APD ID: 10400001894
Operator Name: COG OPERATING LLC
Well Name: NELSON FEDERAL COM
Well Type: OIL WELL

Submission Date: 08/15/2016
Federal/Indian APD: FED
Well Number: 23H
Well Work Type: Drill

Highlight All Changes

Application

Section 1 - General

APD ID: 10400001894
Tie to previous NOS?
Submission Date: 08/15/2016
BLM Office: HOBBS
User: Robyn Odom
Title: Regulatory Analyst
Federal/Indian APD: FED
Is the first lease penetrated for production Federal or Indian? FED
Lease number: NMLC054687
Lease Acres: 400
Surface access agreement in place?
Allotted?
Reservation:
Agreement in place? NO
Federal or Indian agreement:
Agreement number:
Agreement name:
Keep application confidential? NO
Permitting Agent? NO
APD Operator: COG OPERATING LLC
Operator letter of designation:
Keep application confidential? NO

Operator Info

Operator Organization Name: COG OPERATING LLC
Operator Address: 600 West Illinois Ave
Zip: 79701
Operator PO Box:
Operator City: Midland
State: TX
Operator Phone: (432)683-7443
Operator Internet Address: RODOM@CONCHO.COM

Section 2 - Well Information

Well in Master Development Plan? NO
Mater Development Plan name:
Well in Master SUPO? NO
Master SUPO name:
Well in Master Drilling Plan? NO
Master Drilling Plan name:

Operator Name: COG OPERATING LLC

Well Name: NELSON FEDERAL COM **Well Number:** 23H

Well Name: NELSON FEDERAL COM **Well Number:** 23H **Well API Number:**

Field/Pool or Exploratory? Field and Pool **Field Name:** MALJAMAR **Pool Name:** YESO, WEST

Is the proposed well in an area containing other mineral resources? NATURAL GAS,OIL

Describe other minerals:

Is the proposed well in a Helium production area? N **Use Existing Well Pad?** NO **New surface disturbance?**

Type of Well Pad: MULTIPLE WELL **Multiple Well Pad Name:** NELSON FEDERAL COM **Number:** 1

Well Class: HORIZONTAL **Number of Legs:**

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

Well sub-Type: INFILL

Describe sub-type:

Distance to town: 1.6 Miles **Distance to nearest well:** 219.6 FT **Distance to lease line:** 1895 FT

Reservoir well spacing assigned acres Measurement: 240 Acres

Well plat: Nelson Federal Com 23H C102_08-08-2016.pdf

Well work start Date: 03/22/2017 **Duration:** 15 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83 **Vertical Datum:** NAVD88

Survey number:

	STATE: NEW MEXICO	**Meridian:** NEW MEXICO PRINCIPAL	**County:** LEA
	Latitude: 32.8333655	**Longitude:** -103.7566838	
SHL	**Elevation:** 4044	**MD:** 0	**TVD:** 0
Leg #: 1	**Lease Type:** FEDERAL	**Lease #:** NMLC054687	
	NS-Foot: 2188	**NS Indicator:** FSL	
	EW-Foot: 1895	**EW Indicator:** FWL	
	Twsp: 17S	**Range:** 32E	**Section:** 15
	Aliquot: NESW	**Lot:**	**Tract:**

Operator Name: COG OPERATING LLC

Well Name: NELSON FEDERAL COM **Well Number:** 23H

	STATE: NEW MEXICO	**Meridian:** NEW MEXICO PRINCIPAL	**County:** LEA
	Latitude: 32.8333655	**Longitude:** -103.7566838	
KOP	**Elevation:** -1810	**MD:** 5854	**TVD:** 5854
Leg #: 1	**Lease Type:** FEDERAL	**Lease #:** NMLC054687	
	NS-Foot: 2188	**NS Indicator:** FSL	
	EW-Foot: 1895	**EW Indicator:** FWL	
	Twsp: 17S	**Range:** 32E	**Section:** 15
	Aliquot: NESW	**Lot:**	**Tract:**
	STATE: NEW MEXICO	**Meridian:** NEW MEXICO PRINCIPAL	**County:** LEA
	Latitude: 32.8333655	**Longitude:** -103.7566838	
PPP	**Elevation:** -2047	**MD:** 6100	**TVD:** 6091
Leg #: 1	**Lease Type:** FEDERAL	**Lease #:** NMLC054687	
	NS-Foot: 2245	**NS Indicator:** FSL	
	EW-Foot: 1893	**EW Indicator:** FWL	
	Twsp: 17S	**Range:** 32E	**Section:** 15
	Aliquot: NESW	**Lot:**	**Tract:**
	STATE: NEW MEXICO	**Meridian:** NEW MEXICO PRINCIPAL	**County:** LEA
	Latitude: 32.834811	**Longitude:** -103.756803	
EXIT	**Elevation:** -2331	**MD:** 6681	**TVD:** 6375
Leg #: 1	**Lease Type:** FEDERAL	**Lease #:** NMLC054687	
	NS-Foot: 2562	**NS Indicator:** FNL	
	EW-Foot: 1876	**EW Indicator:** FWL	
	Twsp: 17S	**Range:** 32E	**Section:** 15
	Aliquot: SENW	**Lot:**	**Tract:**
	STATE: NEW MEXICO	**Meridian:** NEW MEXICO PRINCIPAL	**County:** LEA
	Latitude: 32.855467	**Longitude:** -103.7574842	
BHL	**Elevation:** -2200	**MD:** 14198	**TVD:** 6244
Leg #: 1	**Lease Type:** FEDERAL	**Lease #:** NMLC064150	
	NS-Foot: 330	**NS Indicator:** FNL	
	EW-Foot: 1650	**EW Indicator:** FWL	

