Submit 1 Copy To Appropriate District Office
District I – (575) 393-6161
1625 N. French Dr., Hobbs, NM 88240
District II – (575) 748-1283
811 S. First St., Artesia, NM 88210
District III – (505) 334-6178
1000 Rio Brazos Rd., Aztec, NM 87410
District IV – (505) 476-3460
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-103
Revised July 18, 2013

WELL API NO.
30-039-26177

5. Indicate Type of Lease
STATE ☒ FEE ☐

6. State Oil & Gas Lease No.
E-178

SUNDRY NOTICES AND REPORTS ON WELLS
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

7. Lease Name or Unit Agreement Name
State Pat

1. Type of Well: Oil Well ☐ Gas Well ☒ Other

8. Well Number 1A

2. Name of Operator
Merrion Oil & Gas Corporation

9. OGRID Number 14634

3. Address of Operator
610 Reilly Ave Farmington, NM 87401

10. Pool name or Wildcat
Blanco MV/ Blanco PC

4. Well Location
Unit Letter C : 1065 feet from the North line and 1940 feet from the West line
Section 32 Township 30N Range 7W NMPM County Rio Arriba

11. Elevation *(Show whether DR, RKB, RT, GR, etc.)*
6220' GL

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK ☐	PLUG AND ABANDON ☐	REMEDIAL WORK ☐	ALTERING CASING ☐
TEMPORARILY ABANDON ☐	CHANGE PLANS ☐	COMMENCE DRILLING OPNS. ☐	P AND A ☐
PULL OR ALTER CASING ☐	MULTIPLE COMPL ☐	CASING/CEMENT JOB ☐	
DOWNHOLE COMMINGLE ☒			
CLOSED-LOOP SYSTEM ☐			
OTHER: ☐		OTHER: ☐	

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

It is intended to commingle the subject well in the Blanco Pictured Cliffs (Pool Code 72359) and the Blanco Mesaverde (Pool Code 72319). Allocation and methodology is attached. Commingling will not reduce the value of the production.

RCVD OCT 15 '13
OIL CONS. DIV.
DIST. 3

This notice is being provided to you by certified mail as an interest owner. Please notify Merrion Oil and Gas and the Oil Conservation Division within twenty (20) days if you have objections.

DHC 3851 AZ

Prior to production, obtain SD, file C104, + completion report

Spud Date: 11/2/1999

Rig Release Date:

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Philana Thompson TITLE Regulatory Compliance Specialist DATE 10/9/13

Type or print name Philana Thompson E-mail address: pthompson@merrion.bz PHONE: 505-324-5336

For State Use Only

APPROVED BY: [signature] TITLE Deputy Oil & Gas Inspector, District #3 DATE DEC 18 2013

Conditions of Approval (if any):

AV

MERRION OIL & GAS

ADD PC PROCEDURE

Well Information			
Well:	State Pat #1A	Field:	Dufers Point
Location:	1065' fnl & 1940' fwl Sec 32, T30N, R7W Rio Arriba Co., NM	Elevations:	6,220' GL, 6,233' KB
		Depths:	5,700' PBTD
API:	30-039-26177	Date:	06/06/2013
Tubulars:	4-1/2" 11.6# J55 liner 5700' – 2675' & 7" 23# J55 intermediate csg @ 2800' KB See schematic for tbg detail	Engineer:	J. Ryan Davis (505.215.3292) Connie Dinning (505.324.5326)
Perforations (MV)	3819' – 5370' (150 select fire holes)		
Proposed Perforations			
Perforations (PC)	3088' – 3098', 3105' – 3112', 3114' – 3124' 4spf		

Version 1 – CSD Draft for JRD final version

Project Scope

- Add Pictured Cliffs perfs and stimulate, commingle w/ MV

Prior to Move In

- Check wellsite for anchors
- Check wellhead companion flange for correct BOP connection
- Haul in 2 400 bbl frac tank, fill w/ ±600 bbl filtered 2% KCl water

Isolate MV

1. MIRU, do not kill well with fluid. Record pressures.
2. Blow dn csg and tbg
3. ND wellhead and NU BOP
4. TOOH w/ 5220' of 2⅜" tbg (157 jts)
5. PU 3¾" bit, 4 ½" csg scraper on tbg
6. Round trip bit and scraper to ±3300' (4 ½" liner top at 2675')
7. POOH w/ tbg and lay dn bit and scraper
8. PU 4 ½" RBP
9. RIH, set RBP @ ±3200' KB
10. Pull up and test RBP
    a. Holds- dump sand on top of RBP, continue
    b. Doesn't Hold- reset and test until RBP holds.

Perf, Acidize and Frac PC

11. RIH w/ GR and perf gun and tag RBP at ±3200'
12. Perforate PC underbalanced in the following intervals bottom to top w/ 4spf correlated to State Pat 1A Spectral Density Log dated 11-07-99, total 120 holes:

3114' – 3124', 3102' – 3112', 3088' – 3098'

Total = 120 holes

13. Acidize PC perfs w/ 500 gal 15% HCl
14. RD wireline truck
15. Rig up pump truck. Breakdown perfs w/ 2% KCl and establish injection rate. Record ISIP on shut down
16. Rig up frac company
17. Frac PC w/ 100M# 20/40 Brady sand in 70Q 20# linear gel foam, 25 bpm as follows:

10000 gal	Pad
10000 gal	1 ppa
15000 gal	2 ppa
20000 gal	3 ppa
2025 gal	Flush

18. Record ISIP, continue to monitor pressure for 15 minutes
19. Flow back slowly on ⅛" choke for first 4 hrs, change to ¼" choke and flow back over night
20. Record rate and pressures to test PC for 24 hrs to determine allocation parameters

Return Well to Production (RTP)

21. RIH w/ tbg and CO sand to RBP @ ±3200'
22. Unset RBP and TOH
23. RIH on 157 jts and land tbg ~ 5220' KB
24. If well does not flow, swab well in

