

**NEWFIELD**



www.newfield.com



**By:**

**Ernie Johnson**

**Newfield Exploration**

# **Greenhouse Gas Application: An Exploration and Production Perspective**

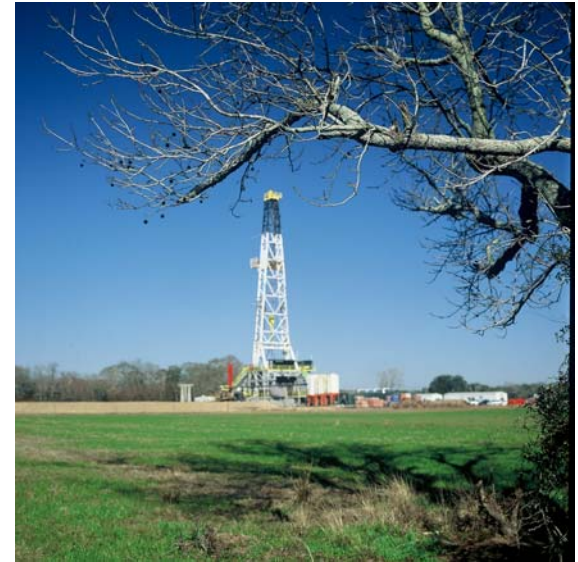
# Agenda

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- **About Newfield**
- **Reasons & Objectives**
- **Software Implementation**
- **What We've Learned So Far**

# Who Is Newfield Exploration?

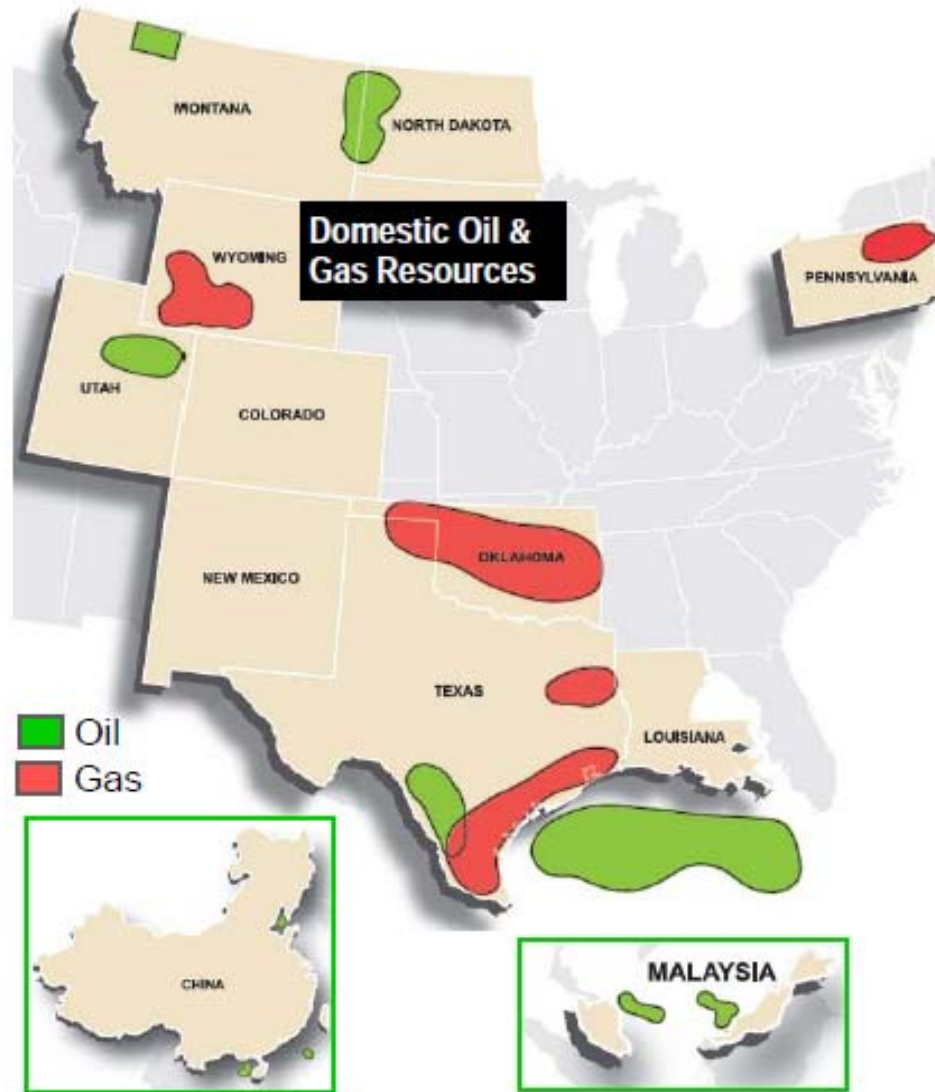
Newfield is a growing independent oil and natural gas company with a balanced program of exploration, production and acquisitions. We are traded on the New York Stock Exchange under the ticker “NFX”.



