requested and so that appropriate questions regarding these records may be asked during the interview.

PHYSICAL INSPECTION

The physical inspection of property is another widely used tool in discovering and listing personal property. Physical inspection is fully discussed in **Chapter 5, Appraisal Performance Analysis**.

ASSESSOR RESPONSIBILITIES

The assessor has several responsibilities relative to the listing of personal property. The responsibilities are as follows:

- To provide declaration forms to taxpayers
- To use approved manuals, procedures, forms, and related data
- To maintain accurate records

PROVIDE DECLARATION FORMS

The assessor must provide two copies of the declaration schedule form to each taxpayer believed to own more than \$2,500 in total actual value of personal property per county. As described in the “**Discovery**” portion of this chapter, assessors attempt to discover all owners of personal property in the county so that the declaration schedules may be delivered. Taxpayers must still obtain and file a declaration schedule even if the assessor fails to send the schedules as required by §§ 39-5-107 and 108, C.R.S.

If desired, assessors have the option to mail out a declaration schedule to all personal property taxpayers. However, only when the total actual value of the personal property exceeds \$2,500 per county is the taxpayer required to return the completed declaration. A late filing or failure to fully disclose penalty cannot be applied unless the total actual value exceeds \$2,500 per county.

All county assessors will need to develop selection criteria for existing personal property accounts that in total will fall below the \$2,500 actual value threshold. Some suggestions for this criteria are:

1. Review of the last three years' (or five years') assessment roll to select those accounts that have consistently been below the \$2,500 threshold.
2. Review of selected accounts by business type:
 - a. Residential rental units (1-3 units)
 - b. Cottage industries and in-home businesses located in residences
 - c. Employees and contractors that work for a business but also file a separate declaration schedule for personal property they own and use in the business, e.g. computers, hand tools, personal furnishings, etc.
 - d. Other business types that generally have less than \$2,500 total actual value of personal property per county.
3. Discussion with other assessors in your district.

USE APPROVED DATA

The assessor has the responsibility to use the approved manuals, procedures, and forms developed by the Division of Property Taxation as required by §§ 39-2-109(1)(d) & (e), C.R.S. Assessors must also consider any other pertinent data provided by the taxpayer to establish the total actual value of personal property as provided for in § 39-5-107, C.R.S.

Approved Manuals

The **ARL Volume 5, PERSONAL PROPERTY MANUAL**, is the approved manual to be used in the valuation of personal property. The manual contains all recommendations and procedures published by the Division of Property Taxation, as approved by the State Board of Equalization (SBOE), concerning the valuation of personal property.

Forms

Pursuant to § 39-2-109(1)(d), C.R.S., the Property Tax Administrator is required to approve the form and size of all personal property declaration schedules, forms, and notices furnished or sent by the assessor to owners of taxable property. Exclusive use of approved schedules, forms, and notices are required. This standardizes the information that is being requested statewide and provides for equal treatment of all taxpayers.

NOTE: County assessors may create customized or computerized county Personal Property Declaration Schedules and taxpayer notification forms if they have these forms approved by the Property Tax Administrator prior to their use.

Appraisal Records

Appraisal records are used by assessors for listing information from the declaration schedule submitted by the taxpayer and to determine the actual and assessed values of personal property.

The personal property appraisal record is a one-year value calculation worksheet for developing cost approach estimates for all machinery, equipment, and furnishings. The appraisal record provides for the determination of current replacement cost new less depreciation (RCNLD) and for adjusting the current value to the correct level of value. Computerized output documents may be used in lieu of the following manual form. The specific manual appraisal record used to list and maintain personal property cost information is as follows:

<u>Form No.</u>	<u>Description</u>
AR 290	Property Appraisal Record - 1 year form (Personal)

Additional documentation is required for application of the market and income approaches and reconciliation to a final value estimate. All appraisal records and appraisal documents should be initialed and dated by the assessor, the appraiser, or the data entry operator as appropriate and maintained as a part of the personal property valuation files.

Personal property may be valued using the AR 290 personal property appraisal record. Real property should be valued, and any related assessment records maintained, on appropriate real property appraisal records. Real and personal cross-reference indexes or files should be kept for related real and personal property. The index or file data should be reviewed annually to eliminate the possibility of duplicate or omitted assessments of property.

Notices of Valuation

The assessor must notify the taxpayers on approved Notices of Valuation (NOVs). The specific requirements and form standards for the NOV are found in **ARL Volume 2, ADMINISTRATIVE AND ASSESSMENT PROCEDURES MANUAL, Chapter 9, Form Standards**.

MAINTAIN ACCURATE RECORDS

Accurate property appraisal files must be maintained for each personal property taxpayer. These files, and their associated records, serve as the permanent documentation for any assessments made by the assessor. The files are the repository of all information gathered by the assessor regarding the taxpayer and the taxpayer's property.

Files should include all declaration schedules and documents submitted by an individual taxpayer or business, along with appraisal records, worksheets, copies of Notices of Valuation, all correspondence, and any other data pertaining to that specific taxpayer or business.

Account Identification System

To provide overall control of the ownership files and records, a permanent unique personal property account identification number should be assigned to each personal property account.

The recommended unique account identification number consists of business activity code, ownership number, and physical location number.

Business Activity Code (5 digits):

The first digit corresponds with the general property class.

- 1 = residential
- 2 = commercial
- 3 = industrial
- 4 = agricultural
- 5 = open
- 6 = natural resources
- 7 = open
- 8 = state assessed
- 9 = exempt

The next four digits correspond with the Standard Industrial Classification Manual published by the Office of Statistical Standards of the Federal government for each type of business or industry.

As an example, 7359 is the standard industrial code for an equipment leasing business. Thus 27359 indicates a commercial equipment leasing business. Refer to the Standard Industrial Classification Manual that is available from any U.S. Government Printing Office. It is also available online at: www.osha.gov/pls/imis/sicsearch.html.

Ownership Number (5 digits):

The assignment of a five-digit owner number provides for 99999 possible individual owners of personal property for each specific type of business or industry within the county. The ownership number is assigned by the assessor.

Physical Location Number (3 digits):

The assignment of a three-digit physical location number provides for 999 possible locations within the county for one owner.

An example account identification number 2-7394-00250-001 is shown below:

<u>Account Identification Number</u>			
Business	Activity	Ownership	Location
2	7359	00250	001
commercial	equipment leasing	owner number	number of business physical location

Account identification numbers provide for control of the personal property accounts. It also allows the assessor to keep records for similar types of businesses together for easy reference and comparison, on a business-by-business basis, when needed.

The ownership control numbers should be used on all records pertaining to a given taxpayer. Listed below are various records, which may be cross-referenced when using the ownership control numbers.

- Alpha listing
- Numerical listing
- Cadastral cards
- Property declaration schedule.s
- File jackets
- Appraisal records
- Master property record cards
- Notice of Valuation
- Location listing
- Correspondence
- Out of state owner listing
- Tax warrant
- Tax bills

Archives Requirements

Personal property listings and valuation records are kept for six years, plus the current year, after which they may be destroyed with the permission of the State Archivist. Refer to **ARL Volume 2, ADMINISTRATIVE AND ASSESSMENT PROCEDURES MANUAL, Chapter 1, Overview of Assessor's Duties and Relationships**, for specific archive retention procedures.

Confidentiality

Confidential information includes detailed listings of personal property reported by a prior owner, whether or not values are included with the listing. According to § 39-1-102(9), C.R.S., "Person" means natural persons, corporations, partnerships, limited liability companies, associations, and other legal entities which are or may become taxpayers by reason of ownership of taxable real or personal property." Pursuant to § 39-5-120, C.R.S., the personal property declaration schedule and attachments are confidential documents and only the following persons have a legal right to view them.

1. The county assessor or members of the assessor's staff
 - a. The assessor and staff have access to the personal property declaration schedule only as it pertains to the conduct of their official duties. Assessors may restrict which staff members may see or use the schedules.
2. The county treasurer or members of the treasurer's staff
 - a. The treasurer and staff have access to the personal property declaration schedule only as it pertains to the collection of taxes due from the property listed in the schedule. The treasurer may restrict access to only those employees directly involved in the taxation of personal property.

3. The annual assessment study contractor, hired pursuant to § 39-1-104(16), C.R.S., and employees of the contractor
 - a. The annual assessment study contractor may view the declaration schedule only as part of the fulfillment of the annual study contract. The results of any such study are reported to the Legislative Council and the State Board of Equalization. No information from personal property declaration schedules may be used by the annual study contractor for purposes outside the scope of the contract.
4. The executive director of the Colorado Department of Revenue and staff members of the Department of Revenue
 - a. The staff of the Colorado Department of Revenue may view the personal property records as part of their official duties. This does not include agents of the Federal Internal Revenue Service.
5. The Property Tax Administrator and Division of Property Taxation staff
 - a. Division of Property Taxation staff may view the personal property records if it is part of their official duties.
6. The county board of equalization (CBOE) and the Board of Assessment Appeals (BAA) when pertinent to a hearing or protest review
 - a. The CBOE or the BAA may see the personal property records as part of an administrative appeal only. In addition, members of these boards may only have access to these records when the appeal is properly before them for hearing. Only county commissioners or their designees may see personal property declarations when they sit as the County Board of Equalization.
 - b. The arbitrator, as defined in § 39-8-108.5, C.R.S., may subpoena the personal property records when they are involved in an arbitration proceeding.
7. The person whose property is listed on the schedule
 - a. The owners of the personal property may see their own schedule. This includes the authorized agent of the owner. Assessors should require written authorization from the owners of the personal property before releasing the information to a third party.
 - b. Taxpayers who purchased personal property or businesses during the current year are not allowed to see the personal property declaration schedule of a previous owner without the consent of that owner. This may include a waiver in the sale contract that sets forth the rights of the new owner to access all information previously filed. If the waiver was not part of the contract, the assessor should require separate written authorization prior to release of any confidential information.
 - c. If the new owner disagrees with the value established by the assessor, a physical inspection of the property should be scheduled as soon as possible. The total value determined from the physical inspection should be compared to the property's current total value to ascertain if an adjustment is warranted.
8. Personal property records ordered opened by the district court

Anyone listed above who uses the personal property schedules as part of official duties is also subject to the confidentiality provisions and may be held accountable for divulging the information on the schedule.

The statutory penalties for divulging confidential information include a fine of not less than \$100 nor more than \$500, or a prison term of up to 3 months, or both as provided for in § 39-1-116, C.R.S.

26 U.S.C. s 7602 of the Internal Revenue Code (IRC) gives representatives from the Internal Revenue Service (IRS) the authority to examine and/or summon certain information (including confidential declaration schedule information) that the Secretary may deem as proper, related to ascertaining the correctness of any return for Federal taxation purposes. Any person that is served with an IRS summons to produce confidential records and information must timely comply or be faced with penalties as noted in Section 7604 of the IRC. Section 7609 of the IRC relieves any person from liability who makes such disclosure in reliance on a summons.

The natural resources property declaration schedules and appraisal records are used for both real and personal property data. Since confidential real and personal property information is contained on both the front and back of these declaration schedules, requests for non-confidential information should be directed to other public agencies which have access to this information and have the means of disclosing it to the public.

These agencies include, but are not limited to, the Colorado Oil and Gas Conservation Commission, Colorado Division of Minerals and Geology, and the Federal Bureau of Land Management.

TAXPAYER RESPONSIBILITIES – DECLARATION SCHEDULES

All owners of taxable personal property are to complete and file a personal property declaration schedule no later than April 15 each year as required by § 39-5-108, C.R.S. The taxpayer must make a full and complete disclosure of all personal property owned by, under the control of, or in the possession of the taxpayer on the schedule, including any costs incurred for acquisition, sales/use tax, installation, and freight to the point of use of the personal property as required by § 39-1-103(13)(b), C.R.S. The taxpayer must also submit any other information requested by the assessor so that the assessor may place a value on the property as required by § 39-5-115(1), C.R.S.

Declaration schedules have been developed by the Division of Property Taxation for use by the county assessors as required by § 39-2-109(1)(d), C.R.S. Assessors must provide these forms to the taxpayers for submission of their personal property data as required by § 39-5-107, C.R.S.

The primary form used by commercial business taxpayers is the Personal Property Declaration Schedule - DS 056. Other forms have been developed for residential rental taxpayers, lessors of personal property, and natural resource operations. A list of forms may be found in the assessor's archives retention schedule located in **ARL Volume 2, ADMINISTRATIVE AND ASSESSMENT PROCEDURES, Chapter 1, Overview of Assessor's Duties and Relationships.**

EXEMPTION OF CONSUMABLE PERSONAL PROPERTY

In 2000, the Colorado Legislature amended § 39-3-119, C.R.S., to require the Division of Property Taxation to "...publish in the manuals, appraisal procedures, and instructions prepared and published pursuant to section 39-2-109(1)(e) a definition or description of the types of personal property that are 'held for consumption by any business' and therefore exempt from the levy and collection of property tax pursuant to this section." Refer to **Chapter 7, Special Issues**, for "consumable" personal property exemption criteria and examples.

Taxpayers are strongly encouraged to file a complete itemized listing of all property that they own, lease, rent, or possess including property that they consider as "consumable" personal property in their first listing of assets with the county assessor. Without an itemized listing of consumable property, assessors will not be able to make an appropriate adjustment to the taxpayer's property listing to accommodate the "consumable" property exemption.

\$2,500 OR LESS PER COUNTY EXEMPTION

Exemption of personal property equal to or less than \$2,500 in total actual value is provided for in § 39-3-119.5, C.R.S. An exemption is allowed and should only be applied if the total actual value of taxpayer's personal property per county is equal to or less than \$2,500. The statute does not exempt the first \$2,500 of each personal property taxpayer's schedule.

On September 10, 2001, in Huddleston and TCI v. Board of Equalization of Montezuma County, 31 P. 3d 155 (Colo. 2001), the Colorado Supreme Court affirmed four separate Colorado Court of Appeals' judgments that had reversed the decisions of the State Board of Assessment Appeals (BAA). Principally, at issue was whether the Property Tax Administrator's interpretation that § 39-3-119.5, C.R.S., should be applied on a *per business location* basis by the assessors of this state is consistent with section 20(8)(b) of article X of the Colorado Constitution, which provides for the exemption of personal property. This ruling changed the previous Division policy that held that this exemption should be applied on a "per business location" basis.

This decision allows taxpayers to file more than one schedule for efficiency and convenience, but clarifies that the exemption must be applied for taxpayers owning \$2,500 or less of business personal property on a per county basis.

Listed below are important criteria that must be considered when implementing this legislation:

1. This exemption applies to all personal property:
 - a. That is not otherwise exempt by constitutional or statutory authority, and
 - b. That is defined under § 39-1-102(11), C.R.S., as machinery, equipment, and other articles related to a commercial or industrial operation **or** are defined, under §§ 39-1-102(6) and (10), C.R.S., as household furnishings or personal effects and that are used for the production of income for any time during the assessment year, and
 - c. Where the total actual value of the personal property owned by a specific taxpayer and located in the same county is \$2,500 or less.
2. Taxpayers owning personal property that has a total actual value of \$2,500 or less per county are not required to file a personal property declaration schedule with the assessor in that county.

3. All personal property owners, regardless of property classification subclass, are subject to the \$2,500 exemption threshold. This includes all residential, commercial, industrial, other-agricultural, natural resource, producing mines, oil and gas, and state assessed personal property.
4. If an assessor believes, through comparison with similar types of businesses, that the total actual value of the taxpayer's personal property per county is likely to exceed the \$2,500 threshold, a declaration schedule should be sent, a "best information available" (BIA) valuation should be assigned to the property, and the taxpayer should be notified prior to the tax bill being issued. Assessors are encouraged to contact taxpayers by telephone or through a physical inspection of the personal property, as soon as possible, to determine whether the \$2,500 threshold is exceeded. If it is apparent that the total actual value is likely to exceed the threshold, taxpayers should be advised, as soon as possible, and given the opportunity to provide an itemized list of the personal property.

The sections of the DS 056 Personal Property Declaration Schedule are listed below, along with an explanation of their purpose and use in the creation of accurate property listings.

SECTION A - NAME, ADDRESS, AND LOCATION

The current name and address provide for the documentation of ownership and property appraisal file control. The name and address help the assessor to cross-reference information if the taxpayer requests valuation information. Since name and address changes are requested, this information also helps the assessor to determine when there has been a change in ownership.

The current owner's name and address, as corrected or changed, are also carried forward to the tax roll and assist the treasurer in collecting taxes due. Finally, this information gives the assessor a source for further information about the property being appraised.

If, after due diligence, the assessor cannot ascertain the ownership of personal property, the assessor may list such property on the tax roll as "owner unknown" as allowed by § 39-5-102(2), C.R.S. In this event, the assessor should confer with the county treasurer and county attorney to determine if the landowner on which this personal property is located should be notified by the treasurer to immediately pay taxes on the personal property as authorized under the suspicion of removal statutes found in § 39-10-113(2), C.R.S.

A box has been provided just to the right of the name and address area to allow the taxpayer to indicate that there are no changes of any kind from the declaration schedule filed the prior year. If the taxpayer checks this box, only declaration schedule **Section I - Declaration**, must be filled out and signed before the declaration schedule is returned to the assessor. The check box indicating no change from last year should only be used if the assessor has received a complete itemized list of the taxpayer's personal property in a prior year.

The actual physical location of personal property, as of the January 1 assessment date, must be determined to establish its taxable situs within the boundaries of the taxing entities which will levy property taxes. A business address at which the personal property is located will assist the assessor in making this determination. If a business address is not available, the legal description of the real property at which the personal property is located should be used.

To the right of the actual physical location area is a box for the taxpayer to indicate the name and address of the prior owner of the personal property. This information is useful as a crosscheck to ensure there is no double assessment of this personal property.

SECTION B - START-UP DATE AND PRODUCT/SERVICE TYPE

The taxpayer is asked to furnish information concerning the start-up date of the business and its primary product or service type. This information may assist the assessor in determining if the personal property owner has filed a complete list of personal property for this type of business for each year since the business was started.

SECTION C - BUSINESS STATUS

Section C requests specific information about whether the business is new or if it has been in existence or if the taxpayer recently acquired the business or if the business was closed before January 1 of the current assessment year. Taxpayers owning personal property that has a total actual value of \$2,500 or less per county, are not required to file a personal property declaration schedule with the assessor.

The business status impacts the information supplied by the taxpayer on the rest of the declaration schedule. It is important for assessors to know if they are receiving the first declaration schedule from a new owner to determine if the costs reported on the schedule are allocated from the previous owner's costs.

Section C also provides a place for the taxpayer to indicate, if the business was closed prior to January 1 of the current assessment year, whether the personal property associated with the business was stored or sold and if sold, to whom. Space is provided for the taxpayer to indicate a changed location for the personal property and the date of this change.

SECTION D - LISTING OF PERSONAL PROPERTY

The taxpayer must fully and completely disclose all taxable personal property to the assessor as required by §§ 39-5-108 and 114, C.R.S. To do so, taxpayers must furnish the assessor with a complete detailed listing of all personal property at least once, hopefully on the first filing. The list should include the personal property's identification number; its description; its model or capacity; its year of acquisition (new or used is to be checked); installed cost to the current owner including acquisition cost, sales/use tax, installation, and freight to the point of use; and a check mark in the box to the right if the personal property was not in use as of the current January 1. If the personal property was newly acquired and not put into use at some time prior to the current January 1, it is not taxable until the year following its initial use pursuant to § 39-3-118.5, C.R.S.

This statute was enacted to provide for exemption of personal property acquired by Colorado businesses, but not as yet put into use.

Business personal property – exemption.

For property tax years commencing on and after January 1, 1996, business personal property shall be exempt from the levy and collection of property tax until such business property is first used in the business after acquisition.

§ 39-3-118.5, C.R.S.

Refer to the *Taxable or Exempt* topic later in this chapter for a listing of criteria to be used in establishing the exemption period prior to first use.

The requirement for a detailed listing benefits both the assessor and the taxpayer by specifically identifying the property being valued. A good detailed listing of personal property reduces the possibility of double assessment of property because each property is separately identified. It also gives the treasurer a list of property to distraint if the taxes are not paid.

After a complete listing has been filed with the assessor, the taxpayer is only required to file additions and deletions, occurring after each January 1 assessment date, on the following year's declaration schedule. The assessor values any reported additions for the current assessment year and removes any reported deletions from the current assessment year's appraisal records.

All assets with a life of greater than one year, whether expense or capitalized; fully depreciated assets still in use; and stored assets which have been subject to IRS depreciation should be included in the initial complete listing and as subsequent additions.

If taxpayers do not submit an itemized list with their first declaration schedule, the assessor should create one as soon as possible. The account should be included with the physical inspections planned for the current year. In this way, the itemized list may be prepared in conjunction with the performance analysis physical inspections that should be performed according to the plan established by the county assessor.

SECTION E - UNLICENSED MOBILE EQUIPMENT

A list of all mobile machinery and self-propelled construction equipment that qualifies for ad valorem taxation should also be itemized on the Personal Property Declaration Schedule. With only two exceptions, Class F personal property should only be listed for ad valorem tax purposes as a last resort to ensure that the property is taxed. Refer to **Chapter 7, Special Issues**.

SECTION F - GENERAL LEDGER

The beginning (book) balances, as they exist each January 1 for the past and current assessment year, should be extracted by the taxpayer from the business accounting records and listed by the personal property asset categories shown on the declaration schedule.

Differences between the current and prior year should be reconciled by the assessor to the additions and deletions of personal property reported in declaration schedule **Section D – Listing of Personal Property** and to the taxpayer's latest depreciation schedule, as reported to the Internal Revenue Service, which is requested in declaration schedule **Section G – Fully Depreciated Assets Still in Use**. Income tax information, from the Department of Revenue, is available to the assessor pursuant to §§ 39-21-113(7) and (10), C.R.S.

SECTION G - DEPRECIATION

The total original (book) installed cost of all fully depreciated assets still in use must be shown in this section. Also, a copy of the taxpayer's Internal Revenue Service income tax depreciation schedule must be filed and attached to the Personal Property Declaration Schedule. The depreciation schedule provides the assessor with information necessary to reconcile the differences in the general ledger balances reported in declaration schedule **Section F – General Ledger**.

Accessing Taxpayer Colorado Income Tax Records

There is a provision in Colorado Revised Statutes that allows county assessors to obtain Colorado income tax returns for business taxpayers, including depreciation information, from the Colorado Department of Revenue (DOR). Refer to *Obtaining New Sales Tax Account Listings* earlier in this chapter.

SECTION H - LEASED, LOANED, OR RENTED PERSONAL PROPERTY

Taxpayers should list all leased, loaned, or rented equipment, furniture, and machinery that is being used by, is in the possession of, or is under the control of the taxpayer on January 1. All leased personal property must be identified by the name, address, and telephone number of the owner (lessor), the personal property's description, its model and serial number, its lease number, the lease term (from-to), and the annual rent paid for the property.

Section H is the assessor's the most important tool for the discovery of leased property. Since the report comes from the lessee, it can be used as a cross-reference to the declaration schedule filed by a leasing company and, thereby, aid in the discovery of new leasing companies and unreported leased property operating in the county.

SECTION I - DECLARATION AND SIGNATURE

The language found in the taxpayer's declaration statement regarding personal property owned by, in the possession of, or under the control of the taxpayer, is required by § 39-5-107(2), C.R.S., and falsification of this declaration constitutes perjury in the second degree.

The declaration schedule must be signed by the owner of the property or the owner's authorized agent. Any schedules which are unsigned must be returned to the taxpayer for signature. It is Division policy that the assessor should keep a copy of unsigned schedules in case these taxpayers neglect to return signed copies. Failure to return a signed copy should be considered as failure to timely file.

Failure on the part of the taxpayer to return the declaration schedule by April 15 will result in the addition to the tax bill of a penalty of 15 percent or 50 dollars of the taxes due, whichever is less. This penalty attaches to the tax bill whenever a declaration schedule is submitted after April 15 or after the last day of the extension period, if an extension has been properly requested pursuant to § 39-5-116(1), C.R.S.

Failure by the taxpayer to make full and complete disclosure of all personal property may result in BIA valuations; or in omitted property valuations for up to six (6) previous years; or penalties of up to 25% of the current assessed valuation of any omitted property value above BIA value, that is discovered and added to the assessment roll as provided for in § 39-5-116(2), C.R.S.

LESSOR PERSONAL PROPERTY DECLARATION SCHEDULE

A separate leasing company declaration schedule, entitled Lessor Personal Property Declaration Schedule - DS 060, is to be used by leasing companies or any other taxpayers owning rental property at various locations.

In this declaration schedule, the taxpayer provides the cost, market, and income information necessary for the assessor to value leased property owned by the taxpayer. Many large leasing companies provide a supplemental listing to this declaration schedule; however, any supplemental listing should contain the same information as this schedule and must be attached to a signed declaration schedule.

The taxpayer must submit a list of the names and addresses of the users (lessees) where the leased property is located. This will allow the placement of the property, by location of the user, in the proper taxing areas.

This list also allows the assessor to mail individual notices of valuation to the lessee, if mutual agreement as to whom the property is assessable can be reached among the assessor, the lessee, and the lessor.

The separate leasing company declaration schedule also provides for manufacturers of personal property who lease property as described in § 39-1-102(7.2), C.R.S.

The manufacturer may claim an exemption, as inventory, for the leased personal property that are returned and held for scrapping, reconditioning, renovation or remanufacturing; or which are rented for thirty (30) days at a time or less, may be returned at the option of the renter, and for which sales/use tax is collected when the property is finally sold.

Personal property owned by manufacturers/lessors that were leased during the previous calendar year, but that have been returned to the manufacturer/lessor for scrapping, substantial reconditioning, renovating, or remanufacturing must be reported to the assessor for the assessment year following the year that the personal property was put back into service.

OTHER PERTINENT INFORMATION

The taxpayer should also provide the assessor with other information affecting the value of personal property. If market or income information is available, the taxpayer should submit it as an attachment to the declaration schedule.

Any information regarding apportionment of values between counties or the proration of works of art value must be submitted to the assessor. All other pertinent information requested by the assessor should be submitted by the taxpayer in writing. All attachments or submissions of information by the taxpayer are considered a part of the declaration schedule and, as such, are confidential as required by § 39-5-120, C.R.S.

CLASSIFICATION

After property has been located or "discovered" and listed, it must be properly classified. Proper classification is necessary because the property valuation methodology may vary depending on the classification. Furthermore, there are several classes of property that are exempt from taxation by statute. The two fundamental classifications that the assessor must make are as follows:

1. Real or Personal Property
2. Taxable or Exempt Property

REAL OR PERSONAL

The first classification that the assessor must make is to determine whether the property being appraised is real or personal.

As discussed in **Chapter 1, Applicable Property Tax Laws**, real property is defined as paraphrased from §§ 39-1-102(7) and (14), C.R.S., as land, water rights, fixtures, fences, mines, quarries, mineral interests, and improvements. The statutes further define personal property as anything subject to ownership that is not real property.

CHARACTERISTICS OF FIXTURES

Fixtures are defined in § 39-1-102(4), C.R.S. The definition may be paraphrased as those articles that were once movable chattels, but have become an accessory to or a part of real property by having been physically incorporated therein or annexed or affixed thereto.

Fixtures include systems for the heating, air conditioning, ventilation, sanitation, lighting, and plumbing of a building. Fixtures do not include machinery, equipment, or other articles related to a commercial or industrial operation which are affixed to the real property for proper utilization of such articles. In addition, for property tax purposes only, fixtures do not include security devices and systems affixed to any residential improvements including, but not limited to security doors, security bars, and alarm systems.

Fixtures include all components of the systems for the heating, air conditioning, ventilation, sanitation, lighting, and plumbing of a building. These will be collectively referred to as fixture systems.

Fixture systems, which are statutorily defined as real property, are appraised at the level of value designated for other real property. Fixture systems generally are given the same economic life as the building that they serve. However, if technological, economic, or functional obsolescence exist, it is possible that fixture systems may have a shorter economic life than the building that they serve.

In Del Mesa Farms, et al. v. Montrose CBOE, 956 P.2d 661 (Colo. App. 1998), using the definition of fixtures as stated in § 39-1-102(4), C.R.S., the court reasoned that a distinction must be made for classification purposes for property that are related to the operation of the building and property that are related to the operation of a business in the building. The court noted “. . . Thus, in our view, regardless of whether a particular item is affixed to a building and may otherwise constitute a fixture system, the item constitutes personal property if its use is primarily tied to a business operation. . .(emphasis added)”

Major issues that arise in the classification of property as either real or personal are in the category of real property fixtures as discussed in **Chapter 1, Applicable Property Tax Laws**.

TAXABLE OR EXEMPT

All property in the state is taxable unless specifically exempt by the Colorado Constitution. The types of personal property exempt from taxation are listed in **Chapter 1, Applicable Property Tax Laws**. What follows are the specific definitions of the exempt property and the applications of these exemptions by the assessor. All exemptions from property taxation are strictly construed and in United Presbyterian Association, et al. v. Board of County Commissioners, 167 Colo. 485, 448 P.2d 967 (1968), the court held that the taxpayer has the responsibility to prove that property is exempt. If a property owner is claiming exemption from taxation, the owner must show where in the Colorado Constitution or the statutes the exemption is justified.

EXEMPTION OF CONSUMABLE PERSONAL PROPERTY

In 2000, the Colorado Legislature amended § 39-3-119, C.R.S., to require the Division of Property Taxation to "...publish in the manuals, appraisal procedures, and instructions prepared and published pursuant to section 39-2-109(1)(e), C.R.S., a definition or description of the types of personal property that are 'held for consumption by any business' and therefore exempt from the levy and collection of property tax pursuant to this section." Refer to **Chapter 7, Special Issues**, for "consumable" personal property exemption criteria and examples.

EXEMPTION - ACTUAL VALUE OF \$2500

Exemption of personal property equal to or less than \$2,500 in total actual value is provided for in § 39-3-119.5, C.R.S. An exemption is allowed and should only be applied if the total actual value of taxpayer's personal property per county is equal to or less than \$2,500. The statute does not exempt the first \$2,500 of each personal property taxpayer's schedule.

On September 10, 2001, in Huddleston and TCI v. Board of Equalization of Montezuma County, 31 P. 3d 155 (Colo. 2001), the Colorado Supreme Court affirmed four separate Colorado Court of Appeals' judgments that had reversed the decisions of the State Board of Assessment Appeals (BAA). Principally, at issue was whether the Property Tax Administrator's interpretation that § 39-3-119.5, C.R.S., should be applied on a *per business location* basis by the assessors of this state is consistent with section 20(8)(b) of article X of the Colorado Constitution, which provides for the exemption of personal property. This ruling changed the previous Division policy that held that this exemption should be applied on a "per business location" basis.

This decision allows taxpayers to file more than one schedule for efficiency and convenience, but clarifies that the exemption must be applied for taxpayers owning \$2,500 or less of business personal property on a per county basis.

Listed below are important criteria that must be considered when implementing this legislation:

1. This exemption applies to all personal property:
 - a. That is not otherwise exempt by constitutional or statutory authority, and
 - b. That is defined under § 39-1-102(11), C.R.S., as machinery, equipment, and other articles related to a commercial or industrial operation **or** are defined, under § 39-1-102(6) and (10), C.R.S., as household furnishings or personal effects and that are used for the production of income for any time during the assessment year, and
 - c. Where the total actual value of the personal property owned by a specific taxpayer and located in the same county is \$2,500 or less.
2. Taxpayers owning personal property that has a total actual value of \$2,500 or less per county are not required to file a personal property declaration schedule with the assessor in that county.
3. All personal property owners, regardless of property classification subclass, are subject to the \$2,500 exemption threshold. This includes all residential, commercial, industrial, other-agricultural, natural resource, producing mines, oil and gas, and state assessed personal property.
4. If an assessor believes, through comparison with similar types of businesses, that the total actual value of the taxpayer's personal property per county is likely to exceed the \$2,500 threshold, a declaration schedule should be sent, a "best information available" (BIA) valuation should be assigned to the property, and the taxpayer should be notified prior to the tax bill being issued. Assessors are encouraged to contact taxpayers by telephone or through a physical inspection of the personal property, as soon as possible, to determine whether the \$2,500 threshold is exceeded. If it is apparent that the total actual value is likely to exceed the threshold, taxpayers should be advised, as soon as possible, and given the opportunity to provide an itemized list of the personal property.

AGRICULTURAL

Agricultural and Livestock Products

Definitions

'Agricultural and livestock products' means plant or animal products in a raw or unprocessed state that are derived from the science and art of agriculture, regardless of the use of the product after its sale and regardless of the entity that purchases the product. 'Agriculture', for purposes of this subsection (1.1), means farming, ranching, animal husbandry, and horticulture.

§ 39-1-102(1.1), C.R.S.

This definition includes all plant or animal products in the raw or unprocessed state. These would include, but are not limited to, products such as alfalfa, all grains, eggs, milk, and fruit. All of these products are exempt from ad valorem taxation.

Any personal property not qualifying as agricultural or livestock products and any processed products may qualify for exemption as supplies or inventories of merchandise and materials held for sale.

Agricultural Equipment Used on the Farm or Ranch

Section 39-1-102(1.3), C.R.S.

All of the following qualifications must be met for the property to be exempt as agricultural equipment:

1. Agricultural equipment must be personal property to be exempt. Fixtures, as defined in § 39-1-102(4), C.R.S., are to be valued as part of the building or structure and are assessed at 29%. A distinction must be made for classification purposes for property that are related to the operation of the building and property that are related to the operation of a business in the building. Regardless of whether a particular property is affixed to a building and may otherwise constitute a fixture system, the property constitutes personal property if its use is primarily tied to the business operation. Therefore, any mechanical system used on the farm or ranch for the conveyance and storage of animal products in a raw or unprocessed state is exempt regardless of whether or not it is a fixture.
2. The equipment must be used on a farm or ranch, that is, land where agricultural products originate from the productivity of the land or land which is grazed by domestic animals.
3. Only equipment that is used to plant, grow, or harvest an agricultural product, raise or breed livestock, or the agricultural equipment that is primarily tied to the business operation are exempt.

It is very important that the terms "farm" and "ranch" be understood by the assessor when classifying agricultural personal property because only that personal property used on a farm or ranch is exempt. The specific definitions for the terms "farm" and "ranch" are found in §§ 39-1-102(3.5) and (13.5), C.R.S., respectively.

Livestock

Section 39-1-102(7.8), C.R.S.

Livestock includes all animals. The animals need not be used on a farm or ranch to be exempt as indicated in section 3(1)(c) of article X, of the Colorado Constitution when read in conjunction with § 39-1-102(7.8), C.R.S.

ALL OTHER AGRICULTURAL AS "ALL OTHER" PROPERTY

As required by § 39-1-102(1.6)(b), C.R.S., all other agricultural property that does not meet the definition set forth in § 39-1-102(1.6)(a), C.R.S., must be classified and valued as all other property. For purposes of identification, a classification category of "all other agricultural property" was developed and includes agribusinesses and/or agriculturally related commercial operations.

These types of properties are not directly related to farming, ranching, animal husbandry or horticulture. The land, improvements and personal property classified as "all other agricultural property" are taxable.

A complete discussion of the valuation of agricultural lands is found in **ARL Volume 3, LAND VALUATION MANUAL, Chapter 5, Valuation of Agricultural Land.**

RESIDENTIAL HOUSEHOLD FURNISHINGS

Section 39-1-102(6), C.R.S.

Any household furniture and freestanding appliances and security systems found in private homes which are used to produce income at any time during the year are taxable for the entire year, otherwise they are exempt pursuant to § 39-3-102, C.R.S. Furniture, freestanding appliances, and security systems found in rental units are taxable. There is no exemption in the law for rental units below a certain size, for example, duplexes or single family residences.

No work of art, as defined in § 39-1-102(18), C.R.S., which is not subject to annual depreciation and which would otherwise be exempt as household furnishings shall cease to be exempt because it is stored or displayed on premises other than a residence pursuant to § 39-3-102(2), C.R.S.

INTANGIBLE PERSONAL PROPERTY

Sections 39-3-118 and 39-22-611, C.R.S.

Black's Law Dictionary, Sixth Edition defines intangible property and intangible assets, paraphrased as follows.

As used in the law of taxation, the term intangible property means that such property has no intrinsic and marketable value, but is merely the representing evidence of value such as certificates of stock, bonds, promissory notes, copyrights, and franchises:

An intangible asset is property that is a "right" such as a patent, copyright, trademark, etc., or one which is lacking physical existence, such as goodwill.

Software is classified as intangible property except for the machine language which is automatically initiated during the computer startup. The value of this machine language is inherent in the value of the computer hardware and is not to be exempted. Refer to **Chapter 7, Special Issues**, for a complete discussion of *Software*.

INVENTORIES OF MERCHANDISE, MATERIAL AND SUPPLIES

Section 39-1-102(7.2), C.R.S.

The elements of what constitutes exempt inventory include the following:

1. Personal property which is held primarily for sale by a business, farm, or ranch;
2. Component parts of personal property held for sale by a business, farm, or ranch or parts that are a part of the manufacturing process:
 - a. The personal property in these two categories include any inventory held for sale; raw materials, work in progress, and finished goods held by a manufacturer; and replacement parts inventory held for sale by manufacturers, wholesalers, or retailers. There is no difference in the inventory held for sale between a wholesaler or a retailer. Any personal property held for sale by a business, whose primary purpose is the sale of such inventory and that are listed as inventory on the company's financial records are exempt.

- b. The definition does not include equipment that is for sale by a business, which does not regularly engage in the sale of inventory. For example, an individual who claims that all of his furniture is for sale as of January 1 cannot have his property exempted as inventory. The primary use of the property is not to be held for sale; rather it is to operate the business.
 - c. In addition, any property that is subject to an allowance for depreciation cannot be classified as exempt inventory. Careful examination of the taxpayer's financial records should reveal any allowances for depreciation taken. An exception to this requirement is property rented for 30 days at a time or less as provided for in § 39-1-102(7.2), C.R.S.
3. Personal property that is held for consumption by a business, farm, or ranch
- a. Supply property is generally considered to be consumed internally during the operation of a business, farm, or ranch and are not generally sold. Such things as paper, pencils, computer disks, baling wire, fuel, and fertilizer are normally included in this category.
4. Rental property that is:
- a. Rented for thirty days at a time or less, and
 - b. Which can be returned at the option of the person renting, and
 - c. Is involved in transactions on which the sales/use tax will be collected before finally being sold, and
 - d. Is not governed by the terms of a lease contract covering a specific period of time and which includes financial penalties for early cancellation.
 - i. In general, personal property held for rent or lease is taxable except for property with a life of less than one year, in which case, it is considered a supply and is therefore exempt.
 - ii. The language of § 39-1-102(7.2), C.R.S., exempts certain rental property under specific conditions. (The rental property for which exemption is claimed must meet all the criteria set forth in the law before it can be declared exempt.)
 - iii. The following describes certain types of personal property which are rented or leased and appear to conform, but in fact do not conform with the thirty days or less exemption criteria. This type of personal property can be discovered through the usual process of identifying such businesses and sending or delivering a personal property declaration schedule.

Automatic Rollover Leases

The personal property is typically rented for more than thirty days, even if the rental/lease agreement is structured to appear otherwise, then the personal property is actually rented for more than 30 days. Therefore, the personal property does not fall under the 30 days or less rental exemption. Examples of this type of personal property rollover leases would include water service bottle holders/dispensers and all rent-to-own furniture, appliances, construction tools, and equipment.

Service Organization Property Leases

Even if the personal property is "changed out" or replaced with an identical or closely similar property during a period of time of less than 30 days, these property are actually rented for more than 30 days. Therefore, the property does not fall under the 30 days or less rental exemption. Examples of this type of service organization property would include compressed gas tanks, water service bottles, and live plant leasing companies.

Property Secondary (Sub) Leases

If the personal property is rented for thirty days or less and conforms to all other provisions of the 30 days or less rental exemption, but this property is leased for more than 30 days from an original distributor, the property does not qualify for the thirty days or less rental exemption.

In these cases, the personal property is actually owned by the original distributor, not by the company executing secondary (sub) leases with a consumer. Therefore, the property is actually leased for more than 30 days to the secondary lessor.

Exemption of personal property held for rent in no way affects the assessment of any furniture or equipment used by the business. This property would be taxable so long as it does not meet any of the other requirements for exemption found in the law.

5. Inventory owned by and in the possession of the manufacturer of the inventory when both of the following apply:
 - a. The inventory is in the possession of the manufacturer after having been leased to a customer directly by the manufacturer.
 - b. The inventory is designated for scrapping, reconditioning, renovation or remanufacture. Normal maintenance is not included in these criteria.

Personal property owned by manufacturers/lessors that were leased during the previous calendar year, but that have been returned to the manufacturer/lessor for scrapping, substantial reconditioning, renovating, or remanufacturing must be reported to the assessor for the assessment year following the year in which the personal property were put back into service.

The language of the statute only addresses machinery that had once been directly leased by the manufacturer to the customer and which has been returned to the manufacturer. The manufacturer must designate such property for scrapping or major reconditioning to qualify the property as exempt. Personal property that are leased through a third party or which have been returned for normal maintenance do not qualify as exempt.

Any leased property which has been returned to the manufacturer and which has not been designated for scrapping or substantial reconstruction cannot be classified as exempt inventory and must be reported to the assessor who will value and assess it as taxable equipment pursuant to § 39-5-107(1), C.R.S.

BUSINESS PERSONAL PROPERTY NOT AS YET IN USE

Section 39-3-118.5, C.R.S.

Business personal property shall be exempt from the levy and collection of property tax until such business personal property is "first used" in the business after acquisition. Taxpayers are to be given this exemption during the "window" between the date that the personal property is acquired and the date when the personal property is first used in the business.

The following criteria should be used when establishing the exemption period prior to first use:

1. This policy applies to all newly acquired personal property that is either locally or state assessed, whether it was acquired either new or used or for either a new or existing business.
2. Information reported by the taxpayer on the applicable declaration schedule will be the primary source in establishing the period of exemption and the point in time when the property becomes assessable. The assessor should contact the taxpayer to resolve any questions regarding acquisition year and year of first use. In case of disagreement between the taxpayer and county regarding the year of first use, the burden of proof is on the taxpayer to substantiate the year the personal property was first used in the business.
3. The Division has incorporated special language and formatting in all declaration schedules so that taxpayers can indicate both year of acquisition and year the personal property was first used in the business.
4. Personal property that is on-site, but has not initially been put into service, qualifies for this exemption. The exemption also applies to property that is in a test or "shakedown" mode prior to being put into service. Personal property that is removed from service does not qualify.
5. Until it is first leased, property acquired for lease by a lessor qualifies for this exemption. However, once this property is leased, it no longer qualifies for this exemption.

Internal auditing procedures in the county will have to be updated so that during on-site field inspections, information is requested from the taxpayer as to the date the personal property was acquired in addition to the date the personal property was first used in the business.

PERSONAL EFFECTS

Section 39-1-102(10), C.R.S.

Personal effects include all property used by private citizens in private life. It includes any property used by the taxpayer in sports or hobbies or other recreational activities so long as the personal property is never used to produce income. If the equipment is used to produce any income during any time of the year, it is taxable for the entire year.

There are instances in which it is difficult to ascertain whether or not income is being derived from a personal effect. One indicator is if the taxpayer advertises a service in some sort of public medium.

If the assessor suspects that a taxpayer is using personal effects for the production of income, a declaration schedule should be sent so that the taxpayer has an opportunity to file and be on record as to the nature and use of the property.

PROPERTY LEASED TO GOVERNMENTAL ENTITIES

Various Statutes

Personal property that is leased to certain governmental entities may be exempt from property taxation.

Refer to **Chapter 1, Applicable Property Tax Laws**, for a complete listing of statutory citations for these exemptions and **ARL Volume 2, ADMINISTRATIVE AND ASSESSMENT PROCEDURES MANUAL, Chapter 10, Exemptions**, for a complete discussion of these exemptions.

WORKS OF ART

Section 39-1-102(18), C.R.S.

Works of art are original creations of visual art, including but not limited to the following:

- Sculpture
- Paintings or drawings
- Mosaics
- Photographs
- Crafts made from clay, fiber and textiles, wood, metal, plastics or any other material
- Calligraphy
- Mixed media
- Unique architectural embellishments

As provided in § 39-3-123, C.R.S., works of art are exempt for the period of time that they are loaned to and under the control of three types of entities.

1. The State of Colorado
2. A political subdivision of the State (Counties, cities, towns, special districts; and school districts)

3. A library, an art gallery, or museum, if:
 - a. Owned or operated by a charitable organization as defined by 39-26-102(2.5), C.R.S.
 - b. The organization's property is irrevocably dedicated to charitable purposes.
 - c. The organization's assets do not benefit any private person upon the liquidation, dissolution, or abandonment by the owner.
 - d. The use of the work of art is for charitable purposes. Charitable purpose is defined as follows:
 - i. Public display
 - ii. Research
 - iii. Educational study
 - iv. Maintenance of the property
 - v. Preparation for display

The assessor can confirm items 3a through 3c by review of the Certificate of Sales Tax Exemption and the Articles of Incorporation for the art gallery or museum.

Works of art that are part of an individual's private collection and not used to produce income at any time are classified as household furnishings or personal effects and are exempt pursuant to §§ 39-1-102(6) or (10), C.R.S.

Paraphrasing § 39-3-102(2), C.R.S., no work of art, as defined in § 39-1-102(18), C.R.S., which is not subject to annual depreciation and which would otherwise be exempt as household furnishings shall cease to be exempt simply because it is stored or displayed on premises other than a residence.

Works of art that are owned by a business or corporation are taxable unless they meet the requirements of §§ 39-3-102(2) or 123, or 39-5-113.5, C.R.S.

The owners of the works of art must file a works of art statement, personal property declaration, and proof of the exemption (documentation) with the assessor to substantiate the claim for exemption each assessment year. Counties creating a form to use for the works of art exemption must submit the form to the Division of Property Taxation for approval pursuant to § 39-2-109(1)(d), C.R.S.

Proof of the Display Location's Exemption

The taxpayer claiming exemption must furnish proof of exemption according to §§ 39-26-102(2.5) and 39-3-123, C.R.S., for the location in which the works of art are to be displayed. The necessary documentation should be available from the organization that is to display the art to comply with the provisions for proof of exemption in § 39-5-113.5(1), C.R.S. Documentation is not required in the case of government buildings.

Proration of Works of Art Valuations

The assessor determines the actual value of the property and prorates the value based on the number of days it qualifies for exemption compared to the full calendar year. After the value is determined and prorated, the assessor must notify the taxpayer pursuant to § 39-5-113.5(2), C.R.S. Procedures and an example of the proration of works of art changing taxable status are found in Chapter 7, Special Issues.

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CHAPTER 3

VALUATION PROCEDURES

There are many techniques and methods available to the assessor for valuing personal property. This chapter will discuss these techniques and methods and provide the assessor with procedures for resolving specific valuation questions.

In Colorado, assessors determine the "actual value" of taxable property. Colorado statutes define actual value as that value determined by appropriate consideration of the following approaches to appraisal:

1. Cost Approach
2. Sales Comparison (Market) Approach
3. Income Approach

The assessor is to consider and document all elements of the three approaches to appraisal that are applicable to personal property prior to an actual value estimate as required by § 39-1-103(5)(a), C.R.S. If the taxpayer's declaration is complete; if it contains a full disclosure of costs of acquisition, installation, sales/use tax, and freight to the point of use; and if it is timely filed, the cost approach to value is to be considered the maximum value as required by § 39-1-103(13), C.R.S.

For Colorado personal property assessment purposes, the actual value is the value in use, as installed. Colorado statutes require that personal property be valued inclusive of all costs incurred in acquisition and installation of the property. The costs of acquisition, installation, sales/use tax, and freight to the point of use must be considered in the personal property valuation. The inclusion of these costs requires that personal property be valued in use. Therefore, the actual value of personal property is based on its value in use.

Appraisals are made to determine the value of personal property. An appraisal is an estimate of value as of a given date. The assessor estimates the value of the property being appraised by using comparative data consisting of cost, recent sales, and income information. The relationship between the subject property being appraised and similar properties of known value forms the foundation of the three approaches used to measure the value of personal property. The appraisal made by the assessor is valid only for the year of assessment in which it is made. Current actual value is established each and every year for personal property as required by § 39-1-104(12.3)(a)(I), C.R.S.

Appraisals are valid only as of the date of the appraisal. In Colorado, both the appraisal date and the assessment date for personal property are defined by § 39-1-105, C.R.S., as January 1 of each year. However, after a current value is established, it is rolled back to the June 30 appraisal date established for real property, using the factors found in **Chapter 4, Personal Property Tables**, as required by § 39-1-104(12.3)(a)(I), C.R.S. The assessor values all taxable personal property owned by, in the possession of, or under the control of each taxpayer in the county based upon the characteristics and condition of the property as of January 1 as reported pursuant to § 39-5-108, C.R.S.

The assessor documents all valuations for assessment and maintains complete appraisal records to justify the values placed on the personal property. The three approaches to appraisal must be considered and documented on the appraisal records. If a given approach to value is not applicable, the assessor should note this in the appraisal records along with defensible reasons why the approach was not used, as prescribed in Montrose Properties, LTD et al. v. Colorado Board of Assessment Appeals et al., 738 P.2d 396 (Colo. App. 1987).

DATA COLLECTION AND ANALYSIS

Before estimating the value for personal property, the assessor gathers and analyzes all necessary data. The assessor gathers general, comparative, and specific data with which to complete the appraisal. Data is collected for the subject property, or the property being appraised, as well as for comparable or similar properties. Most data collection occurs during the discovery process as discussed in **Chapter 2, Discovery, Listing, and Classification**.

GENERAL DATA

Several types of general information are gathered by the assessor. The general information is useful in determining the economic environment in which the personal property is used and may give clues to the actual value of property. The types of general information include the following:

1. Economic Trends
 - a. National
 - b. Regional
 - c. Local
2. Specific Industry
3. Business Cycles
4. Governmental Regulations

SPECIFIC DATA

The specific information necessary to value personal property includes the following:

1. Current owner name and mailing address
2. Location of the property
3. General use of the property
 - a. Residential
 - b. Commercial
 - c. Industrial
 - d. Agricultural
 - e. Natural resources
4. Description of the property

5. Year acquired
6. Specific use
7. Physical condition
8. Estimated remaining economic life

This information is specific to the subject property being appraised.

The primary tool used to gather specific information is the personal property declaration schedule described in **Chapter 2, Discovery, Listing, and Classification**.

The specific information includes a description of the subject property which is crucial to an accurate valuation. The assessor must obtain a clear, current, and detailed description of the subject property before estimating value. Without an accurate description of the subject property it will be impossible for the assessor to gather comparable information.

As discussed in **Chapter 1, Applicable Property Tax Laws**, it is the duty of the taxpayer to furnish information to the assessor about the nature and condition of the property being appraised as required by §§ 39-5-107, 108, and 114, C.R.S. However, the assessor does have a responsibility to gather as much data as possible and to contact the taxpayer if in doubt as to the nature of the subject property.

COMPARATIVE DATA

Comparative data is used to measure the value of the subject property by comparison with other, similar property. Necessary comparative data includes all specific data, as gathered for the subject. The degree of similarity between the comparable property data and the subject will determine the usefulness of the comparative data in making the appraisal.

Comparative data consists of cost, market, and income information and may be gathered for groups of property such as the following:

- Office equipment including computers
- Store equipment and furnishings
- Industrial contractors'/manufacturers' equipment
- Electronic/scientific and related equipment
- Copiers

Any comparative data gathered for use in the appraisal must be confirmed before use. It is especially important that sales information be verified with the buyers and sellers and income and expense data be verified with lessors and lessees. This will ensure that data used in the valuation of the subject is accurate and factual. Cost data submitted by the taxpayer can be confirmed during performance analysis physical inspections. Data that cannot be verified should be used with caution in the appraisal of the subject property.

APPLICATION OF THE APPROACHES

In §§ 39-1-103(5) and 104(12.3)(a)(I), C.R.S., the assessor is required to consider the cost, sales comparison (market), and income approaches to appraisal when determining the actual value of personal property.

For Colorado personal property assessment purposes, the actual value is the value in use, as installed. Colorado statutes require that personal property be valued inclusive of all costs incurred in acquisition and installation of the property. The costs of acquisition, installation, sales/use tax, and freight to the point of use must be considered in the personal property valuation. The inclusion of these costs requires that personal property be valued in use. Therefore, the actual value of personal property is based on its value in use.

The most current valuation information available must be gathered and analyzed. It is Division policy that sales comparison (market) and income information used to determine the current actual value of all types of personal property should be gathered and analyzed from the twelve month period immediately preceding the current assessment date, i.e. the prior calendar year. Analysis of data from this period insures that adequate current market and income information is used in the valuation of personal property.

Assessors must document the physical condition of personal property as of the assessment date. Assessors also must consider current economic conditions when appraising personal property and must document the reasons for functional and economic obsolescence as of the assessment date.

COST APPROACH

The cost approach is based upon the principle that the value of a property equals the cost of acquiring an equally desirable substitute property. It is essentially an estimate of the cost of replacing the subject property with a new property that is equivalent in function and utility. However, the subject property is usually worth less than its cost of replacement because of depreciation.

Depreciation can be defined, in simple terms, as the loss in value due to any and all causes. However, cost tables only reflect depreciation due to ordinary use of the equipment and some functional obsolescence, and do not reflect depreciation due to extraordinary functional or any economic obsolescence which must be separately estimated. Refer to *Calculate Depreciation (Percent Good)* later in this chapter.

Colorado statutes provide that the cost approach shall establish the maximum value of personal property when the owner of the property has timely filed a declaration which contains full and complete disclosure of all costs incurred in the acquisition and installation of the property as required by § 39-1-103(13)(a), C.R.S.

As paraphrased from § 39-1-103(13)(c), C.R.S., the assessor must consider the cost approach in good faith and shall not deny its use except for just cause that the owner has not made full and complete disclosure, or has not filed a declaration by the statutory deadline. Also, an assessor who wrongly denies the use of the cost approach can be held personally liable for all costs incurred by the taxpayer in protesting an assessment based on such denial.

TYPES OF COST

There are several different cost bases that are referred to in accounting and appraisal work. The different types of cost and descriptions of each are as follows:

Reproduction Cost New

Reproduction cost new is the cost to reproduce the subject property being appraised with another property identical to it. Reproduction cost means the cost of producing an exact replica of the personal property that is identical in design, materials, and workmanship to the subject. Reproduction cost new is not typically used in the valuation of personal property in Colorado.

Replacement Cost New

Replacement cost new (RCN) is the cost to replace the property being appraised (subject) with another property that is equivalent in function and utility. RCN is not an exact replica of the subject, but rather a replacement that will yield the same use. RCN is the basis of the cost approach in Colorado.

Manufacturer's Cost

Manufacturer's costs are the costs incurred by the manufacturer of the property to manufacture the property at the plant. The manufacturer's cost does not include installation, sales/use tax, and freight to the point of use.

Original Installed Cost

Original installed cost is the amount that was paid for the personal property when it was new. Original installed cost includes the purchase price of the personal property, freight to the point of use, applicable sales/use tax and any installation charges necessary to ready the property for use in the business location.

Original installed cost should be the cost declared on the personal property declaration schedule. It represents the costs to the owner for acquiring the personal property. Original installed cost is not a depreciated value.

Original installed cost is synonymous with historical cost. Original installed cost is trended to estimate RCN as of the assessment date.

Cost to Current Owner

Cost to current owner generally is the depreciated acquisition cost of used equipment reported by subsequent owners. When the current owner has purchased used personal property, the costs reported on the declaration schedule filed by the current owner may represent the depreciated value of the equipment. However, purchase prices, which are not representative of reasonable market value, should not be used. Instead, comparable equipment values should be researched and used in place of the unrealistic prices.

If the original installed costs are not reported by the current owner to the assessor, then reasonable depreciated costs, as reported by the current owner, may be used in lieu of original acquisition costs, provided these depreciated costs are representative of actual value. Reported declaration schedule depreciated costs may be checked against the bulk sale certificate and associated asset list.

Assuming that a current owner of personal property has timely filed a declaration which includes a full and complete disclosure of all costs incurred in the most recent acquisition of the property, the most recent sale price must be used as the acquisition cost prior to calculating replacement cost new (RCN). The only exceptions to this rule are as follows:

1. If the last transaction was not arm's-length, then prior acquisition costs or comparable RCN estimates from outside sources should be used.
2. If the personal property is at the end of its economic life and the depreciated value floor of the equipment generally has been reached, then the acquisition price paid for the personal property is treated as the depreciated value floor (RCNLD) for the equipment and no replacement cost new (RCN) trending factors or percent good (depreciation) factors are applied to these prices until the property is permanently taken out of service. An exception to this rule applies when the property has been reconditioned to extend its remaining economic life.

Even though personal property has been permanently taken out of service, but has not been scrapped or sold, it still has value. However, additional functional and/or economic obsolescence may exist.

Depreciated acquisition costs are generally used with the RCN cost trending and percent good factors, providing that the personal property has remaining economic life. Assessors may estimate RCN from outside sources in cases where non arm's-length depreciated acquisition costs are reported. When any personal property reaches the end of its economic life, as established in **Chapter 4, Personal Property Tables**, its value is frozen.

TRADE LEVEL

Personal property valuation should consider the appropriate trade level, which refers to the production and distribution stages of a product. There are three distinct trade levels including: the manufacturing level, the wholesale level, and the retail “end user” level. Incremental costs will be added to the product cost as it advances from one level to the next. Therefore, the final product cost will differ depending on the level of trade. In light of the Colorado Constitutional provisions requiring property to be assessed at its “actual value” and promoting the principle of “equalized value,” all property is valued at the retail “end user” level.

If an owner of taxable personal property declares manufacturing or wholesale costs, the county assessor should request an amended listing of personal property showing the original installed costs or the market-derived replacement costs new (RCN) at the appropriate retail “end user” trade level. In cases where the owner/representative does not provide a revised listing, costs that are not representative of reasonable market value at the appropriate retail “end user” trade level should be discarded in favor of researched comparable personal property values.

In Xerox Corporation v. Board of County Commissioners of the County of Arapahoe, 02CA2026 (October 9, 2003), the Colorado Court of Appeals concluded that, “various ARL provisions bolster the conclusion that the comparable sales price, rather than the manufacturer’s cost, is the appropriate starting point for the cost approach under § 39-1-103(13).” It further stated, “the DPT’s interpretation comports with Colorado constitutional provisions requiring property to be assessed at its ‘actual value’ and promoting the principle of ‘equalized value.’ ”

Unique Personal Property

Occasionally, specialized industrial and other types of unique personal property are designed and manufactured within a company. In cases where the taxpayer has built a piece of personal property for which no comparables exist in the market, the taxpayer must estimate the cost of materials and labor used to build the personal property. In addition, estimates for freight to the point of use, installation charges, and sales/use tax must be added to develop a reasonable value in use for the personal property. The estimation procedure is to be used only when no comparable personal property exists in the market.

If comparable personal property exists and is being sold, the acquisition cost of the comparable personal property along with estimates of the costs of installation, sales/use tax, and freight to the point of use should be used to develop a reasonable value in use for the personal property. The same is true of personal property "acquired without monetary cost," e.g. trades.

The acquisition cost of comparable personal property being sold in the market or estimates of materials and labor required to build the personal property, along with the costs of installation, sales/use tax, and freight to the point of use is to be used to develop a reasonable value in use for the personal property "acquired without monetary cost" e.g. gifts.

Bulk Sale of Personal Property

When the sale of a business results in the transfer of most or all of the business's personal property to a new owner, this is known as a bulk sale of personal property. Providing the sale is an arm's length transaction and fairly represents the value in use of the sold personal property, this sale of used personal property represents the acquisition cost to the new owner. For personal property which has reached its depreciated value floor, the value allocated from the bulk sale price is frozen, as stated under the topic *Cost to Current Owner* above. However, purchase prices, which are not representative of reasonable market value, should not be used. Instead, comparable equipment values should be researched and used in place of the unrealistic prices.

For personal property which has not reached its depreciated value floor, the value allocated from the bulk sale price is depreciated over a complete economic life appropriate to the personal property as though the personal property were new, as described under the topic *Valuation of Used Personal Property* in this chapter.

A special problem exists with machinery and equipment at car washes. When these businesses sell, a substantial amount of personal property is included in the selling price. In these cases, an allocation should be requested from the former owner as to the value of personal property included in the transaction. This allocation should be a regular part of the sales confirmation procedure for self-service or automated car washes. Once a number of these allocations is available, it may be possible to determine the value of personal property, as a percentage of all property transferred, without an allocation from the former owner. Also, these percentages may be used to determine BIA valuations for comparable properties.

COST APPROACH PROCEDURE

The steps in the cost approach for personal property valuation are:

1. Estimate Replacement Cost New (RCN).
2. Determine accrued depreciation.

3. Calculate Replacement Cost New Less Depreciation (RCNLD).
4. Adjust RCNLD to the June 30 level of value established for real property.

Estimate Replacement Cost New

In the cost approach, the assessor determines the cost of replacing the subject property, at current cost, with personal property that is similar in function and utility. As noted above, this term is called Replacement Cost New (RCN).

The two methods used by assessors to estimate the RCN of personal property are:

1. Original installed cost trended by cost indices
2. Research of replacement cost new data from outside sources

Original Installed Cost Trended by Cost Index:

Original installed cost trending is the most commonly used method for estimating replacement cost new in Colorado. The method relies on original installed costs furnished by the taxpayer and is applicable in a mass appraisal approach to valuing personal property.

The RCN is estimated for personal property appraisals by multiplying the original installed cost of the subject by the appropriate cost index factor for the year of acquisition. The index, or trending factor, adjusts the original installed cost to the current cost of replacing the personal property with similar personal property.

Price indices developed by Marshall and Swift have been compiled and published by the Division for use by all assessors. These indices show the specific rates and directions of price movements of various equipment categories. The base year for the Marshall & Swift indices is 1926. This means that the published factors are based upon 1926=100%. The indices measure the difference between 1926 costs and current year costs.

The Division of Property Taxation, through the courtesy of Marshall and Swift, converts the price indices into cost trending factors. The factors relate original installed costs, by equipment category, to current year costs. The factors are published annually so that assessors may use them to estimate the current replacement cost new of equipment. The factors are found in **Chapter 4, Personal Property Tables**.

Original installed cost trending has several limitations:

- The cost factors are designed to be used only during the economic life of the property. After the property has reached the end of its economic life, the factoring of original installed costs may lead to distorted RCN values.
- As property ages, the use of original installed cost multiplied by trending factors and percent good factors may not yield reasonable RCNLD values. Any RCNLD estimate should be cross-checked with market and income information sources and modified, if necessary.
- The cost factors are based upon broad surveys of equipment price levels conducted by the Marshall and Swift Company. This company uses the Producer Price Indexes published by the U.S. Department of Labor as well as other recognized national economic indicators to determine the trending factors.

In the year in which the personal property has reached its minimum percent good, the applicable Replacement Cost New (RCN) trending factor in use at that time is “frozen” and the Level of Value (LOV) adjustment factor is “frozen” at 1.0. An exception to this rule applies when the personal property has been reconditioned to extend its remaining economic life.

Even though personal property has been permanently taken out of service, but has not been scrapped or sold, it still has value. However, additional functional and/or economic obsolescence may exist.

The cost factors published in this manual are intended for use with original installed costs submitted by the taxpayer. Each category factor is property specific rather than industry specific. Use of one factor is not intended for use with all property in a business unless the personal property cannot be classified as to the proper RCN factor table.

Determination of Current RCN From Outside Sources:

The replacement cost new of personal property is also estimated directly from market information published by outside sources. Typical sources of RCN information include the following:

- General Services Administration (GSA) List Prices
- Manufacturer Catalog List Prices
- Acquisition Costs of Similar Property
- Local Cost Surveys of Equipment Dealers
- Commercial Replacement Cost Manuals

GSA List Prices

The GSA, or General Services Administration, is the central purchasing and leasing agency for the federal government. Many manufacturers publish catalogs specifically for use by the federal government. These catalogs contain current selling prices and lease rates available to federal agencies from individual manufacturers. These manufacturers must be contacted to obtain their GSA price lists. At the time of contact, the manufacturers should be queried as to whether discounts from the listed prices are typically given.

The assessor must also take care that the personal property listed in the price list are comparable to the subject property. In addition, estimates for freight to the point of use, installation charges, and sales/use tax must be added to develop a reasonable value in use for the property. The GSA prices are current RCN prices and should not be trended using cost factors found in **Chapter 4, Personal Property Tables.**

Pricing Catalogs

Many manufacturers or distributors of equipment maintain current pricing catalogs for the retail trade. Price catalogs are similar to the GSA prices in that they contain current replacement costs for various types of equipment. Price catalogs are available from the manufacturers or distributors of the property.

The price lists give information about the replacement costs of certain personal property for the period of time in which the lists are valid. Supply catalogs such as J.C. Penney contain pricing information for common types of equipment.

The assessor must also take care that the personal property listed in the catalog or price list are comparable to the subject property. In addition, freight to the point of use, installation charges, and sales/use tax must be added. Catalogs, which are current on January 1 of the assessment year, provide the best information. Any current prices taken from any catalogs should not be factored using the cost trending factors found in **Chapter 4, Personal Property Tables.**

Acquisition Costs of Similar Property

Comparison with other personal property schedules will help to determine if the costs reported for similar property are accurate. This comparison can improve equalization between businesses. When the assessor analyzes and uses the costs typically reported within a business activity code, assessments will be more accurate and uniform because individual personal property price differences will be minimized. If the costs derived from this analysis are current replacement costs, they should not be factored using the RCN trending factors found in **Chapter 4, Personal Property Tables.**

However, if the costs are not current, they must be factored from the year of the comparable costs to the current assessment date. In this event, the year of the costs may or may not correspond to the taxpayer's year of acquisition. It is important that the assessor knows which information is in use and applies the correct trending and percent good (depreciation) factors.

Local Cost Surveys of Equipment Dealers

Assessors may also contact local equipment dealers to determine RCN. Local equipment dealers have current list prices available for various types of equipment. The assessor should contact these dealers and ask about the prices of certain types of equipment. This is especially useful as a check on the accuracy of reported costs and trended values. At the time of contact, the dealers should be queried as to whether discounts from the listed prices are typically given.

The assessor must also take care that the personal property listed by the dealers are comparable to the subject property. In addition, estimates for freight to the point of use, installation charges, and sales/use tax must be added.

Commercial Replacement Cost Manuals

Several companies publish pricing guides for personal property. These manuals are updated periodically and provide information for the assessor to use, especially in cases where no other information is available. These manuals include, but are not limited to, the following:

- Dun & Bradstreet, Inc.
Business Economics Division General Economic Information
99 Church Street
New York, NY 10007
 - Computer Price Guide
75 South Greeley Avenue
Chappaqua, NY 10514
- Used Computer Prices

- Marshall and Swift Publication Co.
P.O. Box 26307
Los Angeles, CA 90026
RCN Factors
- R.S. Means Company, Inc.
100 Construction Plaza
Kingston, MA 02364
RCN For Specific Equipment

Many of the companies charge a fee for the information contained in replacement cost manuals. However, payment of the fees usually entitles the purchaser to all updates or factors used in the manual. The manuals provide a valuable crosscheck to estimates of RCN.

Do not factor the prices listed in the replacement cost manuals using the cost trending factors found in **Chapter 4, Personal Property Tables**. Trending factors are furnished with the replacement cost manual by the publisher in order to trend manual RCN's to the current assessment date. Since these trending factors are specifically intended for use with the particular manual do not apply these factors to other manuals or to original costs declared by the taxpayer.

Determine Accrued Depreciation:

Accrued depreciation is the difference between the current replacement cost new and the present value of the equipment as of the date of the appraisal. Depreciation may be defined as follows.

Depreciation is "Loss in value of an object, relative to its replacement cost, reproduction cost, or original cost, whatever the cause of the loss in value..." according to Property Appraisal and Assessment Administration, IAAO, 1990, page 641.

The causes of accrued depreciation are divided into three categories:

1. Physical Depreciation (deterioration)
 - a. Wear and tear from use or from the elements
 - b. Negligent care or inadequate maintenance
 - c. Damage from moisture, breakage, or fire
2. Functional Obsolescence
 - a. Poor plan, design, or style
 - b. Mechanical inadequacy or superadequacy
 - c. Functional inadequacy or superadequacy due to size, style, age
 - d. Technological innovation
 - e. Changes in manufacturing techniques
 - f. Changes in consumer tastes
3. Economic Obsolescence
 - a. Adverse economic conditions
 - b. Passage of restrictive legislation
 - c. Loss of material or labor sources

Physical depreciation and functional obsolescence relate to deficiencies within the property itself. Deficiencies may be classified as either curable or incurable. The deficiencies are curable if the cost to repair, replace, or correct them is economically feasible. This cost to cure is economically feasible if the cost is equal to or less than the additional income which would be generated by the property after the deficiencies have been cured. The deficiencies are incurable if they are physically or economically impractical to repair, replace, or correct.

Economic obsolescence is due to negative forces outside the property. This type of depreciation is seldom curable and is generally classified as incurable.

Losses in value due to functional or economic causes are not related to the actual age of the property, but rather to changing market forces that affect the property. Physical depreciation is related more to its economic life, i.e. its full life assuming normal maintenance, rather than the actual physical age of the equipment. Therefore accrued depreciation is based upon economic life rather than physical life.

Depreciation, as used in appraisal, differs from depreciation as used in accounting. Accountants are interested in income tax deduction justification or allocation of the investment made in the personal property to various income producing activities (sometimes referred to as profit centers). In contrast, the assessor attempts to estimate the actual value of the personal property as of the date of the appraisal.

The assessor must consider and document all elements of physical depreciation and functional and economic obsolescence as of January 1 each year before placing a value on personal property.

Measure Incurable Physical Depreciation:

Physical depreciation which is due to ordinary use of the property is incurable because it is economically impractical to bring the property to its original condition when new each year. In order to measure incurable physical depreciation, the assessor determines the total economic life, the effective age, the remaining economic life, and the appropriate depreciation amount to apply to the subject property. Remaining economic life is the number of years remaining in the economic life of the personal property as of the date of appraisal.

To make a supportable estimate of incurable physical depreciation, the assessor first determines the correct total economic life of the equipment being appraised.

Total economic life is the total period of time over which it is anticipated that equipment can be profitably used. It is described as the sum of the effective age and the remaining economic life. Total economic life is usually less than the physical life of the property. The Economic Life Estimates in **Chapter 4, Personal Property Tables**, are provided to assist in the estimation of total economic life.

Analysis of field data may indicate that the original estimate of economic life should be revised. The economic lives in this manual are generally accurate but there may be exceptions. The estimate of economic life of the property must be defensible, reasonable, and supported by documented evidence.

The following are characteristics of equipment that have long, average, and short term economic lives. They are provided as descriptions of the economic lives found in **Chapter 4, Personal Property Tables**.

Long-lived Equipment:

The characteristics of long-lived equipment are:

- Relatively large investment in relation to the value of the unit produced
- Occurrence in the heavy manufacturing processes such as metal, sugar, oil, paper, cement, stone, and milling
- Infrequent changes in the process, product, style, or function of the property or the industry
- Durability, characterized by a steady output, efficient operation, and normal operating costs over its economic life
- Difficulty in moving due to the special foundation or structures necessary for operation
- Tied to the economic life of the structure in which it is housed

Average-lived Equipment:

The characteristics of average-lived equipment are:

- Found commonly in business and industry
- Adaptability to change or technical advances
- Susceptibility to obsolescence in both style and function
- Ease of relocation (mobility)

Short-lived Equipment:

The characteristics of short-lived equipment are:

- High rate of total wear relative to replacement cost
- Rapid accrual of obsolescence due to advances in technical improvements and capabilities
- Lack of adaptability

Estimate Effective Age

The effective age of personal property is the age of the property as indicated by its condition and utility. Equipment that is not properly maintained, is used more extensively than the average, or due to technological advancement has diminished utility, may have an effective age greater than the actual age of the property. Conversely, equipment in better than average condition may have an effective age that is less than the actual age of the property.

Effective age may be determined from the declaration schedule submitted by the taxpayer and physical inspection of the property. Physical inspections are necessary to determine the use and condition of the property.

Determine Remaining Economic Life

Remaining economic life expresses the period of time remaining over which the subject property will provide a net return to the owner. In other words, it is the period of time from the date of the appraisal to the time when the property only has salvage value or is scrapped.

Remaining economic life is calculated by subtracting the effective age from the total economic life estimate.

Calculate Incurable Physical Depreciation to Arrive at % Good

The amount of incurable physical depreciation is calculated using the percent good table found in **Chapter 4, Personal Property Tables**. The percentage allowed for incurable physical depreciation plus the percent good equals 100%.

The percent good table measures the remaining value of property at given points in time during the total economic life of the property. The table found in **Chapter 4, Personal Property Tables**, generally measures loss in value attributable to typical physical depreciation, and functional/technological obsolescence. The table is not reliable in estimating losses in value due to atypical or extraordinary physical or functional/technological obsolescence or any economic obsolescence that may exist. Measurements of extraordinary functional loss in value or any economic loss in value are made separately, frequently using the income or sales comparison (market) approaches to value.

The percent good table is based upon composites derived from the experience of industries and studies by governmental agencies. The table is based on economic life and applies to equipment in average working condition for its effective age.

The equipment percent good table is designed to assist the assessor in estimating replacement cost new less normal depreciation (RCNLD). The column headings represent the typical economic life expectancy of the equipment under consideration. Each column shows the normal or typical percent good factor for each year of effective age of the equipment.

The procedure for using the percent good table is as follows:

1. Estimate total economic life.
2. Estimate effective age.
3. Multiply RCN by the percent good listed in the table that corresponds to the effective age of the personal property and its total economic life.

If, after physically inspecting the property, the assessor determines that the condition of the subject property is worse than average, an adjustment reducing the percent good applied to the property is made to account for this additional physical obsolescence. If the assessor determines that the condition of the subject property is better than average, an adjustment increasing the percent good applied to the property is made to account for this additional physical utility. The specific adjustment is based upon evidence from the market and should be documented on the appraisal record.

Measure Curable Depreciation & Functional Obsolescence

Curable physical depreciation and curable functional obsolescence are generally measured using the cost to cure method, i.e. the cost of curing or repairing the additional depreciation or obsolescence. Keep in mind that curable depreciation and obsolescence must be economically practical to cure. The cost to cure the deficiency is subtracted from the RCNLD estimate as a loss in addition to incurable physical depreciation.

Measure Incurable Functional and Economic Obsolescence

Incurable functional and economic obsolescence are estimated by either capitalizing the loss of income due to whatever causes exist at the time of the appraisal or by estimating that loss using direct sales comparison in the market.

The analysis and verification of increased operating costs, reduced economic income, or reduction in market value of a property provide the assessor with indicators that depreciation or obsolescence, over and above that published in age-life depreciation tables, may be warranted.

The court ruled in Colorado & Utah Coal Co. v. Rorex, 149 Colo. 502, 369 P.2d 796 (1962), that if economic obsolescence exists, it must be acknowledged and deducted.

Measuring Overall Depreciation Through Capitalization of Loss:

The assessor, in some cases, may be able to estimate the typical net income producing capabilities of the personal property being appraised. Then the actual diminished net income, from all causes of depreciation, is measured.

This difference in net income is capitalized using an overall capitalization rate (OAR), if possible. Even if the capitalization rate is developed using the band of investment or summation techniques as described in published appraisal texts and in **ARL Volume 3, LAND VALUATION MANUAL, Chapter 4, Valuation of Vacant Land Present Worth**, it must include return of investment, return on investment, and an effective tax rate.

The resulting capitalized value of the income loss from all causes of depreciation is subtracted from the estimate of the capitalized value of the income determined for a comparable property when new. This approach can only be applied when income can accurately be attributed to a single piece of equipment, as with a mobile hot dog stand. When income must be allocated to various pieces of equipment, this approach loses credibility and generally is not appropriate.

Isolating Extraordinary Functional & Economic Obsolescence:

The amount of diminished value from extraordinary functional and any economic obsolescence can be estimated using the direct sales comparison method. In using this method, the assessor estimates the value of property with the obsolescence using comparable obsolete property which has sold. If the calculated RCNLD value of the property is greater than the value indicated by the sales of obsolete properties, this difference is an indication of the value loss due to extraordinary functional and any economic obsolescence.

The assessor uses the direct sales comparison method to set up percent loss in value norms for different classes of properties within specific business activity codes. A percent loss in value factor for extraordinary functional and any economic obsolescence may be developed for a class of property within a business activity code and deducted from the calculated RCNLD after application of the percent good factors from the cost approach. The percent good factors in the cost approach account for incurable physical and some functional obsolescence.

A complete discussion of the techniques and theories behind depreciation is found in Chapter 8 of the Property Appraisal and Assessment Administration, IAAO, 1990.

Calculate Replacement Cost New Less Depreciation:

The assessor deducts accrued depreciation from the estimate of RCN. The result is commonly called Replacement Cost New Less Depreciation (RCNLD). RCNLD reflects the current actual value in use of the personal property.

RCNLD, as calculated using the tables in **Chapter 4, Personal Property Tables**, includes loss in value from physical causes and is the indicated current actual value determined by the cost approach. Additional value loss due to extraordinary physical and functional obsolescence or any economic obsolescence can be deducted if these circumstances can be documented.

RCNLD must be factored to the June 30 level of value in effect for real property prior to applying the 29 percent assessment percentage.

Valuation of Used Personal Property:

The valuation of used personal property requires that a decision be made concerning the remaining economic life of the property. If the personal property's elapsed age from its actual year of manufacture, or estimated effective year of manufacture, is equal to or greater than the number of years the personal property reaches its depreciated value floor, as evidenced in **Chapter 4, Personal Property Tables**, then the owner's acquisition cost for the personal property is to be treated as RCNLD and "frozen" at that value. The level of value will be frozen at 1.0 (LOV = 1.0) in the year that the personal property reaches its fully depreciated residual value.

An exception to this rule applies when the personal property is reconditioned to extend its remaining economic life. In such cases, the personal property's effective age is adjusted appropriately and the reasonable acquisition, installation, sales/use tax, and transportation costs of the personal property are subject to depreciation over the entire estimated remaining economic life of the personal property..

Even though personal property has been permanently taken out of service, but has not been scrapped or sold, it still has value. However, additional functional and/or economic obsolescence may exist.

If, however, the elapsed age from the year of manufacture, or estimated effective year of manufacture, is less than the number of years when the personal property would have reached its depreciated value floor, as evidenced in **Chapter 4, Personal Property Tables**, then the property is treated as a new personal property and the owner's acquisition cost is subject to depreciation over the complete economic life of new personal property. The resulting value should be compared to comparable values in use of the personal property, if such information is available.

SALES COMPARISON (MARKET) APPROACH

Colorado Revised Statutes, section 39-1-103(5)(a), requires that the actual value of personal property be determined by appropriate consideration of the cost approach, the sales comparison (market) approach, and the income approach. However, § 39-1-103(13), C.R.S., specifies that the value derived from the cost approach shall be the maximum value if the owner has timely filed a declaration which contains a full and complete disclosure of all personal property including costs of acquisition, installation, sales/use tax, and freight to the point of use. The sales comparison (market) approach is based on independent information gathered by the assessor and may be considered when it results in a lower value than the cost approach as required by § 39-1-103(13)(c), C.R.S. The assessor may use the sales comparison (market) approach either when there is sufficient comparable sales data and the resulting value is lower than that indicated by the cost approach or when the declaration schedule contains faulty or misleading information.

The sales comparison (market) approach is based upon the assumption that property value may be measured by analyzing what buyers pay for similar property. There is one method that is typically employed in the sales comparison (market) approach to the valuation of personal property and that is the comparable sales method.

COMPARABLE SALES METHOD

The comparable sales method involves analysis of market sales of comparable properties and possibly of the subject property itself. It provides an indication of what people in general are willing to pay for a given type of property at the time of sale, i.e. the market value of the property. Refer to the *Bulk Sale of Personal Property* under the topic *Types of Cost* and to *Sources of Data* under the *Comparable Sales Method* topic, both in this chapter.

The Appraisal Institute's definition of market value is derived from Sacramento Southern R.R. C. v. Heilbron, 156 Cal 408, 104 P. 979 (1909).

The most probable price, as of a specified date, in cash, or in terms equivalent to cash, or in other precisely revealed terms for which the specified property rights should sell after reasonable exposure in a competitive market under all conditions requisite to fair sale, with the buyer and seller each acting prudently, knowledgeably, and for self interest, and assuming that neither is under undue duress.

The procedure for the direct sales comparison method is as follows:

- Step 1 - Collect and confirm comparable sales data
- Step 2 - Select appropriate units of comparison
- Step 3 - Adjust comparable sales data using market data
- Step 4 - Array and analyze the adjusted comparable sales data
- Step 5 - Estimate the current actual value of the subject

Collect and Confirm Comparable Sales Data

Before the sales comparison (market) approach can be used on personal property, two conditions must exist:

1. There must be personal property comparable or similar to the subject.
2. Reliable sales data must exist for the comparables.

The assessor gathers current market sales for personal property being appraised. Current sales include transactions occurring during the twelve months preceding the assessment date. These transactions must include, in addition to acquisition price paid by the current owner, adjustments for the cost of installation, sales/use tax, and freight to the point of use.

Current sales are gathered because §§ 39-1-103(5)(a) and 39-1-104(12.3)(a)(I), C.R.S., require the estimation of current actual value of personal property before adjustment of that actual value to the June 30 appraisal date for real property.

Local, regional, state, or national sales data may be used. It may not be sufficient, when gathering market sales for personal property, to restrict the marketplace to an individual town or county. The personal property market is unique in that personal property is movable and has use in many locations. The assessor should attempt to obtain and analyze data from wherever the market exists for the personal property.

After sales of comparable properties have been gathered, the assessor must confirm them to ascertain whether or not they are arm's-length transactions. Confirmation should be made in writing, if possible, and may be accomplished through the buyer, the seller, equipment dealers, auctioneers, or brokers.

Verified sales should be given more weight than those sales where confirmation was initiated, but no verification could be acquired. It is important that the assessor note how the sales information was verified and how familiar the person was with the property.

Minimum Standards for Sales Data:

The following are the minimum requirements for the sales data used in the sales comparison (market) approach:

1. Date of sale
2. Sale Price
3. Condition of the sold property
4. Age of the sold property
5. Location of the sale
6. Buyers' and sellers' names and addresses
7. Special terms of the sale, if any
8. Complete description of the sold property

9. Any unusual conditions surrounding the sale

All of the information must be considered together as part of the valuation of the subject property.

Sources of Data:

There are several sources of comparable market data. The first source is the taxpayer. The acquisition cost of the property may provide the assessor with reliable market information for the date when the personal property was first acquired. Other taxpayers with similar property can provide market information for the same type of personal property. Once a database has been established, the assessor analyzes it to see if any trends emerge which indicate the actual value of the subject property. This analysis is useful for all types of property similar to the property in the database.

For personal property that, due to supply and demand imbalance, are oversupplied in the market, obsolescence is frequently reflected in auction sales prices. This is true only when auctions are the market for this equipment, i.e. when there are few, if any, resales of such equipment outside of an auction environment. Auction sales of personal property may provide reasonable value estimates provided that auctions are held to sell equipment in the normal course of the trade. If these transactions do not include installation, sales/use tax, and freight to the point of use, in addition to acquisition price paid by the current owner, adjustments to the value for the personal property must be made to develop a reasonable value in use.

Auction sales resulting from seller financial duress or involuntary liquidation of personal property are used only in rare instances where no other sales exist or when no other sales have taken place in the recent past. Bankruptcy or forced liquidation auctions may only give evidence of liquidation value instead of actual value. The assessor is appraising property at market value not at liquidation value.

Comparables from auction sales must be carefully researched before being used to establish the actual values of other property.

Used equipment guides may indicate the market value of used equipment. Since some guides report values for disassembled, non-installed properties, the assessor must determine if the used values include installation, sales/use tax, and freight to the point of use. If these transactions do not include installation, sales/use tax, and freight to the point of use, in addition to acquisition price paid by the current owner, adjustments to the reported value for these personal property must be made to develop a reasonable value in use.

Documentation as to the methodology used in determining the used equipment values and the sources for this data should be requested before considering the value as an indication of market value. The comparability of the property listed in the equipment guide to the subject property also must be determined.

Select Appropriate Units of Comparison

The assessor determines an appropriate unit of comparison for the subject and the comparable properties. Personal property units of comparison may include the following:

- Model number
- Equipment type and production output per time period
- Capacity and special accessory items
- Horsepower
- Weight

Any meaningful unit of comparison may be used so long as it allows the assessor to analyze subject and comparable properties on the same basis. Discussions with equipment manufacturers, equipment dealers, and equipment leasing companies may assist the assessor in determining appropriate units of comparison.

Adjust Comparable Sales Data Using Market Data

Before adjusting sales, any differences between comparable properties and the subject property must be identified. The adjustment process accounts for differences between properties so that the comparable market data is made more similar to the subject. Types of adjustments which may be required are as follows:

- Financial terms of the sale
- Time of sale
- Location of sale
- Physical characteristics of the property (including capacity)
- Condition of the property
- Brand name
- Extra accessory items

Based on the effects of the market, there may be no adjustment for a specific difference. The assessor must investigate the marketplace to determine which differences in the property actually affect value.

Adjustments are always made to the comparable property sales prices and never to the subject.

Adjustments may be made in one of two ways:

1. Percentage amounts
2. Dollar amounts

Percentage Adjustments:

A percentage adjustment is made by adjusting the sales prices of other comparable properties by specified percentages of the sales price. The actual percentages used are derived from the market. Comparable property sales which are superior to the subject must be adjusted downward and comparable property sales which are inferior to the subject must be adjusted upward. Time adjustments, if applicable, must be made first because all sales must be on an equivalent basis before other adjustments can be made.

Example: Assume Property A recently sold for \$20,000. The market indicates Property B, the Property you are appraising (Property B), sells for 20 percent more than Property A because it is in better condition. Using only this information, what would be your estimate of Property B's value?

Answer: $\$20,000 + (.20 \times \$20,000) = \$24,000$

Example: Assume Property A recently sold for \$20,000. The market indicates Property A is ten percent better than Property B because Property A is in better condition. Using only this information, what would be your estimate of Property B's value?

Answer: $\$20,000 - (.10 \times \$20,000) = \$18,000$

Percentage adjustments may be determined by studying economic trends, price level changes, information from personal property manufacturers and dealers, or from the database of sales collected by the county assessor. Analysis of sufficient data should yield percentage value changes that may be applied to comparable property sales prices to estimate subject property value.

Dollar Adjustments:

Dollar adjustments are made in the same way as percentage adjustments except that actual dollar amounts are used. The amount of the adjustment is determined from the market.

Example: Assume Property A recently was sold for \$20,000. The market indicates Property B, which you are appraising, sells for \$4,000 more than Property A because it is in better condition. Using only this information, what would be your estimate of Property B's value?

Answer: $\$20,000 + \$4,000 = \$24,000$

Note the similarity of the methodologies used in the two examples. The estimated value of the subject in both cases is the same.

The type of adjustments that should be made will depend on the data available and the judgment of the assessor.

A step-by-step example of the comparable sales method for the valuation of personal property is shown below.

STEP 1 - COLLECT AND CONFIRM COMPARABLE SALES DATA

Market data is collected, confirmed, and arrayed according to type of equipment, age, date of sale, and by units of comparison that may exist. An array is a grouping of data in a specific order that facilitates analysis in such a way that comparisons and relationships between the data may be identified and quantified. The following is an example of a worksheet array of raw sales information.

Example:

Sales Analysis, Personal Computers January 1, 1989					
Type Capacity	Sale Date	Sale Price	Location	Verified With	
IBM PC XT	8-88	\$3,000	Denver	Buyer	256K
IBM PC XT	12-88	\$5,000	Boulder	Seller	512K
IBM PC XT	10-88	\$3,500	Denver	Buyer	256K
Tandy ST1000	11-88	\$3,400	Littleton	Buyer	256K
IBM PC XT	12-88	\$3,300	Denver	Seller	256K
Tandy ST1000	10-88	\$5,500	Boulder	Buyer	512K
Compaq Port.	9-88	\$2,500	Longmont	Buyer	256K
AT&T PC 6300	12-88	\$5,600	Denver	Buyer	512K

STEP 2 - SELECT APPROPRIATE UNITS OF COMPARISON

From this point the sales data are analyzed and market comparisons are made. The array facilitates analysis by displaying the data in a form that can quickly be sorted and analyzed.

The value ranges per unit of comparison that are established are ultimately used to establish indicators of market value. In this example analysis, the unit of comparison selected is the memory capacity of each unit expressed as multiples of "K". A "K" is a kilobyte or 1000 bytes of memory, as shown in the Capacity column.

STEP 3 - ADJUST COMPARABLE SALES DATA USING MARKET DATA

Sales prices adjusted for installation, sales/use tax, and freight to the point of use, if necessary, are used in the arrays to establish value ranges for various types of equipment.

In this example, all sales include freight to the point of use and sales tax, and installation is the customer's responsibility. Therefore, no adjustments are necessary.

STEP 4 - ARRAY/ANALYZE THE ADJUSTED COMPARABLE SALES

The price paid for each K of memory can be calculated by dividing the sales price by the listed memory capacity. A range of values per unit emerges.

Example:

Sales Analysis, Personal Computers January 1, 1989					
Type	Sale Date	Sale Price	Location	Capacity	Price/K
IBM PC XT	8-88	\$3,000	Denver	256K	\$11.72
Compaq Port.	9-88	\$2,500	Longmont	256K	\$ 9.77
IBM PC XT	10-88	\$3,500	Denver2	56K	\$13.67
Tandy ST1000	11-88	\$3,400	Littleton	256K	\$13.28
IBM PC XT	12-88	\$3,300	Denver	256K	\$12.89
Tandy ST1000	10-88	\$5,500	Boulder	512K	\$10.74
IBM PC XT	12-88	\$5,000	Boulder	512K	\$ 9.77
AT&T PC 6300	12-88	\$5,600	Denver	512K	\$10.94

STEP 5 - ESTIMATE THE CURRENT ACTUAL VALUE OF SUBJECT

From the data presented, a conclusion could be reached that the typical price per K of memory for this type of computer is \$12.00 per K for 256K machines and \$10.00 per K for 512K machines. This analysis must be performed yearly to keep the market indicators current.

After the current estimated value of the subject has been determined, the assessor makes adjustments for installation, sales/use tax, and the cost of freight to the point of use, if these were not included with the acquisition price paid by the current owner to develop a reasonable value in use. The assessor's judgment and experience are involved in analyzing the values to estimate the final value. The value of the subject property must be reasonable, defensible, and documented.

Market indicators are used in the valuation of similar types of property for the current assessment year. Market indicators also provide a tool which can be used in checking cost approach depreciation estimates. And, they can be used for comparison with the value estimates developed using the cost and income approaches to value before a final value estimate is made. Market indicators can be especially useful with properties subject to a high degree of functional or economic obsolescence.

INCOME APPROACH

Colorado Revised Statutes section 39-1-103(5)(a), requires that the actual value of personal property be determined by appropriate consideration of the cost approach, the sales comparison (market) approach and the income approach. However, § 39-1-103(13), C.R.S., specifies that the value derived from the cost approach shall be the maximum value if the owner has timely filed a declaration which contains a full and complete disclosure of all personal property, including the costs of acquisition, installation, sales/use tax, and freight to the point of use. The income approach is based on independent information gathered by the assessor and may be considered when it results in a lower value than the cost approach as required by § 39-1-103(13)(c), C.R.S.

The assessor may consider the income approach either when there is sufficient income data and the resulting value is lower than that indicated by the cost approach or when the declaration schedule contains faulty or misleading information.

Income analysis yields an estimate of the present value of future net benefits to be derived from a property. This approach is based on the premise that the price paid for property is dependent on the future net benefits to be derived or investors' estimates of what those future net benefits will be. The procedure for the income approach is as follows:

1. Estimate gross income.
2. Deduct allowable expenses to calculate net income.
3. Determine capitalization rate or gross rent multiplier.
4. Capitalize net income into value.

ESTIMATE GROSS INCOME

In using the income approach, the assessor first measures the economic income (rental or lease amounts) for comparable properties. Economic rental data can be gathered from actual rental data observed in the market. In cases where no rental rates can be established, it is very difficult to accurately value property using the income approach.

The assessor estimates the gross economic income for the property being appraised by gathering current rental or lease information from the books and records of taxpayers leasing or renting personal property.

The assessor also contacts equipment dealers or lessors to determine typical rental or lease rates for various types of equipment. The assessor measures gross income to the property, not to the business enterprise, and it must be clear that the income stream being measured is attributable only to the personal property.

In situations where the income stream is attributable to the entire business enterprise, including income for land, improvements, intangibles, and personal property, the assessor cannot allocate the income to the various components before attempting to value the personal property. The income attributable to the personal property must be capable of being isolated or the income approach should not be used to value the personal property.

The following are term definitions found in The Dictionary of Real Estate Appraisal, Appraisal Institute, Third Edition, 1993:

- **Rent** - Rent is an amount paid for the use of land, improvements, or a capital good.
- **Profit** - Profit is the amount by which the proceeds of a transaction exceed its cost. The income approach requires that the assessor only estimate the income attributable to the property being appraised, not to the entire business. Indeed, a business can operate at a loss instead of a profit, but this does not mean that the property used by the business has a negative value. The income measured by the assessor is the income attributable to the personal property, not business income. Therefore, the term profit is not used as a measure of the value of personal property.

- **Contract Rent** - Contract rent is the actual rental income specified in a lease.
- **Economic Rent** - Economic rent, in appraisal, is a term sometimes used as a synonym for market rent. Economic rent is sought in the income approach because it is the rent justified for the property on the basis of comparable rental properties and upon past, present, and projected future rents of the subject property. It is customarily stated on an annual basis.
- **Gross Income** - Gross income is income from the operation of a business or the management of property, customarily stated on an annual basis. This means the gross income that could be generated by the property on an annual basis. It is based on the economic rent determined from the analysis of rental rates of similar personal property, not the actual contract rent generated by the subject property.

DEDUCT ALLOWABLE EXPENSES TO CALCULATE NET INCOME

The assessor deducts current, typical, operating expenses from the gross income to estimate net income. The expenses deducted from the gross income must be typical for the type of property being appraised. The following expenses are generally allowable.

1. Management
2. Salaries
3. Repairs and maintenance
4. Insurance (if provided by the lessor)

There are other expenses that are not allowable expenses for deduction from gross income. These include the following:

1. Depreciation
2. Debt service
3. Income taxes
4. Capital improvements & expenditures
5. Owner's business expenses

A complete discussion of the expenses to be deducted from gross income is found in Chapter 10 of the Property Appraisal and Assessment Administration, IAAO, 1990.

After the assessor deducts the allowable expenses from gross income, the result is the estimate of net income. It is this estimate of net income that is capitalized into value. The net income is one of the critical components in the income approach to value. The other critical component is determination of the capitalization rate.

DETERMINE CAPITALIZATION RATE

There are several methods used to determine capitalization rates. The data used in developing capitalization rates directly from the market include current typical income and expense data and market sales data. Data used in developing capitalization rates using other techniques include the rates of return expected by typical investors and by lenders, rates developed for recapture of the original investment, and effective tax rates. The techniques for the determination of the capitalization rate are fully discussed in the Chapter 12 of Property Appraisal and Assessment Administration, IAAO, 1990. Generally, the appropriate overall rate for personal property is higher than the overall rate for real property because of the short life of personal property.

CAPITALIZE NET INCOME INTO AN INDICATION OF VALUE

There are three fundamental elements in the income approach: the property value (V), the net income from the property (I), and the rate of return on the investment (R). The relationship of these three quantities is expressed in three formulas, which are really three different arrangements of the same formula:

$$\begin{aligned} \text{Formula 1: } & V \times R = I \\ \text{Formula 2: } & I \div V = R \\ \text{Formula 3: } & I \div R = V \end{aligned}$$

"V" and "I" are expressed in dollars. "R" is usually expressed as a percent, but in computations it should always be converted to decimal form. If the rate of return is 18 percent, it should be expressed as 0.18 for use in computations.

Example:

1. If the property value is \$50,000 and the capitalization rate is 12 percent, what is the net income?

Answer: \$6,000 (formula 1: $\$50,000 \times .12 = \$6,000$).

2. If net income is \$20,000 and the property value is \$100,000, what is the rate?

Answer: 20% (formula 2: $\$20,000/\$100,000 = 0.20$)

3. If net income is \$18,000 and the overall rate is 15 percent, what is the property value?

Answer: \$120,000 (formula 3: $\$18,000/0.15 = \$120,000$)

If any two of the three quantities V, I, or R are known, the third value can be determined by using the appropriate formula.

The actual value of personal property in the income approach is estimated by dividing the net income by the capitalization rate. The result is the estimate of actual value for the current assessment year. The following formula that is used to accomplish this was mentioned earlier in this chapter.

$$\text{Formula 3: } I \div R = V$$

or Income divided by the Capitalization Rate equals Value

The estimate of value from the income approach must include the cost of freight to the point of use, installation, and sales/use tax, in addition to acquisition price paid by the current owner, or adjustments for these costs must be made to develop a reasonable value in use.

Finally, the estimate of value from the income approach is adjusted to the level of value in effect for real property using the adjustment factor found in **Chapter 4, Personal Property Tables**.

FINAL ESTIMATE OF VALUE

After the assessor has determined the indicators of value from the applicable approaches, the current actual value must be determined and carried through to final assessed value. The abundance, reliability, and relevance of the available data, as well as, the values estimated by each approach, will help determine which approach is the most defensible.

