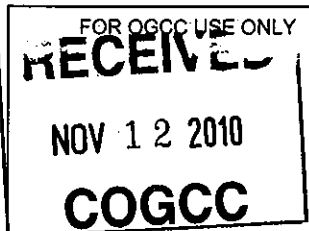




State of Colorado

Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203 (303)894-2100 Fax:(303)894-2109



Complete the
Attachment Checklist

Oper OGCC

UNDERGROUND INJECTION FORMATION PERMIT APPLICATION

1. Submit original and one copy of this form.
2. If data on this form is estimated, indicate as such.
3. Attachments – see checklist and explanation of attachments.
4. Aquifer exemption is required for all injection formations with water quality <10,000 TDS (Rule 322B). Immediately contact the Commission for further requirements if the total dissolved solids (TDS) as determined by water analysis for the injection zone is less than 10,000 ppm.
5. Attach a copy of the certified receipt to each notice to surface and mineral owner(s) or submit a sample copy of the notice and an affidavit of mailing or delivery with names and addresses of those notified. Each person notified shall be specified as either a surface or mineral owner as defined by C.R.S. 34-60-103(7).

Form 31 Original & 1 Copy	✓
Analysis to Injection Zone Water	
Analysis of Injection Water	
Proposed Injection Program	
Resistivity or Induction Log	
Cement Bond Log	
Surface or Salt Water Displ Agrmt	✓
Notice to Surface/Mineral Owners	✓
Remedial Correction Plan for Wells	✓
Map Oil/Water Wells w/in 1/4 Mile	✓
List Oil/Gas Wells w/in 1/2 Mile	✓
Map Surface Owners w/in 1/4 Mile	✓
List Surface Owners w/in 1/4 Mile	✓
Map Mineral Owners w/in 1/4 Mile	✓
List Mineral Owners w/in 1/4 Mile	✓
Surface Facility Diagram	✓
Wellbore Diagram	✓
If Commercial Facility, Description of Ops & Area Served	
Unit Area Plat	

Project Name: VPR C-204 WDW Project Location: SESE Sec 1, T35S, R67W

Project Type: ☐ Enhanced Recovery ☒ Disposal ☐ Simultaneous Disposal

Single or Multiple Well Facility? ☒ Single ☐ Multiple

IF UNIT OPERATIONS, ATTACH PLAT SHOWING UNIT AREA

County: Las Animas Field Name and Number: Lurgatoire River 70810

OGCC Operator Number: 100872

Name of Operator: El Paso E&P Company, L.P.

Address: 1001 Louisiana, Room 9.028TP

City: Houston State: TX Zip: 77002

Contact Name and Telephone:

Maria S. Gomez

No: 713-420-5038

Fax: 713-445-8538

Injection Fluid Type: ☒ Produced Water ☐ Natural Gas ☐ CO₂ ☐ Drilling Fluids

☐ Exempt Gas Plant Waste ☐ Used Workover Fluids ☐ Other Fluids (describe):

Commercial Facility? ☐ Yes ☒ No

If Yes, describe area of operation and types of fluids to be injected at this facility:

PROPOSED INJECTION FORMATIONS

FORMATION A (Name): Dakota Porosity: 7-10%
Formation TDS: 1500-3000 Frac Gradient: 0.65 psi/ft Permeability: 0.1 - 0.8 md

Proposed Stimulation Program: ☒ Acid ☐ Frac Treatment ☐ None

FORMATION B (Name): Entrada Porosity: 2-5%
Formation TDS: 2500 - 3000 Frac Gradient: 0.65 psi/ft Permeability: 0.5 - 1.0 md

Proposed Stimulation Program: ☒ Acid ☐ Frac Treatment ☐ None

Anticipated Project Operating Conditions

Under normal operating conditions, estimated fluid injection rates and pressures:

FOR WATER: A minimum of 10000 bbls/day @ 0 psi to a maximum of 25000 bbls/day @ 1200 psi.

FOR GAS: A minimum of _____ mcf/day @ _____ psi to a maximum of _____ bbls/day @ _____ psi.

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct, and complete.

Print Name: Maria S. Gomez

Signed: Maria S. Gomez

Title: Sr. Regulatory Analyst

Date: 11/09/10

OGCC Approved: Denise M. Dwyer

Title: UIC Supervisor

Date: FEB 24 2012

Order No: _____

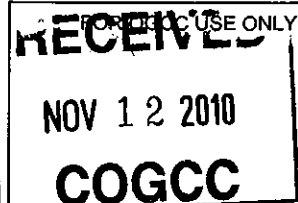
UIC FACILITY NO: 159353

CONDITIONS OF APPROVAL, IF ANY:

State of Colorado

Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203 (303)894-2100 Fax:(303)894-2109



UNDERGROUND INJECTION FORMATION PERMIT APPLICATION

1. Submit original and one copy of this form.
2. If data on this form is estimated, indicate as such.
3. Attachments – see checklist and explanation of attachments.
4. Aquifer exemption is required for all injection formations with water quality <10,000 TDS (Rule 322B). Immediately contact the Commission for further requirements if the total dissolved solids (TDS) as determined by water analysis for the injection zone is less than 10,000 ppm.
5. Attach a copy of the certified receipt to each notice to surface and mineral owner(s) or submit a sample copy of the notice and an affidavit of mailing or delivery with names and addresses of those notified. Each person notified shall be specified as either a surface or mineral owner as defined by C.R.S. 34-60-103(7).