Operator Name: COG OPERATING LLC

Well Name: NELSON FEDERAL COM **Well Number:** 23H

Twsp: 17S **Range:** 32E **Section:** 10

Aliquot: NENW **Lot:** **Tract:**

Drilling Plan

Section 1 - Geologic Formations

ID: Surface formation **Name:** UNKNOWN

Lithology(ies):

ALLUVIUM

Elevation: 4044 **True Vertical Depth:** 0 **Measured Depth:** 0

Mineral Resource(s):

USEABLE WATER

Is this a producing formation? N

ID: Formation 1 **Name:** RUSTLER

Lithology(ies):

ANHYDRITE

Elevation: 3059 **True Vertical Depth:** 985 **Measured Depth:** 985

Mineral Resource(s):

OTHER - Brackish Water

Is this a producing formation? N

ID: Formation 2 **Name:** TOP SALT

Lithology(ies):

SALT

Elevation: 2886 **True Vertical Depth:** 1158 **Measured Depth:** 1158

Mineral Resource(s):

OTHER - Salt

Is this a producing formation? N

Operator Name: COG OPERATING LLC

Well Name: NELSON FEDERAL COM **Well Number:** 23H

ID: Formation 3 **Name:** TANSILL

Lithology(ies):

DOLOMITE

Elevation: 1854 **True Vertical Depth:** 2190 **Measured Depth:** 2190

Mineral Resource(s):

NONE

Is this a producing formation? N

ID: Formation 4 **Name:** YATES

Lithology(ies):

SANDSTONE

DOLOMITE

Elevation: 1744 **True Vertical Depth:** 2300 **Measured Depth:** 2300

Mineral Resource(s):

NATURAL GAS

OIL

Is this a producing formation? N

ID: Formation 5 **Name:** SEVEN RIVERS

Lithology(ies):

SANDSTONE

DOLOMITE

Elevation: 1406 **True Vertical Depth:** 2638 **Measured Depth:** 2638

Mineral Resource(s):

NATURAL GAS

OIL

Is this a producing formation? N

ID: Formation 6 **Name:** QUEEN

Lithology(ies):

SANDSTONE

Elevation: 774 **True Vertical Depth:** 3270 **Measured Depth:** 3270

Mineral Resource(s):

NATURAL GAS

OIL

Is this a producing formation? N

ID: Formation 7 **Name:** GRAYBURG

Lithology(ies):

SANDSTONE

DOLOMITE

Elevation: 323 **True Vertical Depth:** 3721 **Measured Depth:** 3721

Mineral Resource(s):

NATURAL GAS

OIL

Is this a producing formation? N

ID: Formation 8 **Name:** SAN ANDRES

Lithology(ies):

DOLOMITE

ANHYDRITE

Elevation: 18 **True Vertical Depth:** 4026 **Measured Depth:** 4026

Mineral Resource(s):

NATURAL GAS

OIL

Is this a producing formation? N

Operator Name: COG OPERATING LLC

Well Name: NELSON FEDERAL COM **Well Number:** 23H

ID: Formation 9 **Name:** GLORIETA

Lithology(ies):

SANDSTONE

SILTSTONE

Elevation: -1447 **True Vertical Depth:** 5491 **Measured Depth:** 5491

Mineral Resource(s):

NATURAL GAS

OIL

Is this a producing formation? N

ID: Formation 10 **Name:** PADDOCK

Lithology(ies):

DOLOMITE

Elevation: -1516 **True Vertical Depth:** 5560 **Measured Depth:** 5560

Mineral Resource(s):

NATURAL GAS

OIL

Is this a producing formation? N

ID: Formation 11 **Name:** BLINEBRY

Lithology(ies):

DOLOMITE

Elevation: -2032 **True Vertical Depth:** 6076 **Measured Depth:** 6076

Mineral Resource(s):

NATURAL GAS

OIL

Is this a producing formation? Y

Operator Name: COG OPERATING LLC

Well Name: NELSON FEDERAL COM **Well Number:** 23H

ID: Formation 12 **Name:** TUBB

Lithology(ies):

SANDSTONE

DOLOMITE

Elevation: -2906 **True Vertical Depth:** 6950 **Measured Depth:** 6950

Mineral Resource(s):

NATURAL GAS

OIL

Is this a producing formation? N

Section 2 - Blowout Prevention

Pressure Rating (PSI): 2M **Rating Depth:** 9500

Equipment: ALL REQUIRED EQUIPMENT PER FEDERAL AND STATE REGULATIONS TO BE IN PLACE PRIOR TO DRILLING OUT THE SURFACE CASING.
Requesting Variance? NO

Variance request:

Testing Procedure: BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure of 2000 psi per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure of 2000 psi. If the system is upgraded all the components installed will be functional and tested. Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold.