The step in the appraisal process wherein the assessor determines the current actual value is called reconciliation.

RECONCILIATION

The actual value is determined using that estimate which can most readily be defended under the Colorado Revised Statutes. The reconciliation of all available valuation data will indicate which approach to value should be used for an individual property.

When the value indications from the three approaches have been determined, a reconciliation is made. Typically the value indications from the three approaches will not be the same. The best value estimate must be judged according to the following:

1. Requirements of the Colorado Revised Statutes
2. The amount and reliability of the data considered in each approach
3. The strengths and weaknesses of each approach
4. The relevancy of each approach to the subject property

For Colorado personal property assessment purposes, the actual value is the value in use, as installed. Colorado statutes require that personal property be valued inclusive of all costs incurred in acquisition and installation of the property. The costs of acquisition, installation, sales/use tax, and freight to the point of use must be considered in the personal property valuation. The inclusion of these costs requires that personal property be valued in use. Therefore, the actual value of personal property is based on its value in use.

As previously indicated, § 39-1-103(13), C.R.S., provides that the value derived from the cost approach shall be the maximum value of the personal property if the owner has filed a timely declaration which contains full and complete disclosure pertaining to the valuation of the property. Once these conditions have been met, values derived from the market and income approaches can be considered, but can only be used if they result in a lower value than the value estimated from the cost approach.

It is not acceptable to average value indications. Rather, the assessor relies upon the data that are superior in quality, quantity, and defensibility. If the data collected and analyzed do not support a reasonable estimate of value, the assessor must re-evaluate some or all of the appraisal data before a final estimate of value is made.

The final estimate of value usually is based upon taxpayer-submitted information. Under certain circumstances, the final value estimate may be based upon the "Best Information Available" (BIA). After establishing the actual value for the personal property as of the assessment date, the level of value adjustment factor must be applied to trend the personal property actual value back to the level of value in effect for real property as required by § 39-1-104(12.3)(a)(I), C.R.S. Refer to **Chapter 4, Personal Property Tables**.

BEST INFORMATION AVAILABLE VALUATION

The assessor must value all taxable personal property even though no information has been received from the taxpayer. Failure by the assessor to receive a declaration schedule does not invalidate the assessor's valuation, § 39-5-118, C.R.S. Any valuation made without the receipt of the declaration schedule is known as a "Best Information Available" (BIA) valuation. Any valuation determined by BIA generally is not capable of adjustment through the abatement process. In Property Tax Administrator v. Production Geophysical et al., 860 P. 2d 514 (Colo. 1993), abatements for BIA values in excess of what should have been reported, had the taxpayer filed a declaration schedule, were disallowed. An exception to this general rule is provided in § 39-10-114(1)(a)(I)(D), C.R.S., if the following conditions are met, the taxpayer retains the right to file an abatement petition:

1. The taxpayer must have withdrawn from or failed to further pursue the available personal property protest and appeal remedies, and
2. The assessor must have mailed a notice of determination concerning the protest, and
3. The assessor must have performed an audit of the taxpayer's personal property that indicates an overvaluation of the property.

BIA valuations are also made in cases where the owner of the property cannot be determined after due diligence. The assessor may list such property on the tax roll as "owner unknown" as permitted by § 39-5-102(2), C.R.S.

Taxpayers are always notified when a BIA valuation is made. Usually BIA valuations are made prior to the June 15 Notice of Valuation (NOV) deadline. Only in the case of omitted property can a BIA valuation be made after June 15. The assessor uses the Special Notice of Valuation (SNOV) and allows the taxpayer 30 days in which to protest such omitted property valuations. During the protest of any BIA valuation, the assessor should require the taxpayer to submit the personal property declaration schedule or an itemized listing of personal property for the year being protested. If the taxpayer refuses to submit the schedule or list, the protest is denied.

If the taxpayer owns personal property in excess of \$2,500 in total actual value per county and does not file a property declaration schedule by the April 15th deadline or if the taxpayer requests either a 10 or 20 day filing extension, and fails to meet the extended deadline, the assessor makes a BIA valuation and adds a late filing penalty as required by § 39-5-116, C.R.S. Taxpayers owning personal property of \$2,500 or less in total actual value per county are not required to file personal property declaration schedules, as this property is exempt from property taxation pursuant to § 39-3-119.5, C.R.S.

Under certain circumstances the assessor may add, in addition to a late filing penalty, a penalty valuation for omitted property discovered after the assessment date as permitted by § 39-5-116(2)(a), C.R.S.

The penalty valuation for omitted property may only be added if specific personal property has been omitted. Therefore, the BIA valuation must be based on an itemized list of personal property and associated values which are typical of a business of this type. Refer to the topic *Penalties* in this chapter.

ESTIMATING ACTUAL VALUE

If an itemized list was submitted in previous years, or if the property was subject to a physical inspection during the last performance analysis, the assessor may already have sufficient information to determine the value. In all cases, BIA valuations should only be made after research or comparison of the subject property with the valuations of similar properties.

A BIA valuation is not an arbitrary valuation, an excessive valuation, or a penalty imposed upon the taxpayer. The only statutory penalties that the assessor may attach to personal property are found in § 39-5-116, C.R.S. There are no statutory provisions for the assessor to knowingly overvalue personal property.

DATA SOURCES

The assessor has a variety of data sources available when determining values according to the "Best Information Available" (BIA). They include the following:

Comparable Property Records

The property declaration schedules and related appraisal records of comparable or like properties will usually provide the assessor with certain equipment characteristics and value ranges for a given type of business.

Subject Property Records

Other sources of data include assessment and related accounting records for the same business from previous years. These records may be used in valuing the business this year based on the best information available. If proper allowances are made for normal trends regarding additions and deletions, a business may be its own best comparable when estimating BIA values for the current assessment year.

Supply Catalogs

Supply or sales catalogs for equipment furniture and machinery can provide the assessor with price ranges. A list of supply catalogs was previously provided in this chapter.

Appraisal Manuals/Industry Guides/National Averages

Many appraisal manuals contain appraisal procedures, theories, and techniques along with personal property pricing information. In addition, typical values for equipment are available in industry guides. Many of these guides are available in public libraries.

PENALTIES

Penalty for Late Filing

A late filing penalty may be applied in the following circumstances:

Failure to file schedule - failure to fully and completely disclose.

(1) If any person owning taxable personal property to whom one or more personal property schedules have been mailed, or upon whom the assessor or his deputy has called and left one or more schedules, fails to complete and return the same to the assessor by the April 15 next following, unless by such date such person has requested an extension of filing time as provided for in this section, the assessor shall impose a late filing penalty in the amount of fifty dollars or, if a lesser amount, fifteen percent of the amount of tax due on the valuation for assessment determined for the personal property for which any delinquent schedule or schedules are required to be filed. Any person who is unable to properly complete and file one or more of such schedules by April 15 may request an extension of time for filing, for a period of either ten or twenty days, which request shall be in writing and shall be accompanied by payment of an extension fee in the amount of two dollars per day of extension requested. A single request for extension shall be sufficient to extend the filing date for all such schedules which a person is required to file in a single county. Any person who fails to file one or more schedules by the end of the extension time requested shall be subject to a late filing penalty as though no extension had been requested. Further, if any person fails to complete and file one or more schedules by April 15 or, if an extension is requested, by the end of the requested extension, then the assessor may determine the actual value of such person's taxable personal property on the basis of the best information available to and obtainable by him and shall promptly notify such person or his agent of such valuation. Extension fees and late filing penalties shall be fees of the assessor's office. Penalties, if unpaid, shall be certified to the treasurer for collection with taxes levied upon the person's property.

§ 39-5-116, C.R.S.

Penalty for Failure to Fully & Completely Disclose Personal Property

A penalty for failure to fully and completely disclose personal property may be applied in the following circumstances:

Failure to file schedule - failure to fully and completely disclose.

(2)(a) If any person owning taxable personal property to whom two successive personal property schedules have been mailed or upon whom the assessor or his deputy has called and left one or more schedules fails to make a full and complete disclosure of his personal property for assessment purposes, the assessor, after notifying the person of his failure to make such a full and complete disclosure and allowing such person ten days from the date of notification to comply, shall, upon discovery, determine the actual value of such person's taxable property on the basis of the best information available to and obtainable by him and shall promptly notify such person or his agent of such valuation. The assessor shall impose a penalty in an amount of up to twenty-five percent of the valuation for assessment determined for the omitted personal property. Penalties, if unpaid, shall be certified to the treasurer for collection with taxes levied upon the person's personal property. A person fails to make a full and complete disclosure of his personal property pursuant to this paragraph (a) if he includes in a filed schedule any information concerning his property which is false, erroneous, or misleading or fails to include in a schedule any taxable property owned by him.

(b) Any person who makes full and complete disclosure on the first personal property schedules issued to him on or after August 1, 1987, shall not be assessed a penalty for property previously omitted from the assessment rolls under this article.

(c) Any person subject to paragraph (a) of this subsection (2) shall have the right to pursue the administrative remedies available to taxpayers under this title, dependent upon the basis of his claim.

§ 39-5-116, C.R.S.

The penalty valuation for omitted property may only be added if specific personal property has been omitted. Therefore, the BIA valuation must be based on an itemized list of personal property and associated values which are typical of a business of this type.

When the value of the personal property is declared or listed during a subsequent physical inspection, if the actual value of the personal property is determined to be more than the BIA assessment due to specific personal property not being included in the BIA valuation, then a penalty of up to 25 percent of the omitted personal property's value is added to the BIA assessed value. The assessor must notify the taxpayer of the failure to make full and complete disclosure and allow the taxpayer ten days to comply before actually placing the penalty on the omitted property value. The penalty valuation is applied only for the assessment year that the assessor discovers that the taxpayer has failed to make a full and complete disclosure.

The assessor immediately bills the taxpayer the penalty, which can be up to 25% of the BIA assessed value of the undeclared omitted personal property.

The assessor should maintain written documentation regarding the percentage used for the penalty because the penalty should be uniformly applied.

Omitted property can be valued for each of the past six years providing the failure to collect tax on the property was not due to an error or omission of a governmental entity, § 39-10-101(2)(b)(II), C.R.S. If the taxes were not collected because of an error or omission on the part of a governmental entity, taxes for any period, together with any interest thereon, shall not be assessed for a period of more than two years after the tax was or is payable.

Example:

Assessment Date:	January 1, 2006
Date of Acquisition/First Use:	December 20, 2001
2006 Omitted Assessed Value:	\$1,000

Personal Property Valuations not included in the BIA:

<u>Assessment Year</u>	<u>Omitted Assessed Value</u>
2002 (no penalty)	\$1,200 assessed value
2003 (no penalty)	\$1,150 assessed value
2004 (no penalty)	\$1,100 assessed value
2005 (no penalty)	\$1,050 assessed value
2006 (25% penalty derived)	\$1,000 assessed value
Penalty of 25% of the \$1,000 Assessed Value = \$250 penalty billed	

In the example, declaration schedules were mailed to the taxpayer for the years 2002-2006. The assessed value of the omitted property changes each year because additional depreciation is deducted. The penalty assessment is only applied in the current assessment year 2006, since it is applied only in the year of discovery and only if the owner fails to make full and complete disclosure. The penalty may be applied for this one year only and no penalty may be carried forward into subsequent assessment years.

SPECIAL CONSIDERATIONS

Annually, about 10 percent or more of the owners of personal property fail to timely file personal property declarations with the county assessor. These property owners create a large volume of BIA valuations immediately prior to Notice of Valuation deadlines. For the majority of these properties, physical inspection is the best way to establish an accurate value. As many physical inspections as possible should be made before setting BIA valuations.

Any properties not physically inspected are then valued using BIA methods based upon comparable business data. The assessor makes BIA valuations based on current cost, market, or income information. All estimates of value are adjusted to the level of value in effect for real property using the published factors.

A complete discussion of the physical inspection is found in **Chapter 5, Appraisal Performance Analysis**.

LEVEL OF VALUE

All property valuations in Colorado are made at a statutory level of value.

PERSONAL PROPERTY

All estimates of actual value for personal property are adjusted to the level of value in effect for real property. The Property Tax Administrator publishes factors to adjust all personal property valuations to the correct level of value as required by 39-1-104(12.3)(a)(I), C.R.S. The adjustment factors are found in **Chapter 4, Personal Property Tables**.

ASSESSMENT RATE

Based upon section 3 of article X of the Colorado Constitution and § 39-1-104(1), C.R.S., all estimates of actual value for personal property are multiplied by 29% to yield assessed valuation.

VALUATION INFORMATION FOR TAXPAYER REVIEW

Colorado Revised Statutes section 39-5-121.5, requires that all information and documentation, including sales information obtained from all sources, used to determine a valuation be made available to the taxpayer. In addition, § 39-8-107(4), C.R.S., prohibits the assessor from using any confidential information which is not available for review by the taxpayer unless such confidential data is presented in such a manner that the source cannot be identified.

At the written request of any taxpayer or taxpayer's agent, the assessor must make available the data used in determining the actual value of any property owned by the taxpayer within seven (7) working days following the written request. Upon receiving the request, the assessor must immediately advise the taxpayer or agent of the estimated cost of providing the data. The intent of the statute is that the assessor immediately estimates the cost because payment must be sent to the assessor prior to providing the data. Once the data is gathered, the assessor can choose whether the data is mailed, faxed, or sent by electronic transmission to the taxpayer or agent. If the estimated cost was lower than actual costs, the assessor may include a bill with the data for any reasonable cost above the estimated cost subject to the statutory maximum. The additional costs are due and payable upon receipt of the data according to § 39-5-121.5, C.R.S.

Pursuant to § 24-72-205, C.R.S., the statutory maximum is \$1.25 per page unless actual costs exceed this amount. The statute delineates how the charges may be calculated. For additional information regarding this issue, refer to **ARL Volume 2, ADMINISTRATIVE AND ASSESSOR'S DUTIES AND RELATIONSHIPS, Chapter 1, Overview of Assessor's Duties and Relationships**.

If the Computer Assisted Mass Appraisal (CAMA) process is used to determine values, all information used to create the valuation model must also be made available for review by the taxpayer. However, confidential information must be compiled and presented in such a manner that the source of the information cannot be identified. It is suggested that summaries of sales and income data for the various economic areas in the county be prepared. For example, a summary of market sales of office desks would reflect market values ranging from \$X to \$Y.

It is important that the assessor ensure confidentiality in all cases. All information entered or attached to the DS 056 Personal Property Declaration Schedule and any other declaration schedule is confidential information. This information includes any detailed listing of property reported by a prior owner, whether or not valuations of the property are shown.

Information, both confidential and otherwise, should be summarized and ready for distribution prior to the taxpayer protest period. This will allow ample time to summarize confidential Personal Property Declaration Schedule information, yet supply the taxpayer all information to which the taxpayer is entitled. For additional information concerning confidentiality requirements, see **Chapter 2, Discovery, Listing, and Classification.**

COMPLIANCE REQUIREMENTS

The State Board of Equalization standard for the median assessment ratio for personal property statistical compliance is .90 - 1.10.

Additional required procedures are as follows:

1. Establish and follow a personal property audit plan such as the one described in **Chapter 5, Addendum 5-A, Personal Property Audit Standards.**
2. The aggregate ratio will be determined solely from those personal property accounts physically inspected by the assessor. The minimum sample is 1% or 10 schedules; and the maximum sample is 100 schedules.

SUMMARY

Chapter 3, Valuation Procedures, discusses the valuation requirements and procedures used by county assessors for determining the actual and assessed values for personal property. The approaches to value which are considered by the assessor include:

1. Cost
2. Sales Comparison (Market)
3. Income

For Colorado personal property assessment purposes, the actual value is the value in use, as installed. Colorado statutes require that personal property be valued inclusive of all costs incurred in acquisition and installation of the property. The costs of acquisition, installation, sales/use tax, and freight to the point of use must be considered in the personal property valuation. The inclusion of these costs requires that personal property be valued in use. Therefore, the actual value of personal property is based on its value in use.

All personal property is valued as of the current assessment date and factored to the real property level of value using the factors found in **Chapter 4, Personal Property Tables**. The assessment rate used for all personal property is 29% as required by § 39-1-104(1), C.R.S.

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CHAPTER 4

PERSONAL PROPERTY TABLES

The personal property tables chapter contains the replacement cost factors, economic life estimates, and percent good tables that are provided to assist county assessors in valuing personal property by the cost approach. The level of value adjustment factors are provided pursuant to § 39-1-104(12.3), C.R.S., and must be used to factor assessment date actual values of personal property to the level of value (as of the appraisal date) in effect for real property.

The tables and factors published here are subject to verification in the marketplace at the retail “end user” trade level. All cost approach value estimates are based upon the factors and tables found in this section. Cost approach value estimates must be reconciled to the market and income approaches to value based upon the appraiser's opinion as to the reliability of the information used to derive the value estimates from each approach. Reconciliation of the applicable approaches to value is required for the valuation of all personal property in Colorado.

Actual Value Determined When.

(13)(a) ...the cost approach shall establish the maximum value of property if all costs incurred in the acquisition and installation of such property are fully and completely disclosed by the property owner to the assessing officer.

(c) ...However, nothing in this subsection (13) shall preclude the assessing officers from considering the market approach or income approach to the appraisal of personal property when such considerations would result in a lower value of the property and when such valuation is based on independent information obtained by the assessing officers.

§ 39-1-103(13), C.R.S.

For Colorado personal property assessment purposes, the actual value is the value in use, as installed. Colorado statutes require that personal property be valued inclusive of all costs incurred in acquisition and installation of the property. The costs of acquisition, installation, sales/use tax, and freight to the point of use must be considered in the personal property valuation. The inclusion of these costs requires that personal property be valued in use. Therefore, the actual value of personal property is based on its value in use.

Counties that develop in-house trending or depreciation tables must submit them annually for approval to the Statutory Advisory Committee to the Property Tax Administrator prior to use.

As the property under appraisal ages, the cost approach becomes less indicative of the property value. After fifteen years of age, the recommended valuation procedure is to measure the value of depreciated equipment directly in the marketplace, if possible.

COST FACTOR TABLES

The replacement cost factor tables are provided to assist the assessor in the determination of replacement cost new estimates by multiplying original or historical cost of personal property by the cost price indexes published and made available through the courtesy of the Marshall Swift Publication Company. When the original cost is multiplied by the factor for the year of acquisition, the product will approximate the current cost to replace, or the Replacement Cost New (RCN), of the personal property being appraised with property having similar utility.

The assessor must select the appropriate industry category number that corresponds to the type of equipment being appraised. Thirteen industry category numbers are supplied. In many instances, the individual industry category covers more than one type of commercial or industrial property. Specific types of commercial and industrial property are found in each industry category.

If the property to be factored can be specifically identified, the appropriate specific industry category (such as 3 for office equipment) should be applied. If the property cannot specifically be identified, the industry category for the business type may be used. If property is generally useful in many types of business activities, the predominant use shall determine the industry category.

If particular property types are not included in the table, a comparable property type industry category number may be selected. The “average of all” (industry category number 1) should be selected if the specific property type is not included in any of the industry categories.

After selecting the appropriate industry category number, the assessor uses the specific cost factor that corresponds to the year of acquisition of the equipment. The original cost of the equipment is then multiplied by the cost factor to arrive at the estimated replacement cost new (RCN) as of the assessment date.

Example:

Personal Property	Industry Number	Acquisition Year	Cost	Cost Factor	RCN
Desk	3	2001	\$1,500	1.17	\$1,755

In other words, it would cost \$1,755 on the current assessment date to replace an office desk purchased in 2001 for \$1,500.

INDUSTRY CATEGORY NUMBERS

Types of Personal Property Included in Industry Categories

Industry Category Table	
Industry Category Number	Property Type
1	Average of All
2	Candy and Confectionery, Creamery and Dairy, Flour, Cereal and Feed, Garage, Meat Packing, Paint, Refrigeration and Rubber
3	Office Equipment, (excluding copiers), and Office Furniture
4	Retail and Wholesale Stores, Warehousing
5	Rental Furnishings, Apartments, Hotels and Motels
6	Banks, Savings and Loans, Restaurants and Lounges, and Theaters
7	Contractors' Equipment
8	Laundry & Cleaning Equipment
9	Bakery, Bottling, Canneries, and Fruit Packing
10	Brewing and Distilling, Cement, Clay Products, Glass, Metal, Logging, Metal Working, Mining and Milling
11	Chemical, Electrical Equipment, Manufacturing, Paper, Motion Pictures and Television, Printing, and Woodworking
12	All Petroleum, and Textile
13*	Computer and PC Equipment, Computer-integrated Equipment, Telephone and Telecommunication Equipment, and Copiers

Source: Marshall & Swift, October 2006

*Please refer to **Chapter 7, Special Issues**, under *Classification and Valuation of Personal Computers (PCs) and Other Equipment*, for more information.

2007 REPLACEMENT COST NEW FACTORS**2007 PERSONAL PROPERTY
COST FACTOR TABLE**

Year Acquired	Industry Category Number					
	1	2	3	4	5	6
1981	1.88	1.84	1.74	1.87	1.84	1.79
1982	1.80	1.76	1.67	1.80	1.77	1.73
1983	1.76	1.72	1.64	1.75	1.74	1.68
1984	1.72	1.68	1.59	1.70	1.69	1.63
1985	1.69	1.65	1.57	1.67	1.66	1.61
1986	1.68	1.64	1.55	1.65	1.64	1.60
1987	1.65	1.62	1.52	1.62	1.62	1.57
1988	1.58	1.55	1.46	1.56	1.55	1.51
1989	1.50	1.48	1.40	1.48	1.47	1.44
1990	1.46	1.44	1.36	1.44	1.43	1.40
1991	1.44	1.41	1.34	1.42	1.40	1.38
1992	1.42	1.39	1.33	1.40	1.38	1.36
1993	1.39	1.37	1.31	1.36	1.34	1.33
1994	1.35	1.33	1.28	1.32	1.30	1.29
1995	1.31	1.29	1.24	1.28	1.26	1.26
1996	1.29	1.27	1.22	1.26	1.24	1.24
1997	1.27	1.25	1.21	1.24	1.22	1.22
1998	1.26	1.24	1.20	1.23	1.21	1.22
1999	1.25	1.24	1.20	1.23	1.20	1.21
2000	1.23	1.22	1.18	1.20	1.18	1.19
2001	1.22	1.21	1.17	1.20	1.17	1.19
2002	1.21	1.20	1.16	1.19	1.16	1.18
2003	1.19	1.18	1.15	1.17	1.15	1.16
2004	1.15	1.14	1.12	1.13	1.12	1.13
2005	1.07	1.07	1.06	1.06	1.06	1.06
2006	1.00	1.00	1.00	1.00	1.00	1.00

Source: Marshall & Swift, October 2006

2007 REPLACEMENT COST NEW FACTORS CONTINUED

2007 PERSONAL PROPERTY COST FACTOR TABLE

Year Acquired	Industry Category Number						
	7	8	9	10	11	12	13
1981	1.86	1.88	1.89	1.87	1.85	1.89	1.00
1982	1.76	1.80	1.81	1.77	1.79	1.77	1.00
1983	1.72	1.77	1.79	1.74	1.76	1.75	1.00
1984	1.69	1.72	1.74	1.70	1.71	1.72	1.00
1985	1.67	1.69	1.72	1.68	1.69	1.70	1.00
1986	1.65	1.68	1.71	1.67	1.68	1.70	1.00
1987	1.63	1.65	1.69	1.65	1.67	1.70	1.00
1988	1.58	1.59	1.61	1.60	1.57	1.63	1.00
1989	1.51	1.51	1.52	1.52	1.49	1.55	1.00
1990	1.46	1.47	1.48	1.48	1.46	1.51	1.00
1991	1.42	1.44	1.46	1.45	1.44	1.47	1.00
1992	1.40	1.42	1.44	1.44	1.44	1.46	1.00
1993	1.36	1.40	1.42	1.42	1.43	1.45	1.00
1994	1.33	1.36	1.38	1.39	1.39	1.42	1.00
1995	1.29	1.31	1.33	1.34	1.33	1.37	1.00
1996	1.27	1.29	1.31	1.31	1.31	1.34	1.00
1997	1.25	1.27	1.29	1.30	1.30	1.32	1.00
1998	1.23	1.26	1.28	1.28	1.30	1.30	1.00
1999	1.22	1.26	1.28	1.28	1.30	1.30	1.00
2000	1.20	1.24	1.26	1.26	1.28	1.28	1.00
2001	1.20	1.23	1.24	1.25	1.27	1.26	1.00
2002	1.19	1.22	1.24	1.24	1.27	1.25	1.00
2003	1.17	1.20	1.21	1.21	1.25	1.23	1.00
2004	1.13	1.16	1.17	1.17	1.20	1.18	1.00
2005	1.06	1.07	1.08	1.07	1.10	1.09	1.00
2006	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Source: Marshall & Swift, October 2006

2007 COST INDEX - FIXTURES/LEASEHOLD IMPROVEMENTS

June 30, 2006 Level of Value

This cost index is provided to assist the assessor in relating original or historical costs of fixtures or leasehold improvements to the real property level of value. The property may be valued using real property appraisal records for computations and should be assessed to the owner of record.

When using this method of valuation, the property must be classified and abstracted as real property improvements. The factors are useful only in the cost approach when attempting to factor historical costs to the correct level of value. All cost approach value estimates must be reconciled to the sales comparison (market) and income approaches to value as with other real property improvements. The factors found in this table are for estimating replacement costs only and do not include an allowance for depreciation.

2007 FIXTURES/LEASEHOLD IMPROVEMENTS COST FACTOR TABLE

Year Acquired	Factor
1981	2.09
1982	2.03
1983	1.96
1984	1.88
1985	1.83
1986	1.82
1987	1.81
1988	1.77
1989	1.74
1990	1.69
1991	1.67
1992	1.64
1993	1.57
1994	1.51
1995	1.47
1996	1.46
1997	1.41
1998	1.39
1999	1.35
2000	1.28
2001	1.27
2002	1.24
2003	1.21
2004	1.13
2005	1.06
2006	1.00

Source: Marshall & Swift, October 2006

AVERAGE ECONOMIC LIFE ESTIMATES

The average economic life estimates are provided for assistance in applying the percent good depreciation tables for each type of property being valued. The economic life recommendations are based upon the Class Life Asset Depreciation Range published by the Internal Revenue Service, Marshall and Swift Co., and other sources. Further information about the estimates may be found in I.R.S. publication 946, "How To Depreciate Property", available from the I.R.S.

The economic life estimates are based on average national service lives and assume normal use and maintenance of the property. Use of the appropriate economic life estimate accounts for typical physical depreciation and functional/technological obsolescence for the personal property within the valuation process. Use of economic lives that differ from those in the estimates must be documented with specific market information. Counties and taxpayers are encouraged to provide this documentation for review by the Division of Property Taxation for possible update of existing published lives.

For specific types of equipment, economic life estimates were developed based on studies completed by the Division of Property Taxation.

PROPERTY TYPE	Recommended Economic Life (years)
COMMERCIAL	
<i>Wholesale Trade Level</i>	
Wholesale trade machinery equipment, and furnishings	9
<i>Retail Trade Level</i>	
Retail trade machinery equipment, and furnishings	9
<i>Service Trade Level</i>	
Adding machines, calculators	6
All terrain vehicles (ATVs) For addt'l info., see Chapter 7	6
Amusement parks	12
<i>Automated teller machines (ATMs): see Chapter 7</i>	
Computer/electronic components/portion	4*
Structural housing	10
Auto repair shops	10
Bank vault doors	20
Barber and beauty shops	10
<i>Cable television:</i>	
Digital TV set-top boxes	4*
Subscriber converters, other than digital	5
Test equipment	8
Origination equipment	9
Satellite receiving ground stations	9
Distribution & subscriber connection equipment	10
Headend equipment	11
Microwave systems	9
Computers – personal & accessories	3*
Computers – other & stand-alone peripherals	4*
Computer – integrated machinery & equipment	4
Construction equipment, general	6
Copiers and duplicators	6**
Data handling equipment, except computers	6
Electronic equipment, except computers or gaming	6
<i>Gaming: see Chapter 7</i>	
Electronic (e.g. slot machines)	5
Larger gaming personal property (e.g. tables)	10
<i>Gas station equipment:</i>	
Electronic fuel pumps	6
General	10
Tanks (e.g. above ground, propane, septic)	10
Tanks (e.g. below ground, double-walled, fuel)	20
Hydroelectric Generators	20
Golf carts	6
Laundry and dry cleaning	10
<i>Commercial Continued on next page</i>	

* Use appropriate computer percent good table 2007.

** Use the copier percent good table 2007.

Source: Division of Property Taxation, Marshall & Swift, & I.R.S.

PROPERTY TYPE	Recommended Economic Life (years)
COMMERCIAL (continued)	
<i>Service trade level (continued)</i>	
<i>Medical equipment: For add'l info. see Chapter 7</i>	3 to 10
Meter and stamp equipment	6
Office furniture	10
Pedicabs	10
Photo processing equipment (Electronic)	6
Port-a-potty	10
Radio and television broadcasting	6
Recreation and amusement	10
Restaurant and bar (all)	10
River Rafts	10
Shopping carts	5
Signs (Billboard and Monument)	20
Signs (Other)	10
<i>Snow cats: For add'l info. see Chapter 7</i>	
Heavy use (e.g. snowgrooming operations)	6
Moderate use (e.g. transportation operations)	10
<i>Storage tanks:</i>	
Tanks (e.g. above ground, propane, septic)	10
Tanks (e.g. below ground, double-walled, fuel)	20
Telecommunication machinery and equipment	4
Theater	10
Telecommunication towers	20
Typewriters	6
Vending machines	10
Video machines (arcade)	6
RESIDENTIAL/COMMERCIAL	
Residential rental furnishings	10
Apartment, hotel and motel furnishings	10
NATURAL RESOURCES	
<i>Mining-Metallic and Nonmetallic</i>	
Mining, quarrying, & milling equipment	10
<i>Petroleum and Natural Gas</i>	
Exploration, drilling	6
High-technology drilling rigs	10
Production (Excluding pipelines)	14
Marketing, retail	9
Refining	16
<i>Timber</i>	
Logging	6
Sawmills, permanent	10
Sawmills, portable	6

Source: Division of Property Taxation, Marshall & Swift, & I.R.S.

PROPERTY TYPE	Recommended Economic Life (years)
INDUSTRIAL	
<i>Manufacturing Trade Level</i>	
Aerospace	10
Apparel and fabricated textiles	9
Bakeries and Confectionery	12
Brewery	12
Canneries and frozen food	12
Cement manufacture	20
Cereal, flour, grain and mill products	17
Chemicals and related products	10
Clay and gypsum products	15
Concrete manufacture	15
Dairy products manufacturing	12
Electrical equipment manufacturing	10
Electronic equipment manufacturing	6
Fabricated metal products	12
Special tools	3
Food and beverage production	12
Special handling devices	4
Forklifts	10
Glass and glass product	14
Special tools	3
Jewelry	12
Lumber, wood products and furniture	10
Machinery (not otherwise listed in this section)	10
Meat packing	12
Motion picture and television production	12
Paint and varnish	10
Plastics and plastic products	11
Special tools	3
Printing and publishing	11
Professional and scientific instruments	10
Paperboard and pulp	10
Rubber products	14
Special tools	4
<i>Semi-conductor manufacturing:</i>	
General	5
Research and development	3
Test equipment	5
Wafer fabrication	3
Soft drink bottling	12
Steel and related products	15
Stone products	15
Sugar and sugar products	18

Source: Division of Property Taxation, Marshall & Swift, & I.R.S.

PERCENT GOOD TABLE

The personal property percent good table is provided to assist the assessor in estimating the replacement cost new less normal depreciation (RCNLD). The column headings represent the average service life expectancy of the personal property being appraised. Each column contains the percent good factor for a specified age in the life of the property.

Percent good tables measure the value remaining in personal property. Depreciation tables measure the loss in value at a specified age. The factor shown in the columns of the percent good table represents the percentage of RCN remaining at a specified age. The general percent good tables are built upon the following assumptions:

1. Iowa State University property retirement & depreciation studies
2. A specified rate of return
3. Average condition and usage of typical property

The general percent good table is generic in nature. It was designed to be generally useful for the majority of personal property. It is not specific to any particular industry or type of personal property.

The table was designed to account for normal physical depreciation. Use of the table with the appropriate economic life estimate accounts for typical physical depreciation and functional/technological obsolescence for the personal property within the valuation process. Additional functional/technological and/or economic obsolescence may also exist. If documented to exist, additional functional and economic obsolescence must be measured in the marketplace either using the market approach or rent loss methods. In addition, any adjustments to the percent good due to the condition of the subject property must be defensible and documented.

The minimum percent good shown for each of the columns is useful as a guide to residual value. It is not absolute and must be reconciled with value in use information at the retail "end user" trade level for similar types of property. If the market information shows that the actual value of personal property is lower than the value developed by using the minimum percent good, the use of the minimum percent good should be rejected in favor of the lower value. The actual value of the personal property must be determined as long as the personal property is taxable.

If the cost-calculated value is lower than the market and/or income approach developed value in use, when the personal property reaches its minimum percent good, the assessor should review the original cost, all assigned factors, the physical condition of the property, and other pertinent contributors to value. If these are correct, the assessor must use the cost approach value as the actual value of the personal property pursuant to § 39-1-103(13)(a), C.R.S.

As the personal property under appraisal ages, the cost approach becomes less indicative of the property value. After fifteen years of age, the recommended valuation procedure is to measure the value of depreciated equipment directly in the marketplace, if possible.

To use the table, the assessor must determine the economic life and the effective age of the subject property. The percent good may be determined by moving across the columns until the one specified for the economic life is reached and then down this column to the point that reflects the effective age of the property.

Example:

Personal Property	Economic Life	Age	RCN	Percent Good	RCNLD
Desk	10 years	6 years	\$1,755	55%	\$965

The assessor must also consider functional and economic obsolescence, abnormal physical condition, or other factors that might affect the value of the equipment. The assessor should also consider the frequency and extent of maintenance to the property. Extensive maintenance or reconditioning of the property may extend the economic life of the property just as a lack of maintenance may shorten the economic life.

DEPRECIATED VALUE FLOOR

In the year in which the personal property has reached its minimum percent good, the applicable Replacement Cost New (RCN) trending factor in use at that time is "frozen" and the Level of Value (LOV) adjustment factor is "frozen" at 1.0. For the assessment years that follow, the RCNLD value does not change until the personal property is permanently taken out of service. An exception to this rule applies when the property has been reconditioned to extend its remaining economic life.

Even though the personal property has been permanently taken out of service, but has not been scrapped or sold, it still has value. However, additional functional and/or economic obsolescence may exist.

It is possible that the market or income approach may indicate a lower value than the personal property's minimum percent good. In addition, as property ages, the use of original installed cost multiplied by trending factors may not yield reasonable RCN values. Any RCNLD estimate should be crosschecked with sales comparison (market) and income information sources, if possible, and the appropriate value used.

VALUATION OF USED PERSONAL PROPERTY

The valuation of used personal property requires that a decision be made concerning the remaining economic life of the property. If the personal property's elapsed age from its actual year of manufacture, or estimated effective year of manufacture, is equal to or greater than the number of years in which the personal property would have reached its fully depreciated value floor, then the price paid for the personal property is to be treated as RCNLD and "frozen" at that value. RCN trending and percent good factors will not be applied to the frozen value. The LOV adjustment factor is "frozen" at 1.0 and will remain 1.0 until the property is taken out of service, sold, or retired.

An exception to this rule applies when the personal property is reconditioned to extend its remaining economic life. Then the reconditioned property is treated as new personal property and the formerly frozen value is treated as acquisition cost that is subject to depreciation over a complete economic life of the personal property.

Even though personal property has been permanently taken out of service, but has not been scrapped or sold, it still has value. However, additional functional and/or economic obsolescence may exist.

If the elapsed age from the year of manufacture, or estimated effective year of manufacture, is less than the number of years when the personal property would have reached its depreciated value floor, as evidenced in its recommended economic life from the preceding tables, then the property is treated as new personal property and the owner's acquisition cost is subject to depreciation over the complete economic life as would be used for new personal property. However, the resulting value should be compared to the sales comparison (market) value for the personal property, if possible.

2007 GENERAL PERCENT GOOD TABLE

		AVERAGE ECONOMIC LIFE IN YEARS																										
		3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20									
EFFECTIVE AGE	1	69	78	83	87	89	91	92	94	94	95	96	96	97	97	98	98	98	98									
	2	39	55	65	72	77	81	84	87	89	90	91	92	93	94	95	95	96	96									
	3	18	35	48	58	65	71	76	79	82	85	87	88	90	91	92	93	94	94									
	4	15	19	32	44	53	61	67	71	75	79	81	84	86	87	89	90	91	92									
	5		15	20	32	41	51	57	63	68	72	76	79	81	83	85	87	88	90									
	6			15	21	31	40	48	55	61	66	70	74	77	80	82	84	85	87									
	7				15	22	32	40	47	54	60	64	68	72	75	78	80	82	84									
	8					15	23	32	39	47	52	58	63	67	71	74	77	79	81									
	9						15	24	32	39	46	52	57	62	66	69	73	76	78									
	10							15	25	32	40	45	51	56	62	65	69	72	75									
	11								15	26	32	40	46	52	57	60	65	69	72									
	12									22	27	33	40	46	51	55	60	65	68									
	13										15	24	29	36	40	46	49	56	61	64								
	14											15	26	30	36	42	46	52	57	60								
	15												20	24	31	37	43	48	52	56								
	16													15	22	25	32	38	43	48	52							
	17														15	24	27	33	39	44	48							
	18															15	26	28	34	39	44							
	19																22	24	30	35	40							
	20																	15	20	26	31	36						
	21																			19	22	28	33					
	22																				15	19	24	30				
	23																						15	21	27			
	24																								15	24		
	25																										21	
	26																											

Source: Division of Property Taxation

Using market studies, the following table has been developed for **Personal Computers (PCs) and Accessories:**

Percent Good Table 2007

Average Economic Life		
Age	3	
EFF	1	44
	2	23
A	3	13
G	4	7
E		

Source: Division of Property Taxation

Using market studies, the following table has been developed for **Other Computer Equipment Including Computer Peripherals:**

Percent Good Table 2007

Average Economic Life		
Age	4	
EFF	1	50
	2	36
A	3	22
G	4	13
E	5	7

Source: Division of Property Taxation

For personal property classified as Computer-integrated Machinery and Equipment, a four (4) year economic life is assigned. The four (4) year life depreciation table found in the General Percent Good Table in this section should be used.

If you have questions concerning personal computers (PCs) and accessories, other computer equipment including stand-alone computer peripherals, or computer-integrated machinery and equipment, please refer to **Chapter 7, Special Issues**, under *Classification and Valuation of Personal Computers (PCs) and Other Equipment*.

Using market studies, the following table has been developed for **Copiers**:

Percent Good Table 2007

Average Economic Life		
Age	6	
EFF	1	54
	2	46
A	3	36
G	4	32
E	5	29
	6	26
	7	20

Source: Division of Property Taxation

Copiers have a six (6) year economic life and should be “frozen” in the seventh year at the 20 percent good. In the seventh year the LOV adjustment factor is “frozen” at 1.0 and will remain 1.0 until the personal property is taken out of service, sold, or retired.

LEVEL OF VALUE ADJUSTMENT FACTORS

The following table contains the indexes for adjusting current actual value of personal property to the level of value (LOV) in effect for real property as specified by § 39-1-104(12.3)(a)(I), C.R.S. The procedure involves the multiplication of the assessment date actual value estimate by the appropriate LOV factor for the type of property being valued. When personal property reaches its fully depreciated value floor the actual value should be determined and frozen. The LOV adjustment factor is “frozen” at 1.0 and will remain 1.0 until the property is taken out of service, sold, or retired.

Example:

Personal Property	Industry Number	Age	RCNLD	LOV Factor	Actual Value
Desk	3	6 years	\$965	0.98	\$946

2007 PERSONAL PROPERTY LOV FACTOR TABLE
June 30, 2006 Level of Value

Industry Number	LOV Factor
1	0.98
2	0.98
3	0.98
4	0.98
5	0.99
6	0.98
7	0.99
8	0.98
9	0.98
10	0.98
11	0.97
12	0.98
13	1.00

Source: Division of Property Taxation and Marshall & Swift

CHAPTER 5

APPRAISAL PERFORMANCE ANALYSIS

Chapter 5 is intended to guide county assessors in personal property appraisal performance analysis by providing the procedures for conducting this analysis. Throughout this section, when reference is made to the assessor, the personal property appraiser should be considered as well.

PURPOSE OF ANALYSIS

There are two reasons why appraisal performance analysis is important in the valuation of personal property:

1. Valuation equity, including confirming the accuracy of valuation data
2. Equal taxpayer treatment, from both an appraisal and an administrative standpoint

VALUATION EQUITY

The county assessor is responsible for ensuring that valuations of property are just and equalized. This means that all taxpayers are being fairly treated and similar property is being equitably valued.

Analyzing appraisal performance for personal property ensures that values are just and equalized as affirmed in Nuttal v. Leffingwell, 193 Colo. 137, 563 P.2d 356 (1977). In order for the analysis to be effective, the assessor should confirm that the following steps are completed:

1. All personal property in the county is inspected on a regular basis to account for all taxable personal property.
2. The valuations of like personal property are reviewed to ensure that similar property is comparably valued so that taxpayers pay only their fair share of the property tax burden.

EQUAL TAXPAYER TREATMENT

Assessors must never show favoritism or bias toward taxpayers. The laws and procedures governing property assessment must be correctly applied to all properties.

Performance analysis allows assessors to check their work and helps them eliminate any unintentional bias that may occur in the valuation of personal property.

A good appraisal performance analysis program also will encourage the personal property taxpayers to be confident that they are being fairly treated.

BENEFITS OF ANALYSIS

There are two significant benefits for assessors and taxpayers, which come from good performance analysis:

1. Verification of data
2. Promotion of accuracy

VERIFICATION OF DATA

During personal property valuation reviews, the assessor and the taxpayer have an opportunity to verify all information used in the appraisal. This helps ensure that taxpayers have correctly filed their personal property declaration schedule(s) with the assessor and that the assessor is valuing only the property owned by the taxpayer.

PROMOTION OF ACCURACY

Taxpayers are more likely to accurately file declaration schedules when they understand that the assessor is regularly reviewing personal property records.

Assessors are more likely to keep clear, accurate, and organized valuation records when they know taxpayers have the opportunity to regularly review such records.

TYPES OF ANALYSES

The three types of personal property appraisal performance analyses commonly used by county assessors in Colorado are:

1. Office review
2. Physical inspection
3. Examination of accounting books and records

OFFICE REVIEW

DEFINITION

An office review is completed using the personal property records as they exist within the assessor's office.

Office reviews are usually completed between January 1st and June 15th of each year because this is the period of time when new declaration schedules are being submitted by taxpayers.

OVERVIEW

An office review consists of checking the current personal property declaration schedule against existing assessor records which are collectively referred to as an "account." One important part of the office review is the comparison of valuations of similar property to ensure there is equalization between similar types of property. This also is the time when the assessor makes additions to or deletions from the property list supplied by the taxpayer.

The assessor reviews the account and may contact the taxpayer to clarify information found on the current or past declaration schedules. In addition, if significant questions arise, the assessor can flag the account for physical inspection of the property.

REVIEW OBJECTIVES

The main objectives of the office review are to check and update the property appraisal records and select accounts that may need additional review through physical inspection and analysis of books and records.

PROCEDURES FOR OFFICE REVIEW

All personal property schedules are reviewed in the office on a yearly basis as part of the valuation process. The review is in preparation for the yearly appraisal of personal property actual values which are listed on the Notices Of Valuation (NOV's).

To conduct an effective review in the assessor's office, the following steps are completed during the review of each personal property account:

1. All existing personal property records on file in the assessor's office are reviewed. The most current declaration schedule data are compared to the additions and deletions from the prior two years' data to determine if there has been consistency in the pattern of reporting personal property additions and deletions.
2. The current assessment status of all equipment listed as leased or loaned equipment is checked. All taxable property is verified as to having been assessed to the proper owner.
3. Any additional information necessary to explain discrepancies is requested from the taxpayer.
4. All description and value data are reconciled and a final estimate of value is completed.
5. Like properties are compared, with typical standards or with similar properties, to verify that all property has been correctly valued.

The office review is typically conducted while processing the declaration schedule for the current year and is performed in conjunction with the current appraisal of personal property. The office review usually occurs before June 15 and is helpful in determining which accounts may need special attention during the physical inspections conducted later in the year.

PHYSICAL INSPECTION

DEFINITION

The physical inspection involves a representative of the assessor's office visiting and inspecting property at the taxpayer's place of business.

OVERVIEW

The physical inspection may be conducted at any time of the year, but usually begins after the NOV's have been mailed. There are, however, instances in which the assessor may find it necessary to visit the taxpayer's place of business prior to the setting of final values. The usual cause of this early inspection is a need to verify information considered to be doubtful or incomplete, especially in the case of Best Information Available assessments from the prior year, or to establish an accurate list of property under a new ownership as in the case of a business sale or a new business.

The physical inspection is the only way for the assessor to accurately estimate the condition of each piece of personal property.

OBJECTIVES

There are several objectives of the physical inspection which can be described as obtaining answers to the following questions:

1. Does the listed taxable personal property exist?
2. Who owns the property?
3. Has the correct original cost been reported to the assessor?
4. Have personal property dispositions, such as sales or scrapping, been reported to the assessor?
5. Has all leased equipment been reported?
6. Has all leased equipment ownership been reported?
7. Will any leased equipment become the property of the lessee during this year? This property can be flagged to be assessed to the lessee the following year.
8. Is there any taxable personal property on the premises that has not been declared by this taxpayer or by any other taxpayer? Is there any personal property reported by the taxpayer, but not located on the premises?
9. What economic life should be assigned to property not specifically listed in **Chapter 5, Appraisal Performance Analysis**?
10. What is the overall physical condition of the property? Should additional functional or economic obsolescence be considered?
11. Is movable equipment apt to be located in more than one county during the year and, if so, where and for what periods of time?

12. Is Special Mobile Machinery (SMM) listed? If SMM does not leave the real property owned or leased by the equipment owner, it may not be subject to specific ownership tax, and if not, it is subject to ad valorem tax. SMM which is subject to specific ownership tax, but for which no current SMM plates, Z-tabs, or lease decals are visible should be added to the taxpayers list of personal property.
13. To enhance the discovery, listing, and classification process, have all leasehold improvements been declared, listed and assessed, but not double assessed by the real property appraiser, to the lessee of the real property?
14. Is there any personal property that was acquired during the previous calendar year, but not placed into service as of the current assessment date?
15. Does the taxpayer have more than \$2,500 in total actual value of personal property in this county?

PHYSICAL INSPECTION PLANNING

The performance analysis program can be more effective if the personal property schedules designated for performance analysis are grouped geographically. This allows for a concentration of effort in one area of the county and reduces travel expenses.

In addition, this approach provides for taxpayer understanding of the performance analysis program because several taxpayers in an area will be analyzed at the same time.

Many assessors target all the accounts for specific types of businesses for performance analysis in a given year. For example, the assessor may select all attorneys, physicians, accountants, and appraisers during the current year. Analyzing similar business during the same year aides the assessor in identifying inconsistencies within like businesses.

The following types of accounts should be analyzed each year:

- Best Information Available (BIA) valuations
- Incomplete declarations and taxpayers who have failed to file
- Returns that are inconsistent with historical information
- Specific suspected discrepancies

The appraiser assigned to the geographical area prepares a preliminary schedule so the course of the performance analysis program may be planned and the most convenient time for the taxpayer appointments may be determined.

PERSONAL PROPERTY AUDIT PLAN

Each county should establish a personal property audit plan. Included in this plan is a twelve month audit time frame which will allow assessors to plan an annual performance analysis program and monitor efforts by personal property staff. The goal of this program is to complete office reviews, physical inspections, and examination of accounting books and records according to the developed plan. The county should keep track of all accounts completed according to the plan for review by the state assessment auditor. A Personal Property Audit Plan Template is included as **Addendum 5-A, Audit Standards.**

Accounts To Be Analyzed

All personal property accounts are to be included in the personal property audit plan developed by the county assessor. Refer to **Addendum 5-A, Audit Standards**.

Initial Telephone Call

It is very important that the assessor spend adequate time on preliminary performance analysis research and the initial taxpayer telephone contact before conducting the performance analysis. An appointment can be made with the taxpayer, if this is possible.

A time of day for the appointment does not necessarily need to be specified, unless the taxpayers so request, but the taxpayers at least should be informed that an appraiser will be in their area analyzing accounts on a particular day or days. This prepares taxpayers for the performance analysis and allows them time to review and to gather all necessary records before the assessor arrives.

The following recommendations are made to assist assessors in the initial contact with the taxpayers:

1. The public should be notified of the purpose and procedure of the performance analysis through public notices, news releases, and other public relations efforts. The performance analysis program should be explained as to how it will be conducted and the purpose of physical inspections.
2. The taxpayer should be contacted in advance of the performance analysis to enable convenient appointment scheduling.
3. The taxpayer should be put at ease by assurances that the performance analysis is routine and that it will benefit all taxpayers.
4. The appointment should be kept. Since a county employee is both a professional and a representative of county government, it is necessary to be punctual in keeping scheduled appointments. The appointment should be re-scheduled as soon as it becomes apparent that it cannot be kept.

Appointment Verification Letter

If possible, an appointment verification letter is mailed to each taxpayer whose property is scheduled for performance analysis. This begins the written record of the performance analysis. A copy of the original public notice or news release can be enclosed with the letter. A copy of the letter should be filed with the valuation records of the taxpayer.

Taxpayers should be contacted either by phone or by letter. An example taxpayer contact letter is included in **Addendum 5-B, Sample Letters**.

CONDUCTING THE PERFORMANCE ANALYSIS INTERVIEW

General Demeanor

Taxpayers deserve to be treated with courtesy and respect. The appraiser may be the taxpayer's only personal contact with the assessor's office.

Discourteous or argumentative behavior makes the performance analysis more difficult and reflects negatively on the entire assessor's office staff.

Getting the Taxpayer to Cooperate

The following recommendations are made to help the assessor obtain the taxpayer's cooperation and respect:

- A courteous, cooperative, and professional attitude should be displayed, along with professional attire. All questions asked by the taxpayer should be answered.
- All offers of gratuities should be declined.
- Political, religious, or other potentially argumentative topics should be avoided.
- Premature conclusions should not be drawn.
- During the course of the performance analysis, the assessor will request several types of information from the taxpayer. This information includes data about the business enterprise, as well as the methods used by the taxpayer to account for the acquisition or disposition of personal property.
- All pertinent questions should be asked of the taxpayer during the interview. However, the taxpayer should be informed that additional questions may need to be answered once the collected data has been reviewed.

CONDUCT PHYSICAL INSPECTION

In cases where no itemized listing has been furnished by the taxpayer, the assessor creates one during the physical inspection. If the taxpayer has submitted an itemized list, the assessor verifies the listed property while analyzing the business location.

While conducting the physical inspection, the assessor should note high dollar value personal property not listed by the taxpayer on the declaration schedule, as well as, noting whether small dollar value personal property have been included.

An inspection of equipment not only allows the assessor to see how equipment is used, but also allows the assessor to observe and rate physical condition.

The assessor verifies that all property appearing on the personal property account are still being used in the business. Any personal property no longer present in the business are flagged for removal from the taxpayer's account.

The assessor should pay particular attention to real property that have been reported with personal property, to ensure that they are not double assessed as both real and personal property. This is particularly important for property described as "leasehold improvements." Guidelines for the identification and valuation of fixtures is found in **Chapter 1, Applicable Property Tax Laws**.

The assessor should document all findings and conclusions in such a manner that anyone can review and understand what occurred during the performance analysis.

EXAMINATION OF ACCOUNTING BOOKS AND RECORDS

During the initial contact with the taxpayer, it should be explained which records are to be reviewed and over what periods of time. Unnecessary records should not be requested from the taxpayer. The appropriate individual to see for access to records and the location(s) where records are kept also should be determined. If the records are in the possession of an independent accountant the accountant should be contacted, after obtaining the taxpayer's permission. The actual owner of the property should always be contacted first, if possible.

BUSINESS ENTERPRISE INFORMATION

Information about the business enterprise which is requested or verified during the examination of accounting books and records includes the following:

1. Description of the business
 - a. Products manufactured or sold or services offered
 - b. Number of employees
 - c. Hours of operation
 - d. The information requested here enables the appraiser to make judgments about the general operation of the business. The general operation of the business gives indications as to how well property is maintained and indicates the normal use of the property.
2. The business's capitalization and expense practices for accounting purposes
 - a. Rules concerning expensing equipment purchases which fall below a specified minimum amount above which equipment would be capitalized; expense equipment is still assessable, unless it has a total economic life of one year or less in which case it is, by Division policy, considered to be materials or supplies consumed in the ordinary course of the business and therefore exempt pursuant to 39-1-102(7.2), C.R.S.
 - b. Rules concerning expensing or capitalizing freight to the point of use, installation, and sales/use tax; these costs should be included with the original cost of the equipment
 - c. Rules concerning writing off fully depreciated personal property; this personal property is still assessable until it is scrapped or sold, even if it is not in use or if the business is no longer operating
 - d. Rules concerning writing off scrapped or sold personal property; these should be deleted personal property which are not assessable to their former owner
 - e. Rules concerning capitalizing or expensing major equipment repairs; major equipment repairs may change the effective age of equipment, but should not be included with the original cost of the equipment

- f. Rules concerning recording trade-in allowances which some companies deduct from the original cost of the acquired personal property; original costs should include trade-in allowances as part of compensation for the purchased equipment
- g. Rules concerning residual value of leased property at “buy out” time; this is not the original cost of the equipment

The information regarding the methods used by the taxpayer to account for property acquisition and recovery is important to the assessor in reconciling the taxpayer's financial records, the physical inspection, and the personal property account. Companies which expense personal property with a value that is below a specified amount may not be reporting all equipment to the assessor.

Understanding the procedures used by taxpayers regarding personal property treatment and disposition allows the assessor to confirm the accuracy of personal property account listings.

3. Reconciliation between the subsidiary ledgers original costs and the original costs reported on the declaration schedule

Comparisons should be made to reconcile original equipment or pooled personal property costs and the original costs listed on the declaration schedules. The assessor needs to ask the taxpayer, in the initial telephone contact, to provide this subsidiary ledger information or to give permission to contact the taxpayer's accountant, if necessary.

A thorough understanding of any differences between original book costs and original costs reported on the declaration schedule helps the assessor confirm the accuracy of the property listings and the appraised values of the personal property.

4. Method of recording purchases

The company's policy on recording purchases gives information about the accuracy of the declaration schedule, and helps the assessor reconcile the declaration schedule and the taxpayer's accounting records.

5. Methods of accounting for personal property at the subject location that are recorded on the books of a subsidiary or parent corporation

The taxpayer is required to file a listing of all personal property at the subject location. Any property listings carried on the accounting records of a parent or subsidiary company are usually not available to the assessor for reconciliation with the physical inspection or the personal property account.

6. Method of accounting for property leased or rented from others

The way in which taxpayers account for leased or rented equipment is important to the assessor for the discovery of leased property and to reconcile the physical inspection listing with the taxpayer's accounting records.

Careful attention to the ownership of leased property helps avoid double assessments of this property.

7. Access to the company's chart of general ledger accounts may be helpful in determining the company's accounting practices. Any questions which arise as to the appropriateness of an accounting practice, which affects personal property values, should be resolved in consultation with a professional accountant and according to Generally Accepted Accounting Principles (GAAP).

FINANCIAL RECORDS

The financial records and sources that may be of interest to the assessor include the following.

Periodic Financial Statements

Financial statements are documents which indicate the company's profit or loss and net worth. These are sometimes called balance sheets.

General Ledger

The general ledger is the immediate source from which financial statements are prepared. The general ledger provides the overall balances of all personal property, liability, and capital accounts of the company.

Subsidiary Ledgers

Subsidiary ledgers are ledgers that provide detailed, individual balances in support of the general ledger totals such as depreciation schedules for individual pieces of equipment or pooled personal property accounts for depreciating similar equipment purchased at one time.

Books of Original Entry

Books of original entry include sales, purchases, cash disbursements, and general journals from which ledger entries are made.

Primary Source Documents

Primary source documents include documents which serve as the basis for entry in the books of original entry. Examples include sales invoices and supplier's invoices.

Substantiating Documentary Evidence

Substantiating documentary evidence includes documents which support primary evidence. They frequently relate back to the origins of the transaction. Examples include the following:

- Sales orders
- Sales contracts
- Shipping records
- Purchase orders
- Bills of lading
- Receiving records

External Evidence

External evidence includes documents filed with outside governmental or commercial agencies which require detailed information about the company. Examples include the following:

- Federal or state income tax returns
- Fire insurance policies
- Statements for credit reports
- Reports to the Securities and Exchange Commission (10 K Report)

Other Company Records

Other company records include documents which outline company policy and practice such as the following:

- Annual reports
- Accounting procedures manuals
- Systems of internal control

COMPARING APPRAISAL AND ACCOUNTING RECORDS

In comparing appraisal records to accounting records, the assessor verifies that the taxpayer is using original acquisition cost, plus installation, sales/use tax, and freight to the point of use, on the declaration schedule and not net book value, i.e. the cost minus depreciation to date. Net book value is commonly used when a business is sold and may be acquisition cost to the new owner. Refer to ***Bulk Sale of Personal Property*** under the ***Types of Cost*** topic in **Chapter 3, Valuation Procedures**. The amount and listing of fully depreciated personal property still owned is obtained or verified.

PROPERTY CLASSIFICATION LIST REVIEWED

The property classification list can be reviewed to verify that property has been reported according to the statutory definitions for the following types of property.

- Real property
- Personal property
- Exempt property
- Lessor owned equipment
- Movable equipment
- Taxable property
- Works of art

ACQUISITION/DISPOSITION RECORDS ANALYZED

The assessor compares the current personal property and leased equipment lists with the appraisal records and declaration schedules and notes any discrepancies which may result in either omitted property or double assessments. Analysis of acquisition and disposition records should reconcile with equipment listed in the declaration schedules as added or deleted. The assessor attempts to verify all information on the personal property records with taxpayer accounting records. Discrepancies should be brought to the taxpayer's attention for correction, clarification, or explanation.

PERFORMANCE ANALYSES TESTS PERFORMED

Certain performance analysis tests should be performed to verify the accuracy and completeness of information contained on the declaration schedule.

The goal of these tests is to examine the assessor's information and make certain the taxpayer and assessor are in agreement concerning the property which is listed and valued. The performance analysis tests include the following.

High and Low Value Property Test

The assessor selects a few high cost personal property and low cost personal property in the taxpayer's accounting records and double-checks to assure that they are listed in the personal property account. The goal of this test is to verify whether or not all property has been listed in the assessor's records.

PROPERTY Category Test

The assessor scans the subsidiary ledgers to determine if the taxpayer has used the proper property categories, e.g. a desk is classified as furniture rather than machinery. This test will help to identify problems associated with use of improper cost factor tables.

Assessment Status Test for Property Owned by Others

The status of property leased or loaned to the business being analyzed should be checked. When a significant amount of leased equipment is listed, the accounts of the lessor need to be checked to assure that they are reporting the equipment as owned on their declaration schedule. If taxpayer records show a large decrease has occurred in the amount of leased equipment, there may be a corresponding increase in the equipment being purchased by the business.

Additional Information

Additional information, necessary to complete the performance analysis documentation or to address any areas of concern, should be requested from the taxpayer.

DOCUMENT FINDINGS AND CONCLUSIONS

A short written summary is a key feature of a performance analysis, other than an office review. This narrative documents significant findings and conclusions including areas of discrepancy, their causes, and corrective actions taken. The taxpayer's methodology in preparing personal property declaration schedules should be documented if there is a variance from prescribed standards.

The narrative logically follows the sequence of the working papers. It covers significant points in enough detail so that anyone reviewing the performance analysis at a later date can follow the procedures used and the conclusions reached.

The performance analysis narrative is a short summary of the findings, conclusions, and recommendations from the performance analysis. Any opinions or recommendations must be documented. The narrative should be included in the information sent to the taxpayer at the conclusion of the performance analysis.

Any correspondence should be signed by the assessor, dated for future reference, and filed in the taxpayer's personal property account file.

RECONCILE APPROACHES AND ESTIMATE VALUE

The assessor reviews all information received from the taxpayer and appraises the current actual value of the personal property. In addition, the assessor documents all approaches to value considered in the appraisal of the property and identifies the approach used in the final estimate of value.

NOTIFY OWNER OF PERFORMANCE ANALYSIS RESULTS

When a physical inspection or examination of accounting books and records is complete, the assessor should notify the taxpayer, in writing, of the results of the performance analysis.

Letter Explaining Performance Analysis Results

The performance analysis, other than an office review, is not complete until the taxpayer has received written notice of the results. The taxpayer should be thanked for the cooperation shown and be made aware of any action that may be taken as a result of the findings. An example results notification letter is included in **Addendum 5-B, Sample Letters**.

Special Notice of Valuation (SNOV) For Omitted Property

If the performance analysis results in the discovery of omitted property, the taxpayer is notified of the omitted property value. This is accomplished by using the Special Notice of Valuation (SNOV). Refer to **ARL Volume 2, ADMINISTRATIVE AND ASSESSMENT PROCEDURES MANUAL, Chapter 9, Form Standards**, for the SNOV form. The taxpayer is notified in order to preserve the taxpayer's administrative remedies even if the performance analysis has been conducted subsequent to the initial notice of valuation deadline of June 15th.

The penalty for omitted property may be applied under certain circumstances. A complete discussion of this issue is found in **Chapter 3, Valuation Procedures**.

If the performance analysis reveals property that may have been scrapped or sold prior to January 1 or property that has been assessed twice, the assessor should inform the taxpayer that an abatement petition can be submitted for taxes paid on assessments for the two prior years. These are clerical errors and should be corrected whether the taxpayer protested the value of the property during the assessment year(s) in question or not. The taxpayer needs to provide documentation demonstrating that the property was scrapped, sold, or double assessed. The incorrect value also should be corrected for current and subsequent years. Abatement petitions should be approved when the taxpayer has timely filed a declaration schedule for the year subject to abatement and the information on this declaration schedule is incorrect.

It is important to note that the performance analysis program is not designed to detect and correct prior errors. It is designed to verify the accuracy of current personal property listings for the taxpayer and to verify the accuracy of personal property valuations made by the assessor from those listings. The assessor should never make statements about valuation errors or changes until potential problems have been thoroughly investigated.

SUMMARY

A complete personal property appraisal performance analysis program enhances the efficiency of the assessor's office as well as the accuracy of the personal property assessments that are made. A complete performance analysis program involves office review, physical inspection, and examination of accounting books and records.

The assessor should develop a personal property audit plan such as the one described in **Addendum 5-A, Audit Standards**.

Finally, the assessor must notify the taxpayers of the outcomes of the performance analyses, other than office reviews, and allow for taxpayer review and protest of omitted property valuations or filing of abatement petitions, to correct errors.

ADDENDUM 5-A, AUDIT STANDARDS

The purpose of this standard is to provide Colorado assessors with recommended topics and criteria for inclusion in the Colorado State Board of Equalization's mandated personal property audit plan. This plan must be completed and be in place by January 1, 1995, and should be updated each year as needed.

Questions regarding the contents of this standard and suggestions for revision are welcome and should be addressed to the Division of Property Taxation.

TOPICS FOR INCLUSION IN THE PLAN

The following topics should be included in the county audit plan:

1. Purpose of the Plan
2. Personal Property Account Characteristics
3. Plan Time Frame and Interim Progress Review Points
4. Listing of Office Resources Involved in the Audit Program
5. Account Review Selection Criteria and Specific Audit "Triggers"
6. Audit Work Paper and Documentation Guidelines
7. Assessor Signature Page

Recommendations for specific information to be included under each of these topics is listed below.

PURPOSE OF THE PLAN

This section includes the reasons for the development of the plan:

1. To plan for a comprehensive review and audit program involving personal property accounts to ensure accuracy, equalization, and uniformity of taxpayer reporting, and
2. To comply with the Colorado State Board of Equalization requirement to audit, through physical inspection, personal property accounts selected in accordance to criteria contained within a written plan in place on January 1, 1995.

Additional reasons for inclusion under this section may be incorporated at the option of the county.

PERSONAL PROPERTY ACCOUNTS CHARACTERISTICS

The purpose of this topic is to give the reader a general idea of the types, numbers of accounts, and aggregate assessed values of personal property accounts found within the county. Specific totals of personal property accounts should be listed by abstract code along with total assessed values applicable to each code.

The following abstract codes of personal property accounts are included within the scope of this plan:

- 1410 - Residential Personal Property
- 2405 - Gambling Personal Property
- 2410 - Commercial Personal Property
- 3410 - Industrial Personal Property
- 54xx - Natural Resource Personal Property (all types)
- 64xx - Producing Mines Personal Property (all types)
- 74xx - Oil and Gas Personal Property (all types)

Also suggested for inclusion would be a list of the "top ten" personal property taxpayers, by assessed value, in the county.

AUDIT PLAN TIME FRAME

Information required under this topic is:

1. The assessment year covered by the audit plan
2. The specific twelve month period in the audit plan cycle

Personal property audits accomplished within this time period will be analyzed by the state property tax auditor for compliance with the completed plan.

Suggested for inclusion in this plan should be at least two interim progress review points to ascertain that the plan is being timely completed and that adequate documentation is being developed.

LISTING OF OFFICE RESOURCES

Recommended information in this section would be the number of personal property appraisers, appraisal technicians, administrative personnel, and any other assessor office personnel involved in the completion of the audit program. Conversion of personnel resources to a "person-months" unit of comparison is suggested in order to compare resource allocation for this audit program to allocations for subsequent audit programs.

TYPES OF AUDIT ANALYSES AND ACCOUNT SELECTION CRITERIA

This section includes a brief definition of the types of audits that will be conducted during the audit program, i.e. office review, field review (physical inspection), examination of books and records. In addition, general procedures for conducting each of these analyses may be included as well.

Also this section contains specific criteria for selection of accounts for the audit program and the estimated number of accounts that will be physically inspected in the current audit program. Criteria used to exclude any accounts from the audit program must be listed along with the numbers of accounts and assessed valuations assigned to those accounts.

Specific Program Triggers for Priority Selection

Included in the criteria should be specific "triggers" that would prescribe a high priority for review, such as:

- Non-filing taxpayers that resulted in Best Information Available (BIA) assessments placed on their property
- Accounts with omitted property discovered through the county's business discovery program
- Incomplete declarations or declarations having inconsistent information from year to year
- Accounts that were protested from the prior year where the taxpayer had substantial disagreements with the values assigned to the reported property
- Accounts showing greater than 10% change in the taxpayer's General Ledger account balances but with no additions or deletions
- New businesses filing for the first time
- Accounts having no additions or deletions for three continuous years
- Accounts where discrepancies were consistently found in prior audits

Account Selection Criteria

Suggested selection criteria for the balance of accounts scheduled for review are listed below:

- Analysis of accounts associated with same business type or use
- Accounts located in the highest and lowest quartile of actual value per square foot by business type
- Random sample of accounts not audited within the last five years

Selection of accounts by business types is an especially good method because it allows for review of values for equalization purposes as well as creating a basis for BIA assessments to be applied to non-filing comparable businesses.

Although auditing a minimum percentage of accounts is not required as part of the plan, account criteria should be established to allow for a cyclical review and inspection of all accounts, over a reasonable time frame. Use of a cyclical time frame is consistent with the purpose of the audit program to provide accurate and equalized values and uniform taxpayer reporting of personal property accounts in the county.

AUDIT WORK PAPER AND DOCUMENTATION GUIDELINES

This section should contain procedures for documenting how the audited accounts were selected, the number of accounts selected, and any problems encountered in completing the program.

Also recommended for inclusion are procedures for audit "paper trails", audit work paper documentation, and any other documentation essential for a functioning audit program.

ASSESSOR SIGNATURE SECTION

The assessor signs and dates the plan to certify that it is the official personal property audit plan for the current assessment year. The plan must be in place by January 1, 1995.

ADDENDUM 5-B, SAMPLE LETTERS

ADVISING TAXPAYER OF A PHYSICAL INSPECTION

C O U N T Y L E T T E R H E A D

D A T E

Account # _____

Tyrone T. Taxpayer
123 State Street
Podunk, Colorado 80000

Dear Mr. Taxpayer:

This is to inform you that the Carbon County assessor office has selected your business for a routine review of taxable personal property used by you in your business which is located in Carbon County. This review is being conducted under the Personal Property Audit Plan developed by my office that was mandated by the Colorado State Board of Equalization for 1995 and future assessment years.

Mr.(Ms.) _____ of my staff has been assigned to contact you shortly and set up an appointment for a physical inspection of the personal property located at your business. At this time, you will be provided a copy of the current itemized listing of property and will have the chance to discuss additions, deletions, or changes to the listing with my staff appraiser. Any other specific questions or concerns you have can be asked at this time as well.

Your assistance in this review is appreciated. It is my desire that fair, reasonable, and equitable values be assigned to all personal property in my county. Periodic physical inspection and review of all businesses greatly helps us to accomplish this task.

If you have any questions regarding this review, please contact me or my personal property staff at (970) 555-1212. Thank you very much for your cooperation.

Sincerely,

I. M. Fair,
Carbon County Assessor

ADVISING TAXPAYER OF THE RESULTS

C O U N T Y L E T T E R H E A D

D A T E

Account # _____

Tyrone T. Taxpayer
123 State Street
Podunk, Colorado 80000

Dear Mr. Taxpayer:

We have completed our review and physical inspection of the personal property used by you in your business located in Carbon County. Our review indicated the following results:

Included here could/should be:

- Scope of the audit, i.e. what the appraiser actually did.
- List of property discovered to be omitted
- List of property discovered to be no longer at the site
- Request for additional taxpayer documentation, i.e. depreciation schedule, general ledger information, acquisition cost documentation, etc.
- If adequate information regarding taxpayer's property has been provided,
- Action of the assessor regarding discoveries made during the inspection; Special NOV for omitted property, reduction in value for deleted property, rights to abatement for previous 2 years, etc.

I want to thank you again for your cooperation in our review process. If you have any questions or wish to discuss our results, contact me anytime.

Sincerely,

I. M. Fair,
Carbon County Assessor

CHAPTER 6

OIL AND GAS EQUIPMENT VALUATION

INTRODUCTION AND LEGAL BASIS

Using **Chapter 6, Oil and Gas Equipment Valuation**, as a guide, Colorado county assessors will be able to uniformly value oil and gas equipment across the state. All surface equipment and submersible pumps and sucker rods are taxable as personal property pursuant to § 39-7-103, C.R.S. For reference, the statute is repeated here in its entirety.

Surface and subsurface equipment valued separately.

All surface oil and gas well equipment and submersible pumps and sucker rods located on oil and gas leaseholds or lands shall be separately valued for assessment as personal property, and such valuation may be at an amount determined by the assessors of the several counties of the state, approved by the administrator, and uniformly applied to all such equipment wherever situated in the state. All other subsurface oil and gas well equipment, including casing and tubing, shall be valued as part of the leasehold or land under section 39-7-102.

§ 39-7-103, C.R.S.

In response to assessor and industry concerns, the Division of Property Taxation developed an equipment valuation methodology using Basic Equipment Lists (BELs) and Valuation Grids. BELs were developed for the different types of oil and gas wells found in the State. The BELs identify the equipment common to each particular type of well by basin, depth, production level, and method of production. An *Additional Installed Equipment List* section with corresponding values is provided in this chapter for the purpose of adding specific equipment to the BELs as necessary, depending on the information provided by the operator and from field inspections. A *Stored Equipment List* section is also provided in this chapter to value equipment that is located at the wellsite, yard, or warehouse, is not in use, and is not declared as inventory of merchandise by the equipment owner.

Accompanying each BEL are three Valuation Grids. The grids place a value on the BEL based on the condition of its equipment and the depth and production of its well. The three grids distinguish between very good condition equipment, average condition equipment, and minimum condition equipment. The procedure for valuing the equipment is discussed beginning with the *Approaches to Value* section in this chapter. At the end of the chapter, valuation problems that include example worksheets, illustrate the procedure.

BELs are developed only for production and wellsite processing equipment, which is defined as the equipment necessary to produce, separate, and store fluids from the reservoir to the custody transfer point.

The custody transfer point for oil is considered to be the inlet of the Lease Automatic Custody Transfer (LACT) Unit or the outlet of the oil storage tank, whichever is appropriate for each lease. The custody transfer point for gas is considered to be the inlet to the gas meter run. If the producer maintains custody of the production beyond the lease line, then the custody transfer point will be considered to be the lease line.

All property beyond the custody transfer point is subject to local assessment by the assessor or unit assessment by the Division of Property Taxation as state assessed property. Equipment located in off-site facilities such as water/gas injection plants, field-wide gathering systems, gas processing plants, and amine production plants is not included or valued in this chapter. Also, CO₂ wells are not included or valued in this chapter. This equipment is subject to local assessment by the assessor or central assessment by the Division's State Assessed Section. Only equipment located on the wellsite, or associated with the wellsite, but stored and not held for resale, is valued using this chapter.

A **GLOSSARY** consisting of oil field terms and photographs of selected equipment has been provided at the end of this chapter.

APPROACHES TO VALUE

In Colorado, assessors determine the "actual value" of taxable personal property. Colorado statutes define actual value as that value determined by appropriate consideration of the following approaches to value:

1. Cost Approach
2. Sales Comparison (Market) Approach
3. Income Approach

The BELs and the Valuation Grids should be used to determine the actual value of the production equipment.

Oil and gas equipment valuation is subject to two general personal property exemptions:

1. Exemption of "consumable" personal property
2. Exemption of \$2,500 or less in total actual value of taxable equipment (personal property) on a "per county" basis

According to § 39-3-119, C.R.S., the Division has established criteria to determine whether or not the personal property qualifies as "consumable." Please refer to **Chapter 2, Discovery, Listing, and Classification**, in this manual for specific information regarding consumable personal property.

In accordance with § 39-3-119.5, C.R.S., personal property is exempt from ad valorem taxation if the total actual value (market value) of all taxable well equipment (personal property) owned by the taxpayer per county is \$2,500 or less. The real property valuation of the leasehold interest, based on well production, must not be combined with the personal property value to determine if the \$2,500 threshold has been exceeded. The threshold is determined using only personal property valuation.

COST APPROACH

The Cost Approach is described in **Chapter 3, Valuation Procedures**. To reiterate, the cost approach is based upon the principle that the value of a property equals the cost of acquiring an equally desirable substitute property. It is essentially an estimate of the cost of replacing the subject property with a new property that is equivalent in function and utility and then adjusting the Replacement Cost New (RCN) value for appropriate depreciation. The current BELs reflect the most appropriate equipment necessary to produce a given amount of fluid from a given depth.

SALES COMPARISON (MARKET) APPROACH

The sales comparison (market) approach to value is based upon the assumption that property value may be measured by analyzing what buyers pay for similar property. The method used in the chapter to determine the market value is the sales comparison method. Market value is defined in **Chapter 3, Valuation Procedures**, as, “The most probable price, as of a specified date, in cash, or in terms equivalent to cash, or in other precisely revealed terms for which the specified property rights should sell after reasonable exposure in a competitive market under all conditions requisite to fair sale, with the buyer and seller each acting prudently, knowledgeably, and for self-interest, and assuming that neither is under undue duress.”

The market value for oil and gas equipment is based on many considerations, including, but not limited to:

- Availability of equipment
- Current function of equipment
- Condition of equipment
- Current capacity of equipment
- Age of equipment

The method values the equipment separately from the value of the leasehold. When oil and gas properties having on-site equipment sell, any portion of the sales price that is attributable to on-site equipment may be different than the values listed herein, depending on the value placed on the oil and gas reserves. All values contained within this chapter reflect market value of equipment inclusive of acquisition cost, installation cost, sales/use tax and freight to the point of use.

INCOME APPROACH

The income approach to value has limited applicability to oil and gas equipment owned by the operator. However, the income approach can be used to value leased or rented equipment. The annualized net income stream can be capitalized to determine a value by the income approach. Refer to **Chapter 3, Valuation Procedures**, for additional information on the use of the income approach.

MARKET APPROACH VALUATION PROCEDURES

The following ten steps are essential to accurately value installed oil and gas equipment in the State of Colorado, using the Market Approach to Value. A detailed discussion of each step follows the list:

- STEP #1 Develop a detailed inventory of the personal property. This will require a physical inspection and an adequate description of the equipment, condition and ownership.
 - STEP #2 Establish the total production for the lease, including oil, gas, and water production.
 - STEP #3 Determine the depth of the well.
 - STEP #4 Establish which method (flowing or pumping) is used to lift the production from the reservoir.
 - STEP #5 Locate the well in its appropriate geological basin.
 - STEP #6 Select the appropriate BEL based on the factors above.
 - STEP #7 Determine the condition of the equipment.
 - STEP #8 Determine stripper well status. With the above information in hand, a value can now be placed on the equipment for each well. Using the appropriate Valuation Grid, find the value of the BEL based on the depth and total production level. Add the value of any Additional Installed Equipment. Add the value of any stored equipment. The result is the current actual value of the equipment for the well.
 - STEP #9 Apply level of value (LOV) adjustment factor. To adjust to the specified year's level of value, multiply the current actual value by the specified year's adjustment factor. The LOV adjustment factor is sometimes referred to as the "rollback factor."
- The 2007 adjustment (rollback) factor is: 0.98**
- STEP #10 Multiply the adjusted actual value by the 29 percent assessment rate for all personal property.

DETAILED DISCUSSION OF VALUATION STEPS

STEP #1 – DETAILED INVENTORY OF PERSONAL PROPERTY

Itemized Listing Required From Operators

To use **Chapter 6, Oil and Gas Equipment Valuation**, the assessor must have a detailed listing of all oil and gas equipment located on each well in the county. Operators of producing oil and gas wells are required to file a complete listing of all machinery and equipment owned as of the assessment date, by well name. It is Division policy, based upon agreement with oil and gas industry representatives, that all oil and gas taxpayers are required to file a personal property declaration schedule. These schedules must be completely filled out, signed, and filed with the county assessor.

Extension of filing deadlines beyond April 15 for receipt or postmark of the DS 658, Oil and Gas Real and Personal Property Declaration, and the lengths of these extensions are solely at the discretion of the county assessor pursuant to § 39-7-101(2), C.R.S. If granted, such extensions are without charge to the taxpayer. However, in the absence of the assessor granting such an extension or after a granted extension period has elapsed, \$100 per calendar day penalty can be imposed up to a \$3,000 per calendar year maximum for each schedule.

If the operator has previously rendered a complete list by well name, then the operator will not be required to render such a list in the future. The operator only needs to provide annual additions or deletions.

It is suggested that assessors send a form letter along with the declaration schedule to operators within the county requesting a detailed listing of their oil and gas equipment. The letter should explain that such a listing is required by § 39-5-107, C.R.S., and should include the following information.

1. Listing of all equipment, including but not limited to:
 - a. Down-hole equipment including sucker rods and submersible pumps (Casing and tubing should not be listed since they are included in the value of the leasehold)
 - b. Wellhead equipment complete with pipes and valves
 - c. Surface pumping units with gas engine or electric motor
 - d. Treating equipment including separators, heaters, free water knockouts, gas production units, dehydrators, etc.
 - e. Storage and loading facilities
 - f. Metering devices and equipment, including meter house if owned by the producer
 - g. Flow lines and related equipment
 - h. Pressure maintenance and secondary recovery equipment
 - i. Electric, automatic, and computerized controls
 - j. Power lines and poles, transformers, and communication lines

2. A comment noting that the description of the equipment should include the following: manufacturer, model, capacity size, length, diameter, etc.; whether the equipment is installed or stored at the wellsite; and any other information necessary for identification and valuation

3. An explanation as to why, on future declaration schedules, the owner will need to furnish only additions and deletions since the assessor can update the original listing from such information

Physical Inventory by the Assessor

The assessor should implement a program for the physical inspection and listing of all oil and gas equipment in the county. This enables the assessor to compare the listings rendered by each operator with the physical inventory obtained by field inspection, determine the equipment missing from the incomplete declarations, and become more familiar with the equipment in the county's oil and gas fields.

Before making a physical inspection and listing of the equipment, the assessor or appraiser should contact someone with authority for the particular lease, such as the operator, tax representative, production foreman, or pumper. These people are then aware that the appraiser will be present on the lease site, taking inventory.

At the time of inspection, the appraiser, using the Valuation Worksheet found later in the chapter, should list the following information for each piece of equipment:

1. Type of equipment, such as surface pumping unit, separator, treater, gas production unit, oil storage tank, etc.
2. Make, model, and description, including size, diameter, height, etc., or any other information necessary to adequately describe the equipment
3. Year manufactured or estimated age
4. Condition of equipment
 - a. See *STEP #7 – Condition of Equipment*, in this chapter, for the guidelines on evaluating equipment.
5. Whether the equipment is installed or stored at the wellsite
6. Ownership – taxable property in Colorado is generally assessable only to the owner thereof

The Glossary photographs are provided as an aid in identifying equipment.

STEP #2 – PRODUCTION TOTAL

The BELs in this chapter are based on the production of all fluids, both oil and water, or the production of gas. The equipment needed on a lease is directly related to the volume of production. Therefore, it is important to determine the production total.

Request Information From Operator

Oil and gas operators are required to provide the average flow rate of each product produced at each well. The information should include oil, water, and gas production. The flow rates on multiple well leases should be determined by well. However, total production can be divided by the number of wells to determine an average flow rate for each well.

In determining whether any given well should be classified as a “stripper well”, the assessor should request the total number of days that the well was capable of operation. The assessor should then determine the type of well (oil or gas) and calculate the average flow rate per day by dividing the oil or gas production amount declared by the number of days the well was capable of operation. If the resulting number is 10 barrels (Bbls) of oil per day (or less), or 60 Mcf (1000 cubic feet) of gas per day (or less), the well should be classified as a stripper well and valued using the minimum condition grid.

To determine the number of days the well was capable of operation, subtract the number of days the equipment was not operated because of maintenance or mechanical reasons from the total calendar days in a year (365).

If the operator fails to submit flow rate information, the assessor should determine the average operating days for other wells within the field and calculate a “Best Information Available” flow rate for stripper well designation and well valuation purposes.

An example of the flow rate calculation for both stripper well designation and the actual well valuation is shown below.

Example:

STRIPPER WELL DESIGNATION

Previous calendar year **oil** production 2550 Bbls
(product quantity only – no water)
Number of days (365 days – 65 days) 300 days

Flow rate per day 8.5 Bbls/day (used to determine Stripper Well classification)

Example:

WELL FLOW RATE CALCULATION FOR VALUATION

Previous calendar year **fluid** production 28000 Bbls
(oil product and water)
Number of days (365 days – 65 days) 300 days

Flow rate per day: 93 Bbls/day (used to determine volume (Barrels) in BEL grid)

Verification by Assessor

The assessor can audit the information provided by the taxpayer in the following ways.

1. Request information from the Colorado Oil and Gas Conservation Commission (COGCC).

Colorado Oil and Gas Conservation Commission
The Chancery Building
1120 Lincoln Street, Suite 801
Denver, CO 80203
(303) 894-2100

Operators are required to report oil production, water production, and gas production by well to the COGCC on a monthly basis. The information can be accessed on the COGCC website. See **ARL Volume 3, Addendum 6-H, Instructions for Accessing the COGCC Website**, for instructions.

2. Check for reasonableness by dividing production reported per well in Section C of the DS 658 by 365 days.

The average flow rate should equal or exceed the quotient because the method assumes that there were no days the well was shut down.

STEP #3 – WELL DEPTH

Operators are required to provide the depth of each well. This should be the depth of the perforation into the deepest producing reservoir. A well is often drilled deeper than the depth of the perforations to test for additional reservoirs. The assessor can audit the information by requesting completion reports from the COGCC.

STEP #4 – METHOD OF PRODUCTION

The BELs have been developed based on the method of lift, i.e. flowing or pumping. The operator should provide the information. The assessor can audit the information by reviewing data gathered by the physical inventory. For instance, if a pumping unit is present, the assessor knows that artificial lift is being employed. If the inventory does not meet the test of reasonableness, the operator should be contacted.

STEP #5 – GEOLOGICAL BASINS

The BELs have been developed after consideration was given to the different equipment necessary to produce oil and gas in the various basins within the state. The American Association of Petroleum Geologists (AAPG) has identified 13 basins in Colorado. In five of these basins, little or no oil or gas activity currently exists. Because of this, corresponding BELs do not exist for these basins. Refer to **Addendum 6-A, County/Basin Cross Reference**, found later in this chapter, to determine which basin's BELs to use for valuing equipment in a particular county.

STEP #6 – SELECTION OF APPROPRIATE BEL

The correct BEL can now be determined. The BELs are categorized by basin, primary product, and method of lift. Choose the BEL that best conforms to the equipment on the well in question, within the particular basin. If an appropriate BEL cannot be found within the particular basin, the appraiser may use alternate basins to find a BEL that best conforms to the equipment on the subject well. The Division should be advised if alternative basins are used because additional BEL's may be required for the subject basin.

When determining whether a well should be classified as an oil well or gas well, the assessors should first compares the actual equipment on the wells to the BEL equipment configuration to determine which well type, i.e. oil or gas, exists.

For example, gas wells will generally have a gas production unit (separator) to prepare the gas for insertion into the gas gathering system. On oil well sites, a treater or heater/treater can be found which processes the production emulsion into separate oil and water products. The oil product is then stored in storage tanks, either at the wellsite or in a tank battery.

If the assessor is unable to make the appropriate well type determination, the BELs for both an oil well and a gas well should be reviewed, and the BEL that represents the type of well commonly found within the field should be used. If there is still uncertainty about the well type, the assessor should contact the operator to confirm the well classification or contact the Colorado Oil and Gas Conservation Commission (COGCC) and use the original well type reported to them.

STEP #7 – CONDITION OF EQUIPMENT

Three Valuation Grids have been created for each BEL based on the condition of the equipment and status of the well. The grids establish market values for very good condition equipment, average condition equipment, and minimum condition equipment.

In determining the condition of the equipment the assessor should compare information collected from physical inspections with the information reported by the operator on the declaration schedule. If the assessor discovers discrepancies, the operator should be contacted for clarification. However, new equipment on new wells and equipment on shut-in wells will be valued as either very good or minimum, respectively. The descriptions listed below for equipment condition are intended to be guidelines and are not necessarily the sole criteria. The final determination of equipment condition is the assessor's responsibility.

The values on the *Additional Installed Equipment List* and the *Stored Equipment List*, found later in this chapter, are also based on the condition of the equipment. The condition of additional installed and/or stored equipment at the lease site should be determined independently from the condition of the equipment listed on the BEL.

Choose the grid, under the appropriate BEL, which corresponds to the condition rating of the equipment.

Very Good

The equipment is in near-perfect to perfect working condition. It has had limited use and has a long service life ahead.

Average

The equipment is in good mechanical condition and needs no major repairs or maintenance. The key is the condition of the equipment in total. The existence of one or two pieces of very good condition or minimum condition equipment will not necessarily move the overall condition rating in those directions.

Minimum

The equipment has had a substantial amount of service, a limited amount of use remains. Equipment more than 20 years old should generally be classified as minimum condition equipment unless there is evidence that the equipment has recently undergone major overhaul, substantial reconditioning, or re-fabricating. If the assessor feels the equipment has undergone reconditioning or major overhaul, the assessor should refer to the declaration schedule filed by the operator or contact the operator for additional information.

STEP #8 – STRIPPER WELL STATUS (MARGINAL PRODUCTION)

Oil wells producing an average of 10 barrels or less per day, or gas wells producing 60 Mcf or less of gas per day, should be designated as “stripper wells” for equipment valuation purposes. The number of days must be calculated based on days during the year the well was capable of operating. This classification applies to primary, secondary, and tertiary recovery wells and is based on product volumes only, without consideration of water production.

New wells cannot be classified as stripper wells until they have at least 12 calendar months of production data available. New wells may have minimal production when first drilled, but then produce substantially more oil or gas after a short period of time in production.

Equipment associated with stripper wells, e.g. tank batteries, injection wells, etc., is to be valued using the minimum condition grid associated with the respective BEL for the well, if the number of stripper wells exceeds the number of non-stripper wells associated with the equipment. Otherwise the condition is to be determined based on a physical inspection of the associated equipment. In all cases, adequate documentation should be developed to support the condition rating assigned.

If any additional installed equipment exists, find its value, based on condition, on the ***Additional Installed Equipment List***, found later in this chapter. Add that value to the grid value to determine the total value of the equipment on the well. Do not add for any additional equipment not shown on the Additional Installed Equipment list.

If there is stored equipment at the wellsite, find its value, based on condition, on the ***Stored Equipment List***, found later in this chapter. Add this value to the above values to reach a total value for the well.

The Additional Installed Equipment List and the Stored Equipment List are statewide lists. They are not basin specific.

STEP #9 – APPLY LEVEL OF VALUE ADJUSTMENT FACTOR

To adjust to the specified year’s level of value, multiply the current actual value by the specified year’s Level of Value (LOV) adjustment factor. The adjustment factor is sometimes referred to as the “rollback factor.”

The 2007 Level of Value (LOV) adjustment factor is: 0.98

STEP #10 – MULTIPLY BY THE 29 PERCENT ASSESSMENT RATE

WASTE OIL RECYCLING OPERATIONS

Tanks and separators that are associated with operations, which recycle holding pond oil, are not included in the Basic Equipment Lists (BEL) within this chapter. However, tanks and separators have been added to the Additional Installed Equipment List so that these operations may be valued by summing component values from the Additional Installed Equipment List. The use of tank and separator values on the Additional Installed Equipment List is restricted to only these recycling operations. They are not to be added to any other BEL.

LEASED/LOANED EQUIPMENT INCLUDED IN THE BELS

If any of the equipment included within a BEL is leased or loaned to the operator, it is recommended that the assessor contact the operator to determine the proper allocation. If there is uncertainty as to how the situation is properly treated, the assessor should contact the Division of Property Taxation.

BASIC EQUIPMENT LISTS AND VALUATION GRIDS

Basic Equipment Lists have been developed for the following basins that have been defined by the American Association of Petroleum Geologists:

- Anadarko Basin
- Denver-Julesburg (D-J) Basin
- Green River Basin
- Las Animas Arch Basin
- Paradox Basin
- Piceance Basin
- San Juan Basin
- Las Vegas-Raton Basin

BELs have not been developed for the following basins in Colorado. If a county is in one of these basins, refer to the county-by-county listing in the appendix for the alternate basin:

- Eagle Basin
- San Juan Mountain Province
- North Park Basin
- South Park Basin
- San Luis Basin

Within each basin, BELs have been developed for various types of production including the following:

1. Pumping Oil Well With Tanks
2. Pumping Oil Well Without Tanks
3. Flowing Oil Well With Tanks
4. Flowing Oil Well Without Tanks
5. Pumping Gas Well With Tanks
6. Pumping Gas Well Without Tanks
7. Flowing Gas Well With Tanks
8. Flowing Gas Well Without Tanks
9. Common Tank Battery
10. Water Injection Well
11. Water Supply Well

In addition to the eleven wellsite configurations listed above, certain basins required new wellsite configurations such as, Coal Seams Gas Wells, Plunger Lift Gas Wells, Progressive Cavity Wells, Electric Submersible Pump (ESP) Wells, Hydraulic Lift and Hydraulic Pump Wells, to name a few.

HISTORY OF THE BASIC EQUIPMENT LISTS

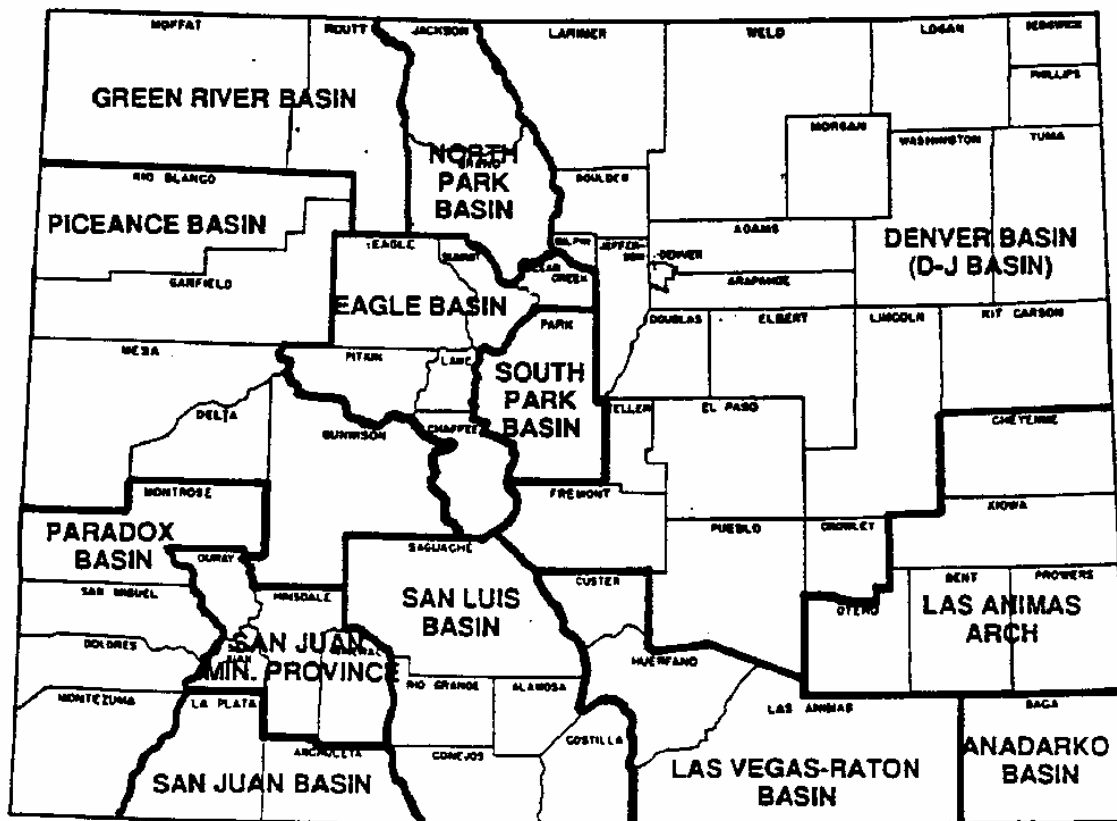
Before the Basic Equipment Lists (BELs) were created, all assessors valued oil and gas equipment using the Cost Approach, which required annual submissions of original costs on large inventories of equipment for thousands of wells. The process was very time consuming for industry. Even more time consuming for assessment personnel was verifying data on all the equipment listed, trending to the assessment date, determining physical depreciation, trying to determine if functional or external obsolescence applied to the equipment, and then calculating the value and rolling it back to the level of value for the appraisal date.

The BELs were created and first published in 1990, utilizing the Market Approach, instead of the Cost Approach. The objective was to reduce the workload of both assessment and industry personnel, while recognizing and properly dealing with obsolescence in oilfield equipment. To properly recognize obsolescence, the BELs were based on engineering statistics. A common misconception about the BELs is that they were meant to reflect what is typically found at the wellsite. From their inception, the BELs were designed to reflect what would be typically engineered for a particular wellsite. Engineered configurations indicate what is necessary to produce oil or gas at a given depth, at a given rate of production per day. Any equipment being used on site with greater ability or capacity than that which was engineered to produce such oil or gas is essentially super-adequate to operate the well. By utilizing engineered wellsite configurations in the BELs, super-adequate functional obsolescence is eliminated.

For instance, a 4' x 15' vertical heater/treater may be all that is necessary to handle the production of a pumping oil well at a certain depth. However, instead of purchasing a new 4' x 15' heater/treater to place at the wellsite, the operator may utilize a 6' x 20' vertical heater/treater that the operator has on hand. A 6' x 20' unit is a larger, more expensive unit and is super-adequate for the needs of the well. Instead of valuing the 6' x 20' unit at the site, the BELs pick up the value of a 4' x 15' unit, thus accounting for the functional super-adequate obsolescence of the larger unit.

Note: Using the Cost Approach for the same valuation would require the appraiser to determine the replacement cost new of the unit, deduct for physical depreciation, determine the super-adequate functional obsolescence and then deduct for it, as well. The final outcome would be about the same as the value of a 4' x 15' unit, the same age, without functional obsolescence, except that much more work would be required to get there.

Therefore, the operator who is using a 6' x 20' unit is assessed at the same level as the operators who have 4' x 15' heater/treaters in place. This principle of recognizing obsolescence through the Market Approach in the BELs was accepted and approved by both assessors and industry involved in the first publication of the BELs.



Other BEL's have been developed in certain basins where special circumstances warrant additional BEL's.

The BEL is a list of the taxable equipment necessary to:

1. Produce the fluid from the reservoir to the mouth of the well
2. Separate the fluids into the basic components – oil, gas, and water
3. Store and transport the products to the custody transfer point

The custody transfer point for oil is considered to be the inlet of the LACT unit or the outlet of the oil storage tank or tank battery; whichever is appropriate for each lease. The custody transfer point for gas is considered to be the inlet to the gas meter run. If the producer maintains custody of the production beyond the lease line, then the custody transfer point will be considered to be the lease line.

The grids list the value of the equipment based upon a particular range of depths and a particular range of volume produced. Each grid will value the equipment for a particular condition – very good, average, or minimum. Superior or inferior equipment may exist on any given well. However, the most appropriate BEL should be chosen and the corresponding value from the grids assigned to that well. All other oil and gas equipment, e.g. field compressors, are subject to local assessment by the county assessor.