Complete the Attachment Checklist

Oper OGCC

Project Name: VPR C-204 WDW Project Location: Sec 1, T35S, R67WProject Type: ☐ Enhanced Recovery ☒ Disposal ☐ Simultaneous DisposalSingle or Multiple Well Facility? ☒ Single ☐ Multiple

IF UNIT OPERATIONS, ATTACH PLAT SHOWING UNIT AREA

County: Las Animas Field Name and Number: Purgatoire River 70830OGCC Operator Number: 100872Name of Operator: El Paso E&P Company, L.P.Address: 1001 Louisiana, Room 9.028TPCity: Houston State: TX Zip: 77002

Contact Name and Telephone:

Maria S. Gomez

No: 713-420-5038Fax: 713-445-8538

Form 31 Original & 1 Copy	<input checked="" type="checkbox"/>
Analysis of Injection Zone Water	<input type="checkbox"/>
Analysis of Injection Water	<input type="checkbox"/>
Proposed Injection Program	<input type="checkbox"/>
Resistivity or Induction Log	<input type="checkbox"/>
Cement Bond Log	<input type="checkbox"/>
Surface or Salt Water Displ Agrmt	<input checked="" type="checkbox"/>
Notice to Surface/Mineral Owners	<input checked="" type="checkbox"/>
Remedial Correction Plan for Wells	<input checked="" type="checkbox"/>
Map Oil/Water Wells w/in 1/4 Mile	<input checked="" type="checkbox"/>
List Oil/Gas Wells w/in 1/2 Mile	<input checked="" type="checkbox"/>
Map Surface Owners w/in 1/4 Mile	<input checked="" type="checkbox"/>
List Surface Owners w/in 1/4 Mile	<input checked="" type="checkbox"/>
Map Mineral Owners w/in 1/4 Mile	<input checked="" type="checkbox"/>
List Mineral Owners w/in 1/4 Mile	<input checked="" type="checkbox"/>
Surface Facility Diagram	<input checked="" type="checkbox"/>
Wellbore Diagram	<input checked="" type="checkbox"/>
If Commercial Facility, Description of Ops & Area Served	<input type="checkbox"/>
Unit Area Plat	<input type="checkbox"/>

Injection Fluid Type: ☒ Produced Water ☐ Natural Gas ☐ CO₂ ☐ Drilling Fluids
☐ Exempt Gas Plant Waste ☐ Used Workover Fluids ☐ Other Fluids (describe): _____

Commercial Facility? ☐ Yes ☒ No

If Yes, describe area of operation and types of fluids to be injected at this facility:

PROPOSED INJECTION FORMATIONS

FORMATION A (Name): GlorietaFormation TDS: 1000-3000 Frac Gradient: 0.65 Porosity: 2-6% Permeability: 0.2 - 0.6 mdProposed Stimulation Program: ☒ Acid ☐ Frac Treatment ☐ None

FORMATION B (Name): _____ Porosity: _____

Formation TDS: _____ Frac Gradient: _____ psi/ft Permeability: _____

Proposed Stimulation Program: ☐ Acid ☐ Frac Treatment ☐ None

Anticipated Project Operating Conditions

Under normal operating conditions, estimated fluid injection rates and pressures:

FOR WATER: A minimum of 10000 bbls/day @ 0 psi to a maximum of 25000 bbls/day @ 1200 psi.

FOR GAS: A minimum of _____ mcf/day @ _____ psi to a maximum of _____ bbls/day @ _____ psi.

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct, and complete.

Print Name: Maria S. GomezSigned: Maria S. GomezTitle: Regulatory AnalystDate: 11/09/10OGCC Approved: Denise M. OryskowTitle: UIC SupervisorDate: FEB 24 2012

Order No: _____

UIC FACILITY NO: 159353

CONDITIONS OF APPROVAL, IF ANY:

EL PASO E&P COMPANY, L.P.
VPR C-204 WDW
SESE SECTION 1 T35S R67W
LAS ANIMAS COUNTY, COLORADO
SINGLE-WELL, NON-COMMERCIAL UNDERGROUND INJECTION PERMIT CHECKLIST

