February 27, 2004

Dear Oil and Gas Research Council Members,

Attached you will find a funding request for a project to be completed by the North Dakota Oil and Gas Division.

Please accept this letter as a binding commitment on behalf of the Oil and Gas Division to complete the project as described in the application if the Commission approves the grant requested.

Sincerely,

Lynn D. Helms
NDIC Oil & Gas Division Director
600 E Blvd Ave. - Dept. 405
Bismarck, ND 58505-0840
Phone (701) 328-8020
Fax (701) 328-8022
http://www.oilgas.nd.gov/

Title Page

Oil and Gas Research Council

Project

“Custom North Dakota ArcIMS Map Server”

2/27/04

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Abstract

The proposed project entitled “Custom North Dakota ArcIMS Map Server” is designed to develop customized user friendly ArcIMS search capabilities and database links that will allow the unskilled user to access printable oil and gas maps and database information.

The map server will be capable of “drilling down” to the desired information or printable maps beginning with a minimal amount of information. The program will present high quality maps for viewing and printing.

The duration of the project is expected to be 3 months. The completed product is expected to provide user friendly map services for up to a decade.

Total project cost is expected to be $14,000.

The project work will be performed by a multidisciplinary team led by the Oil and Gas Division Information Technology Group working together with ESRI, and Kadrmas Lee & Jackson.

Project Summary

The proposed project entitled “Custom North Dakota ArcIMS Map Server” is designed to develop customized user friendly ArcIMS search capabilities and database links that will allow the unskilled user to access printable maps and database information.

Custom search tools will be created that will allow users to quickly zoom to a 5-mile X 5-mile map by entering a section, township, and range. In addition a user will be able to zoom to a map encompassing a field or unit and the 1-mile buffer by entering the field or unit name.

Subscription users will be able to select a well and open a scout card with links to production, well file, and logs in electronic format. Selection of a field name will open links to the commission orders and case files for that field.

A custom print utility will be developed to produce high quality hard copy printouts of maps.

Project Description

The proposed project entitled “Custom North Dakota ArcIMS Map Server” is designed to develop customized user friendly ArcIMS search capabilities and database links that will allow the unskilled user to access printable maps and database information.

Custom search tools will be created that will allow users to quickly zoom to a 5-mile X 5-mile map by entering a section township and range.

In addition, a user will be able to zoom to a map encompassing a field or unit along with the 1-mile buffer by entering the field or unit name.

Appendix 1 contains a sample of the state map with new zoom/search tools.

Appendix 2 contains samples of the 5X5 map, selected well object on a map, and a scout card with links to production records, the well file, the well logs.

A custom print utility will be developed to produce high quality hard copy printouts of maps.

Subscription users will be able to select a well and open a scout card with links to production, well file, and logs in electronic format. Selection of a field or unit name will open links to the commission orders and case files for that field.

Appendix 3 contains samples of a selected Field, Field Record, and a Case & Orders index for a selected oil field.

Standards of Success

Intelligently conceived, intuitive search tools, customized high-quality print utilities, and effectively organized links will be beta tested by a group of industry, legal, and government users.

Based on feedback from the test group, decisions concerning modifications to improve site design will be made providing a more user-friendly site.

A Frequently Ask Questions (FAQ) section and effective written instructions will be established for user assistance.

The final customized Arc IMS version will be made public only after evaluation by the test group.

Success will be assessed through the following measures:

1. Monitoring access and usage logs
2. Feedback from users who access the site
3. Monitoring search engine referrals

Background

In 2002 The Oil & Gas Division installed an ArcIMS workstation and began offering oil and gas data via map services to the general public.

The current map service provides wells, county seats, major rivers, roads, County boundaries, Field Inspector areas, Oil Fields, and Unit boundaries along with standard zooming and map object query capabilities. The information provided on the maps is updated weekly.

The current query writing process is far from user friendly and hard copy print outs of the maps are currently only screen print quality.

Qualifications

The project work will be performed by a multidisciplinary team led by the Oil and Gas Division Information Technology Group working together with ESRI, and Kadrmas Lee & Jackson.

The Oil & Gas Division Information Technology Group (OGIT) has over 20 years experience in using databases and websites to store and deliver oil and gas information. OGIT will install the customized Arc IMS mapping program on an existing web server and create the necessary links to non-confidential database fields. In addition OGIT will maintain map layers that display wells, fields and units.

ESRI was founded as Environmental Systems Research Institute in 1969 as a privately held consulting firm that specialized in land use analysis projects.

In 1981 ESRI launched its first commercial GIS software called ARC/INFO. It combined computer display geographic features, such as points, lines, and polygons, with a database management tool for assigning attributes to these features. Originally designed to run on minicomputers, ARC/INFO offered the first modern GIS. As the technology shifted to UNIX and later to the Windows operating systems, ESRI evolved software tools that took advantage of these new platforms. This shift enabled users of ESRI software to apply the principles of distributed processing and data management. In 1986 another milestone was achieved with PC ARC/INFO, a stand-alone PC-based GIS station. This changed ESRI from a one-product company and opened the doors to even more innovative product development. ESRI's product line grew again in the mid-

1990s with the release of ArcInfo for Windows NT, MapObjects (mapping and GIS components for software developers), the Data Automation Kit, and the acquisition of Atlas GIS. This expansion of ESRI's product family gave users a comprehensive set of GIS and mapping software options and fortified ESRI's position as the world leader in the GIS market.