Choke Diagram Attachment:

2M Choke Schematic 1-12-16.pdf

BOP Diagram Attachment:

2M ANNULAR BOP 2-1-16.pdf

Section 3 - Casing

Operator Name: COG OPERATING LLC

Well Name: NELSON FEDERAL COM **Well Number:** 23H

String Type: SURFACE **Other String Type:**

Hole Size: 17.5

Top setting depth MD: 0 **Top setting depth TVD:** 0

Top setting depth MSL: 4044

Bottom setting depth MD: 1010 **Bottom setting depth TVD:** 1010

Bottom setting depth MSL: 3034

Calculated casing length MD: 1010

Casing Size: 13.375 **Other Size**

Grade: H-40 **Other Grade:**

Weight: 48

Joint Type: STC **Other Joint Type:**

Condition: NEW

Inspection Document:

Standard: API

Spec Document:

Tapered String?: N

Tapered String Spec:

Safety Factors

Collapse Design Safety Factor: 2.26 **Burst Design Safety Factor:** 3.46

Joint Tensile Design Safety Factor type: DRY **Joint Tensile Design Safety Factor:** 6.6

Body Tensile Design Safety Factor type: DRY **Body Tensile Design Safety Factor:** 11.2

Casing Design Assumptions and Worksheet(s):

Casing Design Attachement_08-15-2016.pdf

Operator Name: COG OPERATING LLC

Well Name: NELSON FEDERAL COM **Well Number:** 23H

String Type: INTERMEDIATE **Other String Type:**

Hole Size: 12.25

Top setting depth MD: 0 **Top setting depth TVD:** 0

Top setting depth MSL: 4044

Bottom setting depth MD: 2320 **Bottom setting depth TVD:** 2320

Bottom setting depth MSL: 1724

Calculated casing length MD: 2320

Casing Size: 9.625 **Other Size**

Grade: J-55 **Other Grade:**

Weight: 40

Joint Type: LTC **Other Joint Type:**

Condition: NEW

Inspection Document:

Standard: API

Spec Document:

Tapered String?: N

Tapered String Spec:

Safety Factors

Collapse Design Safety Factor: 2.47 **Burst Design Safety Factor:** 1.44

Joint Tensile Design Safety Factor type: DRY **Joint Tensile Design Safety Factor:** 6.1

Body Tensile Design Safety Factor type: DRY **Body Tensile Design Safety Factor:** 7.4

Casing Design Assumptions and Worksheet(s):

Casing Design Attachement_08-15-2016.pdf

Operator Name: COG OPERATING LLC

Well Name: NELSON FEDERAL COM **Well Number:** 23H

String Type: PRODUCTION **Other String Type:**

Hole Size: 8.75

Top setting depth MD: 0 **Top setting depth TVD:** 0

Top setting depth MSL: 4044

Bottom setting depth MD: 5854 **Bottom setting depth TVD:** 5854

Bottom setting depth MSL: -1810

Calculated casing length MD: 5854

Casing Size: 7.0 **Other Size**

Grade: L-80 **Other Grade:**

Weight: 29

Joint Type: LTC **Other Joint Type:**

Condition: NEW

Inspection Document:

Standard: API

Spec Document:

Tapered String?: N

Tapered String Spec:

Safety Factors

Collapse Design Safety Factor: 3.17 **Burst Design Safety Factor:** 1.33

Joint Tensile Design Safety Factor type: DRY **Joint Tensile Design Safety Factor:** 3.77

Body Tensile Design Safety Factor type: DRY **Body Tensile Design Safety Factor:** 4.27

Casing Design Assumptions and Worksheet(s):

Casing Design Attachement_08-15-2016.pdf

Operator Name: COG OPERATING LLC

Well Name: NELSON FEDERAL COM **Well Number:** 23H

String Type: PRODUCTION **Other String Type:**

Hole Size: 8.75

Top setting depth MD: 5854 **Top setting depth TVD:** 5854

Top setting depth MSL: -1810

Bottom setting depth MD: 6681 **Bottom setting depth TVD:** 6375

Bottom setting depth MSL: -2331

Calculated casing length MD: 827

Casing Size: 5.5 **Other Size**

Grade: L-80 **Other Grade:**

Weight: 17

Joint Type: LTC **Other Joint Type:**

Condition: NEW

Inspection Document:

Standard: API

Spec Document:

Tapered String?: N

Tapered String Spec:

Safety Factors

Collapse Design Safety Factor: 2.29 **Burst Design Safety Factor:** 1.26

Joint Tensile Design Safety Factor type: DRY **Joint Tensile Design Safety Factor:** 4.28

Body Tensile Design Safety Factor type: DRY **Body Tensile Design Safety Factor:** 5.03

Casing Design Assumptions and Worksheet(s):

Casing Design Attachement_08-15-2016.pdf

Operator Name: COG OPERATING LLC

Well Name: NELSON FEDERAL COM **Well Number:** 23H

String Type: PRODUCTION **Other String Type:**

Hole Size: 7.875

Top setting depth MD: 6681 **Top setting depth TVD:** 6375

Top setting depth MSL: -2331

Bottom setting depth MD: 14198 **Bottom setting depth TVD:** 6244

Bottom setting depth MSL: -2200

Calculated casing length MD: 7517

Casing Size: 5.5 **Other Size**

Grade: L-80 **Other Grade:**

Weight: 17

Joint Type: LTC **Other Joint Type:**

Condition: NEW

Inspection Document:

Standard: API

Spec Document:

Tapered String?: N

Tapered String Spec:

Safety Factors

Collapse Design Safety Factor: 2.29 **Burst Design Safety Factor:** 1.26

Joint Tensile Design Safety Factor type: DRY **Joint Tensile Design Safety Factor:** 4.28

Body Tensile Design Safety Factor type: DRY **Body Tensile Design Safety Factor:** 5.03

Casing Design Assumptions and Worksheet(s):