Merrion Oil & Gas Corporation
Wellbore Schematic

State Pat 1A

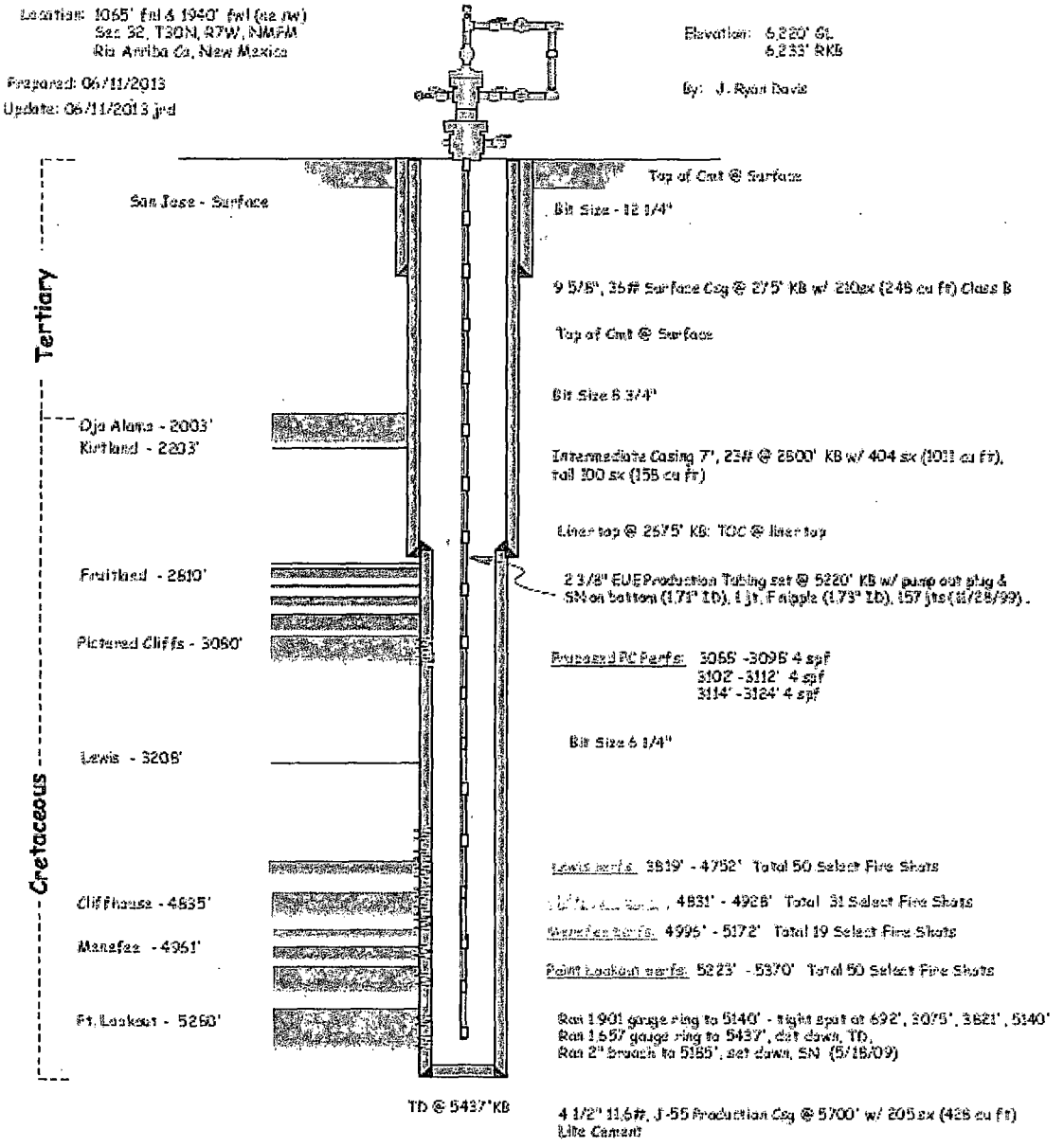
Current Wellbore Configuration

Location: 1065' fnl & 1940' fwl (nc nw)
Sec 32, T30N, R7W, NMPM
Rio Arriba Co, New Mexico

Prepared: 06/11/2013
Update: 06/11/2013 jrd

Elevation: 6,220' GL
6,233' RKB

By: J. Ryan Davis



District I
1625 N. French Drive, Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

Form C-107A
Revised August 1, 2011

APPLICATION TYPE
X Single Well
___ Establish Pre-Approved Pools
EXISTING WELLBORE
X Yes ___ No

RCVD OCT 15'13
OIL CONS. DIV.
DIST. 3

APPLICATION FOR DOWNHOLE COMMINGLING

Merrion Oil & Gas Corp — 610 Reilly Ave, Farmington, NM 87401
Operator — Address

State Pat — 1A — C-32-30N-7W — Rio Arriba
Lease — Well No. — Unit Letter-Section-Township-Range — County

OGRID No. 38100 Property Code 24590 API No. 30-039-26177 Lease Type: ___Federal X State ___Fee

DATA ELEMENT	UPPER ZONE	INTERMEDIATE ZONE	LOWER ZONE
Pool Name	Blanco Pict Cliffs		Blanco Mesaverde
Pool Code	72359		72319
Top and Bottom of Pay Section (Perforated or Open-Hole Interval)	3088' - 3124'		3819' - 5370'
Method of Production (Flowing or Artificial Lift)	Flowing		Flowing
Bottomhole Pressure (Note: Pressure data will not be required if the bottom perforation in the lower zone is within 150% of the depth of the top perforation in the upper zone)	Est. 700 psia		Est. 600 psia
Oil Gravity or Gas BTU (Degree API or Gas BTU)	1163 BTU/MCF (est.)		1202 BTU/MCF
Producing, Shut-In or New Zone	New Zone		Producing
Date and Oil/Gas/Water Rates of Last Production. (Note: For new zones with no production history, applicant shall be required to attach production estimates and supporting data.)	Date: NA New Zone Rates: NA New Zone	Date: Rates:	Date: 4/30/2013 Rates: G=136 MCFD, W=3BWPD, O=0
Fixed Allocation Percentage (Note: If allocation is based upon something other than current or past production, supporting data or explanation will be required.)	Oil % Gas %	Oil % Gas %	Oil % Gas %

ADDITIONAL DATA

Are all working, royalty and overriding royalty interests identical in all commingled zones? Yes ___ No X
If not, have all working, royalty and overriding royalty interest owners been notified by certified mail? Yes X No ___

Are all produced fluids from all commingled zones compatible with each other? Yes X No ___

Will commingling decrease the value of production? Yes ___ No X

If this well is on, or communitized with, state or federal lands, has either the Commissioner of Public Lands or the United States Bureau of Land Management been notified in writing of this application? Yes ___ No ___
Not Communitized

NMOCD Reference Case No. applicable to this well: ___

Attachments:
C-102 for each zone to be commingled showing its spacing unit and acreage dedication.
Production curve for each zone for at least one year. (If not available, attach explanation.)
For zones with no production history, estimated production rates and supporting data.
Data to support allocation method or formula.
Notification list of working, royalty and overriding royalty interests for uncommon interest cases.
Any additional statements, data or documents required to support commingling.