Today, ESRI employs more than 2,700 staff, more than 1,400 of who are based in Redlands, California, at the world headquarters. The Redlands campus has expanded with the addition of a new three-story Research and Development (R&D) Center, which opened in early 1996. With 11 regional offices in the United States, more than 75 international distributors, and users in more than 220 countries, ESRI stands ready to meet the needs of its user community and to set the standards for the GIS industry.

ESRI is privately held, debt-free, and there are no plans for the company to go public or change ownership. The company's focus remains on producing excellent software and delivering exceptional service to users. We at ESRI believe that better information makes for better decisions.

Kadrmas, Lee & Jackson (KL&J) is a team of engineers, surveyors and planners, providing innovative solutions for clients. Since 1938, KL&J has had a strong record of success, which stems directly from its commitment to developing long-term client relationships and to seeking out highly talented individuals as employees. The staff at KL&J is involved with each stage of a job, from initial planning and research to funding and implementation. KL&J strives to find

challenging work and continues providing engineering services of the highest caliber for its clients.

The KL&J Geographic Information Systems (GIS) Group provides ideal solutions for mapping, infrastructure management and inventorying, emergency response, and a host of other management and planning needs. The GIS Group believes in innovation. As a business partner with ESRI™, the world leader in GIS software, KL&J is an authorized reseller of ESRI™ and GIS technology, providing software and training to hundreds of clients. KL&J is also an ESRI™ Authorized Learning Center, offering classes in "Introduction to ArcView GIS" and "Introduction to Avenue." The GIS professionals also offer classes that train users in many applications designed by KL&J's software development group.

Value to North Dakota

It is anticipated that oil and gas operators, working interest owners, royalty owners, overriding royalty owners, as well as representatives of State and Federal governmental agencies, and the general public, will make use of the project results. For example, operators and working interest owners will have access to a 24-hour mapping service for preparation of North Dakota Industrial Commission Oil and Gas Division hearing exhibits and for maps to be utilized for in-house presentations or to market prospects. Providing operators and working interest owners with such a mapping service will facilitate access to data on file with the NDIC and thereby make it easier to do business in the state of North Dakota. Since North Dakota competes with many other oil and gas producing states in attracting company investment in the state, providing oil companies with more information will hopefully encourage them to invest here rather than other states.

The proposed mapping service will allow royalty owners, overriding royalty owners and governmental agencies to become informed of permitted or drilling wells on their own lands or adjacent lands as well as any regulatory matters affecting those lands, such as field boundaries, spacing, pooling and unitization. This information will allow them to make more informed decisions about how they wish to see their lands developed for oil and gas operations.

Management

The OGIT programmer, engineering technician, and engineer are currently under the supervision of the applicant. Work schedules and priorities are reviewed every 2 weeks in regular OGIT staff meetings.

The KL&J programmer will be subject to a contract that specifies product performance, delivery deadlines, and intermediate progress review steps.

The proposed training is currently included in the 2004 ESRI schedule. OGIT personnel who will register and attend are under the supervision of the applicant. Funding is currently available from Fund 317 to pay for training.

Timetable

KL&J programmer to write customized ArcIMS code – May 2004

OGIT programmer to install customized ArcIMS program – June 2004

OGIT programmer to create database links – June 2004

Oil & Gas Division Engineer to input horizontal well surveys – May 2004

ESRI training of OGIT personnel to maintain system – June 2004

KL&J programmer to modify customized ArcIMS per testing – July 2004

OGIT programmer to install revised ArcIMS program – July 2004

Budget

Grant Support

KL&J programmer to write customized ArcIMS code – $7,000

Cost Share

OGIT programmer to install customized ArcIMS program – $1,000

OGIT programmer to create database links – $2,000

Oil & Gas Division Engineer to input horizontal well surveys – $1,500

ESRI training of OGIT personnel to maintain system - $2,500

The funding requested is necessary to achieve the project's objectives within the proposed timetable. If no funding or less funding is available than that requested the project's objectives are ultimately be attainable but will have to be delayed significantly to avoid excessive depletion of Oil & Gas Division Fund 317.

Matching funds

Oil & Gas Division Dept 405 General Fund - $4,500

Oil & Gas Division Fund 317 - $2,500

Confidential Information

None of the information in this application is of a confidential nature.

Patents and Rights to Technical Data

There are no patents or rights that the applicant wishes to reserve.