MARKET VALUE OF ADDITIONAL INSTALLED EQUIPMENT

In addition to the BELs, certain specific equipment, which is atypical to the wellsite, should be listed and valued. The equipment is called “Additional Installed Equipment” on the well. This is the only installed equipment that should be added to the value of the equipment listed on the BEL.

Additional equipment is characterized by its unique nature or its nonstandard ownership. For example, gas meters are included as additional equipment because it has been specifically stated that the BELs list the equipment up to but not including the custody transfer point. However, in some cases the operator owns the gas meter and therefore the value of the gas meter should be added to the total value of the equipment for that particular operator.

VALUATION PROCEDURES

The steps for determining the value of Additional Installed Equipment are virtually the same as the steps for determining the value of installed equipment. For more information refer to the *Approaches To Value* topic at the beginning of this chapter.

The values in the following Additional Installed Equipment List are based on the same condition grading scale as the valuation grids – very good, average, and minimum condition equipment. It should be noted that the values on the list are statewide and not basin specific, except for the category of “Wellheads.”

WELLHEADS AS ADDITIONAL EQUIPMENT

Dual Wellheads

The first two categories of Wellheads listed are: Flanged Wellhead (Total Value) and Threaded Wellhead (Total Value). These values have been supplied so that wells having dual wellheads might be properly valued. Dual wellheads are being used in the extraction of gas from one formation and oil from a second formation located either above or below the first formation. Since the same wellbore is being used, a cost savings is implied. The appropriate BEL to use would be based on the preponderance of production and the type of equipment being used at the wellsite. Please note that values for Flanged Wellhead (Total Value) and Threaded Wellhead (Total Value) are not to be used outside of the dual-well application.

Flanged Wellheads

Flanged wellheads are considered typical for the four basins listed below. Except for the Coal Seams Gas BELs in the San Juan Basin, flanged wellhead market values were included in the development of all the BEL grids in the following basins:

Green River Basin	Piceance Basin (including Rangely Oilfield)
Paradox Basin	San Juan Basin (except Coal Seams Gas Wells)

Flanged wellheads can be identified by the circle of bolts near the perimeters of both the Casinghead and the Tubinghead.

Threaded Wellheads

Threaded wellheads are considered typical for the remaining basins, which are listed below. Threaded wellhead market values were included in the development of all the BEL grids in these basins:

Anadarko Basin	Las Animas Arch Basin
Denver-Julesburg Basin	Las Vegas-Raton Basin

Threaded wellheads can be identified by the ability of the Casinghead and Tubinghead to be screwed on to the casing and tubing. There is an absence of bolts. The caps of the Casinghead and Tubinghead have three heavy-duty, exterior prongs that allow them to be tightened by a tool.

Combination Wellheads (Threaded Casinghead/Flanged Tubinghead)

The term “flanged/threaded combo” refers to a wellhead with a threaded Casinghead and a flanged Tubinghead. This combination wellhead is gaining popularity as a safety measure. In the event that a flanged/threaded combo wellhead is discovered or declared on a well in the Anadarko, Denver-Julesburg, Las Animas Arch, or Las Vegas-Raton basin, a “Flanged/Threaded Combo (Differential)” value for the appropriate condition may be added as Additional Installed Equipment. The “Differential” represents the difference between the typical threaded wellhead value and the value of the more expensive flanged/threaded combo wellhead. This “Differential” should be added to the total value of the wellsite equipment. Differential values are not to be used in conjunction with any other basins than those cited in this paragraph.

Atypical Wellhead Use

In the event that a flanged wellhead is discovered or declared on a well in the Anadarko, Denver-Julesburg, Las Animas Arch, or Las Vegas-Raton basin, a “Flanged Wellhead (Differential)” value for the appropriate condition may be added as Additional Installed Equipment. The “Differential” represents the difference between the typical threaded wellhead value and the value of the more expensive flanged wellhead. This “Differential” should be added to the total value of the wellsite equipment. Differential values are not to be used in conjunction with any other basins than those cited in this paragraph.

VAPOR FLARE/RECOVERY SYSTEMS

In 2004, the Colorado Department of Public Health and Environment (CDPHE) determined that flash emissions from qualifying oil condensate tanks located in the CDPHE designated Eight-hour Ozone Control Area be controlled by one of two methods – by flaring those emissions in a controlled environment or by capturing, compressing, and re-injecting the emissions into a gas system. Note that values for Vapor Flare Systems and Vapor Recovery Systems are not basin-specific and can apply to any tanks having such systems, statewide.

Vapor Flare System (Enclosed Stack)

Currently, oil and gas operators that produce a threshold of 600 barrels per day are required to install an Emission Control Device known as a Vapor Flare System to capture and burn oil condensate tank vapors in an enclosed stack to enhance air quality and prevent further erosion of the ozone layer. Typically, these Vapor Flare Systems are installed on tank batteries that service two or more wells; however, they can be installed on tanks at any given wellsite. A system will generally include 3-inch, interior-diameter pipe attached to the tops of the tanks through which vapors run to a scrubbing unit to remove water, then on to the flare stack for burning/flaring. A typical flare stack is 15 feet high and has from four to six burners, which are located approximately five feet off the ground, to dispose of the vapors.

Vapor Recovery System

The other Emission Control Device being used by some oil and gas operators is called a Vapor Recovery System. Such systems gather emissions the same as the flare systems, except that instead of burning the emissions, these vapors are scrubbed and then compressed so that they can be injected into a standard gas pipeline system. This method achieves the directive to keep flash emissions from damaging the ozone layer, but goes a step further by conserving natural resources. These systems are more costly, because the flare stack is replaced with a compressor, a compressor engine, and sophisticated monitoring equipment.

Add the value of any additional installed equipment to the value of the BEL, along with any stored equipment, to determine the final value for all the equipment at the wellsite.

ADDITIONAL INSTALLED EQUIPMENT LIST

Description	Condition Rating		
	Very Good	Average	Minimum
RADIO TELEMETRY			
Unit (RTU) (Master)	33,860	23,650	5,910
(Large)	8,060	3,700	920
(Small)	5,480	2,250	560
Cathodic Protection Unit			
with Rectifier	1,460	740	180
with Solar Panels	6,720	2,770	690
Gas Meter Run with House	4,170	2,280	680
LACT Unit	18,050	9,260	2,310
Gas Booster Line			
Compressor (15-30 H.P.)	22,120	10,760	2,690
In-Line Heater	5,900	2,970	740
Triplex Water Injection Pump			
75 H.P. Electric Motor	19,260	9,950	2,280
Chemical Pump	1,060	530	240
Recycle Pump	1,110	690	170
Chemical tanks (55-125 Gal.)	1,200	670	240
Fuel/Chemical Tanks (500 Gal.)	4,190	2,310	840
Pit Tanks	8,570	4,710	1,710
Water Flow Lines (per foot)	5.48	3.01	1.08
Separators :			
48" x 12' High Pressure	22,010	12,100	4,400
30" x 10' High Pressure	17,000	9,350	3,400
Free Water Knockouts			
30" x 10'	3,980	2,390	600
4' x 10'	5,810	3,490	870
6' x 10'	6,720	4,020	1,000
8' x 10'	9,450	5,600	1,400
4' x 15'	6,220	3,730	940
6' x 15'	7,600	4,550	1,140
Dehydrator			
Average of All Sizes	14,630	8,510	2,130
Wellheads			
Flanged Wellhead (Total Value)*	5,130	1,850	650
Threaded Wellhead (Total Value)*	1,340	810	220
Flanged Wellhead (Differential)**	3,780	1,040	430
Flanged/Threaded Combo (Differential)**	2,270	910	350

*For use only with wells having dual wellheads on the same wellbore.

**For use only in Basins where Threaded Wellheads are typical. (See VALUATION PROCEDURES.)

Description	Condition Rating		
	Very Good	Average	Minimum
Vapor Recovery System	15,590	9,350	2,340
Vapor Flare System (Enclosed Stack)	10,750	6,450	1,610
Sound Panels (Galvanized Steel):			
Wall & Roof Panels/Sq.Ft. (Padded)	3.36	2.69	0.68
Scrubber	2,600	1,430	520
<u>Waste Oil Recycling Operations Only:</u>			
Tank (1) 300 BBL	6,330	3,160	1,450
Separator 30" x 10' Vertical	5,170	2,490	620
Separator 24" x 10' Horizontal	8,120	4,260	1,060

The **Chemical Tanks (55-125 Gal.)** listed above are generally used for Ethanol and/or Glycol in the dehydration process on gas wells. The **Fuel/Chemical Tanks (500 Gal.)** are normally used as gasoline tanks for engines, but can also be used for Glycol or Ethanol dehydration.

Note: The assessor should confirm ownership of the tanks mentioned above, as many companies lease tanks for this purpose.

A **Pit Tank** usually consists of a large steel water tank that has been cut in half (horizontally). The tank is placed mostly below grade and filled with small river rock or lava rock to catch any spillage. Also called Containment Tanks or Containment Tubs, Pit Tanks can be placed around well bores or under crude oil tanks or anywhere there is a potential for spillage. In some cases, very large brand new steel tanks are being used. Elsewhere, smaller "used" tanks are being utilized.

Water Flow Lines are being used to pump separated water from the wellsite to either a water treatment facility, or to a water disposal wellsite. They usually consist of 3 or 4-inch poly pipe.

MARKET VALUE OF STORED EQUIPMENT

The Stored Equipment List is to be used to value **taxable** stored equipment located at the wellsite, in a warehouse, or in an inventory yard, which is not listed as inventories of merchandise for sale on a company's books and records. In order for stored oil and gas equipment to be considered inventory held for sale and therefore exempt from property taxation, the owner must provide a detailed listing of the equipment held for sale to the county assessor. **In order for any other stored equipment to be taxable, it must have been put into use, by the current owner, at some time prior to the current assessment date and then afterward have been placed into storage.** The stored equipment list is never to be used to value installed wellsite equipment.

VALUATION PROCEDURES

The steps for determining the value of stored equipment are virtually the same as the steps for determining the value of installed equipment. For more information refer to the *Approaches to Value* topic at beginning of this chapter. The values in the following Stored Equipment List are based on the same condition grading scale as the BEL valuation grids - very good condition equipment, average condition equipment and minimum condition equipment. It should be noted that the values on the list are statewide and not basin specific.

If the stored equipment is located at the wellsite, then add the value of the stored equipment to the value of the BEL and any Additional Installed Equipment to determine the final value for the equipment at the wellsite. For equipment stored in a warehouse or yard, simply total the value of the equipment and place the value on the tax roll.

Wells that have been shut-in and capped or plugged and abandoned will be valued based upon their prior calendar year's production, if any. For shut-in and capped wells without any production during the prior calendar year, the wellhead should be listed and valued and any equipment stored at the wellsite should be listed and valued if it was not held for sale. For plugged and abandoned wells without any production during the prior calendar year, only the value of the equipment stored at the wellsite should be listed and valued if it was not held for sale.

The majority of typical oil field equipment has been included in the following stored equipment list. However, if the producer declares equipment not listed, or if the assessor cites equipment not listed, then the assessor should determine the value of the equipment in the following manner. If the equipment is in very good condition, then the assessor should contact the operator to determine the cost of the equipment not listed. If the equipment is in average condition or minimum condition then the assessor should contact used equipment dealers in the area and request market value estimates of the equipment. The Division of Property Taxation can also aid in determining equipment market values.

STORED EQUIPMENT LIST

Description	Condition Rating		
	Very Good	Average	Minimum
Separators			
16" x 5' Horizontal High Pressure	2,390	1,200	300
30" x 10' Vertical Low Pressure	4,640	2,190	550
30" x 10' Horizontal High Pressure	13,380	6,400	1,590
36" x 10' Vertical Low Pressure	5,000	3,390	850
24" x 10' Horizontal High Pressure	7,140	3,740	940
Gas Production Units			
16" x 8' 250MBTU	9,220	4,990	1,250
16" x 8' 500MBTU	10,070	5,400	1,350
Heater Treaters			
4' x 15' Horizontal	12,850	8,010	2,000
4' x 15' Vertical	11,610	7,510	1,880
6' x 20' Horizontal	12,850	7,860	1,970
6' x 20' Vertical	12,230	7,580	1,890
Dehydrators			
Average of All Sizes	12,880	7,490	1,870
Tanks			
95 Barrel	2,910	1,450	350
110 Barrel	3,390	1,700	430
210 Barrel	4,030	2,110	1,130
300 Barrel	5,570	2,780	1,280
400 Barrel	9,030	3,150	1,420
Pumping Units			
Model # 25	4,870	2,440	600
Model # 57	8,470	4,140	1,040
Model # 80	15,130	8,050	2,010
Model # 114	18,220	8,950	2,250
Model # 160	21,800	9,740	2,440
Model # 228	27,320	13,660	3,430
Model # 320	32,680	17,630	4,410
Model # 456	37,580	18,750	4,690
Model # 640	51,750	22,980	5,750
Model # 912	55,170	26,230	6,570
Hydraulic Pumping Units	19,940	10,970	3,990

Description	Condition Rating		
	Very Good	Average	Minimum
Casingheads/Tubingheads			
2000#	570	376	97
3000#	630	430	108
5000#	760	516	129
Wellheads			
Flanged	4,520	1,623	570
Threaded	1,200	720	183
Codell/Nibrara Formation	6,670	2,999	753
Rangely Stainless/Steel	18,710	7,493	1,871
Flowlines (per foot)			
2" Poly Pipe	\$1.08	\$0.73	\$0.11
3" Poly Pipe	1.55	1.05	0.11
2" Fiberglass Pipe	2.97	2.04	0.11
3" Fiberglass Pipe	3.01	2.15	0.11
2" Steel Pipe	1.24	0.84	0.16
3" Steel Pipe	3.49	2.38	0.16
Sucker Rod Pumps (Down Hole Pumps)			
1-1/4"	970	650	160
1-1/2"	1,200	740	180
1-3/4"	1,390	780	190
2"	1,830	810	280
2-1/4"	2,100	970	250
Sucker Rods (per foot)			
1/2"	\$1.51	\$0.75	\$0.19
5/8"	1.70	0.86	0.24
3/4"	1.88	1.03	0.28
7/8"	3.03	1.40	0.32
1"	3.66	1.72	0.38
1-1/8"	4.00	1.89	0.47
Gas Engines			
15 H.P.	3,970	3,090	770
20 H.P.	4,410	3,190	810
25 H.P.	4,850	3,860	970
30 H.P.	5,830	4,180	1,060
40 H.P.	5,860	4,340	1,090
50 H.P.	6,540	4,820	1,200
60 H.P.	6,880	5,120	1,280

Description	Condition Rating		
	Very Good	Average	Minimum
Gas Engines (Cont'd.)			
70 H.P.	7,300	5,670	1,420
75 H.P.	7,870	5,970	1,490
80 H.P.	8,420	6,550	1,630
90 H.P.	8,650	7,050	1,760
100 H.P.	10,210	7,150	1,780
110 H.P.	11,040	7,730	1,940
Electric Motors			
20 H.P.	1,100	620	160
60 H.P.	2,610	1,700	430
Control Panels			
Number 3	1,370	680	170
Number 4	1,580	890	230
Number 5	3,230	1,610	400
Triplex Water Injection Pumps			
75 H.P. Electric Motor	16,950	8,760	2,190
Chemical Pumps			
	940	460	200
Gas (Line) Compressors			
	19,460	9,460	2,370
In-Line Heaters			
	5,190	2,610	660
Recycle Pumps			
	980	600	150
Gas Meter Run with House			
	3,670	2,010	590
Free Water Knockouts			
30" x 10'	3,500	2,100	530
4' x 10'	5,110	3,070	770
6' x 10'	5,910	3,540	880
8' x 10'	8,320	4,920	1,240
4' x 15'	5,470	3,280	820
6' x 15'	6,690	4,000	1,000

Other stored equipment market values may be obtained by contacting the Division of Property Taxation.

EXAMPLES

EXAMPLE WELL EQUIPMENT APPRAISAL #1

You are valuing oil and gas equipment associated with a producing oil well in Prowers County, which is in the Las Animas Arch Basin. The well, which has a depth of 5,300 feet, was completed in 1994 and produces oil, some associated gas, and water. Daily flow rates declared for the well are: oil-450 Bbls per day, water-150 Bbls per day, gas-220 Mcf per day.

The operator has filed a DS 658 declaration listing the following equipment in average condition:

Wellhead	Two 400 Bbl Oil Storage Tanks
Model 320 Lufkin Pumping Unit	One 210 Bbl Water Storage Tank
35 H.P. Gas Engine	600' Flowline
1,800' of 3/4" Sucker Rod	Small Radio Telemetry Unit (RTU)
3,500' of 5/8" Sucker Rod	Gas Meter Run
Rod Pump	Vertical Heater/Treater

All equipment was manufactured in 1993 with the following exceptions: heater/treater (1996) and RTU (1998). You have physically inspected the well site and found the equipment, except for the RTU, to be in average condition as described in ***STEP #7 – Condition of Equipment*** earlier in this chapter. The model AI-1000 RTU appears new and is in very good condition. The gas purchaser owns the gas meter run.

Using the BELs listed for the Las Animas Arch Basin, you find that the equipment declared generally conforms with the BEL titled Total Value Pumping Oil Well With Tanks (Gas Engine). Based on the declared and observed condition for the equipment, you determine the Average Condition grid should be used.

The depth of the well is greater than 5,000 feet but less than 5,500 feet. Using the grid intersection of 5,500 feet and 600 barrels per day, the base equipment value of \$69,239 is noted. The RTU is not on the equipment list for the BEL but is noted on the Additional Installed Equipment List. The value for an installed small RTU in very good condition is \$5,480. Since the purchaser owns the gas meter run, it will not be valued here. However, it should be valued and assessed separately to the gas purchaser.

Adding the base equipment value of \$69,239 to the additional equipment value of \$5,480 results in a total value of \$74,719. The total value of \$74,719 multiplied by the specified year's adjustment factor of 0.98 indicates an actual value of **\$73,225** for all of the well equipment.

Oil and Gas Equipment Valuation Worksheet
State of Colorado
Example #1

ARCH EXPLORATION
Name of Taxpayer
1270 BROADWAY, DENVER
Address of Taxpayer
NE 1/4 13-57-79
Location of Property

ID# Schedule A-103255
Production Year 2006 Page 1 of 1
LAS ANIMAS #1
Lease Name

Method Of Production	Average Daily Flow Rate			Well Depth
Flowing___Pumping <u>X</u>	Oil(Bbbls) <u>450</u>	Gas(Mcf) <u>220</u>	Water(Bbbls) <u>150</u>	<u>5,300 Ft.</u>

Type of Equipment	Make	Model	Size	Year
WELLHEAD				1994
PUMPING UNIT	LUFKIN	320		1994
GAS ENGINE FORD			35 HP	1994
HEATER/TREATER				1996
(2)OIL STORAGE TANKS			400 Bbbls	1994
(1)WATER STORAGE TANK			210 Bbbls	1994
2" FLOWLINE			600'	1994
3/4" SUCKER ROD			1,800'	1994
5/8" SUCKER ROD			3,500'	1994
ROD PUMP				1994
RADIO TELEMETRY UNIT		AI-1000		1998

GAS METER RUN (ASSESSED TO GAS PURCHASER – COLORADO INTERSTATE GAS)

Basic Equipment List (Title): PUMPING OIL WELL WITH TANKS (GAS ENGINE)

Condition of Basic Equipment	VG___	AV <u>X</u>	MIN___
Condition of Additional Installed Equipment	VG <u>X</u>	AV___	MIN___
Condition of Stored Equipment	VG___	AV___	MIN___

Value from BEL Valuation Grid	\$69,239
Value from Additional Equipment List	\$ 5,480
Value from Stored Equipment List	\$ 0
Total Value for Wellsite	\$74,719
Specified Year's Adjustment Factor	x 0.98
Specified Year's Level of Value	<u>\$73,225</u>

EXAMPLE WELL EQUIPMENT APPRAISAL #2

You are to appraise the oil and gas equipment on a producing well located in Montezuma County. The operator of the well has reported the following information on this year's DS 658: the well was completed in 1999 and has a depth of 7,900 feet. The well flows naturally and primarily produces gas with some associated water. The flow rate of the gas is 275 Mcf per day with 4 Bbls per day of associated water. The gas is metered and flows in a gas gathering system. The gas meter is owned by the purchaser.

You have physically inspected the wellsite and have noted the following:

Wellhead
 Production Unit
 Dehydrator
 1000' Flowline
 Gas Meter Run

The equipment was new, at the time of installation, and the observed condition, on the date of inspection, was average condition, as defined in *STEP #7 – Condition of Equipment* earlier in this chapter.

Referring to **Addendum 6-A, County/Basin Cross Reference**, located later in this chapter, the appraiser determines that the subject property is located within the Paradox Basin.

Comparing the listed equipment with the BELs for the Paradox Basin, you determine that the equipment most closely conforms to a Total Value Flowing Gas Well with Dehydrator and Without Tanks. Based on the observed condition for the equipment, you determine the Average Condition grid should be used. The depth of the well is greater than 7,500 feet but less than 8,000 feet and the gas production is greater than 250 Mcf per day but less than 350 Mcf per day.

Using the grid intersection of 8,000 feet and 350 Mcf per day, the base equipment value is \$18,920. The gas meter is owned by the gas purchaser and will not be valued here. However, it should be valued and assessed separately to the gas purchaser. The indicated total value for the well site equipment of \$18,920 is then multiplied by the specified year's adjustment factor of 0.98 for an actual value of **\$18,542**.

Oil and Gas Equipment Valuation Worksheet
State of Colorado
Example #2

<u>FOUR CORNERS PRODUCTION CO.</u>	ID# <u>122742</u>
Name of Taxpayer	
<u>1500 MAIN ST. FARMINGTON, NM</u>	Production Year <u>2006</u> Page <u>1</u> of <u>1</u>
Address of Taxpayer	
<u>NE 1/4 SW 1/4 29-59-52</u>	<u>PARADOX #2</u>
Location of Property	Lease Name

<u>Method Of Production</u>	<u>Average Daily Flow Rate</u>	<u>Well Depth</u>
Flowing <u>X</u> Pumping <u> </u>	Oil(Bbls) <u> </u> Gas(Mcf) <u>275</u> Water(Bbls) <u> </u>	<u>7,900</u> Ft.

<u>Type of Equipment</u>	<u>Make</u>	<u>Model</u>	<u>Size</u>	<u>Year</u>
WELLHEAD				1999
PRODUCTION UNIT				1999
DEHYDRATOR				1999
FLOWLINE			1,000'	1999
GAS METER RUN (ASSESSED TO NORTHWEST PIPELINE CO.)				

Basic Equipment List (Title) FLOWING GAS WELL W/DEHYDRATOR W/O TANKS

Condition of Basic Equipment	VG <u> </u>	AV <u>X</u>	MIN <u> </u>
Condition of Additional Installed Equipment	VG <u> </u>	AV <u> </u>	MIN <u> </u>
Condition of Stored Equipment	VG <u> </u>	AV <u> </u>	MIN <u> </u>

Value from BEL Valuation Grid	\$18,920
Value from Additional Equipment List	\$ 0
Value from Stored Equipment List	\$ 0
Total Value for Wellsite	\$18,920
Specified Year's Adjustment Factor	x 0.98
Specified Year's Level of Value	<u>\$18,542</u>

EXAMPLE WELL EQUIPMENT APPRAISAL #3

You are valuing oil and gas equipment associated with a producing coal seams gas well in La Plata County, which is in the San Juan Basin. The well, which has a depth of 3,500 feet, was completed in 2002 and produces gas and water. Daily flow rates declared for the well are: water-557 Bbls per day, gas-356 Mcf per day.

The operator has filed a DS 658 declaration listing the following equipment:

Wellhead	Separator
Model 320 Lufkin Pumping unit	Water Storage Tanks
35 H.P. Gas Engine	250' Flowline
1,155' of 3/4" Sucker Rod	Small Radio Telemetry Unit (RTU)
2,310' of 5/8" Sucker Rod	Gas Meter Run
Rod Pump	

All equipment was manufactured in 2000. You have physically inspected the well site and found the equipment to be in very good condition as described in *STEP #7 – Condition of Equipment* earlier in this chapter. The gas meter run is owned by the operator and is also in very good condition.

Using the BELs listed for the San Juan Basin, you find that the equipment declared generally conforms with the BEL titled Total Value Pumping Coal Seams Gas Well With Tanks. Based on the observed condition for the equipment, you determine the Very Good Condition grid should be used.

Because this is a pumping coal seams gas well, water production flow rates will be used to determine values. The declared water production flow rate is greater than 500 Bbls per day and less than 600 Bbls per day. Using the grid intersection of 3,500 feet and 600 barrels per day, a base equipment value of \$102,611 is noted. The additional 100 feet of flowline is considered atypical for wells of this type and no additional value will be considered in the base equipment value.

The RTU is not on the equipment list for the BEL but is listed on the Additional Installed Equipment List. The value for an installed small RTU in very good condition is \$5,480. In this BEL, gas meter runs are not included as part of the BEL and therefore will be valued as additional installed equipment at \$4,170.

Adding the base equipment value of \$102,611 to the additional equipment values of \$5,480 and \$4,170 results in a total value of \$112,261. The total value of \$112,261 is multiplied by the specified year's adjustment factor of 0.98, which indicates an actual value of **\$110,016** for all well equipment.

Oil and Gas Equipment Valuation Worksheet
State of Colorado
Example #3

SAN JUAN GAS COMPANY
Name of Taxpayer
78 S. YALE ST., DURANGO
Address of Taxpayer
W 1/2 SW 1/4 36-18-95
Location of Property

ID# 58577664
Production Year 2006 Page 1 of 1
SAN JUAN #3
Lease Name

Method Of Production **Average Daily Flow Rate** **Well Depth**
Flowing Pumping X Oil(Bbls) Gas(Mcf) 356 Water(Bbls)557 3,500 Ft.

Type of Equipment	Make	Model Size	Year
WELLHEAD			2002
PUMPING UNIT	LUFKIN	320	2002
GAS ENGINE		35 HP	2002
3/4" SUCKER RODS		1,155'	2002
5/8" SUCKER RODS		2,310'	2002
ROD PUMP			2002
SEPARATOR		6 x 20	2002
WATER STORAGE TANKS (2)		95 Bbls	2002
FLOWLINE		250'	2002
RADIO TELEMETRY UNIT		AI-1000	2002
GAS METER RUN			2002

Basic Equipment List (Title) PUMPING COAL SEAMS GAS WELL W/ TANKS

Condition of Basic Equipment	VG <u>X</u>	AV <u> </u>	MIN <u> </u>
Condition of Additional Installed Equipment	VG <u>X</u>	AV <u> </u>	MIN <u> </u>
Condition of Stored Equipment	VG <u> </u>	AV <u> </u>	MIN <u> </u>

Value from BEL Valuation Grid	\$102,611
Value from Additional Equipment List	\$ 9,650
Value from Stored Equipment List	\$ 0
Total Value for Wellsite	\$112,261
Specified Year's Adjustment Factor	x 0.98
Specified Year's Level of Value	<u>\$110,016</u>

EXAMPLE WELL EQUIPMENT APPRAISAL #4

You are to appraise the oil and gas equipment on a producing well located in Baca County. The operator of the well has reported the following information on his DS 658: the well was completed in 1993 and is 3,300 feet deep. The well is mechanically pumped and produces gas, oil, and water. The flow rate of the gas is 42 Mcf per day with 2 Bbls per day of oil, and 15 Bbls of water per day. The gas is metered and flows into a gas gathering system and the oil is stored in an on-site tank. The gas meter is owned by the purchaser.

You have physically inspected the well site and have noted the following:

Wellhead	Sucker Rods to Depth
Pumping Unit	Rod Pump
Electric Motor	210 Bbl. Water Storage Tank
Control Panel	Gas Meter Run
1000' Flowline	

The equipment was new, at the time of installation, and the observed condition, on the date of inspection, was average condition, as defined in *STEP #7 – Condition of Equipment* earlier in this chapter. The appraiser has also noted that the subject's well equipment is typical of gas producing wells within the same field as the subject.

Referring to Addendum 6-A, County/Basin Cross Reference, located later in the chapter, the appraiser determines that the subject property is located within the Anadarko Basin. Comparing the listed equipment with the BELs for the Anadarko Basin, you determine that the equipment most closely conforms to a Total Value Pumping Gas Well With Tanks (Electric Motor). The determination is also supported by noting that other equipment in the field is typical of gas production.

Based on the production of 42 Mcf per day of gas, the subject well qualifies as a stripper well. Based on the stripper well classification, the Minimum Condition grid should be used.

The depth of the well is greater than 3000 feet, but less than 3,500 feet. The total fluid pumped per day is 17 Bbls, which is less than 20 Bbls per day.

Using the grid intersection of 3,500 feet and 20 Bbls per day of fluid, the base equipment value is \$5,519. The gas meter is owned by the gas purchaser and will not be valued here. However it should be valued and assessed separately to the gas purchaser. The indicated total value for the well site equipment of \$5,519 is then multiplied by the specified year's adjustment factor of 0.98 for an actual value of **\$5,409**.

Oil and Gas Equipment Valuation Worksheet
State of Colorado
Example #4

<u>BACA PRODUCERS INC.</u>	ID# <u>45921</u>
Name of Taxpayer	
<u>SPRINGFIELD, COLORADO</u>	Production Year <u>2006</u> Page <u>1</u> of <u>1</u>
Address of Taxpayer	
<u>N 1/2 NW 1/4 36-17-21</u>	<u>ANADARKO #4</u>
Location of Property	Lease Name

<u>Method Of Production</u>	<u>Average Daily Flow Rate</u>	<u>Well Depth</u>
Flowing___Pumping <u>X</u>	Oil(Bbbls) <u>2</u> Gas(Mcf) <u>42</u> Water(Bbbls) <u>15</u>	<u>3,300 Ft.</u>

<u>Type of Equipment</u>	<u>Make</u>	<u>Model</u>	<u>Size</u>	<u>Year</u>
WELLHEAD				1993
PUMPING UNIT				1993
ELECTRIC MOTOR				1993
CONTROL PANEL				1993
WATER STORAGE TANK			210 Bbbls	1993
FLOWLINE				1993
SUCKER RODS				1993
ROD PUMP				1993
<u>GAS METER RUN (ASSESSED TO COLORADO INTERSTATE GAS)</u>				

Basic Equipment List (Title) PUMPING GAS WELL WITH TANKS

Condition of Basic Equipment	VG___	AV___	MIN <u>X</u> *
Condition of Additional Installed Equipment	VG___	AV___	MIN___
Condition of Stored Equipment	VG___	AV___	MIN___

Value from BEL Valuation Grid	\$5,519
Value from Additional Equipment List	\$ 0
Value from Stored Equipment List	\$ 0
Total Value for Wellsite	\$5,519
Specified Year's Adjustment Factor	x 0.98
Specified Year's Level of Value	<u>\$5,409</u>

*(Due to stripper well status, minimum condition used)

EXAMPLE WELL EQUIPMENT APPRAISAL #5

You are valuing oil and gas equipment associated with a producing oil well in the Denver-Julesburg (D-J) Basin. The well, which has a depth of 5,500 feet, was completed in 1990 and produces oil, some associated gas, and water. Daily flow rates declared for the well are: oil-3.7 Bbls per day, water-131.3 Bbls per day, gas-50 Mcf per day.

The operator has filed a DS 658 declaration listing the following equipment in average condition:

Wellhead	Two 300-Bbl. Oil Storage Tanks
Model 160 Lufkin Pumping Unit	Control Panel
20 H.P. Electric Motor	1500' Flowline
1,870' of 3/4" Sucker Rod	3,630' of 5/8" Sucker Rod
Rod Pump	

The appraiser noted that the two oil storage tanks are no longer used because the emulsion is flowing to a common tank battery. All equipment was manufactured in 1989. You have physically inspected the well site and found the equipment to be in average condition as described in *STEP #7 – Condition of Equipment* earlier in the chapter.

Using the BELs listed for the D-J Basin, you find that the equipment declared generally conforms with the BEL titled Total Value Pumping Oil Well without Tanks (Electric Motor). The equipment is also similar to other equipment located within the field and is typical of producing oil wells. Based on the oil production of 3.7 Bbls per day, the subject well qualifies as a stripper well. Based on the stripper well classification, the Minimum Condition grid should be used.

The total volume of fluid is greater than 100 Bbls per day, but less than 200 Bbls per day. Using the grid intersection of 5,500 feet and 200 Bbls per day, the base equipment value of \$5,668 is noted.

The two 300-Bbl. oil storage tanks are not on the equipment list for the BEL, but are noted in the Stored Equipment List. The operator has indicated the tanks are for future use and are not being held for resale. The value for the storage tanks in average condition is \$2,780 each, or \$5,560 total.

Adding the base equipment value of \$5,668 to the stored equipment value of \$5,560 results in a total value of \$11,228. The total value of \$11,228 is multiplied by the specified year's adjustment factor of 0.98 indicating an actual value of **\$11,003** for all well equipment.

The appraiser next needs to determine the value of the common tank battery. Upon physical inspection the appraiser noted that the common tank battery serviced 15 wells, of which 8 wells are categorized as stripper wells. The tank battery was constructed last year with used equipment that appears to be in average condition. The appraiser noted the following equipment for the common tank battery:

Three 300 Bbl. Oil Storage Tanks
One 300 Bbl. Fiberglass Water Storage Tank
Recycle Pump
Horizontal Heater/Treater

Since more than 50% of the wells serviced by the tank battery are stripper wells, the Minimum Condition grid should be used for valuing the common tank battery. Locating the intersection on the tank battery grid of three tanks and one heater treater, the total value is \$6,783. The value for the recycle pump is included in the tank battery total. From under the Minimum tank battery grid, add \$1,011 for the additional fiberglass water storage tank. The total value of \$7,794 is then multiplied by the specified year's adjustment factor of 0.98, indicating an actual total value of **\$7,638** for the complete common tank battery.

Oil and Gas Equipment Valuation Worksheet
State of Colorado
Example #5

<u>WELD OIL CO.</u> Name of Taxpayer	ID# <u>45-61975</u>
<u>205 MAIN ST.</u> Address of Taxpayer	Production Year <u>2006</u> Page <u>1</u> of <u>2</u>
<u>SW 1/4 13-16-69</u> Location of Property	<u>D-J #5</u> Lease Name

Method Of Production	Average Daily Flow Rate	Well Depth
Flowing__Pumping <u>X</u>	Oil(Bbbs) <u>3.7</u> Gas(Mcf) <u>50</u> Water(Bbbs) <u>131.3</u>	<u>5,500 Ft.</u>

Type of Equipment	Make	Model	Size	Year
WELLHEAD				1990
PUMPING UNIT	LUFKIN	160		1990
ELECTRIC MOTOR			20 HP	1990
3/4" SUCKER ROD			1,870'	1990
5/8" SUCKER ROD			3,630'	1990
ROD PUMP				1990
OIL STORAGE TANKS (2)			300 Bbbs	1990
CONTROL PANEL				1990
FLOWLINE			1,500'	1990

Basic Equipment List (Title) PUMPING OIL WELL W/O TANKS (ELECTRIC MOTOR)

Condition of			
Basic Equipment	VG__	AV__	MIN <u>X</u> *
Condition of			
Additional Installed Equipment	VG__	AV__	MIN__
Condition of			
Stored Equipment	VG__	AV <u>X</u>	MIN__

Value from BEL Valuation Grid	\$ 5,668
Value from Additional Equipment List	\$ 0
Value from Stored Equipment List	\$ 5,560
Total Value for Wellsite	\$11,228
Specified Year's Adjustment Factor	x 0.98
Specified Year's Level of Value	<u>\$11,003</u>

*(Due to stripper well status, minimum condition used.)

Oil and Gas Equipment Valuation Worksheet
State of Colorado
Example #5 (Cont'd.)

<u>WELD OIL CO.</u> Name of Taxpayer	ID# <u>45-00103</u>
<u>205 MAIN ST.</u> Address of Taxpayer	Production Year <u>2006</u> Page <u>2</u> of <u>2</u>
<u>Tr in NW 1/4 14-16-69</u> Location of Property	<u>WELD OIL BATTERY #1</u> Lease Name

<u>Method Of Production</u>	<u>Average Daily Flow Rate</u>	<u>Well Depth</u>
Flowing___Pumping <u>X</u>	Oil(Bbls)___ Gas(Mcf)___ Water(Bbls)___	_____Ft.

<u>Type of Equipment</u>	<u>Make</u>	<u>Model</u>	<u>Size</u>	<u>Year</u>
OIL STORAGE TANKS (3)			300 Bbls	1990
FIBERGLASS WATER STORAGE TANK			300 Bbls	1990
RECYCLE PUMP				1990
HEATER/TREATER (Horizontal)				1990

Basic Equipment List (Title) COMMON TANK BATTERY

Condition of			
Basic Equipment	VG___	AV___	MIN <u>X*</u>
Condition of			
Additional Installed Equipment	VG___	AV___	MIN___
Condition of			
Stored Equipment	VG___	AV___	MIN___

Value from BEL Valuation Grid	\$7,794
Value from Additional Equipment List	\$ 0
Value from Stored Equipment List	\$ 0
Total Value for Wellsite	\$7,794
Specified Year's Adjustment Factor	x 0.98
Specified Year's Level of Value	<u>\$7,638</u>

*(Because over 50% of wells are stripper, minimum condition grid used)

ADDENDUM 6-A, COUNTY/BASIN CROSS REFERENCE

County	Basin	County	Basin
Adams	Denver (D-J)	Kit Carson	Denver (D-J)
Alamosa*	San Juan	La Plata	San Juan
Arapahoe	Denver (D-J)	Lake*	Piceance
Archuleta	San Juan	Larimer	Denver (D-J)
Baca	Anadarko	Las Animas	Las Vegas-Raton
Bent	Las Animas Arch	Lincoln	Denver (D-J)
Boulder	Denver (D-J)	Logan	Denver (D-J)
Broomfield	Denver (D-J)	Mesa	Piceance
Chaffee*	Piceance	Mineral*	San Juan
Cheyenne	Las Animas Arch	Moffat	Green River
Clear Creek*	Denver (D-J)	Montezuma	Paradox
Conejos*	San Juan	Montrose	Paradox
Costilla*	San Juan	Morgan	Denver (D-J)
Crowley	Denver (D-J)	Otero	Las Animas Arch
Custer	Las Vegas-Raton	Ouray*	San Juan
Delta	Piceance	Park*	Denver (D-J)
Denver	Denver (D-J)	Phillips	Denver (D-J)
Dolores	Paradox	Pitkin*	Piceance
Douglas	Denver (D-J)	Prowers	Las Animas Arch
Eagle*	Piceance	Pueblo	Denver (D-J)
El Paso	Denver (D-J)	Rio Blanco	Piceance
Elbert	Denver (D-J)	Rio Grande*	San Juan
Fremont	Denver (D-J)	Routt	Green River
Garfield	Piceance	Saguache*	San Juan
Gilpin	Denver (D-J)	San Juan*	San Juan
Grand*	Piceance	San Miguel	Paradox
Gunnison	Piceance	Sedgwick	Denver (D-J)
Hinsdale*	San Juan	Summit*	Piceance
Huerfano	Las Vegas-Raton	Teller	Denver (D-J)
Jackson*	Piceance	Washington	Denver (D-J)
Jefferson	Denver (D-J)	Weld	Denver (D-J)
Kiowa	Las Animas Arch	Yuma	Denver (D-J)

Note: Counties in six basins where little or no oil and gas activity exists at this writing have been placed in appropriate adjoining basins. These counties are noted with an asterisk (*)

ADDENDUM 6-B, EQUIPMENT VALUATION WORKSHEET

State of Colorado

ID# _____ Schedule _____

Name of Taxpayer _____

Production Year _____ Page _____ of _____

Address of Taxpayer _____

Location of Property _____ Lease Name _____

Method Of Production **Average Daily Flow Rate** **Well Depth**

Flowing ___ Pumping ___ Oil(Bbls) ___ Gas(Mcf) ___ Water(Bbls) ___ _____ Ft.

Type of Equipment **Make** **Model** **Size** **Year**

Basic Equipment List (Title) _____

Condition of Basic Equipment	VG ___	AV ___	MIN ___
Condition of Additional Installed Equipment	VG ___	AV ___	MIN ___
Condition of Stored Equipment	VG ___	AV ___	MIN ___

Value from BEL Valuation Grid \$ _____

Value from Additional Equipment List \$ _____

Value from Stored Equipment List \$ _____

Total Value for Wellsite \$ _____

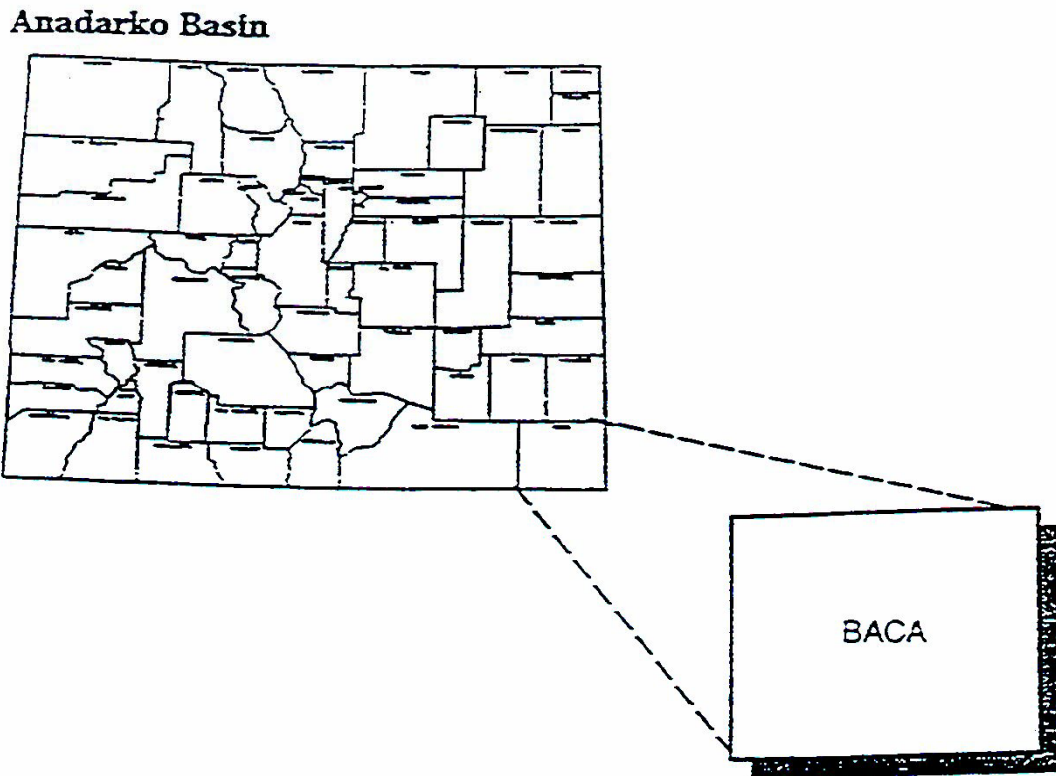
Specified Year's Adjustment Factor x _____

Specified Year's Level of Value \$ _____

ANADARKO BASIN

The Anadarko Basin is primarily a gas basin located in the southeast corner of the state. It includes the following county:

Baca



ANADARKO BASIN BASIC EQUIPMENT LISTS

Total Value Pumping Oil Well with Tanks (Electric Motor)

The basic equipment for a pumping oil well with three oil and one water storage tanks includes:

Pumping Unit	Sucker Rods to Depth
Electric Motor	Rod Pump
Control Panel	300 Barrel Oil Storage Tanks (3) with Stairway
Wellhead	Flowlines - 600'
Heater Treater	210 Barrel Water Storage Tank (1)
Recycle Pump	

Very Good

Barrels

900	118328	121030	122997	127229								
800	118328	121030	122997	124964	129016							
700	86355	93779	102523	122997	124964	129016						
600	86355	93779	95150	104148	124964	125135	130803					
500	78346	87726	95150	96522	105773	125135	126923	132591				
400	73992	79369	89098	96522	97894	107398	110808	128710	134378	136165		
300	70289	74734	80393	81416	90758	92009	102098	103602	130497	132284	137952	
200	62721	71219	76003	76981	77959	78937	79916	94512	95763	106611	108115	
100	62721	63651	64581	65511	74008	74938	75868	76798	82459	90747	102063	
20	58636	59566	60496	61426	62355	63285	64215	65145	66075	67005	67935	
	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500	
												Depth

Average

Barrels

900	57541	58838	59768	63840								
800	57541	58838	59768	60697	64707							
700	45182	50398	53082	59768	60697	64707						
600	45182	50398	51088	53877	60697	60998	65574					
500	39700	45872	51088	51778	54672	60998	61865	66440				
400	38808	40184	46563	51778	52469	55467	57049	62732	67307	68174		
300	37681	39178	41059	41598	47362	47988	54372	55110	63598	64465	69041	
200	33263	38146	39952	40461	40970	41479	41988	49239	49865	56585	57323	
100	33263	33728	34193	34658	39541	40006	40471	40936	43404	46040	52797	
20	31307	31772	32237	32702	33166	33631	34096	34561	35026	35491	35956	
	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500	
												Depth

Minimum

Barrels

900	17232	17557	17782	18821								
800	17232	17557	17782	18006	19033							
700	14246	15545	16133	17782	18006	19033						
600	14246	15545	15726	16327	18006	18108	19245					
500	12895	14427	15726	15907	16520	18108	18321	19458				
400	12669	13029	14608	15907	16088	16713	17117	18533	19670	19882		
300	12364	12747	13261	13410	14837	15004	16464	16646	18745	18958	19644	
200	11257	12489	12956	13094	13231	13368	13505	15336	15503	17010	17193	
100	11257	11382	11507	11632	12864	12989	13114	13239	13926	14551	16075	
20	10762	10887	11012	11137	11262	11387	11512	11637	11762	11887	12012	
	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500	
												Depth

ANADARKO BASIN BASIC EQUIPMENT LISTS

Total Value Pumping Oil Well without Tanks (Electric Motor)

The basic equipment for a pumping oil well without oil and water storage tanks includes:

Pumping Unit	Sucker Rods to Depth
Electric Motor	Rod Pump
Control Panel	Flowlines - 1000'
Wellhead	

Very Good

Barrels

900		79478	82180	84147	88378							
800		79478	82180	84147	86113	90166						
700	47504	54928	63673	84147	86113	90166						
600	47504	54928	56300	65298	86113	86285	91953					
500	39496	48876	56300	57672	66923	86285	88072	93740				
400	35142	40519	50248	57672	59043	68547	71958	89859	95527	97314		
300	31438	35884	41542	42566	51907	53159	63247	64752	91646	93434	99102	
200	23870	32368	37152	38130	39109	40087	41065	55661	56913	67760	69265	
100	23870	24800	25730	26660	35158	36088	37018	37948	43608	51897	63213	
20	19785	20715	21645	22575	23505	24435	25365	26295	27224	28154	29084	
	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500	

Depth

Average

Barrels

900		36901	38198	39128	43200							
800		36901	38198	39128	40057	44067						
700	24542	29758	32442	39128	40057	44067						
600	24542	29758	30448	33237	40057	40358	44934					
500	19060	25232	30448	31138	34032	40358	41225	45800				
400	18168	19544	25923	31138	31829	34827	36409	42092	46667	47534		
300	17041	18538	20419	20958	26722	27348	33732	34470	42958	43825	48401	
200	12623	17506	19312	19821	20330	20839	21348	28599	29225	35945	36683	
100	12623	13088	13553	14018	18901	19366	19831	20296	22764	25400	32157	
20	10667	11132	11597	12062	12526	12991	13456	13921	14386	14851	15316	
	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500	

Depth

Minimum

Barrels

900		9395	9720	9945	10984							
800		9395	9720	9945	10170	11196						
700	6409	7708	8297	9945	10170	11196						
600	6409	7708	7889	8490	10170	10272	11408					
500	5058	6590	7889	8070	8683	10272	10484	11621				
400	4832	5192	6771	8070	8251	8876	9280	10696	11833	12045		
300	4527	4910	5424	5573	7001	7167	8627	8809	10909	11121	11807	
200	3420	4652	5120	5257	5394	5531	5668	7500	7666	9174	9356	
100	3420	3545	3670	3795	5027	5152	5277	5402	6089	6714	8238	
20	2925	3050	3175	3300	3425	3550	3675	3800	3925	4050	4175	
	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500	

Depth

ANADARKO BASIN BASIC EQUIPMENT LISTS

Total Value Pumping Gas Well with Tanks (Electric Motor)

The basic equipment for a pumping gas well with two water storage tanks includes:

Pumping Unit	Sucker Rods to Depth
Electric Motor	Rod Pump
Control Panel	210 Barrel Water Storage Tanks (2) with Stairway
Wellhead	Flowlines - 600'

Very Good

Barrels

900	87282	89984	91951	96183								
800	87282	89984	91951	93918	97970							
700	55309	62733	71477	91951	93918	97970						
600	55309	62733	64104	73102	93918	94089	99757					
500	47300	56680	64104	65476	74727	94089	95877	101545				
400	42946	48323	58052	65476	66848	76352	79762	97664	103332	105119		
300	39243	43688	49347	50370	59712	60963	71052	72556	99451	101238	106906	
200	31675	40173	44957	45935	46913	47891	48870	63466	64717	75565	77069	
100	31675	32605	33535	34465	42962	43892	44822	45752	51413	59701	71017	
20	27590	28520	29450	30380	31309	32239	33169	34099	35029	35959	36889	
	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500	Depth

Average

Barrels

900	40728	42025	42955	47027								
800	40728	42025	42955	43884	47894							
700	28369	33585	36269	42955	43884	47894						
600	28369	33585	34275	37064	43884	44185	48761					
500	22887	29059	34275	34965	37859	44185	45052	49627				
400	21995	23371	29750	34965	35656	38654	40236	45919	50494	51361		
300	20868	22365	24246	24785	30549	31175	37559	38297	46785	47652	52228	
200	16450	21333	23139	23648	24157	24666	25175	32426	33052	39772	40510	
100	16450	16915	17380	17845	22728	23193	23658	24123	26591	29227	35984	
20	14494	14959	15424	15889	16353	16818	17283	17748	18213	18678	19143	
	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500	Depth

Minimum

Barrels

900	11739	12064	12289	13327								
800	11739	12064	12289	12513	13540							
700	8753	10052	10640	12289	12513	13540						
600	8753	10052	10233	10833	12513	12615	13752					
500	7401	8934	10233	10414	11027	12615	12827	13964				
400	7176	7536	9115	10414	10595	11220	11623	13040	14177	14389		
300	6871	7254	7768	7916	9344	9511	10970	11153	13252	13464	14150	
200	5763	6996	7463	7600	7737	7874	8011	9843	10009	11517	11699	
100	5763	5888	6013	6138	7370	7495	7620	7745	8432	9058	10581	
20	5269	5394	5519	5644	5769	5894	6019	6144	6269	6394	6519	
	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500	Depth

ANADARKO BASIN BASIC EQUIPMENT LISTS

Total Value Flowing Gas Well with Tank

The basic equipment for a flowing gas well with one water storage tank includes:

- Wellhead
- 210 Barrel Water Storage Tank (1)
- Flowlines - 600'

**Very Good
MCF**

850	7944	7944	7944	7944	7944	7944	7944	7944	7944	7944	7944
750	7944	7944	7944	7944	7944	7944	7944	7944	7944	7944	7944
650	7944	7944	7944	7944	7944	7944	7944	7944	7944	7944	7944
550	7944	7944	7944	7944	7944	7944	7944	7944	7944	7944	7944
450	7944	7944	7944	7944	7944	7944	7944	7944	7944	7944	7944
350	7944	7944	7944	7944	7944	7944	7944	7944	7944	7944	7944
250	7944	7944	7944	7944	7944	7944	7944	7944	7944	7944	7944
150	7944	7944	7944	7944	7944	7944	7944	7944	7944	7944	7944
60	7944	7944	7944	7944	7944	7944	7944	7944	7944	7944	7944
	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500

Depth

**Average
MCF**

850	4612	4612	4612	4612	4612	4612	4612	4612	4612	4612	4612
750	4612	4612	4612	4612	4612	4612	4612	4612	4612	4612	4612
650	4612	4612	4612	4612	4612	4612	4612	4612	4612	4612	4612
550	4612	4612	4612	4612	4612	4612	4612	4612	4612	4612	4612
450	4612	4612	4612	4612	4612	4612	4612	4612	4612	4612	4612
350	4612	4612	4612	4612	4612	4612	4612	4612	4612	4612	4612
250	4612	4612	4612	4612	4612	4612	4612	4612	4612	4612	4612
150	4612	4612	4612	4612	4612	4612	4612	4612	4612	4612	4612
60	4612	4612	4612	4612	4612	4612	4612	4612	4612	4612	4612
	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500

Depth

**Minimum
MCF**

850	1860	1860	1860	1860	1860	1860	1860	1860	1860	1860	1860
750	1860	1860	1860	1860	1860	1860	1860	1860	1860	1860	1860
650	1860	1860	1860	1860	1860	1860	1860	1860	1860	1860	1860
550	1860	1860	1860	1860	1860	1860	1860	1860	1860	1860	1860
450	1860	1860	1860	1860	1860	1860	1860	1860	1860	1860	1860
350	1860	1860	1860	1860	1860	1860	1860	1860	1860	1860	1860
250	1860	1860	1860	1860	1860	1860	1860	1860	1860	1860	1860
150	1860	1860	1860	1860	1860	1860	1860	1860	1860	1860	1860
60	1860	1860	1860	1860	1860	1860	1860	1860	1860	1860	1860
	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500

Depth

ANADARKO BASIN BASIC EQUIPMENT LISTS

Total Value Flowing Gas Well without Tank

The basic equipment for a flowing gas well without water storage tank includes:

Wellhead
Flowlines - 1000'

**Very Good
MCF**

850	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
750	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
650	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
550	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
450	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
350	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
250	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
150	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
60	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500
											Depth

**Average
MCF**

850	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
750	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
650	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
550	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
450	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
350	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
250	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
150	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
60	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500
											Depth

**Minimum
MCF**

850	806	806	806	806	806	806	806	806	806	806	806
750	806	806	806	806	806	806	806	806	806	806	806
650	806	806	806	806	806	806	806	806	806	806	806
550	806	806	806	806	806	806	806	806	806	806	806
450	806	806	806	806	806	806	806	806	806	806	806
350	806	806	806	806	806	806	806	806	806	806	806
250	806	806	806	806	806	806	806	806	806	806	806
150	806	806	806	806	806	806	806	806	806	806	806
60	806	806	806	806	806	806	806	806	806	806	806
	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500
											Depth

ANADARKO BASIN BASIC EQUIPMENT LISTS

Total Value Flowing Gas Well with Tank and Heater Treater

The basic equipment for a flowing gas well with one water storage tank and heater treater includes:

- Wellhead
- Flowlines - 600'
- 210 Barrel Water Storage Tank (1)
- Heater Treater

**Very Good
MCF**

850	23467	23467	23467	23467	23467	23467	23467	23467	23467	23467	23467
750	23467	23467	23467	23467	23467	23467	23467	23467	23467	23467	23467
650	23467	23467	23467	23467	23467	23467	23467	23467	23467	23467	23467
550	23467	23467	23467	23467	23467	23467	23467	23467	23467	23467	23467
450	23467	23467	23467	23467	23467	23467	23467	23467	23467	23467	23467
350	23467	23467	23467	23467	23467	23467	23467	23467	23467	23467	23467
250	23467	23467	23467	23467	23467	23467	23467	23467	23467	23467	23467
150	23467	23467	23467	23467	23467	23467	23467	23467	23467	23467	23467
60	23467	23467	23467	23467	23467	23467	23467	23467	23467	23467	23467
	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500
	Depth										

**Average
MCF**

850	13642	13642	13642	13642	13642	13642	13642	13642	13642	13642	13642
750	13642	13642	13642	13642	13642	13642	13642	13642	13642	13642	13642
650	13642	13642	13642	13642	13642	13642	13642	13642	13642	13642	13642
550	13642	13642	13642	13642	13642	13642	13642	13642	13642	13642	13642
450	13642	13642	13642	13642	13642	13642	13642	13642	13642	13642	13642
350	13642	13642	13642	13642	13642	13642	13642	13642	13642	13642	13642
250	13642	13642	13642	13642	13642	13642	13642	13642	13642	13642	13642
150	13642	13642	13642	13642	13642	13642	13642	13642	13642	13642	13642
60	13642	13642	13642	13642	13642	13642	13642	13642	13642	13642	13642
	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500
	Depth										

**Minimum
MCF**

850	4117	4117	4117	4117	4117	4117	4117	4117	4117	4117	4117
750	4117	4117	4117	4117	4117	4117	4117	4117	4117	4117	4117
650	4117	4117	4117	4117	4117	4117	4117	4117	4117	4117	4117
550	4117	4117	4117	4117	4117	4117	4117	4117	4117	4117	4117
450	4117	4117	4117	4117	4117	4117	4117	4117	4117	4117	4117
350	4117	4117	4117	4117	4117	4117	4117	4117	4117	4117	4117
250	4117	4117	4117	4117	4117	4117	4117	4117	4117	4117	4117
150	4117	4117	4117	4117	4117	4117	4117	4117	4117	4117	4117
60	4117	4117	4117	4117	4117	4117	4117	4117	4117	4117	4117
	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500
	Depth										

ANADARKO BASIN BASIC EQUIPMENT LISTS

Total Value Flowing Gas Well with Tank and Separator

The basic equipment for a flowing gas well with one water storage tank and separator includes:

- Wellhead
- Flowlines - 600'
- 210 Barrel Water Storage Tank (1)
- Separator

**Very Good
MCF**

850	13115	13115	13115	13115	13115	13115	13115	13115	13115	13115	13115
750	13115	13115	13115	13115	13115	13115	13115	13115	13115	13115	13115
650	13115	13115	13115	13115	13115	13115	13115	13115	13115	13115	13115
550	13115	13115	13115	13115	13115	13115	13115	13115	13115	13115	13115
450	13115	13115	13115	13115	13115	13115	13115	13115	13115	13115	13115
350	13115	13115	13115	13115	13115	13115	13115	13115	13115	13115	13115
250	13115	13115	13115	13115	13115	13115	13115	13115	13115	13115	13115
150	13115	13115	13115	13115	13115	13115	13115	13115	13115	13115	13115
60	13115	13115	13115	13115	13115	13115	13115	13115	13115	13115	13115
	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500
											Depth

**Average
MCF**

850	7117	7117	7117	7117	7117	7117	7117	7117	7117	7117	7117
750	7117	7117	7117	7117	7117	7117	7117	7117	7117	7117	7117
650	7117	7117	7117	7117	7117	7117	7117	7117	7117	7117	7117
550	7117	7117	7117	7117	7117	7117	7117	7117	7117	7117	7117
450	7117	7117	7117	7117	7117	7117	7117	7117	7117	7117	7117
350	7117	7117	7117	7117	7117	7117	7117	7117	7117	7117	7117
250	7117	7117	7117	7117	7117	7117	7117	7117	7117	7117	7117
150	7117	7117	7117	7117	7117	7117	7117	7117	7117	7117	7117
60	7117	7117	7117	7117	7117	7117	7117	7117	7117	7117	7117
	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500
											Depth

**Minimum
MCF**

850	2483	2483	2483	2483	2483	2483	2483	2483	2483	2483	2483
750	2483	2483	2483	2483	2483	2483	2483	2483	2483	2483	2483
650	2483	2483	2483	2483	2483	2483	2483	2483	2483	2483	2483
550	2483	2483	2483	2483	2483	2483	2483	2483	2483	2483	2483
450	2483	2483	2483	2483	2483	2483	2483	2483	2483	2483	2483
350	2483	2483	2483	2483	2483	2483	2483	2483	2483	2483	2483
250	2483	2483	2483	2483	2483	2483	2483	2483	2483	2483	2483
150	2483	2483	2483	2483	2483	2483	2483	2483	2483	2483	2483
60	2483	2483	2483	2483	2483	2483	2483	2483	2483	2483	2483
	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500
											Depth

ANADARKO BASIN BASIC EQUIPMENT LISTS

Common Tank Battery

The basic equipment for a common tank battery includes:

300 Barrel Oil Storage Tanks with Stairway & 110 Barrel Water Storage Tank

Heater Treaters

Recycle Pump

Separators

Manifolds and Headers

Very Good

Tanks

10	67166	85355	90526	100878	106049	111220	126743	131913
9	60834	79023	84194	94546	99717	104888	120411	125582
8	54503	72692	77862	88215	93385	98556	114079	119250
7	48171	66360	71531	81883	87054	92224	107747	112918
6	41839	60028	65199	75551	80722	85893	101416	106586
5	35507	53696	58867	69219	74390	79561	95084	100255
4	29176	47365	52535	62888	68058	73229	88752	93923
3	22844	41033	46204	56556	61727	66897	82420	87591
2	16512	34701	39872	50224	55395	60566	76089	81259
1	10180	28369	33540	43892	49063	54234	69757	74928

Tanks only	With 1 Heater Treater	With 1 Heater Treater and 1 Separator	With 2 Heater Treater	With 2 Heater Treater and 1 Separators	With 2 Heater Treater and 2 Separators	With 3 Heater Treater and 2 Separators	With 3 Heater Treater and 3 Separators
------------	-----------------------	---------------------------------------	-----------------------	--	--	--	--

For Each Additional Tank	Add	6332	For Each Skimming Tank	Add	6515
For Each Additional Separator	Add	5171	For Each Water Tank (Fbrglss)	Add	5053
For Each Additional Heater/Treater	Add	15523	For Each Water Tank (Steel)	Add	13008

Average

Tanks

10	33992	44484	46988	53514	56018	58523	67553	70058
9	30831	41323	43828	50353	52858	55363	64393	66897
8	27671	38163	40667	47193	49697	52202	61232	63737
7	24510	35002	37507	44032	46537	49042	58072	60576
6	21350	31842	34346	40872	43376	45881	54911	57416
5	18189	28681	31186	37711	40216	42721	51751	54255
4	15029	25521	28025	34551	37055	39560	48590	51095
3	11868	22360	24865	31390	33895	36400	45430	47934
2	8708	19200	21704	28230	30734	33239	42269	44774
1	5547	16039	18544	25069	27574	30079	39109	41613

Tanks only	With 1 Heater Treater	With 1 Heater Treater and 1 Separator	With 2 Heater Treater	With 2 Heater Treater and 1 Separators	With 2 Heater Treater and 2 Separators	With 3 Heater Treater and 2 Separators	With 3 Heater Treater and 3 Separators
------------	-----------------------	---------------------------------------	-----------------------	--	--	--	--

For Each Additional Tank	Add	3161	For Each Skimming Tank	Add	3580
For Each Additional Separator	Add	2505	For Each Water Tank (Fbrglss)	Add	2784
For Each Additional Heater/Treater	Add	9030	For Each Water Tank (Steel)	Add	7149

Minimum

Tanks

10	14996	17619	18243	19877	20500	21124	23381	24005
9	13545	16168	16792	18426	19049	19673	21930	22554
8	12094	14717	15340	16974	17598	18221	20479	21102
7	10643	13266	13889	15523	16147	16770	19028	19651
6	9191	11814	12438	14072	14695	15319	17576	18200
5	7740	10363	10987	12621	13244	13868	16125	16749
4	6289	8912	9535	11169	11793	12416	14674	15297
3	4838	7461	8084	9718	10342	10965	13223	13846
2	3386	6009	6633	8267	8890	9514	11771	12395
1	1935	4558	5182	6816	7439	8063	10320	10944

Tanks only	With 1 Heater Treater	With 1 Heater Treater and 1 Separators	With 2 Heater Treater	With 2 Heater Treater and 1 Separators	With 2 Heater Treater and 2 Separators	With 3 Heater Treater and 2 Separators	With 3 Heater Treater and 3 Separators
------------	-----------------------	--	-----------------------	--	--	--	--

For Each Additional Tank	Add	1451	For Each Skimming Tank	Add	1290
For Each Additional Separator	Add	624	For Each Water Tank (Fbrglss)	Add	1011
For Each Additional Heater/Treater	Add	2258	For Each Water Tank (Steel)	Add	2580

ANADARKO BASIN BASIC EQUIPMENT LISTS

Total Value Water Injection Well / Water Disposal Well

The basic equipment for a water injection well includes:

- Wellhead
- Injection lines - 1000'

**Very Good
Barrels**

900	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
800	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
700	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
600	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
500	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
400	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
300	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
200	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
100	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
20	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500
											Depth

**Average
Barrels**

900	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
800	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
700	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
600	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
500	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
400	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
300	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
200	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
100	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
20	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500
											Depth

**Minimum
Barrels**

900	806	806	806	806	806	806	806	806	806	806	806
800	806	806	806	806	806	806	806	806	806	806	806
700	806	806	806	806	806	806	806	806	806	806	806
600	806	806	806	806	806	806	806	806	806	806	806
500	806	806	806	806	806	806	806	806	806	806	806
400	806	806	806	806	806	806	806	806	806	806	806
300	806	806	806	806	806	806	806	806	806	806	806
200	806	806	806	806	806	806	806	806	806	806	806
100	806	806	806	806	806	806	806	806	806	806	806
20	806	806	806	806	806	806	806	806	806	806	806
	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500
											Depth

ANADARKO BASIN BASIC EQUIPMENT LISTS

Total Value ESP Water Supply Well

The basic equipment for an electric submersible pump water supply well includes:

Transformer	Equalizer
Submersible Pump	Switchboard
Electric Motor	Electric Cable to Depth
Wellhead	Flowlines - 1000'

Very Good**Barrels**

4100		65247	66123	66999	67876	68752	69628	70504	71380	72256	
3800		60162	61039	61915	62791	63667	64543	65419	66295	67171	
3400		55943	56749	57556	58362	59168	59974	60781	61587	62393	
2800		54782	55588	56395	57201	58007	58813	59620	60426	61232	
2300		50724	51530	52336	53143	53949	54755	55561	56368	57174	
1900		49751	50557	51364	52170	52976	53782	54589	55395	56201	
1600		46752	47558	48364	49171	49977	50783	51589	52396	53202	
1100		41538	42344	43151	43957	44763	45569	46376	47182	47988	
800	37163	41194	42000	42807	43613	44419	45225	46032	46838	47644	
600	34841	38872	39678	40485	41291	42097	42903	43710	44516	45322	
350	34368	38399	39205	40012	40818	41624	42430	43237	44043	44849	
		1000	3500	4000	4500	5000	5500	6000	6500	7000	7500

Depth

Average**Barrels**

4100		43355	43968	44580	45193	45806	46419	47031	47644	48257	
3800		38378	38990	39603	40216	40829	41441	42054	42667	43280	
3400		35427	35991	36555	37120	37684	38249	38813	39377	39942	
2800		35427	35991	36555	37120	37684	38249	38813	39377	39942	
2300		31997	32562	33126	33691	34255	34819	35384	35948	36512	
1900		29729	30294	30858	31422	31987	32551	33115	33680	34244	
1600		27676	28240	28805	29369	29933	30498	31062	31627	32191	
1100		23956	24521	25085	25650	26214	26778	27343	27907	28471	
800	21135	23956	24521	25085	25650	26214	26778	27343	27907	28471	
600	20070	22892	23457	24021	24585	25150	25714	26278	26843	27407	
350	19511	22333	22898	23462	24026	24591	25155	25719	26284	26848	
		1000	3500	4000	4500	5000	5500	6000	6500	7000	7500

Depth

Minimum**Barrels**

4100		10196	10352	10508	10664	10820	10976	11132	11288	11443	
3800		9637	9793	9949	10105	10261	10417	10573	10729	10884	
3400		8869	9009	9148	9288	9428	9568	9707	9847	9987	
2800		8643	8783	8923	9062	9202	9342	9482	9621	9761	
2300		8009	8149	8288	8428	8568	8708	8847	8987	9127	
1900		7450	7590	7729	7869	8009	8149	8288	8428	8568	
1600		6945	7084	7224	7364	7504	7643	7783	7923	8063	
1100		5999	6138	6278	6418	6558	6697	6837	6977	7117	
800	5182	5880	6020	6160	6300	6439	6579	6719	6859	6998	
600	5042	5741	5880	6020	6160	6300	6439	6579	6719	6859	
350	4891	5590	5730	5870	6009	6149	6289	6429	6568	6708	
		1000	3500	4000	4500	5000	5500	6000	6500	7000	7500

Depth

ANADARKO BASIN BASIC EQUIPMENT LISTS

Total Value Pumping Water Supply Well (Gas Engine)

The basic equipment for a pumping water supply well includes:

Pumping Unit	Sucker Rods To Depth
Wellhead	Rod Pump
Gas Engine	Flowlines - 1000'

Very Good

Barrels

900	89217	91919	92951	97183							
800	89217	91919	92951	94918	98970						
700	54266	61690	70435	92951	94918	98970					
600	52998	60421	61793	72059	94918	93315	100757				
500	44989	54369	61793	62681	73684	93315	95103	102544			
400	39764	45141	54870	62681	64053	75309	78720	96890	102558	104345	
300	35287	39732	45391	46414	55756	57007	67870	69374	98408	100195	105863
200	27687	36185	40968	41947	42925	42785	43763	59510	60761	72383	73887
100	25569	26499	27429	28359	37856	38786	39716	40646	46307	55713	67029
20	21484	22414	23344	24274	25203	26133	27063	27993	28923	29853	30783
	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500

Depth

Average

Barrels

900	44200	45497	45771	49844							
800	44200	45497	45771	46701	50710						
700	30509	35724	38408	45771	46701	50710					
600	29498	34714	35404	39203	46701	46883	51577				
500	24016	30188	35404	35471	39998	46883	47750	52444			
400	22156	23532	29911	35471	36161	40794	42375	48617	53192	54059	
300	20492	21989	23869	24409	30173	30799	37720	38458	48925	49791	54367
200	15945	20828	22634	23143	23652	22989	23498	32050	32676	39934	40671
100	14644	15109	15574	16039	21051	21516	21981	22446	24914	28722	35479
20	12688	13153	13618	14083	14547	15012	15477	15942	16407	16872	17337
	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500

Depth

Minimum

Barrels

900	11212	11537	11601	12639							
800	11212	11537	11601	11825	12852						
700	7893	9192	9780	11601	11825	12852					
600	7645	8944	9125	9973	11825	11895	13064				
500	6294	7826	9125	9145	10167	11895	12107	13276			
400	5821	6181	7760	9145	9326	10360	10763	12320	13456	13669	
300	5387	5770	6284	6433	7861	8027	9616	9798	12392	12604	13290
200	4248	5480	5947	6085	6222	6068	6205	8360	8526	10163	10345
100	3925	4050	4175	4300	5564	5689	5814	5939	6626	7434	9066
20	3431	3556	3681	3806	3930	4055	4180	4305	4430	4555	4680
	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500

Depth

ANADARKO BASIN BASIC EQUIPMENT LISTS

Total Value Pumping Water Supply Well (Electric Motor)

The basic equipment for a pumping water supply well includes:

- | | |
|----------------|----------------------|
| Pumping Unit | Sucker Rods To Depth |
| Wellhead | Rod Pump |
| Electric Motor | Flowlines - 1000' |
| Control Panel | |

Very Good

Barrels

900	79478	82180	84147	88378							
800	79478	82180	84147	86113	90166						
700	47504	54928	63673	84147	86113	90166					
600	47504	54928	56300	65298	86113	86285	91953				
500	39496	48876	56300	57672	66923	86285	88072	93740			
400	35142	40519	50248	57672	59043	68547	71958	89859	95527	97314	
300	31438	35884	41542	42566	51907	53159	63247	64752	91646	93434	99102
200	23870	32368	37152	38130	39109	40087	41065	55661	56913	67760	69265
100	23870	24800	25730	26660	35158	36088	37018	37948	43608	51897	63213
20	19785	20715	21645	22575	23505	24435	25365	26295	27224	28154	29084
	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500

Depth

Average

Barrels

900	36901	38198	39128	43200							
800	36901	38198	39128	40057	44067						
700	24542	29758	32442	39128	40057	44067					
600	24542	29758	30448	33237	40057	40358	44934				
500	19060	25232	30448	31138	34032	40358	41225	45800			
400	18168	19544	25923	31138	31829	34827	36409	42092	46667	47534	
300	17041	18538	20419	20958	26722	27348	33732	34470	42958	43825	48401
200	12623	17506	19312	19821	20330	20839	21348	28599	29225	35945	36683
100	12623	13088	13553	14018	18901	19366	19831	20296	22764	25400	32157
20	10667	11132	11597	12062	12526	12991	13456	13921	14386	14851	15316
	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500

Depth

Minimum

Barrels

900	9395	9720	9945	10984							
800	9395	9720	9945	10170	11196						
700	6409	7708	8297	9945	10170	11196					
600	6409	7708	7889	8490	10170	10272	11408				
500	5058	6590	7889	8070	8683	10272	10484	11621			
400	4832	5192	6771	8070	8251	8876	9280	10696	11833	12045	
300	4527	4910	5424	5573	7001	7167	8627	8809	10909	11121	11807
200	3420	4652	5120	5257	5394	5531	5668	7500	7666	9174	9356
100	3420	3545	3670	3795	5027	5152	5277	5402	6089	6714	8238
20	2925	3050	3175	3300	3425	3550	3675	3800	3925	4050	4175
	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500

Depth

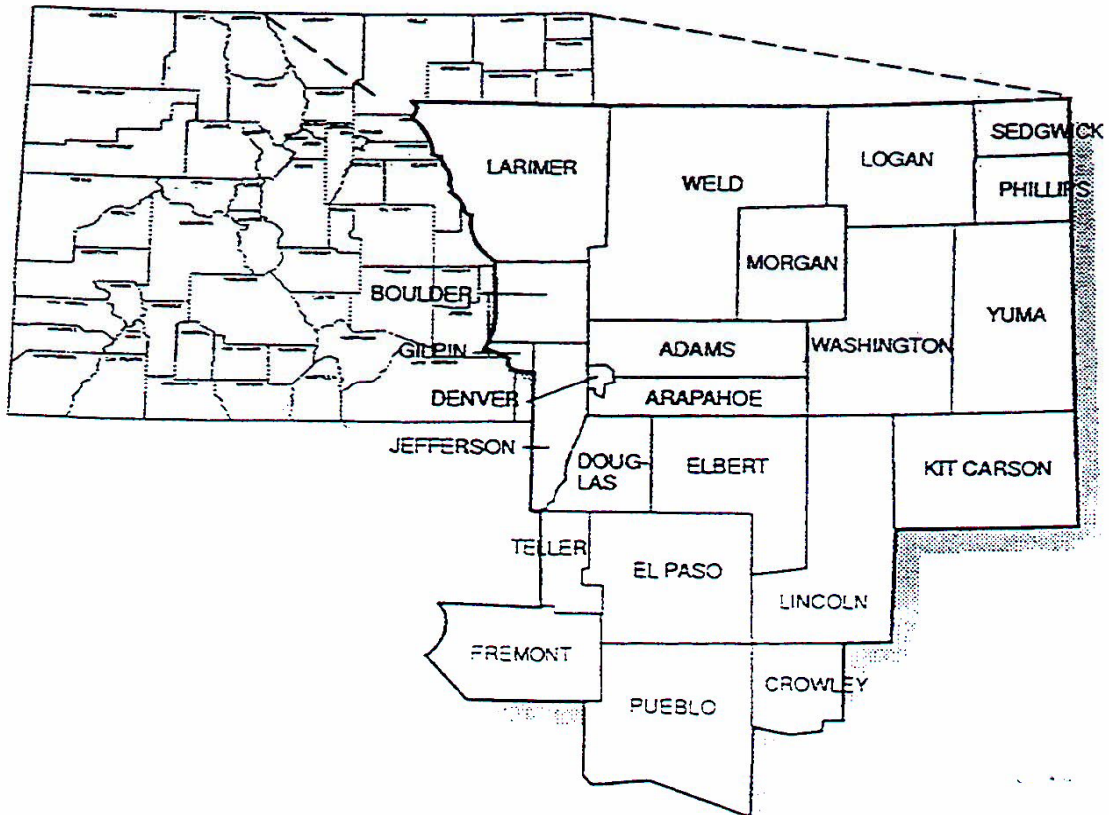
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DENVER-JULESBURG (D-J) BASIN

The Denver-Julesburg Basin (D-J) is located in the northeast corner of the state. It includes the following counties:

Adams	Larimer
Arapahoe	Lincoln
Boulder	Logan
Broomfield	Morgan
Crowley	Phillips
Douglas	Pueblo
El Paso	Sedgwick
Elbert	Teller
Fremont	Washington
Gilpin	Weld
Jefferson	Yuma
Kit Carson	

D-J Basin



D-J BASIN BASIC EQUIPMENT LISTS

Total Value Pumping Oil Well with Tanks (Gas Engine)

The basic equipment for a pumping oil well with two oil storage tanks includes:

Pumping Unit	Sucker Rods to Depth
Gas Engine	Rod Pump
Wellhead	300 Barrel Oil Storage Tanks (2) with Stairway
Heater Treater	Flowlines - 600'

Very Good

Barrels

900	118751	119783	124015									
800	118751	119783	121750	125802								
700	97267	119783	121750	125802								
600	88625	98891	121750	120147	127589							
500	88625	89513	100516	120147	121935	129376						
400	81702	89513	90885	102141	105552	123722	129390	131177				
300	72223	73246	82588	83839	94702	96206	125240	127027	132695			
200	67800	68779	69757	69617	70595	86342	87593	99215	100719	102224	132389	
100	54261	55191	64688	65618	66548	67478	73139	82545	93861	95365	105775	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Average

Barrels

900	59902	60176	64249									
800	59902	60176	61106	65115								
700	52813	60176	61106	65115								
600	49809	53608	61106	61288	65982							
500	49809	49876	54403	61288	62155	66849						
400	44316	49876	50566	55199	56780	63022	67597	68464				
300	38274	38814	44578	45204	52125	52863	63330	64196	68772			
200	37039	37548	38057	37394	37903	46455	47081	54339	55076	55814	66796	
100	29979	30444	35456	35921	36386	36851	39319	43127	49884	50622	57529	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Minimum

Barrels

900	16461	16524	17563									
800	16461	16524	16749	17775								
700	14704	16524	16749	17775								
600	14049	14897	16749	16818	17987							
500	14049	14069	15090	16818	17031	18200						
400	12684	14069	14250	15283	15687	17243	18380	18592				
300	11208	11356	12784	12951	14539	14722	17316	17528	18665			
200	10871	11008	11145	10992	11129	13283	13449	15086	15268	15451	18165	
100	9099	9224	10488	10613	10738	10863	11550	12358	13989	14172	15819	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

D-J BASIN BASIC EQUIPMENT LISTS

Total Value Pumping Oil Well with Tanks (Electric Motor)

The basic equipment for a pumping oil well with two oil storage tanks includes:

Pumping Unit	Sucker Rods to Depth
Electric Motor	Rod Pump
Control Panel	300 Barrel Oil Storage Tanks (2) with Stairway
Wellhead	Flowlines - 600'
Heater Treater	

Very Good

Barrels

900	109012	110979	115210									
800	109012	110979	112945	116998								
700	90505	110979	112945	116998								
600	83132	92130	112945	113117	118785							
500	83132	84504	93755	113117	114904	120572						
400	77080	84504	85875	95379	98790	116691	122359	124146				
300	68374	69398	78739	79991	90079	91584	118478	120266	125934			
200	63984	64962	65941	66919	67897	82493	83745	94592	96097	97601	125627	
100	52562	53492	61990	62920	63850	64780	70440	78729	90045	91549	101153	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Average

Barrels

900	52603	53533	57605									
800	52603	53533	54462	58472								
700	46847	53533	54462	58472								
600	44853	47642	54462	54763	59339							
500	44853	45543	48437	54763	55630	60205						
400	40328	45543	46234	49232	50814	56497	61072	61939				
300	34824	35363	41127	41753	48137	48875	57363	58230	62806			
200	33717	34226	34735	35244	35753	43004	43630	50350	51088	51826	60830	
100	27958	28423	33306	33771	34236	34701	37169	39805	46562	47300	53541	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Minimum

Barrels

900	14644	14869	15907									
800	14644	14869	15093	16120								
700	13220	14869	15093	16120								
600	12813	13413	15093	15195	16332							
500	12813	12994	13607	15195	15407	16544						
400	11695	12994	13175	13800	14203	15620	16757	16969				
300	10348	10496	11924	12091	13550	13733	15832	16044	17181			
200	10043	10180	10317	10454	10591	12423	12589	14097	14279	14462	16681	
100	8593	8718	9950	10075	10200	10325	11012	11638	13161	13344	14830	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

D-J BASIN BASIC EQUIPMENT LISTS

Total Value Pumping Oil Well without Tanks (Gas Engine)

The basic equipment for a pumping oil well without oil storage tanks includes:

- Pumping Unit
- Gas Engine
- Wellhead
- Sucker Rods to Depth
- Rod Pump
- Flowlines - 1000'

Very Good

Barrels

900	91919	92951	97183									
800	91919	92951	94918	98970								
700	70435	92951	94918	98970								
600	61793	72059	94918	93315	100757							
500	61793	62681	73684	93315	95103	102544						
400	54870	62681	64053	75309	78720	96890	102558	104345				
300	45391	46414	55756	57007	67870	69374	98408	100195	105863			
200	40968	41947	42925	42785	43763	59510	60761	72383	73887	75392	105557	
100	27429	28359	37856	38786	39716	40646	46307	55713	67029	68533	78943	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Average

Barrels

900	45497	45771	49844									
800	45497	45771	46701	50710								
700	38408	45771	46701	50710								
600	35404	39203	46701	46883	51577							
500	35404	35471	39998	46883	47750	52444						
400	29911	35471	36161	40794	42375	48617	53192	54059				
300	23869	24409	30173	30799	37720	38458	48925	49791	54367			
200	22634	23143	23652	22989	23498	32050	32676	39934	40671	41409	52391	
100	15574	16039	21051	21516	21981	22446	24914	28722	35479	36217	43124	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Minimum

Barrels

900	11537	11601	12639									
800	11537	11601	11825	12852								
700	9780	11601	11825	12852								
600	9125	9973	11825	11895	13064							
500	9125	9145	10167	11895	12107	13276						
400	7760	9145	9326	10360	10763	12320	13456	13669				
300	6284	6433	7861	8027	9616	9798	12392	12604	13741			
200	5947	6085	6222	6068	6205	8360	8526	10163	10345	10527	13241	
100	4175	4300	5564	5689	5814	5939	6626	7434	9066	9248	10895	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

D-J BASIN BASIC EQUIPMENT LISTS

Total Value Pumping Oil Well without Tanks (Electric Motor)

The basic equipment for a pumping oil well without oil storage tanks includes:

Pumping Unit	Sucker Rods to Depth
Electric Motor	Rod Pump
Control Panel	Flowlines - 1000'
Wellhead	

Very Good**Barrels**

900	82180	84147	88378									
800	82180	84147	86113	90166								
700	63673	84147	86113	90166								
600	56300	65298	86113	86285	91953							
500	56300	57672	66923	86285	88072	93740						
400	50248	57672	59043	68547	71958	89859	95527	97314				
300	41542	42566	51907	53159	63247	64752	91646	93434	99102			
200	37152	38130	39109	40087	41065	55661	56913	67760	69265	70769	98795	
100	25730	26660	35158	36088	37018	37948	43608	51897	63213	64717	74321	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Average**Barrels**

900	38198	39128	43200									
800	38198	39128	40057	44067								
700	32442	39128	40057	44067								
600	30448	33237	40057	40358	44934							
500	30448	31138	34032	40358	41225	45800						
400	25923	31138	31829	34827	36409	42092	46667	47534				
300	20419	20958	26722	27348	33732	34470	42958	43825	48401			
200	19312	19821	20330	20839	21348	28599	29225	35945	36683	37421	46425	
100	13553	14018	18901	19366	19831	20296	22764	25400	32157	32895	39136	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Minimum**Barrels**

900	9720	9945	10984									
800	9720	9945	10170	11196								
700	8297	9945	10170	11196								
600	7889	8490	10170	10272	11408							
500	7889	8070	8683	10272	10484	11621						
400	6771	8070	8251	8876	9280	10696	11833	12045				
300	5424	5573	7001	7167	8627	8809	10909	11121	12258			
200	5120	5257	5394	5531	5668	7500	7666	9174	9356	9538	11758	
100	3670	3795	5027	5152	5277	5402	6089	6714	8238	8420	9906	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

D-J BASIN BASIC EQUIPMENT LISTS

Total Value Flowing Oil Well with Tanks

The basic equipment for a flowing oil well with two oil storage tanks includes:

- Wellhead
- Heater Treater
- 300 Barrel Oil Storage Tanks (2) with Stairway
- Flowlines - 600'

Very Good

Barrels

900	31551	31551	31551	31551	31551	31551	31551	31551	31551	31551	31551
800	31551	31551	31551	31551	31551	31551	31551	31551	31551	31551	31551
700	31551	31551	31551	31551	31551	31551	31551	31551	31551	31551	31551
600	31551	31551	31551	31551	31551	31551	31551	31551	31551	31551	31551
500	31551	31551	31551	31551	31551	31551	31551	31551	31551	31551	31551
400	31551	31551	31551	31551	31551	31551	31551	31551	31551	31551	31551
300	31551	31551	31551	31551	31551	31551	31551	31551	31551	31551	31551
200	31551	31551	31551	31551	31551	31551	31551	31551	31551	31551	31551
100	31551	31551	31551	31551	31551	31551	31551	31551	31551	31551	31551
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

Average

Barrels

900	17576	17576	17576	17576	17576	17576	17576	17576	17576	17576	17576
800	17576	17576	17576	17576	17576	17576	17576	17576	17576	17576	17576
700	17576	17576	17576	17576	17576	17576	17576	17576	17576	17576	17576
600	17576	17576	17576	17576	17576	17576	17576	17576	17576	17576	17576
500	17576	17576	17576	17576	17576	17576	17576	17576	17576	17576	17576
400	17576	17576	17576	17576	17576	17576	17576	17576	17576	17576	17576
300	17576	17576	17576	17576	17576	17576	17576	17576	17576	17576	17576
200	17576	17576	17576	17576	17576	17576	17576	17576	17576	17576	17576
100	17576	17576	17576	17576	17576	17576	17576	17576	17576	17576	17576
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

Minimum

Barrels

900	5730	5730	5730	5730	5730	5730	5730	5730	5730	5730	5730
800	5730	5730	5730	5730	5730	5730	5730	5730	5730	5730	5730
700	5730	5730	5730	5730	5730	5730	5730	5730	5730	5730	5730
600	5730	5730	5730	5730	5730	5730	5730	5730	5730	5730	5730
500	5730	5730	5730	5730	5730	5730	5730	5730	5730	5730	5730
400	5730	5730	5730	5730	5730	5730	5730	5730	5730	5730	5730
300	5730	5730	5730	5730	5730	5730	5730	5730	5730	5730	5730
200	5730	5730	5730	5730	5730	5730	5730	5730	5730	5730	5730
100	5730	5730	5730	5730	5730	5730	5730	5730	5730	5730	5730
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

D-J BASIN BASIC EQUIPMENT LISTS

Total Value Flowing Oil Well without Tanks

The basic equipment for a flowing oil well without oil storage tanks includes:

Wellhead
Flowlines - 1000'

Very Good

Barrels

900	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
800	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
700	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
600	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
500	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
400	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
300	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
200	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
100	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Average

Barrels

900	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
800	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
700	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
600	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
500	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
400	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
300	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
200	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
100	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Minimum

Barrels

900	806	806	806	806	806	806	806	806	806	806	806	806
800	806	806	806	806	806	806	806	806	806	806	806	806
700	806	806	806	806	806	806	806	806	806	806	806	806
600	806	806	806	806	806	806	806	806	806	806	806	806
500	806	806	806	806	806	806	806	806	806	806	806	806
400	806	806	806	806	806	806	806	806	806	806	806	806
300	806	806	806	806	806	806	806	806	806	806	806	806
200	806	806	806	806	806	806	806	806	806	806	806	806
100	806	806	806	806	806	806	806	806	806	806	806	806
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

D-J BASIN BASIC EQUIPMENT LISTS

Total Value Pumping Gas Well with Tank (Gas Engine)

The basic equipment for a pumping gas well with one oil storage tank includes:

Pumping Unit	Rod Pump
Gas Engine	Production Unit
Wellhead	300 Barrel Oil Storage Tank (1) with Stairway
Sucker Rods to Depth	Flowlines - 600'

Very Good

Barrels

900	108345	109377	113609									
800	108345	109377	111344	115396								
700	86861	109377	111344	115396								
600	78219	88485	111344	109741	117183							
500	78219	79107	90110	109741	111529	118970						
400	71296	79107	80479	91735	95146	113316	118984	120771				
300	61817	62840	72182	73433	84296	85800	114834	116621	122289			
200	57394	58373	59351	59211	60189	75936	77187	88809	90313	91818	121983	
100	43855	44785	54282	55212	56142	57072	62733	72139	83455	84959	95369	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Average

Barrels

900	53904	54178	58250									
800	53904	54178	55107	59117								
700	46814	54178	55107	59117								
600	43811	47610	55107	55290	59984							
500	43811	43877	48405	55290	56157	60850						
400	38317	43877	44567	49200	50782	57023	61599	62466				
300	32276	32815	38580	39205	46127	46865	57331	58198	62773			
200	31040	31549	32058	31395	31904	40457	41082	48340	49078	49816	60798	
100	23981	24446	29458	29923	30388	30853	33321	37128	43886	44623	51531	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Minimum

Barrels

900	14289	14353	15391									
800	14289	14353	14577	15604								
700	12532	14353	14577	15604								
600	11877	12725	14577	14647	15816							
500	11877	11897	12919	14647	14859	16028						
400	10512	11897	12078	13112	13515	15072	16208	16421				
300	9036	9185	10613	10779	12368	12550	15144	15356	16493			
200	8699	8837	8974	8820	8957	11112	11278	12915	13097	13279	15993	
100	6927	7052	8316	8441	8566	8691	9378	10186	11818	12000	13647	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

D-J BASIN BASIC EQUIPMENT LISTS

Total Value Pumping Gas Well with Tank (Electric Motor)

The basic equipment for a pumping gas well with one oil storage tank includes:

Pumping Unit	Rod Pump
Electric Motor	Production Unit
Wellhead	300 Barrel Oil Storage Tank (1) with Stairway
Sucker Rods to Depth	Flowlines - 600'
Control Panel	

Very Good

Barrels

900	98606	100573	104804									
800	98606	100573	102539	106592								
700	80099	100573	102539	106592								
600	72726	81724	102539	102711	108379							
500	72726	74098	83349	102711	104498	110166						
400	66674	74098	75469	84973	88384	106285	111953	113740				
300	57968	58992	68333	69585	79673	81178	108072	109860	115528			
200	53578	54556	55535	56513	57491	72087	73339	84186	85691	87195	115221	
100	42156	43086	51584	52514	53444	54374	60034	68323	79639	81143	90747	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Average

Barrels

900	46605	47534	51607									
800	46605	47534	48464	52473								
700	40848	47534	48464	52473								
600	38855	41643	48464	48765	53340							
500	38855	39545	42439	48765	49631	54207						
400	34329	39545	40235	43234	44815	50498	55074	55940				
300	28825	29365	35129	35755	42139	42876	51365	52232	56807			
200	27718	28227	28736	29245	29754	37006	37631	44352	45090	45827	54832	
100	21960	22425	27308	27773	28238	28703	31171	33807	40564	41302	47543	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Minimum

Barrels

900	12472	12697	13736									
800	12472	12697	12922	13948								
700	11049	12697	12922	13948								
600	10641	11242	12922	13024	14160							
500	10641	10822	11435	13024	13236	14373						
400	9523	10822	11003	11628	12032	13448	14585	14797				
300	8176	8325	9753	9919	11379	11561	13661	13873	15010			
200	7872	8009	8146	8283	8420	10252	10418	11926	12108	12290	14510	
100	6422	6547	7779	7904	8029	8154	8841	9466	10990	11172	12658	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

D-J BASIN BASIC EQUIPMENT LISTS

Total Value Pumping Gas Well without Tanks (Gas Engine)

The basic equipment for a pumping gas well without oil storage tanks includes:

Pumping Unit
 Gas Engine
 Wellhead
 Rod Pump
 Flowlines - 1000'
 Sucker Rods to Depth

Very Good

Barrels

900	91919	92951	97183									
800	91919	92951	94918	98970								
700	70435	92951	94918	98970								
600	61793	72059	94918	93315	100757							
500	61793	62681	73684	93315	95103	102544						
400	54870	62681	64053	75309	78720	96890	102558	104345				
300	45391	46414	55756	57007	67870	69374	98408	100195	105863			
200	40968	41947	42925	42785	43763	59510	60761	72383	73887	75392	105557	
100	27429	28359	37856	38786	39716	40646	46307	55713	67029	68533	78943	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Average

Barrels

900	45497	45771	49844									
800	45497	45771	46701	50710								
700	38408	45771	46701	50710								
600	35404	39203	46701	46883	51577							
500	35404	35471	39998	46883	47750	52444						
400	29911	35471	36161	40794	42375	48617	53192	54059				
300	23869	24409	30173	30799	37720	38458	48925	49791	54367			
200	22634	23143	23652	22989	23498	32050	32676	39934	40671	41409	52391	
100	15574	16039	21051	21516	21981	22446	24914	28722	35479	36217	43124	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Minimum

Barrels

900	11537	11601	12639									
800	11537	11601	11825	12852								
700	9780	11601	11825	12852								
600	9125	9973	11825	11895	13064							
500	9125	9145	10167	11895	12107	13276						
400	7760	9145	9326	10360	10763	12320	13456	13669				
300	6284	6433	7861	8027	9616	9798	12392	12604	13741			
200	5947	6085	6222	6068	6205	8360	8526	10163	10345	10527	13241	
100	4175	4300	5564	5689	5814	5939	6626	7434	9066	9248	10895	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

D-J BASIN BASIC EQUIPMENT LISTS

Total Value Pumping Gas Well without Tanks (Electric Motor)

The basic equipment for a pumping gas well without oil storage tanks includes:

- | | |
|----------------------|-------------------|
| Pumping Unit | Rod Pump |
| Electric Motor | Flowlines - 1000' |
| Wellhead | Control Panel |
| Sucker Rods to Depth | |

Very Good

Barrels

900	82180	84147	88378									
800	82180	84147	86113	90166								
700	63673	84147	86113	90166								
600	56300	65298	86113	86285	91953							
500	56300	57672	66923	86285	88072	93740						
400	50248	57672	59043	68547	71958	89859	95527	97314				
300	41542	42566	51907	53159	63247	64752	91646	93434	99102			
200	37152	38130	39109	40087	41065	55661	56913	67760	69265	70769	98795	
100	25730	26660	35158	36088	37018	37948	43608	51897	63213	64717	74321	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Average

Barrels

900	38198	39128	43200									
800	38198	39128	40057	44067								
700	32442	39128	40057	44067								
600	30448	33237	40057	40358	44934							
500	30448	31138	34032	40358	41225	45800						
400	25923	31138	31829	34827	36409	42092	46667	47534				
300	20419	20958	26722	27348	33732	34470	42958	43825	48401			
200	19312	19821	20330	20839	21348	28599	29225	35945	36683	37421	46425	
100	13553	14018	18901	19366	19831	20296	22764	25400	32157	32895	39136	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Minimum

Barrels

900	9720	9945	10984									
800	9720	9945	10170	11196								
700	8297	9945	10170	11196								
600	7889	8490	10170	10272	11408							
500	7889	8070	8683	10272	10484	11621						
400	6771	8070	8251	8876	9280	10696	11833	12045				
300	5424	5573	7001	7167	8627	8809	10909	11121	12258			
200	5120	5257	5394	5531	5668	7500	7666	9174	9356	9538	11758	
100	3670	3795	5027	5152	5277	5402	6089	6714	8238	8420	9906	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

D-J BASIN BASIC EQUIPMENT LISTS

Total Value Plunger Lift Gas Well with Tank

The basic equipment for a plunger lift gas well with one oil storage tank includes:

- Wellhead with Lubricator
- Plunger Lift
- Production Unit
- 300 Barrel Oil Storage Tank (1) with Stairway
- Flowlines - 600'

Very Good

MCF

850	24478	24478	24478	24478	24478	24478	24478	24478	24478	24478	24478	24478
750	24478	24478	24478	24478	24478	24478	24478	24478	24478	24478	24478	24478
650	24478	24478	24478	24478	24478	24478	24478	24478	24478	24478	24478	24478
550	24478	24478	24478	24478	24478	24478	24478	24478	24478	24478	24478	24478
450	24478	24478	24478	24478	24478	24478	24478	24478	24478	24478	24478	24478
350	24478	24478	24478	24478	24478	24478	24478	24478	24478	24478	24478	24478
250	24478	24478	24478	24478	24478	24478	24478	24478	24478	24478	24478	24478
150	24478	24478	24478	24478	24478	24478	24478	24478	24478	24478	24478	24478
60	24478	24478	24478	24478	24478	24478	24478	24478	24478	24478	24478	24478
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	Depth

Average

MCF

850	13470	13470	13470	13470	13470	13470	13470	13470	13470	13470	13470	13470
750	13470	13470	13470	13470	13470	13470	13470	13470	13470	13470	13470	13470
650	13470	13470	13470	13470	13470	13470	13470	13470	13470	13470	13470	13470
550	13470	13470	13470	13470	13470	13470	13470	13470	13470	13470	13470	13470
450	13470	13470	13470	13470	13470	13470	13470	13470	13470	13470	13470	13470
350	13470	13470	13470	13470	13470	13470	13470	13470	13470	13470	13470	13470
250	13470	13470	13470	13470	13470	13470	13470	13470	13470	13470	13470	13470
150	13470	13470	13470	13470	13470	13470	13470	13470	13470	13470	13470	13470
60	13470	13470	13470	13470	13470	13470	13470	13470	13470	13470	13470	13470
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	Depth