PRE-APPROVED POOLS

If application is to establish Pre-Approved Pools, the following additional information will be required:

List of other orders approving downhole commingling within the proposed Pre-Approved Pools
List of all operators within the proposed Pre-Approved Pools
Proof that all operators within the proposed Pre-Approved Pools were provided notice of this application.
Bottomhole pressure data.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE [signature] TITLE Investment Engineer DATE 7-31-13

TYPE OR PRINT NAME Connie S. Dinning TELEPHONE NO. (505) 324-5326

E-MAIL ADDRESS cdinning@merrion.bz

District I
PO Box 1980, Hobbs, NM 88241-1980
District II
PO Drawer DD, Artesia, NM 88211-0719
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
PO Box 2088, Santa Fe, NM 87504-2088

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

Form C-102
Revised February 21, 1994
Instructions on back
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number	² Pool Code	³ Pool Name
30039-26177	72319	Blanco Mesaverde

⁴ Property Code	⁵ Property Name	⁶ Well Number
24590	State Pat	1A

⁷ OGRID No.	⁸ Operator Name	⁹ Elevation
014634	Merrion Oil & Gas Corporation	6220'

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	32	30 N	7 W		1065'	North	1940'	West	Rio Arriba

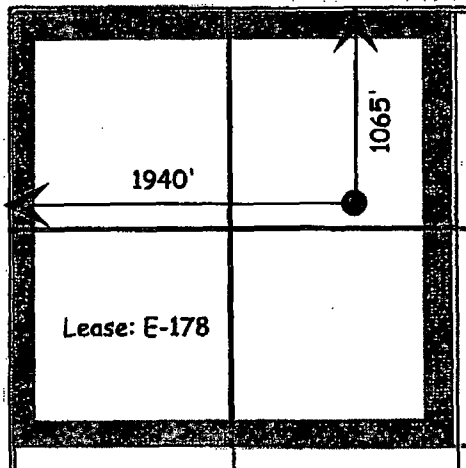
¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

RCVD OCT 15 '13
OIL CONS. DIV.
DIST. 3

¹² Dedicated Acres	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
160	Y		

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



RECEIVED
MAY - 6 1999
OIL CON. DIV.
DIST. 3

¹⁷ OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief

Signature
Steven S. Dunn
Printed Name
Drilling & Production Manager
Title
May 5, 1999
Date

¹⁸ SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

Date of Survey
Signature and Seal of Professional Surveyor
6844
REGISTERED LAND SURVEYOR
STATE OF NEW MEXICO

Certificate Number

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-039-26177	72359	Blanco Pictured Cliffs

[4] Property Code	[5] Property Name	[6] Well Number
24590	State Pat	1A

[7] OGRID No.	[8] Operator Name	[9] Elevation
	Merrion Oil & Gas Corporation	6220'

[10] Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	32	30N	7W		1065	N	1940	W	Rio Arriba

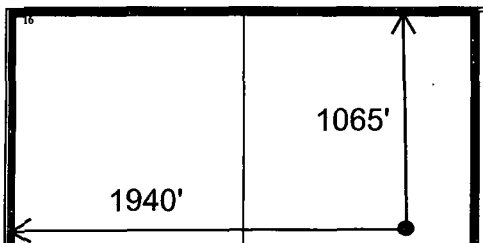
[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
160			

RCVD OCT 15 '13
OIL CONS. DIV.
DIST. 3

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



[17] OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature: CSD Date: 7/24/13

Printed Name: Connie S. Dinning

E-mail Address: cdinning@merrion.bz

[18] SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

Date of Survey

Signature and Seal of Professional Surveyor:

Certificate Number

Additional Information for DHC Application

State Pat 1A

Operated by Merrion Oil and Gas Corporation

Please note: Blanco PC and Blanco MV are pre-approved pools for downhole commingling

Bottom hole pressure:

Pressure History - State Pat 1A Area		
	State Pat 1A MV - psi	Ired 1 PC - psi
Est BHP Initial	620	700
WH Flowing Pressure Initial	150	150
WH Flowing Pressure Current	80	115
1) State Pat 1A MV BHP came from pressure build up data after 900 MMCF		
produced		
2) Ired 1 PC is the direct south offset PC well to the State Pat 1A		
3) Ired 1 PC BHP estimated from early time short term SI pressure		
4) These wells are on compression, and are rarely shut in so BHP		
is difficult to determine		
5) There is no reason to believe any difficulties would arise from a		
variance in BHP between the two formations		

Gas BTU:

Based on the Ired 1 PC well offset to the south, the PC BTU value should be about 1160 BTU/MCF. The latest test for the State Pat 1A MV shows 1202 BTU/MCF.

Anticipated Flow Rates:

The Ired 1 PC well initial gas rate was 430 MCFD with no water production. It began making some water, less than 1 BWPD, about 7 years ago. We anticipate similar results in the State Pat 1A PC. Decline curves are are shown as attachments 1 and 2.

Water Compatibility:

Water samples were collected from the State Pat 1A MV and from the Ired 1 PC and tested for compatibility. There were no significant scale problems noted in the test results, attachment 3.

Notification:

All royalty interest ownership is the same for both zones. There are only 2 working interest owners, MOG and Conoco Phillips (formerly Burlington Resources). Attachment 4, the MOG acreage map shows the ownership for each. The notice of this application is attachment 5.

Allocation Methodology:

MV production is well established, and the current rate = 132 MCFD (see decline curve). After commingling the well and allowing production to stabilize, the PC will be allocated all production exceeding that value, and that ratio will be used to allocate production for future months. Merrion will submit an after the fact sundry summarizing that analysis. If at some point in the future it appears that ratio may no longer be valid, testing will be done to adjust the allocated volumes for each zone.

Commingling should in no way reduce the value of the minerals from this wellbore. It should add value by recovering reserves from the Pictured Cliffs formation as well as the Mesaverde, and by allowing both formations to remain economic to produce for a longer period of time due to shared operating costs in the wellbore.