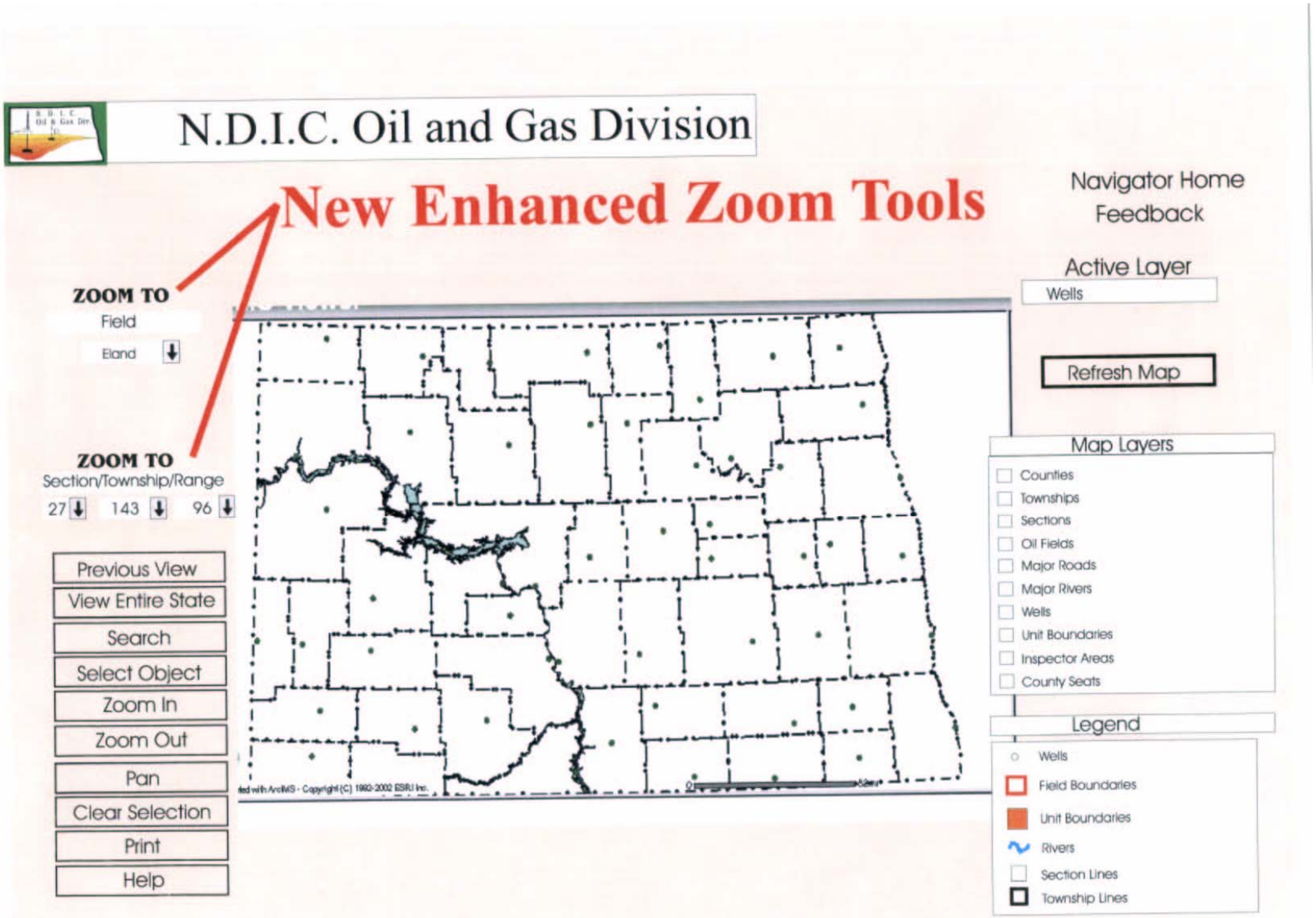
Tax Liability

I, _____, do hereby confirm that the North Dakota Oil & Gas Division does not have an outstanding tax liability owed to the State of North Dakota or any of its political subdivisions.

_____
(Affiant's Signature)
STATE OF _____)
)ss
COUNTY OF _____)

On _____, _____,
known to me to be the person described in and who executed the foregoing instrument, personally appeared before me and acknowledged that (s)he executed the same as a free act and deed.