- 1) Receipt & approval dates for Form 2 – Application for Permit to Drill (325.a.) OK
- 2) Receipt & approval dates for Form 21 – Mechanical Integrity Test (325.e.) OK - 1240 psi
- i) Test used to check for vertical fluid movement in channels adjacent to well bore (326.a.(2)) _____
- 3) Receipt & approval dates for Form 26 – Source of Prod. Water for Disposal (325.c.(5)) OK
- 4) Receipt & approval dates for Form 31 – Underground Inj. Form. Permit Ap. (325.a.) OK
- 5) Receipt & approval dates for Form 33 – Injection Well Permit Application (325.a.)M OK
- 6) Hearing date, if approval withheld (325.b.) _____
- 7) Name, description, and depth of injection formation (325.c.(1)) Sakota, Entrada, Monetta
- 8) Underground sources of drinking water (325.c.(1)) OK
- 9) Hydrologic information request to Division of Water Resources OK
- 10) Fracture gradient of the injection formation (325.c.(1)) 0.65
- 11) Water analysis of injection formation, TDS (mg/l) (325.c.(1)) 13 237 - 22318
- 12) If TDS < 10,000 mg/l, is an aquifer exemption attached? (324B.) N/A
- i) Was an aquifer exemption public notice published? (324B.b.) N/A
- ii) Was a public hearing held? (324B.c.) N/A
- iii) Was the aquifer exemption approved? (324B.d.) N/A
- iv) Notice of approved aquifer exemption to Water Quality Control Commission N/A
- 13) Base plat (¼-mile radius) with the following (325.c.(2)): OK
- i) Location of disposal well OK
- ii) location of all oil & gas wells OK
- iii) location of water wells with depths OK
- iv) name and address of surface owners only one
- v) name and address of mineral owners El Paso
- 14) Base plat (½-mile radius) with oil & gas wells producing from the disp. zone (325.c.(2)) only El Paso
- 15) Base plat showing all surface and mineral owners of record if the well is part of a field-wide system (325.c.(2)) N/A
- 16) Remedial action plans for wells within ¼-mile of the disposal well (325.c.(2)) only well is on 1995' deep
- 17) A resistivity log, description of stratigraphy and/or testing data (325.c.(3)) _____
- 18) A wellbore schematic showing casing, cement, bridge plugs, packers, perforations and any other relevant information (325.c.(4)) OK
- 19) A surface facilities diagram showing pipelines, tanks and any other relevant information for the injection system (325.c.(4)) OK

EL PASO E&P COMPANY, L.P.
VPR C-204 WDW
SESE SECTION 1 T35S R67W
LAS ANIMAS COUNTY, COLORADO
SINGLE-WELL, NON-COMMERCIAL UNDERGROUND INJECTION PERMIT CHECKLIST

- 20) Any proposed stimulation program (325.c.(6)) acid
- 21) Estimated daily minimum and maximum injection volume (325.c.(7)) 10000-25000 bbl
- 22) Maximum injection pressure, calculated by COGCC (325.c.(7)) 1173 psi
- 23) Names and addresses of persons notified and copies of the notices (325.i) NA
- i) Surface and mineral owners within ¼-mile El Paso owns minerals with Surface
- ii) Owners and operators of wells producing in the inj. zone within ½-mile Owner
- iii) Owners of cornering or contiguous units producing in the inj. zone, if greater than ½-mile _____
- 24) Were the notices delivered by certified mail or personal delivery? (325.k.) N/A
- 25) Do the notices include instructions on public hearing requests? (325.l.) N/A
- 26) Publish public notice with brief description of disposal application, including legal location,
 proposed injection zone, depth of injection and other relevant information (325.n.) 8-1-11 The Chronicle News
- 27) Any written requests for public hearing as a result of the notices? (325.m. or 325.n.) no
- 28) Was a surface owner agreement submitted? OK
- 29) Was all information received by the 6-month deadline? (325.o.) _____
- 30) Was a 90-day extension granted? (325.o.) _____

maximum volume:

$$47 \text{ ft} \times 0.08 = 3.76$$

$$32 \text{ ft} \times 0.08 = 2.56$$

$$103 \text{ ft} \times 0.10 = 10.3$$

$$103 \text{ ft} \times 0.04 = 4.12$$

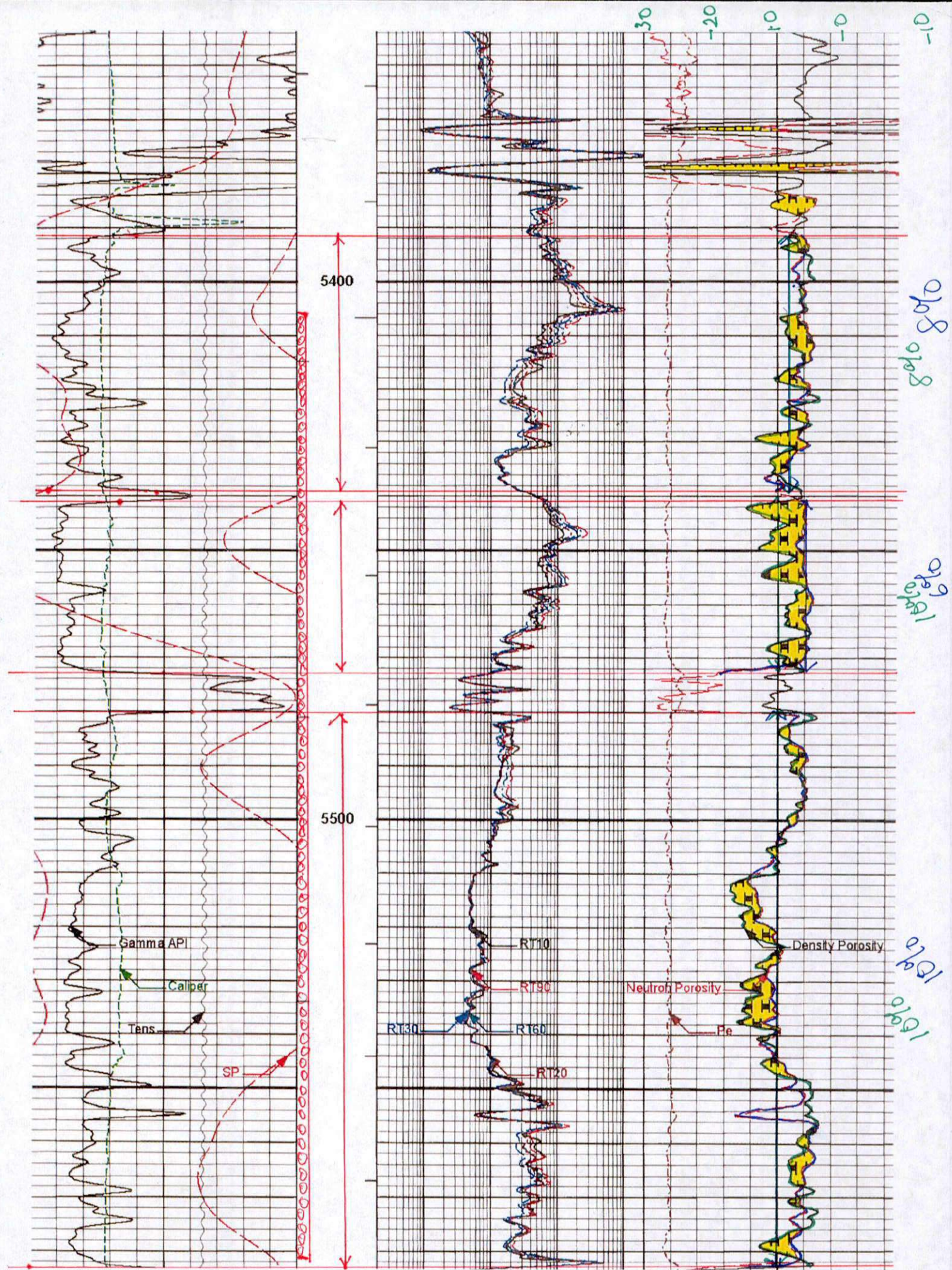
$$74 \text{ ft} \times 0.05 = 3.7$$

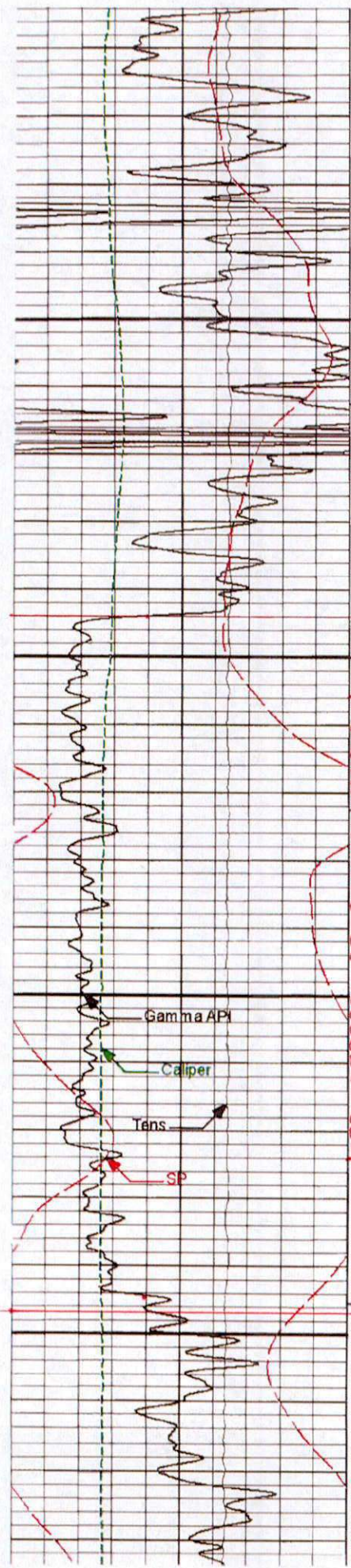
$$24.44 \text{ ft} \times (1320 \text{ ft})^2 \times \pi = 133,782,385.8 \text{ ft}^3$$