Attachment 1

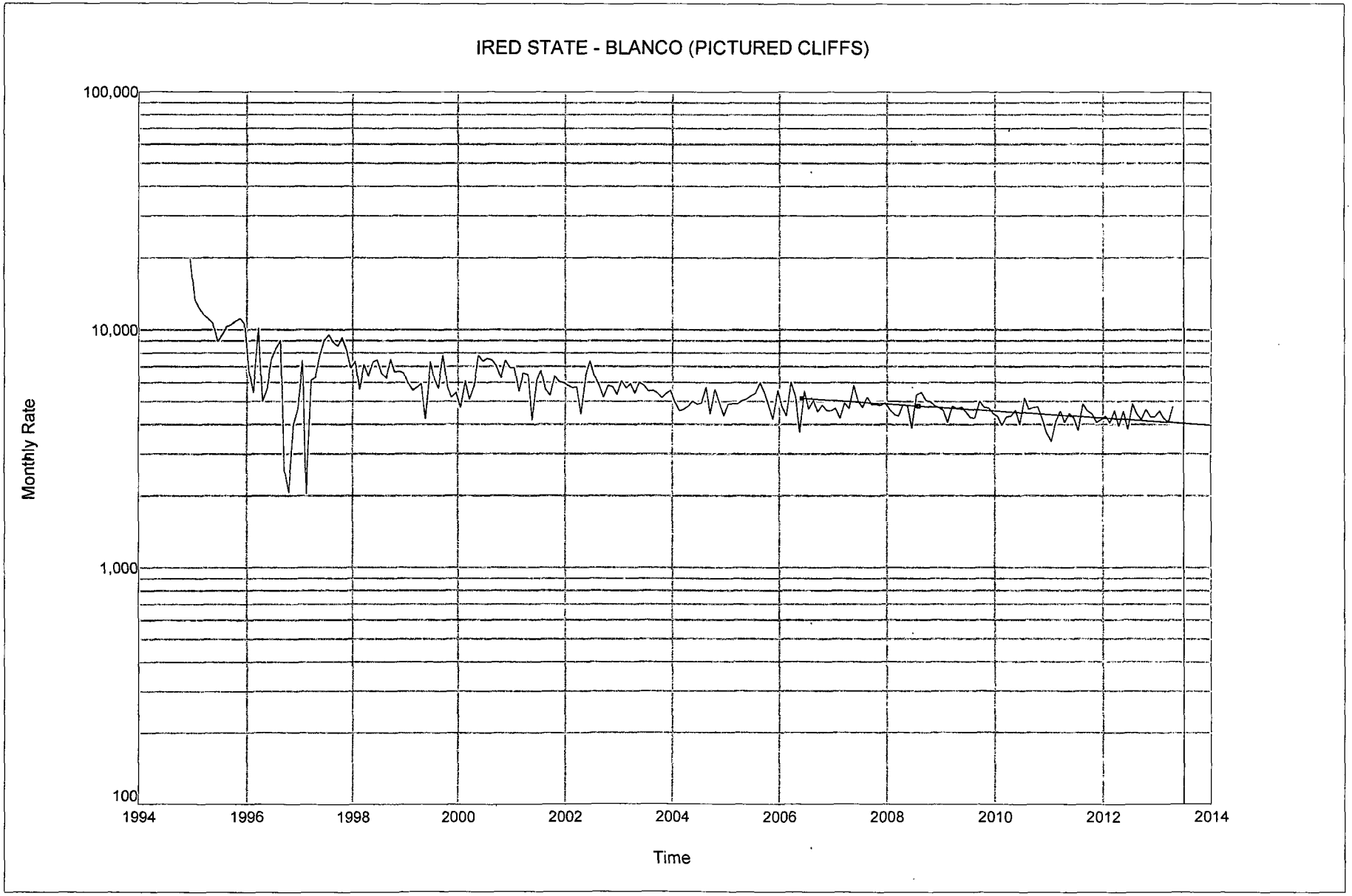
Rate/Time Graph

Project: P:\project_files\0 - 2013 MOG Operated.mdb

Date: 6/18/2013
Time: 9:50 AM

Lease Name: IRED STATE (001)
County, ST: RIO ARRIBA (NM), NM
Location: 790 S 1630 W

Operator: MERRION OIL & GAS CORPORATION
Field Name: BLANCO (PICTURED CLIFFS)