_____
Notary Notary Public
Seal State of _____, County of _____
My Commission expires _____


N.D.I.C. Oil and Gas Division
New Enhanced Zoom Tools
Navigator Home
Feedback
ZOOM TO
Field
Eland
ZOOM TO
Section/Township/Range
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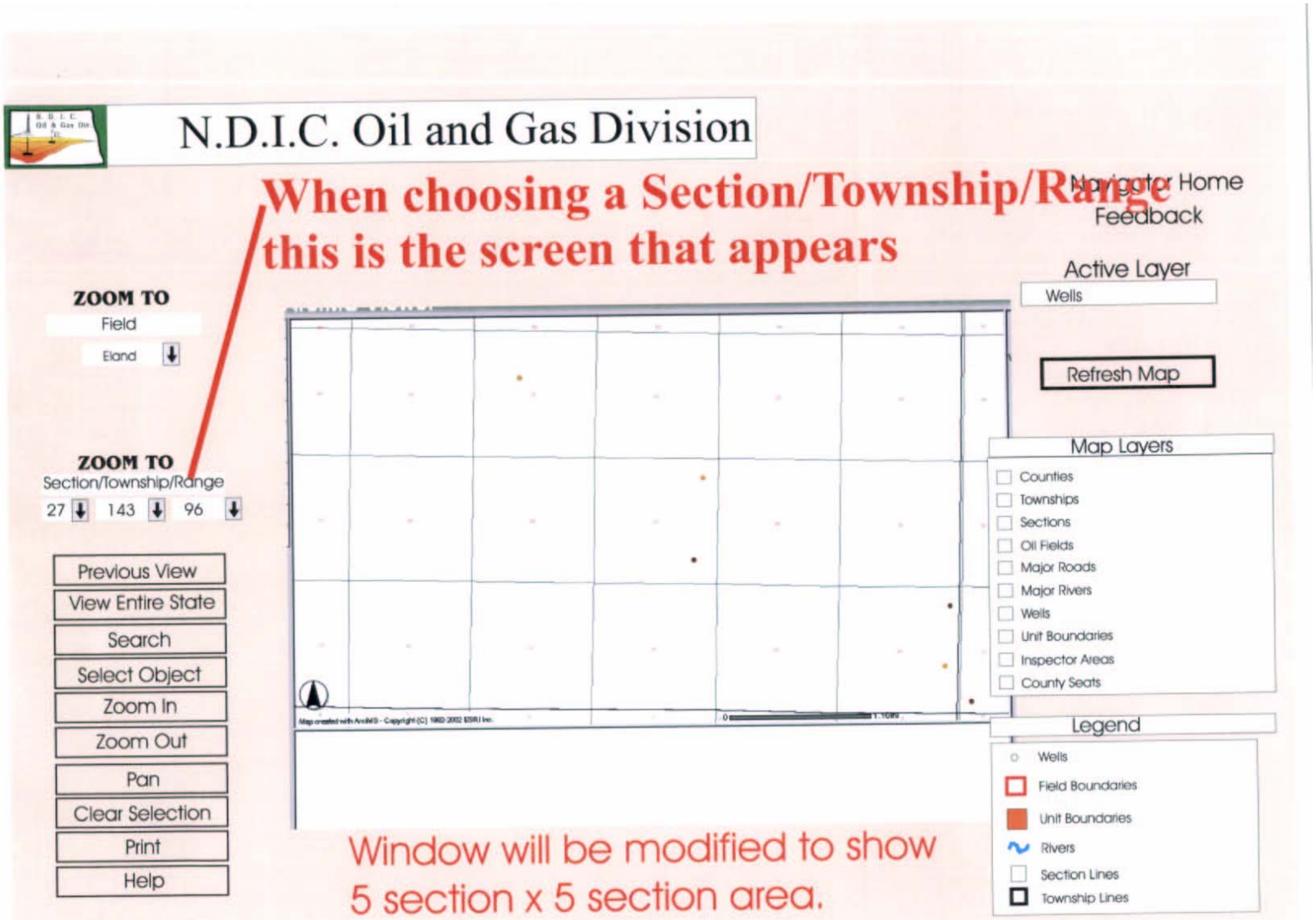
96
Previous View
View Entire State
Search
Select Object
Zoom In
Zoom Out
Pan
Clear Selection
Print
Help
Active Layer
Wells
Refresh Map
Map Layers
Counties
Townships
Sections
Oil Fields
Major Roads
Major Rivers
Wells
Unit Boundaries
Inspector Areas
County Seats
Legend
Wells
Field Boundaries
Unit Boundaries
Rivers
Section Lines
Township Lines