## THE FACTS

Proved Reserves:	2.9 Tcfe, 70% natural gas, 93% domestic
Enterprise Value:	~\$7 billion
Office Locations:	Houston, Texas (Headquarters), Tulsa, Oklahoma; Denver, Colorado; Kuala Lumpur, Malaysia; Beijing, China
Areas of Operation:	Mid-Continent, Rocky Mountains, Onshore Gulf Coast, Gulf of Mexico, offshore Malaysia and China
Employees:	>1,000

# Areas of Operation



# GHG Vision

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- **Why measure GHG Emissions “Back Then”?**
  - *Achieve Corporate social responsibility*
  - *Manage risk and identify opportunities*
  - *Improve competitive advantage*
  - *Participate in policy discussions*
  - *Participate in voluntary GHG programs*
  - *Provide stakeholder information*
  - ***Prepare for pending federal legislation***

# How We Manage Our GHG Data?

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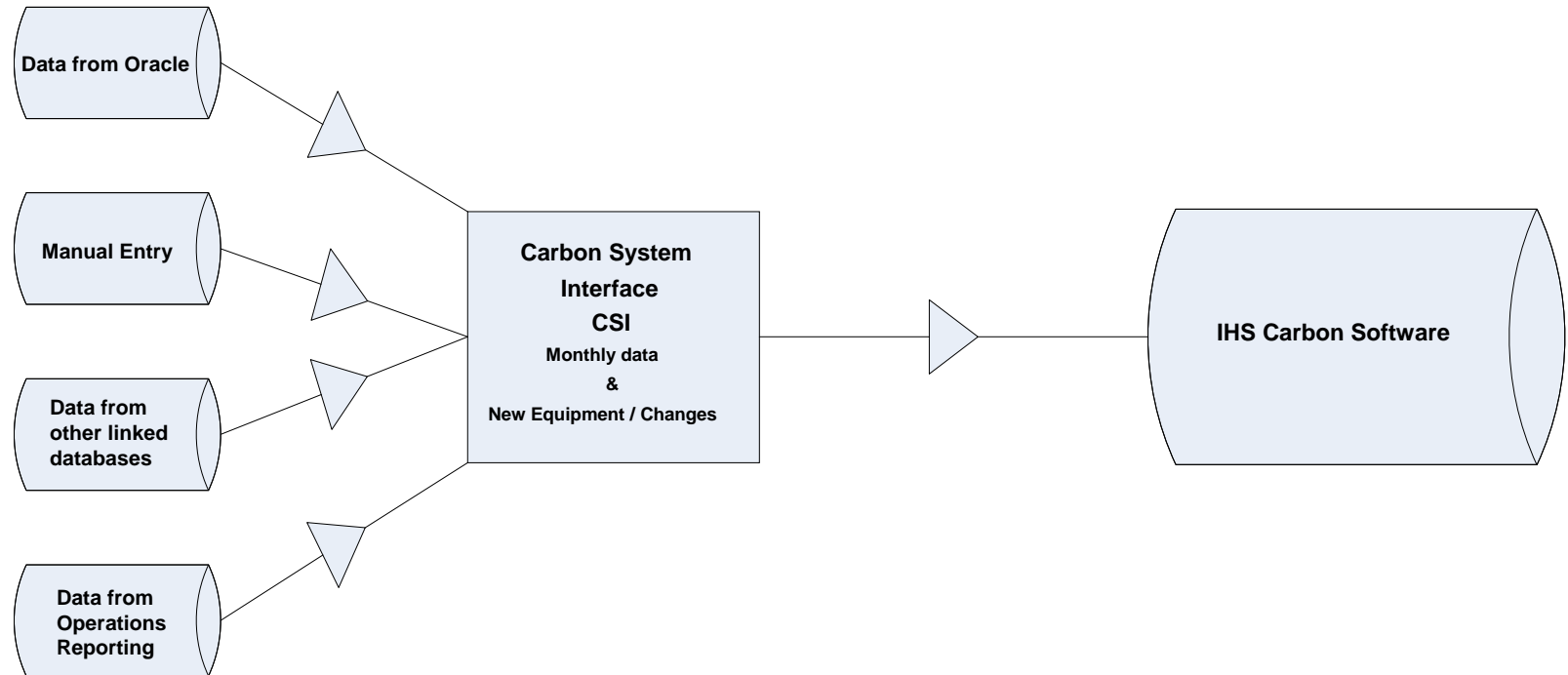
- **Select Software that met Newfield's needs and would provide the Company with:**
  - *Its Carbon Footprint*
  - *Emission reduction opportunities*
  - *GHG reports*
  - *Meeting air permitting and other emission inventory requirements*
  - *Future operations scoping and evaluation*
- **Needed every aspect of data to represent the dynamic environment of our business**