Attachment 2

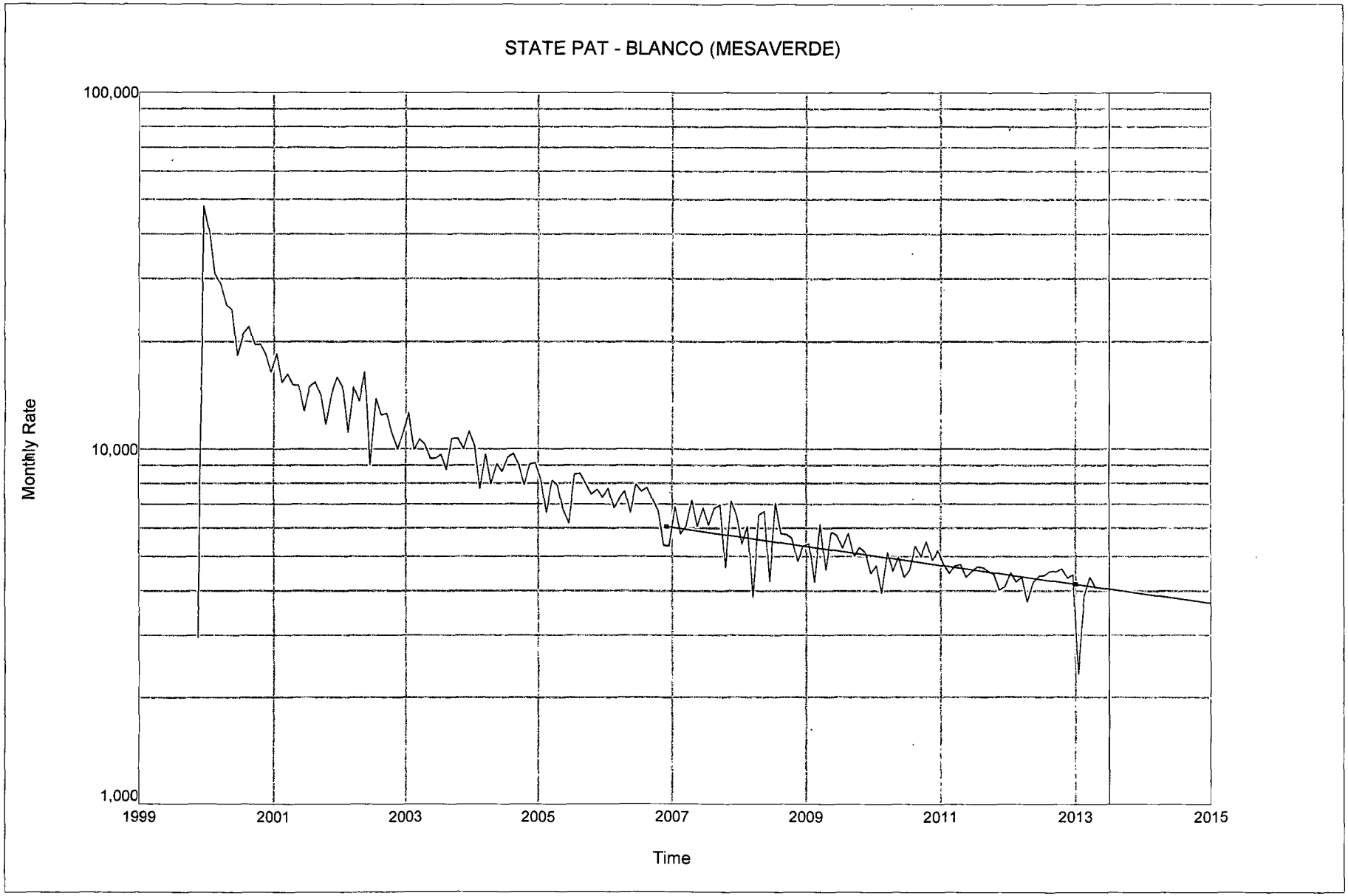
Rate/Time Graph

Project: P:\project_files\0 - 2013 MOG Operated.mdb

Date: 6/18/2013
Time: 9:49 AM

Lease Name: STATE PAT (001A)
County, ST: RIO ARRIBA (NM), NM
Location: 1065 N 1940 W

Operator: MERRION OIL & GAS CORPORATION
Field Name: BLANCO (MESAVERDE)



Attachment 3

JACAM LABORATORIES

DownHole R_X

INJECTION WATER DEPOSITION POTENTIAL INDICATORS

Little scaling tedency for either formation. PC has less scaling than MV. Scaling tendency is lowered when waters are mixed, so the commingling will have either no effect or a positive effect on scaling.

MERRION OIL AND GAS
DOUG GARNER

STATE PAT #1A
SEPARATOR

Report Date: 07-02-2013
Sample #: 4171

Sampled: 06-21-2013
at 0000

SATURATION LEVEL		FREE ION MOMENTARY EXCESS (ppm)	
Calcite ($CaCO_3$)	0.611	Calcite ($CaCO_3$)	-0.215
Aragonite ($CaCO_3$)	0.532	Aragonite ($CaCO_3$)	-0.295
Witherite ($BaCO_3$)	< 0.001	Witherite ($BaCO_3$)	-19.63
Strontianite ($SrCO_3$)	0.224	Strontianite ($SrCO_3$)	-1.53
Calcium oxalate (CaC_2O_4)	0.00	Calcium oxalate (CaC_2O_4)	-0.273
Magnesite ($MgCO_3$)	0.124	Magnesite ($MgCO_3$)	-1.93
Anhydrite ($CaSO_4$)	0.00357	Anhydrite ($CaSO_4$)	-1543
Gypsum ($CaSO_4*2H_2O$)	0.00591	Gypsum ($CaSO_4*2H_2O$)	-1309
Barite ($BaSO_4$)	0.717	Barite ($BaSO_4$)	-0.136
Celestite ($SrSO_4$)	0.0307	Celestite ($SrSO_4$)	-142.51
Fluorite (CaF_2)	0.00	Fluorite (CaF_2)	-33.25
Calcium phosphate	0.00	Calcium phosphate	>-0.001
Hydroxyapatite	0.00	Hydroxyapatite	-508.68
Silica (SiO_2)	0.00	Silica (SiO_2)	-120.15
Brucite ($Mg(OH)_2$)	< 0.001	Brucite ($Mg(OH)_2$)	0.0100
Magnesium silicate	0.00	Magnesium silicate	-218.24
Iron hydroxide ($Fe(OH)_3$)	< 0.001	Iron hydroxide ($Fe(OH)_3$)	< 0.001
Strengite ($FePO_4*2H_2O$)	0.00	Strengite ($FePO_4*2H_2O$)	>-0.001
Siderite ($FeCO_3$)	875.77	Siderite ($FeCO_3$)	0.371
Halite (NaCl)	< 0.001	Halite (NaCl)	-427390
Thenardite ($Na2SO_4$)	< 0.001	Thenardite ($Na2SO_4$)	-109762
Iron sulfide (FeS)	272.36	Iron sulfide (FeS)	1.61

SIMPLE INDICES		BOUND IONS	TOTAL	FREE
Langelier	-0.186	Calcium	122.50	118.96
Ryznar	7.57	Barium	0.204	0.204
Puckorius	7.09	Carbonate	0.552	0.197
Larson-Skold Index	9.31	Phosphate	0.00	0.00
Stiff Davis Index	-0.352	Sulfate	25.00	19.04
Oddo-Tomson	-0.268			

OPERATING CONDITIONS

Temperature (^oF)	77.00
Time(mins)	3.00

JACAM LABORATORIES
205 S. Broadway · P.O. Box 96 · Sterling, KS 67579-0096

JACAM LABORATORIES

DownHole R_X

INJECTION WATER CHEMISTRY INPUT

MERRION OIL AND GAS
DOUG GARNER

STATE PAT #1A
SEPARATOR

Report Date: 07-02-2013
Sample #: 4171

Sampled: 06-21-2013
at 0000

CATIONS		ANIONS	
Calcium (as Ca)	122.50	Chloride (as Cl)	900.00
Magnesium (as Mg)	32.16	Sulfate (as SO_4)	25.00
Barium (as Ba)	0.204	Bromine (as Br)	0.00
Strontium (as Sr)	12.07	Dissolved CO_2 (as CO_2)	19.89
Sodium (as Na)	330.14	Bicarbonate (as HCO_3)	169.18
Potassium (as K)	48.22	Carbonate (as CO_3)	0.553
Lithium (as Li)	3.26	Oxalic acid (as C_2O_4)	0.00
Ammonia (as NH_3)	0.00	Silica (as SiO_2)	0.00
Aluminum (as Al)	0.00	Phosphate(as PO_4)	0.00
Iron (as Fe)	100.90	H_2S (as H_2S)	0.500
Manganese (as Mn)	0.0120	Fluoride (as F)	0.00
Zinc (as Zn)	0.289	Nitrate (as NO_3)	0.00
Lead (as Pb)	0.00	Boron (as B)	0.291

PARAMETERS

pH	7.20
Temperature (^{O}F)	77.00
Density(g/mL)	1.00
Pressure(atm)	1.00
Calculated T.D.S.	1766
Molar Conductivity	2797
Dissolved O2	0.00

