

Policy for Reasonably Foreseeable Development Scenario for Oil and Gas (RFD)

Instruction Memorandum No.
2004-089



Related Guidance

- FLF RFD/CEA Interagency Guide 5/03
- H-1624-1 Planning for Fluid Minerals 5/7/90
- 1624 Supplemental Program Guidance
11/14/86
- Manual 3031 – Energy and Mineral Resource
Assessment 6/19/85



What is an RFD

- Long-term projection (scenario) of oil and gas exploration, development, production, and reclamation activity.
- Technical report based on **reasonable assumptions** supported by scientific methods and data
- Critical part of the NEPA Analysis
- **Supporting information** for Planning Decisions



The RFD Is Not

- The “No Action” Alternative in the RMP
- A Planning Decision
- Just an assumed scenario of future activity
- A “life of area” forecast of ultimate development



Key Policy Change

Baseline forecast of activity assuming:

all* areas are open to exploration and development under

standard lease terms and conditions

instead of

existing management practices

* Except areas closed by law, regulation, Executive Order, and Secretarial Decision



Other Changes

- Monitor effects of activity instead of just the number of wells
- Requires a peer review
- RFD published as a stand alone report
- Suggests a standard report format



RFD Suggested Format

Summary

Estimates of future activity needed in the NEPA/RMP analysis

Estimates of surface disturbance needed in the NEPA/RMP analysis

Introduction

Description of Geology

Subsurface stratigraphy and structure

Reservoirs, traps, source rocks, seals, hydrocarbon generation and migration

Summary of USGS or other play descriptions

Past and Present Oil and Gas Exploration Activity

Geophysical and geochemical surveys

Exploratory drilling and success rates

New field and reservoir discoveries



Past and Present Oil and Gas Development Activity

Leasing activity, unit descriptions, spacing requirements, well locations by class and type

Drilling and completion statistics, fields, development plans, EOR projects

Horizontal or deviated drilling practices

Oil, gas, water, condensate production by field, reservoir, operator, depth, vintage

Oil API gravity, gas characteristics, CO₂, H₂S, and He, NGLs, gas/oil ratios

Production profile for field(s) or formation(s)

Well production profile “type curves” for well life determination

Oil and gas prices, finding and development costs



Past and Present Oil and Gas **Development Activity (cont.)**

INFRASTRUCTURE:

Gathering, processing, compression and transmission costs

Field production equipment and field operation practices

Field gathering and storage facilities, tank batteries, and measurement stations

Gas transmission pipelines and associated capacity, compressor stations

Gas processing facilities, extraction process, processing capacity

Electrical power (lines, generators), roads

Conflicts with other mineral development

Gas storage fields, operations, and facilities



Oil and Gas Occurrence Potential

Review RFD(s) and other data for areas adjacent to the study area

Review resources, plays, oil and gas assessments for study and adjacent areas

Map showing estimated areas of relative oil and gas occurrence potential (high, medium, low, very low and no known**) and level of certainty

**Caution: Avoid identifying areas as “no known” potential. The absence of a USGS play does not necessarily mean there is no potential for oil and gas.

Rationale for selecting values of occurrence potential and certainty



Oil and Gas **Development Potential**

Review of RFD(s) prepared for adjacent areas

avoid unreasonable “border” conflicts

Proven reserves, field outlines, wells by completion status

Map showing estimated areas of relative oil and gas development potential (high, medium, low, very low and no known including a quantitative description of each potential) and level of certainty

Map(s) showing the spatial distribution of estimated ultimate reserves, initial production rates, cumulative production

Rationale for selecting values of development potential and certainty



RFD Baseline Scenario Assumptions and Discussion

Assumes all potentially productive areas are open under standard lease terms and conditions (i.e., lease form without stipulations) except those areas designated as closed to leasing by law, regulation or executive order (for example, wilderness areas, and nearly all national monuments)

Graphs or tables showing forecast of exploration and development wells, and associated oil, gas, and water production rates