$$\times 1 \text{ bbl} / 5.6146 \text{ ft}^3 = 23,827,589.82 \text{ bbl}$$

maximum surface injection pressure

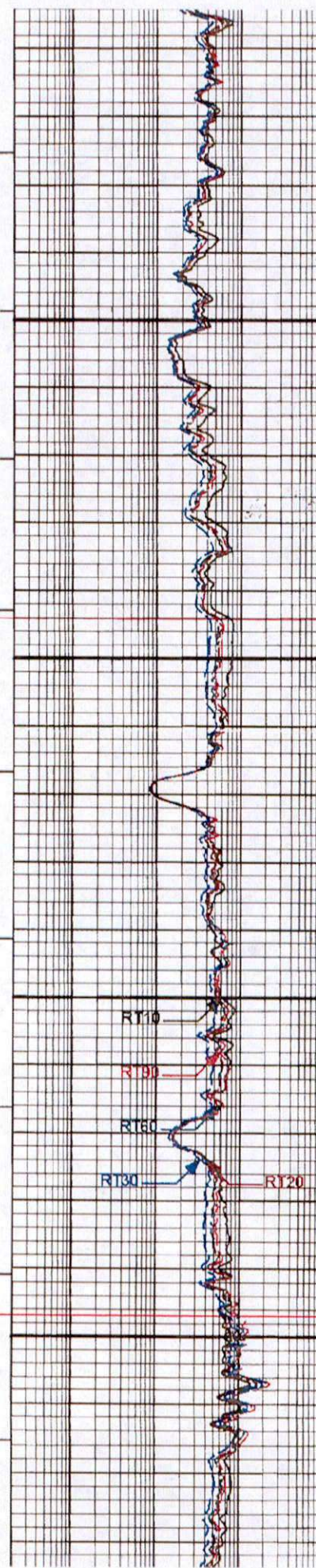
$$(0.65 \text{ psi/ft} - 0.433 \text{ psi/ft}) \times 5406 \text{ ft} = 1173.7 \text{ psi}$$