N.D.I.C. Oil and Gas Division
When choosing a Section/Township/Range
this is the screen that appears
Navigator Home
Feedback
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Wells
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Zoom In
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Sections
Oil Fields
Major Roads
Major Rivers
Wells
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Inspector Areas
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Unit Boundaries
Rivers
Section Lines
Township Lines
Window will be modified to show
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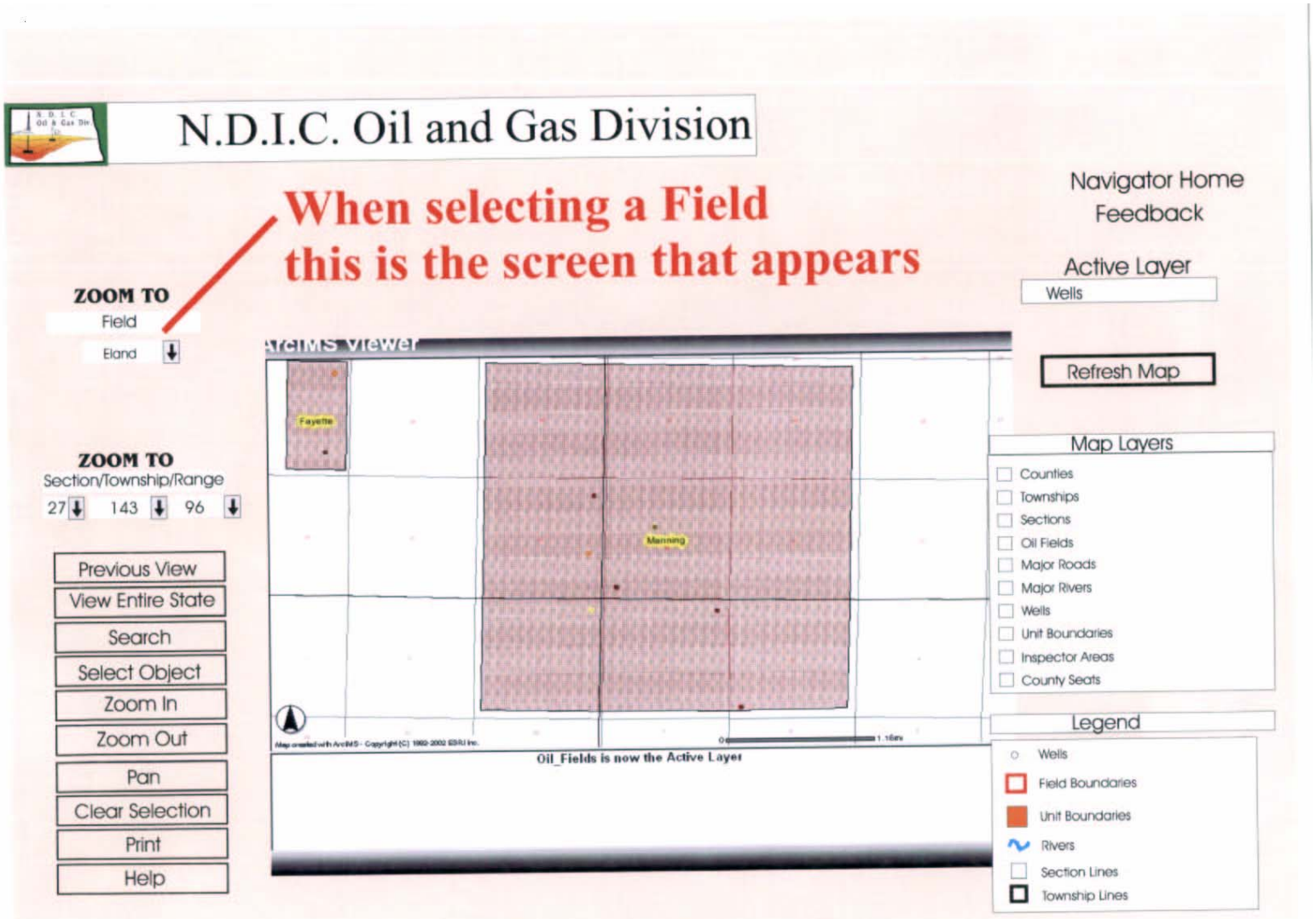
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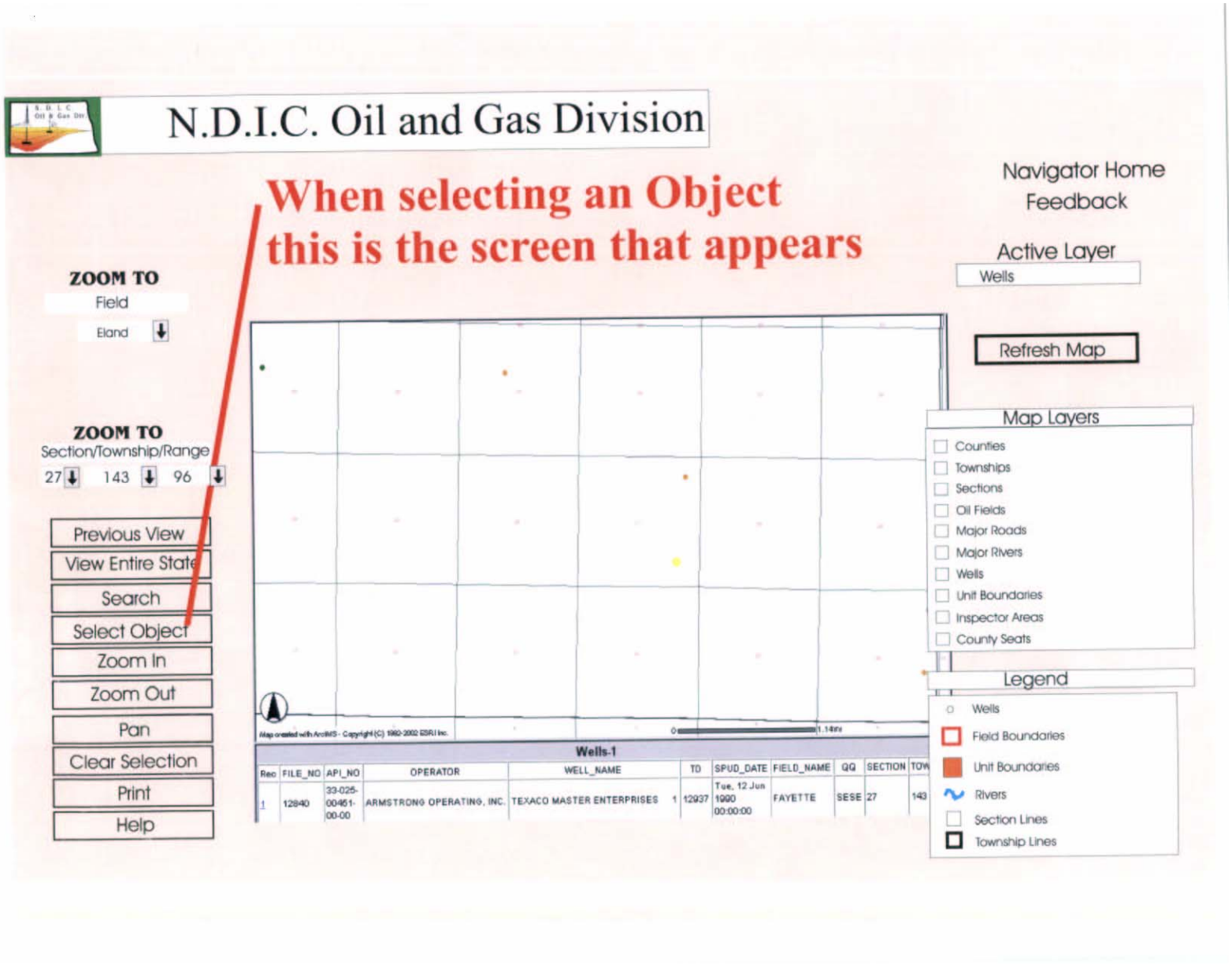
Field Boundaries
Unit Boundaries
Rivers
Section Lines
Township Lines