# GHG Data Flow Management

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- **Newfield's Carbon System Interface (CSI) allows for**
  - *Real time data interface*
    - ◆ **Oracle**
    - ◆ **Link data from other sources**
  - *Isolate production accounting*
  - *Updates to equipment*
  - *Used in QA/QC process*

# Process for Data Flow Management





# CSI – Hierarchy

The screenshot displays the CSI: Newfield web application interface. The browser window shows the URL <http://csi.newfield.com/>. The application header includes the CSI: NEWFIELD logo and navigation links for 'Validate Equipment', 'RC Tree View', and 'Reports'. The main content area is titled 'RC Tree View' and features a 'Newfield Hierarchy' tree on the left and a list of equipment types on the right.

**Newfield Hierarchy**

- BUNT - APPALACHIA
- BUNT - CHINA
- BUNT - HOUSTON
- BUNT - MALAYSIA
- BUNT - ROCKY MOUNTAINS
- BUNT - TULSA
- TEAM - MidC OPERATIONS
  - AREA - MidC - COALGATE
    - FLD - COALGATE/PINEHOLLOW S
      - FACL - ABLES 1H-3**
      - FACL - ADAMS 1H-3
      - FACL - BALM 1H-14
      - FACL - BANDIT 24-1
      - FACL - BANDIT 25-1
      - FACL - BANDIT 25A-1
      - FACL - BANDIT 30-1
      - FACL - BANDIT 30-2
      - FACL - BARGERS 1H-2
      - FACL - BIA 1H-18
      - FACL - BULLOCK 1H-10
      - FACL - BULLOCK 1H-15
      - FACL - BULLOCK 2H-15
      - FACL - BULLOCK 3H-15
      - FACL - BULLOCK 6H-15
      - FACL - BURRIS 1H-30
      - FACL - BURTON 2H-17
      - FACL - BURTON 5H-17
      - FACL - CASEY 1H-3
      - FACL - CATTLE 1H-21
      - FACL - CATTLE 2H-21
      - FACL - CATTLE 3H-21
      - FACL - CATTLE 4H-21
      - FACL - CATTLE 5H-21
      - FACL - CHANDLER/BULL MOUNTAIN
      - FACL - CLAYTON 1H-33
      - FACL - CLAYTON 2H-33

**Equipment: FACL - ABLES 1H-3 (and below)**

- Equipment Type
- Amine Vent Stack
- Automation RTU
- Blowdown Vent Stack
- Boiler / Heater
- Catalytic Heater
- Compressor
- Flare
- Flow Line Bundle (ft)
- Flow Meter
- Fugitives
- Gas Jack
- Generator
- Glycol Dehydrator
- Heater Treater
- Injection Shed
- Muffler
- NG ICE
- NG Pneumatic Controller
- NG Pneumatic Pump
- NG Pneumatic Valve Actuator
- Pen Recorder
- Pump
- Pumping Unit
- Separator
- Stairs
- Tank
- Thermal Oxidizer / Vapor Combustor
- Well Head Assembly

# CSI - Validation

CSI: Newfield - Windows Internet Explorer

http://csi.newfield.com/

File Edit View Favorites Tools Help

Secure Search McAfee

WebTycho CSI: Newfield

CSI: NEWFIELD Validate Equipment RC Tree View Reports

CSI Homepage Validate

Invalid Equipment Types		
Equipment Type	Count	Valid
Well Head Assembly	825	814
Compressor	54	17
Flare	10	0
Fugitives	842	830
<b>Tank</b>	<b>1372</b>	<b>1347</b>
Separator	597	585
NG Pneumatic Controller	1418	1409
Flow Meter	1043	1039
Heater Treater	240	238
NG Pneumatic Valve A...	1181	1175
Pen Recorder	58	49