Minimum

MCF

850	4031	4031	4031	4031	4031	4031	4031	4031	4031	4031	4031	4031
750	4031	4031	4031	4031	4031	4031	4031	4031	4031	4031	4031	4031
650	4031	4031	4031	4031	4031	4031	4031	4031	4031	4031	4031	4031
550	4031	4031	4031	4031	4031	4031	4031	4031	4031	4031	4031	4031
450	4031	4031	4031	4031	4031	4031	4031	4031	4031	4031	4031	4031
350	4031	4031	4031	4031	4031	4031	4031	4031	4031	4031	4031	4031
250	4031	4031	4031	4031	4031	4031	4031	4031	4031	4031	4031	4031
150	4031	4031	4031	4031	4031	4031	4031	4031	4031	4031	4031	4031
60	4031	4031	4031	4031	4031	4031	4031	4031	4031	4031	4031	4031
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	Depth

D-J BASIN BASIC EQUIPMENT LISTS

Total Value Plunger Lift Gas Well without Tanks

The basic equipment for a plunger lift gas well without oil storage tanks includes:

- Wellhead with Lubricator
 - Plunger Lift
 - Production Unit
- Flowlines - 1000'

Very Good

MCF

850	19501	19501	19501	19501	19501	19501	19501	19501	19501	19501	19501
750	19501	19501	19501	19501	19501	19501	19501	19501	19501	19501	19501
650	19501	19501	19501	19501	19501	19501	19501	19501	19501	19501	19501
550	19501	19501	19501	19501	19501	19501	19501	19501	19501	19501	19501
450	19501	19501	19501	19501	19501	19501	19501	19501	19501	19501	19501
350	19501	19501	19501	19501	19501	19501	19501	19501	19501	19501	19501
250	19501	19501	19501	19501	19501	19501	19501	19501	19501	19501	19501
150	19501	19501	19501	19501	19501	19501	19501	19501	19501	19501	19501
60	19501	19501	19501	19501	19501	19501	19501	19501	19501	19501	19501
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

Average

MCF

850	11255	11255	11255	11255	11255	11255	11255	11255	11255	11255	11255
750	11255	11255	11255	11255	11255	11255	11255	11255	11255	11255	11255
650	11255	11255	11255	11255	11255	11255	11255	11255	11255	11255	11255
550	11255	11255	11255	11255	11255	11255	11255	11255	11255	11255	11255
450	11255	11255	11255	11255	11255	11255	11255	11255	11255	11255	11255
350	11255	11255	11255	11255	11255	11255	11255	11255	11255	11255	11255
250	11255	11255	11255	11255	11255	11255	11255	11255	11255	11255	11255
150	11255	11255	11255	11255	11255	11255	11255	11255	11255	11255	11255
60	11255	11255	11255	11255	11255	11255	11255	11255	11255	11255	11255
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

Minimum

MCF

850	2817	2817	2817	2817	2817	2817	2817	2817	2817	2817	2817
750	2817	2817	2817	2817	2817	2817	2817	2817	2817	2817	2817
650	2817	2817	2817	2817	2817	2817	2817	2817	2817	2817	2817
550	2817	2817	2817	2817	2817	2817	2817	2817	2817	2817	2817
450	2817	2817	2817	2817	2817	2817	2817	2817	2817	2817	2817
350	2817	2817	2817	2817	2817	2817	2817	2817	2817	2817	2817
250	2817	2817	2817	2817	2817	2817	2817	2817	2817	2817	2817
150	2817	2817	2817	2817	2817	2817	2817	2817	2817	2817	2817
60	2817	2817	2817	2817	2817	2817	2817	2817	2817	2817	2817
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

D-J BASIN BASIC EQUIPMENT LISTS

Total Value Plunger Lift Gas Well without Tanks or Production Unit

The basic equipment for a plunger lift gas well without oil storage tanks or production unit includes:

- Wellhead with Lubricator
- Plunger Lift
- Flowlines - 1000'

**Very Good
MCF**

850	8052	8052	8052	8052	8052	8052	8052	8052	8052	8052	8052	8052
750	8052	8052	8052	8052	8052	8052	8052	8052	8052	8052	8052	8052
650	8052	8052	8052	8052	8052	8052	8052	8052	8052	8052	8052	8052
550	8052	8052	8052	8052	8052	8052	8052	8052	8052	8052	8052	8052
450	8052	8052	8052	8052	8052	8052	8052	8052	8052	8052	8052	8052
350	8052	8052	8052	8052	8052	8052	8052	8052	8052	8052	8052	8052
250	8052	8052	8052	8052	8052	8052	8052	8052	8052	8052	8052	8052
150	8052	8052	8052	8052	8052	8052	8052	8052	8052	8052	8052	8052
60	8052	8052	8052	8052	8052	8052	8052	8052	8052	8052	8052	8052
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	Depth

**Average
MCF**

850	5063	5063	5063	5063	5063	5063	5063	5063	5063	5063	5063	5063
750	5063	5063	5063	5063	5063	5063	5063	5063	5063	5063	5063	5063
650	5063	5063	5063	5063	5063	5063	5063	5063	5063	5063	5063	5063
550	5063	5063	5063	5063	5063	5063	5063	5063	5063	5063	5063	5063
450	5063	5063	5063	5063	5063	5063	5063	5063	5063	5063	5063	5063
350	5063	5063	5063	5063	5063	5063	5063	5063	5063	5063	5063	5063
250	5063	5063	5063	5063	5063	5063	5063	5063	5063	5063	5063	5063
150	5063	5063	5063	5063	5063	5063	5063	5063	5063	5063	5063	5063
60	5063	5063	5063	5063	5063	5063	5063	5063	5063	5063	5063	5063
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	Depth

**Minimum
MCF**

850	1279	1279	1279	1279	1279	1279	1279	1279	1279	1279	1279	1279
750	1279	1279	1279	1279	1279	1279	1279	1279	1279	1279	1279	1279
650	1279	1279	1279	1279	1279	1279	1279	1279	1279	1279	1279	1279
550	1279	1279	1279	1279	1279	1279	1279	1279	1279	1279	1279	1279
450	1279	1279	1279	1279	1279	1279	1279	1279	1279	1279	1279	1279
350	1279	1279	1279	1279	1279	1279	1279	1279	1279	1279	1279	1279
250	1279	1279	1279	1279	1279	1279	1279	1279	1279	1279	1279	1279
150	1279	1279	1279	1279	1279	1279	1279	1279	1279	1279	1279	1279
60	1279	1279	1279	1279	1279	1279	1279	1279	1279	1279	1279	1279
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	Depth

D-J BASIN BASIC EQUIPMENT LISTS

Total Value Flowing Gas Well with Tank

The basic equipment for a flowing gas well with one oil storage tank includes:

- Wellhead
- Production Unit
- 300 Barrel Oil Storage Tank (1) with Stairway
- Flowlines - 600'

**Very Good
MCF**

850	21145	21145	21145	21145	21145	21145	21145	21145	21145	21145	21145	21145
750	21145	21145	21145	21145	21145	21145	21145	21145	21145	21145	21145	21145
650	21145	21145	21145	21145	21145	21145	21145	21145	21145	21145	21145	21145
550	21145	21145	21145	21145	21145	21145	21145	21145	21145	21145	21145	21145
450	21145	21145	21145	21145	21145	21145	21145	21145	21145	21145	21145	21145
350	21145	21145	21145	21145	21145	21145	21145	21145	21145	21145	21145	21145
250	21145	21145	21145	21145	21145	21145	21145	21145	21145	21145	21145	21145
150	21145	21145	21145	21145	21145	21145	21145	21145	21145	21145	21145	21145
60	21145	21145	21145	21145	21145	21145	21145	21145	21145	21145	21145	21145
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

**Average
MCF**

850	11578	11578	11578	11578	11578	11578	11578	11578	11578	11578	11578	11578
750	11578	11578	11578	11578	11578	11578	11578	11578	11578	11578	11578	11578
650	11578	11578	11578	11578	11578	11578	11578	11578	11578	11578	11578	11578
550	11578	11578	11578	11578	11578	11578	11578	11578	11578	11578	11578	11578
450	11578	11578	11578	11578	11578	11578	11578	11578	11578	11578	11578	11578
350	11578	11578	11578	11578	11578	11578	11578	11578	11578	11578	11578	11578
250	11578	11578	11578	11578	11578	11578	11578	11578	11578	11578	11578	11578
150	11578	11578	11578	11578	11578	11578	11578	11578	11578	11578	11578	11578
60	11578	11578	11578	11578	11578	11578	11578	11578	11578	11578	11578	11578
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

**Minimum
MCF**

850	3558	3558	3558	3558	3558	3558	3558	3558	3558	3558	3558	3558
750	3558	3558	3558	3558	3558	3558	3558	3558	3558	3558	3558	3558
650	3558	3558	3558	3558	3558	3558	3558	3558	3558	3558	3558	3558
550	3558	3558	3558	3558	3558	3558	3558	3558	3558	3558	3558	3558
450	3558	3558	3558	3558	3558	3558	3558	3558	3558	3558	3558	3558
350	3558	3558	3558	3558	3558	3558	3558	3558	3558	3558	3558	3558
250	3558	3558	3558	3558	3558	3558	3558	3558	3558	3558	3558	3558
150	3558	3558	3558	3558	3558	3558	3558	3558	3558	3558	3558	3558
60	3558	3558	3558	3558	3558	3558	3558	3558	3558	3558	3558	3558
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

D-J BASIN BASIC EQUIPMENT LISTS

Total Value Flowing Gas Well without Tanks

The basic equipment for a flowing gas well without oil storage tanks includes:

Wellhead
 Production Unit
 Flowlines - 1000'

Very Good
MCF

850	16168	16168	16168	16168	16168	16168	16168	16168	16168	16168	16168
750	16168	16168	16168	16168	16168	16168	16168	16168	16168	16168	16168
650	16168	16168	16168	16168	16168	16168	16168	16168	16168	16168	16168
550	16168	16168	16168	16168	16168	16168	16168	16168	16168	16168	16168
450	16168	16168	16168	16168	16168	16168	16168	16168	16168	16168	16168
350	16168	16168	16168	16168	16168	16168	16168	16168	16168	16168	16168
250	16168	16168	16168	16168	16168	16168	16168	16168	16168	16168	16168
150	16168	16168	16168	16168	16168	16168	16168	16168	16168	16168	16168
60	16168	16168	16168	16168	16168	16168	16168	16168	16168	16168	16168
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500
											Depth

Average
MCF

850	9363	9363	9363	9363	9363	9363	9363	9363	9363	9363	9363
750	9363	9363	9363	9363	9363	9363	9363	9363	9363	9363	9363
650	9363	9363	9363	9363	9363	9363	9363	9363	9363	9363	9363
550	9363	9363	9363	9363	9363	9363	9363	9363	9363	9363	9363
450	9363	9363	9363	9363	9363	9363	9363	9363	9363	9363	9363
350	9363	9363	9363	9363	9363	9363	9363	9363	9363	9363	9363
250	9363	9363	9363	9363	9363	9363	9363	9363	9363	9363	9363
150	9363	9363	9363	9363	9363	9363	9363	9363	9363	9363	9363
60	9363	9363	9363	9363	9363	9363	9363	9363	9363	9363	9363
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500
											Depth

Minimum
MCF

850	2344	2344	2344	2344	2344	2344	2344	2344	2344	2344	2344
750	2344	2344	2344	2344	2344	2344	2344	2344	2344	2344	2344
650	2344	2344	2344	2344	2344	2344	2344	2344	2344	2344	2344
550	2344	2344	2344	2344	2344	2344	2344	2344	2344	2344	2344
450	2344	2344	2344	2344	2344	2344	2344	2344	2344	2344	2344
350	2344	2344	2344	2344	2344	2344	2344	2344	2344	2344	2344
250	2344	2344	2344	2344	2344	2344	2344	2344	2344	2344	2344
150	2344	2344	2344	2344	2344	2344	2344	2344	2344	2344	2344
60	2344	2344	2344	2344	2344	2344	2344	2344	2344	2344	2344
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500
											Depth

D-J BASIN BASIC EQUIPMENT LISTS

Total Value Flowing Gas Well without Tanks or Production Unit

The basic equipment for a flowing gas well without tanks or production unit includes:

Wellhead
Flowlines - 1000'

Very Good

MCF

850	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
750	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
650	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
550	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
450	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
350	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
250	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
150	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
60	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

Average

MCF

850	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
750	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
650	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
550	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
450	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
350	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
250	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
150	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
60	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

Minimum

MCF

850	806	806	806	806	806	806	806	806	806	806	806
750	806	806	806	806	806	806	806	806	806	806	806
650	806	806	806	806	806	806	806	806	806	806	806
550	806	806	806	806	806	806	806	806	806	806	806
450	806	806	806	806	806	806	806	806	806	806	806
350	806	806	806	806	806	806	806	806	806	806	806
250	806	806	806	806	806	806	806	806	806	806	806
150	806	806	806	806	806	806	806	806	806	806	806
60	806	806	806	806	806	806	806	806	806	806	806
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

D-J BASIN BASIC EQUIPMENT LISTS

Common Tank Battery

The basic equipment for a common tank battery includes:

300 Barrel Oil Storage Tanks with Stairway

Heater Treater

Separators

Recycle Pump

Manifolds and Headers

Very Good

Tanks

10	64425	79948	85119	95471	100642	105812	121335	126506
9	58093	73616	78787	89139	94310	99481	115004	120174
8	51761	67284	72455	82807	87978	93149	108672	113843
7	45430	60953	66123	76476	81646	86817	102340	107511
6	39098	54621	59792	70144	75315	80485	96008	101179
5	32766	48289	53460	63812	68983	74154	89677	94847
4	26434	41957	47128	57480	62651	67822	83345	88516
3	20103	35626	40796	51149	56319	61490	77013	82184
2	13771	29294	34465	44817	49988	55158	70681	75852
1	6332	22962	28133	38485	43656	48827	64350	69520

Tanks only	With 1 Heater Treater	With 1 Heater Treater and 1 Separator	With 2 Heater Treater	With 2 Heater Treater and 1 Separators	With 2 Heater Treater and 2 Separators	With 3 Heater Treater and 2 Separators	With 3 Heater Treater and 3 Separators
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For Each Additional Tank	Add	6332	For Each Skimming Tank	Add	6515
For Each Additional Separator	Add	5171	For Each Water Tank (Fbrgls)	Add	5053
For Each Additional Heater/Treater	Add	15523	For Each Water Tank (Steel)	Add	13008

Average

Tanks

10	32293	41323	43828	50353	52858	55363	64393	66897
9	29133	38163	40667	47193	49697	52202	61232	63737
8	25972	35002	37507	44032	46537	49042	58072	60576
7	22812	31842	34346	40872	43376	45881	54911	57416
6	19651	28681	31186	37711	40216	42721	51751	54255
5	16491	25521	28025	34551	37055	39560	48590	51095
4	13330	22360	24865	31390	33895	36400	45430	47934
3	10170	19200	21704	28230	30734	33239	42269	44774
2	7009	16039	18544	25069	27574	30079	39109	41613
1	3161	12879	15383	21909	24413	26918	35948	38453

Tanks only	With 1 Heater Treater	With 1 Heater Treater and 1 Separator	With 2 Heater Treater	With 2 Heater Treater and 1 Separators	With 2 Heater Treater and 2 Separators	With 3 Heater Treater and 2 Separators	With 3 Heater Treater and 3 Separators
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For Each Additional Tank	Add	3161	For Each Skimming Tank	Add	3580
For Each Additional Separator	Add	2505	For Each Water Tank (Fbrgls)	Add	2784
For Each Additional Heater/Treater	Add	9030	For Each Water Tank (Steel)	Add	7149

Minimum

Tanks

10	14685	16942	17566	19200	19823	20447	22704	23328
9	13233	15491	16114	17748	18372	18995	21253	21876
8	11782	14040	14663	16297	16921	17544	19802	20425
7	10331	12588	13212	14846	15469	16093	18350	18974
6	8880	11137	11761	13395	14018	14642	16899	17523
5	7428	9686	10309	11943	12567	13190	15448	16071
4	5977	8235	8858	10492	11116	11739	13997	14620
3	4526	6783	7407	9041	9664	10288	12545	13169
2	3075	5332	5956	7590	8213	8837	11094	11718
1	1451	3881	4504	6138	6762	7385	9643	10266

Tanks only	With 1 Heater Treater	With 1 Heater Treater and 1 Separators	With 2 Heater Treater	With 2 Heater Treater and 1 Separators	With 2 Heater Treater and 2 Separators	With 3 Heater Treater and 2 Separators	With 3 Heater Treater and 3 Separators
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For Each Additional Tank	Add	1451	For Each Skimming Tank	Add	1290
For Each Additional Separator	Add	624	For Each Water Tank (Fbrgls)	Add	1011
For Each Additional Heater/Treater	Add	2258	For Each Water Tank (Steel)	Add	2580

D-J BASIN BASIC EQUIPMENT LISTS

Total Value Water Injection Well / Water Disposal Well

The basic equipment for a water injection well includes:

- Wellhead
- Injection lines - 1000'

Very Good

Barrels

900	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
800	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
700	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
600	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
500	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
400	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
300	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
200	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
100	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

Average

Barrels

900	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
800	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
700	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
600	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
500	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
400	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
300	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
200	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
100	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

Minimum

Barrels

900	806	806	806	806	806	806	806	806	806	806	806
800	806	806	806	806	806	806	806	806	806	806	806
700	806	806	806	806	806	806	806	806	806	806	806
600	806	806	806	806	806	806	806	806	806	806	806
500	806	806	806	806	806	806	806	806	806	806	806
400	806	806	806	806	806	806	806	806	806	806	806
300	806	806	806	806	806	806	806	806	806	806	806
200	806	806	806	806	806	806	806	806	806	806	806
100	806	806	806	806	806	806	806	806	806	806	806
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

D-J BASIN BASIC EQUIPMENT LISTS**Total Value ESP Water Supply Well**

The basic equipment for an electric submersible pump water supply well includes:

Transformer	Equalizer
Submersible Pump	Switchboard
Electric Motor	Electric Cable to Depth
Wellhead	Flowlines - 1000'

Very Good**Barrels**

4100	65247	66123	66999	67876	68752	69628	70504	71380	72256	73132	74008
3800	60162	61039	61915	62791	63667	64543	65419	66295	67171	68048	68924
3400	55943	56749	57556	58362	59168	59974	60781	61587	62393	63199	64006
2800	54782	55588	56395	57201	58007	58813	59620	60426	61232	62038	62845
2300	50724	51530	52336	53143	53949	54755	55561	56368	57174	57980	58786
1900	49751	50557	51364	52170	52976	53782	54589	55395	56201	57007	57814
1600	46752	47558	48364	49171	49977	50783	51589	52396	53202	54008	54814
1100	41538	42344	43151	43957	44763	45569	46376	47182	47988	48794	49601
800	37163	41194	42000	42807	43613	44419	45225	46032	46838	47644	48450
600	34841	38872	39678	40485	41291	42097	42903	43710	44516	45322	46128
350	34368	38399	39205	40012	40818	41624	42430	43237	44043	44849	45655
	1000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000
											8500

Depth**Average****Barrels**

4100	43355	43968	44580	45193	45806	46419	47031	47644	48257	48870	49482
3800	38378	38990	39603	40216	40829	41441	42054	42667	43280	43892	44505
3400	35427	35991	36555	37120	37684	38249	38813	39377	39942	40506	41070
2800	35427	35991	36555	37120	37684	38249	38813	39377	39942	40506	41070
2300	31997	32562	33126	33691	34255	34819	35384	35948	36512	37077	37641
1900	29729	30294	30858	31422	31987	32551	33115	33680	34244	34809	35373
1600	27676	28240	28805	29369	29933	30498	31062	31627	32191	32755	33320
1100	23956	24521	25085	25650	26214	26778	27343	27907	28471	29036	29600
800	21135	23956	24521	25085	25650	26214	26778	27343	27907	28471	29036
600	20070	22892	23457	24021	24585	25150	25714	26278	26843	27407	27972
350	19511	22333	22898	23462	24026	24591	25155	25719	26284	26848	27413
	1000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000
											8500

Depth**Minimum****Barrels**

4100	10196	10352	10508	10664	10820	10976	11132	11288	11443	11599	11755
3800	9637	9793	9949	10105	10261	10417	10573	10729	10884	11040	11196
3400	8869	9009	9148	9288	9428	9568	9707	9847	9987	10127	10266
2800	8643	8783	8923	9062	9202	9342	9482	9621	9761	9901	10041
2300	8009	8149	8288	8428	8568	8708	8847	8987	9127	9267	9406
1900	7450	7590	7729	7869	8009	8149	8288	8428	8568	8708	8847
1600	6945	7084	7224	7364	7504	7643	7783	7923	8063	8202	8342
1100	5999	6138	6278	6418	6558	6697	6837	6977	7117	7256	7396
800	5182	5880	6020	6160	6300	6439	6579	6719	6859	6998	7138
600	5042	5741	5880	6020	6160	6300	6439	6579	6719	6859	6998
350	4891	5590	5730	5870	6009	6149	6289	6429	6568	6708	6848
	1000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000
											8500

Depth

D-J BASIN BASIC EQUIPMENT LISTS

Total Value Pumping Water Supply Well (Gas Engine)

The basic equipment for a pumping water supply well includes:

- | | |
|--------------|----------------------|
| Pumping Unit | Sucker Rods to Depth |
| Wellhead | Rod Pump |
| Gas Engine | Flowlines - 1000' |

Very Good

Barrels

900	91919	92951	97183									
800	91919	92951	94918	98970								
700	70435	92951	94918	98970								
600	61793	72059	94918	93315	100757							
500	61793	62681	73684	93315	95103	102544						
400	54870	62681	64053	75309	78720	96890	102558	104345				
300	45391	46414	55756	57007	67870	69374	98408	100195	105863			
200	40968	41947	42925	42785	43763	59510	60761	72383	73887	75392	105557	
100	27429	28359	37856	38786	39716	40646	46307	55713	67029	68533	78943	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Average

Barrels

900	45497	45771	49844									
800	45497	45771	46701	50710								
700	38408	45771	46701	50710								
600	35404	39203	46701	46883	51577							
500	35404	35471	39998	46883	47750	52444						
400	29911	35471	36161	40794	42375	48617	53192	54059				
300	23869	24409	30173	30799	37720	38458	48925	49791	54367			
200	22634	23143	23652	22989	23498	32050	32676	39934	40671	41409	52391	
100	15574	16039	21051	21516	21981	22446	24914	28722	35479	36217	43124	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Minimum

Barrels

900	11537	11601	12639									
800	11537	11601	11825	12852								
700	9780	11601	11825	12852								
600	9125	9973	11825	11895	13064							
500	9125	9145	10167	11895	12107	13276						
400	7760	9145	9326	10360	10763	12320	13456	13669				
300	6284	6433	7861	8027	9616	9798	12392	12604	13741			
200	5947	6085	6222	6068	6205	8360	8526	10163	10345	10527	13241	
100	4175	4300	5564	5689	5814	5939	6626	7434	9066	9248	10895	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

D-J BASIN BASIC EQUIPMENT LISTS

Total Value Pumping Water Supply Well (Electric Motor)

The basic equipment for a pumping water supply well includes:

Pumping Unit	Sucker Rods to Depth
Wellhead	Rod Pump
Electric Motor	Flowlines - 1000'
Control Panel	

Very Good

Barrels

900	82180	84147	88378									
800	82180	84147	86113	90166								
700	63673	84147	86113	90166								
600	56300	65298	86113	86285	91953							
500	56300	57672	66923	86285	88072	93740						
400	50248	57672	59043	68547	71958	89859	95527	97314				
300	41542	42566	51907	53159	63247	64752	91646	93434	99102			
200	37152	38130	39109	40087	41065	55661	56913	67760	69265	70769	98795	
100	25730	26660	35158	36088	37018	37948	43608	51897	63213	64717	74321	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Average

Barrels

900	38198	39128	43200									
800	38198	39128	40057	44067								
700	32442	39128	40057	44067								
600	30448	33237	40057	40358	44934							
500	30448	31138	34032	40358	41225	45800						
400	25923	31138	31829	34827	36409	42092	46667	47534				
300	20419	20958	26722	27348	33732	34470	42958	43825	48401			
200	19312	19821	20330	20839	21348	28599	29225	35945	36683	37421	46425	
100	13553	14018	18901	19366	19831	20296	22764	25400	32157	32895	39136	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Minimum

Barrels

900	9720	9945	10984									
800	9720	9945	10170	11196								
700	8297	9945	10170	11196								
600	7889	8490	10170	10272	11408							
500	7889	8070	8683	10272	10484	11621						
400	6771	8070	8251	8876	9280	10696	11833	12045				
300	5424	5573	7001	7167	8627	8809	10909	11121	12258			
200	5120	5257	5394	5531	5668	7500	7666	9174	9356	9538	11758	
100	3670	3795	5027	5152	5277	5402	6089	6714	8238	8420	9906	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

D-J BASIN BASIC EQUIPMENT LISTS**Total Value Shallow Pumping Gas Well with Tank and Production Unit
(Electric Motor)**

The basic equipment for a shallow pumping gas well with one fiberglass storage tank and one production unit includes:

Pumping Unit	Control Panel
Electric Motor	Rod Pump
Wellhead	100 Barrel Fiberglass Storage Tank (1)
Sucker Rods to Depth	Flowlines - 600'
Production Unit	

Very Good**Barrels**

900	26077	27702	31378
800	25064	27702	29326
700	25064	26436	29326
600	23671	26436	27807
500	23671	24694	27807
400	23671	24694	25718
300	23490	24469	25718
200	23490	24469	25447
100	23297	24227	25157
	2000	2500	3000
	Depth		

Average**Barrels**

900	13460	14256	15857
800	13040	14256	15051
700	13040	13730	15051
600	12438	13730	14420
500	12438	13730	14420
400	12316	12978	13517
300	12316	12978	13517
200	12139	12825	13334
100	12139	12604	13069
	2000	2500	3000
	Depth		

Minimum**Barrels**

900	3532	3679	3827
800	3532	3679	3827
700	3532	3679	3827
600	3532	3679	3827
500	3532	3679	3827
400	3532	3679	3827
300	3532	3679	3827
200	3532	3679	3827
100	3532	3679	3827
	2000	2500	3000
	Depth		

D-J BASIN BASIC EQUIPMENT LISTS**Total Value Shallow Pumping Gas Well with Production Unit without Tanks
(Electric Motor)**

The basic equipment for a shallow pumping gas well with one production unit, but without water storage tanks includes:

Pumping Unit	Control Panel
Electric Motor	Rod Pump
Wellhead	Flowlines - 1000'
Sucker Rods to Depth	
Production Unit	

Very Good**Barrels**

900	24871	26496	30172
800	23859	26496	28121
700	23859	25230	28121
600	22465	25230	26602
500	22465	23489	26602
400	22465	23489	24512
300	22285	23263	24512
200	22285	23263	24241
100	22091	23021	23951
	2000	2500	3000
	Depth		

Average**Barrels**

900	13006	13802	15403
800	12586	13802	14597
700	12586	13276	14597
600	11984	13276	13966
500	11984	13276	13966
400	11862	12524	13063
300	11862	12524	13063
200	11685	12371	12880
100	11685	12150	12615
	2000	2500	3000
	Depth		

Minimum**Barrels**

900	3268	3416	3564
800	3268	3416	3564
700	3268	3416	3564
600	3268	3416	3564
500	3268	3416	3564
400	3268	3416	3564
300	3268	3416	3564
200	3268	3416	3564
100	3268	3416	3564
	2000	2500	3000
	Depth		

D-J BASIN BASIC EQUIPMENT LISTS

Total Value Shallow Pumping Gas Well without Production Unit without Tanks (Electric Motor)

The basic equipment for a shallow pumping gas well without production unit and without water storage tanks includes:

- | | |
|----------------------|-------------------|
| Pumping Unit | Control Panel |
| Electric Motor | Rod Pump |
| Wellhead | Flowlines - 1000' |
| Sucker Rods to Depth | |

Very Good

Barrels

900	21635	23260	26936
800	20623	23260	24885
700	20623	21995	24885
600	19230	21995	23366
500	19230	20253	23366
400	19230	20253	21276
300	19049	20027	21276
200	19049	20027	21006
100	18856	19785	20715
	2000	2500	3000

Depth

Average

Barrels

900	11523	12318	13920
800	11103	12318	13113
700	11103	11793	13113
600	10501	11793	12483
500	10501	11793	12483
400	10378	11040	11580
300	10378	11040	11580
200	10202	10887	11396
100	10202	10667	11132
	2000	2500	3000

Depth

Minimum

Barrels

900	2892	3040	3187
800	2892	3040	3187
700	2892	3040	3187
600	2892	3040	3187
500	2892	3040	3187
400	2892	3040	3187
300	2892	3040	3187
200	2892	3040	3187
100	2892	3040	3187
	2000	2500	3000

Depth

Total Value Shallow Flowing Gas Well with Production Unit and with Tank

The basic equipment for a flowing shallow gas well with a production unit (separator) and with one fiberglass storage tank includes:

- Wellhead
- 100 Barrel Fiberglass Storage Tank (1)
- Flowlines - 600'
- Production Unit

**Very Good
MCF**

850	9161	9161	9161
750	9161	9161	9161
650	9161	9161	9161
550	9161	9161	9161
450	9161	9161	9161
350	9161	9161	9161
250	9161	9161	9161
150	9161	9161	9161
60	9161	9161	9161
	2000	2500	3000
	Depth		

**Average
MCF**

850	5109	5109	5109
750	5109	5109	5109
650	5109	5109	5109
550	5109	5109	5109
450	5109	5109	5109
350	5109	5109	5109
250	5109	5109	5109
150	5109	5109	5109
60	5109	5109	5109
	2000	2500	3000
	Depth		

**Minimum
MCF**

850	1446	1446	1446
750	1446	1446	1446
650	1446	1446	1446
550	1446	1446	1446
450	1446	1446	1446
350	1446	1446	1446
250	1446	1446	1446
150	1446	1446	1446
60	1446	1446	1446
	2000	2500	3000
	Depth		

D-J BASIN BASIC EQUIPMENT LISTS**Total Value Shallow Flowing Gas Well with Production Unit and without Tanks**

The basic equipment for a flowing shallow gas well with a production unit, but without fiberglass storage tanks includes:

Wellhead
Flowlines - 1000'
Production Unit

**Very Good
MCF**

850	7955	7955	7955
750	7955	7955	7955
650	7955	7955	7955
550	7955	7955	7955
450	7955	7955	7955
350	7955	7955	7955
250	7955	7955	7955
150	7955	7955	7955
60	7955	7955	7955
	2000	2500	3000
	Depth		

**Average
MCF**

850	4655	4655	4655
750	4655	4655	4655
650	4655	4655	4655
550	4655	4655	4655
450	4655	4655	4655
350	4655	4655	4655
250	4655	4655	4655
150	4655	4655	4655
60	4655	4655	4655
	2000	2500	3000
	Depth		

**Minimum
MCF**

850	1183	1183	1183
750	1183	1183	1183
650	1183	1183	1183
550	1183	1183	1183
450	1183	1183	1183
350	1183	1183	1183
250	1183	1183	1183
150	1183	1183	1183
60	1183	1183	1183
	2000	2500	3000
	Depth		

D-J BASIN BASIC EQUIPMENT LISTS**Total Value Shallow Flowing Gas Well without Production Unit and without Tanks**

The basic equipment for a flowing shallow gas well without production unit and without fiberglass storage tanks

Wellhead
Flowlines - 1000'

Very Good**MCF**

850	4719	4719	4719
750	4719	4719	4719
650	4719	4719	4719
550	4719	4719	4719
450	4719	4719	4719
350	4719	4719	4719
250	4719	4719	4719
150	4719	4719	4719
60	4719	4719	4719
	2000	2500	3000
	Depth		

Average**MCF**

850	3171	3171	3171
750	3171	3171	3171
650	3171	3171	3171
550	3171	3171	3171
450	3171	3171	3171
350	3171	3171	3171
250	3171	3171	3171
150	3171	3171	3171
60	3171	3171	3171
	2000	2500	3000
	Depth		

Minimum**MCF**

850	806	806	806
750	806	806	806
650	806	806	806
550	806	806	806
450	806	806	806
350	806	806	806
250	806	806	806
150	806	806	806
60	806	806	806
	2000	2500	3000
	Depth		

D-J BASIN BASIC EQUIPMENT LISTS**Total Value Hydraulic Pump Gas Well with Tank (Gas Engine)**

The basic equipment for a hydraulic pump gas well with one oil storage tank includes:

Pumping Unit-Hydraulic	Rod Pump
Gas Engine	Production Unit
Wellhead	100 Barrel Oil Storage Tank (1) with Stairway
Sucker Rods to Depth	Flowlines - 600'

Very Good**Barrels**

900	73849	74880	75231									
800	73849	74880	76847	77018								
700	68478	74880	76847	77018								
600	65437	70103	76847	75245	78806							
500	65437	66325	71728	75245	77032	80593						
400	64567	66325	67697	73353	76763	78819	80606	82393				
300	61355	62378	65452	66704	71514	73018	80337	82125	83912			
200	61006	61985	62963	62823	63801	69206	70458	76027	77532	79036	87486	
100	58550	59480	61409	62339	63269	64199	66345	71677	76725	78230	82587	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth**Average****Barrels**

900	41746	42020	42383									
800	41746	42020	42949	43250								
700	39472	42020	42949	43250								
600	37726	40267	42949	43132	44117							
500	37726	37793	41063	43132	43998	44983						
400	36759	37793	38483	41858	43439	44865	45732	46599				
300	35168	35707	37021	37647	40042	40780	45173	46040	46906			
200	34824	35333	35842	35179	35688	38898	39523	42256	42993	43731	48640	
100	33215	33680	34274	34739	35204	35669	37105	40020	42327	43065	45446	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth**Minimum****Barrels**

900	12150	12213	12328									
800	12150	12213	12438	12540								
700	11597	12213	12438	12540								
600	11265	11790	12438	12508	12752							
500	11265	11284	11983	12508	12720	12965						
400	11017	11284	11466	12177	12580	12932	13145	13357				
300	10660	10808	11118	11284	11755	11937	13005	13217	13429			
200	10548	10686	10823	10669	10806	11617	11783	12302	12484	12667	13854	
100	10141	10266	10423	10548	10673	10798	11227	11810	12323	12505	13034	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

D-J BASIN BASIC EQUIPMENT LISTS

Total Value Hydraulic Pump Gas Well without Production Unit and without Tanks (Gas Engine)

The basic equipment for a hydraulic pump gas well without production unit and without oil storage tanks includes:

- | | |
|------------------------|----------------------|
| Pumping Unit-Hydraulic | Flowlines - 1000' |
| Gas Engine | Sucker Rods to Depth |
| Wellhead | |
| Rod Pump | |

Very Good

Barrels

900	59906	60937	61288									
800	59906	60937	62904	63076								
700	54535	60937	62904	63076								
600	51495	56160	62904	61302	64863							
500	51495	52383	57785	61302	63089	66650						
400	50624	52383	53754	59410	62820	64876	66663	68451				
300	47412	48435	51510	52761	57571	59076	66395	68182	69969			
200	47064	48042	49020	48880	49859	55264	56515	62084	63589	65093	73543	
100	44607	45537	47467	48397	49326	50256	52402	57734	62783	64287	68645	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	
												Depth

Average

Barrels

900	34113	34387	34751									
800	34113	34387	35317	35617								
700	31840	34387	35317	35617								
600	30094	32635	35317	35499	36484							
500	30094	30160	33430	35499	36366	37351						
400	29126	30160	30850	34225	35807	37233	38099	38966				
300	27535	28075	29388	30014	32410	33148	37540	38407	39274			
200	27192	27701	28210	27547	28056	31265	31891	34623	35361	36099	41007	
100	25582	26047	26641	27106	27571	28036	29472	32388	34694	35432	37814	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	
												Depth

Minimum

Barrels

900	10365	10429	10543									
800	10365	10429	10653	10755								
700	9812	10429	10653	10755								
600	9480	10006	10653	10723	10968							
500	9480	9500	10199	10723	10935	11180						
400	9233	9500	9681	10392	10796	11148	11360	11572				
300	8875	9024	9333	9500	9971	10153	11220	11433	11645			
200	8764	8901	9038	8885	9022	9832	9999	10517	10700	10882	12070	
100	8357	8482	8639	8764	8889	9014	9443	10025	10538	10721	11250	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	
												Depth

D-J BASIN BASIC EQUIPMENT LISTS

Total Value Hydraulic Pump Gas Well with Tank (Electric Motor)

The basic equipment for a hydraulic pump gas well with one oil storage tank includes:

- | | |
|------------------------|---|
| Pumping Unit-Hydraulic | Rod Pump |
| Electric Motor | Production Unit |
| Wellhead | 100 Barrel Oil Storage Tank (1) with Stairway |
| Sucker Rods to Depth | Flowlines - 600' |
| Control Panel | |

Very Good

Barrels

900	64109	66076	66427									
800	64109	66076	68043	68214								
700	61716	66076	68043	68214								
600	59944	63341	68043	68214	70001							
500	59944	61316	64966	68214	70001	71789						
400	59944	61316	62688	66591	70001	71789	73576	75363				
300	57506	58529	61604	62855	66891	68396	73576	75363	77150			
200	57190	58168	59147	60125	61103	65358	66609	71405	72909	74414	80724	
100	56851	57781	58711	59641	60571	61501	63646	67860	72909	74414	77965	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Average

Barrels

900	34446	35376	35740									
800	34446	35376	36306	36606								
700	33506	35376	36306	36606								
600	32770	34301	36306	36606	37473							
500	32770	33460	35096	36606	37473	38340						
400	32770	33460	34151	35892	37473	38340	39207	40073				
300	31717	32256	33570	34196	36054	36792	39207	40073	40940			
200	31502	32011	32520	33029	33538	35447	36073	38267	39005	39743	42673	
100	31194	31659	32124	32589	33054	33519	34955	36698	39005	39743	41458	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Minimum

Barrels

900	10333	10558	10672									
800	10333	10558	10782	10884								
700	10113	10558	10782	10884								
600	10028	10307	10782	10884	11097							
500	10028	10209	10500	10884	11097	11309						
400	10028	10209	10391	10693	11097	11309	11521	11734				
300	9800	9948	10258	10424	10766	10948	11521	11734	11946			
200	9721	9858	9995	10132	10269	10757	10923	11313	11495	11678	12371	
100	9636	9761	9886	10011	10136	10261	10690	11089	11495	11678	12045	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

D-J BASIN BASIC EQUIPMENT LISTS

Total Value Hydraulic Pump Gas Well without Tanks (Electric Motor)

The basic equipment for a hydraulic pump gas well without oil storage tanks includes:

- | | |
|------------------------|-------------------|
| Pumping Unit-Hydraulic | Rod Pump |
| Electric Motor | Flowlines - 1000' |
| Wellhead | Control Panel |
| Sucker Rods to Depth | |

**Very Good
Barrels**

900	50166	52133	52484									
800	50166	52133	54100	54271								
700	47774	52133	54100	54271								
600	46001	49398	54100	54271	56059							
500	46001	47373	51023	54271	56059	57846						
400	46001	47373	48745	52648	56059	57846	59633	61420				
300	43563	44587	47661	48913	52949	54453	59633	61420	63207			
200	43247	44226	45204	46182	47160	51415	52666	57462	58966	60471	66782	
100	42909	43839	44768	45698	46628	47558	49704	53918	58966	60471	64022	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

**Average
Barrels**

900	26814	27744	28107									
800	26814	27744	28673	28974								
700	25873	27744	28673	28974								
600	25138	26669	28673	28974	29841							
500	25138	25828	27464	28974	29841	30707						
400	25138	25828	26518	28259	29841	30707	31574	32441				
300	24084	24624	25938	26563	28422	29159	31574	32441	33308			
200	23870	24379	24888	25397	25906	27815	28440	30635	31373	32110	35041	
100	23561	24026	24491	24956	25421	25886	27322	29066	31373	32110	33826	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

**Minimum
Barrels**

900	8549	8773	8888									
800	8549	8773	8998	9100								
700	8329	8773	8998	9100								
600	8244	8522	8998	9100	9312							
500	8244	8425	8715	9100	9312	9525						
400	8244	8425	8606	8909	9312	9525	9737	9949				
300	8015	8164	8473	8640	8982	9164	9737	9949	10161			
200	7936	8073	8210	8347	8484	8972	9139	9528	9711	9893	10586	
100	7852	7977	8101	8226	8351	8476	8905	9305	9711	9893	10261	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

D-J BASIN BASIC EQUIPMENT LISTS

Total Value Hydraulic Lift Gas Well without Tanks

The basic equipment for a hydraulic lift gas well without storage tanks includes:

- Wellhead with Lubricator
 - Hydraulic Lift
 - Production Unit
- Flowlines - 1000'

Very Good

MCF

850	29498	29498	29498	29498	29498	29498	29498	29498	29498	29498	29498
750	29498	29498	29498	29498	29498	29498	29498	29498	29498	29498	29498
650	29498	29498	29498	29498	29498	29498	29498	29498	29498	29498	29498
550	29498	29498	29498	29498	29498	29498	29498	29498	29498	29498	29498
450	29498	29498	29498	29498	29498	29498	29498	29498	29498	29498	29498
350	29498	29498	29498	29498	29498	29498	29498	29498	29498	29498	29498
250	29498	29498	29498	29498	29498	29498	29498	29498	29498	29498	29498
150	29498	29498	29498	29498	29498	29498	29498	29498	29498	29498	29498
60	29498	29498	29498	29498	29498	29498	29498	29498	29498	29498	29498
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500
											Depth

Average

MCF

850	17426	17426	17426	17426	17426	17426	17426	17426	17426	17426	17426
750	17426	17426	17426	17426	17426	17426	17426	17426	17426	17426	17426
650	17426	17426	17426	17426	17426	17426	17426	17426	17426	17426	17426
550	17426	17426	17426	17426	17426	17426	17426	17426	17426	17426	17426
450	17426	17426	17426	17426	17426	17426	17426	17426	17426	17426	17426
350	17426	17426	17426	17426	17426	17426	17426	17426	17426	17426	17426
250	17426	17426	17426	17426	17426	17426	17426	17426	17426	17426	17426
150	17426	17426	17426	17426	17426	17426	17426	17426	17426	17426	17426
60	17426	17426	17426	17426	17426	17426	17426	17426	17426	17426	17426
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500
											Depth

Minimum

MCF

850	4365	4365	4365	4365	4365	4365	4365	4365	4365	4365	4365
750	4365	4365	4365	4365	4365	4365	4365	4365	4365	4365	4365
650	4365	4365	4365	4365	4365	4365	4365	4365	4365	4365	4365
550	4365	4365	4365	4365	4365	4365	4365	4365	4365	4365	4365
450	4365	4365	4365	4365	4365	4365	4365	4365	4365	4365	4365
350	4365	4365	4365	4365	4365	4365	4365	4365	4365	4365	4365
250	4365	4365	4365	4365	4365	4365	4365	4365	4365	4365	4365
150	4365	4365	4365	4365	4365	4365	4365	4365	4365	4365	4365
60	4365	4365	4365	4365	4365	4365	4365	4365	4365	4365	4365
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500
											Depth

D-J BASIN BASIC EQUIPMENT LISTS

Total Value Hydraulic Pump Oil Well with Tanks (Gas Engine)

The basic equipment for a hydraulic pump oil well with two oil storage tanks includes:

Pumping Unit-Hydraulic	Rod Pump
Gas Engine	Heater Treater
Wellhead	300 Barrel Oil Storage Tanks (2) with Stairway
Sucker Rods to Depth	Flowlines - 600'

Very Good

Barrels

900	86738	87769	88120									
800	86738	87769	89736	89908								
700	81367	87769	89736	89908								
600	78327	82992	89736	88134	91695							
500	78327	79215	84617	88134	89921	93482						
400	77456	79215	80586	86242	89652	91708	93495	95283				
300	74244	75267	78342	79593	84403	85908	93227	95014	96801			
200	73896	74874	75852	75712	76691	82096	83347	88916	90421	91925	100375	
100	71439	72369	74299	75229	76158	77088	79234	84566	89615	91119	95477	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Average

Barrels

900	48518	48792	49156									
800	48518	48792	49722	50022								
700	46245	48792	49722	50022								
600	44499	47040	49722	49904	50889							
500	44499	44565	47835	49904	50771	51756						
400	43531	44565	45255	48630	50212	51638	52504	53371				
300	41940	42480	43793	44419	46815	47553	51945	52812	53679			
200	41597	42106	42615	41952	42461	45670	46296	49028	49766	50504	55412	
100	39987	40452	41046	41511	41976	42441	43877	46793	49099	49837	52219	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Minimum

Barrels

900	15289	15352	15467									
800	15289	15352	15577	15679								
700	14736	15352	15577	15679								
600	14404	14929	15577	15647	15891							
500	14404	14423	15122	15647	15859	16104						
400	14156	14423	14605	15316	15719	16071	16284	16496				
300	13799	13947	14257	14423	14894	15076	16144	16356	16568			
200	13687	13825	13962	13808	13945	14756	14922	15441	15623	15806	16993	
100	13280	13405	13562	13687	13812	13937	14366	14949	15462	15644	16173	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

D-J BASIN BASIC EQUIPMENT LISTS**Total Value Hydraulic Pump Oil Well without Tanks (Gas Engine)**

The basic equipment for a hydraulic pump oil well without oil storage tanks includes:

Pumping Unit-Hydraulic
 Gas Engine
 Wellhead
 Rod Pump
 Flowlines - 1000'
 Sucker Rods to Depth

Very Good

Barrels

900	59906	60937	61288										
800	59906	60937	62904	63076									
700	54535	60937	62904	63076									
600	51495	56160	62904	61302	64863								
500	51495	52383	57785	61302	63089	66650							
400	50624	52383	53754	59410	62820	64876	66663	68451					
300	47412	48435	51510	52761	57571	59076	66395	68182	69969				
200	47064	48042	49020	48880	49859	55264	56515	62084	63589	65093	73543		
100	44607	45537	47467	48397	49326	50256	52402	57734	62783	64287	68645		
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500		
													Depth

Average

Barrels

900	34113	34387	34751										
800	34113	34387	35317	35617									
700	31840	34387	35317	35617									
600	30094	32635	35317	35499	36484								
500	30094	30160	33430	35499	36366	37351							
400	29126	30160	30850	34225	35807	37233	38099	38966					
300	27535	28075	29388	30014	32410	33148	37540	38407	39274				
200	27192	27701	28210	27547	28056	31265	31891	34623	35361	36099	41007		
100	25582	26047	26641	27106	27571	28036	29472	32388	34694	35432	37814		
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500		
													Depth

Minimum

Barrels

900	10365	10429	10543										
800	10365	10429	10653	10755									
700	9812	10429	10653	10755									
600	9480	10006	10653	10723	10968								
500	9480	9500	10199	10723	10935	11180							
400	9233	9500	9681	10392	10796	11148	11360	11572					
300	8875	9024	9333	9500	9971	10153	11220	11433	11645				
200	8764	8901	9038	8885	9022	9832	9999	10517	10700	10882	12070		
100	8357	8482	8639	8764	8889	9014	9443	10025	10538	10721	11250		
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500		
													Depth

D-J BASIN BASIC EQUIPMENT LISTS

Total Value Hydraulic Pump Oil Well with Tanks (Electric Motor)

The basic equipment for a hydraulic pump oil well with two oil storage tanks includes:

- | | |
|------------------------|--|
| Pumping Unit-Hydraulic | Rod Pump |
| Electric Motor | Heater Treater |
| Wellhead | 300 Barrel Oil Storage Tanks (2) with Stairway |
| Sucker Rods to Depth | Flowlines - 600' |
| Control Panel | |

Very Good

Barrels

900	76998	78965	79316									
800	76998	78965	80932	81103								
700	74606	78965	80932	81103								
600	72833	76230	80932	81103	82891							
500	72833	74205	77855	81103	82891	84678						
400	72833	74205	75577	79480	82891	84678	86465	88252				
300	70395	71419	74493	75745	79781	81285	86465	88252	90039			
200	70079	71058	72036	73014	73992	78247	79498	84294	85798	87303	93614	
100	69741	70671	71600	72530	73460	74390	76536	80750	85798	87303	90854	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	
												Depth

Average

Barrels

900	41219	42149	42512									
800	41219	42149	43078	43379								
700	40278	42149	43078	43379								
600	39543	41074	43078	43379	44246							
500	39543	40233	41869	43379	44246	45112						
400	39543	40233	40923	42664	44246	45112	45979	46846				
300	38489	39029	40343	40968	42827	43564	45979	46846	47713			
200	38275	38784	39293	39802	40311	42220	42845	45040	45778	46515	49446	
100	37966	38431	38896	39361	39826	40291	41727	43471	45778	46515	48231	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	
												Depth

Minimum

Barrels

900	13472	13697	13811									
800	13472	13697	13921	14023								
700	13252	13697	13921	14023								
600	13167	13446	13921	14023	14236							
500	13167	13348	13639	14023	14236	14448						
400	13167	13348	13530	13832	14236	14448	14660	14873				
300	12939	13087	13397	13563	13905	14087	14660	14873	15085			
200	12860	12997	13134	13271	13408	13896	14062	14452	14634	14817	15510	
100	12775	12900	13025	13150	13275	13400	13829	14228	14634	14817	15184	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	
												Depth

D-J BASIN BASIC EQUIPMENT LISTS

Total Value Hydraulic Pump Oil Well without Tanks (Electric Motor)

The basic equipment for a hydraulic pump oil well without oil storage tanks includes:

- | | |
|------------------------|-------------------|
| Pumping Unit-Hydraulic | Rod Pump |
| Electric Motor | Flowlines - 1000' |
| Wellhead | Control Panel |
| Sucker Rods to Depth | |

**Very Good
Barrels**

900	50166	52133	52484									
800	50166	52133	54100	54271								
700	47774	52133	54100	54271								
600	46001	49398	54100	54271	56059							
500	46001	47373	51023	54271	56059	57846						
400	46001	47373	48745	52648	56059	57846	59633	61420				
300	43563	44587	47661	48913	52949	54453	59633	61420	63207			
200	43247	44226	45204	46182	47160	51415	52666	57462	58966	60471	66782	
100	42909	43839	44768	45698	46628	47558	49704	53918	58966	60471	64022	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

**Average
Barrels**

900	26814	27744	28107									
800	26814	27744	28673	28974								
700	25873	27744	28673	28974								
600	25138	26669	28673	28974	29841							
500	25138	25828	27464	28974	29841	30707						
400	25138	25828	26518	28259	29841	30707	31574	32441				
300	24084	24624	25938	26563	28422	29159	31574	32441	33308			
200	23870	24379	24888	25397	25906	27815	28440	30635	31373	32110	35041	
100	23561	24026	24491	24956	25421	25886	27322	29066	31373	32110	33826	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

**Minimum
Barrels**

900	8549	8773	8888									
800	8549	8773	8998	9100								
700	8329	8773	8998	9100								
600	8244	8522	8998	9100	9312							
500	8244	8425	8715	9100	9312	9525						
400	8244	8425	8606	8909	9312	9525	9737	9949				
300	8015	8164	8473	8640	8982	9164	9737	9949	10161			
200	7936	8073	8210	8347	8484	8972	9139	9528	9711	9893	10586	
100	7852	7977	8101	8226	8351	8476	8905	9305	9711	9893	10261	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

D-J BASIN BASIC EQUIPMENT LISTS**Total Value Progressive Cavity Oil Well with Tanks (Electric Motor)**

The basic equipment for a progressive cavity oil well with two oil storage tanks includes:

Wellhead	Electric Motor
Heater/Treater	Progressive Cavity Pump with Stator and Rotor
300 Barrel Oil Storage Tanks (2)	Sucker Rods to Depth
Flowlines - 600'	Wellhead Drive

Very Good**Barrels**

900	69843	71939	74035	76132	78228
800	69843	71939	74035	76132	78228
700	69843	71939	74035	76132	78228
600	67542	69639	71735	73831	75927
500	67542	69639	71735	73831	75927
400	67542	69639	71735	73831	75927
300	67542	69639	71735	73831	75927
200	67542	69639	71735	73831	75927
100	67542	69639	71735	73831	75927
	3000	3500	4000	4500	5000

Depth

Average**Barrels**

900	39001	39995	40990	41984	42979
800	39001	39995	40990	41984	42979
700	39001	39995	40990	41984	42979
600	38507	39501	40495	41490	42484
500	38507	39501	40495	41490	42484
400	37378	39501	40495	41490	42484
300	37378	39501	40495	41490	42484
200	37378	39501	40495	41490	42484
100	37378	39501	40495	41490	42484
	3000	3500	4000	4500	5000

Depth

Minimum**Barrels**

900	10879	11094	11309	11524	11739
800	10879	11094	11309	11524	11739
700	10879	11094	11309	11524	11739
600	10761	10976	11191	11406	11621
500	10761	10976	11191	11406	11621
400	10696	10976	11191	11406	11621
300	10696	10976	11191	11406	11621
200	10696	10976	11191	11406	11621
100	10696	10976	11191	11406	11621
	3000	3500	4000	4500	5000

Depth

D-J BASIN BASIC EQUIPMENT LISTS

Total Value Progressive Cavity Oil Well without Tanks (Electric Motor)

The basic equipment for a progressive cavity oil well without oil storage tanks includes:

Wellhead	Progressive Cavity Pump with Stator and Rotor
Flowlines - 1000'	Sucker Rods to Depth
Electric Motor	Wellhead Drive

Very Good

Barrels

900	43011	45107	47203	49300	51396
800	43011	45107	47203	49300	51396
700	43011	45107	47203	49300	51396
600	43011	45107	47203	49300	51396
500	43011	45107	47203	49300	51396
400	43011	45107	47203	49300	51396
300	43011	45107	47203	49300	51396
200	43011	45107	47203	49300	51396
100	43011	45107	47203	49300	51396
	3000	3500	4000	4500	5000

Depth

Average

Barrels

900	24596	25590	26585	27579	28574
800	24596	25590	26585	27579	28574
700	24596	25590	26585	27579	28574
600	24596	25590	26585	27579	28574
500	24596	25590	26585	27579	28574
400	23467	25590	26585	27579	28574
300	23467	25590	26585	27579	28574
200	23467	25590	26585	27579	28574
100	23467	25590	26585	27579	28574
	3000	3500	4000	4500	5000

Depth

Minimum

Barrels

900	5956	6171	6386	6601	6816
800	5956	6171	6386	6601	6816
700	5956	6171	6386	6601	6816
600	5956	6171	6386	6601	6816
500	5956	6171	6386	6601	6816
400	5891	6171	6386	6601	6816
300	5891	6171	6386	6601	6816
200	5891	6171	6386	6601	6816
100	5891	6171	6386	6601	6816
	3000	3500	4000	4500	5000

Depth

D-J BASIN BASIC EQUIPMENT LISTS

Total Value ESP Oil Well with Tank (Electric Motor)

The basic equipment for an ESP oil well with one oil storage tank includes:

Transformer	Equalizer
Submersible Pump	Switchboard
Electric Motor	Electric Cable to Depth
Wellhead	Flowlines - 600'
Heater/Treater	300 Barrel Oil Storage Tank (1)

Very Good**Barrels**

4100	85747	86624	87500	88376	89252	90128	91004	91880	92756	93633	94509	
3800	80663	81539	82415	83291	84167	85043	85919	86796	87672	88548	89424	
3400	76443	77250	78056	78862	79668	80475	81281	82087	82893	83700	84506	
2800	75282	76089	76895	77701	78507	79314	80120	80926	81732	82539	83345	
2300	71224	72030	72837	73643	74449	75255	76062	76868	77674	78480	79287	
1900	70251	71058	71864	72670	73476	74283	75089	75895	76701	77508	78314	
1600	67252	68058	68865	69671	70477	71283	72090	72896	73702	74508	75315	
1100	62038	62845	63651	64457	65263	66070	66876	67682	68488	69295	70101	
800	57663	61694	62501	63307	64113	64919	65726	66532	67338	68144	68951	
600	53041	57072	57878	58684	59491	60297	61103	61909	62716	63522	64328	
350	52568	56599	57405	58211	59018	59824	60630	61436	62243	63049	63855	
	1000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth**Average****Barrels**

4100	54599	55212	55825	56438	57050	57663	58276	58889	59501	60114	60727	
3800	49622	50235	50848	51460	52073	52686	53299	53911	54524	55137	55750	
3400	46671	47236	47800	48364	48929	49493	50057	50622	51186	51751	52315	
2800	46671	47236	47800	48364	48929	49493	50057	50622	51186	51751	52315	
2300	43242	43806	44371	44935	45499	46064	46628	47193	47757	48321	48886	
1900	40974	41538	42102	42667	43231	43796	44360	44924	45489	46053	46617	
1600	38920	39485	40049	40614	41178	41742	42307	42871	43435	44000	44564	
1100	35201	35765	36330	36894	37458	38023	38587	39152	39716	40280	40845	
800	32379	35201	35765	36330	36894	37458	38023	38587	39152	39716	40280	
600	30820	33642	34207	34771	35335	35900	36464	37028	37593	38157	38722	
350	30261	33083	33648	34212	34776	35341	35905	36469	37034	37598	38163	
	1000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth**Minimum****Barrels**

4100	13669	13825	13980	14136	14292	14448	14604	14760	14916	15072	15227	
3800	13110	13266	13421	13577	13733	13889	14045	14201	14357	14513	14668	
3400	12341	12481	12621	12760	12900	13040	13180	13319	13459	13599	13739	
2800	12115	12255	12395	12535	12674	12814	12954	13094	13233	13373	13513	
2300	11481	11621	11761	11900	12040	12180	12320	12459	12599	12739	12879	
1900	10922	11062	11202	11341	11481	11621	11761	11900	12040	12180	12320	
1600	10417	10557	10696	10836	10976	11116	11255	11395	11535	11675	11814	
1100	9471	9611	9750	9890	10030	10170	10309	10449	10589	10729	10868	
800	8654	9353	9492	9632	9772	9912	10051	10191	10331	10471	10610	
600	8396	9095	9234	9374	9514	9654	9793	9933	10073	10213	10352	
350	8245	8944	9084	9224	9363	9503	9643	9783	9922	10062	10202	
	1000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

D-J BASIN BASIC EQUIPMENT LISTS

Total Value ESP Oil Well without Tanks (Electric Motor)

The basic equipment for an ESP oil well without oil storage tanks includes:

Transformer	Equalizer
Submersible Pump	Switchboard
Electric Motor	Electric Cable to Depth
Wellhead	Flowlines - 1000'

Very Good

Barrels

4100	65247	66123	66999	67876	68752	69628	70504	71380	72256	73132	74008	
3800	60162	61039	61915	62791	63667	64543	65419	66295	67171	68048	68924	
3400	55943	56749	57556	58362	59168	59974	60781	61587	62393	63199	64006	
2800	54782	55588	56395	57201	58007	58813	59620	60426	61232	62038	62845	
2300	50724	51530	52336	53143	53949	54755	55561	56368	57174	57980	58786	
1900	49751	50557	51364	52170	52976	53782	54589	55395	56201	57007	57814	
1600	46752	47558	48364	49171	49977	50783	51589	52396	53202	54008	54814	
1100	41538	42344	43151	43957	44763	45569	46376	47182	47988	48794	49601	
800	37163	41194	42000	42807	43613	44419	45225	46032	46838	47644	48450	
600	34841	38872	39678	40485	41291	42097	42903	43710	44516	45322	46128	
350	34368	38399	39205	40012	40818	41624	42430	43237	44043	44849	45655	
	1000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

Average

Barrels

4100	43355	43968	44580	45193	45806	46419	47031	47644	48257	48870	49482	
3800	38378	38990	39603	40216	40829	41441	42054	42667	43280	43892	44505	
3400	35427	35991	36555	37120	37684	38249	38813	39377	39942	40506	41070	
2800	35427	35991	36555	37120	37684	38249	38813	39377	39942	40506	41070	
2300	31997	32562	33126	33691	34255	34819	35384	35948	36512	37077	37641	
1900	29729	30294	30858	31422	31987	32551	33115	33680	34244	34809	35373	
1600	27676	28240	28805	29369	29933	30498	31062	31627	32191	32755	33320	
1100	23956	24521	25085	25650	26214	26778	27343	27907	28471	29036	29600	
800	21135	23956	24521	25085	25650	26214	26778	27343	27907	28471	29036	
600	20070	22892	23457	24021	24585	25150	25714	26278	26843	27407	27972	
350	19511	22333	22898	23462	24026	24591	25155	25719	26284	26848	27413	
	1000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

Minimum

Barrels

4100	10196	10352	10508	10664	10820	10976	11132	11288	11443	11599	11755	
3800	9637	9793	9949	10105	10261	10417	10573	10729	10884	11040	11196	
3400	8869	9009	9148	9288	9428	9568	9707	9847	9987	10127	10266	
2800	8643	8783	8923	9062	9202	9342	9482	9621	9761	9901	10041	
2300	8009	8149	8288	8428	8568	8708	8847	8987	9127	9267	9406	
1900	7450	7590	7729	7869	8009	8149	8288	8428	8568	8708	8847	
1600	6945	7084	7224	7364	7504	7643	7783	7923	8063	8202	8342	
1100	5999	6138	6278	6418	6558	6697	6837	6977	7117	7256	7396	
800	5182	5880	6020	6160	6300	6439	6579	6719	6859	6998	7138	
600	5042	5741	5880	6020	6160	6300	6439	6579	6719	6859	6998	
350	4891	5590	5730	5870	6009	6149	6289	6429	6568	6708	6848	
	1000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

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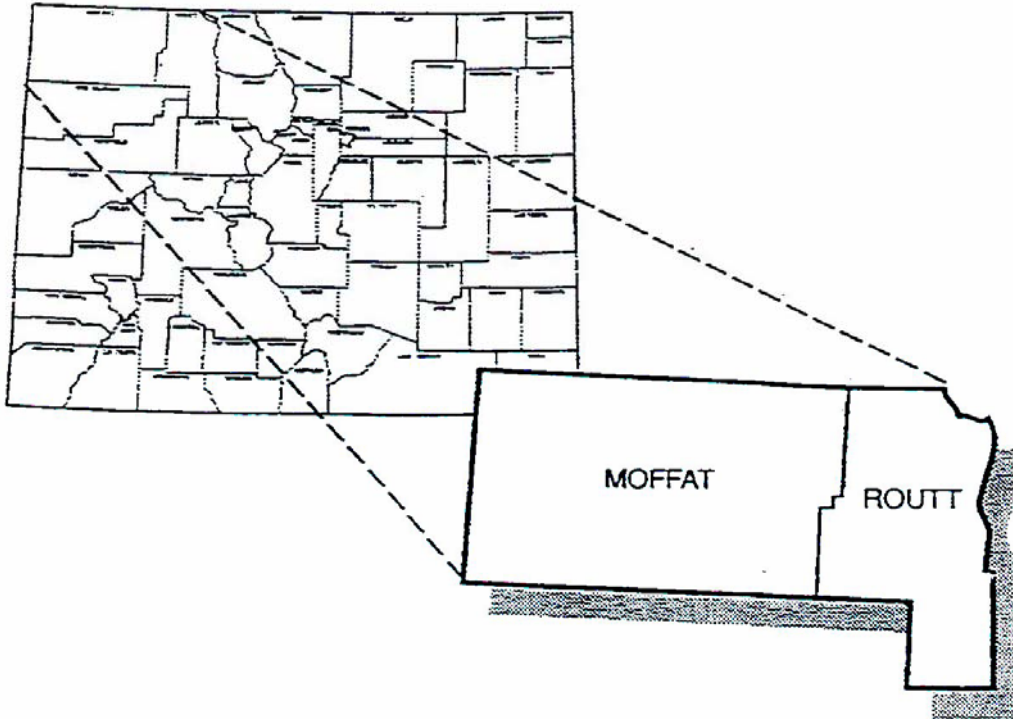
GREEN RIVER BASIN

The Green River Basin is located in the northwest corner of the state. It includes the following counties:

Moffat

Routt

Green River Basin



GREEN RIVER BASIN BASIC EQUIPMENT LISTS

Total Value Pumping Oil Well with Tanks (Gas Engine)

The basic equipment for a pumping oil well with two oil storage tanks includes:

Pumping Unit	Sucker Rods to Depth
Gas Engine	Rod Pump
Wellhead	400 Barrel Oil Storage Tanks (2) with Stairway
Heater Treater	Flowlines - 600'
Line Heater	

Very Good

Barrels

900	136306	137338	141569									
800	136306	137338	139304	143357								
700	114821	137338	139304	143357								
600	103879	114146	137004	135402	142843							
500	103879	104767	115771	135402	137189	144631						
400	96956	104767	106139	117395	120806	138976	144644	146431				
300	87477	88500	97842	99094	109956	111460	140494	142282	147950			
200	83055	84033	85011	84871	85850	101596	102847	114469	115974	117478	147643	
100	69515	70445	79942	80872	81802	82732	88393	97799	109115	110620	121029	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Average

Barrels

900	64751	65025	69097									
800	64751	65025	65954	69964								
700	57661	65025	65954	69964								
600	54163	57962	65460	65642	70336							
500	54163	54229	58757	65642	66509	71203						
400	48670	54229	54920	59552	61134	67376	71951	72818				
300	42628	43168	48932	49558	56479	57217	67683	68550	73126			
200	41392	41901	42410	41748	42257	50809	51434	58692	59430	60168	71150	
100	34333	34798	39810	40275	40740	41205	43673	47481	54238	54976	61883	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Minimum

Barrels

900	17955	18018	19057									
800	17955	18018	18243	19269								
700	16198	18018	18243	19269								
600	15425	16273	18125	18194	19363							
500	15425	15445	16466	18194	18407	19576						
400	14060	15445	15626	16659	17063	18619	19756	19968				
300	12584	12732	14160	14327	15915	16098	18692	18904	20041			
200	12247	12384	12521	12368	12505	14659	14825	16462	16644	16827	19541	
100	10475	10600	11864	11989	12114	12239	12926	13734	15365	15548	17195	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

GREEN RIVER BASIN BASIC EQUIPMENT LISTS

Total Value Pumping Oil Well with Tanks (Electric Motor)

The basic equipment for a pumping oil well with two oil storage tanks includes:

Pumping Unit	Sucker Rods to Depth
Electric Motor	Rod Pump
Control Panel	400 Barrel Oil Storage Tanks (2) with Stairway
Wellhead	Flowlines - 600'
Heater Treater	
Line Heater	

Very Good

Barrels

900	126567	128533	132765									
800	126567	128533	130500	134552								
700	108060	128533	130500	134552								
600	98386	107384	128200	128371	134039							
500	98386	99758	109009	128371	130158	135826						
400	92334	99758	101130	110634	114044	131946	137613	139401				
300	83629	84652	93994	95245	105333	106838	133733	135520	141188			
200	79238	80217	81195	82173	83151	97748	98999	109847	111351	112856	140881	
100	67816	68746	77244	78174	79104	80034	85695	93983	105299	106803	116407	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Average

Barrels

900	57451	58381	62453									
800	57451	58381	59311	63320								
700	51695	58381	59311	63320								
600	49207	51996	58816	59117	63692							
500	49207	49897	52791	59117	59984	64559						
400	44681	49897	50587	53586	55168	60850	65426	66293				
300	39177	39717	45481	46107	52491	53229	61717	62584	67159			
200	38071	38580	39089	39598	40107	47358	47984	54704	55442	56180	65184	
100	32312	32777	37660	38125	38590	39055	41523	44159	50916	51654	57895	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Minimum

Barrels

900	16138	16363	17402									
800	16138	16363	16587	17614								
700	14714	16363	16587	17614								
600	14189	14789	16469	16571	17708							
500	14189	14370	14983	16571	16783	17920						
400	13071	14370	14551	15176	15579	16996	18133	18345				
300	11724	11872	13300	13467	14926	15109	17208	17420	18557			
200	11419	11556	11693	11830	11967	13799	13965	15473	15655	15838	18057	
100	9969	10094	11326	11451	11576	11701	12388	13014	14537	14720	16206	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

GREEN RIVER BASIN BASIC EQUIPMENT LISTS

Total Value Pumping Oil Well without Tanks (Gas Engine)

The basic equipment for a pumping oil well without oil storage tanks includes:

- | | |
|----------------------|-------------------|
| Pumping Unit | Rod Pump |
| Gas Engine | Flowlines - 1000' |
| Wellhead | Line Heater |
| Sucker Rods to Depth | |

Very Good

Barrels

900	101605	102637	106868									
800	101605	102637	104603	108656								
700	80120	102637	104603	108656								
600	71479	81745	104603	103001	110443							
500	71479	72367	83370	103001	104788	112230						
400	64556	72367	73739	84995	88405	106576	112243	114031				
300	55077	56100	65442	66693	77555	79060	108094	109881	115549			
200	50654	51632	52611	52471	53449	69196	70447	82069	83573	85078	115243	
100	37114	38044	47542	48472	49402	50332	55992	65399	76715	78219	88629	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	Depth

Average

Barrels

900	49507	49781	53853									
800	49507	49781	50711	54720								
700	42418	49781	50711	54720								
600	39414	43213	50711	50893	55587							
500	39414	39480	44008	50893	51760	56454						
400	33921	39480	40171	44803	46385	52627	57202	58069				
300	27879	28419	34183	34809	41730	42468	52934	53801	58377			
200	26643	27152	27661	26999	27508	36060	36685	43943	44681	45419	56401	
100	19584	20049	25061	25526	25991	26456	28924	32732	39489	40227	47134	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	Depth

Minimum

Barrels

900	12709	12772	13811									
800	12709	12772	12997	14023								
700	10952	12772	12997	14023								
600	10297	11145	12997	13067	14236							
500	10297	10317	11338	13067	13279	14448						
400	8932	10317	10498	11532	11935	13491	14628	14840				
300	7456	7605	9032	9199	10788	10970	13564	13776	14913			
200	7119	7256	7393	7240	7377	9531	9698	11334	11517	11699	14413	
100	5347	5472	6736	6861	6986	7111	7798	8606	10237	10420	12067	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	Depth

GREEN RIVER BASIN BASIC EQUIPMENT LISTS

Total Value Pumping Oil Well without Tanks (Electric Motor)

The basic equipment for a pumping oil well without oil storage tanks includes:

- | | |
|----------------|----------------------|
| Pumping Unit | Sucker Rods to Depth |
| Electric Motor | Rod Pump |
| Control Panel | Flowlines - 1000' |
| Wellhead | Line Heater |

Very Good

Barrels

900	91866	93832	98064									
800	91866	93832	95799	99851								
700	73359	93832	95799	99851								
600	65986	74983	95799	95971	101639							
500	65986	67357	76608	95971	97758	103426						
400	59933	67357	68729	78233	81644	99545	105213	107000				
300	51228	52251	61593	62845	72933	74437	101332	103119	108787			
200	46838	47816	48794	49773	50751	65347	66598	77446	78951	80455	108481	
100	35416	36346	44844	45774	46703	47633	53294	61582	72898	74403	84006	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Average

Barrels

900	42208	43138	47210									
800	42208	43138	44067	48077								
700	36451	43138	44067	48077								
600	34458	37247	44067	44368	48943							
500	34458	35148	38042	44368	45235	49810						
400	29932	35148	35838	38837	40419	46101	50677	51544				
300	24428	24968	30732	31358	37742	38480	46968	47835	52410			
200	23322	23831	24340	24849	25358	32609	33235	39955	40693	41431	50435	
100	17563	18028	22911	23376	23841	24306	26774	29410	36167	36905	43146	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Minimum

Barrels

900	10892	11117	12156									
800	10892	11117	11341	12368								
700	9468	11117	11341	12368								
600	9061	9662	11341	11443	12580							
500	9061	9242	9855	11443	11656	12793						
400	7943	9242	9423	10048	10452	11868	13005	13217				
300	6596	6745	8172	8339	9799	9981	12080	12293	13429			
200	6291	6429	6566	6703	6840	8671	8838	10345	10528	10710	12930	
100	4842	4967	6199	6324	6449	6574	7261	7886	9410	9592	11078	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

GREEN RIVER BASIN BASIC EQUIPMENT LISTS

Total Value Flowing Oil Well with Tanks

The basic equipment for a flowing oil well with two oil storage tanks includes:

- Wellhead
- Heater Treater
- 400 Barrel Oil Storage Tanks (2) with Stairway
- Flowlines - 600'
- Line Heater

Very Good

Barrels

900	49106	49106	49106	49106	49106	49106	49106	49106	49106	49106	49106
800	49106	49106	49106	49106	49106	49106	49106	49106	49106	49106	49106
700	49106	49106	49106	49106	49106	49106	49106	49106	49106	49106	49106
600	46806	46806	46806	46806	46806	46806	46806	46806	46806	46806	46806
500	46806	46806	46806	46806	46806	46806	46806	46806	46806	46806	46806
400	46806	46806	46806	46806	46806	46806	46806	46806	46806	46806	46806
300	46806	46806	46806	46806	46806	46806	46806	46806	46806	46806	46806
200	46806	46806	46806	46806	46806	46806	46806	46806	46806	46806	46806
100	46806	46806	46806	46806	46806	46806	46806	46806	46806	46806	46806
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

Average

Barrels

900	22425	22425	22425	22425	22425	22425	22425	22425	22425	22425	22425
800	22425	22425	22425	22425	22425	22425	22425	22425	22425	22425	22425
700	22425	22425	22425	22425	22425	22425	22425	22425	22425	22425	22425
600	21930	21930	21930	21930	21930	21930	21930	21930	21930	21930	21930
500	21930	21930	21930	21930	21930	21930	21930	21930	21930	21930	21930
400	21930	21930	21930	21930	21930	21930	21930	21930	21930	21930	21930
300	21930	21930	21930	21930	21930	21930	21930	21930	21930	21930	21930
200	21930	21930	21930	21930	21930	21930	21930	21930	21930	21930	21930
100	21930	21930	21930	21930	21930	21930	21930	21930	21930	21930	21930
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

Minimum

Barrels

900	7224	7224	7224	7224	7224	7224	7224	7224	7224	7224	7224
800	7224	7224	7224	7224	7224	7224	7224	7224	7224	7224	7224
700	7224	7224	7224	7224	7224	7224	7224	7224	7224	7224	7224
600	7106	7106	7106	7106	7106	7106	7106	7106	7106	7106	7106
500	7106	7106	7106	7106	7106	7106	7106	7106	7106	7106	7106
400	7106	7106	7106	7106	7106	7106	7106	7106	7106	7106	7106
300	7106	7106	7106	7106	7106	7106	7106	7106	7106	7106	7106
200	7106	7106	7106	7106	7106	7106	7106	7106	7106	7106	7106
100	7106	7106	7106	7106	7106	7106	7106	7106	7106	7106	7106
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

GREEN RIVER BASIN BASIC EQUIPMENT LISTS

Total Value Flowing Oil Well without Tanks

The basic equipment for a flowing oil well without oil storage tanks includes:

- Wellhead
- Flowlines - 1000'
- Line Heater

Very Good

Barrels

900	14405	14405	14405	14405	14405	14405	14405	14405	14405	14405	14405	14405
800	14405	14405	14405	14405	14405	14405	14405	14405	14405	14405	14405	14405
700	14405	14405	14405	14405	14405	14405	14405	14405	14405	14405	14405	14405
600	14405	14405	14405	14405	14405	14405	14405	14405	14405	14405	14405	14405
500	14405	14405	14405	14405	14405	14405	14405	14405	14405	14405	14405	14405
400	14405	14405	14405	14405	14405	14405	14405	14405	14405	14405	14405	14405
300	14405	14405	14405	14405	14405	14405	14405	14405	14405	14405	14405	14405
200	14405	14405	14405	14405	14405	14405	14405	14405	14405	14405	14405	14405
100	14405	14405	14405	14405	14405	14405	14405	14405	14405	14405	14405	14405
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Average

Barrels

900	7181	7181	7181	7181	7181	7181	7181	7181	7181	7181	7181	7181
800	7181	7181	7181	7181	7181	7181	7181	7181	7181	7181	7181	7181
700	7181	7181	7181	7181	7181	7181	7181	7181	7181	7181	7181	7181
600	7181	7181	7181	7181	7181	7181	7181	7181	7181	7181	7181	7181
500	7181	7181	7181	7181	7181	7181	7181	7181	7181	7181	7181	7181
400	7181	7181	7181	7181	7181	7181	7181	7181	7181	7181	7181	7181
300	7181	7181	7181	7181	7181	7181	7181	7181	7181	7181	7181	7181
200	7181	7181	7181	7181	7181	7181	7181	7181	7181	7181	7181	7181
100	7181	7181	7181	7181	7181	7181	7181	7181	7181	7181	7181	7181
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Minimum

Barrels

900	1978	1978	1978	1978	1978	1978	1978	1978	1978	1978	1978	1978
800	1978	1978	1978	1978	1978	1978	1978	1978	1978	1978	1978	1978
700	1978	1978	1978	1978	1978	1978	1978	1978	1978	1978	1978	1978
600	1978	1978	1978	1978	1978	1978	1978	1978	1978	1978	1978	1978
500	1978	1978	1978	1978	1978	1978	1978	1978	1978	1978	1978	1978
400	1978	1978	1978	1978	1978	1978	1978	1978	1978	1978	1978	1978
300	1978	1978	1978	1978	1978	1978	1978	1978	1978	1978	1978	1978
200	1978	1978	1978	1978	1978	1978	1978	1978	1978	1978	1978	1978
100	1978	1978	1978	1978	1978	1978	1978	1978	1978	1978	1978	1978
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

GREEN RIVER BASIN BASIC EQUIPMENT LISTS

Total Value Pumping Gas Well with Tank (Gas Engine)

The basic equipment for a pumping gas well with one oil storage tank includes:

Pumping Unit	Rod Pump
Gas Engine	Production Unit
Wellhead	400 Barrel Oil Storage Tank (1) with Stairway
Sucker Rods to Depth	Flowlines - 600'

Very Good

Barrels

900	116064	117095	121327									
800	116064	117095	119062	123114								
700	94579	117095	119062	123114								
600	85938	96204	119062	117460	124902							
500	85938	86826	97829	117460	119247	126689						
400	79015	86826	88197	99454	102864	121034	126702	128489				
300	69535	70559	79900	81152	92014	93519	122553	124340	130008			
200	65113	66091	67069	66930	67908	83654	84906	96527	98032	99536	129701	
100	51573	52503	62001	62931	63860	64790	70451	79857	91173	92678	103088	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Average

Barrels

900	55366	55640	59712									
800	55366	55640	56569	60579								
700	48276	55640	56569	60579								
600	45273	49072	56569	56752	61446							
500	45273	45339	49867	56752	57619	62312						
400	39779	45339	46029	50662	52244	58485	63061	63928				
300	33738	34277	40042	40667	47589	48327	58793	59660	64235			
200	32502	33011	33520	32857	33366	41919	42544	49802	50540	51278	62260	
100	25443	25908	30920	31385	31850	32315	34783	38590	45348	46085	52993	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Minimum

Barrels

900	14880	14944	15983									
800	14880	14944	15168	16195								
700	13123	14944	15168	16195								
600	12469	13317	15168	15238	16407							
500	12469	12488	13510	15238	15450	16620						
400	11103	12488	12670	13703	14107	15663	16800	17012				
300	9628	9776	11204	11370	12959	13141	15735	15948	17084			
200	9291	9428	9565	9412	9549	11703	11869	13506	13688	13871	16585	
100	7518	7643	8908	9033	9158	9283	9970	10778	12409	12591	14238	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

GREEN RIVER BASIN BASIC EQUIPMENT LISTS

Total Value Pumping Gas Well without Tanks (Gas Engine)

The basic equipment for a pumping gas well without oil storage tanks includes:

Pumping Unit
 Gas Engine
 Wellhead
 Rod Pump
 Flowlines - 1000'
 Sucker Rods to Depth

Very Good

Barrels

900	95703	96735	100967									
800	95703	96735	98702	102754								
700	74219	96735	98702	102754								
600	65577	75843	98702	97099	104541							
500	65577	66465	77468	97099	98887	106328						
400	58654	66465	67837	79093	82504	100674	106342	108129				
300	49175	50198	59540	60791	71654	73158	102192	103979	109647			
200	44752	45731	46709	46569	47547	63294	64545	76167	77671	79176	109341	
100	31213	32143	41640	42570	43500	44430	50091	59497	70813	72317	82727	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Average

Barrels

900	46540	46814	50886									
800	46540	46814	47744	51753								
700	39451	46814	47744	51753								
600	36447	40246	47744	47926	52620							
500	36447	36513	41041	47926	48793	53487						
400	30954	36513	37204	41836	43418	49660	54235	55102				
300	24912	25452	31216	31842	38763	39501	49967	50834	55410			
200	23676	24185	24694	24032	24541	33093	33718	40976	41714	42452	53434	
100	16617	17082	22094	22559	23024	23489	25957	29765	36522	37260	44167	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Minimum

Barrels

900	11967	12031	13069									
800	11967	12031	12255	13282								
700	10210	12031	12255	13282								
600	9555	10403	12255	12325	13494							
500	9555	9575	10597	12325	12537	13706						
400	8190	9575	9756	10790	11193	12750	13886	14099				
300	6714	6863	8291	8457	10046	10228	12822	13034	14171			
200	6377	6515	6652	6498	6635	8790	8956	10593	10775	10957	13671	
100	4605	4730	5994	6119	6244	6369	7056	7864	9496	9678	11325	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

GREEN RIVER BASIN BASIC EQUIPMENT LISTS

Total Value Flowing Gas Well with Tank

The basic equipment for a flowing gas well with one oil storage tank includes:

Wellhead
 Production Unit
 400 Barrel Oil Storage Tank (1) with Stairway
 Flowlines - 600'

Very Good

MCF

850	28864	28864	28864	28864	28864	28864	28864	28864	28864	28864	28864
750	28864	28864	28864	28864	28864	28864	28864	28864	28864	28864	28864
650	28864	28864	28864	28864	28864	28864	28864	28864	28864	28864	28864
550	28864	28864	28864	28864	28864	28864	28864	28864	28864	28864	28864
450	28864	28864	28864	28864	28864	28864	28864	28864	28864	28864	28864
350	28864	28864	28864	28864	28864	28864	28864	28864	28864	28864	28864
250	28864	28864	28864	28864	28864	28864	28864	28864	28864	28864	28864
150	28864	28864	28864	28864	28864	28864	28864	28864	28864	28864	28864
60	28864	28864	28864	28864	28864	28864	28864	28864	28864	28864	28864
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500
											Depth

Average

MCF

850	13040	13040	13040	13040	13040	13040	13040	13040	13040	13040	13040
750	13040	13040	13040	13040	13040	13040	13040	13040	13040	13040	13040
650	13040	13040	13040	13040	13040	13040	13040	13040	13040	13040	13040
550	13040	13040	13040	13040	13040	13040	13040	13040	13040	13040	13040
450	13040	13040	13040	13040	13040	13040	13040	13040	13040	13040	13040
350	13040	13040	13040	13040	13040	13040	13040	13040	13040	13040	13040
250	13040	13040	13040	13040	13040	13040	13040	13040	13040	13040	13040
150	13040	13040	13040	13040	13040	13040	13040	13040	13040	13040	13040
60	13040	13040	13040	13040	13040	13040	13040	13040	13040	13040	13040
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500
											Depth

Minimum

MCF

850	4150	4150	4150	4150	4150	4150	4150	4150	4150	4150	4150
750	4150	4150	4150	4150	4150	4150	4150	4150	4150	4150	4150
650	4150	4150	4150	4150	4150	4150	4150	4150	4150	4150	4150
550	4150	4150	4150	4150	4150	4150	4150	4150	4150	4150	4150
450	4150	4150	4150	4150	4150	4150	4150	4150	4150	4150	4150
350	4150	4150	4150	4150	4150	4150	4150	4150	4150	4150	4150
250	4150	4150	4150	4150	4150	4150	4150	4150	4150	4150	4150
150	4150	4150	4150	4150	4150	4150	4150	4150	4150	4150	4150
60	4150	4150	4150	4150	4150	4150	4150	4150	4150	4150	4150
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500
											Depth

GREEN RIVER BASIN BASIC EQUIPMENT LISTS

Total Value Flowing Gas Well without Tanks

The basic equipment for a flowing gas well without oil storage tanks includes:

Wellhead
Production Unit
Flowlines - 1000'

Very Good

MCF

850	19952	19952	19952	19952	19952	19952	19952	19952	19952	19952	19952
750	19952	19952	19952	19952	19952	19952	19952	19952	19952	19952	19952
650	19952	19952	19952	19952	19952	19952	19952	19952	19952	19952	19952
550	19952	19952	19952	19952	19952	19952	19952	19952	19952	19952	19952
450	19952	19952	19952	19952	19952	19952	19952	19952	19952	19952	19952
350	19952	19952	19952	19952	19952	19952	19952	19952	19952	19952	19952
250	19952	19952	19952	19952	19952	19952	19952	19952	19952	19952	19952
150	19952	19952	19952	19952	19952	19952	19952	19952	19952	19952	19952
60	19952	19952	19952	19952	19952	19952	19952	19952	19952	19952	19952
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

Average

MCF

850	10406	10406	10406	10406	10406	10406	10406	10406	10406	10406	10406
750	10406	10406	10406	10406	10406	10406	10406	10406	10406	10406	10406
650	10406	10406	10406	10406	10406	10406	10406	10406	10406	10406	10406
550	10406	10406	10406	10406	10406	10406	10406	10406	10406	10406	10406
450	10406	10406	10406	10406	10406	10406	10406	10406	10406	10406	10406
350	10406	10406	10406	10406	10406	10406	10406	10406	10406	10406	10406
250	10406	10406	10406	10406	10406	10406	10406	10406	10406	10406	10406
150	10406	10406	10406	10406	10406	10406	10406	10406	10406	10406	10406
60	10406	10406	10406	10406	10406	10406	10406	10406	10406	10406	10406
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

Minimum

MCF

850	2774	2774	2774	2774	2774	2774	2774	2774	2774	2774	2774
750	2774	2774	2774	2774	2774	2774	2774	2774	2774	2774	2774
650	2774	2774	2774	2774	2774	2774	2774	2774	2774	2774	2774
550	2774	2774	2774	2774	2774	2774	2774	2774	2774	2774	2774
450	2774	2774	2774	2774	2774	2774	2774	2774	2774	2774	2774
350	2774	2774	2774	2774	2774	2774	2774	2774	2774	2774	2774
250	2774	2774	2774	2774	2774	2774	2774	2774	2774	2774	2774
150	2774	2774	2774	2774	2774	2774	2774	2774	2774	2774	2774
60	2774	2774	2774	2774	2774	2774	2774	2774	2774	2774	2774
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

GREEN RIVER BASIN BASIC EQUIPMENT LISTS

Total Value Flowing Gas Well without Tanks or Production Unit

The basic equipment for a flowing gas well without tanks or production unit includes:

Wellhead
Flowlines - 1000'

Very Good

MCF

850	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
750	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
650	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
550	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
450	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
350	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
250	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
150	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
60	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

Average

MCF

850	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
750	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
650	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
550	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
450	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
350	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
250	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
150	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
60	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

Minimum

MCF

850	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
750	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
650	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
550	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
450	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
350	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
250	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
150	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
60	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

GREEN RIVER BASIN BASIC EQUIPMENT LISTS**Common Tank Battery**

The basic equipment for a common tank battery includes:

400 Barrel Oil Storage Tanks with Stairway

Heater Treaters

Separators

Recycle Pump

Manifolds and Headers

Very Good

Tanks

10	103770	119293	124464	134816	139987	145157	160680	165851
9	93504	109027	114197	124550	129720	134891	150414	155585
8	83237	98760	103931	114283	119454	124625	140148	145319
7	72971	88494	93665	104017	109188	114359	129882	135052
6	62705	75927	81098	89150	94321	99491	112714	117885
5	52439	65661	70832	78884	84054	89225	102448	107618
4	42172	55395	60566	68617	73788	78959	92181	97352
3	31906	45129	50299	58351	63522	68693	81915	87086
2	21640	34862	40033	48085	53256	58426	71649	76820
1	10266	24596	29767	37819	42989	48160	61383	66553

Tanks only	With 1 Heater Treater	With 1 Heater Treater and 1 Separator	With 2 Heater Treater	With 2 Heater Treater and 1 Separators	With 2 Heater Treater and 2 Separators	With 3 Heater Treater and 2 Separators	With 3 Heater Treater and 3 Separators
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For Each Additional Tank	Add	6332	For Each Skimming Tank	Add	6515
For Each Additional Separator	Add	5171	For Each Water Tank (Fbrgls)	Add	5053
For Each Additional Heater/Treater	Add	15523	For Each Water Tank (Steel)	Add	13008

Average

Tanks

10	36486	45516	48020	54546	57050	59555	68585	71090
9	32906	41936	44441	50966	53471	55975	65005	67510
8	29326	38356	40861	47386	49891	52396	61426	63930
7	25746	34776	37281	43806	46311	48816	57846	60351
6	22167	30702	33207	39238	41742	44247	52783	55287
5	18587	27122	29627	35658	38163	40667	49203	51708
4	15007	23543	26047	32078	34583	37088	45623	48128
3	11427	19963	22468	28498	31003	33508	42043	44548
2	7848	16383	18888	24919	27423	29928	38464	40968
1	3580	12803	15308	21339	23844	26348	34884	37389

Tanks only	With 1 Heater Treater	With 1 Heater Treater and 1 Separator	With 2 Heater Treater	With 2 Heater Treater and 1 Separators	With 2 Heater Treater and 2 Separators	With 3 Heater Treater and 2 Separators	With 3 Heater Treater and 3 Separators
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For Each Additional Tank	Add	3161	For Each Skimming Tank	Add	3580
For Each Additional Separator	Add	2505	For Each Water Tank (Fbrgls)	Add	2784
For Each Additional Heater/Treater	Add	9030	For Each Water Tank (Steel)	Add	7149

Minimum

Tanks

10	16297	18555	19178	20812	21436	22059	24317	24940
9	14685	16942	17566	19200	19823	20447	22704	23328
8	13072	15330	15953	17587	18211	18834	21092	21715
7	11460	13717	14341	15975	16598	17222	19479	20103
6	9847	11986	12610	14126	14749	15373	17512	18135
5	8235	10374	10997	12513	13137	13760	15899	16523
4	6622	8761	9385	10901	11524	12148	14287	14910
3	5010	7149	7772	9288	9912	10535	12674	13298
2	3397	5536	6160	7676	8299	8923	11062	11685
1	1613	3924	4547	6063	6687	7310	9449	10073

Tanks only	With 1 Heater Treater	With 1 Heater Treater and 1 Separators	With 2 Heater Treater	With 2 Heater Treater and 1 Separators	With 2 Heater Treater and 2 Separators	With 3 Heater Treater and 2 Separators	With 3 Heater Treater and 3 Separators
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For Each Additional Tank	Add	1451	For Each Skimming Tank	Add	1290
For Each Additional Separator	Add	624	For Each Water Tank (Fbrgls)	Add	1011
For Each Additional Heater/Treater	Add	2258	For Each Water Tank (Steel)	Add	2580

GREEN RIVER BASIN BASIC EQUIPMENT LISTS

Total Value Water Injection Well / Water Disposal Well

The basic equipment for a water injection well includes:

Wellhead
Injection Lines - 1000'

Very Good

Barrels

900	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
800	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
700	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
600	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
500	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
400	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
300	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
200	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
100	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

Average

Barrels

900	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
800	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
700	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
600	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
500	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
400	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
300	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
200	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
100	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

Minimum

Barrels

900	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
800	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
700	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
600	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
500	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
400	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
300	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
200	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
100	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

GREEN RIVER BASIN BASIC EQUIPMENT LISTS

Total Value ESP Water Supply Well

The basic equipment for an electric submersible pump water supply well includes:

Transformer	Equalizer
Submersible Pump	Switchboard
Electric Motor	Electric Cable to Depth
Wellhead	Flowlines - 1000'

Very Good

Barrels

4100	65247	66123	66999	67876	68752	69628	70504	71380	72256	73132	74008	
3800	60162	61039	61915	62791	63667	64543	65419	66295	67171	68048	68924	
3400	55943	56749	57556	58362	59168	59974	60781	61587	62393	63199	64006	
2800	54782	55588	56395	57201	58007	58813	59620	60426	61232	62038	62845	
2300	50724	51530	52336	53143	53949	54755	55561	56368	57174	57980	58786	
1900	49751	50557	51364	52170	52976	53782	54589	55395	56201	57007	57814	
1600	46752	47558	48364	49171	49977	50783	51589	52396	53202	54008	54814	
1100	41538	42344	43151	43957	44763	45569	46376	47182	47988	48794	49601	
800	37163	41194	42000	42807	43613	44419	45225	46032	46838	47644	48450	
600	34841	38872	39678	40485	41291	42097	42903	43710	44516	45322	46128	
350	34368	38399	39205	40012	40818	41624	42430	43237	44043	44849	45655	
	1000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

Average

Barrels

4100	43355	43968	44580	45193	45806	46419	47031	47644	48257	48870	49482	
3800	38378	38990	39603	40216	40829	41441	42054	42667	43280	43892	44505	
3400	35427	35991	36555	37120	37684	38249	38813	39377	39942	40506	41070	
2800	35427	35991	36555	37120	37684	38249	38813	39377	39942	40506	41070	
2300	31997	32562	33126	33691	34255	34819	35384	35948	36512	37077	37641	
1900	29729	30294	30858	31422	31987	32551	33115	33680	34244	34809	35373	
1600	27676	28240	28805	29369	29933	30498	31062	31627	32191	32755	33320	
1100	23956	24521	25085	25650	26214	26778	27343	27907	28471	29036	29600	
800	21135	23956	24521	25085	25650	26214	26778	27343	27907	28471	29036	
600	20070	22892	23457	24021	24585	25150	25714	26278	26843	27407	27972	
350	19511	22333	22898	23462	24026	24591	25155	25719	26284	26848	27413	
	1000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

Minimum

Barrels

4100	10196	10352	10508	10664	10820	10976	11132	11288	11443	11599	11755	
3800	9637	9793	9949	10105	10261	10417	10573	10729	10884	11040	11196	
3400	8869	9009	9148	9288	9428	9568	9707	9847	9987	10127	10266	
2800	8643	8783	8923	9062	9202	9342	9482	9621	9761	9901	10041	
2300	8009	8149	8288	8428	8568	8708	8847	8987	9127	9267	9406	
1900	7450	7590	7729	7869	8009	8149	8288	8428	8568	8708	8847	
1600	6945	7084	7224	7364	7504	7643	7783	7923	8063	8202	8342	
1100	5999	6138	6278	6418	6558	6697	6837	6977	7117	7256	7396	
800	5182	5880	6020	6160	6300	6439	6579	6719	6859	6998	7138	
600	5042	5741	5880	6020	6160	6300	6439	6579	6719	6859	6998	
350	4891	5590	5730	5870	6009	6149	6289	6429	6568	6708	6848	
	1000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

GREEN RIVER BASIN BASIC EQUIPMENT LISTS

Total Value Pumping Water Supply Well (Gas Engine)

The basic equipment for a pumping water supply well includes:

Pumping Unit	Sucker Rods to Depth
Wellhead	Rod Pump
Gas Engine	Flowlines - 1000'

Very Good

Barrels

900	95703	96735	100967									
800	95703	96735	98702	102754								
700	74219	96735	98702	102754								
600	65577	75843	98702	97099	104541							
500	65577	66465	77468	97099	98887	106328						
400	58654	66465	67837	79093	82504	100674	106342	108129				
300	49175	50198	59540	60791	71654	73158	102192	103979	109647			
200	44752	45731	46709	46569	47547	63294	64545	76167	77671	79176	109341	
100	31213	32143	41640	42570	43500	44430	50091	59497	70813	72317	82727	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Average

Barrels

900	46540	46814	50886									
800	46540	46814	47744	51753								
700	39451	46814	47744	51753								
600	36447	40246	47744	47926	52620							
500	36447	36513	41041	47926	48793	53487						
400	30954	36513	37204	41836	43418	49660	54235	55102				
300	24912	25452	31216	31842	38763	39501	49967	50834	55410			
200	23676	24185	24694	24032	24541	33093	33718	40976	41714	42452	53434	
100	16617	17082	22094	22559	23024	23489	25957	29765	36522	37260	44167	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Minimum

Barrels

900	11967	12031	13069									
800	11967	12031	12255	13282								
700	10210	12031	12255	13282								
600	9555	10403	12255	12325	13494							
500	9555	9575	10597	12325	12537	13706						
400	8190	9575	9756	10790	11193	12750	13886	14099				
300	6714	6863	8291	8457	10046	10228	12822	13034	14171			
200	6377	6515	6652	6498	6635	8790	8956	10593	10775	10957	13671	
100	4605	4730	5994	6119	6244	6369	7056	7864	9496	9678	11325	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

GREEN RIVER BASIN BASIC EQUIPMENT LISTS

Total Value Pumping Water Supply Well (Electric Motor)

The basic equipment for a pumping water supply well includes:

Pumping Unit	Sucker Rods to Depth
Wellhead	Rod Pump
Electric Motor	Flowlines - 1000'
Control Panel	