N.D.I.C. Oil and Gas Division
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Zoom Out
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Clear Selection
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Unit Boundaries
Rivers
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Township Lines
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API_NO
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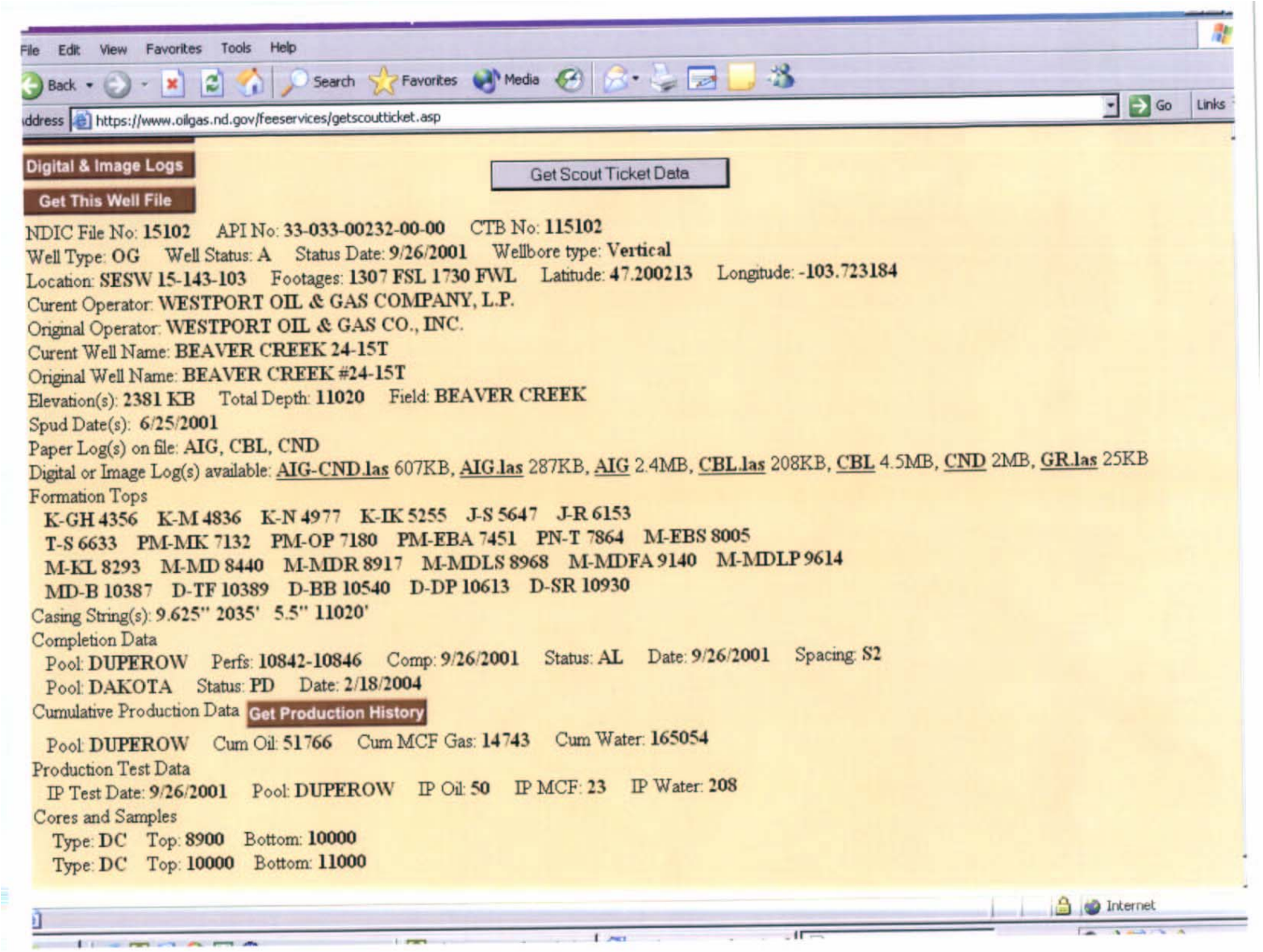
File Edit View Favorites Tools Help
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Go Links
Digital & Image Logs
Get This Well File
Get Scout Ticket Data
NDIC File No: 15102 API No: 33-033-00232-00-00 CTB No: 115102
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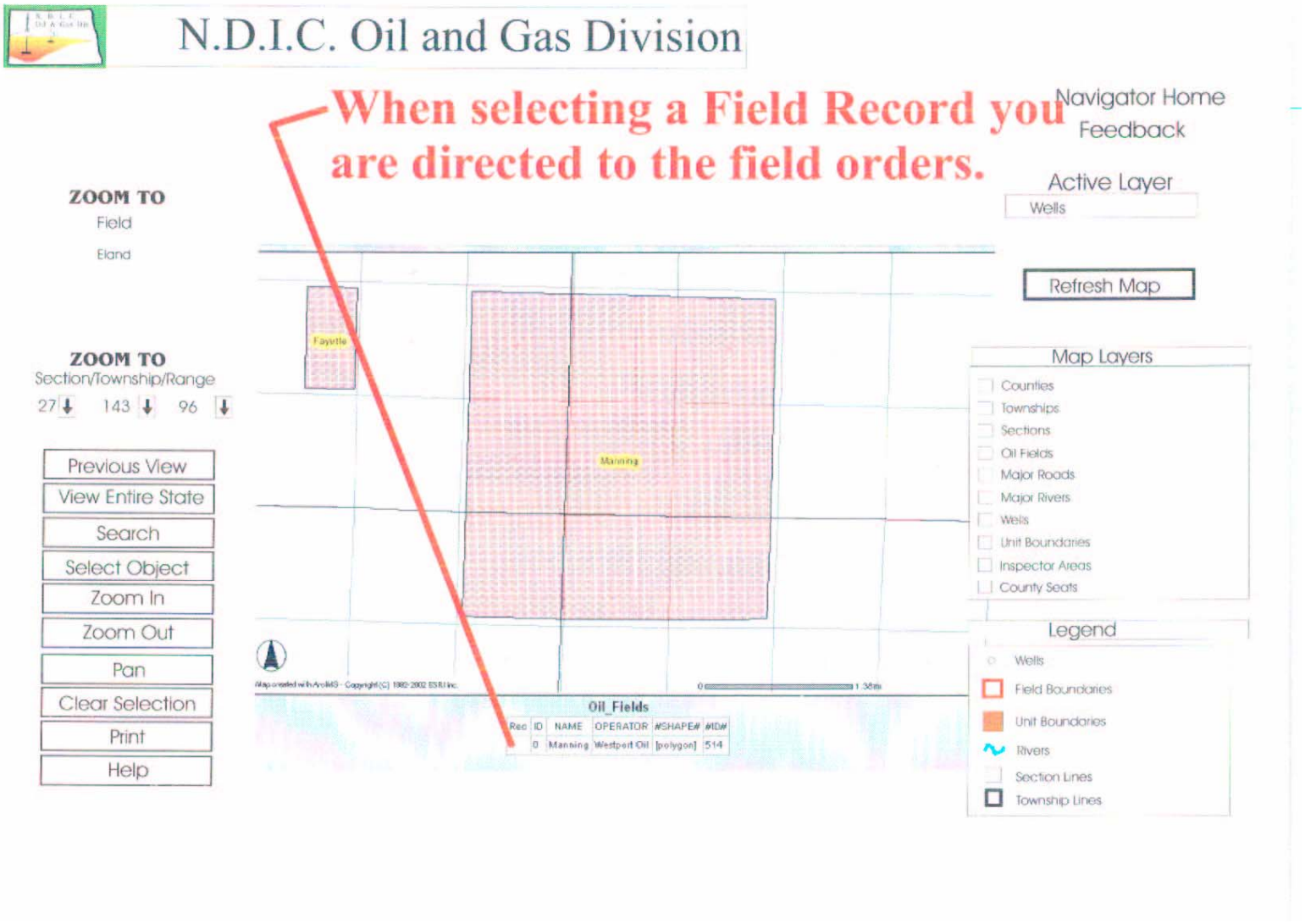
Location: SESW 15-143-103 Footages: 1307 FSL 1730 FWL Latitude: 47.200213 Longitude: -103.723184
Curent Operator: WESTPORT OIL & GAS COMPANY, L.P.
Original Operator: WESTPORT OIL & GAS CO., INC.
Curent Well Name: BEAVER CREEK 24-15T
Original Well Name: BEAVER CREEK #24-15T
Elevation(s): 2381 KB Total Depth: 11020 Field: BEAVER CREEK
Spud Date(s): 6/25/2001
Paper Log(s) on file: AIG, CBL, CND