5900

6000



30

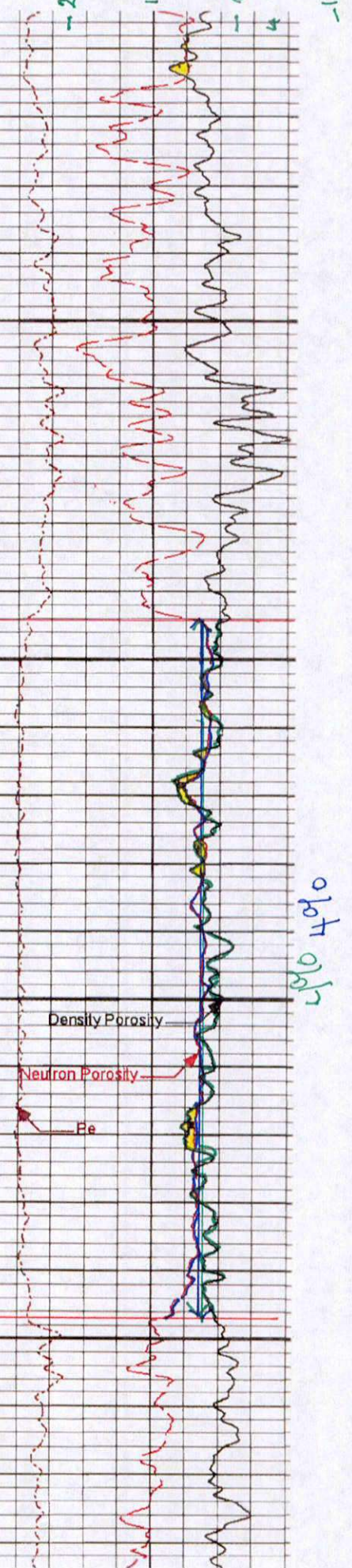
-20

10

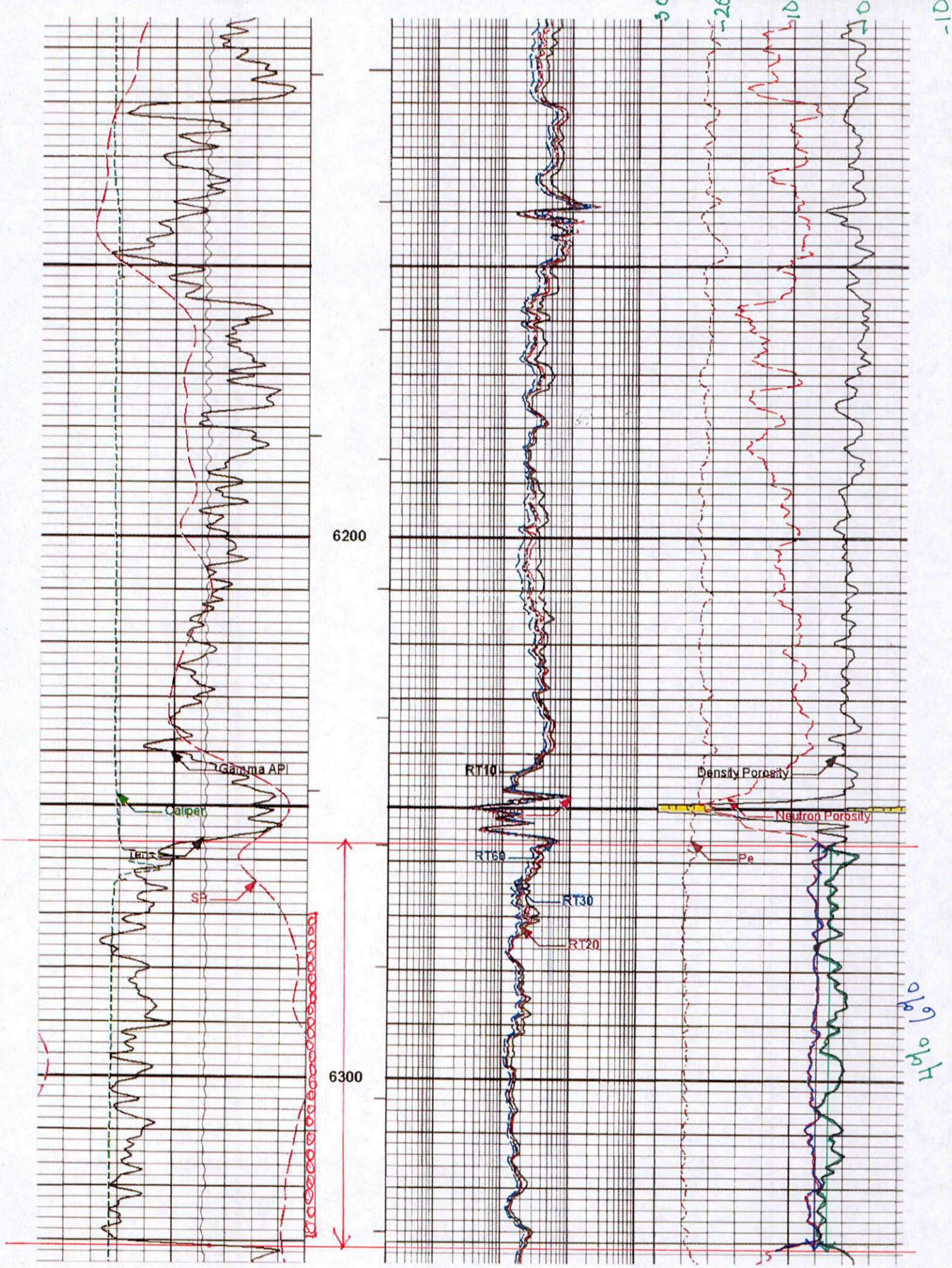
-0

4

-10



4% 4% 0



4/10/90

Onyskiw, Denise

From: Onyskiw, Denise
Sent: Thursday, July 28, 2011 3:38 PM
To: 'stefanie@trinidadchroniclenews.com'
Subject: Public Notice for El Paso Underground Injection Permit
Attachments: VPR C-204 WDW_06-01-11 Pub.docx

Enclosed please find a "Public Notice of Proposed Underground Injection Control Permit" to be published in The Chronicle News on your next publication date, one time only.

Please send a copy of the publication with our invoice as soon as possible after publication.

Denise M. Onyskiw, P.E.
Underground Injection Control Program Supervisor
Colorado Oil and Gas Conservation Commission
1120 Lincoln Street
Denver, CO 80203
303-894-2100 ext. 5145
denise.onyskiw@state.co.us



Onyskiw, Denise

From: Onyskiw, Denise
Sent: Friday, February 24, 2012 9:29 AM
To: 'Gomez, Maria S'
Subject: VPR C-204 WDW

Maria,

I keep getting voice mail when I can either you or Celeste. Your application does not specify who the mineral owners are within the ¼-mile circle. You sent a printout showing that El Paso owns the wells in that area of review but I need to know who owns the minerals.

Denise M. Onyskiw, P.E.
Underground Injection Control Program Supervisor
Colorado Oil and Gas Conservation Commission
1120 Lincoln Street
Denver, CO 80203
303-894-2100 ext. 5145
denise.onyskiw@state.co.us



**Colorado
Oil & Gas Conservation Commission**


(Save as pdf)

COGCC Results
Selected Items Report

Oil and Gas Wells Selected		
Filter Results by Formation: Include ▼		DKENT N-COM RT-VJ [Filter]
WELL DESCRIPTION	LOCATION	WELL INFORMATION
05-071-09061, VPR C 140 EL PASO E & P COMPANY LP	NESE 1 35S -67W (6)	Sidetrack TD Formation Status 00 1945 RT-VJ PR
05-071-09838, VPR C 204 WDW EL PASO E & P COMPANY LP	SESE 1 35S -67W (6)	Sidetrack TD Formation Status 00 6610 DKENT SI 00 6610 N-COM SI

Water Wells Selected From Map					
Filter Results by Depth Greater than ▼					[Filter]
WELL DESCRIPTION	LOCATION	WELL INFORMATION			
		Depth	Top Perf	Bottom Perf	Aquifer
Receipt=1504607, Permit=0073819-F- EL PASO E & P COMPANY, L.P.	NESE 1 35 S-67W	0	0	0	GW

[illegible]

Onyskiw, Denise

From: Onyskiw, Denise
Sent: Friday, February 24, 2012 11:50 AM
To: 'Gomez, Maria S'
Subject: RE: VPR C-204 WDW

Thank you! Just what I needed.