Very Good**Barrels**

900	85964	87931	92162									
800	85964	87931	89897	93950								
700	67457	87931	89897	93950								
600	60084	69082	89897	90069	95737							
500	60084	61456	70707	90069	91856	97524						
400	54032	61456	62827	72331	75742	93643	99311	101098				
300	45326	46350	55691	56943	67031	68536	95430	97218	102886			
200	40936	41914	42893	43871	44849	59445	60697	71544	73049	74553	102579	
100	29514	30444	38942	39872	40802	41732	47392	55681	66997	68501	78105	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth**Average****Barrels**

900	39241	40171	44243									
800	39241	40171	41100	45110								
700	33484	40171	41100	45110								
600	31491	34280	41100	41401	45976							
500	31491	32181	35075	41401	42268	46843						
400	26965	32181	32871	35870	37452	43134	47710	48577				
300	21461	22001	27765	28391	34775	35513	44001	44868	49443			
200	20355	20864	21373	21882	22391	29642	30268	36988	37726	38464	47468	
100	14596	15061	19944	20409	20874	21339	23807	26443	33200	33938	40179	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth**Minimum****Barrels**

900	10150	10375	11414									
800	10150	10375	10600	11626								
700	8727	10375	10600	11626								
600	8319	8920	10600	10702	11838							
500	8319	8500	9113	10702	10914	12051						
400	7201	8500	8681	9306	9710	11126	12263	12475				
300	5854	6003	7431	7597	9057	9239	11339	11551	12688			
200	5550	5687	5824	5961	6098	7930	8096	9604	9786	9968	12188	
100	4100	4225	5457	5582	5707	5832	6519	7144	8668	8850	10336	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

GREEN RIVER BASIN BASIC EQUIPMENT LISTS

Total Value Progressive Cavity Coal Seams Gas Well without Tanks (Electric Motor)

The basic equipment for a progressive cavity coal seams gas well without tanks includes:

Progressive Cavity Pump	Sucker Rods to Depth
Progressive Cavity Electric Motor	Gas Meter Run with House
Wellhead	Flowlines - 5000'
Wellhead Drive	Miscellaneous Surface Equipment

Very Good

Barrels

900	68947	70913	71264									
800	68947	70913	72880	73052								
700	66554	70913	72880	73052								
600	64782	68179	72880	73052	74839							
500	64782	66153	69804	73052	74839	76626						
400	55795	57166	58538	62441	67690	69477	71264	73052				
300	53357	54380	57454	58706	64580	66085	71264	73052	74839			
200	53041	54019	54997	55975	58792	63047	64298	69093	70598	72102	78413	
100	52702	53632	54562	55492	58260	59190	61335	65549	70598	72102	75654	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Average

Barrels

900	38639	39569	39932									
800	38639	39569	40498	40799								
700	37698	39569	40498	40799								
600	36963	38494	40498	40799	41666							
500	36963	37653	39289	40799	41666	42532						
400	31222	31912	32603	34344	37054	37921	38787	39654				
300	30169	30708	32022	32648	35635	36373	38787	39654	40521			
200	29954	30463	30972	31481	33119	35028	35653	37848	38586	39324	42254	
100	29646	30111	30576	31041	32634	33099	34535	36279	38586	39324	41039	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Minimum

Barrels

900	10075	10300	10414									
800	10075	10300	10524	10626								
700	9855	10300	10524	10626								
600	9770	10049	10524	10626	10839							
500	9770	9951	10242	10626	10839	11051						
400	8341	8522	8703	9005	9774	9987	10199	10411				
300	8112	8260	8570	8737	9444	9626	10199	10411	11871			
200	8033	8170	8307	8444	8947	9435	9601	9991	11420	11602	12295	
100	7948	8073	8198	8323	8814	8939	9368	9767	11420	11602	11970	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

GREEN RIVER BASIN BASIC EQUIPMENT LISTS

Total Value Plunger Lift Gas Well with Tank

The basic equipment for a plunger lift gas well with one oil storage tank includes:

Wellhead with Lubricator
 Plunger Lift
 Production Unit
 300 Barrel Oil Storage Tank (1) with Stairway
 Flowlines - 600'

Very Good

MCF

850	28262	28262	28262	28262	28262	28262	28262	28262	28262	28262	28262
750	28262	28262	28262	28262	28262	28262	28262	28262	28262	28262	28262
650	28262	28262	28262	28262	28262	28262	28262	28262	28262	28262	28262
550	28262	28262	28262	28262	28262	28262	28262	28262	28262	28262	28262
450	28262	28262	28262	28262	28262	28262	28262	28262	28262	28262	28262
350	28262	28262	28262	28262	28262	28262	28262	28262	28262	28262	28262
250	28262	28262	28262	28262	28262	28262	28262	28262	28262	28262	28262
150	28262	28262	28262	28262	28262	28262	28262	28262	28262	28262	28262
60	28262	28262	28262	28262	28262	28262	28262	28262	28262	28262	28262
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

Average

MCF

850	14513	14513	14513	14513	14513	14513	14513	14513	14513	14513	14513
750	14513	14513	14513	14513	14513	14513	14513	14513	14513	14513	14513
650	14513	14513	14513	14513	14513	14513	14513	14513	14513	14513	14513
550	14513	14513	14513	14513	14513	14513	14513	14513	14513	14513	14513
450	14513	14513	14513	14513	14513	14513	14513	14513	14513	14513	14513
350	14513	14513	14513	14513	14513	14513	14513	14513	14513	14513	14513
250	14513	14513	14513	14513	14513	14513	14513	14513	14513	14513	14513
150	14513	14513	14513	14513	14513	14513	14513	14513	14513	14513	14513
60	14513	14513	14513	14513	14513	14513	14513	14513	14513	14513	14513
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

Minimum

MCF

850	4461	4461	4461	4461	4461	4461	4461	4461	4461	4461	4461
750	4461	4461	4461	4461	4461	4461	4461	4461	4461	4461	4461
650	4461	4461	4461	4461	4461	4461	4461	4461	4461	4461	4461
550	4461	4461	4461	4461	4461	4461	4461	4461	4461	4461	4461
450	4461	4461	4461	4461	4461	4461	4461	4461	4461	4461	4461
350	4461	4461	4461	4461	4461	4461	4461	4461	4461	4461	4461
250	4461	4461	4461	4461	4461	4461	4461	4461	4461	4461	4461
150	4461	4461	4461	4461	4461	4461	4461	4461	4461	4461	4461
60	4461	4461	4461	4461	4461	4461	4461	4461	4461	4461	4461
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

GREEN RIVER BASIN BASIC EQUIPMENT LISTS

Total Value Plunger Lift Gas Well without Tanks

The basic equipment for a plunger lift gas well without oil storage tanks includes:

- Wellhead with Lubricator
 - Plunger Lift
 - Production Unit
- Flowlines - 1000'

Very Good

MCF

850	21930	21930	21930	21930	21930	21930	21930	21930	21930	21930	21930	21930
750	21930	21930	21930	21930	21930	21930	21930	21930	21930	21930	21930	21930
650	21930	21930	21930	21930	21930	21930	21930	21930	21930	21930	21930	21930
550	21930	21930	21930	21930	21930	21930	21930	21930	21930	21930	21930	21930
450	21930	21930	21930	21930	21930	21930	21930	21930	21930	21930	21930	21930
350	21930	21930	21930	21930	21930	21930	21930	21930	21930	21930	21930	21930
250	21930	21930	21930	21930	21930	21930	21930	21930	21930	21930	21930	21930
150	21930	21930	21930	21930	21930	21930	21930	21930	21930	21930	21930	21930
60	21930	21930	21930	21930	21930	21930	21930	21930	21930	21930	21930	21930
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	Depth

Average

MCF

850	11352	11352	11352	11352	11352	11352	11352	11352	11352	11352	11352	11352
750	11352	11352	11352	11352	11352	11352	11352	11352	11352	11352	11352	11352
650	11352	11352	11352	11352	11352	11352	11352	11352	11352	11352	11352	11352
550	11352	11352	11352	11352	11352	11352	11352	11352	11352	11352	11352	11352
450	11352	11352	11352	11352	11352	11352	11352	11352	11352	11352	11352	11352
350	11352	11352	11352	11352	11352	11352	11352	11352	11352	11352	11352	11352
250	11352	11352	11352	11352	11352	11352	11352	11352	11352	11352	11352	11352
150	11352	11352	11352	11352	11352	11352	11352	11352	11352	11352	11352	11352
60	11352	11352	11352	11352	11352	11352	11352	11352	11352	11352	11352	11352
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	Depth

Minimum

MCF

850	3010	3010	3010	3010	3010	3010	3010	3010	3010	3010	3010	3010
750	3010	3010	3010	3010	3010	3010	3010	3010	3010	3010	3010	3010
650	3010	3010	3010	3010	3010	3010	3010	3010	3010	3010	3010	3010
550	3010	3010	3010	3010	3010	3010	3010	3010	3010	3010	3010	3010
450	3010	3010	3010	3010	3010	3010	3010	3010	3010	3010	3010	3010
350	3010	3010	3010	3010	3010	3010	3010	3010	3010	3010	3010	3010
250	3010	3010	3010	3010	3010	3010	3010	3010	3010	3010	3010	3010
150	3010	3010	3010	3010	3010	3010	3010	3010	3010	3010	3010	3010
60	3010	3010	3010	3010	3010	3010	3010	3010	3010	3010	3010	3010
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	Depth

GREEN RIVER BASIN BASIC EQUIPMENT LISTS

Total Value Pumping Coal Seams Gas Well with Tanks

The basic equipment for a pumping coal seams gas well with two water storage tanks includes:

Pumping Unit	Separator
Gas Engine	300 Barrel Water Storage Tanks (2) with Stairway
Wellhead	Meter Run with House
Sucker Rods to Depth	Flowlines - 600'
Rod Pump	Filter Vessel

Very Good**Barrels**

900	156849	157881	162113									
800	156849	157881	159848	163900								
700	135365	157881	159848	163900								
600	126723	136989	159848	158245	165687							
500	126723	127611	138614	158245	160033	167474						
400	119800	127611	128983	140239	143650	161820	167488	169275				
300	110321	111344	120686	121937	132800	134304	163338	165125	170793			
200	105898	106877	107855	107715	108693	124440	125691	137313	138817	140322	170487	
100	92359	93289	102786	103716	104646	105576	111237	120643	131959	133463	143873	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth**Average****Barrels**

900	72781	73055	77127									
800	72781	73055	73984	77994								
700	65691	73055	73984	77994								
600	62688	66487	73984	74167	78861							
500	62688	62754	67282	74167	75034	79727						
400	57194	62754	63444	68077	69659	75900	80476	81343				
300	51153	51692	57457	58082	65004	65742	76208	77075	81650			
200	49917	50426	50935	50272	50781	59334	59959	67217	67955	68693	79675	
100	42858	43323	48335	48800	49265	49730	52198	56005	62763	63500	70408	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth**Minimum****Barrels**

900	19782	19846	20885									
800	19782	19846	20070	21097								
700	18025	19846	20070	21097								
600	17371	18219	20070	20140	21309							
500	17371	17390	18412	20140	20352	21522						
400	16005	17390	17572	18605	19009	20565	21702	21914				
300	14530	14678	16106	16272	17861	18043	20637	20850	21986			
200	14193	14330	14467	14314	14451	16605	16771	18408	18590	18773	21487	
100	12420	12545	13810	13935	14060	14185	14872	15680	17311	17493	19140	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

GREEN RIVER BASIN BASIC EQUIPMENT LISTS

Total Value Pumping Coal Seams Gas Well without Tanks

The basic equipment for a pumping coal seams gas well without water storage tanks includes:

Pumping Unit	Separator
Gas Engine	Meter Run with House
Wellhead	Flowlines - 1000'
Sucker Rods to Depth	Filter Vessel
Rod Pump	

Very Good**Barrels**

900	145540	146572	150804									
800	145540	146572	148539	152591								
700	124056	146572	148539	152591								
600	115414	125680	148539	146936	154378							
500	115414	116302	127305	146936	148724	156165						
400	108491	116302	117674	128930	132341	150511	156179	157966				
300	99012	100035	109377	110628	121491	122995	152029	153816	159484			
200	94589	95568	96546	96406	97384	113131	114382	126004	127508	129013	159178	
100	81050	81980	91477	92407	93337	94267	99928	109334	120650	122154	132564	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Average**Barrels**

900	67406	67680	71752									
800	67406	67680	68609	72619								
700	60316	67680	68609	72619								
600	57313	61112	68609	68792	73486							
500	57313	57379	61907	68792	69659	74352						
400	51819	57379	58069	62702	64284	70525	75101	75968				
300	45778	46317	52082	52707	59629	60367	70833	71700	76275			
200	44542	45051	45560	44897	45406	53959	54584	61842	62580	63318	74300	
100	37483	37948	42960	43425	43890	44355	46823	50630	57388	58125	65033	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Minimum**Barrels**

900	17116	17180	18219									
800	17116	17180	17404	18431								
700	15359	17180	17404	18431								
600	14705	15553	17404	17474	18643							
500	14705	14724	15746	17474	17686	18856						
400	13339	14724	14906	15939	16343	17899	19036	19248				
300	11864	12012	13440	13606	15195	15377	17971	18184	19320			
200	11527	11664	11801	11648	11785	13939	14105	15742	15924	16107	18821	
100	9754	9879	11144	11269	11394	11519	12206	13014	14645	14827	16474	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

GREEN RIVER BASIN BASIC EQUIPMENT LISTS

Total Value ESP Oil Well with Tank (Electric Motor)

The basic equipment for an ESP oil well with one oil storage tank includes:

Transformer	Equalizer
Submersible Pump	Switchboard
Electric Motor	Electric Cable to Depth
Wellhead	Flowlines - 600'
Heater/Treater	300 Barrel Oil Storage Tank (1)

Very Good

Barrels

4100	89531	90408	91284	92160	93036	93912	94788	95664	96540	97417	98293
3800	84447	85323	86199	87075	87951	88827	89703	90580	91456	92332	93208
3400	80227	81034	81840	82646	83452	84259	85065	85871	86677	87484	88290
2800	79066	79873	80679	81485	82291	83098	83904	84710	85516	86323	87129
2300	75008	75814	76621	77427	78233	79039	79846	80652	81458	82264	83071
1900	74035	74842	75648	76454	77260	78067	78873	79679	80485	81292	82098
1600	71036	71842	72649	73455	74261	75067	75874	76680	77486	78292	79099
1100	65822	66629	67435	68241	69047	69854	70660	71466	72272	73079	73885
800	61447	65478	66285	67091	67897	68703	69510	70316	71122	71928	72735
600	56825	60856	61662	62468	63275	64081	64887	65693	66500	67306	68112
350	56352	60383	61189	61995	62802	63608	64414	65220	66027	66833	67639
	1000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000
										8500	

Depth

Average

Barrels

4100	55642	56255	56868	57480	58093	58706	59319	59931	60544	61157	61770
3800	50665	51278	51890	52503	53116	53729	54341	54954	55567	56180	56792
3400	47714	48278	48843	49407	49971	50536	51100	51665	52229	52793	53358
2800	47714	48278	48843	49407	49971	50536	51100	51665	52229	52793	53358
2300	44285	44849	45413	45978	46542	47107	47671	48235	48800	49364	49928
1900	42016	42581	43145	43710	44274	44838	45403	45967	46531	47096	47660
1600	39963	40528	41092	41656	42221	42785	43349	43914	44478	45043	45607
1100	36244	36808	37372	37937	38501	39066	39630	40194	40759	41323	41887
800	33422	36244	36808	37372	37937	38501	39066	39630	40194	40759	41323
600	31863	34685	35249	35814	36378	36942	37507	38071	38636	39200	39764
350	31304	34126	34690	35255	35819	36383	36948	37512	38077	38641	39205
	1000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000
										8500	

Depth

Minimum

Barrels

4100	14099	14255	14410	14566	14722	14878	15034	15190	15346	15502	15657
3800	13540	13696	13851	14007	14163	14319	14475	14631	14787	14943	15098
3400	12771	12911	13051	13190	13330	13470	13610	13749	13889	14029	14169
2800	12545	12685	12825	12965	13104	13244	13384	13524	13663	13803	13943
2300	11911	12051	12191	12330	12470	12610	12750	12889	13029	13169	13309
1900	11352	11492	11632	11771	11911	12051	12191	12330	12470	12610	12750
1600	10847	10987	11126	11266	11406	11546	11685	11825	11965	12105	12244
1100	9901	10041	10180	10320	10460	10600	10739	10879	11019	11159	11298
800	9084	9783	9922	10062	10202	10342	10481	10621	10761	10901	11040
600	8826	9525	9664	9804	9944	10084	10223	10363	10503	10643	10782
350	8675	9374	9514	9654	9793	9933	10073	10213	10352	10492	10632
	1000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000
										8500	

Depth

GREEN RIVER BASIN BASIC EQUIPMENT LISTS

Total Value ESP Oil Well without Tanks (Electric Motor)

The basic equipment for an ESP oil well without oil storage tanks includes:

- | | |
|------------------|-------------------------|
| Transformer | Equalizer |
| Submersible Pump | Switchboard |
| Electric Motor | Electric Cable to Depth |
| Wellhead | Flowlines - 1000' |

Very Good

Barrels

4100	69031	69907	70783	71660	72536	73412	74288	75164	76040	76916	77792
3800	63946	64823	65699	66575	67451	68327	69203	70079	70955	71832	72708
3400	59727	60533	61340	62146	62952	63758	64565	65371	66177	66983	67790
2800	58566	59372	60179	60985	61791	62597	63404	64210	65016	65822	66629
2300	54508	55314	56120	56927	57733	58539	59345	60152	60958	61764	62570
1900	53535	54341	55148	55954	56760	57566	58373	59179	59985	60791	61598
1600	50536	51342	52148	52955	53761	54567	55373	56180	56986	57792	58598
1100	45322	46128	46935	47741	48547	49353	50160	50966	51772	52578	53385
800	40947	44978	45784	46591	47397	48203	49009	49816	50622	51428	52234
600	38625	42656	43462	44269	45075	45881	46687	47494	48300	49106	49912
350	38152	42183	42989	43796	44602	45408	46214	47021	47827	48633	49439
	1000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000
											8500

Depth

Average

Barrels

4100	44398	45010	45623	46236	46849	47461	48074	48687	49300	49912	50525
3800	39420	40033	40646	41259	41871	42484	43097	43710	44322	44935	45548
3400	36469	37034	37598	38163	38727	39291	39856	40420	40984	41549	42113
2800	36469	37034	37598	38163	38727	39291	39856	40420	40984	41549	42113
2300	33040	33605	34169	34733	35298	35862	36426	36991	37555	38120	38684
1900	30772	31336	31901	32465	33029	33594	34158	34723	35287	35851	36416
1600	28719	29283	29847	30412	30976	31541	32105	32669	33234	33798	34362
1100	24999	25564	26128	26692	27257	27821	28385	28950	29514	30079	30643
800	22177	24999	25564	26128	26692	27257	27821	28385	28950	29514	30079
600	21113	23935	24499	25064	25628	26192	26757	27321	27886	28450	29014
350	20554	23376	23940	24505	25069	25633	26198	26762	27327	27891	28455
	1000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000
											8500

Depth

Minimum

Barrels

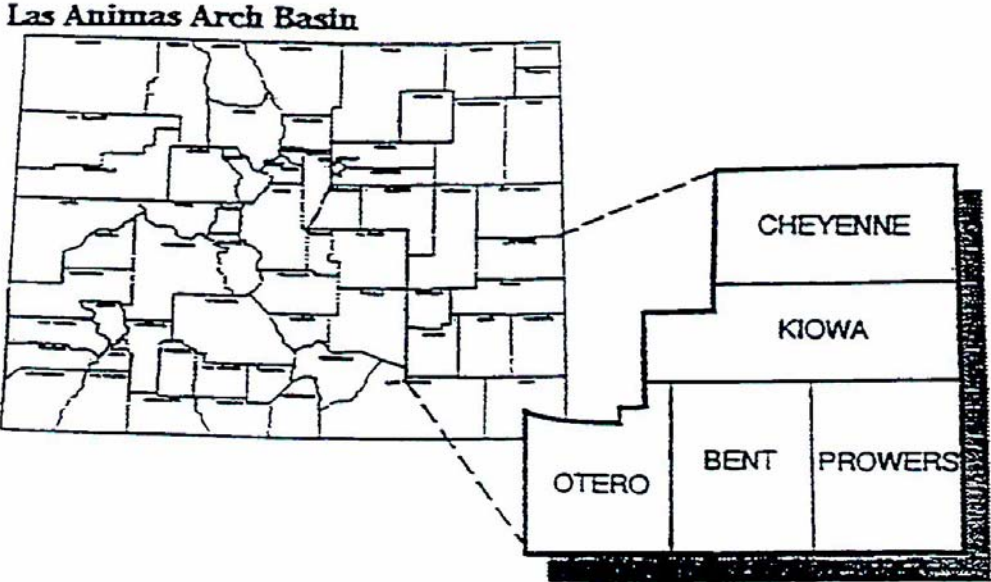
4100	10626	10782	10938	11094	11250	11406	11562	11718	11873	12029	12185
3800	10067	10223	10379	10535	10691	10847	11003	11159	11314	11470	11626
3400	9299	9439	9578	9718	9858	9998	10137	10277	10417	10557	10696
2800	9073	9213	9353	9492	9632	9772	9912	10051	10191	10331	10471
2300	8439	8579	8718	8858	8998	9138	9277	9417	9557	9697	9836
1900	7880	8020	8159	8299	8439	8579	8718	8858	8998	9138	9277
1600	7375	7514	7654	7794	7934	8073	8213	8353	8493	8632	8772
1100	6429	6568	6708	6848	6988	7127	7267	7407	7547	7686	7826
800	5612	6310	6450	6590	6730	6869	7009	7149	7289	7428	7568
600	5472	6171	6310	6450	6590	6730	6869	7009	7149	7289	7428
350	5321	6020	6160	6300	6439	6579	6719	6859	6998	7138	7278
	1000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000
											8500

Depth

LAS ANIMAS ARCH BASIN

The Las Animas Arch Basin trends to the southwest from the Kansas border in Cheyenne County. It includes the following counties:

- Bent**
- Cheyenne**
- Kiowa**
- Otero**
- Prowers**



LAS ANIMAS ARCH BASIN BASIC EQUIPMENT LISTS

Total Value Pumping Oil Well with Tanks (Gas Engine)

The basic equipment for a pumping oil well with two oil storage tanks includes:

Pumping Unit	Sucker Rods to Depth
Chemical Pump	Rod Pump
Gas Engine	400 Barrel Oil Storage Tanks (2) with Stairway
Wellhead	Flowlines - 600'
Heater Treater	210 Barrel Water Storage Tank (1)

Very Good

Barrels

900	132264	133296	137527									
800	132264	133296	135262	139315								
700	110779	133296	135262	139315								
600	99837	110104	132962	131360	138801							
500	99837	100725	111729	131360	133147	140589						
400	92914	100725	102097	113353	116764	134934	140602	142389				
300	83435	84458	93800	95052	105914	107418	136452	138240	143908			
200	79013	79991	80969	80829	81808	97554	98805	110427	111932	113436	143601	
100	65473	66403	75900	76830	77760	78690	84351	93757	105073	106578	116987	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	
												Depth

Average

Barrels

900	63654	63928	68000									
800	63654	63928	64858	68867								
700	56565	63928	64858	68867								
600	53066	56865	64363	64546	69239							
500	53066	53133	57661	64546	65412	70106						
400	47573	53133	53823	58456	60037	66279	70855	71721				
300	41532	42071	47835	48461	55383	56120	66587	67454	72029			
200	40296	40805	41314	40651	41160	49712	50338	57596	58334	59071	70054	
100	33236	33701	38713	39178	39643	40108	42576	46384	53141	53879	60787	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	
												Depth

Minimum

Barrels

900	18310	18373	19412									
800	18310	18373	18598	19624								
700	16553	18373	18598	19624								
600	15780	16628	18479	18549	19718							
500	15780	15799	16821	18549	18761	19931						
400	14414	15799	15981	17014	17418	18974	20111	20323				
300	12939	13087	14515	14681	16270	16452	19046	19259	20395			
200	12602	12739	12876	12723	12860	15014	15180	16817	16999	17182	19896	
100	10829	10954	12219	12344	12469	12594	13281	14089	15720	15902	17549	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	
												Depth

LAS ANIMAS ARCH BASIN BASIC EQUIPMENT LISTS

Total Value Pumping Oil Well with Tanks (Electric Motor)

The basic equipment for a pumping oil well with two oil storage tanks includes:

Pumping Unit	Sucker Rods to Depth
Chemical Pump	Rod Pump
Electric Motor	400 Barrel Oil Storage Tanks (2) with Stairway
Wellhead	Flowlines - 600'
Heater Treater	210 Barrel Water Storage Tank (1)
Control Panel	

Very Good

Barrels

900	122525	124491	128723									
800	122525	124491	126458	130510								
700	104018	124491	126458	130510								
600	94344	103342	124158	124329	129997							
500	94344	95716	104967	124329	126116	131784						
400	88292	95716	97088	106592	110002	127904	133571	135359				
300	79587	80610	89952	91203	101291	102796	129691	131478	137146			
200	75196	76175	77153	78131	79109	93706	94957	105805	107309	108814	136839	
100	63774	64704	73202	74132	75062	75992	81653	89941	101257	102761	112365	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Average

Barrels

900	56355	57285	61357									
800	56355	57285	58214	62224								
700	50598	57285	58214	62224								
600	48111	50899	57720	58020	62596							
500	48111	48801	51694	58020	58887	63463						
400	43585	48801	49491	52490	54071	59754	64329	65196				
300	38081	38620	44385	45010	51394	52132	60621	61487	66063			
200	36974	37483	37992	38501	39010	46262	46887	53608	54345	55083	64087	
100	31215	31680	36563	37028	37493	37958	40426	43062	49820	50557	56798	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Minimum

Barrels

900	16493	16718	17756									
800	16493	16718	16942	17969								
700	15069	16718	16942	17969								
600	14543	15144	16824	16926	18063							
500	14543	14724	15337	16926	17138	18275						
400	13425	14724	14906	15531	15934	17351	18487	18700				
300	12079	12227	13655	13821	15281	15463	17563	17775	18912			
200	11774	11911	12048	12185	12322	14154	14320	15828	16010	16193	18412	
100	10324	10449	11681	11806	11931	12056	12743	13368	14892	15075	16560	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

LAS ANIMAS ARCH BASIN BASIC EQUIPMENT LISTS

Total Value Pumping Oil Well without Tanks (Gas Engine)

The basic equipment for a pumping oil well without oil storage tanks includes:

Pumping Unit	Sucker Rods to Depth
Chemical Pump	Rod Pump
Gas Engine	Flowlines - 1000'
Wellhead	

Very Good

Barrels

900	92984	94015	98247									
800	92984	94015	95982	100034								
700	71499	94015	95982	100034								
600	62857	73124	95982	94380	101821							
500	62857	63745	74749	94380	96167	103609						
400	55934	63745	65117	76373	79784	97954	103622	105409				
300	46455	47478	56820	58072	68934	70438	99472	101260	106928			
200	42033	43011	43989	43849	44828	60574	61825	73447	74952	76456	106621	
100	28493	29423	38920	39850	40780	41710	47371	56777	68093	69598	80007	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Average

Barrels

900	46024	46298	50370									
800	46024	46298	47228	51237								
700	38935	46298	47228	51237								
600	35931	39730	47228	47410	52104							
500	35931	35997	40525	47410	48277	52971						
400	30438	35997	36688	41320	42902	49144	53719	54586				
300	24396	24936	30700	31326	38247	38985	49451	50318	54894			
200	23160	23669	24178	23516	24025	32577	33202	40460	41198	41936	52918	
100	16101	16566	21578	22043	22508	22973	25441	29249	36006	36744	43651	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Minimum

Barrels

900	11537	11601	12639									
800	11537	11601	11825	12852								
700	9780	11601	11825	12852								
600	9125	9973	11825	11895	13064							
500	9125	9145	10167	11895	12107	13276						
400	7760	9145	9326	10360	10763	12320	13456	13669				
300	6284	6433	7861	8027	9616	9798	12392	12604	13741			
200	5947	6085	6222	6068	6205	8360	8526	10163	10345	10527	13241	
100	4175	4300	5564	5689	5814	5939	6626	7434	9066	9248	10895	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

LAS ANIMAS ARCH BASIN BASIC EQUIPMENT LISTS

Total Value Pumping Oil Well without Tanks (Electric Motor)

The basic equipment for a pumping oil well without oil storage tanks includes:

Pumping Unit	Sucker Rods to Depth
Chemical Pump	Rod Pump
Electric Motor	Flowlines - 1000'
Wellhead	Control Panel

Very Good

Barrels

900	83244	85211	89443									
800	83244	85211	87178	91230								
700	64737	85211	87178	91230								
600	57364	66362	87178	87349	93017							
500	57364	58736	67987	87349	89136	94804						
400	51312	58736	60108	69612	73022	90924	96591	98379				
300	42607	43630	52972	54223	64311	65816	92711	94498	100166			
200	38216	39195	40173	41151	42129	56726	57977	68825	70329	71834	99859	
100	26794	27724	36222	37152	38082	39012	44673	52961	64277	65781	75385	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Average

Barrels

900	38725	39655	43727									
800	38725	39655	40584	44594								
700	32968	39655	40584	44594								
600	30975	33764	40584	40885	45460							
500	30975	31665	34559	40885	41752	46327						
400	26449	31665	32355	35354	36936	42618	47194	48061				
300	20945	21485	27249	27875	34259	34997	43485	44352	48927			
200	19839	20348	20857	21366	21875	29126	29752	36472	37210	37948	46952	
100	14080	14545	19428	19893	20358	20823	23291	25927	32684	33422	39663	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Minimum

Barrels

900	9957	10182	11220									
800	9957	10182	10406	11433								
700	8533	10182	10406	11433								
600	8126	8726	10406	10508	11645							
500	8126	8307	8920	10508	10720	11857						
400	7008	8307	8488	9113	9516	10933	12070	12282				
300	5661	5809	7237	7404	8863	9046	11145	11357	12494			
200	5356	5493	5630	5767	5904	7736	7902	9410	9592	9775	11994	
100	3906	4031	5263	5388	5513	5638	6325	6951	8474	8657	10143	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

LAS ANIMAS ARCH BASIN BASIC EQUIPMENT LISTS

Total Value Flowing Oil Well with Tanks

The basic equipment for a flowing oil well with two oil storage tanks includes:

- Wellhead
- Heater Treater
- 400 Barrel Oil Storage Tanks (2) with Stairway
- 210 Barrel Water Storage Tank (1)
- Flowlines - 600'

Very Good

Barrels	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500
900	44000	44000	44000	44000	44000	44000	44000	44000	44000	44000	44000
800	44000	44000	44000	44000	44000	44000	44000	44000	44000	44000	44000
700	44000	44000	44000	44000	44000	44000	44000	44000	44000	44000	44000
600	41699	41699	41699	41699	41699	41699	41699	41699	41699	41699	41699
500	41699	41699	41699	41699	41699	41699	41699	41699	41699	41699	41699
400	41699	41699	41699	41699	41699	41699	41699	41699	41699	41699	41699
300	41699	41699	41699	41699	41699	41699	41699	41699	41699	41699	41699
200	41699	41699	41699	41699	41699	41699	41699	41699	41699	41699	41699
100	41699	41699	41699	41699	41699	41699	41699	41699	41699	41699	41699
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

Average

Barrels	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500
900	20801	20801	20801	20801	20801	20801	20801	20801	20801	20801	20801
800	20801	20801	20801	20801	20801	20801	20801	20801	20801	20801	20801
700	20801	20801	20801	20801	20801	20801	20801	20801	20801	20801	20801
600	20307	20307	20307	20307	20307	20307	20307	20307	20307	20307	20307
500	20307	20307	20307	20307	20307	20307	20307	20307	20307	20307	20307
400	20307	20307	20307	20307	20307	20307	20307	20307	20307	20307	20307
300	20307	20307	20307	20307	20307	20307	20307	20307	20307	20307	20307
200	20307	20307	20307	20307	20307	20307	20307	20307	20307	20307	20307
100	20307	20307	20307	20307	20307	20307	20307	20307	20307	20307	20307
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

Minimum

Barrels	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500
900	7342	7342	7342	7342	7342	7342	7342	7342	7342	7342	7342
800	7342	7342	7342	7342	7342	7342	7342	7342	7342	7342	7342
700	7342	7342	7342	7342	7342	7342	7342	7342	7342	7342	7342
600	7224	7224	7224	7224	7224	7224	7224	7224	7224	7224	7224
500	7224	7224	7224	7224	7224	7224	7224	7224	7224	7224	7224
400	7224	7224	7224	7224	7224	7224	7224	7224	7224	7224	7224
300	7224	7224	7224	7224	7224	7224	7224	7224	7224	7224	7224
200	7224	7224	7224	7224	7224	7224	7224	7224	7224	7224	7224
100	7224	7224	7224	7224	7224	7224	7224	7224	7224	7224	7224
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

LAS ANIMAS ARCH BASIN BASIC EQUIPMENT LISTS

Total Value Flowing Oil Well without Tanks

The basic equipment for a flowing oil well without oil storage tanks includes:

- Wellhead
- Flowlines - 1000'

Very Good

Barrels

900	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
800	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
700	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
600	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
500	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
400	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
300	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
200	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
100	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

Average

Barrels

900	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
800	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
700	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
600	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
500	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
400	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
300	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
200	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
100	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

Minimum

Barrels

900	806	806	806	806	806	806	806	806	806	806	806
800	806	806	806	806	806	806	806	806	806	806	806
700	806	806	806	806	806	806	806	806	806	806	806
600	806	806	806	806	806	806	806	806	806	806	806
500	806	806	806	806	806	806	806	806	806	806	806
400	806	806	806	806	806	806	806	806	806	806	806
300	806	806	806	806	806	806	806	806	806	806	806
200	806	806	806	806	806	806	806	806	806	806	806
100	806	806	806	806	806	806	806	806	806	806	806
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

Total Value Pumping Gas Well with Tank (Gas Engine)

The basic equipment for a pumping gas well with one oil storage tank includes:

Pumping Unit	Rod Pump
Chemical Pump	Production Unit
Gas Engine	400 Barrel Oil Storage Tank (1) with Stairway
Wellhead	210 Barrel Water Storage Tank (1)
Sucker Rods to Depth	Flowlines - 600'

Very Good

Barrels

900	117924	118955	123187									
800	117924	118955	120922	124974								
700	96439	118955	120922	124974								
600	87797	98064	120922	119320	126761							
500	87797	88685	99689	119320	121107	128549						
400	80874	88685	90057	101313	104724	122894	128562	130349				
300	71395	72418	81760	83012	93874	95378	124412	126200	131868			
200	66973	67951	68929	68789	69768	85514	86765	98387	99892	101396	131561	
100	53433	54363	63860	64790	65720	66650	72311	81717	93033	94538	104947	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	Depth

Average

Barrels

900	57236	57510	61583									
800	57236	57510	58440	62449								
700	50147	57510	58440	62449								
600	47143	50942	58440	58622	63316							
500	47143	47210	51737	58622	59489	64183						
400	41650	47210	47900	52533	54114	60356	64931	65798				
300	35608	36148	41912	42538	49459	50197	60664	61530	66106			
200	34373	34882	35391	34728	35237	43789	44415	51673	52410	53148	64130	
100	27313	27778	32790	33255	33720	34185	36653	40461	47218	47956	54863	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	Depth

Minimum

Barrels

900	15977	16040	17079									
800	15977	16040	16265	17291								
700	14220	16040	16265	17291								
600	13565	14413	16265	16335	17504							
500	13565	13585	14606	16335	16547	17716						
400	12200	13585	13766	14800	15203	16759	17896	18108				
300	10724	10873	12300	12467	14056	14238	16832	17044	18181			
200	10387	10524	10661	10508	10645	12799	12966	14602	14785	14967	17681	
100	8615	8740	10004	10129	10254	10379	11066	11874	13505	13688	15335	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	Depth

LAS ANIMAS ARCH BASIN BASIC EQUIPMENT LISTS

Total Value Pumping Gas Well without Tank (Gas Engine)

The basic equipment for a pumping gas well without oil storage tank includes:

Pumping Unit	Rod Pump
Chemical Pump	Sucker Rods to Depth
Gas Engine	Flowlines - 1000'
Wellhead	

Very Good

Barrels

900	92984	94015	98247									
800	92984	94015	95982	100034								
700	71499	94015	95982	100034								
600	62857	73124	95982	94380	101821							
500	62857	63745	74749	94380	96167	103609						
400	55934	63745	65117	76373	79784	97954	103622	105409				
300	46455	47478	56820	58072	68934	70438	99472	101260	106928			
200	42033	43011	43989	43849	44828	60574	61825	73447	74952	76456	106621	
100	28493	29423	38920	39850	40780	41710	47371	56777	68093	69598	80007	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Average

Barrels

900	46024	46298	50370									
800	46024	46298	47228	51237								
700	38935	46298	47228	51237								
600	35931	39730	47228	47410	52104							
500	35931	35997	40525	47410	48277	52971						
400	30438	35997	36688	41320	42902	49144	53719	54586				
300	24396	24936	30700	31326	38247	38985	49451	50318	54894			
200	23160	23669	24178	23516	24025	32577	33202	40460	41198	41936	52918	
100	16101	16566	21578	22043	22508	22973	25441	29249	36006	36744	43651	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Minimum

Barrels

900	11774	11837	12876									
800	11774	11837	12062	13088								
700	10017	11837	12062	13088								
600	9362	10210	12062	12131	13300							
500	9362	9382	10403	12131	12344	13513						
400	7997	9382	9563	10596	11000	12556	13693	13905				
300	6521	6669	8097	8264	9852	10035	12629	12841	13978			
200	6184	6321	6458	6305	6442	8596	8762	10399	10581	10764	13478	
100	4412	4537	5801	5926	6051	6176	6863	7671	9302	9485	11132	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

LAS ANIMAS ARCH BASIN BASIC EQUIPMENT LISTS

Total Value Flowing Gas Well with Tank

The basic equipment for a flowing gas well with one oil storage tank includes:

- Wellhead
- Production Unit
- 400 Barrel Oil Storage Tank (1) with Stairway
- Flowlines - 600'

**Very Good
MCF**

850	19393	19393	19393	19393	19393	19393	19393	19393	19393	19393	19393	19393
750	19393	19393	19393	19393	19393	19393	19393	19393	19393	19393	19393	19393
650	19393	19393	19393	19393	19393	19393	19393	19393	19393	19393	19393	19393
550	19393	19393	19393	19393	19393	19393	19393	19393	19393	19393	19393	19393
450	19393	19393	19393	19393	19393	19393	19393	19393	19393	19393	19393	19393
350	19393	19393	19393	19393	19393	19393	19393	19393	19393	19393	19393	19393
250	19393	19393	19393	19393	19393	19393	19393	19393	19393	19393	19393	19393
150	19393	19393	19393	19393	19393	19393	19393	19393	19393	19393	19393	19393
60	19393	19393	19393	19393	19393	19393	19393	19393	19393	19393	19393	19393
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	Depth

**Average
MCF**

850	10804	10804	10804	10804	10804	10804	10804	10804	10804	10804	10804	10804
750	10804	10804	10804	10804	10804	10804	10804	10804	10804	10804	10804	10804
650	10804	10804	10804	10804	10804	10804	10804	10804	10804	10804	10804	10804
550	10804	10804	10804	10804	10804	10804	10804	10804	10804	10804	10804	10804
450	10804	10804	10804	10804	10804	10804	10804	10804	10804	10804	10804	10804
350	10804	10804	10804	10804	10804	10804	10804	10804	10804	10804	10804	10804
250	10804	10804	10804	10804	10804	10804	10804	10804	10804	10804	10804	10804
150	10804	10804	10804	10804	10804	10804	10804	10804	10804	10804	10804	10804
60	10804	10804	10804	10804	10804	10804	10804	10804	10804	10804	10804	10804
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	Depth

**Minimum
MCF**

850	3397	3397	3397	3397	3397	3397	3397	3397	3397	3397	3397	3397
750	3397	3397	3397	3397	3397	3397	3397	3397	3397	3397	3397	3397
650	3397	3397	3397	3397	3397	3397	3397	3397	3397	3397	3397	3397
550	3397	3397	3397	3397	3397	3397	3397	3397	3397	3397	3397	3397
450	3397	3397	3397	3397	3397	3397	3397	3397	3397	3397	3397	3397
350	3397	3397	3397	3397	3397	3397	3397	3397	3397	3397	3397	3397
250	3397	3397	3397	3397	3397	3397	3397	3397	3397	3397	3397	3397
150	3397	3397	3397	3397	3397	3397	3397	3397	3397	3397	3397	3397
60	3397	3397	3397	3397	3397	3397	3397	3397	3397	3397	3397	3397
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	Depth

LAS ANIMAS ARCH BASIN BASIC EQUIPMENT LISTS

Total Value Flowing Gas Well without Tanks

The basic equipment for a flowing gas well without oil storage tanks includes:

Wellhead
 Production Unit
 Flowlines - 1000'

Very Good

MCF

850	16168	16168	16168	16168	16168	16168	16168	16168	16168	16168	16168
750	16168	16168	16168	16168	16168	16168	16168	16168	16168	16168	16168
650	16168	16168	16168	16168	16168	16168	16168	16168	16168	16168	16168
550	16168	16168	16168	16168	16168	16168	16168	16168	16168	16168	16168
450	16168	16168	16168	16168	16168	16168	16168	16168	16168	16168	16168
350	16168	16168	16168	16168	16168	16168	16168	16168	16168	16168	16168
250	16168	16168	16168	16168	16168	16168	16168	16168	16168	16168	16168
150	16168	16168	16168	16168	16168	16168	16168	16168	16168	16168	16168
60	16168	16168	16168	16168	16168	16168	16168	16168	16168	16168	16168
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

Average

MCF

850	9363	9363	9363	9363	9363	9363	9363	9363	9363	9363	9363
750	9363	9363	9363	9363	9363	9363	9363	9363	9363	9363	9363
650	9363	9363	9363	9363	9363	9363	9363	9363	9363	9363	9363
550	9363	9363	9363	9363	9363	9363	9363	9363	9363	9363	9363
450	9363	9363	9363	9363	9363	9363	9363	9363	9363	9363	9363
350	9363	9363	9363	9363	9363	9363	9363	9363	9363	9363	9363
250	9363	9363	9363	9363	9363	9363	9363	9363	9363	9363	9363
150	9363	9363	9363	9363	9363	9363	9363	9363	9363	9363	9363
60	9363	9363	9363	9363	9363	9363	9363	9363	9363	9363	9363
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

Minimum

MCF

850	2344	2344	2344	2344	2344	2344	2344	2344	2344	2344	2344
750	2344	2344	2344	2344	2344	2344	2344	2344	2344	2344	2344
650	2344	2344	2344	2344	2344	2344	2344	2344	2344	2344	2344
550	2344	2344	2344	2344	2344	2344	2344	2344	2344	2344	2344
450	2344	2344	2344	2344	2344	2344	2344	2344	2344	2344	2344
350	2344	2344	2344	2344	2344	2344	2344	2344	2344	2344	2344
250	2344	2344	2344	2344	2344	2344	2344	2344	2344	2344	2344
150	2344	2344	2344	2344	2344	2344	2344	2344	2344	2344	2344
60	2344	2344	2344	2344	2344	2344	2344	2344	2344	2344	2344
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

LAS ANIMAS ARCH BASIN BASIC EQUIPMENT LISTS

Total Value Flowing Gas Well without Tanks or Production Unit

The basic equipment for a flowing gas well without tanks or production unit includes:

- Wellhead
- Flowlines - 1000'

**Very Good
MCF**

850	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
750	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
650	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
550	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
450	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
350	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
250	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
150	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
60	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

**Average
MCF**

850	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
750	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
650	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
550	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
450	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
350	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
250	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
150	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
60	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

**Minimum
MCF**

850	806	806	806	806	806	806	806	806	806	806	806
750	806	806	806	806	806	806	806	806	806	806	806
650	806	806	806	806	806	806	806	806	806	806	806
550	806	806	806	806	806	806	806	806	806	806	806
450	806	806	806	806	806	806	806	806	806	806	806
350	806	806	806	806	806	806	806	806	806	806	806
250	806	806	806	806	806	806	806	806	806	806	806
150	806	806	806	806	806	806	806	806	806	806	806
60	806	806	806	806	806	806	806	806	806	806	806
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

LAS ANIMAS ARCH BASIN BASIC EQUIPMENT LISTS**Common Tank Battery**

The basic equipment for a common tank battery includes:

400 Barrel Oil Storage Tanks with Stairway

Heater Treaters

Recycle Pump

Separators

Manifolds and Headers

Very Good

Tanks

10	103770	119293	124464	134816	139987	145157	160680	165851
9	93504	109027	114197	124550	129720	134891	150414	155585
8	83237	98760	103931	114283	119454	124625	140148	145319
7	72971	88494	93665	104017	109188	114359	129882	135052
6	62705	75927	81098	89150	94321	99491	112714	117885
5	52439	65661	70832	78884	84054	89225	102448	107618
4	42172	55395	60566	68617	73788	78959	92181	97352
3	31906	45129	50299	58351	63522	68693	81915	87086
2	21640	34862	40033	48085	53256	58426	71649	76820
1	10266	24596	29767	37819	42989	48160	61383	66553

Tanks only	With 1 Heater Treater	With 1 Heater Treater and 1 Separator	With 2 Heater Treater	With 2 Heater Treater and 1 Separators	With 2 Heater Treater and 2 Separators	With 3 Heater Treater and 2 Separators	With 3 Heater Treater and 3 Separators
------------	-----------------------	---------------------------------------	-----------------------	--	--	--	--

For Each Additional Tank	Add	6332	For Each Skimming Tank	Add	6515
For Each Additional Separator	Add	5171	For Each Water Tank (Fbrglss)	Add	5053
For Each Additional Heater/Treater	Add	15523	For Each Water Tank (Steel)	Add	13008

Average

Tanks

10	36486	45516	48020	54546	57050	59555	68585	71090
9	32906	41936	44441	50966	53471	55975	65005	67510
8	29326	38356	40861	47386	49891	52396	61426	63930
7	25746	34776	37281	43806	46311	48816	57846	60351
6	22167	30702	33207	39238	41742	44247	52783	55287
5	18587	27122	29627	35658	38163	40667	49203	51708
4	15007	23543	26047	32078	34583	37088	45623	48128
3	11427	19963	22468	28498	31003	33508	42043	44548
2	7848	16383	18888	24919	27423	29928	38464	40968
1	3580	12803	15308	21339	23844	26348	34884	37389

Tanks only	With 1 Heater Treater	With 1 Heater Treater and 1 Separator	With 2 Heater Treater	With 2 Heater Treater and 1 Separators	With 2 Heater Treater and 2 Separators	With 3 Heater Treater and 2 Separators	With 3 Heater Treater and 3 Separators
------------	-----------------------	---------------------------------------	-----------------------	--	--	--	--

For Each Additional Tank	Add	3161	For Each Skimming Tank	Add	3580
For Each Additional Separator	Add	2505	For Each Water Tank (Fbrglss)	Add	2784
For Each Additional Heater/Treater	Add	9030	For Each Water Tank (Steel)	Add	7149

Minimum

Tanks

10	16297	18555	19178	20812	21436	22059	24317	24940
9	14685	16942	17566	19200	19823	20447	22704	23328
8	13072	15330	15953	17587	18211	18834	21092	21715
7	11460	13717	14341	15975	16598	17222	19479	20103
6	9847	11986	12610	14126	14749	15373	17512	18135
5	8235	10374	10997	12513	13137	13760	15899	16523
4	6622	8761	9385	10901	11524	12148	14287	14910
3	5010	7149	7772	9288	9912	10535	12674	13298
2	3397	5536	6160	7676	8299	8923	11062	11685
1	1613	3924	4547	6063	6687	7310	9449	10073

Tanks only	With 1 Heater Treater	With 1 Heater Treater and 1 Separators	With 2 Heater Treater	With 2 Heater Treater and 1 Separators	With 2 Heater Treater and 2 Separators	With 3 Heater Treater and 2 Separators	With 3 Heater Treater and 3 Separators
------------	-----------------------	--	-----------------------	--	--	--	--

For Each Additional Tank	Add	1451	For Each Skimming Tank	Add	1290
For Each Additional Separator	Add	624	For Each Water Tank (Fbrglss)	Add	1011
For Each Additional Heater/Treater	Add	2258	For Each Water Tank (Steel)	Add	2580

Total Value Water Injection Well / Water Disposal Well

The basic equipment for a water injection well includes:

- Wellhead
- Injection lines - 1000'

Very Good

Barrels

900	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
800	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
700	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
600	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
500	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
400	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
300	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
200	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
100	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719	4719
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

Average

Barrels

900	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
800	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
700	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
600	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
500	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
400	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
300	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
200	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
100	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171	3171
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

Minimum

Barrels

900	806	806	806	806	806	806	806	806	806	806	806
800	806	806	806	806	806	806	806	806	806	806	806
700	806	806	806	806	806	806	806	806	806	806	806
600	806	806	806	806	806	806	806	806	806	806	806
500	806	806	806	806	806	806	806	806	806	806	806
400	806	806	806	806	806	806	806	806	806	806	806
300	806	806	806	806	806	806	806	806	806	806	806
200	806	806	806	806	806	806	806	806	806	806	806
100	806	806	806	806	806	806	806	806	806	806	806
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

LAS ANIMAS ARCH BASIN BASIC EQUIPMENT LISTS

Total Value ESP Water Supply Well

The basic equipment for an electric submersible pump water supply well includes:

Transformer	Equalizer
Submersible Pump	Switchboard
Electric Motor	Electric Cable to Depth
Wellhead	Flowlines - 1000'

Very Good**Barrels**

4100	65247	66123	66999	67876	68752	69628	70504	71380	72256	73132	74008
3800	60162	61039	61915	62791	63667	64543	65419	66295	67171	68048	68924
3400	55943	56749	57556	58362	59168	59974	60781	61587	62393	63199	64006
2800	54782	55588	56395	57201	58007	58813	59620	60426	61232	62038	62845
2300	50724	51530	52336	53143	53949	54755	55561	56368	57174	57980	58786
1900	49751	50557	51364	52170	52976	53782	54589	55395	56201	57007	57814
1600	46752	47558	48364	49171	49977	50783	51589	52396	53202	54008	54814
1100	41538	42344	43151	43957	44763	45569	46376	47182	47988	48794	49601
800	37163	41194	42000	42807	43613	44419	45225	46032	46838	47644	48450
600	34841	38872	39678	40485	41291	42097	42903	43710	44516	45322	46128
350	34368	38399	39205	40012	40818	41624	42430	43237	44043	44849	45655
	1000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000
										8500	

Depth**Average****Barrels**

4100	43355	43968	44580	45193	45806	46419	47031	47644	48257	48870	49482
3800	38378	38990	39603	40216	40829	41441	42054	42667	43280	43892	44505
3400	35427	35991	36555	37120	37684	38249	38813	39377	39942	40506	41070
2800	35427	35991	36555	37120	37684	38249	38813	39377	39942	40506	41070
2300	31997	32562	33126	33691	34255	34819	35384	35948	36512	37077	37641
1900	29729	30294	30858	31422	31987	32551	33115	33680	34244	34809	35373
1600	27676	28240	28805	29369	29933	30498	31062	31627	32191	32755	33320
1100	23956	24521	25085	25650	26214	26778	27343	27907	28471	29036	29600
800	21135	23956	24521	25085	25650	26214	26778	27343	27907	28471	29036
600	20070	22892	23457	24021	24585	25150	25714	26278	26843	27407	27972
350	19511	22333	22898	23462	24026	24591	25155	25719	26284	26848	27413
	1000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000
										8500	

Depth**Minimum****Barrels**

4100	10196	10352	10508	10664	10820	10976	11132	11288	11443	11599	11755
3800	9637	9793	9949	10105	10261	10417	10573	10729	10884	11040	11196
3400	8869	9009	9148	9288	9428	9568	9707	9847	9987	10127	10266
2800	8643	8783	8923	9062	9202	9342	9482	9621	9761	9901	10041
2300	8009	8149	8288	8428	8568	8708	8847	8987	9127	9267	9406
1900	7450	7590	7729	7869	8009	8149	8288	8428	8568	8708	8847
1600	6945	7084	7224	7364	7504	7643	7783	7923	8063	8202	8342
1100	5999	6138	6278	6418	6558	6697	6837	6977	7117	7256	7396
800	5182	5880	6020	6160	6300	6439	6579	6719	6859	6998	7138
600	5042	5741	5880	6020	6160	6300	6439	6579	6719	6859	6998
350	4891	5590	5730	5870	6009	6149	6289	6429	6568	6708	6848
	1000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000
										8500	

Depth

LAS ANIMAS ARCH BASIN BASIC EQUIPMENT LISTS

Total Value Pumping Water Supply Well (Gas Engine)

The basic equipment for a pumping water supply well includes:

Pumping Unit	Sucker Rods to Depth
Wellhead	Rod Pump
Gas Engine	Flowlines - 1000'

Very Good

Barrels

900	91919	92951	97183									
800	91919	92951	94918	98970								
700	70435	92951	94918	98970								
600	61793	72059	94918	93315	100757							
500	61793	62681	73684	93315	95103	102544						
400	54870	62681	64053	75309	78720	96890	102558	104345				
300	45391	46414	55756	57007	67870	69374	98408	100195	105863			
200	40968	41947	42925	42785	43763	59510	60761	72383	73887	75392	105557	
100	27429	28359	37856	38786	39716	40646	46307	55713	67029	68533	78943	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Average

Barrels

900	45497	45771	49844									
800	45497	45771	46701	50710								
700	38408	45771	46701	50710								
600	35404	39203	46701	46883	51577							
500	35404	35471	39998	46883	47750	52444						
400	29911	35471	36161	40794	42375	48617	53192	54059				
300	23869	24409	30173	30799	37720	38458	48925	49791	54367			
200	22634	23143	23652	22989	23498	32050	32676	39934	40671	41409	52391	
100	15574	16039	21051	21516	21981	22446	24914	28722	35479	36217	43124	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Minimum

Barrels

900	11537	11601	12639									
800	11537	11601	11825	12852								
700	9780	11601	11825	12852								
600	9125	9973	11825	11895	13064							
500	9125	9145	10167	11895	12107	13276						
400	7760	9145	9326	10360	10763	12320	13456	13669				
300	6284	6433	7861	8027	9616	9798	12392	12604	13741			
200	5947	6085	6222	6068	6205	8360	8526	10163	10345	10527	13241	
100	4175	4300	5564	5689	5814	5939	6626	7434	9066	9248	10895	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Total Value Pumping Water Supply Well (Electric Motor)

The basic equipment for a pumping water supply well includes:

Pumping Unit	Sucker Rods to Depth
Wellhead	Rod Pump
Electric Motor	Flowlines - 1000'
Control Panel	

Very Good

Barrels

900	82180	84147	88378									
800	82180	84147	86113	90166								
700	63673	84147	86113	90166								
600	56300	65298	86113	86285	91953							
500	56300	57672	66923	86285	88072	93740						
400	50248	57672	59043	68547	71958	89859	95527	97314				
300	41542	42566	51907	53159	63247	64752	91646	93434	99102			
200	37152	38130	39109	40087	41065	55661	56913	67760	69265	70769	98795	
100	25730	26660	35158	36088	37018	37948	43608	51897	63213	64717	74321	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Average

Barrels

900	38198	39128	43200									
800	38198	39128	40057	44067								
700	32442	39128	40057	44067								
600	30448	33237	40057	40358	44934							
500	30448	31138	34032	40358	41225	45800						
400	25923	31138	31829	34827	36409	42092	46667	47534				
300	20419	20958	26722	27348	33732	34470	42958	43825	48401			
200	19312	19821	20330	20839	21348	28599	29225	35945	36683	37421	46425	
100	13553	14018	18901	19366	19831	20296	22764	25400	32157	32895	39136	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Minimum

Barrels

900	9720	9945	10984									
800	9720	9945	10170	11196								
700	8297	9945	10170	11196								
600	7889	8490	10170	10272	11408							
500	7889	8070	8683	10272	10484	11621						
400	6771	8070	8251	8876	9280	10696	11833	12045				
300	5424	5573	7001	7167	8627	8809	10909	11121	12258			
200	5120	5257	5394	5531	5668	7500	7666	9174	9356	9538	11758	
100	3670	3795	5027	5152	5277	5402	6089	6714	8238	8420	9906	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

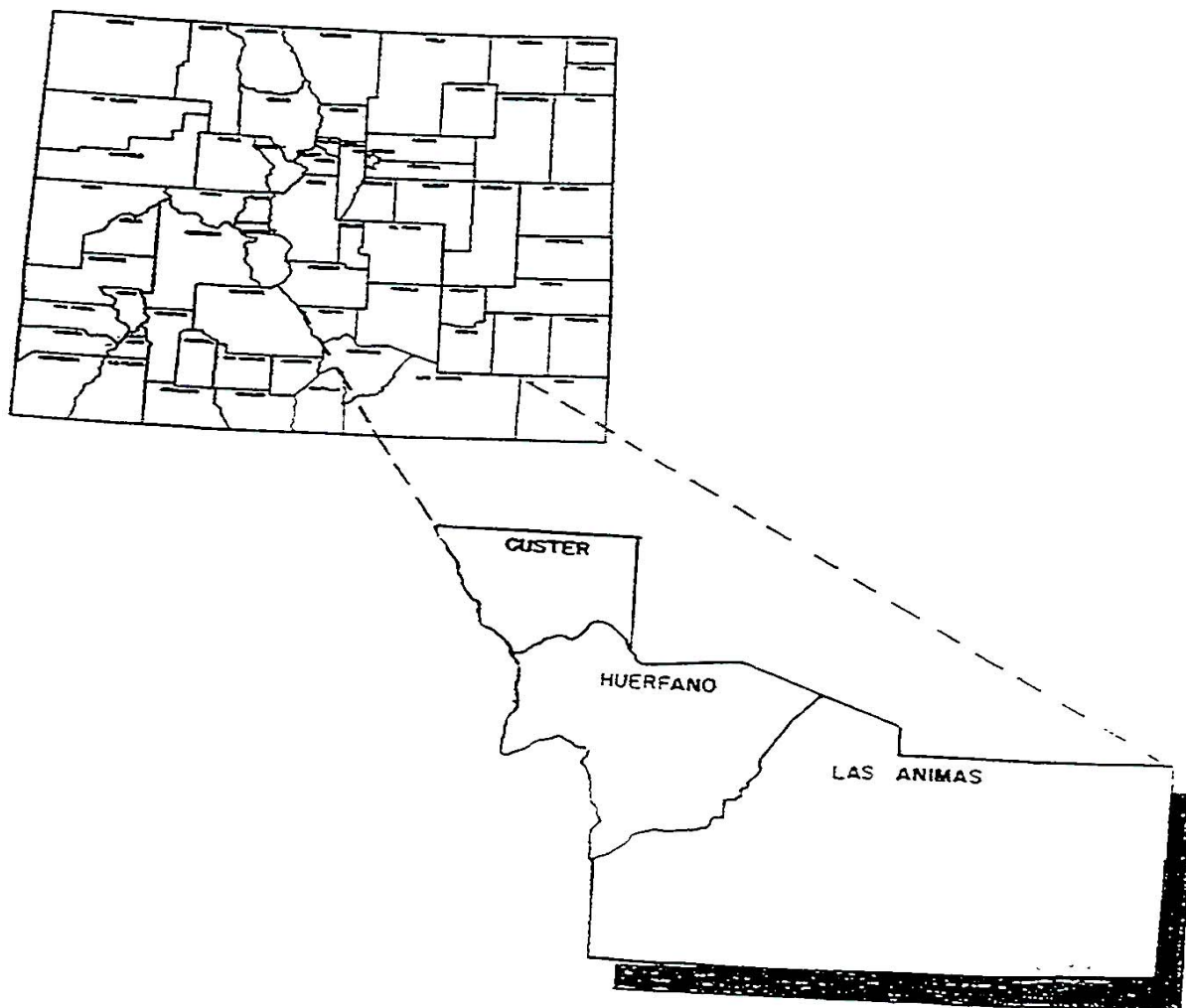
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LAS VEGAS - RATON BASIN

The Las Vegas - Raton Basin is located in the south central area of the state. It includes the following counties:

- Custer**
- Huerfano**
- Las Animas**

Las Vegas – Raton Basin



LAS VEGAS-RATON BASIN BASIC EQUIPMENT LISTS

Total Value Pumping Coal Seams Gas Well with Tanks (Gas Engine)

The basic equipment for a pumping coal seams gas well with two water storage tanks includes:

Pumping Unit	Separator
Gas Engine	400 Barrel Water Storage Tanks (2) with Stairway
Wellhead	Flowlines - 600'
Sucker Rods to Depth	Meter Run with House
Rod Pump	

Very Good**Barrels**

900	108769	110865	112961	115057	117154	119250
800	108769	110865	112961	115057	117154	119250
700	89677	91773	93869	95965	98062	100158
600	82807	84904	87000	89096	91192	93289
500	82807	84904	87000	89096	91192	93289
400	75508	77228	78948	80668	82388	84108
300	68467	70187	71907	73627	75347	77067
200	64360	66080	67800	69520	71240	72960
100	51159	52879	54599	56319	58039	59759
	500	1000	1500	2000	2500	3000

Depth**Average****Barrels**

900	50982	51976	52971	53965	54959	55954
800	50982	51976	52971	53965	54959	55954
700	44833	45827	46822	47816	48810	49805
600	42565	43559	44553	45548	46542	47537
500	42565	43559	44553	45548	46542	47537
400	36883	37690	38496	39302	40108	40915
300	31895	32702	33508	34314	35120	35927
200	30874	31680	32487	33293	34099	34905
100	24123	24929	25736	26542	27348	28154
	500	1000	1500	2000	2500	3000

Depth**Minimum****Barrels**

900	14470	14685	14900	15115	15330	15545
800	14470	14685	14900	15115	15330	15545
700	12932	13147	13362	13577	13792	14007
600	12363	12578	12793	13008	13223	13438
500	12363	12578	12793	13008	13223	13438
400	10987	11191	11395	11599	11804	12008
300	9740	9944	10148	10352	10557	10761
200	9482	9686	9890	10094	10299	10503
100	7794	7998	8202	8407	8611	8815
	500	1000	1500	2000	2500	3000

Depth

LAS VEGAS-RATON BASIN BASIC EQUIPMENT LISTS

Total Value Pumping Coal Seams Gas Well without Tanks (Gas Engine)

The basic equipment for a pumping coal seams gas well without water storage tanks includes:

Pumping Unit	Rod Pump
Gas Engine	Separator
Wellhead	Flowlines - 1000'
Sucker Rods to Depth	Meter Run with House

Very Good**Barrels**

900	89591	91687	93783	95879	97976	100072
800	89591	91687	93783	95879	97976	100072
700	70499	72595	74691	76787	78884	80980
600	63629	65726	67822	69918	72014	74111
500	63629	65726	67822	69918	72014	74111
400	56330	58050	59770	61490	63210	64930
300	49289	51009	52729	54449	56169	57889
200	45182	46902	48622	50342	52062	53782
100	31981	33701	35421	37141	38861	40581
	500	1000	1500	2000	2500	3000

Depth**Average****Barrels**

900	44768	45763	46757	47752	48746	49740
800	44768	45763	46757	47752	48746	49740
700	38619	39614	40608	41603	42597	43591
600	36351	37346	38340	39334	40329	41323
500	36351	37346	38340	39334	40329	41323
400	30670	31476	32282	33089	33895	34701
300	25682	26488	27294	28101	28907	29713
200	24661	25467	26273	27079	27886	28692
100	17910	18716	19522	20328	21135	21941
	500	1000	1500	2000	2500	3000

Depth**Minimum****Barrels**

900	11481	11696	11911	12126	12341	12556
800	11481	11696	11911	12126	12341	12556
700	9944	10159	10374	10589	10804	11019
600	9374	9589	9804	10019	10234	10449
500	9374	9589	9804	10019	10234	10449
400	7998	8202	8407	8611	8815	9019
300	6751	6955	7160	7364	7568	7772
200	6493	6697	6902	7106	7310	7514
100	4805	5010	5214	5418	5622	5827
	500	1000	1500	2000	2500	3000

Depth

LAS VEGAS-RATON BASIN BASIC EQUIPMENT LISTS

Total Value Pumping Coal Seams Gas Well without Tanks (Electric Motor)

The basic equipment for a pumping coal seams gas well without water storage tanks includes:

Pumping Unit	Rod Pump
Electric Motor	Separator
Wellhead	Flowlines - 1000'
Sucker Rods to Depth	Meter Run with House

Very Good**Barrels**

900	78292	80389	82485	84581	86677	88774
800	78292	80389	82485	84581	86677	88774
700	62178	64274	66371	68467	70563	72659
600	56577	58674	60770	62866	64962	67059
500	56577	58674	60770	62866	64962	67059
400	50149	51869	53589	55309	57029	58749
300	43882	45602	47322	49042	50762	52482
200	39807	41527	43247	44967	46687	48407
100	28724	30444	32164	33884	35604	37324
	500	1000	1500	2000	2500	3000

Depth**Average****Barrels**

900	36695	37690	38684	39678	40673	41667
800	36695	37690	38684	39678	40673	41667
700	31879	32874	33868	34862	35857	36851
600	30621	31616	32610	33605	34599	35593
500	30621	31616	32610	33605	34599	35593
400	25908	26714	27520	28326	29133	29939
300	21457	22263	23070	23876	24682	25488
200	20565	21371	22177	22984	23790	24596
100	15115	15921	16727	17533	18340	19146
	500	1000	1500	2000	2500	3000

Depth**Minimum****Barrels**

900	9471	9686	9901	10116	10331	10546
800	9471	9686	9901	10116	10331	10546
700	8267	8482	8697	8912	9127	9342
600	7944	8159	8374	8589	8804	9019
500	7944	8159	8374	8589	8804	9019
400	6816	7020	7224	7428	7633	7837
300	5698	5902	6106	6310	6515	6719
200	5472	5676	5880	6085	6289	6493
100	4107	4311	4515	4719	4924	5128
	500	1000	1500	2000	2500	3000

Depth

LAS VEGAS-RATON BASIN BASIC EQUIPMENT LISTS

Total Value Gas Lift Coal Seams Well with Tanks

The basic equipment for a gas lift coal seams gas well with two water storage tanks includes:

Wellhead
 Separator
 400 Barrel Water Storage Tanks (2)
 Flowlines - 600'
 Meter Run with House

Very Good

Barrels

900	33239	33239	33239	33239	33239	33239
800	33239	33239	33239	33239	33239	33239
700	33239	33239	33239	33239	33239	33239
600	33239	33239	33239	33239	33239	33239
500	33239	33239	33239	33239	33239	33239
400	33239	33239	33239	33239	33239	33239
300	33239	33239	33239	33239	33239	33239
200	33239	33239	33239	33239	33239	33239
100	33239	33239	33239	33239	33239	33239
	500	1000	1500	2000	2500	3000

Depth

Average

Barrels

900	14169	14169	14169	14169	14169	14169
800	14169	14169	14169	14169	14169	14169
700	14169	14169	14169	14169	14169	14169
600	14169	14169	14169	14169	14169	14169
500	14169	14169	14169	14169	14169	14169
400	14169	14169	14169	14169	14169	14169
300	14169	14169	14169	14169	14169	14169
200	14169	14169	14169	14169	14169	14169
100	14169	14169	14169	14169	14169	14169
	500	1000	1500	2000	2500	3000

Depth

Minimum

Barrels

900	5096	5096	5096	5096	5096	5096
800	5096	5096	5096	5096	5096	5096
700	5096	5096	5096	5096	5096	5096
600	5096	5096	5096	5096	5096	5096
500	5096	5096	5096	5096	5096	5096
400	5096	5096	5096	5096	5096	5096
300	5096	5096	5096	5096	5096	5096
200	5096	5096	5096	5096	5096	5096
100	5096	5096	5096	5096	5096	5096
	500	1000	1500	2000	2500	3000

Depth

LAS VEGAS-RATON BASIN BASIC EQUIPMENT LISTS

Total Value Gas Lift Coal Seams Well without Tanks

The basic equipment for a gas lift coal seams gas well without water storage tanks includes:

Wellhead
 Separator
 Flowlines - 1000'
 Meter Run with House

Very Good

Barrels

900	14061	14061	14061	14061	14061	14061
800	14061	14061	14061	14061	14061	14061
700	14061	14061	14061	14061	14061	14061
600	14061	14061	14061	14061	14061	14061
500	14061	14061	14061	14061	14061	14061
400	14061	14061	14061	14061	14061	14061
300	14061	14061	14061	14061	14061	14061
200	14061	14061	14061	14061	14061	14061
100	14061	14061	14061	14061	14061	14061
	500	1000	1500	2000	2500	3000

Depth

Average

Barrels

900	7955	7955	7955	7955	7955	7955
800	7955	7955	7955	7955	7955	7955
700	7955	7955	7955	7955	7955	7955
600	7955	7955	7955	7955	7955	7955
500	7955	7955	7955	7955	7955	7955
400	7955	7955	7955	7955	7955	7955
300	7955	7955	7955	7955	7955	7955
200	7955	7955	7955	7955	7955	7955
100	7955	7955	7955	7955	7955	7955
	500	1000	1500	2000	2500	3000

Depth

Minimum

Barrels

900	2107	2107	2107	2107	2107	2107
800	2107	2107	2107	2107	2107	2107
700	2107	2107	2107	2107	2107	2107
600	2107	2107	2107	2107	2107	2107
500	2107	2107	2107	2107	2107	2107
400	2107	2107	2107	2107	2107	2107
300	2107	2107	2107	2107	2107	2107
200	2107	2107	2107	2107	2107	2107
100	2107	2107	2107	2107	2107	2107
	500	1000	1500	2000	2500	3000

Depth

LAS VEGAS-RATON BASIN BASIC EQUIPMENT LISTS

Total Value ESP Coal Seams Gas Well with Tanks (Electric Motor)

The basic equipment for an ESP coal seams gas well with two water storage tanks includes:

Wellhead	Electric Cable to Depth
Transformer	400 Barrel Water Storage Tanks (2)
Electric Motor	Separator
Submersible Pump	Flowlines - 600'
Equalizer	Meter Run with House
Switch Board	

Very Good**Barrels**

900	54030	54836	55642	56448	57255	58061
800	54030	54836	55642	56448	57255	58061
700	54030	54836	55642	56448	57255	58061
600	51708	52514	53320	54126	54933	55739
500	51708	52514	53320	54126	54933	55739
400	51708	52514	53320	54126	54933	55739
300	51235	52041	52847	53653	54460	55266
200	51235	52041	52847	53653	54460	55266
100	51235	52041	52847	53653	54460	55266
	500	1000	1500	2000	2500	3000

Depth**Average****Barrels**

900	26257	26821	27386	27950	28514	29079
800	26257	26821	27386	27950	28514	29079
700	26257	26821	27386	27950	28514	29079
600	25193	25757	26321	26886	27450	28015
500	25193	25757	26321	26886	27450	28015
400	25193	25757	26321	26886	27450	28015
300	24634	25198	25762	26327	26891	27456
200	24634	25198	25762	26327	26891	27456
100	24634	25198	25762	26327	26891	27456
	500	1000	1500	2000	2500	3000

Depth**Minimum****Barrels**

900	7998	8138	8278	8417	8557	8697
800	7998	8138	8278	8417	8557	8697
700	7998	8138	8278	8417	8557	8697
600	7858	7998	8138	8278	8417	8557
500	7858	7998	8138	8278	8417	8557
400	7858	7998	8138	8278	8417	8557
300	7708	7848	7987	8127	8267	8407
200	7708	7848	7987	8127	8267	8407
100	7708	7848	7987	8127	8267	8407
	500	1000	1500	2000	2500	3000

Depth

LAS VEGAS-RATON BASIN BASIC EQUIPMENT LISTS

Total Value ESP Coal Seams Gas Well without Tanks (Electric Motor)

The basic equipment for an ESP coal seams gas well without water storage tanks includes:

Wellhead	Switchboard
Transformer	Electric Cable to Depth
Electric Motor	Separator
Submersible Pump	Flowlines - 1000'
Equalizer	Meter Run with House

Very Good

Barrels

900	34852	35658	36464	37270	38077	38883
800	34852	35658	36464	37270	38077	38883
700	34852	35658	36464	37270	38077	38883
600	32530	33336	34142	34948	35755	36561
500	32530	33336	34142	34948	35755	36561
400	32530	33336	34142	34948	35755	36561
300	32057	32863	33669	34475	35282	36088
200	32057	32863	33669	34475	35282	36088
100	32057	32863	33669	34475	35282	36088

500 1000 1500 2000 2500 3000

Depth

Average

Barrels

900	20043	20608	21172	21737	22301	22865
800	20043	20608	21172	21737	22301	22865
700	20043	20608	21172	21737	22301	22865
600	18979	19544	20108	20672	21237	21801
500	18979	19544	20108	20672	21237	21801
400	18979	19544	20108	20672	21237	21801
300	18420	18985	19549	20113	20678	21242
200	18420	18985	19549	20113	20678	21242
100	18420	18985	19549	20113	20678	21242

500 1000 1500 2000 2500 3000

Depth

Minimum

Barrels

900	5010	5149	5289	5429	5569	5708
800	5010	5149	5289	5429	5569	5708
700	5010	5149	5289	5429	5569	5708
600	4870	5010	5149	5289	5429	5569
500	4870	5010	5149	5289	5429	5569
400	4870	5010	5149	5289	5429	5569
300	4719	4859	4999	5139	5278	5418
200	4719	4859	4999	5139	5278	5418
100	4719	4859	4999	5139	5278	5418

500 1000 1500 2000 2500 3000

Depth

LAS VEGAS-RATON BASIN BASIC EQUIPMENT LISTS

Total Value Pumping Gas Well with Tanks (Gas Engine)

The basic equipment for a pumping gas well with two oil storage tanks includes:

Pumping Unit	Rod Pump
Gas Engine	Separator (aka: Production Unit)
Wellhead	400 Barrel Oil Storage Tanks (2) with Stairway
Sucker Rods to Depth	Flowlines - 600'
	Meter Run with House

Very Good

Barrels

900	108769	110865	112961	115057	117154	119250
800	108769	110865	112961	115057	117154	119250
700	89677	91773	93869	95965	98062	100158
600	82807	84904	87000	89096	91192	93289
500	82807	84904	87000	89096	91192	93289
400	75508	77228	78948	80668	82388	84108
300	68467	70187	71907	73627	75347	77067
200	64360	66080	67800	69520	71240	72960
100	51159	52879	54599	56319	58039	59759
	500	1000	1500	2000	2500	3000

Depth

Average

Barrels

900	50982	51976	52971	53965	54959	55954
800	50982	51976	52971	53965	54959	55954
700	44833	45827	46822	47816	48810	49805
600	42565	43559	44553	45548	46542	47537
500	42565	43559	44553	45548	46542	47537
400	36883	37690	38496	39302	40108	40915
300	31895	32702	33508	34314	35120	35927
200	30874	31680	32487	33293	34099	34905
100	24123	24929	25736	26542	27348	28154
	500	1000	1500	2000	2500	3000

Depth

Minimum

Barrels

900	14470	14685	14900	15115	15330	15545
800	14470	14685	14900	15115	15330	15545
700	12932	13147	13362	13577	13792	14007
600	12363	12578	12793	13008	13223	13438
500	12363	12578	12793	13008	13223	13438
400	10987	11191	11395	11599	11804	12008
300	9740	9944	10148	10352	10557	10761
200	9482	9686	9890	10094	10299	10503
100	7794	7998	8202	8407	8611	8815
	500	1000	1500	2000	2500	3000

Depth

LAS VEGAS-RATON BASIN BASIC EQUIPMENT LISTS

Total Value Pumping Gas Well without Tanks (Gas Engine)

The basic equipment for a pumping gas well without oil storage tanks includes:

Pumping Unit	Rod Pump
Gas Engine	Separator
Wellhead	Flowlines - 1000'
Sucker Rods to Depth	Meter Run with House

Very Good**Barrels**

900	89591	91687	93783	95879	97976	100072
800	89591	91687	93783	95879	97976	100072
700	70499	72595	74691	76787	78884	80980
600	63629	65726	67822	69918	72014	74111
500	63629	65726	67822	69918	72014	74111
400	56330	58050	59770	61490	63210	64930
300	49289	51009	52729	54449	56169	57889
200	45182	46902	48622	50342	52062	53782
100	31981	33701	35421	37141	38861	40581
	500	1000	1500	2000	2500	3000

Depth**Average****Barrels**

900	44768	45763	46757	47752	48746	49740
800	44768	45763	46757	47752	48746	49740
700	38619	39614	40608	41603	42597	43591
600	36351	37346	38340	39334	40329	41323
500	36351	37346	38340	39334	40329	41323
400	30670	31476	32282	33089	33895	34701
300	25682	26488	27294	28101	28907	29713
200	24661	25467	26273	27079	27886	28692
100	17910	18716	19522	20328	21135	21941
	500	1000	1500	2000	2500	3000

Depth**Minimum****Barrels**

900	11481	11696	11911	12126	12341	12556
800	11481	11696	11911	12126	12341	12556
700	9944	10159	10374	10589	10804	11019
600	9374	9589	9804	10019	10234	10449
500	9374	9589	9804	10019	10234	10449
400	7998	8202	8407	8611	8815	9019
300	6751	6955	7160	7364	7568	7772
200	6493	6697	6902	7106	7310	7514
100	4805	5010	5214	5418	5622	5827
	500	1000	1500	2000	2500	3000

Depth

LAS VEGAS-RATON BASIN BASIC EQUIPMENT LISTS

Progressive Cavity Coal Seams Gas Well with Tanks (Gas Engine)

The basic equipment for a progressive cavity coal seams gas well with two water storage tanks includes:

Wellhead	Gas Engine
Separator	Progressive Cavity Pump
400 Barrel Water Storage Tanks (2)	Sucker Rods to Depth
Flowlines - 600'	Wellhead Drive
Meter Run with House	Miscellaneous Surface Equipment

Very Good

Barrels

900	67714	69811	71907	74003	76099	78196
800	67714	69811	71907	74003	76099	78196
700	67714	69811	71907	74003	76099	78196
600	67714	69811	71907	74003	76099	78196
500	67714	69811	71907	74003	76099	78196
400	52718	54438	56158	57878	62028	63748
300	52718	54438	56158	57878	62028	63748
200	52718	54438	56158	57878	62028	63748
100	52718	54438	56158	57878	62028	63748
	500	1000	1500	2000	2500	3000

Depth

Average

Barrels

900	34653	35647	36641	37636	38630	39625
800	34653	35647	36641	37636	38630	39625
700	34653	35647	36641	37636	38630	39625
600	34653	35647	36641	37636	38630	39625
500	34653	35647	36641	37636	38630	39625
400	25639	26445	27251	28058	30326	31132
300	25639	26445	27251	28058	30326	31132
200	25639	26445	27251	28058	30326	31132
100	25639	26445	27251	28058	30326	31132
	500	1000	1500	2000	2500	3000

Depth

Minimum

Barrels

900	10180	10395	10610	10825	11040	11255
800	10180	10395	10610	10825	11040	11255
700	10180	10395	10610	10825	11040	11255
600	10180	10395	10610	10825	11040	11255
500	10180	10395	10610	10825	11040	11255
400	7977	8181	8385	8589	9159	9363
300	7977	8181	8385	8589	9159	9363
200	7977	8181	8385	8589	9159	9363
100	7977	8181	8385	8589	9159	9363
	500	1000	1500	2000	2500	3000

Depth

LAS VEGAS-RATON BASIN BASIC EQUIPMENT LISTS

Progressive Cavity Coal Seams Gas Well with Tanks (Electric Motor)

The basic equipment for a progressive cavity coal seams gas well with two water storage tanks includes:

Wellhead	Electric Motor
Separator	Progressive Cavity Pump
400 Barrel Water Storage Tanks (2)	Sucker Rods to Depth
Flowlines - 600'	Wellhead Drive
Meter Run with House	Miscellaneous Surface Equipment

Very Good

Barrels

900	59211	61307	63404	65500	67596	69692
800	59211	61307	63404	65500	67596	69692
700	59211	61307	63404	65500	67596	69692
600	59211	61307	63404	65500	67596	69692
500	59211	61307	63404	65500	67596	69692
400	49257	50977	52697	54417	58566	60286
300	49257	50977	52697	54417	58566	60286
200	49257	50977	52697	54417	58566	60286
100	49257	50977	52697	54417	58566	60286
	500	1000	1500	2000	2500	3000

Depth

Average

Barrels

900	29493	30487	31481	32476	33470	34465
800	29493	30487	31481	32476	33470	34465
700	29493	30487	31481	32476	33470	34465
600	29493	30487	31481	32476	33470	34465
500	29493	30487	31481	32476	33470	34465
400	23564	24370	25177	25983	28251	29057
300	23564	24370	25177	25983	28251	29057
200	23564	24370	25177	25983	28251	29057
100	23564	24370	25177	25983	28251	29057
	500	1000	1500	2000	2500	3000

Depth

Minimum

Barrels

900	8890	9105	9320	9535	9750	9965
800	8890	9105	9320	9535	9750	9965
700	8890	9105	9320	9535	9750	9965
600	8890	9105	9320	9535	9750	9965
500	8890	9105	9320	9535	9750	9965
400	7450	7654	7858	8063	8632	8837
300	7450	7654	7858	8063	8632	8837
200	7450	7654	7858	8063	8632	8837
100	7450	7654	7858	8063	8632	8837
	500	1000	1500	2000	2500	3000

Depth

LAS VEGAS-RATON BASIN BASIC EQUIPMENT LISTS

Progressive Cavity Coal Seams Gas Well without Tanks (Gas Engine)

The basic equipment for a progressive cavity coal seams gas well without water storage tanks includes:

Wellhead	Gas Engine
Separator	Progressive Cavity Pump
Flowlines - 1000'	Sucker Rods to Depth
Meter Run with House	Wellhead Drive
	Miscellaneous Surface Equipment

Very Good**Barrels**

900	48536	50633	52729	54825	56921	59018
800	48536	50633	52729	54825	56921	59018
700	48536	50633	52729	54825	56921	59018
600	48536	50633	52729	54825	56921	59018
500	48536	50633	52729	54825	56921	59018
400	33540	35260	36980	38700	42850	44570
300	33540	35260	36980	38700	42850	44570
200	33540	35260	36980	38700	42850	44570
100	33540	35260	36980	38700	42850	44570
	500	1000	1500	2000	2500	3000

Depth**Average****Barrels**

900	28439	29434	30428	31422	32417	33411
800	28439	29434	30428	31422	32417	33411
700	28439	29434	30428	31422	32417	33411
600	28439	29434	30428	31422	32417	33411
500	28439	29434	30428	31422	32417	33411
400	19425	20232	21038	21844	24112	24919
300	19425	20232	21038	21844	24112	24919
200	19425	20232	21038	21844	24112	24919
100	19425	20232	21038	21844	24112	24919
	500	1000	1500	2000	2500	3000

Depth**Minimum****Barrels**

900	7192	7407	7622	7837	8052	8267
800	7192	7407	7622	7837	8052	8267
700	7192	7407	7622	7837	8052	8267
600	7192	7407	7622	7837	8052	8267
500	7192	7407	7622	7837	8052	8267
400	4988	5192	5397	5601	6171	6375
300	4988	5192	5397	5601	6171	6375
200	4988	5192	5397	5601	6171	6375
100	4988	5192	5397	5601	6171	6375
	500	1000	1500	2000	2500	3000

Depth

LAS VEGAS-RATON BASIN BASIC EQUIPMENT LISTS

Progressive Cavity Coal Seams Gas Well without Tanks (Electric Motor)

The basic equipment for a progressive cavity coal seams gas well without water storage tanks includes:

Wellhead	Electric Motor
Separator	Progressive Cavity Pump
Flowlines - 1000'	Sucker Rods to Depth
Meter Run with House	Wellhead Drive
	Miscellaneous Surface Equipment

Very Good**Barrels**

900	40033	42129	44226	46322	48418	50514
800	40033	42129	44226	46322	48418	50514
700	40033	42129	44226	46322	48418	50514
600	40033	42129	44226	46322	48418	50514
500	40033	42129	44226	46322	48418	50514
400	30079	31799	33519	35239	39388	41108
300	30079	31799	33519	35239	39388	41108
200	30079	31799	33519	35239	39388	41108
100	30079	31799	33519	35239	39388	41108
	500	1000	1500	2000	2500	3000

Depth**Average****Barrels**

900	23279	24274	25268	26262	27257	28251
800	23279	24274	25268	26262	27257	28251
700	23279	24274	25268	26262	27257	28251
600	23279	24274	25268	26262	27257	28251
500	23279	24274	25268	26262	27257	28251
400	17351	18157	18963	19769	22038	22844
300	17351	18157	18963	19769	22038	22844
200	17351	18157	18963	19769	22038	22844
100	17351	18157	18963	19769	22038	22844
	500	1000	1500	2000	2500	3000

Depth**Minimum****Barrels**

900	5902	6117	6332	6547	6762	6977
800	5902	6117	6332	6547	6762	6977
700	5902	6117	6332	6547	6762	6977
600	5902	6117	6332	6547	6762	6977
500	5902	6117	6332	6547	6762	6977
400	4461	4666	4870	5074	5644	5848
300	4461	4666	4870	5074	5644	5848
200	4461	4666	4870	5074	5644	5848
100	4461	4666	4870	5074	5644	5848
	500	1000	1500	2000	2500	3000

Depth

LAS VEGAS-RATON BASIN BASIC EQUIPMENT LISTS

Total Value Flowing Gas Well with Tanks

The basic equipment for a flowing gas well with two oil storage tanks includes:

Wellhead
 Separator
 400 Barrel Oil Storage Tanks (2) with Stairway
 Flowlines - 600'

Very Good

MCF

850	29068	29068	29068	29068	29068	29068
750	29068	29068	29068	29068	29068	29068
650	29068	29068	29068	29068	29068	29068
550	29068	29068	29068	29068	29068	29068
450	29068	29068	29068	29068	29068	29068
350	29068	29068	29068	29068	29068	29068
250	29068	29068	29068	29068	29068	29068
150	29068	29068	29068	29068	29068	29068
60	29068	29068	29068	29068	29068	29068
	500	1000	1500	2000	2500	3000

Depth

Average

MCF

850	11890	11890	11890	11890	11890	11890
750	11890	11890	11890	11890	11890	11890
650	11890	11890	11890	11890	11890	11890
550	11890	11890	11890	11890	11890	11890
450	11890	11890	11890	11890	11890	11890
350	11890	11890	11890	11890	11890	11890
250	11890	11890	11890	11890	11890	11890
150	11890	11890	11890	11890	11890	11890
60	11890	11890	11890	11890	11890	11890
	500	1000	1500	2000	2500	3000

Depth

Minimum

MCF

850	4418	4418	4418	4418	4418	4418
750	4418	4418	4418	4418	4418	4418
650	4418	4418	4418	4418	4418	4418
550	4418	4418	4418	4418	4418	4418
450	4418	4418	4418	4418	4418	4418
350	4418	4418	4418	4418	4418	4418
250	4418	4418	4418	4418	4418	4418
150	4418	4418	4418	4418	4418	4418
60	4418	4418	4418	4418	4418	4418
	500	1000	1500	2000	2500	3000

Depth

LAS VEGAS-RATON BASIN BASIC EQUIPMENT LISTS

Total Value Flowing Gas Well without Tanks

The basic equipment for a flowing gas well without oil storage tanks includes:

Wellhead
 Separator
 Flowlines - 1000'

Very Good

MCF

850	9890	9890	9890	9890	9890	9890
750	9890	9890	9890	9890	9890	9890
650	9890	9890	9890	9890	9890	9890
550	9890	9890	9890	9890	9890	9890
450	9890	9890	9890	9890	9890	9890
350	9890	9890	9890	9890	9890	9890
250	9890	9890	9890	9890	9890	9890
150	9890	9890	9890	9890	9890	9890
60	9890	9890	9890	9890	9890	9890
	500	1000	1500	2000	2500	3000

Depth

Average

MCF

850	5676	5676	5676	5676	5676	5676
750	5676	5676	5676	5676	5676	5676
650	5676	5676	5676	5676	5676	5676
550	5676	5676	5676	5676	5676	5676
450	5676	5676	5676	5676	5676	5676
350	5676	5676	5676	5676	5676	5676
250	5676	5676	5676	5676	5676	5676
150	5676	5676	5676	5676	5676	5676
60	5676	5676	5676	5676	5676	5676
	500	1000	1500	2000	2500	3000

Depth

Minimum

MCF

850	1430	1430	1430	1430	1430	1430
750	1430	1430	1430	1430	1430	1430
650	1430	1430	1430	1430	1430	1430
550	1430	1430	1430	1430	1430	1430
450	1430	1430	1430	1430	1430	1430
350	1430	1430	1430	1430	1430	1430
250	1430	1430	1430	1430	1430	1430
150	1430	1430	1430	1430	1430	1430
60	1430	1430	1430	1430	1430	1430
	500	1000	1500	2000	2500	3000

Depth

LAS VEGAS-RATON BASIN BASIC EQUIPMENT LISTS

Total Value Flowing Gas Well without Tanks or Separator

The basic equipment for a flowing gas well without tanks or production unit includes:

Wellhead
Flowlines - 1000'

Very Good

MCF

850	4719	4719	4719	4719	4719	4719
750	4719	4719	4719	4719	4719	4719
650	4719	4719	4719	4719	4719	4719
550	4719	4719	4719	4719	4719	4719
450	4719	4719	4719	4719	4719	4719
350	4719	4719	4719	4719	4719	4719
250	4719	4719	4719	4719	4719	4719
150	4719	4719	4719	4719	4719	4719
60	4719	4719	4719	4719	4719	4719
	500	1000	1500	2000	2500	3000

Depth

Average

MCF

850	3171	3171	3171	3171	3171	3171
750	3171	3171	3171	3171	3171	3171
650	3171	3171	3171	3171	3171	3171
550	3171	3171	3171	3171	3171	3171
450	3171	3171	3171	3171	3171	3171
350	3171	3171	3171	3171	3171	3171
250	3171	3171	3171	3171	3171	3171
150	3171	3171	3171	3171	3171	3171
60	3171	3171	3171	3171	3171	3171
	500	1000	1500	2000	2500	3000

Depth

Minimum

MCF

850	806	806	806	806	806	806
750	806	806	806	806	806	806
650	806	806	806	806	806	806
550	806	806	806	806	806	806
450	806	806	806	806	806	806
350	806	806	806	806	806	806
250	806	806	806	806	806	806
150	806	806	806	806	806	806
60	806	806	806	806	806	806
	500	1000	1500	2000	2500	3000

Depth

LAS VEGAS-RATON BASIN BASIC EQUIPMENT LISTS

Common Tank Battery

The basic equipment for a common tank battery includes:

300 Barrel Oil Storage Tanks with Stairway Separators

Recycle Pump Manifolds and Headers

Very Good

Tanks

10	64425	69596	74766	79937
9	58093	63264	68435	73605
8	51761	56932	62103	67274
7	45430	50600	55771	60942
6	39098	44269	49439	54610
5	32766	37937	43108	48278
4	26434	31605	36776	41947
3	20103	25273	30444	35615
2	13771	18942	24112	29283
1	6332	12610	17781	22951
	Tanks only	With 1 Separator	With 2 Separators	With 3 Separators

For Each Additional Tank Add **6332**
 For Each Additional Separator Add **5171**
 For Each Skimming Tank Add **6515**

For Each Water Tank (Fbrglss) Add **5053**
 For Each Water Tank (Steel) Add **13008**

Average

Tanks

10	32293	34798	37303	39807
9	29133	31637	34142	36647
8	25972	28477	30982	33486
7	22812	25316	27821	30326
6	19651	22156	24661	27165
5	16491	18995	21500	24005
4	13330	15835	18340	20844
3	10170	12674	15179	17684
2	7009	9514	12019	14523
1	3161	6353	8858	11363
	Tanks only	With 1 Separator	With 2 Separators	With 3 Separators

For Each Additional Tank Add **3161**
 For Each Additional Separator Add **2505**
 For Each Skimming Tank Add **3580**

For Each Water Tank (Fbrglss) Add **2784**
 For Each Water Tank (Steel) Add **7149**

Minimum

Tanks

10	14685	15308	15932	16555
9	13233	13857	14480	15104
8	11782	12406	13029	13653
7	10331	10954	11578	12201
6	8880	9503	10127	10750
5	7428	8052	8675	9299
4	5977	6601	7224	7848
3	4526	5149	5773	6396
2	3075	3698	4322	4945
1	1451	2247	2870	3494
	Tanks only	With 1 Separator	With 2 Separators	With 3 Separators

For Each Additional Tank Add **1451**
 For Each Additional Separator Add **624**
 For Each Skimming Tank Add **1290**

For Each Water Tank (Fbrglss) Add **1011**
 For Each Water Tank (Steel) Add **2580**

LAS VEGAS-RATON BASIN BASIC EQUIPMENT LISTS

Total Value Water Injection Well / Water Disposal Well

The basic equipment for a water injection well includes:

Wellhead
Injection lines - 1000'

Very Good

Barrels

900	4719	4719	4719	4719	4719	4719
800	4719	4719	4719	4719	4719	4719
700	4719	4719	4719	4719	4719	4719
600	4719	4719	4719	4719	4719	4719
500	4719	4719	4719	4719	4719	4719
400	4719	4719	4719	4719	4719	4719
300	4719	4719	4719	4719	4719	4719
200	4719	4719	4719	4719	4719	4719
100	4719	4719	4719	4719	4719	4719
	500	1000	1500	2000	2500	3000

Depth

Average

Barrels

900	3171	3171	3171	3171	3171	3171
800	3171	3171	3171	3171	3171	3171
700	3171	3171	3171	3171	3171	3171
600	3171	3171	3171	3171	3171	3171
500	3171	3171	3171	3171	3171	3171
400	3171	3171	3171	3171	3171	3171
300	3171	3171	3171	3171	3171	3171
200	3171	3171	3171	3171	3171	3171
100	3171	3171	3171	3171	3171	3171
	500	1000	1500	2000	2500	3000

Depth

Minimum

Barrels

900	806	806	806	806	806	806
800	806	806	806	806	806	806
700	806	806	806	806	806	806
600	806	806	806	806	806	806
500	806	806	806	806	806	806
400	806	806	806	806	806	806
300	806	806	806	806	806	806
200	806	806	806	806	806	806
100	806	806	806	806	806	806
	500	1000	1500	2000	2500	3000

Depth

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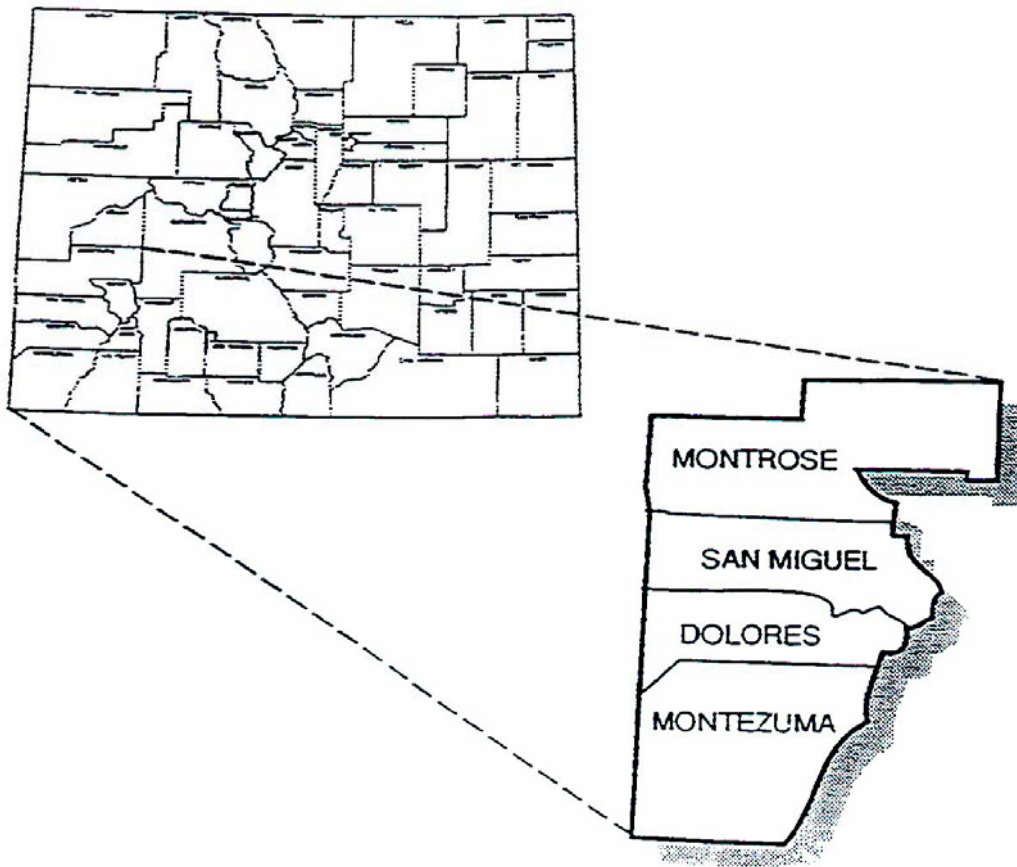
PARADOX BASIN

The Paradox Basin is located in the extreme southwestern part of the state.
It includes the following counties:

Dolores
Montezuma

Montrose
San Miguel

Paradox Basin



Total Value Pumping Oil Well with Tanks (Gas Engine)

The basic equipment for a pumping oil well with two oil storage tanks includes:

Pumping Unit	Sucker Rods to Depth
Gas Engine	Rod Pump
Wellhead	300 Barrel Oil Storage Tanks (2) with Stairway
Heater Treater	Flowlines - 600'

Very Good

Barrels

900	122535	123567	127799									
800	122535	123567	125534	129586								
700	101051	123567	125534	129586								
600	90109	100375	123233	121631	129073							
500	90109	90997	102000	121631	123418	130860						
400	83186	90997	92368	103625	107035	125205	130873	132660				
300	73706	74730	84071	85323	96185	97690	126724	128511	134179			
200	69284	70262	71240	71101	72079	87825	89077	100698	102203	103707	133872	
100	55744	56674	66172	67102	68031	68961	74622	84028	95344	96849	107259	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	Depth

Average

Barrels

900	60945	61219	65291									
800	60945	61219	62149	66158								
700	53856	61219	62149	66158								
600	50357	54156	61654	61837	66530							
500	50357	50424	54952	61837	62703	67397						
400	44864	50424	51114	55747	57328	63570	68146	69012				
300	38823	39362	45126	45752	52674	53411	63878	64745	69320			
200	37587	38096	38605	37942	38451	47003	47629	54887	55625	56362	67345	
100	30527	30992	36004	36469	36934	37399	39867	43675	50432	51170	58078	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	Depth

Minimum

Barrels

900	16891	16954	17993									
800	16891	16954	17179	18205								
700	15134	16954	17179	18205								
600	14361	15209	17060	17130	18299							
500	14361	14380	15402	17130	17342	18512						
400	12995	14380	14562	15595	15999	17555	18692	18904				
300	11520	11668	13096	13262	14851	15033	17627	17840	18976			
200	11183	11320	11457	11304	11441	13595	13761	15398	15580	15763	18477	
100	9410	9535	10800	10925	11050	11175	11862	12670	14301	14483	16130	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	Depth

Total Value Pumping Oil Well without Tanks (Gas Engine)

The basic equipment for a pumping oil well without oil storage tanks includes:

- Pumping Unit
- Gas Engine
- Wellhead
- Sucker Rods to Depth
- Rod Pump
- Flowlines - 1000'

Very Good

Barrels

900	95703	96735	100967									
800	95703	96735	98702	102754								
700	74219	96735	98702	102754								
600	65577	75843	98702	97099	104541							
500	65577	66465	77468	97099	98887	106328						
400	58654	66465	67837	79093	82504	100674	106342	108129				
300	49175	50198	59540	60791	71654	73158	102192	103979	109647			
200	44752	45731	46709	46569	47547	63294	64545	76167	77671	79176	109341	
100	31213	32143	41640	42570	43500	44430	50091	59497	70813	72317	82727	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Average

Barrels

900	46540	46814	50886									
800	46540	46814	47744	51753								
700	39451	46814	47744	51753								
600	36447	40246	47744	47926	52620							
500	36447	36513	41041	47926	48793	53487						
400	30954	36513	37204	41836	43418	49660	54235	55102				
300	24912	25452	31216	31842	38763	39501	49967	50834	55410			
200	23676	24185	24694	24032	24541	33093	33718	40976	41714	42452	53434	
100	16617	17082	22094	22559	23024	23489	25957	29765	36522	37260	44167	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Minimum

Barrels

900	11967	12031	13069									
800	11967	12031	12255	13282								
700	10210	12031	12255	13282								
600	9555	10403	12255	12325	13494							
500	9555	9575	10597	12325	12537	13706						
400	8190	9575	9756	10790	11193	12750	13886	14099				
300	6714	6863	8291	8457	10046	10228	12822	13034	14171			
200	6377	6515	6652	6498	6635	8790	8956	10593	10775	10957	13671	
100	4605	4730	5994	6119	6244	6369	7056	7864	9496	9678	11325	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Total Value Flowing Oil Well with Tanks

The basic equipment for a flowing oil well with two oil storage tanks includes:

- Wellhead
- Heater Treater
- 300 Barrel Oil Storage Tanks (2) with Stairway
- Flowlines - 600'

Very Good

Barrels

900	35335	35335	35335	35335	35335	35335	35335	35335	35335	35335	35335	35335
800	35335	35335	35335	35335	35335	35335	35335	35335	35335	35335	35335	35335
700	35335	35335	35335	35335	35335	35335	35335	35335	35335	35335	35335	35335
600	33035	33035	33035	33035	33035	33035	33035	33035	33035	33035	33035	33035
500	33035	33035	33035	33035	33035	33035	33035	33035	33035	33035	33035	33035
400	33035	33035	33035	33035	33035	33035	33035	33035	33035	33035	33035	33035
300	33035	33035	33035	33035	33035	33035	33035	33035	33035	33035	33035	33035
200	33035	33035	33035	33035	33035	33035	33035	33035	33035	33035	33035	33035
100	33035	33035	33035	33035	33035	33035	33035	33035	33035	33035	33035	33035
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Average

Barrels

900	18619	18619	18619	18619	18619	18619	18619	18619	18619	18619	18619	18619
800	18619	18619	18619	18619	18619	18619	18619	18619	18619	18619	18619	18619
700	18619	18619	18619	18619	18619	18619	18619	18619	18619	18619	18619	18619
600	18125	18125	18125	18125	18125	18125	18125	18125	18125	18125	18125	18125
500	18125	18125	18125	18125	18125	18125	18125	18125	18125	18125	18125	18125
400	18125	18125	18125	18125	18125	18125	18125	18125	18125	18125	18125	18125
300	18125	18125	18125	18125	18125	18125	18125	18125	18125	18125	18125	18125
200	18125	18125	18125	18125	18125	18125	18125	18125	18125	18125	18125	18125
100	18125	18125	18125	18125	18125	18125	18125	18125	18125	18125	18125	18125
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Minimum

Barrels

900	6160	6160	6160	6160	6160	6160	6160	6160	6160	6160	6160	6160
800	6160	6160	6160	6160	6160	6160	6160	6160	6160	6160	6160	6160
700	6160	6160	6160	6160	6160	6160	6160	6160	6160	6160	6160	6160
600	6042	6042	6042	6042	6042	6042	6042	6042	6042	6042	6042	6042
500	6042	6042	6042	6042	6042	6042	6042	6042	6042	6042	6042	6042
400	6042	6042	6042	6042	6042	6042	6042	6042	6042	6042	6042	6042
300	6042	6042	6042	6042	6042	6042	6042	6042	6042	6042	6042	6042
200	6042	6042	6042	6042	6042	6042	6042	6042	6042	6042	6042	6042
100	6042	6042	6042	6042	6042	6042	6042	6042	6042	6042	6042	6042
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Total Value Flowing Oil Well without Tanks

The basic equipment for a flowing oil well without oil storage tanks includes:

Wellhead
Flowlines - 1000'

**Very Good
Barrels**

900	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
800	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
700	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
600	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
500	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
400	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
300	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
200	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
100	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

**Average
Barrels**

900	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
800	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
700	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
600	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
500	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
400	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
300	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
200	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
100	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

**Minimum
Barrels**

900	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
800	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
700	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
600	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
500	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
400	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
300	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
200	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
100	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Total Value Pumping Gas Well with Tank (Gas Engine)

The basic equipment for a pumping gas well with one oil storage tank includes:

Pumping Unit	Rod Pump
Gas Engine	Production Unit
Wellhead	300 Barrel Oil Storage Tank (1) with Stairway
Sucker Rods to Depth	Flowlines - 600'

Very Good

Barrels

900	112129	113161	117393									
800	112129	113161	115128	119180								
700	90645	113161	115128	119180								
600	82003	92269	115128	113525	120967							
500	82003	82891	93894	113525	115313	122754						
400	75080	82891	84263	95519	98930	117100	122768	124555				
300	65601	66624	75966	77217	88080	89584	118618	120405	126073			
200	61178	62157	63135	62995	63973	79720	80971	92593	94097	95602	125767	
100	47639	48569	58066	58996	59926	60856	66517	75923	87239	88743	99153	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Average

Barrels

900	54947	55221	59293									
800	54947	55221	56150	60160								
700	47857	55221	56150	60160								
600	44853	48652	56150	56333	61026							
500	44853	44920	49448	56333	57199	61893						
400	39360	44920	45610	50243	51824	58066	62642	63508				
300	33319	33858	39622	40248	47170	47907	58374	59241	63816			
200	32083	32592	33101	32438	32947	41499	42125	49383	50121	50858	61841	
100	25023	25488	30500	30965	31430	31895	34363	38171	44928	45666	52574	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Minimum

Barrels

900	14719	14783	15821									
800	14719	14783	15007	16034								
700	12962	14783	15007	16034								
600	12307	13155	15007	15077	16246							
500	12307	12327	13349	15077	15289	16458						
400	10942	12327	12508	13542	13945	15502	16638	16851				
300	9466	9615	11043	11209	12798	12980	15574	15786	16923			
200	9129	9267	9404	9250	9387	11542	11708	13345	13527	13709	16423	
100	7357	7482	8746	8871	8996	9121	9808	10616	12248	12430	14077	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Total Value Pumping Gas Well without Tank (Gas Engine)

The basic equipment for a pumping gas well without oil storage tank includes:

- Pumping Unit
- Gas Engine
- Wellhead
- Rod Pump
- Flowlines - 1000'
- Sucker Rods to Depth

Very Good

Barrels

900	107152	108184	112415									
800	107152	108184	110150	114203								
700	85667	108184	110150	114203								
600	77026	87292	110150	108548	115990							
500	77026	77914	88917	108548	110335	117777						
400	70103	77914	79286	90542	93952	112123	117790	119578				
300	60624	61647	70989	72240	83102	84607	113641	115428	121096			
200	56201	57179	58158	58018	58996	74743	75994	87616	89120	90625	120790	
100	42661	43591	53089	54019	54949	55879	61539	70946	82262	83766	94176	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Average

Barrels

900	52732	53006	57078									
800	52732	53006	53936	57945								
700	45643	53006	53936	57945								
600	42639	46438	53936	54118	58812							
500	42639	42705	47233	54118	54985	59679						
400	37146	42705	43396	48028	49610	55852	60427	61294				
300	31104	31644	37408	38034	44955	45693	56159	57026	61602			
200	29868	30377	30886	30224	30733	39285	39910	47168	47906	48644	59626	
100	22809	23274	28286	28751	29216	29681	32149	35957	42714	43452	50359	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Minimum

Barrels

900	13504	13568	14607									
800	13504	13568	13792	14819								
700	11747	13568	13792	14819								
600	11093	11941	13792	13862	15031							
500	11093	11112	12134	13862	14074	15244						
400	9727	11112	11294	12327	12731	14287	15424	15636				
300	8252	8400	9828	9994	11583	11765	14359	14572	15708			
200	7915	8052	8189	8036	8173	10327	10493	12130	12312	12495	15209	
100	6142	6267	7532	7657	7782	7907	8594	9402	11033	11215	12862	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Total Value Flowing Gas Well with Tank

The basic equipment for a flowing gas well with one oil storage tank includes:

- Wellhead
- Production Unit
- 300 Barrel Oil Storage Tank (1) with Stairway
- Flowlines - 600'

Very Good

MCF

850	24929	24929	24929	24929	24929	24929	24929	24929	24929	24929	24929
750	24929	24929	24929	24929	24929	24929	24929	24929	24929	24929	24929
650	24929	24929	24929	24929	24929	24929	24929	24929	24929	24929	24929
550	24929	24929	24929	24929	24929	24929	24929	24929	24929	24929	24929
450	24929	24929	24929	24929	24929	24929	24929	24929	24929	24929	24929
350	24929	24929	24929	24929	24929	24929	24929	24929	24929	24929	24929
250	24929	24929	24929	24929	24929	24929	24929	24929	24929	24929	24929
150	24929	24929	24929	24929	24929	24929	24929	24929	24929	24929	24929
60	24929	24929	24929	24929	24929	24929	24929	24929	24929	24929	24929
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

Average

MCF

850	12621	12621	12621	12621	12621	12621	12621	12621	12621	12621	12621
750	12621	12621	12621	12621	12621	12621	12621	12621	12621	12621	12621
650	12621	12621	12621	12621	12621	12621	12621	12621	12621	12621	12621
550	12621	12621	12621	12621	12621	12621	12621	12621	12621	12621	12621
450	12621	12621	12621	12621	12621	12621	12621	12621	12621	12621	12621
350	12621	12621	12621	12621	12621	12621	12621	12621	12621	12621	12621
250	12621	12621	12621	12621	12621	12621	12621	12621	12621	12621	12621
150	12621	12621	12621	12621	12621	12621	12621	12621	12621	12621	12621
60	12621	12621	12621	12621	12621	12621	12621	12621	12621	12621	12621
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

Minimum

MCF

850	3988	3988	3988	3988	3988	3988	3988	3988	3988	3988	3988
750	3988	3988	3988	3988	3988	3988	3988	3988	3988	3988	3988
650	3988	3988	3988	3988	3988	3988	3988	3988	3988	3988	3988
550	3988	3988	3988	3988	3988	3988	3988	3988	3988	3988	3988
450	3988	3988	3988	3988	3988	3988	3988	3988	3988	3988	3988
350	3988	3988	3988	3988	3988	3988	3988	3988	3988	3988	3988
250	3988	3988	3988	3988	3988	3988	3988	3988	3988	3988	3988
150	3988	3988	3988	3988	3988	3988	3988	3988	3988	3988	3988
60	3988	3988	3988	3988	3988	3988	3988	3988	3988	3988	3988
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

Total Value Flowing Gas Well without Tanks

The basic equipment for a flowing gas well without oil storage tanks includes:

- Wellhead
- Production Unit
- Flowlines - 1000'

**Very Good
MCF**

850	19952	19952	19952	19952	19952	19952	19952	19952	19952	19952	19952
750	19952	19952	19952	19952	19952	19952	19952	19952	19952	19952	19952
650	19952	19952	19952	19952	19952	19952	19952	19952	19952	19952	19952
550	19952	19952	19952	19952	19952	19952	19952	19952	19952	19952	19952
450	19952	19952	19952	19952	19952	19952	19952	19952	19952	19952	19952
350	19952	19952	19952	19952	19952	19952	19952	19952	19952	19952	19952
250	19952	19952	19952	19952	19952	19952	19952	19952	19952	19952	19952
150	19952	19952	19952	19952	19952	19952	19952	19952	19952	19952	19952
60	19952	19952	19952	19952	19952	19952	19952	19952	19952	19952	19952
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

**Average
MCF**

850	10406	10406	10406	10406	10406	10406	10406	10406	10406	10406	10406
750	10406	10406	10406	10406	10406	10406	10406	10406	10406	10406	10406
650	10406	10406	10406	10406	10406	10406	10406	10406	10406	10406	10406
550	10406	10406	10406	10406	10406	10406	10406	10406	10406	10406	10406
450	10406	10406	10406	10406	10406	10406	10406	10406	10406	10406	10406
350	10406	10406	10406	10406	10406	10406	10406	10406	10406	10406	10406
250	10406	10406	10406	10406	10406	10406	10406	10406	10406	10406	10406
150	10406	10406	10406	10406	10406	10406	10406	10406	10406	10406	10406
60	10406	10406	10406	10406	10406	10406	10406	10406	10406	10406	10406
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

**Minimum
MCF**

850	2774	2774	2774	2774	2774	2774	2774	2774	2774	2774	2774
750	2774	2774	2774	2774	2774	2774	2774	2774	2774	2774	2774
650	2774	2774	2774	2774	2774	2774	2774	2774	2774	2774	2774
550	2774	2774	2774	2774	2774	2774	2774	2774	2774	2774	2774
450	2774	2774	2774	2774	2774	2774	2774	2774	2774	2774	2774
350	2774	2774	2774	2774	2774	2774	2774	2774	2774	2774	2774
250	2774	2774	2774	2774	2774	2774	2774	2774	2774	2774	2774
150	2774	2774	2774	2774	2774	2774	2774	2774	2774	2774	2774
60	2774	2774	2774	2774	2774	2774	2774	2774	2774	2774	2774
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

Total Value Flowing Gas Well without Tanks or Production Unit

The basic equipment for a flowing gas well without production unit & tanks includes:

Wellhead
Flowlines - 1000'

**Very Good
MCF**

850	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
750	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
650	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
550	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
450	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
350	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
250	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
150	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
60	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

**Average
MCF**

850	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
750	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
650	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
550	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
450	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
350	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
250	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
150	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
60	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

**Minimum
MCF**

850	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
750	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
650	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
550	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
450	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
350	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
250	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
150	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
60	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

PARADOX BASIN BASIC EQUIPMENT LISTS

Common Tank Battery

The basic equipment for a common tank battery includes:

- 300 Barrel Oil Storage Tanks with Stairway
- Heater Treaters
- Separators
- Recycle Pump
- Manifolds and Headers

Very Good

Tanks

10	64425	79948	85119	95471	100642	105812	121335	126506
9	58093	73616	78787	89139	94310	99481	115004	120174
8	51761	64984	70155	78206	83377	93149	108672	113843
7	45430	58652	63823	71875	77045	86817	102340	107511
6	39098	52320	57491	65543	70714	75884	89107	94278
5	32766	45989	51159	59211	64382	69553	82775	87946
4	26434	39657	44828	52879	58050	63221	76443	81614
3	20103	33325	38496	46548	51718	56889	70112	75282
2	13771	26993	32164	40216	45387	50557	63780	68951
1	6332	20662	25832	33884	39055	44226	57448	62619

Tanks only	With 1 Heater Treater	With 1 Heater Treater and 1 Separator	With 2 Heater Treater	With 2 Heater Treater and 1 Separators	With 2 Heater Treater and 2 Separators	With 3 Heater Treater and 2 Separators	With 3 Heater Treater and 3 Separators
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For Each Additional Tank	Adc	6332	For Each Skimming Tank	Add	6515
For Each Additional Separator	Adc	5171	For Each Water Tank (Fbrgls)	Add	5053
For Each Additional Heater/Treater	Adc	15523	For Each Water Tank (Steel)	Add	13008

Average

Tanks

10	32293	41323	43828	50353	52858	55363	64393	66897
9	29133	38163	40667	47193	49697	52202	61232	63737
8	25972	34508	37012	43043	45548	49042	58072	60576
7	22812	31347	33852	39883	42387	45881	54911	57416
6	19651	28187	30691	36722	39227	41732	50267	52772
5	16491	25026	27531	33562	36066	38571	47107	49611
4	13330	21866	24370	30401	32906	35411	43946	46451
3	10170	18705	21210	27241	29745	32250	40786	43290
2	7009	15545	18049	24080	26585	29090	37625	40130
1	3161	12384	14889	20920	23424	25929	34465	36969

Tanks only	With 1 Heater Treater	With 1 Heater Treater and 1 Separator	With 2 Heater Treater	With 2 Heater Treater and 1 Separators	With 2 Heater Treater and 2 Separators	With 3 Heater Treater and 2 Separators	With 3 Heater Treater and 3 Separators
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For Each Additional Tank	Adc	3161	For Each Skimming Tank	Add	3580
For Each Additional Separator	Adc	2505	For Each Water Tank (Fbrgls)	Add	2784
For Each Additional Heater/Treater	Adc	9030	For Each Water Tank (Steel)	Add	7149

Minimum

Tanks

10	14685	16942	17566	19200	19823	20447	22704	23328
9	13233	15491	16114	17748	18372	18995	21253	21876
8	11782	13921	14545	16061	16684	17544	19802	20425
7	10331	12470	13094	14609	15233	16093	18350	18974
6	8880	11019	11642	13158	13782	14405	16544	17168
5	7428	9568	10191	11707	12330	12954	15093	15717
4	5977	8116	8740	10256	10879	11503	13642	14265
3	4526	6665	7289	8804	9428	10051	12191	12814
2	3075	5214	5837	7353	7977	8600	10739	11363
1	1451	3763	4386	5902	6525	7149	9288	9912

Tanks only	With 1 Heater Treater	With 1 Heater Treater and 1 Separators	With 2 Heater Treater	With 2 Heater Treater and 1 Separators	With 2 Heater Treater and 2 Separators	With 3 Heater Treater and 2 Separators	With 3 Heater Treater and 3 Separators
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For Each Additional Tank	Adc	1451	For Each Skimming Tank	Add	1290
For Each Additional Separator	Adc	624	For Each Water Tank (Fbrgls)	Add	1011
For Each Additional Heater/Treater	Adc	2258	For Each Water Tank (Steel)	Add	2580

Total Value Water Injection Well / Water Disposal Well

The basic equipment for a water injection well includes:

- Wellhead
- Injection lines - 1000'

Very Good

Barrels

900	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
800	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
700	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
600	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
500	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
400	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
300	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
200	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
100	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

Average

Barrels

900	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
800	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
700	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
600	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
500	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
400	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
300	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
200	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
100	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

Minimum

Barrels

900	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
800	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
700	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
600	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
500	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
400	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
300	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
200	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
100	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

Total Value ESP Water Supply Well

The basic equipment for an electric submersible pump water supply well includes:

- | | |
|------------------|-------------------------|
| Transformer | Equalizer |
| Submersible Pump | Switchboard |
| Electric Motor | Electric Cable to Depth |
| Wellhead | Flowlines - 1000' |

Very Good

Barrels	1000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500
4100		65247	66123	66999	67876	68752	69628	70504	71380	72256	73132	74008
3800		60162	61039	61915	62791	63667	64543	65419	66295	67171	68048	68924
3400		55943	56749	57556	58362	59168	59974	60781	61587	62393	63199	64006
2800		54782	55588	56395	57201	58007	58813	59620	60426	61232	62038	62845
2300		50724	51530	52336	53143	53949	54755	55561	56368	57174	57980	58786
1900		49751	50557	51364	52170	52976	53782	54589	55395	56201	57007	57814
1600		46752	47558	48364	49171	49977	50783	51589	52396	53202	54008	54814
1100		41538	42344	43151	43957	44763	45569	46376	47182	47988	48794	49601
800	37163	41194	42000	42807	43613	44419	45225	46032	46838	47644	48450	49257
600	34841	38872	39678	40485	41291	42097	42903	43710	44516	45322	46128	46935
350	34368	38399	39205	40012	40818	41624	42430	43237	44043	44849	45655	46462

Depth

Average

Barrels	1000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500
4100		43355	43968	44580	45193	45806	46419	47031	47644	48257	48870	49482
3800		38378	38990	39603	40216	40829	41441	42054	42667	43280	43892	44505
3400		35427	35991	36555	37120	37684	38249	38813	39377	39942	40506	41070
2800		35427	35991	36555	37120	37684	38249	38813	39377	39942	40506	41070
2300		31997	32562	33126	33691	34255	34819	35384	35948	36512	37077	37641
1900		29729	30294	30858	31422	31987	32551	33115	33680	34244	34809	35373
1600		27676	28240	28805	29369	29933	30498	31062	31627	32191	32755	33320
1100		23956	24521	25085	25650	26214	26778	27343	27907	28471	29036	29600
800	21135	23956	24521	25085	25650	26214	26778	27343	27907	28471	29036	29600
600	20070	22892	23457	24021	24585	25150	25714	26278	26843	27407	27972	28536
350	19511	22333	22898	23462	24026	24591	25155	25719	26284	26848	27413	27977

Depth

Minimum

Barrels	1000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500
4100		10196	10352	10508	10664	10820	10976	11132	11288	11443	11599	11755
3800		9637	9793	9949	10105	10261	10417	10573	10729	10884	11040	11196
3400		8869	9009	9148	9288	9428	9568	9707	9847	9987	10127	10266
2800		8643	8783	8923	9062	9202	9342	9482	9621	9761	9901	10041
2300		8009	8149	8288	8428	8568	8708	8847	8987	9127	9267	9406
1900		7450	7590	7729	7869	8009	8149	8288	8428	8568	8708	8847
1600		6945	7084	7224	7364	7504	7643	7783	7923	8063	8202	8342
1100		5999	6138	6278	6418	6558	6697	6837	6977	7117	7256	7396
800	5182	5880	6020	6160	6300	6439	6579	6719	6859	6998	7138	7278
600	5042	5741	5880	6020	6160	6300	6439	6579	6719	6859	6998	7138
350	4891	5590	5730	5870	6009	6149	6289	6429	6568	6708	6848	6988

Depth

Total Value Pumping Water Supply Well (Gas Engine)

The basic equipment for a pumping water supply well includes:

Pumping Unit	Sucker Rods to Depth
Wellhead	Rod Pump
Gas Engine	Flowlines - 1000'

Very Good

Barrels

900	95703	96735	100967									
800	95703	96735	98702	102754								
700	74219	96735	98702	102754								
600	65577	75843	98702	97099	104541							
500	65577	66465	77468	97099	98887	106328						
400	58654	66465	67837	79093	82504	100674	106342	108129				
300	49175	50198	59540	60791	71654	73158	102192	103979	109647			
200	44752	45731	46709	46569	47547	63294	64545	76167	77671	79176	109341	
100	31213	32143	41640	42570	43500	44430	50091	59497	70813	72317	82727	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Average

Barrels

900	46540	46814	50886									
800	46540	46814	47744	51753								
700	39451	46814	47744	51753								
600	36447	40246	47744	47926	52620							
500	36447	36513	41041	47926	48793	53487						
400	30954	36513	37204	41836	43418	49660	54235	55102				
300	24912	25452	31216	31842	38763	39501	49967	50834	55410			
200	23676	24185	24694	24032	24541	33093	33718	40976	41714	42452	53434	
100	16617	17082	22094	22559	23024	23489	25957	29765	36522	37260	44167	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Minimum

Barrels

900	11967	12031	13069									
800	11967	12031	12255	13282								
700	10210	12031	12255	13282								
600	9555	10403	12255	12325	13494							
500	9555	9575	10597	12325	12537	13706						
400	8190	9575	9756	10790	11193	12750	13886	14099				
300	6714	6863	8291	8457	10046	10228	12822	13034	14171			
200	6377	6515	6652	6498	6635	8790	8956	10593	10775	10957	13671	
100	4605	4730	5994	6119	6244	6369	7056	7864	9496	9678	11325	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Total Value Flowing Gas Well with Dehydrator and with Tanks

The basic equipment for a flowing gas well with a dehydrator and with one oil storage tank includes:

Wellhead	300 Barrel Oil Storage Tank (1) with Stairway
Production Unit	Flowlines - 600'
Dehydrator	

**Very Good
MCF**

850	39560	39560	39560	39560	39560	39560	39560	39560	39560	39560	39560
750	39560	39560	39560	39560	39560	39560	39560	39560	39560	39560	39560
650	39560	39560	39560	39560	39560	39560	39560	39560	39560	39560	39560
550	39560	39560	39560	39560	39560	39560	39560	39560	39560	39560	39560
450	39560	39560	39560	39560	39560	39560	39560	39560	39560	39560	39560
350	39560	39560	39560	39560	39560	39560	39560	39560	39560	39560	39560
250	39560	39560	39560	39560	39560	39560	39560	39560	39560	39560	39560
150	39560	39560	39560	39560	39560	39560	39560	39560	39560	39560	39560
60	39560	39560	39560	39560	39560	39560	39560	39560	39560	39560	39560
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

**Average
MCF**

850	21135	21135	21135	21135	21135	21135	21135	21135	21135	21135	21135
750	21135	21135	21135	21135	21135	21135	21135	21135	21135	21135	21135
650	21135	21135	21135	21135	21135	21135	21135	21135	21135	21135	21135
550	21135	21135	21135	21135	21135	21135	21135	21135	21135	21135	21135
450	21135	21135	21135	21135	21135	21135	21135	21135	21135	21135	21135
350	21135	21135	21135	21135	21135	21135	21135	21135	21135	21135	21135
250	21135	21135	21135	21135	21135	21135	21135	21135	21135	21135	21135
150	21135	21135	21135	21135	21135	21135	21135	21135	21135	21135	21135
60	21135	21135	21135	21135	21135	21135	21135	21135	21135	21135	21135
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

**Minimum
MCF**

850	6117	6117	6117	6117	6117	6117	6117	6117	6117	6117	6117
750	6117	6117	6117	6117	6117	6117	6117	6117	6117	6117	6117
650	6117	6117	6117	6117	6117	6117	6117	6117	6117	6117	6117
550	6117	6117	6117	6117	6117	6117	6117	6117	6117	6117	6117
450	6117	6117	6117	6117	6117	6117	6117	6117	6117	6117	6117
350	6117	6117	6117	6117	6117	6117	6117	6117	6117	6117	6117
250	6117	6117	6117	6117	6117	6117	6117	6117	6117	6117	6117
150	6117	6117	6117	6117	6117	6117	6117	6117	6117	6117	6117
60	6117	6117	6117	6117	6117	6117	6117	6117	6117	6117	6117
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

Total Value Flowing Gas Well with Dehydrator and without Tanks

The basic equipment for a flowing gas well with a dehydrator and without oil storage tanks includes:

Wellhead
Production Unit

Dehydrator
Flowlines - 1000'

**Very Good
MCF**

850	34583	34583	34583	34583	34583	34583	34583	34583	34583	34583	34583
750	34583	34583	34583	34583	34583	34583	34583	34583	34583	34583	34583
650	34583	34583	34583	34583	34583	34583	34583	34583	34583	34583	34583
550	34583	34583	34583	34583	34583	34583	34583	34583	34583	34583	34583
450	34583	34583	34583	34583	34583	34583	34583	34583	34583	34583	34583
350	34583	34583	34583	34583	34583	34583	34583	34583	34583	34583	34583
250	34583	34583	34583	34583	34583	34583	34583	34583	34583	34583	34583
150	34583	34583	34583	34583	34583	34583	34583	34583	34583	34583	34583
60	34583	34583	34583	34583	34583	34583	34583	34583	34583	34583	34583
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500
											Depth

**Average
MCF**

850	18920	18920	18920	18920	18920	18920	18920	18920	18920	18920	18920
750	18920	18920	18920	18920	18920	18920	18920	18920	18920	18920	18920
650	18920	18920	18920	18920	18920	18920	18920	18920	18920	18920	18920
550	18920	18920	18920	18920	18920	18920	18920	18920	18920	18920	18920
450	18920	18920	18920	18920	18920	18920	18920	18920	18920	18920	18920
350	18920	18920	18920	18920	18920	18920	18920	18920	18920	18920	18920
250	18920	18920	18920	18920	18920	18920	18920	18920	18920	18920	18920
150	18920	18920	18920	18920	18920	18920	18920	18920	18920	18920	18920
60	18920	18920	18920	18920	18920	18920	18920	18920	18920	18920	18920
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500
											Depth

**Minimum
MCF**

850	4902	4902	4902	4902	4902	4902	4902	4902	4902	4902	4902
750	4902	4902	4902	4902	4902	4902	4902	4902	4902	4902	4902
650	4902	4902	4902	4902	4902	4902	4902	4902	4902	4902	4902
550	4902	4902	4902	4902	4902	4902	4902	4902	4902	4902	4902
450	4902	4902	4902	4902	4902	4902	4902	4902	4902	4902	4902
350	4902	4902	4902	4902	4902	4902	4902	4902	4902	4902	4902
250	4902	4902	4902	4902	4902	4902	4902	4902	4902	4902	4902
150	4902	4902	4902	4902	4902	4902	4902	4902	4902	4902	4902
60	4902	4902	4902	4902	4902	4902	4902	4902	4902	4902	4902
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500
											Depth

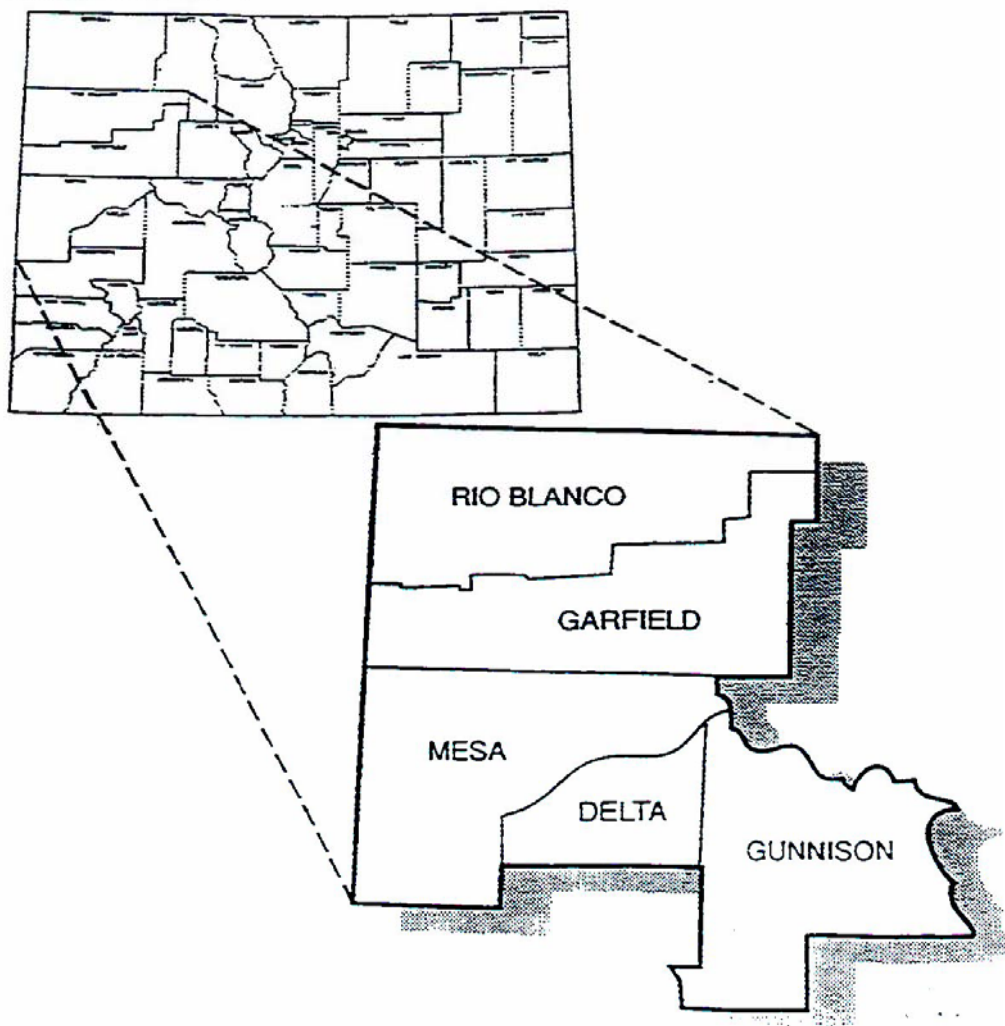
PICEANCE BASIN

The Piceance Basin is located on the western slope. It includes the following counties:

**Delta
Garfield
Gunnison**

**Mesa
Rio Blanco**

Piceance Basin



PICEANCE BASIN BASIC EQUIPMENT LISTS

Total Value Pumping Oil Well with Tanks (Gas Engine)

The basic equipment for a pumping oil well with two oil storage tanks includes:

Pumping Unit	Sucker Rods to Depth
Gas Engine	Rod Pump
Wellhead	400 Barrel Oil Storage Tanks (2) with Stairway
Heater Treater	Flowlines - 600'

**Very Good
Barrels**

900	130404	131436	135668									
800	130404	131436	133403	137455								
700	108920	131436	133403	137455								
600	97978	108244	131102	129500	136942							
500	97978	98866	109869	129500	131287	138729						
400	91055	98866	100237	111494	114904	133074	138742	140529				
300	81575	82599	91940	93192	104054	105559	134593	136380	142048			
200	77153	78131	79109	78970	79948	95694	96946	108567	110072	111576	141741	
100	63613	64543	74041	74971	75900	76830	82491	91897	103213	104718	115128	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	Depth

**Average
Barrels**

900	61784	62058	66130									
800	61784	62058	62987	66997								
700	54694	62058	62987	66997								
600	51196	54995	62493	62675	67369							
500	51196	51262	55790	62675	63542	68236						
400	45703	51262	51953	56585	58167	64409	68984	69851				
300	39661	40201	45965	46591	53512	54250	64716	65583	70159			
200	38425	38934	39443	38781	39290	47842	48467	55725	56463	57201	68183	
100	31366	31831	36843	37308	37773	38238	40706	44514	51271	52009	58916	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	Depth

**Minimum
Barrels**

900	17213	17277	18315									
800	17213	17277	17501	18528								
700	15456	17277	17501	18528								
600	14683	15531	17383	17453	18622							
500	14683	14703	15724	17453	17665	18834						
400	13318	14703	14884	15918	16321	17877	19014	19226				
300	11842	11991	13418	13585	15174	15356	17950	18162	19299			
200	11505	11642	11779	11626	11763	13917	14084	15720	15903	16085	18799	
100	9733	9858	11122	11247	11372	11497	12184	12992	14623	14806	16453	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	Depth

PICEANCE BASIN BASIC EQUIPMENT LISTS

Total Value Pumping Oil Well with Tanks (Electric Motor)

The basic equipment for a pumping oil well with two oil storage tanks includes:

Pumping Unit	Sucker Rods to Depth
Electric Motor	Rod Pump
Control Panel	400 Barrel Oil Storage Tanks (2) with Stairway
Wellhead	Flowlines - 600'
Heater Treater	

Very Good

Barrels

900	120665	122632	126863									
800	120665	122632	124598	128651								
700	102158	122632	124598	128651								
600	92484	101482	122298	122469	128137							
500	92484	93856	103107	122469	124257	129925						
400	86432	93856	95228	104732	108142	126044	131712	133499				
300	77727	78750	88092	89343	99432	100936	127831	129618	135286			
200	73337	74315	75293	76271	77250	91846	93097	103945	105449	106954	134980	
100	61915	62845	71342	72272	73202	74132	79793	88081	99397	100902	110505	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	Depth

Average

Barrels

900	54484	55414	59486									
800	54484	55414	56344	60353								
700	48728	55414	56344	60353								
600	46240	49029	55849	56150	60725							
500	46240	46930	49824	56150	57017	61592						
400	41714	46930	47620	50619	52201	57883	62459	63326				
300	36210	36750	42514	43140	49524	50262	58750	59617	64192			
200	35104	35613	36122	36631	37140	44391	45017	51737	52475	53213	62217	
100	29345	29810	34693	35158	35623	36088	38556	41192	47949	48687	54928	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	Depth

Minimum

Barrels

900	15396	15621	16660									
800	15396	15621	15846	16872								
700	13973	15621	15846	16872								
600	13447	14048	15727	15829	16966							
500	13447	13628	14241	15829	16042	17179						
400	12329	13628	13809	14434	14838	16254	17391	17603				
300	10982	11131	12558	12725	14185	14367	16466	16679	17815			
200	10677	10815	10952	11089	11226	13057	13224	14731	14914	15096	17316	
100	9228	9353	10585	10710	10835	10960	11647	12272	13796	13978	15464	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	Depth

PICEANCE BASIN BASIC EQUIPMENT LISTS

Total Value Pumping Oil Well without Tanks (Gas Engine)

The basic equipment for a pumping oil well without oil storage tanks includes:

Pumping Unit
 Gas Engine
 Wellhead
 Sucker Rods to Depth
 Rod Pump
 Flowlines - 1000'

Very Good

Barrels

900	95703	96735	100967									
800	95703	96735	98702	102754								
700	74219	96735	98702	102754								
600	65577	75843	98702	97099	104541							
500	65577	66465	77468	97099	98887	106328						
400	58654	66465	67837	79093	82504	100674	106342	108129				
300	49175	50198	59540	60791	71654	73158	102192	103979	109647			
200	44752	45731	46709	46569	47547	63294	64545	76167	77671	79176	109341	
100	31213	32143	41640	42570	43500	44430	50091	59497	70813	72317	82727	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Average

Barrels

900	46540	46814	50886									
800	46540	46814	47744	51753								
700	39451	46814	47744	51753								
600	36447	40246	47744	47926	52620							
500	36447	36513	41041	47926	48793	53487						
400	30954	36513	37204	41836	43418	49660	54235	55102				
300	24912	25452	31216	31842	38763	39501	49967	50834	55410			
200	23676	24185	24694	24032	24541	33093	33718	40976	41714	42452	53434	
100	16617	17082	22094	22559	23024	23489	25957	29765	36522	37260	44167	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Minimum

Barrels

900	11967	12031	13069									
800	11967	12031	12255	13282								
700	10210	12031	12255	13282								
600	9555	10403	12255	12325	13494							
500	9555	9575	10597	12325	12537	13706						
400	8190	9575	9756	10790	11193	12750	13886	14099				
300	6714	6863	8291	8457	10046	10228	12822	13034	14171			
200	6377	6515	6652	6498	6635	8790	8956	10593	10775	10957	13671	
100	4605	4730	5994	6119	6244	6369	7056	7864	9496	9678	11325	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

PICEANCE BASIN BASIC EQUIPMENT LISTS

Total Value Pumping Oil Well without Tanks (Electric Motor)

The basic equipment for a pumping oil well without oil storage tanks includes:

Pumping Unit	Sucker Rods to Depth
Electric Motor	Rod Pump
Control Panel	Flowlines - 1000'
Wellhead	

Very Good

Barrels

900	85964	87931	92162									
800	85964	87931	89897	93950								
700	67457	87931	89897	93950								
600	60084	69082	89897	90069	95737							
500	60084	61456	70707	90069	91856	97524						
400	54032	61456	62827	72331	75742	93643	99311	101098				
300	45326	46350	55691	56943	67031	68536	95430	97218	102886			
200	40936	41914	42893	43871	44849	59445	60697	71544	73049	74553	102579	
100	29514	30444	38942	39872	40802	41732	47392	55681	66997	68501	78105	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Average

Barrels

900	39241	40171	44243									
800	39241	40171	41100	45110								
700	33484	40171	41100	45110								
600	31491	34280	41100	41401	45976							
500	31491	32181	35075	41401	42268	46843						
400	26965	32181	32871	35870	37452	43134	47710	48577				
300	21461	22001	27765	28391	34775	35513	44001	44868	49443			
200	20355	20864	21373	21882	22391	29642	30268	36988	37726	38464	47468	
100	14596	15061	19944	20409	20874	21339	23807	26443	33200	33938	40179	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Minimum

Barrels

900	10150	10375	11414									
800	10150	10375	10600	11626								
700	8727	10375	10600	11626								
600	8319	8920	10600	10702	11838							
500	8319	8500	9113	10702	10914	12051						
400	7201	8500	8681	9306	9710	11126	12263	12475				
300	5854	6003	7431	7597	9057	9239	11339	11551	12688			
200	5550	5687	5824	5961	6098	7930	8096	9604	9786	9968	12188	
100	4100	4225	5457	5582	5707	5832	6519	7144	8668	8850	10336	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

PICEANCE BASIN BASIC EQUIPMENT LISTS

Total Value Shallow Pumping Oil Well without Tanks (Electric Motor)

The basic equipment for a shallow pumping oil well without oil storage tanks includes:

Pumping Unit	Sucker Rods to Depth
Electric Motor	Rod Pump
Control Panel	Flowlines - 1000'
Wellhead	

Very Good

Barrels

900				
800				
700				
600				
500	35018	35948	47219	48149
400	31503	32433	40952	41882
300	23935	32433	33363	37808
200	23935	24865	33363	34293
100	23935	24865	25795	26725
	500	1000	1500	2000

Depth

Average

Barrels

900				
800				
700				
600				
500	18149	18614	23529	23994
400	16224	16689	19079	19544
300	11806	16689	17154	18651
200	11806	12271	17154	17619
100	11806	12271	12736	13201
	500	1000	1500	2000

Depth

Minimum

Barrels

900				
800				
700				
600				
500	4715	4840	7427	7552
400	4715	4840	6309	6434
300	3350	4840	4965	5316
200	3350	3475	4965	5090
100	3350	3475	3600	3725
	500	1000	1500	2000

Depth

PICEANCE BASIN BASIC EQUIPMENT LISTS

Total Value Flowing Oil Well with Tanks

The basic equipment for a flowing oil well with two oil storage tanks includes:

Wellhead
 Heater Treater
 400 Barrel Oil Storage Tanks (2) with Stairway
 Flowlines - 600'

Very Good

Barrels

900	43204	43204	43204	43204	43204	43204	43204	43204	43204	43204	43204
800	43204	43204	43204	43204	43204	43204	43204	43204	43204	43204	43204
700	43204	43204	43204	43204	43204	43204	43204	43204	43204	43204	43204
600	40904	40904	40904	40904	40904	40904	40904	40904	40904	40904	40904
500	40904	40904	40904	40904	40904	40904	40904	40904	40904	40904	40904
400	40904	40904	40904	40904	40904	40904	40904	40904	40904	40904	40904
300	40904	40904	40904	40904	40904	40904	40904	40904	40904	40904	40904
200	40904	40904	40904	40904	40904	40904	40904	40904	40904	40904	40904
100	40904	40904	40904	40904	40904	40904	40904	40904	40904	40904	40904
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

Average

Barrels

900	19458	19458	19458	19458	19458	19458	19458	19458	19458	19458	19458
800	19458	19458	19458	19458	19458	19458	19458	19458	19458	19458	19458
700	19458	19458	19458	19458	19458	19458	19458	19458	19458	19458	19458
600	18963	18963	18963	18963	18963	18963	18963	18963	18963	18963	18963
500	18963	18963	18963	18963	18963	18963	18963	18963	18963	18963	18963
400	18963	18963	18963	18963	18963	18963	18963	18963	18963	18963	18963
300	18963	18963	18963	18963	18963	18963	18963	18963	18963	18963	18963
200	18963	18963	18963	18963	18963	18963	18963	18963	18963	18963	18963
100	18963	18963	18963	18963	18963	18963	18963	18963	18963	18963	18963
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

Minimum

Barrels

900	6482	6482	6482	6482	6482	6482	6482	6482	6482	6482	6482
800	6482	6482	6482	6482	6482	6482	6482	6482	6482	6482	6482
700	6482	6482	6482	6482	6482	6482	6482	6482	6482	6482	6482
600	6364	6364	6364	6364	6364	6364	6364	6364	6364	6364	6364
500	6364	6364	6364	6364	6364	6364	6364	6364	6364	6364	6364
400	6364	6364	6364	6364	6364	6364	6364	6364	6364	6364	6364
300	6364	6364	6364	6364	6364	6364	6364	6364	6364	6364	6364
200	6364	6364	6364	6364	6364	6364	6364	6364	6364	6364	6364
100	6364	6364	6364	6364	6364	6364	6364	6364	6364	6364	6364
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

PICEANCE BASIN BASIC EQUIPMENT LISTS

Total Value Flowing Oil Well with Tanks without Heater Treater

The basic equipment for a flowing oil well with two oil storage tanks without heater treater includes:

- Wellhead
- 400 Barrel Oil Storage Tanks (2) with Stairway
- Flowlines - 600'

**Very Good
Barrels**

900	27681	27681	27681	27681	27681	27681	27681	27681	27681	27681	27681
800	27681	27681	27681	27681	27681	27681	27681	27681	27681	27681	27681
700	27681	27681	27681	27681	27681	27681	27681	27681	27681	27681	27681
600	27681	27681	27681	27681	27681	27681	27681	27681	27681	27681	27681
500	27681	27681	27681	27681	27681	27681	27681	27681	27681	27681	27681
400	27681	27681	27681	27681	27681	27681	27681	27681	27681	27681	27681
300	27681	27681	27681	27681	27681	27681	27681	27681	27681	27681	27681
200	27681	27681	27681	27681	27681	27681	27681	27681	27681	27681	27681
100	27681	27681	27681	27681	27681	27681	27681	27681	27681	27681	27681
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

**Average
Barrels**

900	10428	10428	10428	10428	10428	10428	10428	10428	10428	10428	10428
800	10428	10428	10428	10428	10428	10428	10428	10428	10428	10428	10428
700	10428	10428	10428	10428	10428	10428	10428	10428	10428	10428	10428
600	10428	10428	10428	10428	10428	10428	10428	10428	10428	10428	10428
500	10428	10428	10428	10428	10428	10428	10428	10428	10428	10428	10428
400	10428	10428	10428	10428	10428	10428	10428	10428	10428	10428	10428
300	10428	10428	10428	10428	10428	10428	10428	10428	10428	10428	10428
200	10428	10428	10428	10428	10428	10428	10428	10428	10428	10428	10428
100	10428	10428	10428	10428	10428	10428	10428	10428	10428	10428	10428
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

**Minimum
Barrels**

900	4225	4225	4225	4225	4225	4225	4225	4225	4225	4225	4225
800	4225	4225	4225	4225	4225	4225	4225	4225	4225	4225	4225
700	4225	4225	4225	4225	4225	4225	4225	4225	4225	4225	4225
600	4225	4225	4225	4225	4225	4225	4225	4225	4225	4225	4225
500	4225	4225	4225	4225	4225	4225	4225	4225	4225	4225	4225
400	4225	4225	4225	4225	4225	4225	4225	4225	4225	4225	4225
300	4225	4225	4225	4225	4225	4225	4225	4225	4225	4225	4225
200	4225	4225	4225	4225	4225	4225	4225	4225	4225	4225	4225
100	4225	4225	4225	4225	4225	4225	4225	4225	4225	4225	4225
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

PICEANCE BASIN BASIC EQUIPMENT LISTS

Total Value Flowing Oil Well without Tanks

The basic equipment for a flowing oil well without oil storage tanks includes:

Wellhead
Flowlines - 1000'

**Very Good
Barrels**

900	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
800	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
700	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
600	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
500	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
400	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
300	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
200	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
100	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	Depth

**Average
Barrels**

900	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
800	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
700	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
600	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
500	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
400	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
300	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
200	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
100	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	Depth

**Minimum
Barrels**

900	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
800	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
700	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
600	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
500	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
400	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
300	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
200	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
100	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	Depth

PICEANCE BASIN BASIC EQUIPMENT LISTS

Total Value Pumping Gas Well with Tank (Gas Engine)

The basic equipment for a pumping gas well with oil storage tank includes:

Pumping Unit	Rod Pump
Gas Engine	Production Unit
Wellhead	400 Barrel Oil Storage Tank with Stairway
Sucker Rods to Depth	Flowlines - 600'

Very Good

Barrels

900	116064	117095	121327									
800	116064	117095	119062	123114								
700	94579	117095	119062	123114								
600	85938	96204	119062	117460	124902							
500	85938	86826	97829	117460	119247	126689						
400	79015	86826	88197	99454	102864	121034	126702	128489				
300	69535	70559	79900	81152	92014	93519	122553	124340	130008			
200	65113	66091	67069	66930	67908	83654	84906	96527	98032	99536	129701	
100	51573	52503	62001	62931	63860	64790	70451	79857	91173	92678	103088	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Average

Barrels

900	55366	55640	59712									
800	55366	55640	56569	60579								
700	48276	55640	56569	60579								
600	45273	49072	56569	56752	61446							
500	45273	45339	49867	56752	57619	62312						
400	39779	45339	46029	50662	52244	58485	63061	63928				
300	33738	34277	40042	40667	47589	48327	58793	59660	64235			
200	32502	33011	33520	32857	33366	41919	42544	49802	50540	51278	62260	
100	25443	25908	30920	31385	31850	32315	34783	38590	45348	46085	52993	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Minimum

Barrels

900	14880	14944	15983									
800	14880	14944	15168	16195								
700	13123	14944	15168	16195								
600	12469	13317	15168	15238	16407							
500	12469	12488	13510	15238	15450	16620						
400	11103	12488	12670	13703	14107	15663	16800	17012				
300	9628	9776	11204	11370	12959	13141	15735	15948	17084			
200	9291	9428	9565	9412	9549	11703	11869	13506	13688	13871	16585	
100	7518	7643	8908	9033	9158	9283	9970	10778	12409	12591	14238	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

PICEANCE BASIN BASIC EQUIPMENT LISTS

Total Value Pumping Gas Well without Tank (Gas Engine)

The basic equipment for a pumping gas well without oil storage tank includes:

Pumping Unit
 Gas Engine
 Wellhead
 Rod Pump
 Flowlines - 1000'
 Sucker Rods to Depth

Very Good

Barrels

900	95703	96735	100967									
800	95703	96735	98702	102754								
700	74219	96735	98702	102754								
600	65577	75843	98702	97099	104541							
500	65577	66465	77468	97099	98887	106328						
400	58654	66465	67837	79093	82504	100674	106342	108129				
300	49175	50198	59540	60791	71654	73158	102192	103979	109647			
200	44752	45731	46709	46569	47547	63294	64545	76167	77671	79176	109341	
100	31213	32143	41640	42570	43500	44430	50091	59497	70813	72317	82727	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Average

Barrels

900	46540	46814	50886									
800	46540	46814	47744	51753								
700	39451	46814	47744	51753								
600	36447	40246	47744	47926	52620							
500	36447	36513	41041	47926	48793	53487						
400	30954	36513	37204	41836	43418	49660	54235	55102				
300	24912	25452	31216	31842	38763	39501	49967	50834	55410			
200	23676	24185	24694	24032	24541	33093	33718	40976	41714	42452	53434	
100	16617	17082	22094	22559	23024	23489	25957	29765	36522	37260	44167	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Minimum

Barrels

900	11967	12031	13069									
800	11967	12031	12255	13282								
700	10210	12031	12255	13282								
600	9555	10403	12255	12325	13494							
500	9555	9575	10597	12325	12537	13706						
400	8190	9575	9756	10790	11193	12750	13886	14099				
300	6714	6863	8291	8457	10046	10228	12822	13034	14171			
200	6377	6515	6652	6498	6635	8790	8956	10593	10775	10957	13671	
100	4605	4730	5994	6119	6244	6369	7056	7864	9496	9678	11325	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

PICEANCE BASIN BASIC EQUIPMENT LISTS

Total Value Plunger Lift Gas Well with Tank

The basic equipment for a plunger lift gas well with one oil storage tank includes:

Wellhead with Lubricator
 Plunger Lift
 Production Unit
 300 Barrel Oil Storage Tank (1) with Stairway
 Flowlines - 600'

Very Good**MCF**

850	28262	28262	28262	28262	28262	28262	28262	28262	28262	28262	28262
750	28262	28262	28262	28262	28262	28262	28262	28262	28262	28262	28262
650	28262	28262	28262	28262	28262	28262	28262	28262	28262	28262	28262
550	28262	28262	28262	28262	28262	28262	28262	28262	28262	28262	28262
450	28262	28262	28262	28262	28262	28262	28262	28262	28262	28262	28262
350	28262	28262	28262	28262	28262	28262	28262	28262	28262	28262	28262
250	28262	28262	28262	28262	28262	28262	28262	28262	28262	28262	28262
150	28262	28262	28262	28262	28262	28262	28262	28262	28262	28262	28262
60	28262	28262	28262	28262	28262	28262	28262	28262	28262	28262	28262
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth**Average****MCF**

850	14513	14513	14513	14513	14513	14513	14513	14513	14513	14513	14513
750	14513	14513	14513	14513	14513	14513	14513	14513	14513	14513	14513
650	14513	14513	14513	14513	14513	14513	14513	14513	14513	14513	14513
550	14513	14513	14513	14513	14513	14513	14513	14513	14513	14513	14513
450	14513	14513	14513	14513	14513	14513	14513	14513	14513	14513	14513
350	14513	14513	14513	14513	14513	14513	14513	14513	14513	14513	14513
250	14513	14513	14513	14513	14513	14513	14513	14513	14513	14513	14513
150	14513	14513	14513	14513	14513	14513	14513	14513	14513	14513	14513
60	14513	14513	14513	14513	14513	14513	14513	14513	14513	14513	14513
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth**Minimum****MCF**

850	4461	4461	4461	4461	4461	4461	4461	4461	4461	4461	4461
750	4461	4461	4461	4461	4461	4461	4461	4461	4461	4461	4461
650	4461	4461	4461	4461	4461	4461	4461	4461	4461	4461	4461
550	4461	4461	4461	4461	4461	4461	4461	4461	4461	4461	4461
450	4461	4461	4461	4461	4461	4461	4461	4461	4461	4461	4461
350	4461	4461	4461	4461	4461	4461	4461	4461	4461	4461	4461
250	4461	4461	4461	4461	4461	4461	4461	4461	4461	4461	4461
150	4461	4461	4461	4461	4461	4461	4461	4461	4461	4461	4461
60	4461	4461	4461	4461	4461	4461	4461	4461	4461	4461	4461
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

PICEANCE BASIN BASIC EQUIPMENT LISTS

Total Value Plunger Lift Gas Well without Tanks

The basic equipment for a plunger lift gas well without oil storage tanks includes:

Wellhead with Lubricator
Plunger Lift
Production Unit

Flowlines - 1000'

Very Good

MCF

850	21930	21930	21930	21930	21930	21930	21930	21930	21930	21930	21930
750	21930	21930	21930	21930	21930	21930	21930	21930	21930	21930	21930
650	21930	21930	21930	21930	21930	21930	21930	21930	21930	21930	21930
550	21930	21930	21930	21930	21930	21930	21930	21930	21930	21930	21930
450	21930	21930	21930	21930	21930	21930	21930	21930	21930	21930	21930
350	21930	21930	21930	21930	21930	21930	21930	21930	21930	21930	21930
250	21930	21930	21930	21930	21930	21930	21930	21930	21930	21930	21930
150	21930	21930	21930	21930	21930	21930	21930	21930	21930	21930	21930
60	21930	21930	21930	21930	21930	21930	21930	21930	21930	21930	21930
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500
											Depth

Average

MCF

850	11352	11352	11352	11352	11352	11352	11352	11352	11352	11352	11352
750	11352	11352	11352	11352	11352	11352	11352	11352	11352	11352	11352
650	11352	11352	11352	11352	11352	11352	11352	11352	11352	11352	11352
550	11352	11352	11352	11352	11352	11352	11352	11352	11352	11352	11352
450	11352	11352	11352	11352	11352	11352	11352	11352	11352	11352	11352
350	11352	11352	11352	11352	11352	11352	11352	11352	11352	11352	11352
250	11352	11352	11352	11352	11352	11352	11352	11352	11352	11352	11352
150	11352	11352	11352	11352	11352	11352	11352	11352	11352	11352	11352
60	11352	11352	11352	11352	11352	11352	11352	11352	11352	11352	11352
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500
											Depth

Minimum

MCF

850	3010	3010	3010	3010	3010	3010	3010	3010	3010	3010	3010
750	3010	3010	3010	3010	3010	3010	3010	3010	3010	3010	3010
650	3010	3010	3010	3010	3010	3010	3010	3010	3010	3010	3010
550	3010	3010	3010	3010	3010	3010	3010	3010	3010	3010	3010
450	3010	3010	3010	3010	3010	3010	3010	3010	3010	3010	3010
350	3010	3010	3010	3010	3010	3010	3010	3010	3010	3010	3010
250	3010	3010	3010	3010	3010	3010	3010	3010	3010	3010	3010
150	3010	3010	3010	3010	3010	3010	3010	3010	3010	3010	3010
60	3010	3010	3010	3010	3010	3010	3010	3010	3010	3010	3010
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500
											Depth

PICEANCE BASIN BASIC EQUIPMENT LISTS

Total Value Plunger Lift Gas Well without Tanks or Production Unit

The basic equipment for a plunger lift gas well without oil storage tanks or production unit includes:

Wellhead with Lubricator
Plunger Lift
Flowlines - 1000'

Very Good**MCF**

850	10481	10481	10481	10481	10481	10481	10481	10481	10481	10481	10481
750	10481	10481	10481	10481	10481	10481	10481	10481	10481	10481	10481
650	10481	10481	10481	10481	10481	10481	10481	10481	10481	10481	10481
550	10481	10481	10481	10481	10481	10481	10481	10481	10481	10481	10481
450	10481	10481	10481	10481	10481	10481	10481	10481	10481	10481	10481
350	10481	10481	10481	10481	10481	10481	10481	10481	10481	10481	10481
250	10481	10481	10481	10481	10481	10481	10481	10481	10481	10481	10481
150	10481	10481	10481	10481	10481	10481	10481	10481	10481	10481	10481
60	10481	10481	10481	10481	10481	10481	10481	10481	10481	10481	10481
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth**Average****MCF**

850	5160	5160	5160	5160	5160	5160	5160	5160	5160	5160	5160
750	5160	5160	5160	5160	5160	5160	5160	5160	5160	5160	5160
650	5160	5160	5160	5160	5160	5160	5160	5160	5160	5160	5160
550	5160	5160	5160	5160	5160	5160	5160	5160	5160	5160	5160
450	5160	5160	5160	5160	5160	5160	5160	5160	5160	5160	5160
350	5160	5160	5160	5160	5160	5160	5160	5160	5160	5160	5160
250	5160	5160	5160	5160	5160	5160	5160	5160	5160	5160	5160
150	5160	5160	5160	5160	5160	5160	5160	5160	5160	5160	5160
60	5160	5160	5160	5160	5160	5160	5160	5160	5160	5160	5160
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth**Minimum****MCF**

850	1473	1473	1473	1473	1473	1473	1473	1473	1473	1473	1473
750	1473	1473	1473	1473	1473	1473	1473	1473	1473	1473	1473
650	1473	1473	1473	1473	1473	1473	1473	1473	1473	1473	1473
550	1473	1473	1473	1473	1473	1473	1473	1473	1473	1473	1473
450	1473	1473	1473	1473	1473	1473	1473	1473	1473	1473	1473
350	1473	1473	1473	1473	1473	1473	1473	1473	1473	1473	1473
250	1473	1473	1473	1473	1473	1473	1473	1473	1473	1473	1473
150	1473	1473	1473	1473	1473	1473	1473	1473	1473	1473	1473
60	1473	1473	1473	1473	1473	1473	1473	1473	1473	1473	1473
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

PICEANCE BASIN BASIC EQUIPMENT LISTS

Total Value Pumping Coal Seams Gas Well with Tanks

The basic equipment for a pumping coal seams gas well with two water storage tanks includes:

Pumping Unit	Separator
Gas Engine	300 Barrel Water Storage Tanks (2) with Stairway
Wellhead	Flowlines - 600'
Sucker Rods to Depth	Filter Vessel
Rod Pump	

Very Good

Barrels

900	152678	153710	157942									
800	152678	153710	155677	159729								
700	131194	153710	155677	159729								
600	122552	132818	155677	154074	161516							
500	122552	123440	134443	154074	155862	163303						
400	115629	123440	124812	136068	139479	157649	163317	165104				
300	106150	107173	116515	117766	128629	130133	159167	160954	166622			
200	101727	102706	103684	103544	104522	120269	121520	133142	134646	136151	166316	
100	88188	89118	98615	99545	100475	101405	107066	116472	127788	129292	139702	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Average

Barrels

900	70502	70776	74848									
800	70502	70776	71705	75715								
700	63412	70776	71705	75715								
600	60409	64208	71705	71888	76582							
500	60409	60475	65003	71888	72755	77448						
400	54915	60475	61165	65798	67380	73621	78197	79064				
300	48874	49413	55178	55803	62725	63463	73929	74796	79371			
200	47638	48147	48656	47993	48502	57055	57680	64938	65676	66414	77396	
100	40579	41044	46056	46521	46986	47451	49919	53726	60484	61221	68129	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Minimum

Barrels

900	19105	19169	20207									
800	19105	19169	19393	20420								
700	17348	19169	19393	20420								
600	16693	17541	19393	19463	20632							
500	16693	16713	17735	19463	19675	20844						
400	15328	16713	16894	17928	18331	19888	21024	21237				
300	13852	14001	15429	15595	17184	17366	19960	20172	21309			
200	13515	13653	13790	13636	13773	15928	16094	17731	17913	18095	20809	
100	11743	11868	13132	13257	13382	13507	14194	15002	16634	16816	18463	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

PICEANCE BASIN BASIC EQUIPMENT LISTS

Total Value Pumping Coal Seams Gas Well without Tanks

The basic equipment for a pumping coal seams gas well without water storage tanks includes:

Pumping Unit	Rod Pump
Gas Engine	Separator
Wellhead	Flowlines - 1000'
Sucker Rods to Depth	Filter Vessel

Very Good

Barrels

900	141369	142401	146633									
800	141369	142401	144368	148420								
700	119885	142401	144368	148420								
600	111243	121509	144368	142765	150207							
500	111243	112131	123134	142765	144553	151994						
400	104320	112131	113503	124759	128170	146340	152008	153795				
300	94841	95864	105206	106457	117320	118824	147858	149645	155313			
200	90418	91397	92375	92235	93213	108960	110211	121833	123337	124842	155007	
100	76879	77809	87306	88236	89166	90096	95757	105163	116479	117983	128393	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Average

Barrels

900	65127	65401	69473									
800	65127	65401	66330	70340								
700	58037	65401	66330	70340								
600	55034	58833	66330	66513	71207							
500	55034	55100	59628	66513	67380	72073						
400	49540	55100	55790	60423	62005	68246	72822	73689				
300	43499	44038	49803	50428	57350	58088	68554	69421	73996			
200	42263	42772	43281	42618	43127	51680	52305	59563	60301	61039	72021	
100	35204	35669	40681	41146	41611	42076	44544	48351	55109	55846	62754	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Minimum

Barrels

900	16439	16503	17541									
800	16439	16503	16727	17754								
700	14682	16503	16727	17754								
600	14027	14875	16727	16797	17966							
500	14027	14047	15069	16797	17009	18178						
400	12662	14047	14228	15262	15665	17222	18358	18571				
300	11186	11335	12763	12929	14518	14700	17294	17506	18643			
200	10849	10987	11124	10970	11107	13262	13428	15065	15247	15429	18143	
100	9077	9202	10466	10591	10716	10841	11528	12336	13968	14150	15797	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

PICEANCE BASIN BASIC EQUIPMENT LISTS

Total Value Flowing Gas Well with Tank

The basic equipment for a flowing gas well with one oil storage tank includes:

Wellhead
 Production Unit
 400 Barrel Oil Storage Tank (1) with Stairway
 Flowlines - 600'

**Very Good
MCF**

850	28864	28864	28864	28864	28864	28864	28864	28864	28864	28864	28864
750	28864	28864	28864	28864	28864	28864	28864	28864	28864	28864	28864
650	28864	28864	28864	28864	28864	28864	28864	28864	28864	28864	28864
550	28864	28864	28864	28864	28864	28864	28864	28864	28864	28864	28864
450	28864	28864	28864	28864	28864	28864	28864	28864	28864	28864	28864
350	28864	28864	28864	28864	28864	28864	28864	28864	28864	28864	28864
250	28864	28864	28864	28864	28864	28864	28864	28864	28864	28864	28864
150	28864	28864	28864	28864	28864	28864	28864	28864	28864	28864	28864
60	28864	28864	28864	28864	28864	28864	28864	28864	28864	28864	28864
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500
											Depth

**Average
MCF**

850	13040	13040	13040	13040	13040	13040	13040	13040	13040	13040	13040
750	13040	13040	13040	13040	13040	13040	13040	13040	13040	13040	13040
650	13040	13040	13040	13040	13040	13040	13040	13040	13040	13040	13040
550	13040	13040	13040	13040	13040	13040	13040	13040	13040	13040	13040
450	13040	13040	13040	13040	13040	13040	13040	13040	13040	13040	13040
350	13040	13040	13040	13040	13040	13040	13040	13040	13040	13040	13040
250	13040	13040	13040	13040	13040	13040	13040	13040	13040	13040	13040
150	13040	13040	13040	13040	13040	13040	13040	13040	13040	13040	13040
60	13040	13040	13040	13040	13040	13040	13040	13040	13040	13040	13040
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500
											Depth

**Minimum
MCF**

850	4150	4150	4150	4150	4150	4150	4150	4150	4150	4150	4150
750	4150	4150	4150	4150	4150	4150	4150	4150	4150	4150	4150
650	4150	4150	4150	4150	4150	4150	4150	4150	4150	4150	4150
550	4150	4150	4150	4150	4150	4150	4150	4150	4150	4150	4150
450	4150	4150	4150	4150	4150	4150	4150	4150	4150	4150	4150
350	4150	4150	4150	4150	4150	4150	4150	4150	4150	4150	4150
250	4150	4150	4150	4150	4150	4150	4150	4150	4150	4150	4150
150	4150	4150	4150	4150	4150	4150	4150	4150	4150	4150	4150
60	4150	4150	4150	4150	4150	4150	4150	4150	4150	4150	4150
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500
											Depth

PICEANCE BASIN BASIC EQUIPMENT LISTS

Total Value Flowing Gas Well without Tanks

The basic equipment for a flowing gas well without oil storage tanks includes:

Wellhead
 Production Unit
 Flowlines - 1000'

Very Good MCF

850	19952	19952	19952	19952	19952	19952	19952	19952	19952	19952	19952
750	19952	19952	19952	19952	19952	19952	19952	19952	19952	19952	19952
650	19952	19952	19952	19952	19952	19952	19952	19952	19952	19952	19952
550	19952	19952	19952	19952	19952	19952	19952	19952	19952	19952	19952
450	19952	19952	19952	19952	19952	19952	19952	19952	19952	19952	19952
350	19952	19952	19952	19952	19952	19952	19952	19952	19952	19952	19952
250	19952	19952	19952	19952	19952	19952	19952	19952	19952	19952	19952
150	19952	19952	19952	19952	19952	19952	19952	19952	19952	19952	19952
60	19952	19952	19952	19952	19952	19952	19952	19952	19952	19952	19952
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500
											Depth

Average MCF

850	10406	10406	10406	10406	10406	10406	10406	10406	10406	10406	10406
750	10406	10406	10406	10406	10406	10406	10406	10406	10406	10406	10406
650	10406	10406	10406	10406	10406	10406	10406	10406	10406	10406	10406
550	10406	10406	10406	10406	10406	10406	10406	10406	10406	10406	10406
450	10406	10406	10406	10406	10406	10406	10406	10406	10406	10406	10406
350	10406	10406	10406	10406	10406	10406	10406	10406	10406	10406	10406
250	10406	10406	10406	10406	10406	10406	10406	10406	10406	10406	10406
150	10406	10406	10406	10406	10406	10406	10406	10406	10406	10406	10406
60	10406	10406	10406	10406	10406	10406	10406	10406	10406	10406	10406
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500
											Depth

Minimum MCF

850	2774	2774	2774	2774	2774	2774	2774	2774	2774	2774	2774
750	2774	2774	2774	2774	2774	2774	2774	2774	2774	2774	2774
650	2774	2774	2774	2774	2774	2774	2774	2774	2774	2774	2774
550	2774	2774	2774	2774	2774	2774	2774	2774	2774	2774	2774
450	2774	2774	2774	2774	2774	2774	2774	2774	2774	2774	2774
350	2774	2774	2774	2774	2774	2774	2774	2774	2774	2774	2774
250	2774	2774	2774	2774	2774	2774	2774	2774	2774	2774	2774
150	2774	2774	2774	2774	2774	2774	2774	2774	2774	2774	2774
60	2774	2774	2774	2774	2774	2774	2774	2774	2774	2774	2774
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500
											Depth

PICEANCE BASIN BASIC EQUIPMENT LISTS

Total Value Flowing Gas Well without Tanks or Production Unit

The basic equipment for a flowing gas well without tanks or production unit includes:

Wellhead
Flowlines - 1000'

Very Good

MCF

850	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
750	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
650	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
550	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
450	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
350	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
250	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
150	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
60	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	Depth

Average

MCF

850	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
750	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
650	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
550	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
450	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
350	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
250	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
150	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
60	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	Depth

Minimum

MCF

850	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
750	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
650	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
550	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
450	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
350	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
250	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
150	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
60	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	Depth

PICEANCE BASIN BASIC EQUIPMENT LISTS

Common Tank Battery

The basic equipment for a common tank battery includes:

400 Barrel Oil Storage Tanks with Stairway
 Heater Treaters
 Separators
 Recycle Pump
 Manifolds and Headers

Very Good

Tanks

10	103770	119293	124464	134816	139987	145157	160680	165851
9	93504	109027	114197	124550	129720	134891	150414	155585
8	83237	98760	103931	114283	119454	124625	140148	145319
7	72971	88494	93665	104017	109188	114359	129882	135052
6	62705	75927	81098	89150	94321	99491	112714	117885
5	52439	65661	70832	78884	84054	89225	102448	107618
4	42172	55395	60566	68617	73788	78959	92181	97352
3	31906	45129	50299	58351	63522	68693	81915	87086
2	21640	34862	40033	48085	53256	58426	71649	76820
1	10266	24596	29767	37819	42989	48160	61383	66553

Tanks only	With 1 Heater Treater	With 1 Heater Treater and 1 Separator	With 2 Heater Treater	With 2 Heater Treater and 1 Separators	With 2 Heater Treater and 2 Separators	With 3 Heater Treater and 2 Separators	With 3 Heater Treater and 3 Separators
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For Each Additional Tank	Add	6332	For Each Skimming Tank	Add	6515
For Each Additional Separator	Add	5171	For Each Water Tank (Fbrgls)	Add	5053
For Each Additional Heater/Treater	Add	15523	For Each Water Tank (Steel)	Add	13008

Average

Tanks

10	36486	45516	48020	54546	57050	59555	68585	71090
9	32906	41936	44441	50966	53471	55975	65005	67510
8	29326	38356	40861	47386	49891	52396	61426	63930
7	25746	34776	37281	43806	46311	48816	57846	60351
6	22167	30702	33207	39238	41742	44247	52783	55287
5	18587	27122	29627	35658	38163	40667	49203	51708
4	15007	23543	26047	32078	34583	37088	45623	48128
3	11427	19963	22468	28498	31003	33508	42043	44548
2	7848	16383	18888	24919	27423	29928	38464	40968
1	3580	12803	15308	21339	23844	26348	34884	37389

Tanks only	With 1 Heater Treater	With 1 Heater Treater and 1 Separator	With 2 Heater Treater	With 2 Heater Treater and 1 Separators	With 2 Heater Treater and 2 Separators	With 3 Heater Treater and 2 Separators	With 3 Heater Treater and 3 Separators
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For Each Additional Tank	Add	3161	For Each Skimming Tank	Add	3580
For Each Additional Separator	Add	2505	For Each Water Tank (Fbrgls)	Add	2784
For Each Additional Heater/Treater	Add	9030	For Each Water Tank (Steel)	Add	7149

Minimum

Tanks

10	16297	18555	19178	20812	21436	22059	24317	24940
9	14685	16942	17566	19200	19823	20447	22704	23328
8	13072	15330	15953	17587	18211	18834	21092	21715
7	11460	13717	14341	15975	16598	17222	19479	20103
6	9847	11986	12610	14126	14749	15373	17512	18135
5	8235	10374	10997	12513	13137	13760	15899	16523
4	6622	8761	9385	10901	11524	12148	14287	14910
3	5010	7149	7772	9288	9912	10535	12674	13298
2	3397	5536	6160	7676	8299	8923	11062	11685
1	1613	3924	4547	6063	6687	7310	9449	10073

Tanks only	With 1 Heater Treater	With 1 Heater Treater and 1 Separators	With 2 Heater Treater	With 2 Heater Treater and 1 Separators	With 2 Heater Treater and 2 Separators	With 3 Heater Treater and 2 Separators	With 3 Heater Treater and 3 Separators
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For Each Additional Tank	Add	1451	For Each Skimming Tank	Add	1290
For Each Additional Separator	Add	624	For Each Water Tank (Fbrgls)	Add	1011
For Each Additional Heater/Treater	Add	2258	For Each Water Tank (Steel)	Add	2580

Total Value Water Injection Well / Water Disposal Well

The basic equipment for a water injection well includes:

- Wellhead
- Injection lines - 1000'

Very Good

Barrels

900	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
800	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
700	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
600	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
500	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
400	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
300	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
200	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
100	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503	8503
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Average

Barrels

900	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
800	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
700	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
600	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
500	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
400	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
300	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
200	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
100	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214	4214
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Minimum

Barrels

900	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
800	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
700	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
600	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
500	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
400	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
300	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
200	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
100	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236	1236
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

PICEANCE BASIN BASIC EQUIPMENT LISTS

Total Value ESP Water Supply Well

The basic equipment for an electric submersible pump water supply well includes:

- | | |
|------------------|-------------------------|
| Transformer | Equalizer |
| Submersible Pump | Switchboard |
| Electric Motor | Electric Cable to Depth |
| Wellhead | Flowlines - 1000' |

Very Good

Barrels

4100	65247	66123	66999	67876	68752	69628	70504	71380	72256	73132	74008
3800	60162	61039	61915	62791	63667	64543	65419	66295	67171	68048	68924
3400	55943	56749	57556	58362	59168	59974	60781	61587	62393	63199	64006
2800	54782	55588	56395	57201	58007	58813	59620	60426	61232	62038	62845
2300	50724	51530	52336	53143	53949	54755	55561	56368	57174	57980	58786
1900	49751	50557	51364	52170	52976	53782	54589	55395	56201	57007	57814
1600	46752	47558	48364	49171	49977	50783	51589	52396	53202	54008	54814
1100	41538	42344	43151	43957	44763	45569	46376	47182	47988	48794	49601
800	37163	41194	42000	42807	43613	44419	45225	46032	46838	47644	48450
600	34841	38872	39678	40485	41291	42097	42903	43710	44516	45322	46128
350	34368	38399	39205	40012	40818	41624	42430	43237	44043	44849	45655
	1000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000
										8500	Depth

Average

Barrels

4100	43355	43968	44580	45193	45806	46419	47031	47644	48257	48870	49482
3800	38378	38990	39603	40216	40829	41441	42054	42667	43280	43892	44505
3400	35427	35991	36555	37120	37684	38249	38813	39377	39942	40506	41070
2800	35427	35991	36555	37120	37684	38249	38813	39377	39942	40506	41070
2300	31997	32562	33126	33691	34255	34819	35384	35948	36512	37077	37641
1900	29729	30294	30858	31422	31987	32551	33115	33680	34244	34809	35373
1600	27676	28240	28805	29369	29933	30498	31062	31627	32191	32755	33320
1100	23956	24521	25085	25650	26214	26778	27343	27907	28471	29036	29600
800	21135	23956	24521	25085	25650	26214	26778	27343	27907	28471	29036
600	20070	22892	23457	24021	24585	25150	25714	26278	26843	27407	27972
350	19511	22333	22898	23462	24026	24591	25155	25719	26284	26848	27413
	1000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000
										8500	Depth

Minimum

Barrels

4100	10196	10352	10508	10664	10820	10976	11132	11288	11443	11599	11755
3800	9637	9793	9949	10105	10261	10417	10573	10729	10884	11040	11196
3400	8869	9009	9148	9288	9428	9568	9707	9847	9987	10127	10266
2800	8643	8783	8923	9062	9202	9342	9482	9621	9761	9901	10041
2300	8009	8149	8288	8428	8568	8708	8847	8987	9127	9267	9406
1900	7450	7590	7729	7869	8009	8149	8288	8428	8568	8708	8847
1600	6945	7084	7224	7364	7504	7643	7783	7923	8063	8202	8342
1100	5999	6138	6278	6418	6558	6697	6837	6977	7117	7256	7396
800	5182	5880	6020	6160	6300	6439	6579	6719	6859	6998	7138
600	5042	5741	5880	6020	6160	6300	6439	6579	6719	6859	6998
350	4891	5590	5730	5870	6009	6149	6289	6429	6568	6708	6848
	1000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000
										8500	Depth

PICEANCE BASIN BASIC EQUIPMENT LISTS

Total Value Pumping Water Supply Well (Gas Engine)

The basic equipment for a pumping water supply well includes:

Pumping Unit	Sucker Rods to Depth
Wellhead	Rod Pump
Gas Engine	Flowlines - 1000'

Very Good

Barrels

900	95703	96735	100967									
800	95703	96735	98702	102754								
700	74219	96735	98702	102754								
600	65577	75843	98702	97099	104541							
500	65577	66465	77468	97099	98887	106328						
400	58654	66465	67837	79093	82504	100674	106342	108129				
300	49175	50198	59540	60791	71654	73158	102192	103979	109647			
200	44752	45731	46709	46569	47547	63294	64545	76167	77671	79176	109341	
100	31213	32143	41640	42570	43500	44430	50091	59497	70813	72317	82727	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Average

Barrels

900	46540	46814	50886									
800	46540	46814	47744	51753								
700	39451	46814	47744	51753								
600	36447	40246	47744	47926	52620							
500	36447	36513	41041	47926	48793	53487						
400	30954	36513	37204	41836	43418	49660	54235	55102				
300	24912	25452	31216	31842	38763	39501	49967	50834	55410			
200	23676	24185	24694	24032	24541	33093	33718	40976	41714	42452	53434	
100	16617	17082	22094	22559	23024	23489	25957	29765	36522	37260	44167	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Minimum

Barrels

900	11967	12031	13069									
800	11967	12031	12255	13282								
700	10210	12031	12255	13282								
600	9555	10403	12255	12325	13494							
500	9555	9575	10597	12325	12537	13706						
400	8190	9575	9756	10790	11193	12750	13886	14099				
300	6714	6863	8291	8457	10046	10228	12822	13034	14171			
200	6377	6515	6652	6498	6635	8790	8956	10593	10775	10957	13671	
100	4605	4730	5994	6119	6244	6369	7056	7864	9496	9678	11325	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

PICEANCE BASIN BASIC EQUIPMENT LISTS

Total Value Pumping Water Supply Well (Electric Motor)

The basic equipment for a pumping water supply well includes:

Pumping Unit	Sucker Rods to Depth
Wellhead	Rod Pump
Electric Motor	Flowlines - 1000'
Control Panel	

Very Good

Barrels

900	85964	87931	92162									
800	85964	87931	89897	93950								
700	67457	87931	89897	93950								
600	60084	69082	89897	90069	95737							
500	60084	61456	70707	90069	91856	97524						
400	54032	61456	62827	72331	75742	93643	99311	101098				
300	45326	46350	55691	56943	67031	68536	95430	97218	102886			
200	40936	41914	42893	43871	44849	59445	60697	71544	73049	74553	102579	
100	29514	30444	38942	39872	40802	41732	47392	55681	66997	68501	78105	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Average

Barrels

900	39241	40171	44243									
800	39241	40171	41100	45110								
700	33484	40171	41100	45110								
600	31491	34280	41100	41401	45976							
500	31491	32181	35075	41401	42268	46843						
400	26965	32181	32871	35870	37452	43134	47710	48577				
300	21461	22001	27765	28391	34775	35513	44001	44868	49443			
200	20355	20864	21373	21882	22391	29642	30268	36988	37726	38464	47468	
100	14596	15061	19944	20409	20874	21339	23807	26443	33200	33938	40179	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Minimum

Barrels

900	10150	10375	11414									
800	10150	10375	10600	11626								
700	8727	10375	10600	11626								
600	8319	8920	10600	10702	11838							
500	8319	8500	9113	10702	10914	12051						
400	7201	8500	8681	9306	9710	11126	12263	12475				
300	5854	6003	7431	7597	9057	9239	11339	11551	12688			
200	5550	5687	5824	5961	6098	7930	8096	9604	9786	9968	12188	
100	4100	4225	5457	5582	5707	5832	6519	7144	8668	8850	10336	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

PICEANCE BASIN BASIC EQUIPMENT LISTS

RANGELY OIL FIELD PRODUCTION

ESP Oil Well

The basic equipment for an ESP oil well includes:

- | | |
|---------------------------|-------------------------|
| Transformer | Equalizer |
| Electric Submersible Pump | Switchboard |
| Electric Motor | Electric Cable to Depth |
| Wellhead | Flowlines - 1,500' |

**Very Good
Barrels**

6000	109047
5600	107757
4900	94814
4100	89321
3800	84236
3400	79765
2800	78604
2300	74546
1900	73573
1600	70574
1100	65360
800	65016
600	62694
350	62221

**5300
Depth**

**Average
Barrels**

6000	58351
5600	57566
4900	49794
4100	47117
3800	44871
3400	42334
2800	41441
2300	38904
1900	37442
1600	35389
1100	31670
800	31197
600	30605
350	30046

**5300
Depth**

**Minimum
Barrels**

6000	15918
5600	15971
4900	13778
4100	13112
3800	12553
3400	11748
2800	11522
2300	10888
1900	10522
1600	10017
1100	9071
800	8953
600	8813
350	8662

**5300
Depth**

PICEANCE BASIN BASIC EQUIPMENT LISTS

RANGELY OIL FIELD PRODUCTION

Pumping Oil Well

The basic equipment for a pumping oil well includes:

- Pumping Unit
- Electric Motor
- Wellhead
- Sucker Rods to Depth
- Rod Pump
- Flowlines - 1,500'

**Very Good
Barrels**

6000	90797
5600	90797
4900	90797
4100	90797
3800	90797
3400	90797
2800	90797
2300	90797
1900	90797
1600	90797
1100	90797
800	90797
600	90797
350	90797

**5300
Depth**

**Average
Barrels**

6000	44324
5600	44324
4900	44324
4100	44324
3800	44324
3400	44324
2800	44324
2300	44324
1900	44324
1600	44324
1100	44324
800	44324
600	44324
350	44324

**5300
Depth**

**Minimum
Barrels**

6000	11228
5600	11228
4900	11228
4100	11228
3800	11228
3400	11228
2800	11228
2300	11228
1900	11228
1600	11228
1100	11228
800	11228
600	11228
350	11228

**5300
Depth**

PICEANCE BASIN BASIC EQUIPMENT LISTS

RANGELY OIL FIELD PRODUCTION

CO2/Water Injection Well

The basic equipment for a CO2/water injection well includes:

- Wellhead
- Injection lines - 3000'

**Very Good
Barrels**

6000	30638
5600	30638
4900	30638
4100	30638
3800	30638
3400	30638
2800	30638
2300	30638
1900	30638
1600	30638
1100	30638
800	30638
600	30638
350	30638

**5300
Depth**

**Average
Barrels**

6000	15061
5600	15061
4900	15061
4100	15061
3800	15061
3400	15061
2800	15061
2300	15061
1900	15061
1600	15061
1100	15061
800	15061
600	15061
350	15061

**5300
Depth**

**Minimum
Barrels**

6000	3763
5600	3763
4900	3763
4100	3763
3800	3763
3400	3763
2800	3763
2300	3763
1900	3763
1600	3763
1100	3763
800	3763
600	3763
350	3763

**5300
Depth**

PICEANCE BASIN BASIC EQUIPMENT LISTS

RANGELY OIL FIELD PRODUCTION

Water Injection Well

The basic equipment for a water injection well includes:

- Wellhead
- Flowlines -1500'

**Very Good
Barrels**

6000	25639
5600	25639
4900	25639
4100	25639
3800	25639
3400	25639
2800	25639
2300	25639
1900	25639
1600	25639
1100	25639
800	25639
600	25639
350	25639

**5300
Depth**

**Average
Barrels**

6000	11578
5600	11578
4900	11578
4100	11578
3800	11578
3400	11578
2800	11578
2300	11578
1900	11578
1600	11578
1100	11578
800	11578
600	11578
350	11578

**5300
Depth**

**Minimum
Barrels**

6000	2892
5600	2892
4900	2892
4100	2892
3800	2892
3400	2892
2800	2892
2300	2892
1900	2892
1600	2892
1100	2892
800	2892
600	2892
350	2892

**5300
Depth**

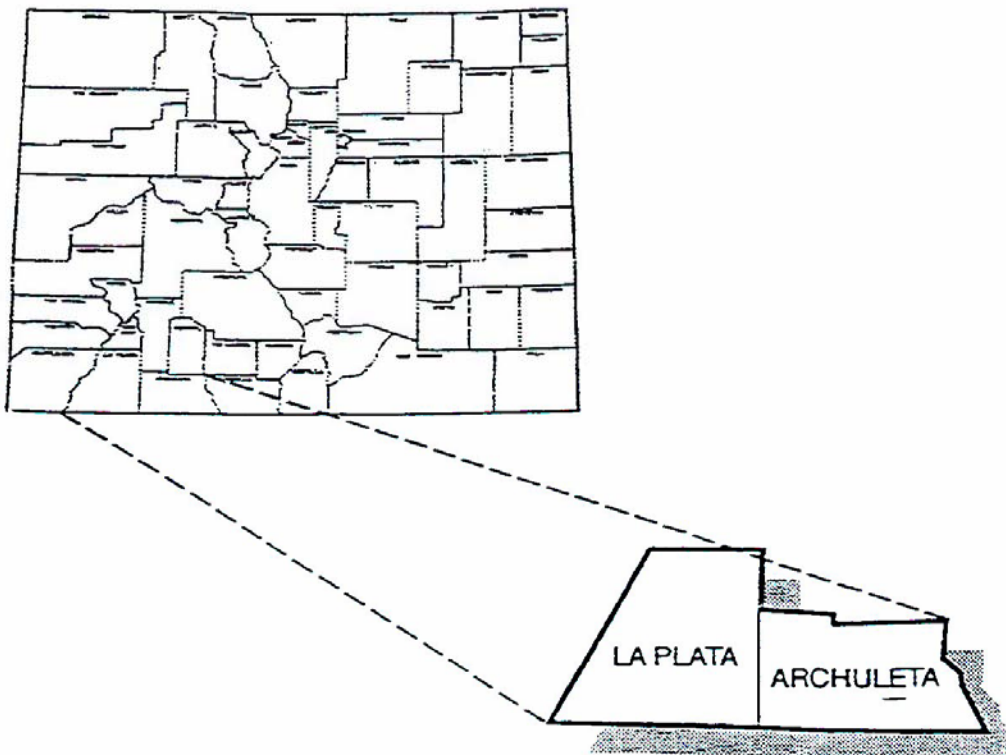
SAN JUAN BASIN

The San Juan Basin reaches into the southwest part of the state.
It includes the following counties:

Archuleta

La Plata

San Juan Basin



SAN JUAN BASIN BASIC EQUIPMENT LISTS

Total Value Pumping Oil Well with Tanks (Gas Engine)

The basic equipment for a pumping oil well with two oil storage tanks includes:

Pumping Unit	Sucker Rods to Depth
Gas Engine	Rod Pump
Wellhead	300 Barrel Oil Storage Tanks (2) with Stairway
Heater Treater	Flowlines - 600'

Very Good**Barrels**

900	138693	139724	143956									
800	138693	139724	141691	145743								
700	117208	139724	141691	145743								
600	106266	116532	139390	137788	145230							
500	106266	107154	118157	137788	139575	147017						
400	99343	107154	108526	119782	123192	141363	147030	148818				
300	89864	90887	100229	101480	112342	113847	142881	144668	150336			
200	85441	86419	87398	87258	88236	103983	105234	116856	118360	119865	150030	
100	71901	72831	82329	83259	84189	85119	90779	100186	111502	113006	123416	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	Depth

Average**Barrels**

900	67610	67884	71956									
800	67610	67884	68814	72823								
700	60521	67884	68814	72823								
600	57022	60821	68319	68502	73195							
500	57022	57089	61617	68502	69368	74062						
400	51529	57089	57779	62412	63993	70235	74811	75677				
300	45488	46027	51791	52417	59339	60076	70543	71410	75985			
200	44252	44761	45270	44607	45116	53668	54294	61552	62290	63027	74010	
100	37192	37657	42669	43134	43599	44064	46532	50340	57097	57835	64743	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	Depth

Minimum**Barrels**

900	18374	18438	19476									
800	18374	18438	18662	19689								
700	16617	18438	18662	19689								
600	15844	16692	18544	18614	19783							
500	15844	15864	16885	18614	18826	19995						
400	14479	15864	16045	17079	17482	19038	20175	20387				
300	13003	13152	14579	14746	16335	16517	19111	19323	20460			
200	12666	12803	12940	12787	12924	15078	15245	16881	17064	17246	19960	
100	10894	11019	12283	12408	12533	12658	13345	14153	15784	15967	17614	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	Depth

SAN JUAN BASIN BASIC EQUIPMENT LISTS

Total Value Pumping Oil Well with Tanks (Electric Motor)

The basic equipment for a pumping oil well with two oil storage tanks includes:

Pumping Unit	Sucker Rods to Depth
Electric Motor	Rod Pump
Control Panel	300 Barrel Oil Storage Tanks (2) with Stairway
Wellhead	Flowlines - 600'
Heater Treater	

Very Good

Barrels

900	128953	130920	135152									
800	128953	130920	132887	136939								
700	110446	130920	132887	136939								
600	100773	109770	130586	130758	136426							
500	100773	102144	111395	130758	132545	138213						
400	94720	102144	103516	113020	116431	134332	140000	141787				
300	86015	87038	96380	97632	107720	109224	136119	137906	143574			
200	81625	82603	83581	84560	85538	100134	101385	112233	113738	115242	143268	
100	70203	71133	79631	80561	81490	82420	88081	96369	107685	109190	118793	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	Depth

Average

Barrels

900	60311	61241	65313									
800	60311	61241	62170	66180								
700	54554	61241	62170	66180								
600	52067	54855	61676	61976	66552							
500	52067	52757	55650	61976	62843	67419						
400	47541	52757	53447	56446	58027	63710	68285	69152				
300	42037	42576	48341	48966	55350	56088	64577	65443	70019			
200	40930	41439	41948	42457	42966	50218	50843	57564	58301	59039	68043	
100	35171	35636	40519	40984	41449	41914	44382	47018	53776	54513	60754	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	Depth

Minimum

Barrels

900	16557	16782	17821									
800	16557	16782	17007	18033								
700	15134	16782	17007	18033								
600	14608	15209	16888	16990	18127							
500	14608	14789	15402	16990	17203	18340						
400	13490	14789	14970	15595	15999	17415	18552	18764				
300	12143	12292	13719	13886	15346	15528	17627	17840	18976			
200	11838	11976	12113	12250	12387	14218	14385	15892	16075	16257	18477	
100	10389	10514	11746	11871	11996	12121	12808	13433	14957	15139	16625	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	Depth

SAN JUAN BASIN BASIC EQUIPMENT LISTS

Total Value Pumping Oil Well without Tanks (Electric Motor)

The basic equipment for a pumping oil well without oil storage tanks includes:

Pumping Unit	Sucker Rods to Depth
Electric Motor	Rod Pump
Control Panel	Flowlines - 1000'
Wellhead	

Very Good

Barrels

900	102121	104088	108320									
800	102121	104088	106055	110107								
700	83614	104088	106055	110107								
600	76241	85239	106055	106226	111894							
500	76241	77613	86864	106226	108013	113681						
400	70189	77613	78985	88489	91899	109801	115468	117256				
300	61484	62507	71849	73100	83188	84693	111588	113375	119043			
200	57093	58072	59050	60028	61006	75603	76854	87702	89206	90711	118736	
100	45671	46601	55099	56029	56959	57889	63550	71838	83154	84658	94262	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Average

Barrels

900	45906	46836	50908									
800	45906	46836	47765	51775								
700	40149	46836	47765	51775								
600	38156	40945	47765	48066	52641							
500	38156	38846	41740	48066	48933	53508						
400	33630	38846	39536	42535	44117	49799	54375	55242				
300	28126	28666	34430	35056	41440	42178	50666	51533	56108			
200	27020	27529	28038	28547	29056	36307	36933	43653	44391	45129	54133	
100	21261	21726	26609	27074	27539	28004	30472	33108	39865	40603	46844	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Minimum

Barrels

900	11634	11859	12897									
800	11634	11859	12083	13110								
700	10210	11859	12083	13110								
600	9803	10403	12083	12185	13322							
500	9803	9984	10597	12185	12397	13534						
400	8685	9984	10165	10790	11193	12610	13747	13959				
300	7338	7486	8914	9081	10540	10723	12822	13034	14171			
200	7033	7170	7307	7444	7581	9413	9579	11087	11269	11452	13671	
100	5583	5708	6940	7065	7190	7315	8002	8628	10151	10334	11820	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

SAN JUAN BASIN BASIC EQUIPMENT LISTS

Total Value Flowing Oil Well with Tanks

The basic equipment for a flowing oil well with two oil storage tanks includes:

Wellhead
 Heater Treater
 300 Barrel Oil Storage Tanks (2) with Stairway
 Flowlines - 600'

Very Good

Barrels

900	51493	51493	51493	51493	51493	51493	51493	51493	51493	51493	51493
800	51493	51493	51493	51493	51493	51493	51493	51493	51493	51493	51493
700	51493	51493	51493	51493	51493	51493	51493	51493	51493	51493	51493
600	49192	49192	49192	49192	49192	49192	49192	49192	49192	49192	49192
500	49192	49192	49192	49192	49192	49192	49192	49192	49192	49192	49192
400	49192	49192	49192	49192	49192	49192	49192	49192	49192	49192	49192
300	49192	49192	49192	49192	49192	49192	49192	49192	49192	49192	49192
200	49192	49192	49192	49192	49192	49192	49192	49192	49192	49192	49192
100	49192	49192	49192	49192	49192	49192	49192	49192	49192	49192	49192
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

Average

Barrels

900	25284	25284	25284	25284	25284	25284	25284	25284	25284	25284	25284
800	25284	25284	25284	25284	25284	25284	25284	25284	25284	25284	25284
700	25284	25284	25284	25284	25284	25284	25284	25284	25284	25284	25284
600	24790	24790	24790	24790	24790	24790	24790	24790	24790	24790	24790
500	24790	24790	24790	24790	24790	24790	24790	24790	24790	24790	24790
400	24790	24790	24790	24790	24790	24790	24790	24790	24790	24790	24790
300	24790	24790	24790	24790	24790	24790	24790	24790	24790	24790	24790
200	24790	24790	24790	24790	24790	24790	24790	24790	24790	24790	24790
100	24790	24790	24790	24790	24790	24790	24790	24790	24790	24790	24790
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

Minimum

Barrels

900	7643	7643	7643	7643	7643	7643	7643	7643	7643	7643	7643
800	7643	7643	7643	7643	7643	7643	7643	7643	7643	7643	7643
700	7643	7643	7643	7643	7643	7643	7643	7643	7643	7643	7643
600	7525	7525	7525	7525	7525	7525	7525	7525	7525	7525	7525
500	7525	7525	7525	7525	7525	7525	7525	7525	7525	7525	7525
400	7525	7525	7525	7525	7525	7525	7525	7525	7525	7525	7525
300	7525	7525	7525	7525	7525	7525	7525	7525	7525	7525	7525
200	7525	7525	7525	7525	7525	7525	7525	7525	7525	7525	7525
100	7525	7525	7525	7525	7525	7525	7525	7525	7525	7525	7525
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