JACAM LABORATORIES
205 S. Broadway · P.O. Box 96 · Sterling, KS 67579-0096

JACAM LABORATORIES

DownHole R_x

FORMATION WATER CHEMISTRY INPUT

MERRION OIL AND GAS
DOUG GARNER

IRED STATE COM #1
SEPARATOR

Report Date: 07-02-2013
Sample #: 4171

Sampled: 06-21-2013
at 0000

CATIONS		ANIONS	
Calcium (as Ca)	8.30	Chloride (as Cl)	700.00
Magnesium (as Mg)	3.29	Sulfate (as SO_4)	0.00
Barium (as Ba)	0.204	Bromine (as Br)	0.00
Strontium (as Sr)	1.51	Dissolved CO_2 (as CO_2)	5.97
Sodium (as Na)	409.34	Bicarbonate (as HCO_3)	24.05
Potassium (as K)	24.89	Carbonate (as CO_3)	0.0135
Lithium (as Li)	0.352	Oxalic acid (as C_2O_4)	0.00
Ammonia (as NH_3)	0.00	Silica (as SiO_2)	0.00
Aluminum (as Al)	0.00	Phosphate(as PO_4)	0.00
Iron (as Fe)	25.55	H_2S (as H_2S)	0.500
Manganese (as Mn)	0.0120	Fluoride (as F)	0.00
Zinc (as Zn)	0.0820	Nitrate (as NO_3)	0.00
Lead (as Pb)	0.00	Boron (as B)	0.291

PARAMETERS

pH	6.83
Temperature (^oF)	70.00
Density(g/mL)	1.00
Pressure(atm)	1.00
Calculated T.D.S.	1206
Molar Conductivity	2186
Dissolved O2	0.00

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DownHole R_x

FORMATION WATER DEPOSITION POTENTIAL INDICATORS

MERRION OIL AND GAS
DOUG GARNER

IRED STATE COM #1
SEPARATOR

Report Date: 07-02-2013
Sample #: 4171

Sampled: 06-21-2013
at 0000

SATURATION LEVEL		FREE ION MOMENTARY EXCESS (ppm)	
Calcite ($CaCO_3$)	0.00260	Calcite ($CaCO_3$)	-0.215
Aragonite ($CaCO_3$)	0.00228	Aragonite ($CaCO_3$)	-0.295
Witherite ($BaCO_3$)	< 0.001	Witherite ($BaCO_3$)	-19.63
Strontianite ($SrCO_3$)	0.00184	Strontianite ($SrCO_3$)	-1.53
Calcium oxalate (CaC_2O_4)	0.00	Calcium oxalate (CaC_2O_4)	-0.273
Magnesite ($MgCO_3$)	< 0.001	Magnesite ($MgCO_3$)	-1.93
Anhydrite ($CaSO_4$)	0.00	Anhydrite ($CaSO_4$)	-1543
Gypsum ($CaSO_4*2H_2O$)	0.00	Gypsum ($CaSO_4*2H_2O$)	-1309
Barite ($BaSO_4$)	0.00	Barite ($BaSO_4$)	-0.136
Celestite ($SrSO_4$)	0.00	Celestite ($SrSO_4$)	-142.51
Fluorite (CaF_2)	0.00	Fluorite (CaF_2)	-33.25
Calcium phosphate	0.00	Calcium phosphate	>-0.001
Hydroxyapatite	0.00	Hydroxyapatite	-508.68
Silica (SiO_2)	0.00	Silica (SiO_2)	-120.15
Brucite ($Mg(OH)_2$)	< 0.001	Brucite ($Mg(OH)_2$)	0.0100
Magnesium silicate	0.00	Magnesium silicate	-218.24
Iron hydroxide ($Fe(OH)_3$)	466.80	Iron hydroxide ($Fe(OH)_3$)	< 0.001
Strengite ($FePO_4*2H_2O$)	0.00	Strengite ($FePO_4*2H_2O$)	>-0.001
Siderite ($FeCO_3$)	12.98	Siderite ($FeCO_3$)	0.371
Halite (NaCl)	< 0.001	Halite (NaCl)	-427390
Thenardite ($Na2SO_4$)	0.00	Thenardite ($Na2SO_4$)	-109762
Iron sulfide (FeS)	25.88	Iron sulfide (FeS)	1.61

SIMPLE INDICES		BOUND IONS	TOTAL	FREE
Langelier	-2.94	Calcium	8.30	8.28
Ryznar	12.70	Barium	0.204	0.204
Puckorius	13.10	Carbonate	0.0133	0.0102
Larson-Skold Index	50.71	Phosphate	0.00	0.00
Stiff Davis Index	-2.82	Sulfate	0.00	0.00
Oddo-Tomson	-2.64			

OPERATING CONDITIONS

Temperature (^oF)	77.00
Time(mins)	3.00

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MIXED WATER

MERRION OIL AND GAS	DOUG GARNER	MERRION OIL AND GAS	DOUG GARNER
STATE PAT #1A	SEPARATOR	IRED STATE COM #1	SEPARATOR
Report Date 07-15-2013	Sample # 4171	Report Date 07-02-2013	Sample # 4171
Sample Date 06-26-2013	at 0000	Sample Date 06-21-2013	at 0000

	% INJECTION WATER						
SATURATION LEVEL	**0.00**	**16.67**	**33.33**	**50.00**	**66.67**	**83.33**	**100.00**
Calcite	0.00260	0.0259	0.0783	0.162	0.276	0.422	0.598
Aragonite	0.00228	0.0226	0.0684	0.141	0.241	0.368	0.521
Witherite	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Strontianite	0.00184	0.0119	0.0325	0.0638	0.106	0.158	0.219
Calcium oxalate	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Magnesite	< 0.001	0.00554	0.0160	0.0325	0.0554	0.0848	0.121
Anhydrite	0.00	< 0.001	< 0.001	0.00116	0.00186	0.00267	0.00357
Gypsum	0.00	< 0.001	0.00100	0.00195	0.00311	0.00444	0.00591
Barite	0.00	0.194	0.348	0.471	0.571	0.651	0.717
Celestite	0.00	0.00196	0.00557	0.0105	0.0164	0.0232	0.0307
Calcium phosphate	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hydroxyapatite	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fluorite	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Silica	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Brucite	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Mag. silicate	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ferric hydroxide	466.80	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Siderite	12.97	59.28	142.23	262.96	421.76	619.63	856.52
Strengite	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Halite	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Thenardite	0.00	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Iron sulfide	93.48	248.44	408.09	560.70	702.98	834.44	955.44
SIMPLE INDICES							
Langelier	-2.94	-1.61	-1.10	-0.778	-0.539	-0.351	-0.195
Ryznar	12.70	10.22	9.29	8.69	8.24	7.88	7.58
Oddo-Tomson	-2.64	-1.65	-1.16	-0.848	-0.615	-0.430	-0.278
Stiff-Davis	-2.82	-1.80	-1.30	-0.973	-0.725	-0.527	-0.362
Puckorius	13.11	10.36	9.24	8.50	7.93	7.48	7.09
Larson-Skold	50.71	26.38	18.39	14.41	12.03	10.44	9.31