Denise

From: Gomez, Maria S [<mailto:Maria.Gomez@ElPaso.com>]
Sent: Friday, February 24, 2012 11:40 AM
To: Onyskiw, Denise
Subject: RE: VPR C-204 WDW

Denise:

The VPR C-140 (within ¼ mile) and the VPR C-133 (within ½ mile) minerals are owned by El Paso and Vermejo Park LLC has Royalty Interest.

Thanks,

Maria S. Gomez
Principle Regulatory Analyst
713-420-5038 Office
713-445-8554 Fax
832-683-0361 Cell

From: Onyskiw, Denise [<mailto:Denise.Onyskiw@state.co.us>]
Sent: Friday, February 24, 2012 10:29 AM
To: Gomez, Maria S
Subject: VPR C-204 WDW

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Colorado Oil and Gas Conservation Commission
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denise.onyskiw@state.co.us



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Onyskiw, Denise

From: Gomez, Maria S [Maria.Gomez@ElPaso.com]
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Onyskiw, Denise

From: Gomez, Maria S [Maria.Gomez@ElPaso.com]
Sent: Friday, February 24, 2012 9:59 AM
To: Onyskiw, Denise
Subject: RE: VPR C-204 WDW

I will take a look and send you the info. by early next week. Sorry I missed your call but I was out of the office yesterday.

Thanks,

Maria S. Gomez
Principle Regulatory Analyst
713-420-5038 Office
713-445-8554 Fax
832-683-0361 Cell

From: Onyskiw, Denise [<mailto:Denise.Onyskiw@state.co.us>]
Sent: Friday, February 24, 2012 10:29 AM
To: Gomez, Maria S
Subject: VPR C-204 WDW

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Denise M. Onyskiw, P.E.
Underground Injection Control Program Supervisor
Colorado Oil and Gas Conservation Commission
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303-894-2100 ext. 5145
denise.onyskiw@state.co.us



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Onyskiw, Denise

From: Gomez, Maria S [Maria.Gomez@ElPaso.com]
Sent: Monday, February 13, 2012 7:14 AM
To: Onyskiw, Denise
Subject: RE: Request on the El Paso VPR C #204WDW

Denise:

The engineer for this project is Celeste Hagler. Her email is celeste.hagler@elpaso.com and her phone number is 205-481-8058.

I will be back Monday morning the 20th.

Thanks,

Maria S. Gomez
Principle Regulatory Analyst
713-420-5038 Office
713-445-8554 Fax
832-683-0361 Cell

From: Onyskiw, Denise [<mailto:Denise.Onyskiw@state.co.us>]
Sent: Friday, February 10, 2012 11:03 AM
To: Gomez, Maria S
Subject: RE: Request on the El Paso VPR C #204WDW

Maria,
As soon as the form 5A gets approved, I'll be finishing your UIC permit. Can you give me the name of someone to call if I have questions while you are gone?

Denise

From: Gomez, Maria S [<mailto:Maria.Gomez@ElPaso.com>]
Sent: Friday, February 10, 2012 9:57 AM
To: Onyskiw, Denise
Subject: FW: Request on the El Paso VPR C #204WDW

Sorry, I misspelled your last name the first time.

Have a wonderful weekend.

Maria S. Gomez
Principle Regulatory Analyst
713-420-5038 Office
713-445-8554 Fax
832-683-0361 Cell

From: Gomez, Maria S
Sent: Friday, February 10, 2012 10:55 AM
To: 'Yokley, Bill'

Cc: 'denise.onyskiew@state.co.us'

Subject: RE: Request on the El Paso VPR C #204WDW

Attached is WBS you requested. Sorry for the delay.

I will be on vacation starting Monday (02/13/12) for the entire week. I will be returning Monday (02/20/12).

Thanks,

Maria S. Gomez
Principle Regulatory Analyst
713-420-5038 Office
713-445-8554 Fax
832-683-0361 Cell

From: Yokley, Bill [<mailto:Bill.Yokley@state.co.us>]
Sent: Tuesday, January 31, 2012 10:07 AM
To: Gomez, Maria S
Subject: RE: Request on the El Paso VPR C #204WDW

Thanks I appreciate it.

From: Gomez, Maria S [<mailto:Maria.Gomez@ElPaso.com>]
Sent: Tuesday, January 31, 2012 9:00 AM
To: Yokley, Bill
Subject: RE: Request on the El Paso VPR C #204WDW

Our engineer is working on it now. Hopefully will have by tomorrow.