Casing Design Attachement_08-15-2016.pdf

Section 4 - Cement

Casing String Type: SURFACE

Stage Tool Depth:

Lead

Top MD of Segment: 0 **Bottom MD Segment:** 1010 **Cement Type:** Class C

Additives: 4%Gel+2%CaCl2+0.25pps CF **Quantity (sks):** 550 **Yield (cu.ff./sk):** 1.75

Density: 13.5 **Volume (cu.ft.):** 962.5 **Percent Excess:** 76

Tail

Top MD of Segment: 0 **Bottom MD Segment:** 1010 **Cement Type:** Class C

Additives: 2%CaCl2+0.25pps CF **Quantity (sks):** 200 **Yield (cu.ff./sk):** 1.32

Density: 14.8 **Volume (cu.ft.):** 264 **Percent Excess:**

Casing String Type: INTERMEDIATE

Stage Tool Depth:

Lead

Top MD of Segment: 0 **Bottom MD Segment:** 2320 **Cement Type:** 50:50:10 C:Poz:Gel

Additives: 5%Salt+5pps LCM+0.25pps CF. **Quantity (sks):** 425 **Yield (cu.ff./sk):** 2.45

Density: 11.8 **Volume (cu.ft.):** 1041.25 **Percent Excess:** 125

Tail

Top MD of Segment: **Bottom MD Segment:** 2320 **Cement Type:** Class C

Additives: 2% CaCl2 **Quantity (sks):** 200 **Yield (cu.ff./sk):** 1.32

Density: 14.8 **Volume (cu.ft.):** 264 **Percent Excess:**

Casing String Type: PRODUCTION

Stage Tool Depth:

Lead

Top MD of Segment: 0 **Bottom MD Segment:** 4100 **Cement Type:** 35:65:6 C:Poz:Gel

Additives: 5%Salt+5pps LCM+0.2%SMS+1%FL-25+1%Ba-58+0.3%FL-52A+0.125pps CF **Quantity (sks):** 600 **Yield (cu.ff./sk):** 2.01

Density: 12.5 **Volume (cu.ft.):** 1206 **Percent Excess:** 101

Tail

Bottom MD Segment: 14198 **Cement Type:** 50:50:2 C:Poz:Gel

Top MD of Segment: 4100 **Quantity (sks):** 2400 **Yield (cu.ff./sk):** 1.37

Additives: 5%salt+3pps LCM+0.6%SMS+1%FL-25+1%Ba- **Volume (cu.ft.):** 3288 **Percent Excess:**

Density: 14

Stage Tool Depth:

Lead

Top MD of Segment: 0

Bottom MD Segment: 4100

Cement Type: 35:65:6 C:Poz:Gel

Additives: 5%salt+5pps LCM+0.2%SMS+1%FL-25+1%Ba-58+0.3%FL-52A+0.125pps CF

Quantity (sks): 600

Yield (cu.ff./sk): 2.01

Volume (cu.ft.): 1206

Percent Excess: 101

Density: 12.5

Tail

Bottom MD Segment: 14198

Cement Type: 50:50:2 C:Poz:Gel

Top MD of Segment: 4100

Quantity (sks): 2400

Yield (cu.ff./sk): 1.37

Additives: 5%salt+3pps LCM+0.6%SMS+1%FL-25+1%BA-

Volume (cu.ft.): 3288

Percent Excess:

Density: 14

Stage Tool Depth:

Lead

Top MD of Segment: 0

Bottom MD Segment: 4100

Cement Type: 35:65:6 C:Poz:Gel

Additives: 5%Salt+5pps LCM+0.2%SMS+1%FL-25+1%Ba-58+0.3%FL-52A+0.125pps CF

Quantity (sks): 600

Yield (cu.ff./sk): 2.01

Volume (cu.ft.): 1206

Percent Excess: 101

Density: 12.5

Tail

Bottom MD Segment: 14198

Cement Type: 50:50:2 C:Poz:Gel

Top MD of Segment: 4100

Quantity (sks): 2400

Yield (cu.ff./sk): 1.37

Additives: 5%salt+3pps LCM+0.6%SMS+1%FL-25+1%Ba-

Volume (cu.ft.): 3288

Percent Excess:

Density: 14

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

Description of the equipment for the circulating system in accordance with Onshore Order #2:

Diagram of the equipment for the circulating system in accordance with Onshore Order #2:

Describe what will be on location to control well or mitigate other conditions: SUFFICIENT MUD MATERIALS TO MAINTAIN MUD PROPERTIES AND MEET MINIMUM LOST CIRCULATION AND WEIGHT INCREASE REQUIREMENTS WILL BE KEPT ON LOCATION AT ALL TIMES.