Equipment Details: Tank						
Parent Location	Name	Manufacturer	Model	Serial Number	Service Type	
FACL - BAKER A	BAKER A TK 205231 - Dun...	NA	300 bbl	NA	Fixed Roof	
FACL - BAKER A	BAKER A TK 205232 - Dun...	NA	300 bbl	NA	Fixed Roof	
FACL - BAKER A	BAKER A TK 205233 - Dun...	NA	300 bbl	NA	Fixed Roof	
FACL - BAKER A	BAKER A TK 205234 - Dun...	NA	300 bbl	NA	Fixed Roof	
FACL - BAKER A	BAKER A TK 205235 - Dun...	NA	300 bbl	NA	Fixed Roof	
FACL - BAKER A	HARRY A 1 & 2 TK 52410 - ...	NA	300 bbl	NA	Fixed Roof	
FACL - BAKER A	HARRY A 1 & 2 TK 52420 - ...	NA	300 bbl	NA	Fixed Roof	
FACL - BAKER A	HARRY A 1 & 2 TK 52430 - ...	NA	300 bbl	NA	Fixed Roof	
FACL - BAKER A	HARRY A 3 W TNKV - Dun...	NA	300 bbl	NA	Fixed Roof	
FACL - BAKER A	New Tank - Dunaway Doyl...	NA	400 bbl	NA	Fixed Roof	
FACL - BAKER A	New Tank - Dunaway Doyl...	NA	300 bbl	NA	Fixed Roof	
FACL - BAKER A	New Tank - DUNAWAY DO...	NA	200 bbl	NA	Fixed Roof	
FACL - BAKER A	New Tank - DUNAWAY DO...	NA	200 bbl	NA	Fixed Roof	
FACL - BAKER A	New Tank - DUNAWAY DO...	NA	300 bbl	NA	Fixed Roof	
WELL - STIPE 1H-9	New Tank	NA	300 bbl	NA	Fixed Roof	
WELL - STIPE 1H-9	New Tank	NA	300 bbl	NA	Fixed Roof	
WELL - WOODRUFF 1-23	New Tank	NA	200 bbl	NA	Fixed Roof	
WELL - WOODRUFF 1-14	New Tank	NA	100 bbl	NA	Fixed Roof	
WELL - BAMA 1	New Tank	NA	30 bbl	NA	Fixed Roof	

# Software Implementation

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- **Selected IHS OpsInfo**

- *Established Newfield Selection Criteria*

- **Selected Software Implementation Manager to assist with:**

- *Determine Emission Sources to include*
- *Develop Emission Profiles*
- *Process for Data Management*
  - ◆ Internally developed Carbon System Interface (CSI)