SAN JUAN BASIN BASIC EQUIPMENT LISTS

Total Value Flowing Oil Well without Tanks

The basic equipment for a flowing oil well without oil storage tanks includes:

Wellhead
Flowlines - 1000'

Very Good

Barrels

900	24661	24661	24661	24661	24661	24661	24661	24661	24661	24661	24661
800	24661	24661	24661	24661	24661	24661	24661	24661	24661	24661	24661
700	24661	24661	24661	24661	24661	24661	24661	24661	24661	24661	24661
600	24661	24661	24661	24661	24661	24661	24661	24661	24661	24661	24661
500	24661	24661	24661	24661	24661	24661	24661	24661	24661	24661	24661
400	24661	24661	24661	24661	24661	24661	24661	24661	24661	24661	24661
300	24661	24661	24661	24661	24661	24661	24661	24661	24661	24661	24661
200	24661	24661	24661	24661	24661	24661	24661	24661	24661	24661	24661
100	24661	24661	24661	24661	24661	24661	24661	24661	24661	24661	24661
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

Average

Barrels

900	10879	10879	10879	10879	10879	10879	10879	10879	10879	10879	10879
800	10879	10879	10879	10879	10879	10879	10879	10879	10879	10879	10879
700	10879	10879	10879	10879	10879	10879	10879	10879	10879	10879	10879
600	10879	10879	10879	10879	10879	10879	10879	10879	10879	10879	10879
500	10879	10879	10879	10879	10879	10879	10879	10879	10879	10879	10879
400	10879	10879	10879	10879	10879	10879	10879	10879	10879	10879	10879
300	10879	10879	10879	10879	10879	10879	10879	10879	10879	10879	10879
200	10879	10879	10879	10879	10879	10879	10879	10879	10879	10879	10879
100	10879	10879	10879	10879	10879	10879	10879	10879	10879	10879	10879
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

Minimum

Barrels

900	2720	2720	2720	2720	2720	2720	2720	2720	2720	2720	2720
800	2720	2720	2720	2720	2720	2720	2720	2720	2720	2720	2720
700	2720	2720	2720	2720	2720	2720	2720	2720	2720	2720	2720
600	2720	2720	2720	2720	2720	2720	2720	2720	2720	2720	2720
500	2720	2720	2720	2720	2720	2720	2720	2720	2720	2720	2720
400	2720	2720	2720	2720	2720	2720	2720	2720	2720	2720	2720
300	2720	2720	2720	2720	2720	2720	2720	2720	2720	2720	2720
200	2720	2720	2720	2720	2720	2720	2720	2720	2720	2720	2720
100	2720	2720	2720	2720	2720	2720	2720	2720	2720	2720	2720
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

Total Value Pumping Gas Well with Tank (Gas Engine)

The basic equipment for a pumping gas well (gas engine) with one oil storage tank includes:

- | | |
|----------------------|---|
| Pumping Unit | Rod Pump |
| Gas Engine | Production Unit |
| Wellhead | 300 Barrel Oil Storage Tank (1) with Stairway |
| Sucker Rods to Depth | Flowlines - 600' |

Very Good

Barrels

900	128287	129318	133550									
800	129652	130683	132650	136702								
700	108167	130683	132650	136702								
600	99526	109792	132650	131048	138490							
500	99526	100414	111417	131048	132835	140277						
400	92603	100414	101785	113042	116452	134622	140290	142077				
300	83123	84147	93488	94740	105602	107107	136141	137928	143596			
200	78701	79679	80657	80518	81496	97242	98494	110115	111620	113124	143289	
100	65161	66091	75589	76519	77448	78378	84039	93445	104761	106266	116676	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Average

Barrels

900	62407	62681	65958									
800	62407	62681	63611	67620								
700	55318	62681	63611	67620								
600	52314	56113	63611	63793	68487							
500	52314	52380	56908	63793	64660	69354						
400	46821	52380	53071	57703	59285	65527	70102	70969				
300	40779	41319	47083	47709	54630	55368	65834	66701	71277			
200	39543	40052	40561	39899	40408	48960	49585	56843	57581	58319	69301	
100	32484	32949	37961	38426	38891	39356	41824	45632	52389	53127	60034	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Minimum

Barrels

900	16203	16266	17305									
800	16203	16266	16491	17517								
700	14446	16266	16491	17517								
600	13791	14639	16491	16560	17729							
500	13791	13811	14832	16560	16773	17942						
400	12426	13811	13992	15025	15429	16985	18122	18334				
300	10950	11098	12526	12693	14281	14464	17058	17270	18407			
200	10613	10750	10887	10734	10871	13025	13191	14828	15010	15193	17907	
100	8841	8966	10230	10355	10480	10605	11292	12100	13731	13914	15561	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

SAN JUAN BASIN BASIC EQUIPMENT LISTS

Total Value Pumping Gas Well without Tank (Gas Engine)

The basic equipment for a pumping gas well (gas engine) without oil storage tank includes:

Pumping Unit
 Gas Engine
 Wellhead
 Rod Pump
 Flowlines - 1000'
 Sucker Rods to Depth

Very Good

Barrels

900	111861	112892	117124									
800	111861	112892	114859	118911								
700	90376	112892	114859	118911								
600	81734	92001	114859	113257	120698							
500	81734	82622	93626	113257	115044	122486						
400	74811	82622	83994	95250	98661	116831	122499	124286				
300	65332	66355	75697	76949	87811	89315	118349	120137	125805			
200	60910	61888	62866	62726	63705	79451	80702	92324	93829	95333	125498	
100	47370	48300	57797	58727	59657	60587	66248	75654	86970	88475	98884	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	Depth

Average

Barrels

900	53205	53479	57551									
800	53205	53479	54409	58418								
700	46116	53479	54409	58418								
600	43112	46911	54409	54591	59285							
500	43112	43178	47706	54591	55458	60152						
400	37619	43178	43869	48501	50083	56325	60900	61767				
300	31577	32117	37881	38507	45428	46166	56632	57499	62075			
200	30341	30850	31359	30697	31206	39758	40383	47641	48379	49117	60099	
100	23282	23747	28759	29224	29689	30154	32622	36430	43187	43925	50832	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	Depth

Minimum

Barrels

900	13451	13514	14553									
800	13451	13514	13739	14765								
700	11694	13514	13739	14765								
600	11039	11887	13739	13808	14977							
500	11039	11059	12080	13808	14021	15190						
400	9674	11059	11240	12273	12677	14233	15370	15582				
300	8198	8346	9774	9941	11529	11712	14306	14518	15655			
200	7861	7998	8135	7982	8119	10273	10439	12076	12258	12441	15155	
100	6089	6214	7478	7603	7728	7853	8540	9348	10979	11162	12809	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	Depth

SAN JUAN BASIN BASIC EQUIPMENT LISTS

Total Value Pumping Gas Well with Tank (Electric Motor)

The basic equipment for a pumping gas well (electric motor) with one oil storage tank includes:

Pumping Unit	Rod Pump
Electric Motor	Production Unit
Wellhead	300 Barrel Oil Storage Tank (1) with Stairway
Sucker Rods to Depth	Flowlines - 600'

Very Good

Barrels

900	116988	118955	123187									
800	116988	118955	120922	124974								
700	98481	118955	120922	124974								
600	91108	100106	120922	121093	126761							
500	91108	92480	101731	121093	122881	128549						
400	85056	92480	93852	103356	106766	124668	130336	132123				
300	76351	77374	86716	87967	98056	99560	126455	128242	133910			
200	71961	72939	73917	74895	75874	90470	91721	102569	104073	105578	133604	
100	60539	61469	69966	70896	71826	72756	78417	86705	98021	99526	109129	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Average

Barrels

900	53538	62681	65958									
800	62407	62681	63611	67620								
700	55318	62681	63611	67620								
600	52314	56113	63611	63793	68487							
500	52314	52380	56908	63793	64660	69354						
400	46821	52380	53071	57703	59285	65527	70102	70969				
300	40779	41319	47083	47709	54630	55368	65834	66701	71277			
200	39543	40052	40561	39899	40408	48960	49585	56843	57581	58319	69301	
100	32484	32949	37961	38426	38891	39356	41824	45632	52389	53127	60034	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Minimum

Barrels

900	14192	14417	15456									
800	14192	14417	14642	15668								
700	12769	14417	14642	15668								
600	12361	12962	14642	14744	15880							
500	12361	12542	13155	14744	14956	16093						
400	11243	12542	12723	13348	13752	15168	16305	16517				
300	9896	10045	11473	11639	13099	13281	15381	15593	16730			
200	9592	9729	9866	10003	10140	11972	12138	13646	13828	14010	16230	
100	8142	8267	9499	9624	9749	9874	10561	11186	12710	12892	14378	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

SAN JUAN BASIN BASIC EQUIPMENT LISTS

Total Value Pumping Gas Well without Tank (Electric Motor)

The basic equipment for a pumping gas well (electric motor) without oil storage tank includes:

Pumping Unit
 Electric Motor
 Wellhead
 Rod Pump
 Flowlines - 1000'
 Sucker Rods to Depth

Very Good

Barrels

900	100562	102529	106761									
800	100562	102529	104496	108548								
700	82055	102529	104496	108548								
600	74682	83680	104496	104667	110335							
500	74682	76054	85305	104667	106455	112123						
400	68630	76054	77426	86930	90340	108242	113910	115697				
300	59925	60948	70290	71541	81630	83134	110029	111816	117484			
200	55535	56513	57491	58469	59448	74044	75295	86143	87647	89152	117178	
100	44113	45043	53540	54470	55400	56330	61991	70279	81595	83100	92703	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Average

Barrels

900	45132	46062	50134									
800	45132	46062	46991	51001								
700	39375	46062	46991	51001								
600	32368	35657	42977	43778	48853							
500	28868	29558	32452	38778	39645	44220						
400	24342	29558	30248	33247	34829	40511	45087	45954				
300	18838	19378	25142	25768	32152	32890	41378	42245	46820			
200	17732	18241	18750	19259	19768	27019	27645	34365	35103	35841	44845	
100	11973	12438	17321	17786	18251	18716	21184	23820	30577	31315	37556	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Minimum

Barrels

900	11440	11665	12704									
800	11440	11665	11890	12916								
700	10017	11665	11890	12916								
600	9609	10210	11890	11992	13128							
500	9609	9790	10403	11992	12204	13341						
400	8491	9790	9971	10596	11000	12416	13553	13765				
300	7144	7293	8721	8887	10347	10529	12629	12841	13978			
200	6840	6977	7114	7251	7388	9220	9386	10894	11076	11258	13478	
100	5390	5515	6747	6872	6997	7122	7809	8434	9958	10140	11626	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Total Value Flowing Gas Well with Tank

The basic equipment for a flowing gas well with one oil storage tank includes:

- Wellhead
- Production Unit
- 300 Barrel Oil Storage Tank (1) with Stairway
- Flowlines - 600'

Very Good

MCF

850	41087	41087	41087	41087	41087	41087	41087	41087	41087	41087	41087	41087
750	41087	41087	41087	41087	41087	41087	41087	41087	41087	41087	41087	41087
650	41087	41087	41087	41087	41087	41087	41087	41087	41087	41087	41087	41087
550	41087	41087	41087	41087	41087	41087	41087	41087	41087	41087	41087	41087
450	41087	41087	41087	41087	41087	41087	41087	41087	41087	41087	41087	41087
350	41087	41087	41087	41087	41087	41087	41087	41087	41087	41087	41087	41087
250	41087	41087	41087	41087	41087	41087	41087	41087	41087	41087	41087	41087
150	41087	41087	41087	41087	41087	41087	41087	41087	41087	41087	41087	41087
60	41087	41087	41087	41087	41087	41087	41087	41087	41087	41087	41087	41087
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	Depth

Average

MCF

850	19286	19286	19286	19286	19286	19286	19286	19286	19286	19286	19286	19286
750	19286	19286	19286	19286	19286	19286	19286	19286	19286	19286	19286	19286
650	19286	19286	19286	19286	19286	19286	19286	19286	19286	19286	19286	19286
550	19286	19286	19286	19286	19286	19286	19286	19286	19286	19286	19286	19286
450	19286	19286	19286	19286	19286	19286	19286	19286	19286	19286	19286	19286
350	19286	19286	19286	19286	19286	19286	19286	19286	19286	19286	19286	19286
250	19286	19286	19286	19286	19286	19286	19286	19286	19286	19286	19286	19286
150	19286	19286	19286	19286	19286	19286	19286	19286	19286	19286	19286	19286
60	19286	19286	19286	19286	19286	19286	19286	19286	19286	19286	19286	19286
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	Depth

Minimum

MCF

850	5472	5472	5472	5472	5472	5472	5472	5472	5472	5472	5472	5472
750	5472	5472	5472	5472	5472	5472	5472	5472	5472	5472	5472	5472
650	5472	5472	5472	5472	5472	5472	5472	5472	5472	5472	5472	5472
550	5472	5472	5472	5472	5472	5472	5472	5472	5472	5472	5472	5472
450	5472	5472	5472	5472	5472	5472	5472	5472	5472	5472	5472	5472
350	5472	5472	5472	5472	5472	5472	5472	5472	5472	5472	5472	5472
250	5472	5472	5472	5472	5472	5472	5472	5472	5472	5472	5472	5472
150	5472	5472	5472	5472	5472	5472	5472	5472	5472	5472	5472	5472
60	5472	5472	5472	5472	5472	5472	5472	5472	5472	5472	5472	5472
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	Depth

SAN JUAN BASIN BASIC EQUIPMENT LISTS

Total Value Flowing Gas Well without Tanks

The basic equipment for a flowing gas well without oil storage tanks includes:

Wellhead
 Production Unit
 Flowlines - 1000'

Very Good

MCF

850	36109	36109	36109	36109	36109	36109	36109	36109	36109	36109	36109
750	36109	36109	36109	36109	36109	36109	36109	36109	36109	36109	36109
650	36109	36109	36109	36109	36109	36109	36109	36109	36109	36109	36109
550	36109	36109	36109	36109	36109	36109	36109	36109	36109	36109	36109
450	36109	36109	36109	36109	36109	36109	36109	36109	36109	36109	36109
350	36109	36109	36109	36109	36109	36109	36109	36109	36109	36109	36109
250	36109	36109	36109	36109	36109	36109	36109	36109	36109	36109	36109
150	36109	36109	36109	36109	36109	36109	36109	36109	36109	36109	36109
60	36109	36109	36109	36109	36109	36109	36109	36109	36109	36109	36109
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500
											Depth

Average

MCF

850	17071	17071	17071	17071	17071	17071	17071	17071	17071	17071	17071
750	17071	17071	17071	17071	17071	17071	17071	17071	17071	17071	17071
650	17071	17071	17071	17071	17071	17071	17071	17071	17071	17071	17071
550	17071	17071	17071	17071	17071	17071	17071	17071	17071	17071	17071
450	17071	17071	17071	17071	17071	17071	17071	17071	17071	17071	17071
350	17071	17071	17071	17071	17071	17071	17071	17071	17071	17071	17071
250	17071	17071	17071	17071	17071	17071	17071	17071	17071	17071	17071
150	17071	17071	17071	17071	17071	17071	17071	17071	17071	17071	17071
60	17071	17071	17071	17071	17071	17071	17071	17071	17071	17071	17071
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500
											Depth

Minimum

MCF

850	4257	4257	4257	4257	4257	4257	4257	4257	4257	4257	4257
750	4257	4257	4257	4257	4257	4257	4257	4257	4257	4257	4257
650	4257	4257	4257	4257	4257	4257	4257	4257	4257	4257	4257
550	4257	4257	4257	4257	4257	4257	4257	4257	4257	4257	4257
450	4257	4257	4257	4257	4257	4257	4257	4257	4257	4257	4257
350	4257	4257	4257	4257	4257	4257	4257	4257	4257	4257	4257
250	4257	4257	4257	4257	4257	4257	4257	4257	4257	4257	4257
150	4257	4257	4257	4257	4257	4257	4257	4257	4257	4257	4257
60	4257	4257	4257	4257	4257	4257	4257	4257	4257	4257	4257
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500
											Depth

SAN JUAN BASIN BASIC EQUIPMENT LISTS

Total Value Flowing Gas Well without Tanks or Production Unit

The basic equipment for a flowing gas well without tanks or production unit includes:

Wellhead
Flowlines - 1000'

very Good**MCF**

850	24661	24661	24661	24661	24661	24661	24661	24661	24661	24661	24661
750	24661	24661	24661	24661	24661	24661	24661	24661	24661	24661	24661
650	24661	24661	24661	24661	24661	24661	24661	24661	24661	24661	24661
550	24661	24661	24661	24661	24661	24661	24661	24661	24661	24661	24661
450	24661	24661	24661	24661	24661	24661	24661	24661	24661	24661	24661
350	24661	24661	24661	24661	24661	24661	24661	24661	24661	24661	24661
250	24661	24661	24661	24661	24661	24661	24661	24661	24661	24661	24661
150	24661	24661	24661	24661	24661	24661	24661	24661	24661	24661	24661
60	24661	24661	24661	24661	24661	24661	24661	24661	24661	24661	24661
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500
											Depth

Average**MCF**

850	10879	10879	10879	10879	10879	10879	10879	10879	10879	10879	10879
750	10879	10879	10879	10879	10879	10879	10879	10879	10879	10879	10879
650	10879	10879	10879	10879	10879	10879	10879	10879	10879	10879	10879
550	10879	10879	10879	10879	10879	10879	10879	10879	10879	10879	10879
450	10879	10879	10879	10879	10879	10879	10879	10879	10879	10879	10879
350	10879	10879	10879	10879	10879	10879	10879	10879	10879	10879	10879
250	10879	10879	10879	10879	10879	10879	10879	10879	10879	10879	10879
150	10879	10879	10879	10879	10879	10879	10879	10879	10879	10879	10879
60	10879	10879	10879	10879	10879	10879	10879	10879	10879	10879	10879
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500
											Depth

Minimum**MCF**

850	2720	2720	2720	2720	2720	2720	2720	2720	2720	2720	2720
750	2720	2720	2720	2720	2720	2720	2720	2720	2720	2720	2720
650	2720	2720	2720	2720	2720	2720	2720	2720	2720	2720	2720
550	2720	2720	2720	2720	2720	2720	2720	2720	2720	2720	2720
450	2720	2720	2720	2720	2720	2720	2720	2720	2720	2720	2720
350	2720	2720	2720	2720	2720	2720	2720	2720	2720	2720	2720
250	2720	2720	2720	2720	2720	2720	2720	2720	2720	2720	2720
150	2720	2720	2720	2720	2720	2720	2720	2720	2720	2720	2720
60	2720	2720	2720	2720	2720	2720	2720	2720	2720	2720	2720
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500
											Depth

SAN JUAN BASIN BASIC EQUIPMENT LISTS

Total Value Flowing Gas Well with Dehydrator with Tank

The basic equipment for a flowing gas well with one oil storage tank and a dehydrator includes:

Wellhead
 Production Unit
 Dehydrator
 300 Barrel Oil Storage Tank (1) with Stairway
 Flowlines - 600'

Very Good

MCF

850	55717	55717	55717	55717	55717	55717	55717	55717	55717	55717	55717
750	55717	55717	55717	55717	55717	55717	55717	55717	55717	55717	55717
650	55717	55717	55717	55717	55717	55717	55717	55717	55717	55717	55717
550	55717	55717	55717	55717	55717	55717	55717	55717	55717	55717	55717
450	55717	55717	55717	55717	55717	55717	55717	55717	55717	55717	55717
350	55717	55717	55717	55717	55717	55717	55717	55717	55717	55717	55717
250	55717	55717	55717	55717	55717	55717	55717	55717	55717	55717	55717
150	55717	55717	55717	55717	55717	55717	55717	55717	55717	55717	55717
60	55717	55717	55717	55717	55717	55717	55717	55717	55717	55717	55717
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

Average

MCF

850	27800	27800	27800	27800	27800	27800	27800	27800	27800	27800	27800
750	27800	27800	27800	27800	27800	27800	27800	27800	27800	27800	27800
650	27800	27800	27800	27800	27800	27800	27800	27800	27800	27800	27800
550	27800	27800	27800	27800	27800	27800	27800	27800	27800	27800	27800
450	27800	27800	27800	27800	27800	27800	27800	27800	27800	27800	27800
350	27800	27800	27800	27800	27800	27800	27800	27800	27800	27800	27800
250	27800	27800	27800	27800	27800	27800	27800	27800	27800	27800	27800
150	27800	27800	27800	27800	27800	27800	27800	27800	27800	27800	27800
60	27800	27800	27800	27800	27800	27800	27800	27800	27800	27800	27800
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

Minimum

MCF

850	7600	7600	7600	7600	7600	7600	7600	7600	7600	7600	7600
750	7600	7600	7600	7600	7600	7600	7600	7600	7600	7600	7600
650	7600	7600	7600	7600	7600	7600	7600	7600	7600	7600	7600
550	7600	7600	7600	7600	7600	7600	7600	7600	7600	7600	7600
450	7600	7600	7600	7600	7600	7600	7600	7600	7600	7600	7600
350	7600	7600	7600	7600	7600	7600	7600	7600	7600	7600	7600
250	7600	7600	7600	7600	7600	7600	7600	7600	7600	7600	7600
150	7600	7600	7600	7600	7600	7600	7600	7600	7600	7600	7600
60	7600	7600	7600	7600	7600	7600	7600	7600	7600	7600	7600
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

SAN JUAN BASIN BASIC EQUIPMENT LISTS

Total Value Flowing Gas Well with Dehydrator and without Tanks

The basic equipment for a flowing gas well without oil storage tanks but with a dehydrator includes:

Wellhead
 Production Unit
 Dehydrator
 Flowlines - 1000'

Very Good

MCF

850	50740	50740	50740	50740	50740	50740	50740	50740	50740	50740	50740
750	50740	50740	50740	50740	50740	50740	50740	50740	50740	50740	50740
650	50740	50740	50740	50740	50740	50740	50740	50740	50740	50740	50740
550	50740	50740	50740	50740	50740	50740	50740	50740	50740	50740	50740
450	50740	50740	50740	50740	50740	50740	50740	50740	50740	50740	50740
350	50740	50740	50740	50740	50740	50740	50740	50740	50740	50740	50740
250	50740	50740	50740	50740	50740	50740	50740	50740	50740	50740	50740
150	50740	50740	50740	50740	50740	50740	50740	50740	50740	50740	50740
60	50740	50740	50740	50740	50740	50740	50740	50740	50740	50740	50740
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

Average

MCF

850	25585	25585	25585	25585	25585	25585	25585	25585	25585	25585	25585
750	25585	25585	25585	25585	25585	25585	25585	25585	25585	25585	25585
650	25585	25585	25585	25585	25585	25585	25585	25585	25585	25585	25585
550	25585	25585	25585	25585	25585	25585	25585	25585	25585	25585	25585
450	25585	25585	25585	25585	25585	25585	25585	25585	25585	25585	25585
350	25585	25585	25585	25585	25585	25585	25585	25585	25585	25585	25585
250	25585	25585	25585	25585	25585	25585	25585	25585	25585	25585	25585
150	25585	25585	25585	25585	25585	25585	25585	25585	25585	25585	25585
60	25585	25585	25585	25585	25585	25585	25585	25585	25585	25585	25585
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

Minimum

MCF

850	6386	6386	6386	6386	6386	6386	6386	6386	6386	6386	6386
750	6386	6386	6386	6386	6386	6386	6386	6386	6386	6386	6386
650	6386	6386	6386	6386	6386	6386	6386	6386	6386	6386	6386
550	6386	6386	6386	6386	6386	6386	6386	6386	6386	6386	6386
450	6386	6386	6386	6386	6386	6386	6386	6386	6386	6386	6386
350	6386	6386	6386	6386	6386	6386	6386	6386	6386	6386	6386
250	6386	6386	6386	6386	6386	6386	6386	6386	6386	6386	6386
150	6386	6386	6386	6386	6386	6386	6386	6386	6386	6386	6386
60	6386	6386	6386	6386	6386	6386	6386	6386	6386	6386	6386
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

SAN JUAN BASIN BASIC EQUIPMENT LISTS

Common Tank Battery

The basic equipment for a common tank battery includes:

300 Barrel Oil Storage Tanks with Stairway
 Heater Treators
 Separators

Recycle Pump
 Manifolds and Headers

Very Good

Tanks

10	64425	79948	85119	95471	100642	105812	121335	126506
9	58093	73616	78787	89139	94310	99481	115004	120174
8	51761	64984	70155	78206	83377	93149	108672	113843
7	45430	58652	63823	71875	77045	86817	102340	107511
6	39098	52320	57491	65543	70714	75884	89107	94278
5	32766	45989	51159	59211	64382	69553	82775	87946
4	26434	39657	44828	52879	58050	63221	76443	81614
3	20103	33325	38496	46548	51718	56889	70112	75282
2	13771	26993	32164	40216	45387	50557	63780	68951
1	6332	20662	25832	33884	39055	44226	57448	62619

Tanks only	With 1 Heater Treater	With 1 Heater Treater and 1 Separator	With 2 Heater Treater	With 2 Heater Treater and 1 Separators	With 2 Heater Treater and 2 Separators	With 3 Heater Treater and 2 Separators	With 3 Heater Treater and 3 Separators
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For Each Additional Tank	Add	6332	For Each Skimming Tank	Add	6515
For Each Additional Separator	Add	5171	For Each Water Tank (Fbrgls)	Add	5053
For Each Additional Heater/Treater	Add	15523	For Each Water Tank (Steel)	Add	13008

Average

Tanks

10	32293	41323	43828	50353	52858	55363	64393	66897
9	29133	38163	40667	47193	49697	52202	61232	63737
8	25972	34508	37012	43043	45548	49042	58072	60576
7	22812	31347	33852	39883	42387	45881	54911	57416
6	19651	28187	30691	36722	39227	41732	50267	52772
5	16491	25026	27531	33562	36066	38571	47107	49611
4	13330	21866	24370	30401	32906	35411	43946	46451
3	10170	18705	21210	27241	29745	32250	40786	43290
2	7009	15545	18049	24080	26585	29090	37625	40130
1	3161	12384	14889	20920	23424	25929	34465	36969

Tanks only	With 1 Heater Treater	With 1 Heater Treater and 1 Separator	With 2 Heater Treater	With 2 Heater Treater and 1 Separators	With 2 Heater Treater and 2 Separators	With 3 Heater Treater and 2 Separators	With 3 Heater Treater and 3 Separators
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For Each Additional Tank	Add	3161	For Each Skimming Tank	Add	3580
For Each Additional Separator	Add	2505	For Each Water Tank (Fbrgls)	Add	2784
For Each Additional Heater/Treater	Add	9030	For Each Water Tank (Steel)	Add	7149

Minimum

Tanks

10	14685	16942	17566	19200	19823	20447	22704	23328
9	13233	15491	16114	17748	18372	18995	21253	21876
8	11782	13921	14545	16061	16684	17544	19802	20425
7	10331	12470	13094	14609	15233	16093	18350	18974
6	8880	11019	11642	13158	13782	14405	16544	17168
5	7428	9568	10191	11707	12330	12954	15093	15717
4	5977	8116	8740	10256	10879	11503	13642	14265
3	4526	6665	7289	8804	9428	10051	12191	12814
2	3075	5214	5837	7353	7977	8600	10739	11363
1	1451	3763	4386	5902	6525	7149	9288	9912

Tanks only	With 1 Heater Treater	With 1 Heater Treater and 1 Separators	With 2 Heater Treater	With 2 Heater Treater and 1 Separators	With 2 Heater Treater and 2 Separators	With 3 Heater Treater and 2 Separators	With 3 Heater Treater and 3 Separators
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For Each Additional Tank	Add	1451	For Each Skimming Tank	Add	1290
For Each Additional Separator	Add	624	For Each Water Tank (Fbrgls)	Add	1011
For Each Additional Heater/Treater	Add	2258	For Each Water Tank (Steel)	Add	2580

SAN JUAN BASIN BASIC EQUIPMENT LISTS

Total Value Plunger Lift Gas Well with Tank

The basic equipment for a plunger lift gas well with one oil storage tank includes:

Wellhead with Lubricator
 Plunger Lift
 Production Unit
 300 Barrel Oil Storage Tank (1) with Stairway
 Flowlines - 600'

Very Good Barrels

850	44419	44419	44419	44419	44419	44419	44419	44419	44419	44419	44419
750	44419	44419	44419	44419	44419	44419	44419	44419	44419	44419	44419
650	44419	44419	44419	44419	44419	44419	44419	44419	44419	44419	44419
550	44419	44419	44419	44419	44419	44419	44419	44419	44419	44419	44419
450	44419	44419	44419	44419	44419	44419	44419	44419	44419	44419	44419
350	44419	44419	44419	44419	44419	44419	44419	44419	44419	44419	44419
250	44419	44419	44419	44419	44419	44419	44419	44419	44419	44419	44419
150	44419	44419	44419	44419	44419	44419	44419	44419	44419	44419	44419
60	44419	44419	44419	44419	44419	44419	44419	44419	44419	44419	44419
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500
											Depth

Average Barrels

850	21178	21178	21178	21178	21178	21178	21178	21178	21178	21178	21178
750	21178	21178	21178	21178	21178	21178	21178	21178	21178	21178	21178
650	21178	21178	21178	21178	21178	21178	21178	21178	21178	21178	21178
550	21178	21178	21178	21178	21178	21178	21178	21178	21178	21178	21178
450	21178	21178	21178	21178	21178	21178	21178	21178	21178	21178	21178
350	21178	21178	21178	21178	21178	21178	21178	21178	21178	21178	21178
250	21178	21178	21178	21178	21178	21178	21178	21178	21178	21178	21178
150	21178	21178	21178	21178	21178	21178	21178	21178	21178	21178	21178
60	21178	21178	21178	21178	21178	21178	21178	21178	21178	21178	21178
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500
											Depth

Minimum Barrels

850	5945	5945	5945	5945	5945	5945	5945	5945	5945	5945	5945
750	5945	5945	5945	5945	5945	5945	5945	5945	5945	5945	5945
650	5945	5945	5945	5945	5945	5945	5945	5945	5945	5945	5945
550	5945	5945	5945	5945	5945	5945	5945	5945	5945	5945	5945
450	5945	5945	5945	5945	5945	5945	5945	5945	5945	5945	5945
350	5945	5945	5945	5945	5945	5945	5945	5945	5945	5945	5945
250	5945	5945	5945	5945	5945	5945	5945	5945	5945	5945	5945
150	5945	5945	5945	5945	5945	5945	5945	5945	5945	5945	5945
60	5945	5945	5945	5945	5945	5945	5945	5945	5945	5945	5945
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500
											Depth

SAN JUAN BASIN BASIC EQUIPMENT LISTS

Total Value Plunger Lift Gas Well without Tanks

The basic equipment for a plunger lift gas well without oil storage tank includes:

Wellhead with Lubricator
Plunger Lift
Production Unit

Flowlines - 1000'

**Very Good
Barrels**

850	38087	38087	38087	38087	38087	38087	38087	38087	38087	38087	38087	38087
750	38087	38087	38087	38087	38087	38087	38087	38087	38087	38087	38087	38087
650	38087	38087	38087	38087	38087	38087	38087	38087	38087	38087	38087	38087
550	38087	38087	38087	38087	38087	38087	38087	38087	38087	38087	38087	38087
450	38087	38087	38087	38087	38087	38087	38087	38087	38087	38087	38087	38087
350	38087	38087	38087	38087	38087	38087	38087	38087	38087	38087	38087	38087
250	38087	38087	38087	38087	38087	38087	38087	38087	38087	38087	38087	38087
150	38087	38087	38087	38087	38087	38087	38087	38087	38087	38087	38087	38087
60	38087	38087	38087	38087	38087	38087	38087	38087	38087	38087	38087	38087
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	Depth

**Average
Barrels**

850	18017	18017	18017	18017	18017	18017	18017	18017	18017	18017	18017	18017
750	18017	18017	18017	18017	18017	18017	18017	18017	18017	18017	18017	18017
650	18017	18017	18017	18017	18017	18017	18017	18017	18017	18017	18017	18017
550	18017	18017	18017	18017	18017	18017	18017	18017	18017	18017	18017	18017
450	18017	18017	18017	18017	18017	18017	18017	18017	18017	18017	18017	18017
350	18017	18017	18017	18017	18017	18017	18017	18017	18017	18017	18017	18017
250	18017	18017	18017	18017	18017	18017	18017	18017	18017	18017	18017	18017
150	18017	18017	18017	18017	18017	18017	18017	18017	18017	18017	18017	18017
60	18017	18017	18017	18017	18017	18017	18017	18017	18017	18017	18017	18017
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	Depth

**Minimum
Barrels**

850	4494	4494	4494	4494	4494	4494	4494	4494	4494	4494	4494	4494
750	4494	4494	4494	4494	4494	4494	4494	4494	4494	4494	4494	4494
650	4494	4494	4494	4494	4494	4494	4494	4494	4494	4494	4494	4494
550	4494	4494	4494	4494	4494	4494	4494	4494	4494	4494	4494	4494
450	4494	4494	4494	4494	4494	4494	4494	4494	4494	4494	4494	4494
350	4494	4494	4494	4494	4494	4494	4494	4494	4494	4494	4494	4494
250	4494	4494	4494	4494	4494	4494	4494	4494	4494	4494	4494	4494
150	4494	4494	4494	4494	4494	4494	4494	4494	4494	4494	4494	4494
60	4494	4494	4494	4494	4494	4494	4494	4494	4494	4494	4494	4494
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	Depth

SAN JUAN BASIN BASIC EQUIPMENT LISTS

Total Value Plunger Lift Gas Well without Tanks & Production Units

The basic equipment for a plunger lift gas well without oil storage tank or production unit includes:

Wellhead with Lubricator
Plunger Lift
Flowlines -1000'

**Very Good
Barrels**

850	26639	26639	26639	26639	26639	26639	26639	26639	26639	26639	26639
750	26639	26639	26639	26639	26639	26639	26639	26639	26639	26639	26639
650	26639	26639	26639	26639	26639	26639	26639	26639	26639	26639	26639
550	26639	26639	26639	26639	26639	26639	26639	26639	26639	26639	26639
450	26639	26639	26639	26639	26639	26639	26639	26639	26639	26639	26639
350	26639	26639	26639	26639	26639	26639	26639	26639	26639	26639	26639
250	26639	26639	26639	26639	26639	26639	26639	26639	26639	26639	26639
150	26639	26639	26639	26639	26639	26639	26639	26639	26639	26639	26639
60	26639	26639	26639	26639	26639	26639	26639	26639	26639	26639	26639
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

**Average
Barrels**

850	11825	11825	11825	11825	11825	11825	11825	11825	11825	11825	11825
750	11825	11825	11825	11825	11825	11825	11825	11825	11825	11825	11825
650	11825	11825	11825	11825	11825	11825	11825	11825	11825	11825	11825
550	11825	11825	11825	11825	11825	11825	11825	11825	11825	11825	11825
450	11825	11825	11825	11825	11825	11825	11825	11825	11825	11825	11825
350	11825	11825	11825	11825	11825	11825	11825	11825	11825	11825	11825
250	11825	11825	11825	11825	11825	11825	11825	11825	11825	11825	11825
150	11825	11825	11825	11825	11825	11825	11825	11825	11825	11825	11825
60	11825	11825	11825	11825	11825	11825	11825	11825	11825	11825	11825
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

**Minimum
Barrels**

850	2956	2956	2956	2956	2956	2956	2956	2956	2956	2956	2956
750	2956	2956	2956	2956	2956	2956	2956	2956	2956	2956	2956
650	2956	2956	2956	2956	2956	2956	2956	2956	2956	2956	2956
550	2956	2956	2956	2956	2956	2956	2956	2956	2956	2956	2956
450	2956	2956	2956	2956	2956	2956	2956	2956	2956	2956	2956
350	2956	2956	2956	2956	2956	2956	2956	2956	2956	2956	2956
250	2956	2956	2956	2956	2956	2956	2956	2956	2956	2956	2956
150	2956	2956	2956	2956	2956	2956	2956	2956	2956	2956	2956
60	2956	2956	2956	2956	2956	2956	2956	2956	2956	2956	2956
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

SAN JUAN BASIN BASIC EQUIPMENT LISTS

Total Value Pumping Coal Seams Gas Well with Tanks (Gas Engine)

The basic equipment for a pumping coal seams gas well (gas engine) with two water storage tanks includes:

Pumping Unit	Separator
Gas Engine	300 Barrel Water Storage Tanks (2) with Stairway
Wellhead	Flowlines - 600'
Sucker Rods to Depth	Filter Vessel
Rod Pump	

Very Good**Barrels**

900	132737	133769	138000	
800	132737	133769	135735	139788
700	111252	133769	135735	139788
600	102611	112877	135735	134133
500	102611	103499	114502	134133
400	95688	103499	104871	116127
300	86209	87232	96574	97825
200	81786	82764	83743	83603
100	68246	69176	78674	79604
	3500	4000	4500	5000

Depth**Average****Barrels**

900	62794	63068	67140	
800	62794	63068	63998	68007
700	55705	63068	63998	68007
600	52701	56500	63998	64180
500	52701	52767	57295	64180
400	47208	52767	53458	58090
300	41166	41706	47470	48096
200	39930	40439	40948	40286
100	32871	33336	38348	38813
	3500	4000	4500	5000

Depth**Minimum****Barrels**

900	17192	17255	18294	
800	17192	17255	17480	18506
700	15435	17255	17480	18506
600	14780	15628	17480	17549
500	14780	14800	15821	17549
400	13415	14800	14981	16014
300	11939	12087	13515	13682
200	11602	11739	11876	11723
100	9830	9955	11219	11344
	3500	4000	4500	5000

Depth

SAN JUAN BASIN BASIC EQUIPMENT LISTS

Total Value Pumping Coal Seams Gas Well without Tanks (Gas Engine)

The basic equipment for a pumping coal seams gas well (gas engine) without water storage tanks includes:

Pumping Unit	Rod Pump
Gas Engine	Separator
Wellhead	Flowlines - 1000'
Sucker Rods to Depth	Filter Vessel

Very Good

Barrels

900	121428	122460	126691	
800	121428	122460	124426	128479
700	99943	122460	124426	128479
600	91302	101568	124426	122824
500	91302	92190	103193	122824
400	84379	92190	93562	104818
300	74900	75923	85265	86516
200	70477	71455	72434	72294
100	56937	57867	67365	68295
	3500	4000	4500	5000

Depth

Average

Barrels

900	57419	57693	61765	
800	57419	57693	58623	62632
700	50330	57693	58623	62632
600	47326	51125	58623	58805
500	47326	47392	51920	58805
400	41833	47392	48083	52715
300	35791	36331	42095	42721
200	34555	35064	35573	34911
100	27496	27961	32973	33438
	3500	4000	4500	5000

Depth

Minimum

Barrels

900	14526	14589	15628	
800	14526	14589	14814	15840
700	12769	14589	14814	15840
600	12114	12962	14814	14883
500	12114	12134	13155	14883
400	10749	12134	12315	13348
300	9273	9421	10849	11016
200	8936	9073	9210	9057
100	7164	7289	8553	8678
	3500	4000	4500	5000

Depth

SAN JUAN BASIN BASIC EQUIPMENT LISTS

Total Value Pumping Coal Seams Gas Well with Tanks (Electric Motor)

The basic equipment for a pumping coal seams gas well (electric motor) with two water storage tanks includes:

Pumping Unit	Separator
Electric Motor	300 Barrel Water Storage Tanks (2) with Stairway
Wellhead	Flowlines - 600'
Sucker Rods to Depth	Filter Vessel
Rod Pump	

Very Good**Barrels**

900	121439	123406	127637	
800	121439	123406	125372	129425
700	102932	123406	125372	129425
600	95559	104557	125372	125544
500	95559	96931	106182	125544
400	89507	96931	98302	107806
300	80801	81825	91166	92418
200	76411	77389	78368	79346
100	64989	65919	74417	75347
	3500	4000	4500	5000

Depth**Average****Barrels**

900	54721	55651	59723	
800	54721	55651	56580	60590
700	48964	55651	56580	60590
600	46971	49760	56580	56881
500	46971	47661	50555	56881
400	42445	47661	48351	51350
300	36941	37481	43245	43871
200	35835	36344	36853	37362
100	30076	30541	35424	35889
	3500	4000	4500	5000

Depth**Minimum****Barrels**

900	15181	15406	16445	
800	15181	15406	15631	16657
700	13758	15406	15631	16657
600	13350	13951	15631	15733
500	13350	13531	14144	15733
400	12232	13531	13712	14337
300	10885	11034	12462	12628
200	10581	10718	10855	10992
100	9131	9256	10488	10613
	3500	4000	4500	5000

Depth

SAN JUAN BASIN BASIC EQUIPMENT LISTS

Total Value Pumping Coal Seams Gas Well without Tanks (Electric Motor)

The basic equipment for a pumping coal seams gas well (electric motor) without water storage tanks includes:

Pumping Unit	Rod Pump
Electric Motor	Separator
Wellhead	Flowlines - 1000'
Sucker Rods to Depth	Filter Vessel

Very Good

Barrels

900	110130	112097	116328	
800	110130	112097	114063	118116
700	91623	112097	114063	118116
600	84250	93248	114063	114235
500	84250	85622	94873	114235
400	78198	85622	86993	96497
300	69492	70516	79857	81109
200	65102	66080	67059	68037
100	53680	54610	63108	64038
	3500	4000	4500	5000

Depth

Average

Barrels

900	49346	50276	54348	
800	49346	50276	51205	55215
700	43589	50276	51205	55215
600	41596	44385	51205	51506
500	41596	42286	45180	51506
400	37070	42286	42976	45975
300	31566	32106	37870	38496
200	30460	30969	31478	31987
100	24701	25166	30049	30514
	3500	4000	4500	5000

Depth

Minimum

Barrels

900	12515	12740	13779	
800	12515	12740	12965	13991
700	11092	12740	12965	13991
600	10684	11285	12965	13067
500	10684	10865	11478	13067
400	9566	10865	11046	11671
300	8219	8368	9796	9962
200	7915	8052	8189	8326
100	6465	6590	7822	7947
	3500	4000	4500	5000

Depth

SAN JUAN BASIN BASIC EQUIPMENT LISTS

Total Value Flowing Coal Seams Gas Well with Tanks

The basic equipment for a flowing coal seams gas well with two water storage tanks includes:

Wellhead
Separator
Filter Vessel

300 Barrel Water Storage Tanks (2) with Stairway
Flowlines - 600'

Very Good

MCF

850	45537	45537	45537	45537
750	45537	45537	45537	45537
650	45537	45537	45537	45537
550	45537	45537	45537	45537
450	45537	45537	45537	45537
350	45537	45537	45537	45537
250	45537	45537	45537	45537
150	45537	45537	45537	45537
60	45537	45537	45537	45537
	3500	4000	4500	5000
			Depth	

Average

MCF

850	20468	20468	20468	20468
750	20468	20468	20468	20468
650	20468	20468	20468	20468
550	20468	20468	20468	20468
450	20468	20468	20468	20468
350	20468	20468	20468	20468
250	20468	20468	20468	20468
150	20468	20468	20468	20468
60	20468	20468	20468	20468
	3500	4000	4500	5000
			Depth	

Minimum

MCF

850	6461	6461	6461	6461
750	6461	6461	6461	6461
650	6461	6461	6461	6461
550	6461	6461	6461	6461
450	6461	6461	6461	6461
350	6461	6461	6461	6461
250	6461	6461	6461	6461
150	6461	6461	6461	6461
60	6461	6461	6461	6461
	3500	4000	4500	5000
			Depth	

SAN JUAN BASIN BASIC EQUIPMENT LISTS

Total Value Flowing Coal Seams Gas Well without Tanks

The basic equipment for a flowing coal seams gas well without water storage tanks includes:

Wellhead
 Separator
 Flowlines - 1000'
 Filter Vessel

Very Good

MCF

850	34228	34228	34228	34228
750	34228	34228	34228	34228
650	34228	34228	34228	34228
550	34228	34228	34228	34228
450	34228	34228	34228	34228
350	34228	34228	34228	34228
250	34228	34228	34228	34228
150	34228	34228	34228	34228
60	34228	34228	34228	34228
	3500	4000	4500	5000
				Depth

Average

MCF

850	15093	15093	15093	15093
750	15093	15093	15093	15093
650	15093	15093	15093	15093
550	15093	15093	15093	15093
450	15093	15093	15093	15093
350	15093	15093	15093	15093
250	15093	15093	15093	15093
150	15093	15093	15093	15093
60	15093	15093	15093	15093
	3500	4000	4500	5000
				Depth

Minimum

MCF

850	3795	3795	3795	3795
750	3795	3795	3795	3795
650	3795	3795	3795	3795
550	3795	3795	3795	3795
450	3795	3795	3795	3795
350	3795	3795	3795	3795
250	3795	3795	3795	3795
150	3795	3795	3795	3795
60	3795	3795	3795	3795
	3500	4000	4500	5000
				Depth

SAN JUAN BASIN BASIC EQUIPMENT LISTS

Total Value Gas Lift Coal Seams Gas Well with Tanks

The basic equipment for a gas lift coal seams gas well with two water storage tanks includes:

Wellhead
Separator
Filter Vessel

300 Barrel Water Storage Tanks (2) with Stairway
Flowlines - 2,000'

Very Good

MCF

850	50267	50267	50267	50267
750	50267	50267	50267	50267
650	50267	50267	50267	50267
550	50267	50267	50267	50267
450	50267	50267	50267	50267
350	50267	50267	50267	50267
250	50267	50267	50267	50267
150	50267	50267	50267	50267
60	50267	50267	50267	50267
	3500	4000	4500	5000

Depth

Average

MCF

850	23779	23779	23779	23779
750	23779	23779	23779	23779
650	23779	23779	23779	23779
550	23779	23779	23779	23779
450	23779	23779	23779	23779
350	23779	23779	23779	23779
250	23779	23779	23779	23779
150	23779	23779	23779	23779
60	23779	23779	23779	23779
	3500	4000	4500	5000

Depth

Minimum

MCF

850	7289	7289	7289	7289
750	7289	7289	7289	7289
650	7289	7289	7289	7289
550	7289	7289	7289	7289
450	7289	7289	7289	7289
350	7289	7289	7289	7289
250	7289	7289	7289	7289
150	7289	7289	7289	7289
60	7289	7289	7289	7289
	3500	4000	4500	5000

Depth

SAN JUAN BASIN BASIC EQUIPMENT LISTS

**Total Value Pumping Coal Seams Gas Well with Tanks, with Meter
(Gas Engine)**

The basic equipment for a pumping coal seams gas well (gas engine) with two water storage tanks, with meter run, includes:

Pumping Unit	Separator
Gas Engine	300 Barrel Water Storage Tanks (2) with Stairway
Wellhead	Meter Run with House
Sucker Rods to Depth	Flowlines - 600'
Rod Pump	Filter Vessel

Very Good

Barrels

900	136908	137940	142171	
800	136908	137940	139906	143959
700	115423	137940	139906	143959
600	106782	117048	139906	138304
500	106782	107670	118673	138304
400	99859	107670	109042	120298
300	90380	91403	100745	101996
200	85957	86935	87914	87774
100	72417	73347	82845	83775
	3500	4000	4500	5000

Depth

Average

Barrels

900	65073	65347	69419	
800	65073	65347	66277	70286
700	57984	65347	66277	70286
600	54980	58779	66277	66459
500	54980	55046	59574	66459
400	49487	55046	55737	60369
300	43445	43985	49749	50375
200	42209	42718	43227	42565
100	35150	35615	40627	41092
	3500	4000	4500	5000

Depth

Minimum

Barrels

900	17869	17932	18971	
800	17869	17932	18157	19183
700	16112	17932	18157	19183
600	15457	16305	18157	18227
500	15457	15477	16498	18227
400	14092	15477	15658	16692
300	12616	12765	14192	14359
200	12279	12416	12553	12400
100	10507	10632	11896	12021
	3500	4000	4500	5000

Depth

SAN JUAN BASIN BASIC EQUIPMENT LISTS

Total Value Pumping Coal Seams Gas Well without Tanks, with Meter (Gas Engine)

The basic equipment for a pumping coal seams gas well (gas engine) without water storage tanks, with meter run, includes:

Pumping Unit	Separator
Gas Engine	Meter Run with House
Wellhead	Flowlines - 1000'
Sucker Rods to Depth	Filter Vessel
Rod Pump	

Very Good**Barrels**

900	125599	126631	130862	
800	125599	126631	128597	132650
700	104114	126631	128597	132650
600	95473	105739	128597	126995
500	95473	96361	107364	126995
400	88550	96361	97733	108989
300	79071	80094	89436	90687
200	74648	75626	76605	76465
100	61108	62038	71536	72466
	3500	4000	4500	5000

Depth**Average****Barrels**

900	59698	59972	64044	
800	59698	59972	60902	64911
700	52609	59972	60902	64911
600	49605	53404	60902	61084
500	49605	49671	54199	61084
400	44112	49671	50362	54994
300	38070	38610	44374	45000
200	36834	37343	37852	37190
100	29775	30240	35252	35717
	3500	4000	4500	5000

Depth**Minimum****Barrels**

900	15203	15266	16305	
800	15203	15266	15491	16517
700	13446	15266	15491	16517
600	12791	13639	15491	15561
500	12791	12811	13832	15561
400	11426	12811	12992	14026
300	9950	10099	11526	11693
200	9613	9750	9887	9734
100	7841	7966	9230	9355
	3500	4000	4500	5000

Depth

SAN JUAN BASIN BASIC EQUIPMENT LISTS

**Total Value Pumping Coal Seams Gas Well with Tanks, with Meter
(Electric Motor)**

The basic equipment for a pumping coal seams gas well (electric motor) with two water storage tanks, with meter run, includes:

Pumping Unit	Separator
Electric Motor	300 Barrel Water Storage Tanks (2) with Stairway
Wellhead	Meter Run with House
Sucker Rods to Depth	Flowlines - 600'
Rod Pump	Filter Vessel

Very Good

Barrels

900	125610	127577	131808	
800	125610	127577	129543	133596
700	107103	127577	129543	133596
600	99730	108728	129543	129715
500	99730	101102	110353	129715
400	93678	101102	102473	111977
300	84972	85996	95337	96589
200	80582	81560	82539	83517
100	69160	70090	78588	79518
	3500	4000	4500	5000

Depth

Average

Barrels

900	57000	57930	62002	
800	57000	57930	58859	62869
700	51243	57930	58859	62869
600	49250	52039	58859	59160
500	49250	49940	52834	59160
400	44724	49940	50630	53629
300	39220	39760	45524	46150
200	38114	38623	39132	39641
100	32355	32820	37703	38168
	3500	4000	4500	5000

Depth

Minimum

Barrels

900	15859	16083	17122	
800	15859	16083	16308	17334
700	14435	16083	16308	17334
600	14027	14628	16308	16410
500	14027	14208	14821	16410
400	12909	14208	14390	15015
300	11563	11711	13139	13305
200	11258	11395	11532	11669
100	9808	9933	11165	11290
	3500	4000	4500	5000

Depth

SAN JUAN BASIN BASIC EQUIPMENT LISTS

Total Value Pumping Coal Seams Gas Well without Tanks, with Meter (Electric Motor)

The basic equipment for a pumping coal seams gas well (electric motor) without water storage tanks, with meter run, includes:

Pumping Unit	Separator
Electric Motor	Meter Run with House
Wellhead	Flowlines - 1000'
Sucker Rods to Depth	Filter Vessel
Rod Pump	

Very Good**Barrels**

900	114301	116268	120499	
800	114301	116268	118234	122287
700	95794	116268	118234	122287
600	88421	97419	118234	118406
500	88421	89793	99044	118406
400	82369	89793	91164	100668
300	73663	74687	84028	85280
200	69273	70251	71230	72208
100	57851	58781	67279	68209
	3500	4000	4500	5000

Depth**Average****Barrels**

900	51625	52555	56627	
800	51625	52555	53484	57494
700	45868	52555	53484	57494
600	43875	46664	53484	53785
500	43875	44565	47459	53785
400	39349	44565	45255	48254
300	33845	34385	40149	40775
200	32739	33248	33757	34266
100	26980	27445	32328	32793
	3500	4000	4500	5000

Depth**Minimum****Barrels**

900	13193	13417	14456	
800	13193	13417	13642	14668
700	11769	13417	13642	14668
600	11361	11962	13642	13744
500	11361	11542	12155	13744
400	10243	11542	11724	12349
300	8897	9045	10473	10639
200	8592	8729	8866	9003
100	7142	7267	8499	8624
	3500	4000	4500	5000

Depth

SAN JUAN BASIN BASIC EQUIPMENT LISTS

Total Value Flowing Coal Seams Gas Well with Tanks, with Meter

The basic equipment for a flowing coal seams gas well with meter run, with two water storage tanks, includes:

Wellhead	300 Barrel Water Storage Tanks (2) with Stairway
Separator	Flowlines - 600'
Filter Vessel	Meter Run with House

Very Good

MCF

850	49708	49708	49708	49708
750	49708	49708	49708	49708
650	49708	49708	49708	49708
550	49708	49708	49708	49708
450	49708	49708	49708	49708
350	49708	49708	49708	49708
250	49708	49708	49708	49708
150	49708	49708	49708	49708
60	49708	49708	49708	49708
	3500	4000	4500	5000
	Depth			

Average

MCF

850	22747	22747	22747	22747
750	22747	22747	22747	22747
650	22747	22747	22747	22747
550	22747	22747	22747	22747
450	22747	22747	22747	22747
350	22747	22747	22747	22747
250	22747	22747	22747	22747
150	22747	22747	22747	22747
60	22747	22747	22747	22747
	3500	4000	4500	5000
	Depth			

Minimum

MCF

850	7138	7138	7138	7138
750	7138	7138	7138	7138
650	7138	7138	7138	7138
550	7138	7138	7138	7138
450	7138	7138	7138	7138
350	7138	7138	7138	7138
250	7138	7138	7138	7138
150	7138	7138	7138	7138
60	7138	7138	7138	7138
	3500	4000	4500	5000
	Depth			

SAN JUAN BASIN BASIC EQUIPMENT LISTS

Total Value Flowing Coal Seams Gas Well without Tanks, with Meter

The basic equipment for a flowing coal seams gas well with meter run, without water storage tanks, includes:

Wellhead
 Separator
 Meter Run with House
 Flowlines - 1000'
 Filter Vessel

Very Good

MCF

850	38399	38399	38399	38399
750	38399	38399	38399	38399
650	38399	38399	38399	38399
550	38399	38399	38399	38399
450	38399	38399	38399	38399
350	38399	38399	38399	38399
250	38399	38399	38399	38399
150	38399	38399	38399	38399
60	38399	38399	38399	38399
	3500	4000	4500	5000
	Depth			

Average

MCF

850	17372	17372	17372	17372
750	17372	17372	17372	17372
650	17372	17372	17372	17372
550	17372	17372	17372	17372
450	17372	17372	17372	17372
350	17372	17372	17372	17372
250	17372	17372	17372	17372
150	17372	17372	17372	17372
60	17372	17372	17372	17372
	3500	4000	4500	5000
	Depth			

Minimum

MCF

850	4472	4472	4472	4472
750	4472	4472	4472	4472
650	4472	4472	4472	4472
550	4472	4472	4472	4472
450	4472	4472	4472	4472
350	4472	4472	4472	4472
250	4472	4472	4472	4472
150	4472	4472	4472	4472
60	4472	4472	4472	4472
	3500	4000	4500	5000
	Depth			

SAN JUAN BASIN BASIC EQUIPMENT LISTS

Total Value Gas Lift Coal Seams Gas Well with Tanks, with Meter

The basic equipment for a gas lift coal seams gas well with meter run, with two water storage tanks, includes:

Wellhead	Filter Vessel
Separator	Flowlines - 2,000'
300 Barrel Water Storage Tanks (2) with Stairway	
Meter Run with House	

Very Good

MCF

850	54438	54438	54438	54438
750	54438	54438	54438	54438
650	54438	54438	54438	54438
550	54438	54438	54438	54438
450	54438	54438	54438	54438
350	54438	54438	54438	54438
250	54438	54438	54438	54438
150	54438	54438	54438	54438
60	54438	54438	54438	54438
	3500	4000	4500	5000
	Depth			

Average

MCF

850	26058	26058	26058	26058
750	26058	26058	26058	26058
650	26058	26058	26058	26058
550	26058	26058	26058	26058
450	26058	26058	26058	26058
350	26058	26058	26058	26058
250	26058	26058	26058	26058
150	26058	26058	26058	26058
60	26058	26058	26058	26058
	3500	4000	4500	5000
	Depth			

Minimum

MCF

850	7966	7966	7966	7966
750	7966	7966	7966	7966
650	7966	7966	7966	7966
550	7966	7966	7966	7966
450	7966	7966	7966	7966
350	7966	7966	7966	7966
250	7966	7966	7966	7966
150	7966	7966	7966	7966
60	7966	7966	7966	7966
	3500	4000	4500	5000
	Depth			

SAN JUAN BASIN BASIC EQUIPMENT LISTS

Total Value Shallow Pumping Oil Well with Tanks (Electric Motor)

The basic equipment for a shallow pumping oil well with two oil storage tanks includes:

Pumping Unit	Sucker Rods to Depth
Electric Motor	Rod Pump
Control Panel	300 Bbl. Oil Storage Tanks (2) with Staircase
Wellhead	Flowlines - 600'

Very Good

Barrels

900				
800				
700				
600				
500	46327	47257	58528	59458
400	42812	43742	52261	53191
300	35244	43742	44672	49117
200	35244	36174	44672	45602
100	35244	36174	37104	38034
	500	1000	1500	2000
	Depth			

Average

Barrels

900				
800				
700				
600				
500	23524	23989	28904	29369
400	21599	22064	24454	24919
300	17181	22064	22529	24026
200	17181	17646	22529	22994
100	17181	17646	18111	18576
	500	1000	1500	2000
	Depth			

Minimum

Barrels

900				
800				
700				
600				
500	7381	7506	10093	10218
400	7381	7506	8975	9100
300	6016	7506	7631	7982
200	6016	6141	7631	7756
100	6016	6141	6266	6391
	500	1000	1500	2000
	Depth			

SAN JUAN BASIN BASIC EQUIPMENT LISTS

Total Value Shallow Pumping Oil Well without Tanks (Electric Motor)

The basic equipment for a shallow pumping oil well without oil storage tanks includes:

Pumping Unit	Sucker Rods to Depth
Electric Motor	Rod Pump
Control Panel	Flowlines - 1000'
Wellhead	

Very Good

Barrels

900				
800				
700				
600				
500	35018	35948	47219	48149
400	31503	32433	40952	41882
300	23935	32433	33363	37808
200	23935	24865	33363	34293
100	23935	24865	25795	26725
	500	1000	1500	2000
	Depth			

Average

Barrels

900				
800				
700				
600				
500	18149	18614	23529	23994
400	16224	16689	19079	19544
300	11806	16689	17154	18651
200	11806	12271	17154	17619
100	11806	12271	12736	13201
	500	1000	1500	2000
	Depth			

Minimum

Barrels

900				
800				
700				
600				
500	4715	4840	7427	7552
400	4715	4840	6309	6434
300	3350	4840	4965	5316
200	3350	3475	4965	5090
100	3350	3475	3600	3725
	500	1000	1500	2000
	Depth			

SAN JUAN BASIN PROGRESSIVE CAVITY WELL BASIC EQUIPMENT LISTS

Progressive Cavity Coal Seams Gas Well with Tanks (Gas Engine)

The basic equipment for a progressive cavity coal seams gas well with two water storage tanks includes:

- | | |
|------------------------------------|---------------------------------|
| Wellhead | Progressive Cavity Pump |
| Separator | Sucker Rods to Depth |
| 400 Barrel Water Storage Tanks (2) | Wellhead Drive |
| Flowlines - 600' | Miscellaneous Surface Equipment |
| Gas Engine | |

Very Good

Barrels

900	75214	77181	79147									
800	75214	77181	79147	79319								
700	72821	77181	79147	79319								
600	71049	74446	79147	79319	81106							
500	71049	72421	76071	79319	81106	82893						
400	57020	58392	59764	63667	77258	79045	80832	82619				
300	54582	55605	58680	59931	74148	75652	80832	82619	84406			
200	54266	55244	56223	57201	68359	72614	73865	78661	80165	81670	87981	
100	53927	54857	55787	56717	67827	68757	70903	75117	80165	81670	85221	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Average

Barrels

900	37886	38816	39746									
800	37886	38816	39746	40046								
700	36946	38816	39746	40046								
600	36210	37741	39746	40046	40913							
500	36210	36900	38536	40046	40913	41780						
400	27385	28075	28765	30506	33549	34416	35283	36150				
300	26331	26871	28184	28810	32130	32868	35283	36150	42037			
200	26117	26626	27135	27644	29615	31523	32149	34344	40102	40839	43770	
100	25808	26273	26738	27203	29130	29595	31031	32775	40102	40839	42555	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Minimum

Barrels

900	10860	11085	11199									
800	10860	11085	11309	11534								
700	10640	11085	11309	11411								
600	10555	10833	11309	11411	11623							
500	10555	10736	11027	11411	11623	11836						
400	8362	8543	8724	9027	9796	10008	10221	10433				
300	8133	8282	8592	8758	9465	9648	10221	10433	11892			
200	8054	8192	8329	8466	8968	9456	9622	10012	11441	11624	12317	
100	7970	8095	8220	8345	8835	8960	9389	9789	11441	11624	11992	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

SAN JUAN BASIN PROGRESSIVE CAVITY WELL BASIC EQUIPMENT LISTS

Progressive Cavity Coal Seams Gas Well with Tanks (Electric Motor)

The basic equipment for a progressive cavity coal seams gas well with water storage tanks includes:

- | | |
|------------------------------------|---------------------------------|
| Wellhead | Progressive Cavity Pump |
| Separator | Sucker Rods to Depth |
| 400 Barrel Water Storage Tanks (2) | Wellhead Drive |
| Flowlines - 600' | Miscellaneous Surface Equipment |
| Electric Motor | |

Very Good

Barrels

900	66711	68677	70644									
800	66711	68677	70644	70816								
700	64318	68677	70644	70816								
600	62546	65943	70644	70816	72603							
500	62546	63917	67568	70816	72603	74390						
400	53559	54930	56302	60205	73796	75583	77370	79158				
300	51121	52144	55218	56470	70686	72191	77370	79158	80945			
200	50805	51783	52761	53739	64898	69153	70404	75199	76704	78208	84519	
100	50466	51396	52326	53256	64366	65296	67441	71655	76704	78208	81760	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Average

Barrels

900	32726	33656	34586									
800	32726	33656	34586	34886								
700	31786	33656	34586	34886								
600	31050	32581	34586	34886	35753							
500	31050	31740	33376	34886	35753	36620						
400	25310	26000	26690	28431	31475	32341	33208	34075				
300	24256	24796	26110	26735	30056	30793	33208	34075	39962			
200	24042	24551	25060	25569	27540	29449	30074	32269	38027	38765	41695	
100	23733	24198	24663	25128	27055	27520	28956	30700	38027	38765	40480	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Minimum

Barrels

900	9570	9795	9909									
800	9570	9795	10019	10244								
700	9350	9795	10019	10121								
600	9265	9543	10019	10121	10333							
500	9265	9446	9737	10121	10333	10546						
400	7835	8016	8198	8500	9269	9482	9694	9906				
300	7607	7755	8065	8231	8939	9121	9694	9906	11365			
200	7528	7665	7802	7939	8441	8929	9096	9485	10915	11097	11790	
100	7443	7568	7693	7818	8308	8433	8862	9262	10915	11097	11465	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

SAN JUAN BASIN PROGRESSIVE CAVITY WELL BASIC EQUIPMENT LISTS

Progressive Cavity Coal Seams Gas Well without Tanks (Gas Engine)

The basic equipment for a progressive cavity coal seams gas well without water storage tanks includes:

- | | |
|-------------------|---------------------------------|
| Wellhead | Progressive Cavity Pump |
| Separator | Sucker Rods to Depth |
| Flowlines - 1000' | Wellhead Drive |
| Gas Engine | Miscellaneous Surface Equipment |

Very Good

Barrels

900	56036	58003	59969									
800	56036	58003	59969	60141								
700	53643	58003	59969	60141								
600	51871	55268	59969	60141	61928							
500	51871	53243	56893	60141	61928	63715						
400	37842	39214	40586	44489	58080	59867	61654	63441				
300	35404	36427	39502	40753	54970	56474	61654	63441	65228			
200	35088	36066	37045	38023	49181	53436	54687	59483	60987	62492	68803	
100	34749	35679	36609	37539	48649	49579	51725	55939	60987	62492	66043	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Average

Barrels

900	31673	32603	33532									
800	31673	32603	33532	33833								
700	30732	32603	33532	33833								
600	29997	31528	33532	33833	34700							
500	29997	30687	32323	33833	34700	35566						
400	21171	21861	22551	24292	27336	28203	29069	29936				
300	20118	20657	21971	22597	25917	26655	29069	29936	35823			
200	19903	20412	20921	21430	23401	25310	25935	28130	33888	34626	37556	
100	19595	20060	20524	20989	22916	23381	24817	26561	33888	34626	36341	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Minimum

Barrels

900	7871	8096	8210									
800	7871	8096	8321	8545								
700	7652	8096	8321	8423								
600	7567	7845	8321	8423	8635							
500	7567	7748	8038	8423	8635	8847						
400	5374	5555	5736	6038	6807	7020	7232	7444				
300	5145	5293	5603	5770	6477	6659	7232	7444	8904			
200	5066	5203	5340	5477	5980	6468	6634	7024	8453	8635	9328	
100	4981	5106	5231	5356	5847	5972	6401	6800	8453	8635	9003	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

SAN JUAN BASIN PROGRESSIVE CAVITY WELL BASIC EQUIPMENT LISTS

Progressive Cavity Coal Seams Gas Well without Tanks (Electric Motor)

The basic equipment for a progressive cavity coal seams gas well without water storage tanks includes:

Wellhead	Progressive Cavity Pump
Separator	Sucker Rods to Depth
Flowlines - 1000'	Wellhead Drive
Electric Motor	Miscellaneous Surface Equipment

Very Good**Barrels**

900	47533	49499	51466								
800	47533	49499	51466	51638							
700	45140	49499	51466	51638							
600	43368	46765	51466	51638	53425						
500	43368	44739	48390	51638	53425	55212					
400	34381	35752	37124	41027	54618	56405	58192	59980			
300	31943	32966	36040	37292	51508	53013	58192	59980	61767		
200	31627	32605	33583	34561	45720	49975	51226	56021	57526	59030	65341
100	31288	32218	33148	34078	45188	46118	48263	52477	57526	59030	62582
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

Average**Barrels**

900	26513	27443	28372								
800	26513	27443	28372	28673							
700	25572	27443	28372	28673							
600	24837	26368	28372	28673	29540						
500	24837	25527	27163	28673	29540	30406					
400	19096	19786	20477	22218	25261	26128	26995	27861			
300	18043	18582	19896	20522	23842	24580	26995	27861	33748		
200	17828	18337	18846	19355	21326	23235	23861	26055	31813	32551	35482
100	17520	17985	18450	18915	20842	21307	22743	24486	31813	32551	34266
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

Minimum**Barrels**

900	6581	6806	6920								
800	6581	6806	7031	7255							
700	6362	6806	7031	7133							
600	6277	6555	7031	7133	7345						
500	6277	6458	6748	7133	7345	7557					
400	4847	5028	5209	5512	6281	6493	6705	6918			
300	4618	4767	5076	5243	5950	6132	6705	6918	8377		
200	4539	4676	4813	4950	5453	5941	6107	6497	7926	8109	8802
100	4455	4580	4704	4829	5320	5445	5874	6273	7926	8109	8476
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500

Depth

SAN JUAN BASIN BASIC EQUIPMENT LISTS

Total Value ESP Gas Well with Tank (Electric Motor)

The basic equipment for an ESP gas well with one water storage tank includes:

Transformer	Equalizer
Submersible Pump	Switchboard
Electric Motor	Electric Cable to Depth
Wellhead	Flowlines - 600'
Separator	300 Barrel Water Storage Tank (1)

Very Good**Barrels**

4100	75395	76271	77147	78024	78900	79776	80652	81528	82404	83280	84156
3800	70310	71187	72063	72939	73815	74691	75567	76443	77319	78196	79072
3400	66091	66897	67704	68510	69316	70122	70929	71735	72541	73347	74154
2800	64930	65736	66543	67349	68155	68961	69768	70574	71380	72186	72993
2300	60872	61678	62484	63291	64097	64903	65709	66516	67322	68128	68934
1900	59899	60705	61512	62318	63124	63930	64737	65543	66349	67155	67962
1600	56900	57706	58512	59319	60125	60931	61737	62544	63350	64156	64962
1100	51686	52492	53299	54105	54911	55717	56524	57330	58136	58942	59749
800	47311	51342	52148	52955	53761	54567	55373	56180	56986	57792	58598
600	44989	49020	49826	50633	51439	52245	53051	53858	54664	55470	56276
350	44516	48547	49353	50160	50966	51772	52578	53385	54191	54997	55803
	1000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000

Depth**Average****Barrels**

4100	48074	48687	49300	49912	50525	51138	51751	52363	52976	53589	54202
3800	43097	43710	44322	44935	45548	46161	46773	47386	47999	48612	49224
3400	40146	40710	41275	41839	42403	42968	43532	44097	44661	45225	45790
2800	40146	40710	41275	41839	42403	42968	43532	44097	44661	45225	45790
2300	36717	37281	37845	38410	38974	39539	40103	40667	41232	41796	42360
1900	34448	35013	35577	36142	36706	37270	37835	38399	38963	39528	40092
1600	32395	32960	33524	34088	34653	35217	35781	36346	36910	37475	38039
1100	28676	29240	29804	30369	30933	31498	32062	32626	33191	33755	34319
800	25854	28676	29240	29804	30369	30933	31498	32062	32626	33191	33755
600	24790	27611	28176	28740	29305	29869	30433	30998	31562	32126	32691
350	24231	27052	27617	28181	28746	29310	29874	30439	31003	31567	32132
	1000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000

Depth**Minimum****Barrels**

4100	12035	12191	12346	12502	12658	12814	12970	13126	13282	13438	13593
3800	11476	11632	11787	11943	12099	12255	12411	12567	12723	12879	13034
3400	10707	10847	10987	11126	11266	11406	11546	11685	11825	11965	12105
2800	10481	10621	10761	10901	11040	11180	11320	11460	11599	11739	11879
2300	9847	9987	10127	10266	10406	10546	10686	10825	10965	11105	11245
1900	9288	9428	9568	9707	9847	9987	10127	10266	10406	10546	10686
1600	8783	8923	9062	9202	9342	9482	9621	9761	9901	10041	10180
1100	7837	7977	8116	8256	8396	8536	8675	8815	8955	9095	9234
800	7020	7719	7858	7998	8138	8278	8417	8557	8697	8837	8976
600	6880	7579	7719	7858	7998	8138	8278	8417	8557	8697	8837
350	6730	7428	7568	7708	7848	7987	8127	8267	8407	8546	8686
	1000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000

Depth

15-AS-DPT

ARL VOL 5

2-89 Rev 4-07

Total Value ESP Gas Well without Tanks (Electric Motor)

The basic equipment for an ESP gas well without water storage tanks includes:

- | | |
|------------------|-------------------------|
| Transformer | Equalizer |
| Submersible Pump | Switchboard |
| Electric Motor | Electric Cable to Depth |
| Wellhead | Flowlines - 1000' |

Very Good

Barrels

4100	65247	62748	63624	64500	65376	66252	67128	68005	68881	69757	70633
3800	60162	61039	61915	62791	63667	64543	65419	66295	67171	68048	68924
3400	55943	56749	57556	58362	59168	59974	60781	61587	62393	63199	64006
2800	54782	55588	56395	57201	58007	58813	59620	60426	61232	62038	62845
2300	50724	51530	52336	53143	53949	54755	55561	56368	57174	57980	58786
1900	49751	50557	51364	52170	52976	53782	54589	55395	56201	57007	57814
1600	46752	47558	48364	49171	49977	50783	51589	52396	53202	54008	54814
1100	41538	42344	43151	43957	44763	45569	46376	47182	47988	48794	49601
800	37163	41194	42000	42807	43613	44419	45225	46032	46838	47644	48450
600	34841	38872	39678	40485	41291	42097	42903	43710	44516	45322	46128
350	34368	38399	39205	40012	40818	41624	42430	43237	44043	44849	45655
	1000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000

Depth

Average

Barrels

4100	43355	43968	44580	45193	45806	46419	47031	47644	48257	48870	49482
3800	38378	38990	39603	40216	40829	41441	42054	42667	43280	43892	44505
3400	35427	35991	36555	37120	37684	38249	38813	39377	39942	40506	41070
2800	35427	35991	36555	37120	37684	38249	38813	39377	39942	40506	41070
2300	31997	32562	33126	33691	34255	34819	35384	35948	36512	37077	37641
1900	29729	30294	30858	31422	31987	32551	33115	33680	34244	34809	35373
1600	27676	28240	28805	29369	29933	30498	31062	31627	32191	32755	33320
1100	23956	24521	25085	25650	26214	26778	27343	27907	28471	29036	29600
800	21135	23956	24521	25085	25650	26214	26778	27343	27907	28471	29036
600	20070	22892	23457	24021	24585	25150	25714	26278	26843	27407	27972
350	19511	22333	22898	23462	24026	24591	25155	25719	26284	26848	27413
	1000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000

Depth

Minimum

Barrels

4100	10196	10352	10508	10664	10820	10976	11132	11288	11443	11599	11755
3800	9637	9793	9949	10105	10261	10417	10573	10729	10884	11040	11196
3400	8869	9009	9148	9288	9428	9568	9707	9847	9987	10127	10266
2800	8643	8783	8923	9062	9202	9342	9482	9621	9761	9901	10041
2300	8009	8149	8288	8428	8568	8708	8847	8987	9127	9267	9406
1900	7450	7590	7729	7869	8009	8149	8288	8428	8568	8708	8847
1600	6945	7084	7224	7364	7504	7643	7783	7923	8063	8202	8342
1100	5999	6138	6278	6418	6558	6697	6837	6977	7117	7256	7396
800	5182	5880	6020	6160	6300	6439	6579	6719	6859	6998	7138
600	5042	5741	5880	6020	6160	6300	6439	6579	6719	6859	6998
350	4891	5590	5730	5870	6009	6149	6289	6429	6568	6708	6848
	1000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000

Depth

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SAN JUAN BASIN PROGRESSIVE CAVITY WELL BASIC EQUIPMENT LISTS

Progressive Cavity Coal Seams Gas Well with Tanks, with Meter (Gas Engine)

The basic equipment for a progressive cavity coal seams gas well with meter run, with two water storage tanks, includes:

- | | |
|------------------------------------|---------------------------------|
| Wellhead | Progressive Cavity Pump |
| Separator | Sucker Rods to Depth |
| 400 Barrel Water Storage Tanks (2) | Wellhead Drive |
| Flowlines - 600' | Miscellaneous Surface Equipment |
| Gas Engine | Meter Run with House |

Very Good

Barrels

900	79385	81352	83318									
800	79385	81352	83318	83490								
700	76992	81352	83318	83490								
600	75220	78617	83318	83490	85277							
500	75220	76592	80242	83490	85277	87064						
400	61191	62563	63935	67838	81429	83216	85003	86790				
300	58753	59776	62851	64102	78319	79823	85003	86790	88577			
200	58437	59415	60394	61372	72530	76785	78036	82832	84336	85841	92152	
100	58098	59028	59958	60888	71998	72928	75074	79288	84336	85841	89392	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Average

Barrels

900	40165	41095	42025									
800	40165	41095	42025	42325								
700	39225	41095	42025	42325								
600	38489	40020	42025	42325	43192							
500	38489	39179	40815	42325	43192	44059						
400	29664	30354	31044	32785	35828	36695	37562	38429				
300	28610	29150	30463	31089	34409	35147	37562	38429	44316			
200	28396	28905	29414	29923	31894	33802	34428	36623	42381	43118	46049	
100	28087	28552	29017	29482	31409	31874	33310	35054	42381	43118	44834	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Minimum

Barrels

900	11537	11762	11876									
800	11537	11762	11986	12211								
700	11317	11762	11986	12088								
600	11232	11511	11986	12088	12301							
500	11232	11413	11704	12088	12301	12513						
400	9039	9220	9402	9704	10473	10686	10898	11110				
300	8811	8959	9269	9435	10143	10325	10898	11110	12569			
200	8732	8869	9006	9143	9645	10133	10300	10689	12119	12301	12994	
100	8647	8772	8897	9022	9512	9637	10066	10466	12119	12301	12669	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

SAN JUAN BASIN PROGRESSIVE CAVITY WELL BASIC EQUIPMENT LISTS

Progressive Cavity Coal Seams Gas Well with Tanks, with Meter (Electric Motor)

The basic equipment for a progressive cavity coal seams gas well with meter run, with water storage tanks, includes:

- | | |
|------------------------------------|---------------------------------|
| Wellhead | Progressive Cavity Pump |
| Separator | Sucker Rods to Depth |
| 400 Barrel Water Storage Tanks (2) | Wellhead Drive |
| Flowlines - 600' | Miscellaneous Surface Equipment |
| Electric Motor | Meter Run with House |

Very Good

Barrels

900	70882	72848	74815									
800	70882	72848	74815	74987								
700	68489	72848	74815	74987								
600	66717	70114	74815	74987	76774							
500	66717	68088	71739	74987	76774	78561						
400	57730	59101	60473	64376	77967	79754	81541	83329				
300	55292	56315	59389	60641	74857	76362	81541	83329	85116			
200	54976	55954	56932	57910	69069	73324	74575	79370	80875	82379	88690	
100	54637	55567	56497	57427	68537	69467	71612	75826	80875	82379	85931	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Average

Barrels

900	35005	35935	36865									
800	35005	35935	36865	37165								
700	34065	35935	36865	37165								
600	33329	34860	36865	37165	38032							
500	33329	34019	35655	37165	38032	38899						
400	27589	28279	28969	30710	33754	34620	35487	36354				
300	26535	27075	28389	29014	32335	33072	35487	36354	42241			
200	26321	26830	27339	27848	29819	31728	32353	34548	40306	41044	43974	
100	26012	26477	26942	27407	29334	29799	31235	32979	40306	41044	42759	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Minimum

Barrels

900	10247	10472	10586									
800	10247	10472	10696	10921								
700	10027	10472	10696	10798								
600	9942	10221	10696	10798	11011							
500	9942	10123	10414	10798	11011	11223						
400	8513	8694	8875	9177	9946	10159	10371	10583				
300	8284	8432	8742	8909	9616	9798	10371	10583	12043			
200	8205	8342	8479	8616	9119	9607	9773	10163	11592	11774	12467	
100	8120	8245	8370	8495	8986	9111	9540	9939	11592	11774	12142	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

SAN JUAN BASIN PROGRESSIVE CAVITY WELL BASIC EQUIPMENT LISTS

Progressive Cavity Coal Seams Gas Well without Tanks, with Meter (Gas Engine)

The basic equipment for a progressive cavity coal seams gas well with meter run, without water storage tanks, includes:

- | | |
|-------------------|---------------------------------|
| Wellhead | Progressive Cavity Pump |
| Separator | Sucker Rods to Depth |
| Flowlines - 1000' | Wellhead Drive |
| Gas Engine | Miscellaneous Surface Equipment |
| | Meter Run with House |

Very Good

Barrels

900	60207	62174	64140									
800	60207	62174	64140	64312								
700	57814	62174	64140	64312								
600	56042	59439	64140	64312	66099							
500	56042	57414	61064	64312	66099	67886						
400	42013	43385	44757	48660	62251	64038	65825	67612				
300	39575	40598	43673	44924	59141	60645	65825	67612	69399			
200	39259	40237	41216	42194	53352	57607	58858	63654	65158	66663	72974	
100	38920	39850	40780	41710	52820	53750	55896	60110	65158	66663	70214	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Average

Barrels

900	33952	34882	35811									
800	33952	34882	35811	36112								
700	33011	34882	35811	36112								
600	32276	33807	35811	36112	36979							
500	32276	32966	34602	36112	36979	37845						
400	23450	24140	24830	26571	29615	30482	31348	32215				
300	22397	22936	24250	24876	28196	28934	31348	32215	38102			
200	22182	22691	23200	23709	25680	27589	28214	30409	36167	36905	39835	
100	21874	22339	22803	23268	25195	25660	27096	28840	36167	36905	38620	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Minimum

Barrels

900	8549	8773	8888									
800	8549	8773	8998	9222								
700	8329	8773	8998	9100								
600	8244	8522	8998	9100	9312							
500	8244	8425	8715	9100	9312	9525						
400	6051	6232	6413	6716	7485	7697	7909	8122				
300	5822	5971	6280	6447	7154	7336	7909	8122	9581			
200	5743	5880	6017	6154	6657	7145	7311	7701	9130	9313	10006	
100	5659	5784	5908	6033	6524	6649	7078	7477	9130	9313	9680	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

SAN JUAN BASIN PROGRESSIVE CAVITY WELL BASIC EQUIPMENT LISTS

Progressive Cavity Coal Seams Gas Well without Tanks, with Meter (Electric Motor)

The basic equipment for a progressive cavity coal seams gas well with meter run, without water storage tanks, includes:

- | | |
|-------------------|---------------------------------|
| Wellhead | Progressive Cavity Pump |
| Separator | Sucker Rods to Depth |
| Flowlines - 1000' | Wellhead Drive |
| Electric Motor | Miscellaneous Surface Equipment |
| | Meter Run with House |

Very Good

Barrels

900	51704	53670	55637									
800	51704	53670	55637	55809								
700	49311	53670	55637	55809								
600	47539	50936	55637	55809	57596							
500	47539	48910	52561	55809	57596	59383						
400	38552	39923	41295	45198	58789	60576	62363	64151				
300	36114	37137	40211	41463	55679	57184	62363	64151	65938			
200	35798	36776	37754	38732	49891	54146	55397	60192	61697	63201	69512	
100	35459	36389	37319	38249	49359	50289	52434	56648	61697	63201	66753	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Average

Barrels

900	28792	29722	30651									
800	28792	29722	30651	30952								
700	27851	29722	30651	30952								
600	27116	28647	30651	30952	31819							
500	27116	27806	29442	30952	31819	32685						
400	21375	22065	22756	24497	27540	28407	29274	30140				
300	20322	20861	22175	22801	26121	26859	29274	30140	36027			
200	20107	20616	21125	21634	23605	25514	26140	28334	34092	34830	37761	
100	19799	20264	20729	21194	23121	23586	25022	26765	34092	34830	36545	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

Minimum

Barrels

900	7259	7483	7598									
800	7259	7483	7708	7932								
700	7039	7483	7708	7810								
600	6954	7232	7708	7810	8022							
500	6954	7135	7425	7810	8022	8235						
400	5524	5705	5886	6189	6958	7170	7383	7595				
300	5295	5444	5754	5920	6627	6810	7383	7595	9054			
200	5216	5354	5491	5628	6130	6618	6784	7174	8603	8786	9479	
100	5132	5257	5382	5507	5997	6122	6551	6951	8603	8786	9154	
	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	

Depth

SAN JUAN BASIN BASIC EQUIPMENT LISTS

Total Value ESP Gas Well with Tank, with Meter (Electric Motor)

The basic equipment for an ESP gas well with meter run, with one water storage tank, includes:

Transformer	Equalizer
Submersible Pump	Switchboard
Electric Motor	Electric Cable to Depth
Wellhead	Flowlines - 600'
Separator	300 Barrel Water Storage Tank (1)
	Meter Run with House

Very Good**Barrels**

4100	79566	80442	81318	82195	83071	83947	84823	85699	86575	87451	88327
3800	74481	75358	76234	77110	77986	78862	79738	80614	81490	82367	83243
3400	70262	71068	71875	72681	73487	74293	75100	75906	76712	77518	78325
2800	69101	69907	70714	71520	72326	73132	73939	74745	75551	76357	77164
2300	65043	65849	66655	67462	68268	69074	69880	70687	71493	72299	73105
1900	64070	64876	65683	66489	67295	68101	68908	69714	70520	71326	72133
1600	61071	61877	62683	63490	64296	65102	65908	66715	67521	68327	69133
1100	55857	56663	57470	58276	59082	59888	60695	61501	62307	63113	63920
800	51482	55513	56319	57126	57932	58738	59544	60351	61157	61963	62769
600	49160	53191	53997	54804	55610	56416	57222	58029	58835	59641	60447
350	42581	48547	49353	50160	50966	51772	52578	53385	54191	54997	55803
	1000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000
											8500
											Depth

Average**Barrels**

4100	50353	50966	51579	52191	52804	53417	54030	54642	55255	55868	56481
3800	45376	45989	46601	47214	47827	48440	49052	49665	50278	50891	51503
3400	42425	42989	43554	44118	44682	45247	45811	46376	46940	47504	48069
2800	42425	42989	43554	44118	44682	45247	45811	46376	46940	47504	48069
2300	38996	39560	40124	40689	41253	41818	42382	42946	43511	44075	44639
1900	36727	37292	37856	38421	38985	39549	40114	40678	41242	41807	42371
1600	34674	35239	35803	36367	36932	37496	38060	38625	39189	39754	40318
1100	30955	31519	32083	32648	33212	33777	34341	34905	35470	36034	36598
800	28133	30955	31519	32083	32648	33212	33777	34341	34905	35470	36034
600	27069	29890	30455	31019	31584	32148	32712	33277	33841	34405	34970
350	26510	29331	29896	30460	31025	31589	32153	32718	33282	33846	34411
	1000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000
											8500
											Depth

Minimum**Barrels**

4100	12712	12868	13024	13180	13335	13491	13647	13803	13959	14115	14271
3800	12153	12309	12465	12621	12776	12932	13088	13244	13400	13556	13712
3400	11384	11524	11664	11804	11943	12083	12223	12363	12502	12642	12782
2800	11159	11298	11438	11578	11718	11857	11997	12137	12277	12416	12556
2300	10524	10664	10804	10944	11083	11223	11363	11503	11642	11782	11922
1900	9965	10105	10245	10385	10524	10664	10804	10944	11083	11223	11363
1600	9460	9600	9740	9879	10019	10159	10299	10438	10578	10718	10858
1100	8514	8654	8794	8933	9073	9213	9353	9492	9632	9772	9912
800	7697	8396	8536	8675	8815	8955	9095	9234	9374	9514	9654
600	7557	8256	8396	8536	8675	8815	8955	9095	9234	9374	9514
350	7407	8106	8245	8385	8525	8665	8804	8944	9084	9224	9363
	1000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000
											8500
											Depth

SAN JUAN BASIN BASIC EQUIPMENT LISTS

Total Value ESP Gas Well without Tanks, with Meter (Electric Motor)

The basic equipment for an ESP gas well with meter run, without water storage tanks, includes:

Transformer	Equalizer
Submersible Pump	Switchboard
Electric Motor	Electric Cable to Depth
Wellhead	Flowlines - 1000'
	Meter Run with House

Very Good**Barrels**

4100	69418	70294	71170	72047	72923	73799	74675	75551	76427	77303	78179
3800	64333	65210	66086	66962	67838	68714	69590	70466	71342	72219	73095
3400	60114	60920	61727	62533	63339	64145	64952	65758	66564	67370	68177
2800	58953	59759	60566	61372	62178	62984	63791	64597	65403	66209	67016
2300	54895	55701	56507	57314	58120	58926	59732	60539	61345	62151	62957
1900	53922	54728	55535	56341	57147	57953	58760	59566	60372	61178	61985
1600	50923	51729	52535	53342	54148	54954	55760	56567	57373	58179	58985
1100	45709	46515	47322	48128	48934	49740	50547	51353	52159	52965	53772
800	41334	45365	46171	46978	47784	48590	49396	50203	51009	51815	52621
600	39012	43043	43849	44656	45462	46268	47074	47881	48687	49493	50299
350	38539	42570	43376	44183	44989	45795	46601	47408	48214	49020	49826
	1000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000
											8500
											Depth

Average**Barrels**

4100	45634	46247	46859	47472	48085	48698	49310	49923	50536	51149	51761
3800	40657	41269	41882	42495	43108	43720	44333	44946	45559	46171	46784
3400	37706	38270	38834	39399	39963	40528	41092	41656	42221	42785	43349
2800	37706	38270	38834	39399	39963	40528	41092	41656	42221	42785	43349
2300	34276	34841	35405	35970	36534	37098	37663	38227	38791	39356	39920
1900	32008	32573	33137	33701	34266	34830	35394	35959	36523	37088	37652
1600	29955	30519	31084	31648	32212	32777	33341	33906	34470	35034	35599
1100	26235	26800	27364	27929	28493	29057	29622	30186	30750	31315	31879
800	23414	26235	26800	27364	27929	28493	29057	29622	30186	30750	31315
600	22349	25171	25736	26300	26864	27429	27993	28557	29122	29686	30251
350	21790	24612	25177	25741	26305	26870	27434	27998	28563	29127	29692
	1000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000
											8500
											Depth

Minimum**Barrels**

4100	10874	11030	11185	11341	11497	11653	11809	11965	12121	12277	12432
3800	10315	10471	10626	10782	10938	11094	11250	11406	11562	11718	11873
3400	9546	9686	9826	9965	10105	10245	10385	10524	10664	10804	10944
2800	9320	9460	9600	9740	9879	10019	10159	10299	10438	10578	10718
2300	8686	8826	8966	9105	9245	9385	9525	9664	9804	9944	10084
1900	8127	8267	8407	8546	8686	8826	8966	9105	9245	9385	9525
1600	7622	7762	7901	8041	8181	8321	8460	8600	8740	8880	9019
1100	6676	6816	6955	7095	7235	7375	7514	7654	7794	7934	8073
800	5859	6558	6697	6837	6977	7117	7256	7396	7536	7676	7815
600	5719	6418	6558	6697	6837	6977	7117	7256	7396	7536	7676
350	5569	6267	6407	6547	6687	6826	6966	7106	7246	7385	7525
	1000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000
											8500
											Depth

CHAPTER 7 SPECIAL ISSUES

SPECIAL ADMINISTRATIVE ISSUES

The purpose of this section is to discuss special issues related to personal property administration and valuation. This section will be periodically updated to include new special personal property issues as they arise.

APPORTIONMENT OF VALUE

Apportionment of value is the distribution of taxable value between two or more counties within the state. Apportionment does not affect the total taxable value of the property.

Personal property valuations are apportioned only in the following instances:

- Movable equipment that is apt to be located in more than one county during the current assessment year in the ordinary course of business
- Oil and gas skid-mounted drilling rigs that were located in more than one county during the preceding calendar year

MOVABLE OR PORTABLE EQUIPMENT

The statutory requirements and definitions for movable or portable equipment apportionments are found in § 39-5-113, C.R.S.

County of Original Assessment

All persons owning movable or portable equipment, which in the ordinary course of business is likely to be located in more than one county during the current assessment year, must file the following information with the assessor no later than April 15:

1. Kind, description and serial number of the property
2. Counties where the property will be located or maintained during the year
3. The estimated period of time that the property will be in each county

Note: Excepted from this requirement are owners of oil and gas skid-mounted drilling rigs pursuant to § 39-5-113.3, C.R.S., and owners of special mobile machinery subject to specific ownership tax pursuant to §§ 42-3-103(1) and 106(1)(e), C.R.S.

The taxpayer files this information with the county assessor of the county in which the property was located on January 1 of the current assessment year, or the county in which the property is first located. This county is called the County of Original Assessment (COA).

It is the responsibility of the assessor of the COA to determine the actual and assessed value of the movable property for the entire assessment year. The assessor of the COA is also responsible for making apportionments of value for the other counties listed by the taxpayer. The taxpayer and the other counties must be notified of the actual valuation and the apportioned actual values of the movable equipment. The apportionment is based upon the number of days that the property is estimated to be located in each county.

Auxiliary (Movable) Equipment

Auxiliary equipment typically installed in vans, such as upholstery cleaning equipment, or pulled behind self-propelled drilling rigs, including auxiliary drilling equipment hauled behind self-propelled drilling rigs or by semi-tractor trailers, can present a special apportionment problem. If this property is likely to move between counties, an apportionment should be requested of the owner as required by § 39-5-113, C.R.S. If no apportionment is received from the owner, the apportionment should be based on the last year's county locations, if available. If the owner does not supply this apportionment, the entire value of the equipment should be listed in the County of Original Assessment (COA) until such time as the owner supplies an apportionment. Apportionments based upon current assessment year planned locations are preferred; however, historical locations should be used to apportion value rather than listing the entire value in the COA.

Example:

Subject Property:	Auxiliary Drilling Equipment.	
COA:		Larimer County
Actual value estimate:		\$25,000
Times the Factor to Adjust to Specified Level of Value:		<u>x 0.98</u>
Adjusted to Specified Level of Value:		\$24,500

Counties and Time Estimates for Each County:

<u>County</u>	<u>Est. Time Property was Located in County</u>		
Larimer		45 days	
Boulder		65 days	
El Paso		120 days	
Adams		<u>135 days</u>	
		365 days	
Actual Value per Day:	\$24,500	-:-	365 = \$67.12

Apportionment of Value to Each County:

Larimer: 45 days	
Apportioned Actual Value: (45 x \$67.12) =	\$ 3,021
Boulder: 65 days	
Apportioned Actual Value: (65 x \$67.12) =	\$ 4,363
El Paso: 120 days	
Apportioned Actual Value: (120 x \$67.12) =	\$ 8,055
Adams: 135 days	
Apportioned Actual Value: (135 x \$67.12) =	<u>\$ 9,061</u>
Total Actual Value: 365 days	\$24,500

Note that this example reflects a typical 365-day year. During leap years, an extra day must be added. The taxpayer and each of the other three counties are notified of the total actual value and the actual value apportioned to each county, as in the example above, by the Larimer County Assessor. The apportioned assessed value of the movable equipment is included on the abstracts of assessment prepared by each of the four counties. The other counties are required to use the total actual value and the apportioned actual value provided by the assessor of the COA. Any protests of the actual value by the taxpayer are made to the COA.

The total of the county apportionments should be compared to the actual value determined by the COA to ensure that they are identical.

Amended Apportionments

If movable property is moved into a county not listed in the original declaration, or if movable property is located in a county for a different length of time than that originally declared, the assessor of any county so affected may request an amended apportionment from the county of original assessment (COA). This must be done whether the time the equipment is located in the county is shorter than or longer than the period of time used in the original apportionment.

The assessor of the COA, upon receipt of such a request for amended apportionment, shall reapportion the value to all affected counties and send an amended NOV to the taxpayer and the counties. The taxpayer and the affected counties must be notified of any amended apportionments. If there is no request for an amended apportionment by a county assessor, the original apportionment shall stand for that assessment year.

It is Division policy that when a change in apportionment occurs prior to December 10, the assessors must re-certify the valuation to the affected taxing jurisdictions pursuant to § 39-1-111(5), C.R.S. If a change in apportionment occurs after December 10, no amended apportionment is made.

OIL AND GAS SKID-MOUNTED DRILLING RIGS

The term "oil and gas skid-mounted drilling rig" means any drilling unit capable of drilling oil and gas wells, except self-propelled rigs subject to the specific ownership tax as required by §§ 42-3-102(1) and 105(1)(f), C.R.S. In addition, the term includes typical auxiliary equipment that is not permanently attached to, but is transported with the rig.

The statutory requirements regarding the apportionment of the valuations of oil and gas skid-mounted drilling rigs are found in § 39-5-113.3, C.R.S. The following procedures are to be used in the valuation of these rigs:

1. County assessors determine those rigs that were operating in their counties during the previous calendar year and mail two DS 656, Oil and Gas Rotary Drilling Rig declaration schedules to the owner or agent.
2. The owner or agent submits a declaration schedule, to the county assessor, which lists all of the owner's rigs that were located in the county during the previous year and attaches a copy of the drilling log for each rig.

3. The owner or agent also sends an inventory of each rig's equipment sufficient to determine the valuation for assessment to the assessor of the first county in Colorado listed on each rig's log. This county is the county of original assessment or COA. It is Division policy that this inventory must include the rig's depth capacity and actual working depth; its overall physical condition rating as good, fair, or stacked; and the additional drilling collars and linear feet of drill pipe that are stored at the site. The declaration schedule and associated data must be filed with the assessor no later than April 15.
4. The assessor in the COA values the rig, according to Division policy, by using the actual rig depth capacity and rig condition multiplied first by the value per foot and then by the level of value adjustment factor published by the Division. In the case of modified or remanufactured rigs, the actual depth capacity may be greater than the original depth capacity. Any additional drilling collars and drill pipe value are added to the rig value. This total value is then apportioned among the counties listed on the drilling log according to the number of days the rig was located or stacked in each county as compared to the full calendar year.

Refer to **Addendum 7-A, 2007 Drilling Rig Valuation Depth Schedule**, for the current capacity market values, condition ratings, and value of stored collars and drill pipe.

Should the rig have been destroyed during the previous calendar year, the same procedures are followed for an adjusted actual value and a shortened calendar year. In this case, the rig value is apportioned to Colorado counties based on the number of calendar days it was located or stacked in each county, prior to the day of its destruction. Refer to the topic ***Drilling Rigs Removed from State Prior to Next Assessment Date*** following this list.