Describe the mud monitoring system utilized: PVT/PASON/VISUAL MONITORING

Circulating Medium Table

Operator Name: COG OPERATING LLC

Well Name: NELSON FEDERAL COM **Well Number:** 23H

Top Depth: 0 **Bottom Depth:** 1010

Mud Type: WATER-BASED MUD

Min Weight (lbs./gal.): 8.6 **Max Weight (lbs./gal.):** 8.8

Density (lbs/cu.ft.): **Gel Strength (lbs/100 sq.ft.):**

PH: **Viscosity (CP):**

Filtration (cc): **Salinity (ppm):**

Additional Characteristics:

Top Depth: 0 **Bottom Depth:** 5854

Mud Type: SALT SATURATED

Min Weight (lbs./gal.): 10 **Max Weight (lbs./gal.):** 10.2

Density (lbs/cu.ft.): **Gel Strength (lbs/100 sq.ft.):**

PH: **Viscosity (CP):**

Filtration (cc): **Salinity (ppm):**

Additional Characteristics:

Top Depth: 5854 **Bottom Depth:** 6244

Mud Type: WATER-BASED MUD

Min Weight (lbs./gal.): 8.5 **Max Weight (lbs./gal.):** 9.2

Density (lbs/cu.ft.): **Gel Strength (lbs/100 sq.ft.):**

PH: **Viscosity (CP):**

Filtration (cc): **Salinity (ppm):**

Additional Characteristics:

Section 6 - Test, Logging, Coring

List of production tests including testing procedures, equipment and safety measures:

INTERVAL PERFORATING, FRACTURE STIMULATING, FLOW BACK TESTING.

List of open and cased hole logs run in the well:

CNL,MUDLOG

Coring operation description for the well:

N/A

Operator Name: COG OPERATING LLC

Well Name: NELSON FEDERAL COM **Well Number:** 23H

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 2805 **Anticipated Surface Pressure:** 1402.5

Anticipated Bottom Hole Temperature(F): 118

Anticipated abnormal proessures, temperatures, or potential geologic hazards? NO

Describe:

Contingency Plans geoharzards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

H2S Plan_05-20-2016.pdf

Nelson Federal Com 23H H2S Schematic_08-03-2016.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Nelson Federal Com 23H Plan 2 Rpt_08-08-2016.pdf

Other proposed operations facets description:

9 5/8" DV TOOL CEMENT OPTION IS PROPOSED FOR APPROVAL. THIS MAY BECOME NECESSARY IF LOST CIRCULATIC OCCURS WHILE DRILLING THE 12 1/4" INTERMEDIATE HOLE. DV TOOL DEPTH WILL BE BASED ON HOLE CONDITIONS. CEMENT VOLUMES WILL BE ADJUSTED PROPORTIONALLY. DV TOOL WILL BE SET MINIMUM OF 50' BELOW PREVIOUS CASING AND A MINIMUM OF 200' ABOUT CURRENT SHOE.
7" DV TOOL CEMENT OPTION IS PROPOSED FOR APPROVAL. THIS MAY BECOME NECESSARY IF WATER FLOWS IN TH SAN ANDRES ARE ENCOUNTERED. THESE WATER FLOWS NORMALLY OCCUR IN AREAS WHERE PRODUCED WATER DISPOSAL IS HAPPENING. THIS DENSE CEMENT IS USED TO COMBAT WATER FLOWS. THIS CEMENT RECIPE ALSO HA RIGHT ANGLE SET TIME AND IS MIXED A LITTLE UNDER SATURATED SO THE WATER FLOW WILL BE ABSORBED BY CEMENT. DV TOOL DEPTH WILL BE BASED ON HOLE CONDITIONS. CEMENT VOLUMES WILL BE ADJUSTED PROPORTIONALLY. DV TOOL WILL BE SET A MINIUM OF 50' BELOW PREVIOUS CASING AND A MINIMUM OF 200' ABOVE CURRENT SHOE.

Other proposed operations facets attachment:

Closed Loop Schematic_08-03-2016.pdf

Nelson Fed Com 23H_Production Cement Breakdown_11-02-2016.pdf

Other Variance attachment:

SUPO

Operator Name: COG OPERATING LLC

Well Name: NELSON FEDERAL COM **Well Number:** 23H

Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

Nelson Federal Com 23H Vicinity Plat_08-03-2016.pdf

Existing Road Purpose: ACCESS,FLUID TRANSPORT **Row(s) Exist?** NO

ROW ID(s)

ID:

Do the existing roads need to be improved? NO

Existing Road Improvement Description:

Existing Road Improvement Attachment:

Section 2 - New or Reconstructed Access Roads

Will new roads be needed? NO

Section 3 - Location of Existing Wells

Existing Wells Map? YES

Attach Well map:

Nelson Federal Com 23H 1mileRadius Map_08-03-2016.pdf

Existing Wells description:

Operator Name: COG OPERATING LLC

Well Name: NELSON FEDERAL COM **Well Number:** 23H

Section 4 - Location of Existing and/or Proposed Production Facilities

Submit or defer a Proposed Production Facilities plan? SUBMIT

Estimated Production Facilities description:

Production Facilities description: Production will be sent to the Nelson Federal Com Tank Battery located in Section 15 of T17S R32E. Proposed flowlines will follow an archaeologically approved route to the Nelson Federal Com Tank Battery. The flowlines will be SDR 7 3" poly line laid on the surface and will be approx. 440' in length. Normal working pressure of the flowlines will be below 70 psi and carry a mixture of produced oil, water, and gas. Flowlines will follow existing well-traveled or proposed roads.