Digital or Image Log(s) available: AIG-CND.las 607KB, AIG.las 287KB, AIG 2.4MB, CBL.las 208KB, CBL 4.5MB, CND 2MB, GR.las 25KB
Formation Tops
K-GH 4356 K-M 4836 K-N 4977 K-IK 5255 J-S 5647 J-R 6153
T-S 6633 PM-MK 7132 PM-OP 7180 PM-EBA 7451 PN-T 7864 M-EBS 8005
M-KL 8293 M-MD 8440 M-MDR 8917 M-MDLS 8968 M-MDFA 9140 M-MDLP 9614
MD-B 10387 D-TF 10389 D-BB 10540 D-DP 10613 D-SR 10930
Casing String(s): 9.625" 2035' 5.5" 11020'
Completion Data
Pool: DUPEROW Perfs: 10842-10846 Comp: 9/26/2001 Status: AL Date: 9/26/2001 Spacing: S2
Pool: DAKOTA Status: PD Date: 2/18/2004
Cumulative Production Data Get Production History
Pool: DUPEROW Cum Oil: 51766 Cum MCF Gas: 14743 Cum Water: 165054
Production Test Data
IP Test Date: 9/26/2001 Pool: DUPEROW IP Oil: 50 IP MCF: 23 IP Water: 208
Cores and Samples
Type: DC Top: 8900 Bottom: 10000
Type: DC Top: 10000 Bottom: 11000
Internet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When selecting a Field Record you are directed to the field orders.
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Major Roads
Major Rivers
Wells
Unit Boundaries
Inspector Areas
County Seats
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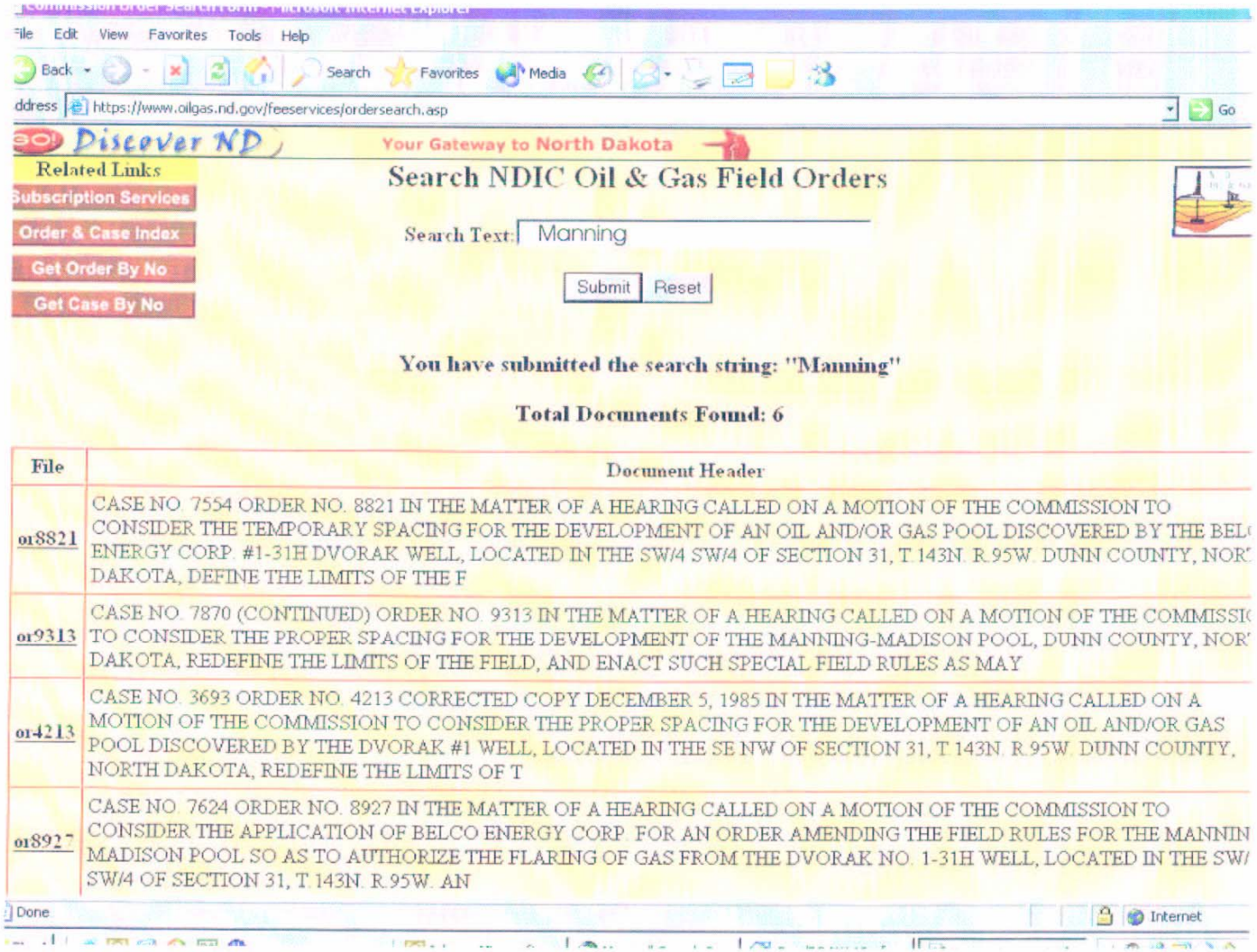