Assumptions made in determining the type and level of projected activity should be clearly stated and referenced to sources of information

Identify mineral estates under different ownerships and estimates of amount (percent) of activity likely to occur on lands under those authorities (Federal, State, and private)



Surface Disturbance

Future surface disturbance should consider the temporal nature of each type of disturbance activity

Current surface disturbance resulting from oil and gas activity

Types of surface disturbance: well pads, roads, and oil and gas related infrastructure

Staged future reclamation

Estimated total surface disturbance

**Total net surface disturbance =
current disturbance + future disturbance - future reclamation**

Estimated number and type of infrastructure facilities that may impact air quality

Estimated quantity and quality of produced water disposed on the surface



References

Acknowledgements

Statement of Qualifications

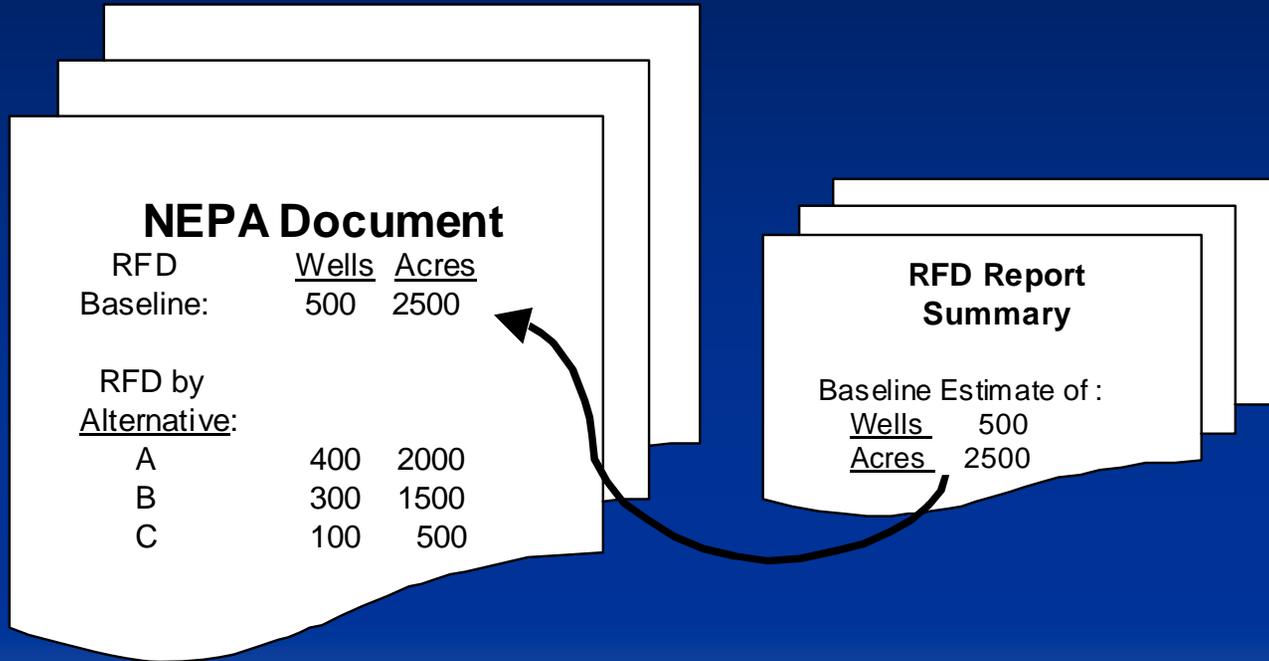
Appendix

Maps, graphs, and tables can be included here or in the body of the report if appropriate

List of data files, GIS layers, metadata, contacts, sources of data and definitions



RFD Scenarios



Surface Disturbance

- Area of disturbance depends on the type and age of the well
- Physical infrastructure
- Intermediate reclamation by operator
- Natural reclamation
- Final reclamation





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THANK YOU

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