5. On or before June 15, the assessor of the COA furnishes a copy of the apportionment working papers and an NOV for the apportioned actual value to the owner or operator. Also, on or before June 15, the assessor of the COA sends the total actual value, apportionment working papers, and a copy of the drilling log to every county assessor involved. These assessors must use the actual values as apportioned to their counties by the assessor of the COA and must send their NOVs to the taxpayers on or before June 15.
6. The apportioned rig is assessed at 29 percent of actual value and included in each county's abstract of assessment.

Drilling Rigs Removed from State Prior to Next Assessment Date

As stated above, Division policy requires the assessor to base the value of skid-mounted drilling rigs for the current assessment year on rigs operating in the county during the previous calendar year. If a rig was destroyed prior to the current assessment date, but was operating during the prior calendar year, a personal property declaration schedule is mailed to the owner or agent of the rig as soon after the assessment date as possible, as required by § 39-5-113.3(1), C.R.S.

The actual value of the rig is determined by dividing the intact rig value by the number of calendar days in the previous calendar year and multiplying the resulting actual value per day times the number of days the rig existed intact during the prior calendar year, excluding the day of destruction, as shown in the example.

As a check for balancing purposes, it is recommended that the nontaxable value also be calculated and added to the apportioned taxable value. The resulting sum should be equal to the total intact rig value.

The assessor in the county of original assessment (COA) values the rig and apportions the value among the counties listed on the drilling log. This apportionment is accomplished by multiplying the calculated total actual value per day by the number of days the rig was located in each county during the previous calendar year. On or before June 15, the assessor of the COA furnishes a copy of the actual valuation of the rig, the apportionment working papers, and the NOV for the COA apportioned actual value to the owner or operator. The assessor of the COA also sends the actual valuation, apportionment working papers, and copies of the drilling log to every county assessor involved. These assessors send their NOV's for their apportioned actual values to the taxpayer on or before June 15. Below is an example of a skid-mounted drilling rig removed from the state on 10/1/2006, which is valued for assessment on January 1, 2007:

<u>Well Name</u>	<u>County/State</u>	<u>Date From:</u>	<u>Date To:</u>	<u># of Days</u>
Sniff "C"	Bent, CO (COA)	01-01-06	02-23-06	54
Trahern "D"	Baca, CO	02-24-06	04-17-06	54
Hoffman #1-29	Prowers, CO	04-18-06	07-02-06	76
STACKED	Prowers, CO	07-03-06	09-30-06	90
				274
TOTAL ACTUAL VALUE: \$357,140 :- 365			=	\$978.47
APPORTIONED ACTUAL VALUE: \$978.47 X 274			=	\$268,100
NONTAXABLE VALUE: \$874.03 X 91			=	<u>\$ 89,040</u>
				\$357,140
Days in Bent County, CO	54 X \$978.47	=	\$ 52,837	
Days in Baca County, CO	54 X \$978.47	=	52,837	
Days in Prowers County, CO	166 X \$978.47	=	<u>162,426</u>	
	Total	=	\$268,100	

NOTE: This example shows calculations for a typical year. For leap years, the Total Actual Value would be divided by 366 days to arrive at a "per day" figure for apportionment. Final assessed-value rounding errors, either plus or minus, are assigned to the county of original assessment. Stacked days are assigned to the county where the rig is stacked. Travel days are assigned to the destination county.

The repeal of personal property proration described later in this chapter does not affect the apportionment of skid-mounted oil and gas drilling rigs. These drilling rigs can only be valued for the days they were traveling in, were operating within, or were stacked within Colorado.

New High-Technology Drilling Rigs

There are a number of new and nearly new high-technology drilling rigs that have been operating in the state that are a type of platform rig. However, **Addendum 7-A, 2007 Drilling Rig Valuation Depth Schedule**, which was developed to value older skid-mounted rotary drilling rigs, has no category for new or nearly new rigs. Therefore, the following procedures apply to the newer high-technology drilling rigs. While there are several types of high-technology rigs, two of the types are described below as examples, along with instructions on how they will be assessed or licensed.

Coil Over Top Drive drilling rigs are trailer-mounted rigs where the trailer actually serves as the platform. In place of the standard drill pipe, the rig uses coiled tubing dispensed from the trailer-mounted platform to do the drilling. Coil rigs are known to complete the drilling process in a fraction of the time that a standard skid-mounted rig is capable of doing. Coil rigs also utilize cutting-edge computer electronic systems that increase the efficiency of the drilling process and enhance safety for the crew. The fact that these rigs are trailer mounted, permits ease of movement between drilling sites. All trailer-mounted rigs qualify for Special Mobile Machinery (SMM) license plates and should be registered before they arrive at their first drilling site. All auxiliary equipment brought in by trucks and used as part of the complete rig or in association with it should be registered using Z-tabs.

Flex rigs are a form of platform rig, except that the design allows for hydraulic adjustment of the platform and a wide range of drilling depths, for instance, from 8,000 ft. to 18,000 ft. The term “flex rig” comes from this ability to be flexible in the drilling depth. Flex rigs utilize cutting edge computer technology, resulting in considerable time savings and increased safety for crew members. Each rig breaks down to fewer movable components than a standard skid-mounted rig, permitting ease of movement between drilling sites. Some models of the Flex rig are trailer-mounted, qualifying for SMM license plates for the main rig and Z-tabs for all the auxiliary equipment. Flex rigs brought into the state on trucks (not trailer-mounted) should be valued by the assessor. Rig operators should be encouraged to have a completed Form 301 ready to present to the Ports of Entry personnel when entering the state. See *SMM & Ad Valorem Tax – Form 301* and *Equipment Moving through Ports of Entry* later in this chapter.

Since high-technology rigs are new to the Colorado drilling rig market, little or no market information is available for the Market Approach. Similarly, income information on rigs is scarce or nonexistent, limiting use of the Income Approach. Therefore, these rigs should be valued on the basis of the Cost Approach. Assessors must obtain original costs, which should be trended to the current assessment date, be properly depreciated using a 10-year life table, and have a Level of Value (LOV) adjustment factor applied to the Reproduction Cost New, Less Depreciation figure to determine actual value. (This procedure does not apply to self-propelled drilling rigs, truck-mounted drilling rigs, or trailer-mounted drilling rigs, all of which should be registered as Special Mobile Machinery.) When high-technology rigs operate in more than one county during the year, final values must be determined and apportioned by the County of Original Assessment (COA). See the example in *Drilling Rigs Removed from State Prior to Next Assessment Date* above.

For 2007, the Level of Value (LOV) adjustment factor for drilling rigs is **0.98**.

PRORATION OF VALUE

Proration, or proportionate valuation, of personal property is a reduction in total taxable value because of the existence of certain circumstances. Proration of value essentially means that property is assessed for less than the full calendar year.

As of January 1, 1996, the only condition that requires a proration of personal property value is the change in taxable status of Works of Art loaned to and used for charitable purposes by an exempt organization.

If other taxable personal property was located in Colorado on the assessment date, it is taxable for the entire assessment year, provided that, if it was newly acquired, it was put into use as of the assessment date. If it was not located in the state on the assessment date, or if it was newly acquired, but was not put into use as of the assessment date, it cannot be taxed until the next assessment year. Personal property exempt on the assessment date retains its exempt status for the entire assessment year except for Works of Art, for skid-mounted drilling rigs, and for movable equipment, which are apportioned. These requirements do not affect the proration of real property.

WORKS OF ART

Any work of art, as defined in § 39-1-102(18), C.R.S., may be subject to proration of its taxable and exempt value. The proration provisions are specified in § 39-5-113.5, C.R.S. Detailed criteria pertaining to the qualifying works of art, exempt entities, charitable purposes, and documents required by the assessor are listed in **Chapter 2, Discovery, Listing, and Classification**.

The proration process is as follows:

1. Determine the actual value (as of the assessment date) of the works of art.
2. Factor actual values to the correct level of value using the appropriate level value (LOV) adjustment factor for the appropriate year as found in **Chapter 4, Personal Property Tables**, Industry Category Number 6.
3. Determine assessed value.
4. Prorate the actual value according to the number of days that the property is taxable and exempt compared to the full calendar year.

Example:

Subject Property:	Mixed media, paintings, sculptures.
Months Displayed:	January-September
Place Displayed:	State Capitol Building, Denver.
Actual Value:	\$750,000

Actual Value:	\$750,000
Adjust to the Specified Level of Value:	$\times \quad 0.98$
Adjusted to Specified Level of Value:	\$735,000

Actual Value per Day: \$735,000 ÷ 365 =	\$2,013.70
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Time that property is exempt: 273 days

Time that property is taxable: 92 days

Proration:

Exempt	273 days x \$2,013.70 =	\$549,740 (rounded)
Taxable	92 days x \$2,013.70 =	\$185,260 (rounded)
		\$735,000 (rounded)

The total of the taxable and exempt proration should be compared to the total actual value to ensure that they are identical.

The assessor notifies the owner of the works of art of the actual value and the proration no later than June 15. The owner may protest the valuation in the same manner as other personal property.

To take advantage of the works of art exemption, property owners must file the works of art statement with the personal property declaration schedule and proof of the exemption (documentation). Failure to file a statement results in forfeiture of a claim for exemption in that calendar year pursuant to § 39-5-113.5, C.R.S.

SMM & AD VALOREM TAX – FORM 301

Mobile machinery and self-propelled construction equipment is designated as Class F personal property and is commonly referred to as Special Mobile Machinery (SMM). SMM is subject to registration and annual specific ownership taxation in lieu of ad valorem taxation as provided in §§ 42-3-103(1) and 106(1)(e), C.R.S. The assessor should list this equipment for ad valorem tax valuation only if the equipment falls under one of the two exceptions to registration listed under *Exceptions to Specific Ownership Taxation*.

Two agents are authorized to register such equipment and collect the specific ownership tax. The county clerk can register equipment on an annual basis, which is the most common method of registration. Equipment registered by the county clerk must display either an **SMM license plate**, or more commonly, an **SMM decal** (Z-tab), which states “(current year) SMM SPECIFIC OWNERSHIP TAX PAID.”

Colorado ports of entry are also authorized to register SMM equipment, but they do so only for equipment that is located in Colorado for less than a full year. This includes equipment coming into the state for less than a full year and equipment based in Colorado that is leaving the state for part of the year. The registration provided by ports of entry is prorated for a period of two to eleven months. Vehicles that receive a prorated registration will not display an SMM license plate or decal. Instead, the owner is provided a **Specific Ownership Tax Receipt (SOT)**. The SOT is an official port of entry form that includes a start date and an end date for the prorated registration. Prorated registration is authorized by § 42-3-107(16.5), C.R.S. and became effective July 1, 2001.

Because of the specific ownership taxation laws, very little mobile machinery or construction equipment is on the ad valorem tax rolls. Any such equipment discovered which may have escaped specific ownership taxation, or that was registered on a prorated basis for a time period that has expired, is reported to the county clerk's motor vehicle section. Non self-propelled oil and gas drilling rigs are to be listed and valued by the assessor as provided in § 39-5-113.3, C.R.S.

The specific ownership method of taxation is considerably different than that of ad valorem taxation. A graduated, decreasing tax rate is applied to the taxable value of the SMM. Beginning in 1997, the law controlling specific ownership taxation requires calculation of taxable value to be based, in part, on when the equipment was purchased by its current owner. In all cases, the taxable value of SMM, including attachments is calculated **exclusive of state and local sales taxes**.

Taxable value of the SMM purchased by the current owner **on or after 1/1/97** is established in one of the following ways:

- The taxable value is 85 percent of the manufacturer's suggested retail price. When attachments have been added, the total taxable value includes 85 percent of the suggested retail price of the attachments.
- If the manufacturer's suggested retail price is not available, then the taxable value is 100 percent of the retail delivered price including 100 percent of the retail delivered price of the attachments.
- If neither of the above are available, then the taxable value shall be established by the Property Tax Administrator as 85 percent of the value set forth in a nationally recognized or standard reference for such figures.
- If none of the above are available, the taxable value is based on the best information available to the Property Tax Administrator, pursuant to § 42-3-107(15)(b.5), C.R.S.

Taxable value of the SMM purchased by the current owner **before 1/1/97** is established in one of the following ways:

- The taxable value is 100 percent of the factory list price and, if there are attachments, the taxable value includes 75 percent of the original retail delivered purchase price of the attachments.
- When the factory list price is not available, the taxable value is 75 percent of the original retail delivered price including attachments.
- When neither the factory list price of the equipment nor the original retail delivered price are available, then the taxable value shall be established by the Division based on the best information available.

Taxable value, as determined by one of the owner's purchase dates described above, is used for all subsequent years during which the special mobile machinery is under the same ownership. A graduated decreasing tax rate is applied to the taxable value as shown in the table below. For most equipment, the manufacturer's suggested retail price is published by the Division in the Mobile Equipment Manual (AH 538). The tax rate schedule, from § 42-3-107(15)(d), C.R.S., is listed below:

<u>YEAR OF SERVICE</u>	<u>RATE OF TAX</u>
First year	2.10% of taxable value (FOB New)
Second year	1.50% of taxable value (FOB New)
Third year	1.25% of taxable value (FOB New)
Fourth year	1.00% of taxable value (FOB New)
Fifth year	.75% of taxable value (FOB New)
Sixth and later years	.50% of taxable value (FOB New), but not less than \$5.00

EXCEPTIONS TO SPECIFIC OWNERSHIP TAXATION

There are only two exceptions under which equipment that is normally subject to registration and specific ownership taxation is valued for ad valorem taxation. Both exceptions are listed in § 42-3-104(3), C.R.S.

1. Registration and specific ownership taxation are not required for mobile machinery and self-propelled construction equipment used solely on property owned or leased by the owner of such machinery and equipment, if it is not operated on the public highways and roads and the owner lists all such machinery and equipment on the personal property schedule filed with the assessor in the county in which it is located.
2. Registration and specific ownership taxation are not required for mobile machinery and self-propelled construction equipment owned by a public utility, if it is not operated on the public highways and roads and it is valued for assessment by the Property Tax Administrator.

Examples of equipment qualifying for these exceptions are crushers, conveyors, bulldozers, and loaders operating exclusively in a sand and gravel pit, off-highway dump trucks operating exclusively within the boundaries of a mining operation, and fork lifts operating exclusively within a warehouse or lumber yard.

Many owners of equipment that operate solely on property owned or leased by the owner of the equipment elect to register such equipment with the county clerk and pay specific ownership taxes rather than list it with the assessor.

EQUIPMENT MOVING THROUGH PORTS OF ENTRY

SMM registration is usually restricted to machines that have wheels or endless tracks and are self-propelled or capable of being towed. Skid-mounted oil and gas drilling rigs are listed and valued by county assessors. On occasion, equipment such as oil field pumps and compressors has been registered for specific ownership tax purposes. See the *Auxiliary Equipment* topic earlier in this section.

Form 301

A problem develops when mobile equipment listed by the assessor is transported over the highways to a repair facility or to its new owner. This equipment could operate exclusively on property owned or leased by the equipment owner or it may be a piece of equipment that belongs to a skid-mounted drilling rig. If such equipment must pass through a port of entry station or a portable weight check station, it may be detained because it does not display an SMM plate or decal, if there is no proof that it has been assessed by a Colorado assessor.

To solve this problem, the Division of Property Taxation and Ports of Entry Division met and agreed to allow movable equipment to pass through check stations if an appropriate form showing proof of current year property tax assessment accompanies the mobile equipment. Form 301 has been approved by both Divisions for this purpose. Form 301 is a three copy, carbonless paper document, which is to be completed in its entirety. There should be no spaces left blank. Movable equipment must be adequately described by year, make, model, common name or description (such as pressure booster pump), serial or identification number (very important), date of purchase, and purchase price.

The certification of assessment must be completed and signed by either the assessor or chief deputy. The document also must be embossed with the county seal. Copies or facsimiles of Form 301 will not be accepted by the Ports of Entry agents. The form is designed so that up to nine separate SMMs may be listed.

Upon stopping at a port of entry, the owner, agent, or driver should present the yellow copy for clearance and point out which of the SMMs listed are being transported at the time. The yellow copy will be returned to the driver. The pink copy is the owner's file copy. It is recommended that, as a matter of public relations, assessors notify owners of assessed mobile equipment about Form 301 and its purpose.

The number of taxpayers involved should be small because use of Form 301 is limited to owners of skid-mounted drilling rig equipment and owners of mobile machinery operated exclusively on property owned or leased by the equipment owner, but which may be transported through a port of entry or weigh station. Form 301 is not furnished by the Division of Property Taxation. Each assessor should order a small supply of these forms from the following printing company or contact the Division.

PRINTRITE
303-789-6067

SPECIAL VALUATION ISSUES

ASSETS IN STORAGE

Personal property business assets in storage, which are no longer used to produce income, are still taxable to the owner. However, as maintenance on these assets may be deferred, they may suffer from additional physical depreciation as well as economic and functional obsolescence. Measurement of extraordinary depreciation from all causes can be difficult.

The Division recommends no adjustment during the assessment year the company goes out of business, whether the stored assets remain within their original real property location or not. During the next assessment year, the owner's intent regarding disposition of these assets should be determined. If the property is to be sold, moved out of state, or reconditioned during the assessment year, no extraordinary depreciation is applied. However, if the property remains in storage and periodic maintenance or reconditioning does not take place, auction value or even liquidation value may be appropriate depending on the individual circumstances. Specialized equipment may be appropriately valued at salvage value. The assessor must make these determinations on a case-by-case basis.

For example, restaurant equipment has an established secondary auction market, which may provide values adjusted for additional depreciation from all causes. Front range metropolitan counties may be of assistance in determining adjusted market values for used equipment.

CONSUMABLE PERSONAL PROPERTY - EXEMPTION

In 2000, the Colorado Legislature amended § 39-3-119, C.R.S., to require the Division of Property Taxation to "...publish in the manuals, appraisal procedures, and instructions prepared and published pursuant to § 39-2-109(1)(e), C.R.S., a definition or description of the types of personal property that are 'held for consumption by any business' and therefore exempt from the levy and collection of property tax pursuant to this section."

The Division has developed two criteria to aid in determining whether personal property is considered consumable and, therefore, exempt from property taxation. To be classified as "consumable," personal property must fall under one of the two criteria identified below:

- 1. The personal property must have an economic life of one (1) year or less.**

This criterion applies to any personal property regardless of original acquisition cost. This category also includes non-functional personal property that is used as a source of parts for the repair of operational machinery and equipment.

2. **The personal property has an economic life exceeding one year, but has an acquisition cost, inclusive of installation cost, sales tax, and freight expense to the point of use, of \$250 or less.**

The \$250 personal property threshold applies to the acquisition cost of the personal property as completely assembled for use in the business, not the personal property's unassembled, individual component parts. Note the following two examples.

Example 1:

The original installed costs incurred for a complete computer system in place and ready for the end user should be considered. The component parts of the system including the mouse, keyboard, monitor, and the CPU should not be divided and considered separately for the \$250 or less “consumable” exemption.

Example 2:

The costs incurred in the acquisition and installation of an entire theater seating system including the acquisition, installation, sales tax, and transportation costs should be considered. The individual theater seats are unassembled individual component parts of a larger theater seating system and their costs should not be considered separately for the \$250 or less “consumable” exemption.

Leased equipment provision:

For leased equipment having a “buy out” provision occurring during or at the end of the lease, the fair market value of the personal property, including installation, sales tax, and freight to the point of use, at the time the initial agreement is executed, is to be used as the acquisition cost for the purposes of the \$250 threshold.

TECHNOLOGICALLY ADVANCED EQUIPMENT

The Division of Property Taxation has reviewed the published classification definitions, Replacement Cost New (RCN) trending factors, and economic lives assigned to computers, other computer equipment including stand-alone computer peripherals, computer-integrated equipment, and telecommunication equipment. As a result, the following classifications for computer personal property have been established:

- Personal Computers and Accessories
- Other Computer Equipment Including Stand-Alone Computer Peripherals
- Computer-integrated Equipment
- Telecommunication Equipment

Each of these classifications is discussed in the paragraphs below.

PERSONAL COMPUTERS (PCS) AND ACCESSORIES

This classification refers to a stand-alone desktop, notebook, or palm-size computer. Examples of components and accessories that may be found on a personal computer are:

- Stationary central processing unit (CPU)
- Internal and/or external disk drives
- Internal or external modem
- Computer docking stations
- Keyboard
- Mouse
- Tape storage units
- Monitors

The above examples are not all-inclusive. In determining whether to include computer equipment under this classification, the general rule is to include any component or accessory that is used in conjunction with the personal computer and will be disposed of at the same time as the personal computer.

In order to better estimate the effects of technological obsolescence and rapidly changing economics inherent in the personal computer segment of the computer industry, we have assigned PCs and related accessories to RCN Table 13 (no RCN trend) and to a three (3) year economic life. A separate depreciation table incorporating a seven percent (7 percent) residual value for PCs and accessories has been developed and can be found in **Chapter 4, Personal Property Tables.**

OTHER COMPUTERS AND STAND-ALONE COMPUTER PERIPHERALS

This classification includes all computer equipment and stand-alone peripheral equipment that is not classified as personal computer components or accessories. Examples of other computer equipment include:

- Mainframe and Supercomputers
- Card readers
- Network servers
- Data entry devices
- Disc packs
- Printers (including high speed printers)
- Keypunch machines
- Magnetic tape feeds
- Mass storage units
- Servers
- Digital cameras
- Minicomputers
- Bar code scanners
- Point of sale credit card readers
- Optical character readers
- Plotters
- Tape cassettes, tape drives
- Terminals (including LOTTO)
- Modems
- Scanners
- Digital TV set-top boxes
- Automated Teller Machines (computer/electronic components/portion excluding the structural housing of the ATMs which should be valued using a ten (10) year economic life)

- Multi-purpose, computer-based equipment that has two or more separate functions (facsimile, printer, scanner, and/or telecommunication) equipment is also included in this category as other computer equipment.

In order to better estimate the effects of technological obsolescence inherent in the computer industry, we have assigned Other Computer Equipment to RCN Table 13 (no RCN trend) and to a four (4) year economic life. A separate depreciation table incorporating a seven percent (7 percent) residual value for Other Computer Equipment has been developed and can be found in **Chapter 4, Personal Property Tables**.

Excluded Equipment

Examples of equipment excluded from this classification are as follows:

- Adding and accounting machines
- Calculators
- Copiers
- Duplicating equipment
- Electronic desk calculators
- Production computers¹
- Typewriters
- Video arcade game equipment²

The above noted personal property is classified based on its use as office equipment (RCN Table 3) or under the appropriate commercial or industrial use type.

USE OF MARKET GUIDES TO VALUE COMPUTER EQUIPMENT

The market value of used computer equipment reported in published market guides may be substituted for Replacement Cost New Less Depreciation (RCNLD), if it produces a lower value than the RCNLD value. These market guides contain sales information on many types and brands of used computer equipment. However, values obtained from these guides must include an additional amount for sales/use tax, freight charges to the point of use, and any installation costs.

¹Production computer equipment that is integrated into other equipment is generally excluded from this classification. Examples of this type of computer equipment include: computers used primarily for process or production control, switching, channeling, and automating distributive trades as with computerized material conveyance and handling systems, drill and punch presses, wood and metal turning lathes, and similar equipment. See the *Computer-integrated Machinery and Equipment* topic found later in this section.

² Video arcade game equipment used primarily for amusement or entertainment of the user also is excluded from this classification. Refer to the topic *Video Arcade Games* in this section.

References for used computer equipment values include:

Computer Price Watch
 Computer Information Resources
 P.O. Box 13176
 Arlington, TX 76094-0176
 (817) 654-0346

Orion Blue Books
 Orion Research Corporation
 14555 N. Scottsdale Rd., Suite 330
 Scottsdale, AZ 85254
 (800) 844-0759

Used IBM Computer Prices
 Computer Economics, Inc.
 27121 Aliso Creek Road, Suite 120
 Aliso Viejo, CA 92656
 (800) 326-8100 x 123
 (760) 438-8100 x 123

COMPUTER-INTEGRATED MACHINERY AND EQUIPMENT

In recent years, computers and/or computer-based controls have become integrated into a variety of personal property categories. This category includes all machinery and equipment wherein a computerized control system is built into or incorporated with the components of the machinery or equipment in such a way that the computer component is a permanent part of the equipment.

Machinery and equipment are to be classified as computer-integrated personal property if all of the classification criteria listed below are met:

1. The equipment is purchased or constructed to function as a single unit.

If the original sales invoice or other property sales information separates the computer portion from the mechanical portion of the equipment, then the computer portion should be valued as a stand-alone computer and given a four (4) year economic life. The mechanical portion of equipment should be given the appropriate economic life for personal property that is not computer-integrated. Please refer to the *Computer-Integrated v. Modular Computer Equipment* topic later in this section.

2. The computer is not designed to perform functions outside the machinery or equipment and the machinery or equipment cannot function without the computer.
3. The machine is controlled by a programmable central processing unit that is physically integrated within the structure of the machinery or equipment.
4. The total cost of both the computer and machinery is depreciated as a unit for income tax purposes.

5. The capabilities of the machine cannot be expanded by substituting a more complex computer for the original. The capability of upgrading operating software will not disqualify equipment from being included in this category. In addition, typical industry practice for the personal property demonstrates that when either the computer or mechanical component of the machinery is no longer functional or economically feasible to repair, the entire machine is retired, scrapped, and/or sold for parts.

Computerized lathes used in research and development is one example of computer-integrated equipment.

If one or more of the criteria are not met, the personal property is to be classified as normal machinery and equipment, and given the appropriate replacement cost new (RCN) trending factor and economic life. When evaluating a complete manufacturing line or process, each piece of machinery or equipment within the line or process must be separately examined to determine whether it meets the criteria listed above.

Computer-integrated machinery and equipment should be valued using RCN Table 13 (no RCN trend) and a four (4) year economic life. To access the applicable depreciation tables for computer-integrated equipment, please refer to **Chapter 4, Personal Property Tables**.

Computer-integrated equipment may suffer functional and/or economic obsolescence due to technological changes. If verified, the assessor should consider any market or income information that will support a lower value than that established through the cost approach.

Computer-Integrated v. Modular-Controlled Equipment

Assessors should be aware that much of the equipment and machinery used today have modular electronic and/or computer controls that direct the operation of the machine. These modular controls can be replaced by new controls or updated with new hardware circuitry as needed by the equipment owner. The modular computer controls typically are not physically integrated with the equipment in such a way that the personal property meets the definition as Computer-integrated Equipment.

When modular computer-controlled equipment is found, the assessor should classify and value the computer portion as **Other Computer Equipment Including Stand-Alone Computer Peripherals** and the mechanical portion at the appropriate economic life assigned for that type of equipment. When modular electronic-controlled equipment is found, the assessor should classify and value the electronic portion as electronic equipment and the mechanical portion at the appropriate economic life assigned for that type of equipment.

Computerized machinery and equipment may be subject to additional technological obsolescence. Assessors should be prepared to consider verified market and income information that indicates a value lower than the cost approach.

TELECOMMUNICATION EQUIPMENT AND SYSTEMS

Examples of telecommunication machinery and equipment included in this classification are:

- Internal customer telecommunication systems
- Fax machines
- Key systems
- Teletypes
- PBX systems
- Small telephone systems
- Telephone handsets

Telecommunication machinery and equipment are to be valued using RCN Table 13 (no RCN trend) and a four (4) year economic life. To access the applicable depreciation tables for telecommunication equipment, please refer to **Chapter 4, Personal Property Tables**.

Equipment Excluded from This Classification

Examples of equipment excluded from this classification are as follows:

- Aerial wires
- Cable
- Microwave systems
- Pole lines
- Radio and television towers
- Underground conduits
- Satellite communication services

Excluded equipment should be valued using the RCN Factor Tables that are applicable to the type of equipment. Procedures for the classification and valuation of telecommunication towers are located later in this section.

CONDITIONAL SALES AGREEMENTS VERSUS TRUE LEASES

Questions arise in the responsibility for declaring personal property leased pursuant to a true lease as opposed to a conditional sales agreement. In some cases, an agreement identifying itself as a lease may be a conditional sales agreement and vice versa. In Colorado, personal property under a true lease agreement should be assessed to the lessor (owner) of the personal property.

Conditional sales agreements may be assessed to either the lessor or lessee depending on whether legal title to the personal property has passed from the lessor to the lessee. Definitions of a true lease and conditional sales agreement are shown below:

TRUE LEASE

A “true lease” is an agreement under which the owner of personal property gives up possession and use of the property for valuable consideration and for a definite time period. At the end of the time period, the lessor has the right to retake, control, or convey the property. True leases are agreements where there is no intent to transfer ownership from the lessor to the lessee.

CONDITIONAL SALES AGREEMENTS

Also known as “financing leases,” these are considered to be sales contracts under the Uniform Commercial Code. Specifically, sellers receive periodic payments for the purchase price until full payment is made or until a predetermined date occurs.

Differentiating Between a Lease and a Conditional Sales Agreement

Suggested criteria for differentiating between a lease and conditional sales agreement is shown below:

True Lease

- Lease is cancelable on a monthly or annual basis
- Optional purchase price at the end of the agreement is at market value
- Present value of the lease payments is less than the purchase price of the personal property
- Agreement specifying ownership of the personal property is retained by the lessor
- Lessor is treating the property as a depreciable asset

Conditional Sales Agreement

- Lease period is approximately the same as the economic life of the asset
- Present value of the payments is the same or greater than the purchase price of the personal property
- Lessee is treating the property as a depreciable asset
- Agreement indicates passage of legal title to the lessee with a security interest retained by the lessor until the end of the agreement

RESPONSIBILITY FOR THE REPORTING OF LEASED PROPERTY

Lessors of personal property under true leases are responsible for reporting the installed cost and location of the personal property. In most cases involving conditional sales agreements, the seller retains title to the property for collateral or security purposes during the term of the agreement. In these instances, the seller is considered the legal owner of the property and is responsible for reporting the installed cost and location of the personal property. If, under the provisions of the agreement, legal title is passed to the lessee, it is the lessee’s responsibility to report the location and installed cost to the appropriate county assessor.

GAMING EQUIPMENT

The recommended RCN Factor Table for the valuation of gaming equipment is Table 1 - Average of All. The recommended economic lives for electronic gaming equipment, such as slot machines, and most other larger gaming personal property, such as tables, are five (5) years and ten (10) years respectively. However, much of the personal property found in a typical gaming establishment may be consumed during the business year and should be classified as exempt materials and supplies. Examples include playing cards, dealer's aprons, and betting chips. It is recommended that a detailed listing of personal property be obtained from each new gaming establishment prior to determining taxable status of the business personal property.

ALL TERRAIN VEHICLES (ATVS)

The recommended RCN Factor Table for ATVs is Table 1 – Average of All. The recommended economic life for ATVs is six (6) years. The ATV category includes: non-licensed three or more wheeled vehicles, snowmobiles, and motorbikes.

SNOW CATS

The Division completed a snow cat economic life research study in February of 2004. The results support the recommended economic lives as noted in **Chapter 4 – Personal Property Tables**. Heavy use snow cats (averaging 1,300 or more hours of operation per calendar year) remain economically feasible to operate for six (6) years. Heavy use snow cats include snow cats that are used in a ski resort's snow grooming operations. Moderate use snow cats (averaging less than 1,300 hours of operation per calendar year) remain economically feasible to operate for ten (10) years. Moderate use snow cats include snow cats that are used for surveying, transportation, and/or in search and rescue operations. The recommended RCN Factor Table for snow cats is Table 1 – Average of All.

MEDICAL EQUIPMENT

The recommended economic life tables as listed in **Chapter 4, Personal Property Tables**, contain specific and general categories that adequately cover most personal property used in the health care industry. The recommended economic life tables support economic lives ranging from three (3) to ten (10) years depending on the composition, design, and use of the personal property. The recommended life tables and industry classifications should be reviewed to ensure that the appropriate justifiable industry and recommended economic life is assigned to the personal property. If a Colorado industry category where the specific personal property is typically used cannot be clearly determined “Industry Table 1 – Average of All” should be used for that personal property. Personal property that is not specifically noted in the recommended economic life tables should be classified into the category where it “best fits” with other similar functioning and/or purpose personal property.

The following listing contains examples of categories and types of medical equipment and the recommended economic life for each.

1. 3 – Year Recommended Economic Life
 - a. Computers – personal and accessories
 - b. Computers – laptop

2. 4 – Year Recommended Economic Life
 - a. Computers – other and stand-alone peripherals
 - b. Computer – integrated machinery and equipment
 - c. Lasers (coronary)
 - d. Telecommunication machinery and equipment

3. 6 – Year Recommended Economic Life
 - a. Anesthesia unit and equipment
 - b. Analyzer equipment
 - c. Blood pressure devices/machines
 - d. Blood warmer machines
 - e. Bypass/heart – lung system
 - f. Cameras and associated equipment
 - g. Cash registers (electronic)
 - h. Copiers and duplicators
 - i. Defibrillators
 - j. Dopplers
 - k. Echocardiograph system (EKG)
 - l. Electrocardiographs
 - m. Electronic equipment, except computers
 - n. Electronic charting equipment
 - o. Electronic pulmonary equipment
 - p. Floor cleaning/polishing machinery
 - q. Isotope equipment
 - r. Lithotripters, extracorporeal shock-wave (ESWL)
 - s. Lasers (positioner, surgical, other not including coronary)
 - t. Magnetic resonance imaging equipment (MRI) (Electronic portion)
 - u. Mammography units
 - v. Monitors (other than those used with a computer)
 - w. Optical readers
 - x. Scanners
 - y. Scopes
 - z. Sterilization system equipment
 - aa. Stretchers (hydraulic)
 - bb. Telemetry units (cardiac)
 - cc. Television equipment
 - dd. Typewriters (electric)
 - ee. Wheel chairs
 - ff. X-ray equipment

4. 10 – Year Recommended Economic Life
 - a. Aspirators
 - b. Blanket warmers/dryers
 - c. Counters
 - d. Conveyor system (used for laundry or trays)
 - e. Folding partitions/walls
 - f. Forklifts
 - g. Furniture (i.e. beds, cabinets, chairs, desks, tables, other)
 - h. Lockers
 - i. Magnetic resonance imaging equipment (MRI) (Mechanical portion)
 - j. Patient lifters
 - k. Packaging Machinery
 - l. Pneumatic tube system
 - m. Pumps, medical
 - n. Saws, medical

Note: The above listing is designed to assist assessors and their staff in determining reasonable economic lives for medical equipment. It should be used for consistency purposes. Also note that the list is not an all-inclusive list.

PIPELINE CLASSIFICATION AND VALUATION PROCEDURES

STATUTORY REFERENCES

In 1998, the following statute was enacted to classify pipelines, as well as other types of property installed through an easement, right-of-way or leasehold, as personal property.

Definitions.

(11)...Except as otherwise specified in articles 1 to 13 of this title, any pipeline, telecommunications line, utility line, cable television line, or other similar business asset or article installed through an easement, right-of-way, or leasehold for the purpose of commercial or industrial operation and not for the enhancement of real property shall be deemed to be personal property, including, without limitation, oil and gas distribution and transmission pipelines, flow lines, process lines, and related water pipeline collection, transportation, and distribution systems. Structures and other buildings installed on an easement, right-of-way, or leasehold that are not specifically referenced in this subsection (11) shall be deemed to be improvements pursuant to subsection (7) of this section,

§ 39-1-102, C.R.S.

Specific policies and procedures developed to implement this statute are contained in the sections below.

GENERAL POLICY PROVISIONS

This policy and associated procedures cover classification and valuation of all oil and gas gathering, transmission, and distribution pipelines located in Colorado.

With respect to classification, both locally assessed gathering and transmission pipeline systems and systems that are state assessed as pipeline companies, gas transmission carrier companies, and gas companies are to be considered personal property. However, since valuation of state assessed property is specifically determined using the “unitary valuation concept” the pipeline valuation procedures contained herein do not apply to state assessed companies.

Examples of property that would be classified as personal property and covered under these procedures are:

- Pipeline Tubulars inclusive of installation cost
- Cathodic Protection Units, Compressors
- Pipeline Controls, Regulators, and Meters
- Gas Measurement Devices such as orifice, turbine, and venturi meters
- All other assets and articles, exclusive of buildings and structures, installed within the pipeline right-of-way.

Examples of property that would be classified as real property and covered under these procedures are:

- Land owned by the pipeline company
- Buildings, structures, fixtures, and fences classified as improvements pursuant to § 39-1-102(7), C.R.S.

Other components of the pipeline system may fall under one of the two examples as either real or personal property. For further clarification and guidance, contact the Division of Property Taxation.

Although flow line and piping located at oil and gas wellsites and tank battery sites are also similar to the types of pipeline property listed above, the value of flow line and piping is included in the market values published in **Chapter 6, Oil and Gas Equipment Valuation**, and should not be valued under this policy.

DEFINITIONS

Most oil and gas pipeline systems fall into one of three groups: gathering, trunk/transmission, or distribution. For the purpose of this policy and associated procedures, the following definitions will be used.

Pipeline System

A pipeline system is defined as a collection of pipeline facilities used to transport oil, natural gas, or NGLs from a source of supply to the end user (natural gas) or final processing at a petrochemical refinery (crude oil and NGLs). The system may include gathering systems, transmission lines, distribution systems, and related facilities for compression, treatment, and processing the oil and/or gas during its journey through the system.

Gathering System

A gathering system is defined as a network-like system of pipelines that transport crude oil and natural gas from individual wellsites to a compressor station, treating or processing plant, or main transmission line. Gathering lines are generally short in length, operate at a relatively low pressure, and are small in diameter. The “Gathering” Percent Good Table should be used for pipe diameters less than 6 inches. In contrast, gathering lines of 6-inch diameter or more are considered as gathering “trunk” lines, despite their length. In the valuation process, the “Trunk/Transmission” Percent Good Table should be used for 6-inch, or more, diameter pipe.

Product Transmission System

A product transmission system is defined as pipelines designed and constructed for transporting product from principal supply areas to distribution systems, larger volume customers, other transmission lines, or petrochemical refineries. Transmission lines generally have a linear configuration, larger diameter pipe, operate at a relatively high pressure, and traverse long distances. Pipe diameters can be as small as 6 inches, but are generally 10 to 12 inches, or more. The “Trunk/Transmission” Percent Good Table should be used for these pipelines.

Distribution System

A distribution system is defined as a network-like system of pipelines that transport natural gas from a transmission line to end users’ service lines or to other distribution lines. Generally large pipelines are laid in principal streets, with smaller lateral lines extending along side streets and connected at the ends to form a grid or brought to a dead end.

PIPELINE CLASSIFICATION POLICIES

Classification of Pipelines as Personal Property

Under the provisions of § 39-1-102(11), C.R.S., pipelines are to be classified as personal property. Land owned by the pipeline company, buildings, and structures located within the right-of-way or easement are to be classified as real property. The value of pipeline rights-of-way and easements are included as part of the value of the assets of the pipeline and associated machinery and equipment. No separate assessment of pipeline rights-of-way or easements is to be done.

State Assessed vs. Locally Assessed Pipelines

The Division of Property Taxation - State Assessed Section relies on the following general criteria when determining applicability for state assessment:

- The intent of statutory language contained in article 4 of title 39 of the Colorado Revised Statutes
- Existing Colorado case law
- Whether the entity owning the property is regulated by the Colorado Public Utility Commission (PUC), Federal Energy Regulatory Commission (FERC), or other governmental agency
- Whether the property crosses county and/or state boundaries
- Comparison of the subject property to assessment practices of other companies that are currently state and/or locally assessed.

If a question exists as to whether a pipeline property will be state or locally assessed, contact the State Assessed Section of the Division of Property Taxation for a determination.

Gathering Pipeline Systems vs. Trunk/Transmission Pipeline Systems

The final determination as to whether a pipeline should be designated as a gathering system pipeline (14 year economic life) as opposed to a trunk or transmission pipeline (22 year economic life) should reflect the judgment of the assessor based on the facts as they apply to the specific pipeline system under appraisal. Assessors are strongly encouraged to examine the physical characteristics and purpose of the pipeline when determining whether it is a gathering or transmission pipeline.

It is possible that larger diameter “trunk” lines, from 6 inches to 30 inches, could be used in the gathering system. Typically, such large-diameter pipe has a longer economic life than the smaller-diameter lines used in the rest of the gathering system. In this instance, if the trunk line measures 6 inches or more, it would be considered a gathering system “trunk” line and would be valued using a 22-year economic life for trunk lines.

PIPELINE VALUATION PROCEDURES

As personal property, Colorado statutes require that the cost, market, and income approaches to value be considered in the valuation process. However, § 39-1-103(13)(a), C.R.S., mandates that the value determined using the cost approach to appraisal shall set the maximum value for the pipeline if all costs incurred in the acquisition and installation of the pipeline have been provided to the assessor. Additionally, all forms of depreciation are to be considered when establishing a final actual value for the pipeline. The assessment rate for pipeline systems is 29%.

For gathering systems, the primary approach to value will generally be the cost approach. However, market and income approaches are to be considered and applied if sufficient comparable sales or actual income and expense information exists. Assessors should be aware that few gathering systems sell or operate separately from the oil and gas reserve and/or gas processing plant to which the gathering system is connected. Total values determined from market and/or income approaches to value must be allocated to the various components of the total system so that separate values for each component are determined.

For product transmission and distribution systems, all three approaches are to be considered. Assessors should request income and expense information upon which to analyze net operating income. When sales of transmission and/or distribution systems occur, assessors need to confirm the sales price and terms of the sale and ascertain the allocated sales price for each component (transmission system v. other oil and gas assets) contained in the sale.

Cost Approach Valuation Procedures

When utilizing the cost approach to value, assessors may consider historical installed costs as well as replacement costs in establishing the cost new prior to application of depreciation. However, consideration of all forms of depreciation (physical, functional, and economic) is required when applying the cost approach.

Based on typical Federal Energy Regulatory Commission (FERC) filings for 1990 and 1991, the average breakdown of costs for onshore pipelines is shown as follows:

Right of Way/Damages	4.38%
Labor	38.55%
Materials	36.59%
Miscellaneous	<u>20.48%</u>
	100.00%

Based on information compiled by the Oil and Gas Journal and quoted in the Oil and Gas Pipeline Fundamentals text, an average investment breakdown for crude oil and products pipelines is also listed below.

CRUDE OIL PIPELINES PRODUCTS PIPELINES

Land and Right of Way	2.86%	2.88%
Line Pipe and Fittings	27.30%	27.44%
Pipeline Construction	40.20%	38.36%
Miscellaneous	8.25%	13.40%
Pump Stations and Equipment	<u>21.39%</u>	<u>17.92%</u>
	100.00%	100.00%

These percentages are overall industry averages and may not reflect exact cost allocations for a specific pipeline project in Colorado. Assessors should be aware of any substantive differences between the industry averages and information provided by the taxpayer and are encouraged to discuss with the pipeline owner any significant differences between the above cost allocation percentages and actual costs reported to the assessor.

Establishing Original Installed Cost:

For these procedures, the primary basis of the cost approach is the Original Installed Cost of the pipeline system. When possible, the assessor should obtain actual pipeline construction costs for each pipeline system in the county.

Research and discussions with industry indicates that there is no “typical” or “representative” pipeline system as far as installed cost is concerned. Construction costs depend on geographical area, size of the pipeline, number and size of pump and compressor stations, and general economic conditions.

Components of Historical Cost:

Examples of typical types of costs incurred when constructing a pipeline system are:

1. Right of way
2. Damages
3. Land survey
4. Pipeline materials and labor
 - a. Cost of pipeline tubulars (e.g. line pipe and fittings)
 - b. Installation costs
 - c. Pipeline coating
 - d. Cathodic protection
5. Engineering inspection
6. General overhead and contingencies
7. Regulatory and Legal fees
8. Cost of other services
9. Telecommunication equipment

Depending on the size and purpose of the pipeline, not all of the above costs may be separately listed by the pipeline owner. Assessors are strongly encouraged to solicit an accurate cost of the pipeline from the pipeline owner.

Costs used for valuation purposes are generally those costs that have been classified as assets and are capitalized and depreciated on the books and records of the company. However, pipeline right-of-way (ROW) acquisition costs should not be separately valued when valuing the assets of a pipeline, as original ROW acquisition costs are associated with land or its use. Since the pipeline could not exist without the Right-of-Way, the value of the Right-of-Way attributable to the pipeline is assumed to be included in the total actual value of the pipeline, once that value is determined. Damage costs paid to the landowner for damage caused by installation of the pipeline system are expenses, not capitalized assets, and are not to be valued with the pipeline or separately from it.

In general, the longer a pipeline is, the lower its cost per mile. A pipeline a few miles long will cost considerably more per mile than a pipeline several hundred miles long even though both are the same diameter and are laid out in similar terrain. Pipeline costs are often compared on an “inch-mile” basis to make the comparison less dependent on pipeline size. To convert to inch-miles, multiply the pipeline interior diameter by the number of actual miles of the pipeline.

Capitalized installed costs incurred to replace a component of the pipeline system can be accounted for by one of two methods. The first is to show the cost of replacement as a separate cost, trend this cost to reproduction cost new (RpdCN) as of January 1 of the assessment year, and depreciate the RpdCN as any other pipeline asset cost. However, a reduction in the original historical cost for the replaced component must be made to account for the fact that the original component is no longer a part of the pipeline system. Normal maintenance and repair costs that do not increase the economic life of the pipeline system should not be considered as capitalized replacement costs under this procedure.

The second method for the accounting of replaced equipment is to increase the percent good of the pipeline system to account for the added economic life due to replacement of the pipeline component. If this method is employed, the assessor should validate with the pipeline owner any measurable change in the remaining economic life of the system. In valuing the pipeline under the cost approach, the adjusted economic life (and resulting percent good) is used as the basis for recognizing normal physical depreciation.

Establishing Current Reproduction Cost New:

Once historical pipeline costs have been obtained, they must be trended to reproduction cost new (RpdCN) as of January 1 of the assessment year. When trending historical cost, the result is considered to be Reproduction Cost New (RpdCN), because it represents what was actually installed when the pipeline was new.

The Division has developed Cost Trending Factors to trend original installed costs to costs as if new as of the assessment date. These trending factors are based on "Total Plant" gas utility construction cost trends listed in Table G-5 of the *Handy-Whitman Index of Public Utility Construction Costs* by Whitman, Requardt and Associates. The trending factors for pipelines are also applicable to compressor station equipment, as well as measuring and regulating equipment. Since the factors in these tables have been calibrated to include the level of value adjustment factor, pipeline values do not require the use of a Level of Value (LOV) adjustment or "Rollback" factor. Put another way, the LOV Factor will always be **1.00**.

The table containing the trending factors is found in ***Cost Trending Factors and Percent Good Tables*** at the end of these procedures. A basic illustration on the use of the factors in the valuation of a gathering system for the 2006 assessment year is shown below:

Description	Year of Construction	Installed Cost	Trending Factor	RpdCN
Field Line	1997	\$ 850,000	1.434	\$ 1,218,900
Field Reg & Meas. Structures	1998	\$ 50,000	1.404	\$ 70,200

The resulting reproduction cost new (RpdCN) figures represent the estimated cost to build the pipeline as if new as of the January 1 assessment date.

Special Rule Regarding the "Freezing" of the Cost Trending Factor:

When a component of pipeline personal property has reached its minimum depreciated value (15 percent), the applicable Cost Trending Factor in use at that time is "frozen," and will remain frozen until the component is permanently taken out of service. If this rule were not established, pipeline values would increase as they got older. This situation does not realistically happen in the marketplace.

An exception to this rule applies when the property has been reconditioned to extend its remaining economic life. In this instance, the assessor may substitute a later 'year acquired' thus increasing the cost approach value of the pipeline to reflect the additional value attributable to a longer remaining economic life.

The next step is to apply depreciation to the trended reproduction costs new in order to calculate reproduction cost new less depreciation (RpdCNLD).

Calculation of Depreciation

Depreciation calculations should consider the economic life of the pipeline, the economic life of the oil and gas reserve served by the pipeline, any loss in value due to super-adequacy of pipeline capacity or loss in functional utility, and economic obsolescence due to market forces affecting the oil and gas industry.

Types of depreciation that are recognized in the cost approach valuation of pipelines:

- Normal Physical Deterioration (due to normal wear and tear over the economic life of the pipeline).
- Extraordinary Physical Deterioration due to excessive physical deterioration from soil conditions or transportation of corrosive materials over and above the loss in value due to normal wear and tear.
- Functional/Economic Obsolescence due to lower than normal pipeline “throughput” in relation to operating design capacity.

Each of these forms of depreciation is discussed in greater detail below.

Normal Physical Deterioration:

Normal physical depreciation is accounted for through the use of depreciation tables. The depreciation tables are based on Iowa State University Retirement and Survivor Curve Studies for various types of commercial and industrial assets.

For trunk/transmission pipeline systems, the table is based on a 22 year economic life. For gathering systems using less than 6-inch pipe, the table is based on a 14 year economic life. These tables are identical to tables used for the valuation of other personal property components having the same economic lives.

Please note that the Iowa State University studies extend the minimum depreciated value floor from 14 to 17 years for gathering systems and from 22 to 29 years for trunk/transmission pipeline systems.

This table is found in the *Cost Trending Factors and Percent Good Tables* at the end of these procedures. An example of this procedure using the 14-year life table (Gathering System Pipeline) for the 2006 assessment year is shown below:

<u>Description</u>	<u>Year of Construction</u>	<u>RpdCN Cost</u>	<u>Percent Good</u>	<u>RpdCNLD</u>
Field Line	1997	\$ 1,218,900	51% (0.51)	\$ 621,639
Field Reg & Meas. Structures	1998	\$ 70,200	57% (0.57)	\$ 40,014

The percent good numbers listed in the Percent Good Table reflect normal depreciation assigned to the pipeline assets, excluding ROW costs, over the economic life of the pipeline.

Extraordinary Physical Deterioration:

Extraordinary forms of physical deterioration can exist from exposure to caustic or corrosive products transported within the pipeline as well as soil conditions that shorten the economic life of the pipeline.

Allowance for extraordinary deterioration can be made in one of two ways:

1. Allowance of additional physical deterioration can be measured by deducting the net “cost-to-cure” relating to the condition causing the extraordinary physical deterioration. Net cost-to-cure is determined by the total cost-to-cure less the current depreciated cost of the pipeline component being replaced.
2. Reduction of the remaining economic life of the pipeline causing a higher percentage of depreciation (lower percent good) to be applied to the reproduction cost new.

Generally, incurable extraordinary physical deterioration can be accounted for by reducing the percentage good assigned to the pipeline through the use of the depreciation table in the ***Cost Trending Factors and Percent Good Tables*** at the end of these procedures. This adjustment has the effect of lowering the remaining economic life of the pipeline or pipeline component that is affected by the condition.

The assessor should work closely with the pipeline owner to determine the reason for reducing the remaining economic life of the system. The adjusted economic life (and resulting percent good) serves the basis for application of normal physical depreciation and no additional adjustment for extraordinary depreciation is allowed.

For example, assume a gathering system pipeline with a normal remaining economic life (REL) of 10 years is suffering from advanced corrosion due to sulfuric acid created by excessive hydrogen sulfide gas (H₂S) in the natural gas stream. Although the pipeline owner had applied an interior coating to the pipeline to protect it from corrosion, the pipeline has only five (5) years left until the corroded section will have to be replaced or a new line installed.

The assessor may recognize this additional loss in value by decreasing the percent good obtained from the gathering system depreciation table found in the ***Cost Trending Factors and Percent Good Tables*** from 60% good (10 year REL) to 33% (5 year REL).

Functional/Economic Obsolescence:

After a pipeline system has begun operation, functional/economic obsolescence may become evident. This obsolescence may be caused by a drop in “throughput” (amount of product shipped through the pipeline) due to reduced oil or gas reserve estimates, super-adequacy of the system based on current supply, the shut-in (shut down) of wells due to economic conditions making production uneconomical, or other functional problems or economic conditions affecting the pipeline system.

Because of the time needed to connect wells and/or gathering systems to a new pipeline system, functional/economic obsolescence should be considered only after either of the following two conditions are met:

1. All of the wells and/or gathering systems for which the system was constructed to handle have been connected, or
2. Two full assessment years have passed since the pipeline began operation.

Calculation of functional/economic obsolescence should be done using the following formula:

$$\frac{1 + \sqrt{\frac{\text{Previous Calendar Year Throughput}}{\text{Pipeline Normal Operating Design Capacity}}}}{2}$$

An example calculation of functional/economic obsolescence is shown on the next page.

Example:

A natural gas gathering system with a remaining economic life of 8 years experienced a drop in pipeline utilization (throughput) during the previous calendar year due to several gas wells being “shut-in” by outside producers that were connected to the pipeline. The previous year’s throughput was 12,000,000 MCF and the system’s capacity for which it is currently designed is 20,000,000 MCF.

$$\frac{1 + \sqrt{\frac{12,000,000 \text{ MCF}}{20,000,000 \text{ MCF}}}}{2} = \frac{1 + .7746}{2} = .8873 = 1 - .8873 = .113 \text{ or } 11.3\% \text{ Obsolescence}$$

Application of the above obsolescence amount is to be made in the following manner:

Description	Original Cost	RpdCN	Normal Physical Depr.%¹	Funct/Econ Obsol.%²	Total Act. Val.
Field Line	\$ 850,000	\$ 1,218,900	(\$ 597,261)	(\$ 137,736)	\$ 483,903
Field Reg and Meas. Structures	\$ 50,000	\$ 70,200	(\$ 30,186)	(\$ 7,933)	\$ 32,081
TOTAL ACTUAL VALUE					\$ 515,985
¹ Field line physical depreciation			\$ 1,218,900	x 0.49	= \$ 597,261
Field structures physical depreciation			\$ 70,200	x 0.43	= \$ 30,186
² Field line functional/economic obsolescence			\$ 1,218,900	x 0.113	= \$ 137,736
Field structures functional/economic obsolescence			\$ 70,200	x 0.113	= \$ 7,933

The value illustrated above represents the actual value of the pipeline including the value of the right-of-way attributable to the pipeline. In addition to the field pipe and field structures values, any other real and personal property used in conjunction with the pipeline must be valued and assessed separately.

Special Procedures For Newly Acquired Used Pipeline Personal Property:

In valuing used pipeline personal property, if the actual historical age of the personal property at the time it was acquired by the current owner either meets or exceeds the age corresponding to 15% Good in the **Percent Good Tables** for pipeline systems, the current owner's actual acquisition cost is to be treated as the Reproduction Cost New, Less Depreciation (RpdCNLD). The actual used-property acquisition cost is "frozen" at that value until that component is permanently taken out of service. **Cost Trending Factors** do not apply to "frozen" values.

In valuing used pipeline personal property, if the actual historical age of the personal property at the time it was acquired by the current owner was less than the age corresponding to 15% Good in the **Percent Good Tables** for pipeline systems, the used personal property is treated as if new. The current owner's actual acquisition cost is subject to depreciation as if the property's economic life for ad valorem tax purposes had begun at the time it was acquired.

In both of the above circumstances, the resulting value should be compared to the sales comparison (market) value for the component, if sales are available.

Depreciated Value Floor for Pipelines (15 percent):

When using the cost approach to value pipelines, the minimum percent good inclusive of physical, functional, and/or economic obsolescence will be 15 percent (15 percent) of the pipeline's reproduction cost new (RpdCN).

This floor may be exceeded when the market or income approach indicates a lower value or when the pipeline has been abandoned and no longer is capable of being used. Any pipeline value established from the use of the cost approach should be crosschecked with sales comparison (market) and income information sources, if possible, and the appropriate value used.

Income Approach Valuation Procedures

In accordance with Colorado constitutional and statutory provisions, the income approach to appraisal must be considered when establishing a value for a pipeline system.

The income (and market) approaches have applicability for valuation of both **gathering systems** and **product transmission and distribution pipeline systems**. Most **gathering system** values are tied to the economic life and economic viability of the oil and gas production field and/or processing plant that is connected to the gathering system. Allocation of income and expenses to the various components may be difficult. If an overall “system” income value is calculated, additional analysis of the relative worth of the various components may be required to arrive at a value of the pipeline property.

For **product transmission and distribution pipeline systems**, the income approach should be considered in determining actual value. When utilizing the income approach to value for transmission and distribution pipelines, the following steps should be followed:

- | | |
|---------|--|
| Step #1 | Obtain an Income and Expense Statement for the pipeline operation. A minimum of three (3) calendar years should be obtained. |
| Step #2 | Determine Net Operating Income (NOI) |
| Step #3 | Determine the Appropriate Capitalization Rate |
| Step #4 | Capitalize the NOI to an Actual Value Estimate |
| Step #5 | Allocate the Total Actual Value into Real and Personal Property Components |

Each of these steps is more specifically discussed below.

Step #1 - Obtain an Income and Expense Statement:

Crucial to using the income approach to value is obtaining income and expense information about the pipeline. In many cases, the pipeline company may be able to provide the assessor with a financial statement listing income and expenses. It is recommended that at least three calendar years of income and expense history be obtained in order to stabilize estimate revenue and expense amounts to what would typically be experienced by the pipeline operation.

Gross income (revenue) estimates are based on the transportation revenue paid to the pipeline company for transporting the product. In some cases, the pipeline company may have a published (or unpublished) tariff that sets forth the fees and charges for transporting the oil and gas product. If a tariff or other form of transportation agreement exists between the producer and pipeline company, the assessor should request it. Because unpublished tariffs and transportation agreements may be proprietary and confidential in nature, the assessor must treat all such tariffs and agreements as confidential according to § 24-72-204(3)(a)(IV), C.R.S.

A list of typical expense categories that may be found in a pipeline income and expense statement are:

OPERATIONS EXPENSES

Supervision and engineering
 System load and control dispatching
 Communication system expenses
 Compressor station labor & expenses
 Fuel and power costs
 Rents and leased equipment costs
 Compression of gas by others
 Other transmission expenses
 General overhead and administrative

MAINTENANCE EXPENSES

Supervision and engineering
 Maintenance costs for:
 Structures and Improvements
 Transmission mains
 Compressor equipment
 Measuring and regulating
 station equipment
 Communication equipment
 Other equipment expenses

For the above categories, general types of expenses would be:

- Salaries, wages, and benefits paid to employees in the operation and maintenance of transportation mains, equipment and facilities
- Fuel and utility costs
- Materials and supplies including chemicals and lubricants
- Non-capitalized repairs, labor, materials, and supplies directly related to the transportation mains, equipment, and facilities
- Real and personal property taxes
- Insurance and payroll taxes
- Arm's-length rental, leasing, or contract service costs for operation and maintenance of the equipment and facility
- Allocated direct general and administrative overhead costs, e.g. headquarters personnel, telephone service, payroll taxes, employee benefits, vehicle expenses, office supplies, etc., that represent typical expenditures that are directly related to the operation and maintenance of the pipeline system, equipment, and improvements. Assessors should request a copy of the allocation methodology for any on-site or off-site general and administrative costs that are allocated and deducted.
- Book depreciation of the pipeline system assets that is calculated on a straight-line basis over the assigned economic life of the asset.

The assessor should evaluate all taxpayer-provided income and expense information and allow those expenses as a deduction from gross revenue that are directly related to the pipeline operation.

Step #2 - Determine Net Operating Income:

Net operating income is defined as the income remaining after deduction of operating expenses, maintenance expenses, and annual depreciation expense from gross revenue received by the pipeline. Depreciation must be calculated as a straight-line (non-accelerated) deduction from the capitalized remaining undepreciated balance of pipeline assets over its assigned economic life.

After appropriate expenses are deducted, the remaining income is termed net operating income (NOI).

Step #3 - Determine an Appropriate Capitalization Rate:

The Division of Property Taxation annually publishes capitalization rates for use in valuing locally assessed oil and gas pipelines. For 2007, the capitalization rates by pipeline type that must be used are:

Fluid Transmission Pipelines	Gas Transmission Pipelines	Gas Distribution Pipeline
11.23%	11.35%	9.39%

This capitalization rate must be applied to the NOI of the pipeline.

Step #4 - Capitalize Net Operating Income to an Actual Value Estimate:

Capitalizing net income estimates to actual value is calculated by dividing the net income estimates by the capitalization rate. An example of this calculation for a gas transmission pipeline is shown below:

\$100,000	Net Operating Income (NOI)
<u>:- .1135</u>	Published capitalization rate (Gas Transmission Pipelines)
\$881,057	Actual Value Determined Through the Income Approach

The final step is to allocate the above pipeline system value to various real and personal property components.

Step #5 - Allocate Value into Real and Personal Property Components:

The actual value estimate determined from capitalization of net income represents the value of the entire pipeline system including land, rights of way, line pipe, structures, and personal property. To arrive at a reasonable value for the line pipe and attached fixtures, an allocation of the total actual value to the various components is required.

Allocation by original acquisition cost of the various pipeline system components can be considered. The assessor should request actual original acquisition costs from the company's financial records for each of the pipeline system components such as rights of way, other lands, transmission mains, pipeline structures, compressor and pumping equipment, and other real and personal property components that are included in the system value of the pipeline. Right-of-way acquisition costs should be excluded from the allocation, as original ROW acquisition costs are associated with land or its use. Since the pipeline could not exist without the Right-of-Way, the value of the Right-of-Way attributable to the pipeline is assumed to be included in the total actual value of the pipeline, once that value is determined. Damage costs paid to the landowner for damage caused by installation of the pipeline system are expenses, not capitalized assets, and are not to be valued with the pipeline. Any intangible personal property assets will also have to be excluded before the final value is considered in the reconciliation process.

In determining allocation percentages, the original acquisition cost of all pipeline system assets, exclusive of right-of-way acquisition costs and damage costs to landowners, are totaled and percentages calculated for each asset as part of the total (100%). These percentages are applied to the indicated income approach value to determine the contributory value of each component of the pipeline system. If oil and gas reserves are included in the overall value of the pipeline system, qualified engineering studies will have to be obtained from the taxpayer to support the allocation of the overall system income value to the contributory value of the reserves. For the purposes of this methodology, it is assumed that each component of the pipeline system contributes equally to establish the total value of the pipeline system from the income approach.

The income (or market) value of personal property assets can only be considered if it is less than the value determined by the cost approach to value, § 39-1-103(13), C.R.S.

Market Approach Valuation Procedures

In accordance with Colorado constitutional and statutory provisions, the market (sales comparison) approach to value must be considered when establishing a value for a pipeline system.

The market (and income) approaches have applicability for valuation of both **gathering systems** and **product transmission and distribution pipeline systems**. Most **gathering system** values are tied to the economic life and economic viability of the oil and gas production field and/or processing plant that is connected to the gathering system. Allocation of the sales price paid for an integrated system into various components may be difficult.

If an overall “system” market value is calculated, additional analysis of the relative worth of the various components may be required to arrive at a value for the pipeline property. As stated earlier in these procedures, the cost approach typically is the primary method of value for **gathering systems**. However, for **product transmission and distribution pipeline systems**, the market approach should be considered in determining actual value.

Discussions with independent appraisal industry sources indicate that a considerable amount of sales information is unpublished and must be gathered directly from the seller or buyer. In addition, other sources of market sales information are industry reports and Security and Exchange Commission (SEC) 10-K reports for publicly traded companies.

If a product transmission pipeline sells within Colorado, the assessor should confirm the sales price paid and obtain additional information about the pipeline, such as:

1. Allocation of the pipeline sale price to the component values for rights-of-way, line pipe, improvements, and personal property, if possible. If non-pipeline assets such as oil and gas wells, gathering lines, or a gas processing plant were included, portions of the sale price attributable to each component of the pipeline system should be allocated.
2. Description of the pipeline operation including type of product transported

3. Pipeline operational and physical characteristics, such as:
 - a. Pipeline design capacity in MMcfd (million cubic feet per day)
 - b. Average daily pipeline throughput in MMcfd for prior year(s)
 - c. Type of product transported
 - d. The length of the pipeline converted to inch-miles. To convert to inch-miles, multiply the pipeline interior diameter by the number of actual miles of the pipeline
 - e. Age of the pipeline and buyers or sellers estimate of the remaining economic life
 - f. Has any major rehabilitation or replacement of the pipeline been done since construction?
4. Does the sale price represent 100% ownership of the system?
5. Are the seller and buyer related parties?

Each of the above questions and answers is useful in determining the comparability of the sold pipeline to the pipeline system under appraisal.

Making Market Adjustments to Comparable Pipeline System Sales:

Each pipeline system exhibits specific operating characteristics that will allow the appraiser to analyze sales of other pipeline systems similar to the subject property. These characteristics can be used as a unit of comparison when analyzing comparable pipeline system sales.

If a pipeline transports crude oil or natural gas, comparable pipeline sales could be analyzed on a **barrel (Bbl) or million cubic feet (MMcf) per day actual throughput** as a unit of comparison. Other areas of comparison that should be considered are:

- Age of the pipeline system
- Location in relation to proven oil and gas reserves
- Inclusion of non-pipeline assets such as oil and gas reserves, gathering systems, and product processing facilities

It must be pointed out that the valuation determined by the market approach encompasses all of the real and personal property of the pipeline system: land, rights of way, line pipe, buildings, structures, and personal property. It may also include intangible assets such as long-term transportation contracts as well. Intangible personal property assets must be excluded before the final value is considered in the reconciliation process.

Determining Market Values for Pipeline Systems Using Comparable Sales:

Because of the wide variance in pipeline design and product throughput volume, obtaining sufficient truly comparable sales may be problematic. The wide variety of pipeline locations, pipeline types and sizes, type of product transported, and pipeline operating characteristics requires a large database of sales with similar characteristics to ascertain comparability.

If determining a market value estimate is contemplated, it is suggested that a market range based on confirmed sales prices divided by the actual throughput in MMcf per day be attempted. Comparison of this range with other approaches to value will enable the appraiser to determine if the value is reasonable and defensible.

Reconciliation of Valuation Approaches to a Final Estimate of Value

In textbook examples of the reconciliation process, the cost approach, market approach, and income approach are weighed carefully to determine, in the appraiser's opinion, the final market value of the property. The reconciliation is the attempt by the appraiser to explain or reconcile differences that may exist between the various indicators of value and to review the strengths and weaknesses of each approach.

The final value conclusion is subjective, but is based on the indicators plus general overall value influences. Where the appraiser has adequate and reliable data, the greatest reliance is placed on this data in the reconciliation process. For newer pipeline systems in Colorado, the historical cost less depreciation approach is typically considered as the most reliable indicator of value. When the assessor is made aware of additional obsolescence based on functional and/or economic concerns, these adjustments should be considered.

However, as a pipeline ages, the cost approach becomes less reliable. Pipelines that are 15 - 20 years old typically generate higher values through the capitalization of net income than would be represented by the depreciated historical cost approach. However, uses of the income and market approaches carry with them some additional cautions regarding allocation of the indicated value into real and personal property components. Careful allocation of the market and/or income approach values must be done in order to estimate the representative market or income value attributable to the real property assets.

The actual value estimate determined from sales comparison analysis of comparable pipeline sales or from the capitalization of income approach will generally represent the value of the entire pipeline system including land, rights of way, line pipe, structures, and personal property. To arrive at an allocation of value between pipeline real property and personal property, allocation of the pipeline components by original acquisition or installation cost of the various pipeline system components can be considered.

The assessor should request actual original acquisition costs from the company's financial records for each of the pipeline system components such as rights of way, other lands, transmission mains, pipeline structures, compressor and pumping equipment, and any other real or personal property components included in the pipeline system. Please note that intangible personal property assets will have to be excluded before the pipeline components are analyzed. Note also that right-of-way acquisition costs and damage costs paid to landowners are to be excluded from the analysis.

In determining allocation percentages, the original acquisition costs of all pipeline system assets are totaled and percentages calculated for each asset as part of the total (100%). These percentages are applied to the market approach value and/or income approach value(s) to determine the contributory value of each component of the pipeline system. For the purposes of this methodology, it is assumed that each component of the pipeline system contributes equally to establish the total value of the pipeline system from the income approach. Finally, each component is then classified as real or personal property in accordance with Colorado statutes and these procedures. According to § 39-1-103(13)(a), C.R.S., the market (or income) value of personal property assets can only be considered if it is less than the value determined by the cost approach to value.

If oil and gas reserves are included in the overall value of the pipeline system, qualified engineering studies will have to be obtained from the taxpayer to support the allocation of the overall system market value to the contributory value of the reserves.

LOCALLY ASSESSED PIPELINES

LEVEL OF VALUE ADJUSTMENT (ROLLBACK) FACTOR

As required by § 39-1-104(12.3)(a)(I), C.R.S., the current actual value determined each year for personal property must be adjusted to the level of value applicable for real property. The procedure involves the multiplication of the current actual value estimate by the appropriate factor for the type of property being valued. Each year, the Division of Property Taxation researches and publishes these adjustment factors for use by all Colorado Assessors.

Since the Cost Trending Factors for Pipeline Systems have been calibrated to include the Level of Value (LOV) adjustment (Rollback) factor, pipeline values do not require the use of a LOV factor. Put another way, the LOV factor will always be **1.00**.

Best Information Available (BIA) Valuation of Pipelines

If a taxpayer is unable or unwilling to supply basic historical cost and/or income information for the valuation of the pipeline system, the assessor may determine a BIA valuation for the property. Two possible sources for BIA values can be used:

1. Comparable pipeline values per mile based on other pipeline assessments within the county or in other neighboring counties. Age of the system, pipeline throughput, and pipe size are important units of comparison when establishing BIA values. Assessors within the same oil and gas production basin are encouraged to discuss pipeline assessment practices and provide comparative assessment information to be reviewed by all assessors.
2. Section 62, page 6, of the Marshall Valuation Service manual should also be considered as a source of BIA assessments. Make sure you read the explanatory paragraph under “*Pipeline Costs*” associated with the typical costs per mile so the appropriate rate can be assigned. (As with most sections of the Marshall Valuation Service manual, local multipliers may be applicable to the section. Final figures may need to be adjusted to the appropriate level of value using Marshall’s own indices for such data.) You will also have to add costs for compressor/pumping equipment.

It is important that the BIA value be based on comparable pipeline cost information, assessment information, or other source of information related to the pipeline industry.

BIBLIOGRAPHY OF SOURCES

The following sources may contain additional information regarding how oil and gas pipelines are constructed and used:

- Fundamentals of Oil and Gas Accounting - 3rd. Edition
- “Gas Handling and Field Processing,” Plant Operations Training text, Penwell Books
- Modern Petroleum - A Basic Primer of the Industry, Penwell Books
- Oil and Gas Pipeline Fundamentals - 2nd Edition, Penwell Books
- Natural Gas Desk Book, published by Mobil Natural Gas Inc.

Assessors are encouraged to obtain one or more of the reference texts for use in understanding pipeline terminology and other intricacies of pipeline operations.

EXAMPLE VALUATION OF AN OIL AND GAS GATHERING SYSTEM

The subject property is a 12-mile natural gas gathering system owned by B & B Production Company that encompasses 100 oil and gas wells in the Allentown gas field in Carbon County, Colorado. Also included is a pre-engineered metal field office (20'x40') with concrete floor, four (4) field measurement and regulation station structures that contain regulation and measurement equipment, and two field compressors. For the purpose of this example, the field structures are portable and are classified as personal property.

Right-of-way acquisition cost for construction of the line was \$350,000. Damage costs paid to landowners were included in the right-of-way acquisition cost. A pipeline site map was requested by the assessor and supplied by the taxpayer.

As of January 1, 2006, the gathering system consisted of the following assets:

<u>Asset Description</u>	<u>Mileage</u>	<u>Pipe Size or Capacity</u>	<u>Original Inst. Cost</u>	<u>Year Const</u>	<u>Dist.</u>
Field line	3.9	6"	\$ 857,600	1999	
Field line	2.2	6"	\$ 457,000	1999	
Field line	4.0	8"	\$1,100,000	1999	
Field line	1.9	10"	\$ 400,000	1999	
Rights-of-way	12.00	n/a	\$ 350,000	1999	
Field Structures	n/a	n/a	\$ 25,000	2000	1
Field Structures	n/a	n/a	\$ 32,000	2000	2
Field Office	n/a	n/a	\$ 9,000	2001	2

Although the system has been in place for seven years, the taxpayer indicates that as of the January 1 assessment date, the line was not at normal operating capacity and that this condition had existed during the prior year. Discussion with the pipeline operator revealed that price negotiations had deteriorated between the pipeline company and a few large field owners and many gas wells were selling to local users, instead. This economic condition existed as of the assessment date. Design operating throughput for the pipeline is **25MMcf per day**. Daily average throughput for the prior year was **12MMcf per day**. The taxpayer did not indicate that any other forms of obsolescence were affecting the pipeline system.

Valuation of Subject Gathering System

Valuation of this gathering system will be based on the cost approach to value with additional consideration given to functional/economic obsolescence due to diminished throughput. The cost approach will be calculated using published factors and economic life depreciation guidelines. These factors and depreciation guidelines are included as *Cost Trending Factors and Percent Good Tables* at the end of this section.

Valuation of Gathering System Field Line and Right of Way:

Since all of the field lines were constructed in 1999, the total installed cost will be used in this example. However, if there are different years of construction, each year must be considered separately.

Field line	\$ 857,600	1999
Field line	\$ 457,000	1999
Field line	\$1,100,000	1999
Field line	<u>\$ 400,000</u>	1999
TOTAL	\$2,814,600	
\$2,814,600	Total Original Installed Cost of Field Line	
x 1.409	Cost Trending Factor	
\$3,965,771	Reproduction Cost New (RpdCN) of the Field Line	
\$3,965,771	Total Percent Good	(Percent Good* – Funct. Obsoles.)
x 0.476	(0.63 – .154)	
\$1,887,707	RpdCN less all Depreciation (RpdCNLD)	
	*(from Percent Good Tables)	

For pipeline valuation, Reproduction Cost New Less all Depreciation (RpdCNLD) is also termed the **Actual Value** of the pipeline. This is because pipeline Cost Trending Factors include the Level of Value Adjustment in the factors. Note also that the Right-of-way acquisition cost of \$350,000, (which included damage costs paid to landowners) is excluded before the pipeline components are analyzed. Pipeline right-of-way (ROW) acquisition costs should not be separately valued when valuing the assets of a pipeline, as original ROW acquisition costs are associated with land or its use. Since the pipeline could not exist without the Right-of-Way, the value of the Right-of-Way attributable to the pipeline is assumed to be included in the total actual value of the pipeline, once that value is determined. Since damage costs are expenses and not assets, they should not be valued as part of the pipeline system.

Determination of Functional/Economic Obsolescence:

The analysis of gathering system throughput for the prior year indicates the pipeline is not operating at design capacity. This economic condition was caused by adverse contract negotiations causing lesser quantities of gas to enter the pipeline than expected. .

Recognition of the above condition is in the form of obsolescence and is calculated using the following formula:

$$1 + \sqrt{\frac{\text{Previous Calendar Year Throughput}}{\text{Pipeline Normal Operating Design Capacity}}}$$

2

Calculation of the actual obsolescence number is shown below:

$$\frac{1 + \sqrt{\frac{12,000,000 \text{ Mcf}}{25,000,000 \text{ Mcf}}}}{2} = \frac{1 + .6928}{2} = .8464 = 1 - .8464 = .154 \text{ or } 15.4\% \text{ Obsolescence}$$

This calculation takes into account the loss in value for the gathering system assets due to diminished use.

Valuation of Field Structures:

Field structures typically include small, shed-like structures used to enclose meters or field regulators attached to line pipe. They may or may not be attached to a concrete foundation. Since the field structures are closely tied to and considered part of the line pipe, for convenience purposes they should be classified and valued as personal property using the same factors and depreciation tables as the line pipe.

Field Structures	\$25,000	District #1	2000
Field Structures	<u>\$32,000</u>	District #2	2000
Total Structures	\$57,000		
District #1		District #2	
\$25,000	\$32,000	Total Original Installed Cost of Field Structures	
x 1.380	x 1.380	Cost New Trending Factor	
<u>\$34,500</u>	<u>\$44,160</u>	RpdCN of the Field Structures	
x 0.526	x 0.526	Total Percent Good	
		(Percent Good* - Funct. Obsolescence.)	
		(0.68 - .154)	
		*(from tables)	
\$18,147	\$23,228	RpdCN less all depreciation (RpdCNLD)	
		<i>Also termed Actual Value of the Field Structures</i>	

Valuation of the Field Office

Since the field office is a pre-engineered metal improvement, it must be classified and valued as real property according to § 39-1-102(14)(c), C.R.S. To determine the cost approach value of the improvement, the Marshall Valuation Service commercial cost manual was used. Specifically, May 2005 base costs for Class S, average quality Light Commercial – Commodity Warehouse (104) utility buildings were used.

These costs are found in Section 17, page 11, of the Marshall Valuation Service manual. Using Section 98, page 5, the base costs were adjusted to reflect June 30, 2006, level of value by using the appropriate cost multiplier for the Western Region to trend the May 2005 base costs forward to the June 30, 2006, level of value.

Marshall Valuation Service recommended a 25-year life and the depreciation table applicable for the improvements was used. The depreciation table is located in Section 97, page 16 of the Marshall Valuation Service manual.

Field Office (2001)	800	Sq.Ft. (20' x 40')
	x \$16.80	(\$15.76 x 1.066)
6/30/2006 RCN	\$13,440	
	x 0.85	Percent Good (100% - 15% deprec.)
Actual Value	\$11,424	

TOTAL VALUATION OF GATHERING SYSTEM ASSETS

Valuation of all the pipeline assets is summed as follows:

ROW	(included in overall value)
Field Line	\$1,887,707
Field Structures	\$41,375
Field Office	\$11,424
TOTAL ACTUAL VALUE	\$1,940,506

Market Approach to Value

Under the Colorado constitutional and statutory provisions, the market (sales comparison) approach to value must be considered along with the cost approach when establishing a value for this gathering system.

In this example, there were no arms-length sales of pipeline gathering systems within the county or within Colorado. As such, this approach to value was considered but not used.

Income Approach to Value

According to Colorado constitutional and statutory provisions, the income approach to value must be considered when establishing a value for a gathering system.

In this example, the gathering system was operated as part of an integrated oil and gas production, processing, and transportation venture. There was no actual sale of the product upon which to complete an income and expense analysis. As such, this approach to value was considered but not used.

Consideration of lost revenue due to underutilization of the pipeline is accounted for in the functional/economic obsolescence analysis portion of the cost approach procedures.

2007 COST TRENDING FACTORS & PERCENT GOOD TABLES

FOR PIPELINE SYSTEMS VALUATION

<u>RCN Trending Factors</u>		<u>Percent Good Tables</u>		
<u>Year of Acquisition</u>	<u>Trending Factor</u>	<u>Effective Age</u>	<u>Gathering</u>	<u>Trunk/Transmission</u>
2006	1.000	1	96%	99%
2005	1.022	2	92%	97%
2004	1.199	3	88%	95%
2003	1.344	4	84%	93%
2002	1.358	5	79%	91%
2001	1.376	6	74%	89%
2000	1.380	7	68%	87%
1999	1.409	8	63%	84%
1998	1.404	9	57%	82%
1997	1.434	10	51%	79%
1996	1.454	11	46%	76%
1995	1.524	12	40%	73%
1994	1.536	13	36%	69%
1993	1.565	14	30%	66%
1992	1.595	15	24%	63%
1991	1.565	16	22%	59%
1990	1.513	17	15%	56%
1989	1.547	18	----	52%
1988	1.571	19	----	49%
1987	1.621	20	----	45%
1986	1.653	21	----	42%
1985	1.694	22	----	39%
1984	1.673	23	----	35%
1983	1.667	24	----	32%
1982	1.583	25	----	30%
1981	1.715	26	----	26%
1980	1.898	27	----	23%
1979	2.092	28	----	19%
1978	2.265	29	----	15%
1977	2.500			
1976 & prior	2.715			

Please note that the Iowa State University studies extend the minimum depreciated value floor from 14 to 17 years for gathering systems and from 22 to 29 years for trunk/transmission pipeline systems. Note also that the RCN Trending Factors are displayed in the same order as the Percent Good Tables. A straight-edge applied at the bottom of any particular Year's row will reveal the correct Trending Factor, the Effective Age for that Year of Acquisition, and the appropriate Percent Good for either a Gathering System or a Trunk/Transmission System.

SATELLITE RECEIVING GROUND STATIONS

Satellite receiving ground stations (ground stations), sometimes referred to as dishes, are personal property. Taxable ground stations should be valued as retail equipment using RCN Factor Table 4 and a recommended life at the Retail Trade Level of 9 years.

Ground stations on residential property, which are associated with the production of income any time during the year are taxable, otherwise they are exempt as residential household furnishings. Ground stations associated with commercial or industrial property are taxable.

SECURITY SYSTEMS CLASSIFICATION AND VALUATION

RESIDENTIAL PROPERTY OWNER'S SECURITY SYSTEMS

Residential security systems, equipment and devices are included as part of the definition of household furnishings exempt from ad valorem taxation in § 39-3-102(1), C.R.S. Such security measures for residential properties are exempt from ad valorem taxation only if they are not used for production of income at any time. Security systems, devices, and equipment in leased or rented residential property are not exempt, because household furnishings that are productive of income at any time during the year are taxable for the entire year.

Examples of residential property owner's security devices and equipment may include, but are not limited to, the following:

1. Photoelectric sensors
2. Point-area detectors, such as:
 - a. alarm systems,
 - b. alarm glass (wired),
 - c. vibration detectors, and
 - d. trip switches
3. Remote annunciators (alarms)
4. Security doors and bars
5. Sound, motion, and stress detectors

For security system personal property located in non income-producing residential property and owned by the residential property owner, the Division recommends that the assessor conduct an analysis of the sales in each economic area for each reappraisal year to determine if security devices and systems contribute any incremental increase in value in that economic area. If it is determined that they do contribute an incremental increase in value, those sales which include the devices/systems should be adjusted to exclude the contributory value of the security system personal property.

When conducting an analysis of sales in an economic area, the assessor should take into consideration the following factors:

1. When security systems are not the norm in a given economic area, then the base market value per unit of comparison for that economic area should be established using sales of residential properties without security systems. This process will enable the assessor to determine values that do not include the value of a security system. Then any contributory value of security systems can be determined by comparing the prices per unit of comparison of residential properties so equipped to the established base values.
2. Although a residential security system may cost the property owners \$3,000 to install, the value of the property may not necessarily increase by the same amount. Depending upon the market's response to the existence of the security system, improved security may or may not contribute an incremental increase in value per unit of comparison to the base values of property within the economic area being analyzed. It is possible, although unlikely, that the system could be a detriment to value.

LEASED SECURITY SYSTEMS

Residential security systems come in several different designs and technical capabilities. However, the average system used for security today contains assorted detection sensors installed into a subscriber's premises. This sensor system is affixed to and wired throughout the structure of the subscribers' house and connected to the lessor's annunciation (alarm) system.

Leased residential security systems, sensors, devices, and/or equipment are taxable to the owner (lessor) of the leased personal property. Leased residential security personal property should be reported by the lessor to the applicable county assessor in section "H" of Form DS 056, Personal Property Declaration Schedule.

The maximum value of the valuation of leased residential security systems, devices, and equipment is to be determined by the acquisition cost reported from the owner of the leased equipment, including purchase price, freight to the point of use, installation, and sales/use tax, unless data for the market or income approach are available and either of these result in a lower value estimate as provided in § 39-1-103(13), C.R.S.

Generally, once a detection system is installed into the structure of a house, the system cannot be removed without significant damage. If a subscriber chooses to discontinue the service contract, the physical wiring of the system is left intact. Generally, there is no influence on the value of the residential property for the intact wiring.

SERVICE STATION LIFTS, PUMPS, AND STORAGE TANKS

Service station hydraulic lifts, gasoline pumps, and underground storage tanks are personal property. They conform to the exception to the definition of "fixtures" contained in § 39-1-102(4), in that: "Fixtures" does not include machinery, equipment, or other articles related to a commercial or industrial operation which are affixed to the real property for proper utilization of such articles."

Thus hydraulic lifts, gasoline pumps and underground storage tanks are not fixtures to real property; nor do they, of themselves, fit the definition of real property contained in § 39-1-102(14), C.R.S. Therefore, according to § 39-1-102(11), C.R.S., they must be classified and valued as personal property.

SOFTWARE

Software is defined as the programs used to direct the operation of a computer. Software includes documentation such as manuals, diagrams, and operator instructions. It also includes operating systems software, compilers, assemblers, translators, interpreters, and application programs. These programs are intangible personal property and, therefore, exempt pursuant to § 39-3-118, C.R.S.

The following definitions are given as an aid in understanding what constitutes a computer and various forms of software.

A **computer** is defined as a programmable electronically activated device capable of accepting information, applying prescribed processes to the information, and supplying the results of these processes with or without human intervention. It usually consists of a central processing unit containing extensive storage, logic, arithmetic, and control capabilities.

Included are those production computers which are an integral part of other equipment, such as computers used primarily for process or production control, switching, channeling, and automating distributive trades; and production services such as point of sale (POS) computer systems. Software controlling such production equipment and services is exempt providing these devices are actually controlled by software rather than hard-wired printed circuit boards.

The following definitions are generally from The Prentice-Hall Standard Glossary of Computer Terminology, Robert A. Edwards, (Prentice-Hall, Inc. 1995).

Application programs are created to perform business functions or to control or monitor processes. Examples of canned application programs are Lotus 1-2-3, dBase, Word Perfect, and Microsoft Word.

An **assembler** is a program that converts lower level symbolic instructions into a form suitable for execution on a computer.

A **compiler** is a program used to translate a higher-level symbolic program language into machine language that is understandable to the processor.

An **interpreter** is a program that scans each line of the source program binary code and changes (interprets) it into machine code (binary ones and zeros the computer understands) each time the program is run. An interpreter translates each program instruction and immediately executes it.

Operations or systems programs control the hardware itself and allow it to compile, assemble and process application programs. Examples of canned operations programs are DOS and Unix.

Printed circuit (board) is an electric circuit in which the conducting connections are formed by depositing a conducting metal, such as copper in predetermined patterns on an insulating substrate, e.g. a plastic coated fiberboard; other materials, especially semiconductors, are deposited to form various electronic components. This definition is from The American Heritage Dictionary, Second College Edition (Houghton Mifflin Co. 1985). Printed circuit boards are hardware and therefore do not qualify as software.

A **translator** is a routine, program, or device that is capable of directing the translation or transformation of statements, or their codes, in one language to equivalent statements or codes in another language.

The above software programs can be custom built or canned. Canned programs are also referred to as shelf or generic programs.

All software programs, with one exception, are intangible and exempt from ad valorem taxation. All software is exempt except the machine language that is automatically initiated during the computer startup. This machine language is both a software program and an integral part of the hardware (computer). It is the basic input-output system (BIOS). It is never stated as a separate part of the computer because without this program the computer cannot function. It is the only software which is taxable.

When a taxpayer lists a computer on the declaration schedule, the assessor should determine whether or not the listed cost includes software. If the taxpayer indicates software was part of the cost, but not a separately priced part, the assessor must determine what amount must be deducted from the computer cost to arrive at the original installed cost of the computer.

Contributory value of software that has been included in the computer cost can be valued using the following procedures:

- **Cost Approach** - The cost approach is applied by determining the original cost of the software to the purchaser, including any installation costs, and applying an allowance for depreciation. Typically, the value of custom software will be based upon its original installed cost, less depreciation. In the case of custom software written in-house, development costs can be used in lieu of acquisition costs.

Custom software programs, but not printed circuit boards which are hardware not software, which may be found in such products as typewriters, calculators, elevators, telephone switching systems, computers used primarily for process or production control, channeling, computerized HVAC systems, robotics, and video games, to name a few examples, must have the software portion of the valuation deducted from the cost. However, the value deducted should be provided by the taxpayer in the form of an invoice from the manufacturer. If an invoice or other proof of software value is not available, no deduction should be made.

Since most software is short-lived because of rapid technological advances, a four-year average economic life is to be used. The cost approach is generally the most appropriate for appraising computer software.

- **Market Approach** - The resale market for software is limited. However, publications exist which indicate resale values of popular canned software programs such as Lotus 1-2-3, D-Base, and DOS. One such publication is the NACD Computer Blue Book. Typically, customized software does not have a market value.

- Income Approach - In the income approach, net income attributable to the software is capitalized over an appropriate life cycle. This approach may be appropriate in appraising mainframe software, which is often leased rather than purchased.

When software programs are individually listed on a declaration schedule, the assessor must remove any value attributed to the software before determining the taxpayer's personal property value.

TELECOMMUNICATION TOWERS

DISCOVERY AND CLASSIFICATION

Telecommunication towers are defined as personal property designed to facilitate electronic transmission or relay technologies. Telecommunication towers are classified as personal property pursuant to § 39-1-102(11), C.R.S.

Identifying ownership of telecommunication towers may be accomplished by discussion with the owner of the land on which the tower is erected or by reviewing construction permits that may contain the tower owner's name. Current ownership information is necessary to send a declaration schedule and assign tax liability.

Determination of ownership may also be aided by the Federal Communications Commission (FCC) Antenna Structure Registration Listing on the Internet at <http://wireless.fcc.gov/antenna/index.html>. Additional ownership and other related tower information may be found at the following website locations:

<http://www.towersource.com/>

<http://www.planwireless.com/contents.htm>

<http://www.richlandtowers.com/>

Towers may be owned by either a state assessed company or by a company whose property is subject to local assessment. Beginning in 2001, the Division's State Assessed Section will incorporate requirements for state assessed companies to list all towers as part of their Annual Statement of Property.

Both state assessed and locally assessed equipment may be attached to the tower. If the equipment is owned by a state assessed company, it is typically included in the company's Annual Statement of Property rendition to the Division. If it is owned by a non-state assessed company, it should be valued separately by the local county assessor.

VALUATION OF TELECOMMUNICATION TOWERS

Valuation of telecommunication towers may be accomplished using either factored historical costs or a cost service such as Marshall Valuation Service. If factored historical costs are used, RCN Factor Table 1, Average of All trending factors and a recommended economic life of twenty years are to be used. If a cost service is to be used, the service's recommended economic life for towers should be considered.

Pursuant to § 39-1-103(13), C.R.S., the cost approach shall establish the maximum value of personal property, if all costs incurred in the acquisition and installation of the property are fully and completely disclosed by the owner to the assessor. Therefore, the market and income approaches may only be employed in the valuation of telecommunication towers if a value lower than that indicated by the cost approach is indicated.

If subject to state assessment, towers are not subject to local assessment. However, non-state assessed towers are subject to local assessment even if they lease space for equipment to a state assessed company.

Locally assessed electronic equipment installed on towers has a recommended economic life of six years unless it is computer-integrated equipment in which case it has a recommended economic life of four years.

Associated buildings and/or other improvements are valued as real property.

VIDEO ARCADE GAMES

While there are some similarities, video arcade games are not computers. Video arcade games should be placed in RCN Factor Table 1, Average of All. They are properly classified as commercial personal property and they should be given a recommended economic life of six years.

Except for newer cartridge-driven models, video arcade games do not use software programs per se. The legislative declaration and statutory language in SB 90-81 stated that intangible personal property includes, but is not limited to, computer software that is therefore exempt, "...except the built-in machine language acquired as an integral part of the operational function of the computer."

Hard-wired circuit boards that control the operation of most video arcade games are not software programs. Thus, there should be no deduction for software when these circuit boards are valued.

However, video arcade games that use interchangeable cartridges to control their operation are using a type of software-based game program cartridges, which is intangible personal property and, therefore, exempt. The value of these cartridges should be deducted, if it is included in original acquisition costs or market values. See the *Software* topic in this section for a discussion of procedures to determine software deductions.

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ADDENDUM 7-A, 2007 DRILLING RIG DEPTH SCHEDULE

MARKET VALUATION DEPTH SCHEDULE

To use the market valuation depth schedule, the assessor of the County of Original Assessment (COA) must physically inspect the rig and determine the following:

1. Actual rig depth capacity.
2. Overall physical condition according to condition ratings shown in the condition ratings section.
3. Drill pipe and collars, whether used by the rig or carried with the rig.

All operating oil and gas skid-mounted rotary drilling rigs are to be valued for 2007 using the market valuation depth schedule found below. The county clerk or motor vehicle department values self-propelled drilling rigs at the time a Special Mobile Machinery (SMM) license plate is purchased.

MARKET VALUATION DEPTH SCHEDULE		RIG CONDITION		
		POOR/STACKED	FAIR	GOOD
DEPTH RATING	3,999' OR LESS	\$ 66,400	\$ 159,250	\$ 353,900
	4,000' TO 4,999'	\$ 68,100	\$ 163,480	\$ 360,250
	5,000' TO 5,999'	\$ 99,220	\$ 238,180	\$ 629,400
	6,000' TO 6,499'	\$ 133,080	\$ 318,930	\$ 709,850
	6,500' TO 6,999'	\$ 144,830	\$ 347,690	\$ 772,750
	7,000' TO 7,499'	\$ 155,250	\$ 372,980	\$ 828,850
	7,500' TO 7,799'	\$ 295,270	\$ 708,720	\$ 1,574,950
	7,800' TO 7,999'	\$ 298,710	\$ 716,980	\$ 1,623,300
	8,000' TO 8,499'	\$ 328,600	\$ 788,730	\$ 1,752,750
	8,500' TO 8,999'	\$ 324,800	\$ 810,020	\$ 1,800,300
	9,000' TO 9,499'	\$ 357,140	\$ 857,220	\$ 1,905,050
	9,500' TO 9,999'	\$ 376,240	\$ 903,530	\$ 2,006,850
	10,000' TO 10,499'	\$ 713,200	\$ 1,711,950	\$ 3,804,350
	10,500' TO 10,999'	\$ 747,650	\$ 1,794,620	\$ 3,987,950
	11,000' TO 11,499'	\$ 782,450	\$ 1,877,640	\$ 4,171,650
	11,500' TO 11,999'	\$ 817,425	\$ 1,962,170	\$ 4,359,100
	12,000' TO 12,499'	\$ 842,020	\$ 2,021,050	\$ 4,490,750
	12,500' TO 12,999'	\$ 876,920	\$ 1,831,320	\$ 4,669,350
13,000' TO 13,999'	\$ 943,360	\$ 2,237,170	\$ 4,971,000	
14,000' TO 14,999'	\$ 1,322,370	\$ 2,380,720	\$ 5,290,000	
15,000' TO 15,999'	\$ 1,389,620	\$ 2,501,820	\$ 5,379,100	
16,000' TO 17,999'	\$ 1,430,720	\$ 2,574,850	\$ 5,721,400	
18,000' AND ABOVE	\$ 1,490,900	\$ 2,687,850	\$ 5,972,000	

Using the table from the prior page, find the rig's actual "Depth Rating" in feet, and the "Rig Condition," to determine its market value. Rig depth capacity may be greater than original capacity in the case of modified or remanufactured rigs. Drill pipe and collars must be added to this value if they are present.

The resulting market value of the rig, drill pipe, and collars is then multiplied by the specified year's adjustment factor to determine the specified year's level of value.

CONDITION RATINGS

Rig condition ratings must be determined by a physical inspection of each rig using the following guidelines. The appraiser must evaluate the rig as a whole and assign the rating that best approximates the rig's condition. Do not use ratings and values other than those provided.

Good

Operating condition is 100%. No known or obvious mechanical defects, but the rig may have some minor worn parts that will need repair or replacement in the near future. May have high hours of use, but no defects are obvious.

Fair

Has very high hours, indicating extended use. Defects are obvious and will require repair or general rebuilding soon. Not 100% functional or efficient, rigs may be operational or functional, but questionable as to how long this will continue.

Poor/Stacked

Has seen very hard and long hours of service. Requires rebuild, repair, or overhaul before it can be used. Not operational or functional.

Stacked rigs are those rigs that have been dismantled, the components have been stacked together over a year, and are in poor condition. Because of stacking, these rigs show additional physical deterioration that will require repairs and/or maintenance to begin operation.

Rigs that have been stacked only a short time, which do not show additional physical depreciation due to "pickling," i.e. they are covered with a preservative grease, or are subject to regular maintenance, should be valued based on their observed condition using the operating rig depth schedule.

ADDITIONAL VALUES

The values shown in the Market Valuation Depth Schedule for both operating and stacked rigs do not include values for drill pipe and drill collars. The County of Original Assessment (COA) is to add the following values for pipe and collars, to the actual value determined for the drilling rig, prior to apportionment of the total actual value to the Colorado counties in which the rig was located during the prior calendar year:

DRILL PIPE -	\$22.00 per linear foot	
DRILL COLLARS -	7,500' & under	\$22,800
	7,501' to 12,500'	\$30,400
	12,501' & over	\$38,000

LEVEL OF VALUE ADJUSTMENT FACTOR

The actual value of personal property must be adjusted to current level of value for real property as required by § 39-1-104(12.3)(a)(I), C.R.S.

For 2007, the Level of Value (LOV) adjustment factor for drilling rigs is **0.98**.

DRILLING RIG VALUATION EXAMPLE

The subject property is an operating, skid-mounted, rotary drilling rig located, as of January 1, in Carbon County, Colorado. The assessor's physical inspection determined that the rig was originally manufactured to drill up to 8,000 feet in depth. However, after modifications to the drilling rig, it was adjusted to drill up to 10,000 feet in depth. The inspection noted 12,000 feet of drill pipe. The rig is determined to be in Good condition.

10,000'	(adjusted rig depth) in Good Condition
\$3,804,350	Value of rig from table
264,000	(drill pipe - 12,000' x \$22.00 per foot)
+ 30,400	(drill collars - \$30,400 total for a 10,000' rig)
\$4,098,750	Current level of value of rig and related equipment
x 0.98	(specified year's level of value adjustment factor)
\$4,016,775	Specified year's level of value
x .29	(statutory assessment rate)
<u>\$1,164,865</u>	ASSESSED VALUE

The assessed value is then apportioned, as required in § 39-5-113.3(2), C.R.S., to all counties where the rig was in operation during the previous calendar year. Refer to *Special Administrative Issues*.

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