Production Facilities map:

Nelson Federal Com 13H_Tank Battery Schematic_11-11-2016.pdf

Section 5 - Location and Types of Water Supply

Water Source Table

Water source use type: DUST CONTROL, INTERMEDIATE/PRODUCTION CASING, SURFACE CASING

Water source type: GW WELL

Describe type:

Source latitude:

Source longitude:

Source datum:

Water source permit type: PRIVATE CONTRACT

Source land ownership: COMMERCIAL

Water source transport method: PIPELINE,TRUCKING

Source transportation land ownership: COMMERCIAL

Water source volume (barrels): 8000

Source volume (acre-feet): 1.0311447

Source volume (gal): 336000

Water source and transportation map:

Caswell Ranch_Water Supply_11-02-2016.pdf

Loco Hills Water Disposal Co Water Supply_12-12-2016.pdf

Water source comments: The well will be drilled with combination brine and fresh water mud system as outlined in the drilling program. Water will be obtained from commercial water stations in the area and hauled to location by transport truck over the existing and proposed access roads shown in Vicinity Map. A fresh water source is nearby and fast line may be laid along existing road ROW's and fresh water pumped to the well. Water will originate from 1 and/or all of the 3 private wells location depicted on the attached "Caswell Ranch Water Supply" Map. A secondary water source will be from private wells location described on the attached "Water Well Description" attached to this APD (Loco Hills Water Disposal Co). James R. Maloney, 575-677-2118. No water well will be drilled on the location.

New water well? NO

New Water Well Info

Well latitude: **Well Longitude:** **Well datum:**

Operator Name: COG OPERATING LLC

Well Name: NELSON FEDERAL COM **Well Number:** 23H

Well target aquifer:

Est. depth to top of aquifer(ft): **Est thickness of aquifer:**

Aquifer comments:

Aquifer documentation:

Well depth (ft): **Well casing type:**

Well casing outside diameter (in.): **Well casing inside diameter (in.):**

New water well casing? **Used casing source:**

Drilling method: **Drill material:**

Grout material: **Grout depth:**

Casing length (ft.): **Casing top depth (ft.):**

Well Production type: **Completion Method:**

Water well additional information:

State appropriation permit:

Additional information attachment:

Section 6 - Construction Materials

Construction Materials description: Surfacing material will consist of native caliche. Caliche will be obtained from the actual well site if available. Secondary candidate source will be Caswell Ranch owned Caliche Pit located in NESE of Sec 9, T17S, R32E. A third candidate source will be the NMSLO Caliche Pit located in S2/SW4 of Sec 32, T16S, R30E.

Construction Materials source location attachment:

Construction Turn-Over Procedure_08-03-2016.pdf

Caswell Ranch Caliche Pit_11-02-2016.pdf

NMSLO Caliche Pit_12-12-2016.pdf

Section 7 - Methods for Handling Waste

Waste type: DRILLING

Waste content description: DRILL CUTTINGS AND DRILLING FLUIDS

Amount of waste: 100 barrels

Waste disposal frequency : Daily

Safe containment description: CLOSED LOOP SYSTEM

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** FEDERAL

Disposal type description:

Disposal location description: R360'S DISPOSAL SITE LOCATED AT 4507 WEST CARLSBAD HIGHWAY, HOBBS, NM 88240.

Operator Name: COG OPERATING LLC

Well Name: NELSON FEDERAL COM **Well Number:** 23H

Waste type: PRODUCED WATER

Waste content description: PRODUCED WATER

Amount of waste: 100 barrels

Waste disposal frequency : Daily

Safe containment description: STEEL TANKS

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** STATE

Disposal type description:

Disposal location description: NMOCD APPROVED COMMERCIAL DISPOSAL FACILITY. R360'S DISPOSAL SITE LOCATED AT 4507 WEST CARLSBAD HIGHWAY, HOBBS, NM 88240.

Waste type: GARBAGE

Waste content description: GARBAGE AND TRASH PRODUCED DURING DRILLING AND COMPLETION OPERATIONS.

Amount of waste: 100 pounds

Waste disposal frequency : Weekly

Safe containment description: TRASH BIN

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** STATE

Disposal type description:

Disposal location description: GARBAGE AND TRASH TO BE COLLECTED IN TRASH BIN AND HAULED TO LEA LANDFILL LLC. LOCATED AT MILE MARKER 64, HIGHWAY 62-180 EAST, PO BOX 3247, CARLSBAD, NM 88221. NO TOXIC WASTE OR HAZARDOUS CHEMICALS WILL BE PRODUCED BY THIS OPERATION.

Waste type: SEWAGE

Waste content description: HUMAN WASTE AND GREY WATER.

Amount of waste: 100 gallons

Waste disposal frequency : Weekly

Safe containment description: PORTABLE SEPTIC SYSTEM AND/OR PORTABLE WASTE GATHERING SYSTEM.

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL

Disposal type description:

Disposal location description: HAULED TO NMOCD APPROVED WASTE DISPOSAL FACILTY.

Reserve Pit

Reserve Pit being used? NO

Operator Name: COG OPERATING LLC

Well Name: NELSON FEDERAL COM **Well Number:** 23H

Temporary disposal of produced water into reserve pit?

Reserve pit length (ft.) **Reserve pit width (ft.)**

Reserve pit depth (ft.) **Reserve pit volume (cu. yd.)**

Is at least 50% of the reserve pit in cut?

Reserve pit liner

Reserve pit liner specifications and installation description

Cuttings Area

Cuttings Area being used? NO

Are you storing cuttings on location? YES

Description of cuttings location CLOSED LOOP MUD SYSTEM: ROLL-OFF STYLE MUD BOX.

Cuttings area length (ft.) **Cuttings area width (ft.)**

Cuttings area depth (ft.) **Cuttings area volume (cu. yd.)**

Is at least 50% of the cuttings area in cut?