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Get Order By No

Get Case By No

Search NDIC Oil & Gas Field Orders

Search Text: Manning

Submit Reset

You have submitted the search string: "Manning"

Total Documents Found: 6

File	Document Header
or8821	CASE NO. 7554 ORDER NO. 8821 IN THE MATTER OF A HEARING CALLED ON A MOTION OF THE COMMISSION TO CONSIDER THE TEMPORARY SPACING FOR THE DEVELOPMENT OF AN OIL AND/OR GAS POOL DISCOVERED BY THE BEL ENERGY CORP. #1-31H DVORAK WELL, LOCATED IN THE SW/4 SW/4 OF SECTION 31, T.143N. R.95W. DUNN COUNTY, NOR DAKOTA, DEFINE THE LIMITS OF THE F
or9313	CASE NO. 7870 (CONTINUED) ORDER NO. 9313 IN THE MATTER OF A HEARING CALLED ON A MOTION OF THE COMMISSI TO CONSIDER THE PROPER SPACING FOR THE DEVELOPMENT OF THE MANNING-MADISON POOL, DUNN COUNTY, NOR DAKOTA, REDEFINE THE LIMITS OF THE FIELD, AND ENACT SUCH SPECIAL FIELD RULES AS MAY
or4213	CASE NO. 3693 ORDER NO. 4213 CORRECTED COPY DECEMBER 5, 1985 IN THE MATTER OF A HEARING CALLED ON A MOTION OF THE COMMISSION TO CONSIDER THE PROPER SPACING FOR THE DEVELOPMENT OF AN OIL AND/OR GAS POOL DISCOVERED BY THE DVORAK #1 WELL, LOCATED IN THE SE NW OF SECTION 31, T.143N. R.95W. DUNN COUNTY, NORTH DAKOTA, REDEFINE THE LIMITS OF T
or8927	CASE NO. 7624 ORDER NO. 8927 IN THE MATTER OF A HEARING CALLED ON A MOTION OF THE COMMISSION TO CONSIDER THE APPLICATION OF BELCO ENERGY CORP. FOR AN ORDER AMENDING THE FIELD RULES FOR THE MANNIN MADISON POOL SO AS TO AUTHORIZE THE FLARING OF GAS FROM THE DVORAK NO. 1-31H WELL, LOCATED IN THE SW/ SW/4 OF SECTION 31, T.143N. R.95W. AN

Done Internet