- **Training and QA/QC**

- *Core User Training – Operations and IT*
- *Develop data validation process*

# Ops Web Interface

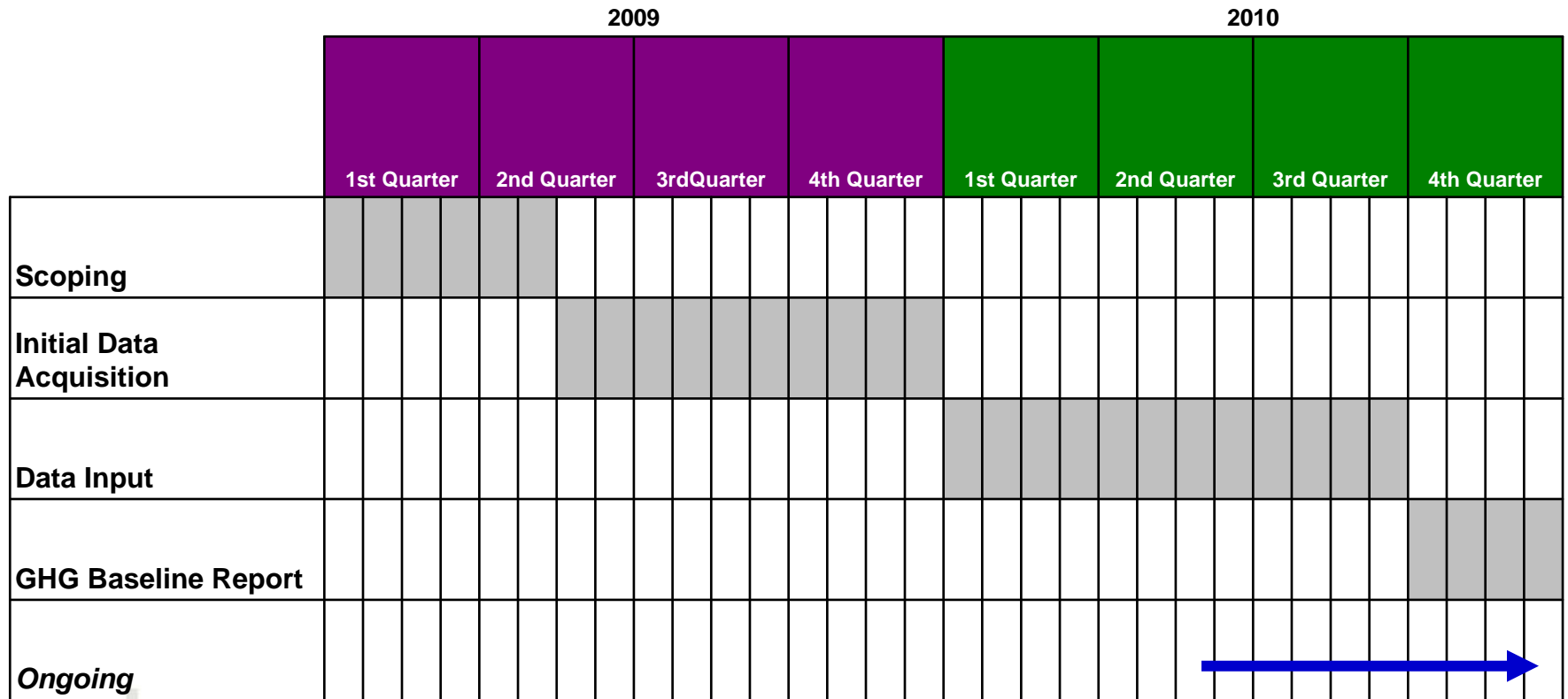
The screenshot shows the IHS opsInfo web interface. The browser title is '\* TULSA BUNIT - Windows Internet Explorer'. The address bar shows a URL starting with 'http://nfxhoucarbopr/OP38/opsTreeMain.asp?SINGLE=0&ModelID=9201497&SessionId={68ED4C9A-223A-4259-B65B-08FDD2F65985}&DBFLAG=3&COMPANYID=1'. The interface includes a search bar, navigation icons, and a tree view on the left. The tree view is expanded to show 'MidC - COALGATE\_AREA.MidC - COALGATE\_AREA\_DF'. The main content area displays a 'Parameter Set' table with a search function and a table of data.

**Parameter Set**

Search By Begin Date

MidC - COALGATE_AREA_Well Workovers .ProcessRates - 10/08/2010			
MidC - COALGATE_AREA .AREA_DeHYD_PROFILE - 01/01/2000			
MidC - COALGATE_AREA .FlaredGasProperties - 01/01/2000			
MidC - COALGATE_AREA .VEH_MILES - 01/01/2000			
MidC - COALGATE_AREA_Electricity .ProcessRates - 06/01/2010			
MidC - COALGATE_AREA_Fugitive Dust .PVRASSUMP - 10/08/2010			
MidC - COALGATE_AREA_Fugitive Dust .UPVRASSUMP - 10/08/2010			
MidC - COALGATE_AREA_Vehicle Combustion .Design - 01/01/2000			
MidC - COALGATE_AREA_Vehicle Combustion .ProcessRates - 01/03/2010			
MidC - COALGATE_AREA_Venting .ProcessRates - 10/08/2010	08/2010		
MidC - COALGATE_AREA_Well Completions .Design - 10/08/2010	08/2010		
MidC - COALGATE_AREA_Well Completions .ProcessRates - 10/08/2010			
MidC - COALGATE_AREA_Well Workovers .Design - 10/08/2010			
MidC - COALGATE_AREA_Well Workovers .ProcessRates - 10/08/2010			
MidC - COALGATE_AREA_Well Workovers.ProcessRates:		UOM	Descrip
Runtime		hr	
Measurement 0 [Total 0]			

# Project Implementation Strategy & Timing



# Review

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- **Reasons & Objectives**
- **Software Selection**
- **Determination of Sources**
- **Data Collection**
- **Calculation Methodologies / Emission Factors**
- **Training and QA/QC**



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**Ernie Johnson**

Newfield Exploration, Inc.

[ejohnson@newfield.com](mailto:ejohnson@newfield.com)

(918) 582-2690