WCuttings area liner

Cuttings area liner specifications and installation description

Section 8 - Ancillary Facilities

Are you requesting any Ancillary Facilities?: NO

Ancillary Facilities attachment:

Comments:

Section 9 - Well Site Layout

Well Site Layout Diagram:

Nelson Federal Com 23H Well Site Plat_08-03-2016.pdf

Nelson Federal Com 23H Interim Reclamation Plat_08-03-2016.pdf

Comments:

Operator Name: COG OPERATING LLC

Well Name: NELSON FEDERAL COM **Well Number:** 23H

Section 10 - Plans for Surface Reclamation

Type of disturbance: PAD EXPANSION

Recontouring attachment:

Drainage/Erosion control construction: NO SEDIMENTATION OR EROSION CONTROL WILL BE NECESSARY ON THIS LOCATION AS IT IS GENERALLY FLAT WITH LITTLE TO NO SLOPE OR CUT AND FILL.
Drainage/Erosion control reclamation: NO SEDIMENTATION OR EROSION CONTROL WILL BE NECESSARY ON THIS LOCATION AS IT IS GENERALLY FLAT WITH LITTLE TO NO SLOPE OR CUT AND FILL.

Wellpad long term disturbance (acres): 1.99 **Wellpad short term disturbance (acres):** 2.206

Access road long term disturbance (acres): 0 **Access road short term disturbance (acres):** 0

Pipeline long term disturbance (acres): 0 **Pipeline short term disturbance (acres):** 0

Other long term disturbance (acres): 0 **Other short term disturbance (acres):** 0

Total long term disturbance: 1.99 **Total short term disturbance:** 2.206

Reconstruction method: AFTER WELL IS COMPLETED, THE PAD WILL BE DOWNSIZED BY RECLAIMING THE AREAS NOT NEEDED FOR PRODUCTION OPERATIONS. THE PORTIONS OF THE PAD THAT ARE NOT NEEDED FOR PRODUCTION OPERATIONS WILL BE RE-CONTOURED TO ITS ORIGINAL STATE AS MUSH AS POSSIBLE. THE CALICHE THAT IS REMOVED WILL BE REUSED TO EITHER BUILD ANOTHER PAD SITE OR FOR ROAD REPAIRS WITHIN THE LEASE.
Topsoil redistribution: THE STOCKPILED TOPSOIL WILL BE SPREAD OUT ON RECLAIMED AREA AND RESEEDED WITH A BLM APPROVED SEED MIXTURE.
Soil treatment: INTERIM RECLAMATION AS IDENTIFIED DURING ONSITE.

Existing Vegetation at the well pad: GRASSLAND AREA WITH SANDY TOPSOIL. VEGETATION IS MODERATELY SPARSE WITH NATIVE PRAIRIE GRASSES, SOME MESQUITE AND SHINNERY OAK.
Existing Vegetation at the well pad attachment:

Existing Vegetation Community at the road: GRASSLAND AREA WITH SANDY TOPSOIL. VEGETATION IS MODERATELY SPARSE WITH NATIVE PRAIRIE GRASSES, SOME MESQUITE AND SHINNERY OAK.
Existing Vegetation Community at the road attachment:

Existing Vegetation Community at the pipeline: GRASSLAND AREA WITH SANDY TOPSOIL. VEGETATION IS MODERATELY SPARSE WITH NATIVE PRAIRIE GRASSES, SOME MESQUITE AND SHINNERY OAK.
Existing Vegetation Community at the pipeline attachment:

Existing Vegetation Community at other disturbances: GRASSLAND AREA WITH SANDY TOPSOIL. VEGETATION IS MODERATELY SPARSE WITH NATIVE PRAIRIE GRASSES, SOME MESQUITE AND SHINNERY OAK.
Existing Vegetation Community at other disturbances attachment:

Non native seed used? NO

Non native seed description:

Seedling transplant description:

Will seedlings be transplanted for this project? NO

Seedling transplant description attachment:

Will seed be harvested for use in site reclamation? NO

Seed harvest description:

Seed harvest description attachment:

Operator Name: COG OPERATING LLC

Well Name: NELSON FEDERAL COM **Well Number:** 23H

Seed Management

Seed Table

Seed type: **Seed source:**

Seed name:

Source name: **Source address:**

Source phone:

Seed cultivar:

Seed use location:

PLS pounds per acre: **Proposed seeding season:**

Seed Summary

Total pounds/Acre:

Seed Type	Pounds/Acre

Seed reclamation attachment:

Operator Contact/Responsible Official Contact Info

First Name: **Last Name:**

Phone: **Email:**

Seedbed prep:

Seed BMP:

Seed method:

Existing invasive species? NO

Existing invasive species treatment description:

Existing invasive species treatment attachment:

Weed treatment plan description: APPROVED EPA AND BLM REQUIREMENTS AND POLICIES FOR WEED CONTROL METHODS WILL BE FOLLOWED.
Weed treatment plan attachment:

Monitoring plan description: EVALUATION OF GROWTH WILL BE MADE AFTER THE COMPLETION OF ONE FULL GROWING SEASON AFTER SEEDING. -OR- BLM REPRESENTATIVE WILL BE CONTACTED PRIOR TO COMMENCING CONSTRUCTION OF WELL PAD AND ROAD. BLM REPERSENTATIVE WILL ALSO BE CONTACTED PRIOR TO COMMENCING RECLAMATION WORK.
Monitoring plan attachment:

Success standards: 80% COVERAGE BY 2ND GROWING SEASON OF NATIVE SPECIES WITH LESS THAN 5% INVASIVE SPECIES.
Pit closure description: N/A

Pit closure attachment:

Operator Name: COG OPERATING LLC

Well Name: NELSON FEDERAL COM **Well Number:** 23H

Section 11 - Surface Ownership

Disturbance type: EXISTING ACCESS ROAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland: **USFS Ranger District:**

Disturbance type: WELL PAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Operator Name: COG OPERATING LLC

Well Name: NELSON FEDERAL COM **Well Number:** 23H

Other Local Office:

USFS Region:

USFS Forest/Grassland: **USFS Ranger District:**

Disturbance type: PIPELINE

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland: **USFS Ranger District:**

Section 12 - Other Information

Right of Way needed? NO **Use APD as ROW?**

ROW Type(s):

ROW Applications

SUPO Additional Information: 1. A fence will be constructed on the North side of the well pad. 2. There will be necessary electric line construction for this well. Central Valley Electric (CVE) operates an existing primary line nearby and plats have been submitted with this APD showing proposed construction routes along existing disturbance.

Operator Name: COG OPERATING LLC

Well Name: NELSON FEDERAL COM **Well Number:** 23H

Use a previously conducted onsite? YES

Previous Onsite information: ONSITE PERFORMED ON 03/31/2016 BY BOB BALLARD(BLM), CADEN JAMESON(COG), GARY BOX(P.C.)

Other SUPO Attachment

Nelson Federal Com 23H_Flowline Map_11-02-2016.pdf

Nelson Federal Wells Electric Line Reroute_11-11-2016.pdf

PWD

Section 1 - General

Would you like to address long-term produced water disposal? NO

Section 2 - Lined Pits

Would you like to utilize Lined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Lined pit PWD on or off channel:

Lined pit PWD discharge volume (bbl/day):

Lined pit specifications:

Pit liner description:

Pit liner manufacturers information:

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal permit:

Lined pit precipitated solids disposal schedule:

Lined pit precipitated solids disposal schedule attachment:

Lined pit reclamation description:

Lined pit reclamation attachment:

Leak detection system description:

Leak detection system attachment:

Lined pit Monitor description:

Lined pit Monitor attachment:

Lined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Lined pit bond number:

Lined pit bond amount:

Additional bond information attachment:

Section 3 - Unlined Pits

Would you like to utilize Unlined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Unlined pit PWD on or off channel:

Unlined pit PWD discharge volume (bbl/day):

Unlined pit specifications:

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal permit:

Unlined pit precipitated solids disposal schedule:

Unlined pit precipitated solids disposal schedule attachment:

Unlined pit reclamation description:

Unlined pit reclamation attachment:

Unlined pit Monitor description:

Unlined pit Monitor attachment:

Do you propose to put the produced water to beneficial use?

Beneficial use user confirmation:

Estimated depth of the shallowest aquifer (feet):

Does the produced water have an annual average Total Dissolved Solids (TDS) concentration equal to or less than that of the existing water to be protected?

TDS lab results:

Geologic and hydrologic evidence:

State authorization:

Unlined Produced Water Pit Estimated percolation:

Operator Name: COG OPERATING LLC

Well Name: NELSON FEDERAL COM **Well Number:** 23H

Unlined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Unlined pit bond number:

Unlined pit bond amount:

Additional bond information attachment:

Section 4 - Injection

Would you like to utilize Injection PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Injection PWD discharge volume (bbl/day):

Injection well mineral owner:

Injection well type:

Injection well number: **Injection well name:**

Assigned injection well API number? **Injection well API number:**

Injection well new surface disturbance (acres):

Minerals protection information:

Mineral protection attachment:

Underground Injection Control (UIC) Permit?

UIC Permit attachment:

Section 5 - Surface Discharge

Would you like to utilize Surface Discharge PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Surface discharge PWD discharge volume (bbl/day):

Surface Discharge NPDES Permit?

Surface Discharge NPDES Permit attachment:

Surface Discharge site facilities information:

Surface discharge site facilities map:

Section 6 - Other

Would you like to utilize Other PWD options? NO

Operator Name: COG OPERATING LLC

Well Name: NELSON FEDERAL COM **Well Number:** 23H

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Other PWD discharge volume (bbl/day):

Other PWD type description:

Other PWD type attachment:

Have other regulatory requirements been met?

Other regulatory requirements attachment:

Bond Info

Bond Information

Federal/Indian APD: FED

BLM Bond number: NMB000215

BIA Bond number:

Do you have a reclamation bond? NO

Is the reclamation bond a rider under the BLM bond?

Is the reclamation bond BLM or Forest Service?

BLM reclamation bond number:

Forest Service reclamation bond number:

Forest Service reclamation bond attachment:

Reclamation bond number:

Reclamation bond amount:

Reclamation bond rider amount:

Additional reclamation bond information attachment:

Operator Certification

Operator Certification

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

NAME: Robyn Odom **Signed on:** 08/15/2016

Title: Regulatory Analyst

Street Address: 600 W Illinois Ave

Operator Name: COG OPERATING LLC

Well Name: NELSON FEDERAL COM **Well Number:** 23H

City: Midland **State:** TX **Zip:** 79701

Phone: (432)685-4385

Email address: rodom@concho.com

Field Representative

Representative Name: Luke Bedrick

Street Address: 600 W Illinois Ave

City: Midland **State:** TX **Zip:** 79701

Phone: (432)686-3000

Email address: lbedrick@concho.com

Payment Info

Payment

APD Fee Payment Method: PAY.GOV

pay.gov Tracking ID: 25TB212G