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MIXED WATER
DEPOSITION POTENTIAL INDICATORS

MERRION OIL AND GAS	DOUG GARNER	MERRION OIL AND GAS	DOUG GARNER
STATE PAT #1A	SEPARATOR	IRED STATE COM #1	SEPARATOR
Report Date 07-15-2013	Sample # 4171	Report Date 07-02-2013	Sample # 4171
Sample Date 06-26-2013	at 0000	Sample Date 06-21-2013	at 0000

		% INJECTION WATER						
TOTAL VS FREE IONS		**0.00**	**16.67**	**33.33**	**50.00**	**66.67**	**83.33**	**100.00**
Ca	Total	8.30	27.33	46.37	65.40	84.43	103.47	122.50
	Free	8.28	27.11	45.77	64.27	82.63	100.86	118.97
Ba	Total	0.204	0.204	0.204	0.204	0.204	0.204	0.204
	Free	0.204	0.204	0.204	0.204	0.204	0.204	0.204
CO_3	Total	0.0133	0.0511	0.111	0.190	0.288	0.405	0.539
	Free	0.0102	0.0319	0.0591	0.0895	0.122	0.156	0.192
PO_4	Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Free	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SO_4	Total	0.00	4.17	8.33	12.50	16.67	20.83	25.00
	Free	0.00	3.74	7.19	10.41	13.44	16.31	19.04
FREE ION MOMENTARY EXCESS (ppm)								
Calcite		-5.18	-1.95	-1.15	-0.769	-0.531	-0.357	-0.215
Aragonite		-5.79	-2.22	-1.33	-0.901	-0.638	-0.447	-0.295
Witherite		-17.41	-17.85	-18.25	-18.63	-18.98	-19.31	-19.63
Strontianite		-4.73	-3.81	-3.12	-2.59	-2.17	-1.83	-1.53
Calcium oxalate		-2.80	-0.978	-0.610	-0.453	-0.367	-0.312	-0.273
Magnesite		-10.20	-6.51	-4.62	-3.53	-2.82	-2.31	-1.93
Anhydrite		-1557	-1558	-1557	-1555	-1552	-1548	-1543
Gypsum		-1344	-1339	-1334	-1328	-1322	-1316	-1309
Barite		-3.71	-1.22	-0.615	-0.378	-0.256	-0.183	-0.136
Celestite		-152.80	-151.00	-149.27	-147.57	-145.88	-144.20	-142.51
Calcium phosphate		-0.0017	>-0.001	>-0.001	>-0.001	>-0.001	>-0.001	>-0.001
Hydroxyapatite		-448.93	-459.68	-470.02	-480.05	-489.81	-499.34	-508.68
Fluorite		-56.70	-48.99	-43.75	-39.99	-37.18	-35.00	-33.25
Silica		-108.92	-110.73	-112.57	-114.43	-116.31	-118.22	-120.15
Brucite		0.00313	0.00502	0.00636	0.00744	0.00838	0.00923	0.0100
Mag. silicate		-200.80	-203.90	-206.91	-209.83	-212.69	-215.49	-218.24
Ferric hydroxide		< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Siderite		0.0181	0.0606	0.113	0.172	0.235	0.302	0.371
Strengite		>-0.001	>-0.001	>-0.001	>-0.001	>-0.001	>-0.001	>-0.001
Halite		-409303	-412668	-415859	-418909	-421837	-424660	-427390
Thenardite		-103386	-104619	-105769	-106840	-107863	-108835	-109762
Iron sulfide		1.08	1.34	1.46	1.52	1.56	1.59	1.61

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WATER CHEMISTRY AT VARIOUS RATIOS

MERRION OIL AND GAS	DOUG GARNER	MERRION OIL AND GAS	DOUG GARNER
STATE PAT #1A	SEPARATOR	IRED STATE COM #1	SEPARATOR
Report Date 07-15-2013	Sample # 4171	Report Date 07-02-2013	Sample # 4171
Sample Date 06-26-2013	at 0000	Sample Date 06-21-2013	at 0000

	% INJECTION WATER						
CATIONS	**0.00**	**16.67**	**33.33**	**50.00**	**66.67**	**83.33**	**100.00**
Calcium(as Ca)	8.30	27.33	46.37	65.40	84.43	103.47	122.50
Magnesium(as Mg)	3.29	8.10	12.91	17.73	22.54	27.35	32.16
Barium(as Ba)	0.204	0.204	0.204	0.204	0.204	0.204	0.204
Strontium(as Sr)	1.51	3.27	5.03	6.79	8.55	10.31	12.07
Sodium(as Na)	409.34	396.14	382.94	369.74	356.54	343.34	330.14
Potassium(as K)	24.89	28.78	32.67	36.56	40.44	44.33	48.22
Lithium(as Li)	0.352	0.837	1.32	1.81	2.29	2.78	3.26
Iron(as Fe)	25.55	38.11	50.67	63.22	75.78	88.34	100.90
Ammonia(as NH_3)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Aluminum(as Al)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manganese (as Mn)	0.0120	0.0120	0.0120	0.0120	0.0120	0.0120	0.0120
Zinc (as Zn)	0.0820	0.116	0.151	0.185	0.220	0.255	0.289
Lead (as Pb)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ANIONS							
Chloride(as Cl)	700.00	733.33	766.67	800.00	833.33	866.67	900.00
Sulfate(as SO_4)	0.00	4.17	8.33	12.50	16.67	20.83	25.00
Bromine (as Br)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dissolved CO_2	6.8	9.2	11.5	13.8	15.9	17.9	19.9
Bicarbonate	23.7	47.9	72.1	96.3	120.4	144.6	168.7
Carbonate	0.0	0.1	0.1	0.2	0.3	0.4	0.5
Silica(as SiO_2)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phosphate(as PO_4)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
H_2S(as H_2S)	0.500	0.500	0.500	0.500	0.500	0.500	0.500
Fluoride(as F)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nitrate(as NO_3)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Boron(as B)	0.291	0.291	0.291	0.291	0.291	0.291	0.291
PARAMETERS							
pH	6.83	7.01	7.09	7.13	7.16	7.18	7.19
Temperature(^{0}F)	70.00	71.17	72.33	73.50	74.67	75.83	77.00
Pressure(atm)	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Density(g/mL)	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Calculated TDS	1207	1300	1394	1487	1580	1674	1767
CORROSION RATE (mpy)							
CO_2 - H_2S Rate	0.01	0.01	0.01	0.01	0.01	0.02	0.02

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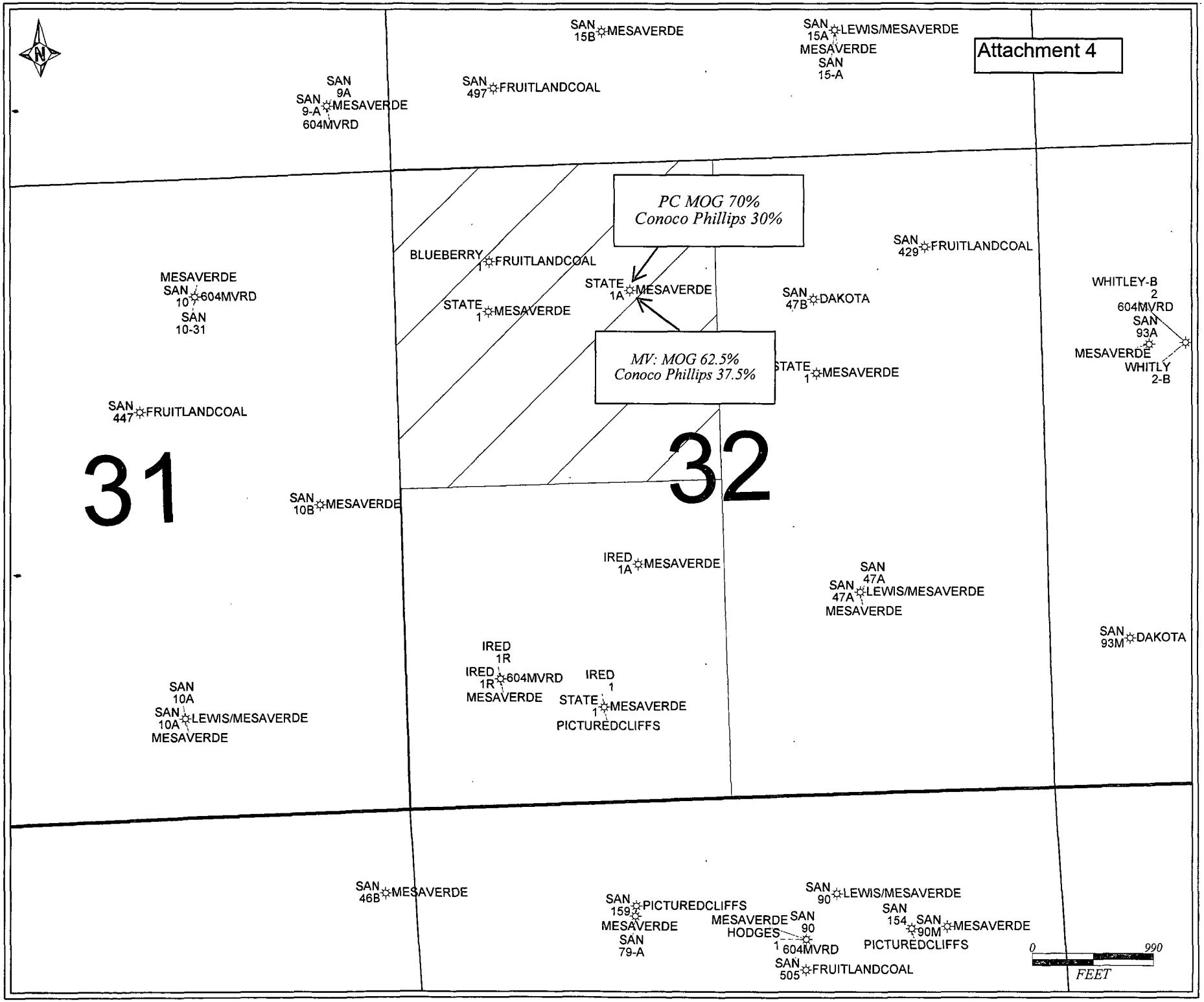
Attachment 4
SAN 15B MESAVERDE
SAN 15A LEWIS/MESAVERDE
MESAVERDE
SAN 15-A
SAN 9A
SAN 9-A MESAVERDE
604MVRD
SAN 497 FRUITLANDCOAL
PC MOG 70%
Conoco Phillips 30%
BLUEBERRY 1 FRUITLANDCOAL
SAN 429 FRUITLANDCOAL
MESAVERDE
SAN 10 604MVRD
SAN 10-31
STATE 1A MESAVERDE
STATE 1 MESAVERDE
SAN 47B DAKOTA
WHITLEY-B 2
604MVRD
SAN 93A
MESAVERDE
WHITLY 2-B
MV: MOG 62.5%
Conoco Phillips 37.5%
STATE 1 MESAVERDE
SAN 447 FRUITLANDCOAL
31
32
SAN 10B MESAVERDE
IRED 1A MESAVERDE
SAN 47A
SAN 47A LEWIS/MESAVERDE
MESAVERDE
SAN 93M DAKOTA
IRED 1R
IRED 1R 604MVRD
MESAVERDE
IRED 1
STATE 1 MESAVERDE
PICTUREDCLIFFS
SAN 10A
SAN 10A LEWIS/MESAVERDE
MESAVERDE
SAN 46B MESAVERDE
SAN 159 PICTUREDCLIFFS
MESAVERDE
SAN 79-A
MESAVERDE
HODGES
SAN 90
1 604MVRD
SAN 505 FRUITLANDCOAL
SAN 90 LEWIS/MESAVERDE
SAN 154
SAN 90M MESAVERDE
PICTUREDCLIFFS
0
990
FEET

Attachment 5

MERRION
OIL & GAS

RCVD OCT 15 '13
OIL CONS. DIV.
DIST. 3

Conoco Phillips
3401 East 30th Street
Farmington, NM 87401
Attn: Ben Malone

Dear Mr. Malone:

Merrion Oil and Gas (MOG) proposes to add the Pictured Cliffs formation to the State Pat 1A wellbore. This well is currently a Mesaverde producer in which you hold a working interest. MOG further proposes to downhole commingle production from the MV and PC. Persuant to NMOCD rule 19.15.12.11.C.1b, this letter is to notify you that the attached DHC application is being filed with the NMOCD.

According to our records, working interest in the MV is 62.5% to MOG and 37.5% to Conoco Phillips. WI in the PC is 70% MOG and 30% to Conoco Phillips. PC NRI's for both WI owners are reduced proportionately to MV NRI's.

MOG conservatively estimates that the PC will add 300 MMCF to the total well reserves. You will receive an AFE for the project with full cost and upside details under separate cover.

Should you require additional information, or if you have questions about any of the information presented in the DHC application, please contact me by email at cdinning@merrion.bz or phone at 505.324.5326.

Sincerely,

Connie S. Dinning
Investment Engineer

Enclosures

Cc: NMOCD