Thanks,

Maria S. Gomez
Principle Regulatory Analyst
713-420-5038 Office
713-445-8554 Fax
832-683-0361 Cell

From: Yokley, Bill [<mailto:Bill.Yokley@state.co.us>]
Sent: Tuesday, January 31, 2012 9:59 AM
To: Gomez, Maria S
Subject: Request on the El Paso VPR C #204WDW

Good morning Maria,
Trying to finish up some of the forms that Kathleen Mills had started prior to her departure from COGCC.
Would you please furnish a wellbore diagram for this well that supplies all the actual or proposed perf's?
If you would email that to me it would help.

Thanks,
Bill

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Onyskiw, Denise

From: Onyskiw, Denise
Sent: Friday, February 10, 2012 10:03 AM
To: 'Gomez, Maria S'
Subject: RE: Request on the El Paso VPR C #204WDW

Maria,

As soon as the form 5A gets approved, I'll be finishing your UIC permit. Can you give me the name of someone to call if I have questions while you are gone?

Denise

From: Gomez, Maria S [<mailto:Maria.Gomez@ElPaso.com>]
Sent: Friday, February 10, 2012 9:57 AM
To: Onyskiw, Denise
Subject: FW: Request on the El Paso VPR C #204WDW

Sorry, I misspelled your last name the first time.

Have a wonderful weekend.

Maria S. Gomez
Principle Regulatory Analyst
713-420-5038 Office
713-445-8554 Fax
832-683-0361 Cell

From: Gomez, Maria S
Sent: Friday, February 10, 2012 10:55 AM
To: 'Yokley, Bill'
Cc: 'denise.onyskiew@state.co.us'
Subject: RE: Request on the El Paso VPR C #204WDW

Attached is WBS you requested. Sorry for the delay.

I will be on vacation starting Monday (02/13/12) for the entire week. I will be returning Monday (02/20/12).

Thanks,

Maria S. Gomez
Principle Regulatory Analyst
713-420-5038 Office
713-445-8554 Fax
832-683-0361 Cell

From: Yokley, Bill [<mailto:Bill.Yokley@state.co.us>]
Sent: Tuesday, January 31, 2012 10:07 AM
To: Gomez, Maria S
Subject: RE: Request on the El Paso VPR C #204WDW

Thanks I appreciate it.

From: Gomez, Maria S [<mailto:Maria.Gomez@ElPaso.com>]
Sent: Tuesday, January 31, 2012 9:00 AM
To: Yokley, Bill
Subject: RE: Request on the El Paso VPR C #204WDW

Our engineer is working on it now. Hopefully will have by tomorrow.

Thanks,

Maria S. Gomez
Principle Regulatory Analyst
713-420-5038 Office
713-445-8554 Fax
832-683-0361 Cell

From: Yokley, Bill [<mailto:Bill.Yokley@state.co.us>]
Sent: Tuesday, January 31, 2012 9:59 AM
To: Gomez, Maria S
Subject: Request on the El Paso VPR C #204WDW

Good morning Maria,
Trying to finish up some of the forms that Kathleen Mills had started prior to her departure from COGCC.
Would you please furnish a wellbore diagram for this well that supplies all the actual or proposed perf's?
If you would email that to me it would help.

Thanks,
Bill

THIS E-MAIL AND ANY MATERIALS TRANSMITTED WITH IT MAY CONTAIN CONFIDENTIAL OR PROPRIETARY MATERIAL FOR THE SOLE USE OF THE INTENDED RECIPIENT. ANY REVIEW, USE, DISTRIBUTION OR DISCLOSURE BY OTHERS IS STRICTLY PROHIBITED. IF YOU ARE NOT THE INTENDED RECIPIENT, OR AUTHORIZED TO RECEIVE THE INFORMATION FROM THE RECIPIENT, PLEASE NOTIFY THE SENDER BY REPLY E-MAIL AND DELETE ALL COPIES OF THIS MESSAGE.

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Onyskiw, Denise

From: Gomez, Maria S [Maria.Gomez@ElPaso.com]
Sent: Friday, February 10, 2012 9:57 AM
To: Onyskiw, Denise
Subject: FW: Request on the El Paso VPR C #204WDW
Attachments: C-204 WDW As Built Wellbore Diagram.pdf

Sorry, I misspelled your last name the first time.

Have a wonderful weekend.

Maria S. Gomez
Principle Regulatory Analyst
713-420-5038 Office
713-445-8554 Fax
832-683-0361 Cell

From: Gomez, Maria S
Sent: Friday, February 10, 2012 10:55 AM
To: 'Yokley, Bill'
Cc: 'denise.onyskiew@state.co.us'
Subject: RE: Request on the El Paso VPR C #204WDW

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Thanks,

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Principle Regulatory Analyst
713-420-5038 Office
713-445-8554 Fax
832-683-0361 Cell

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Sent: Tuesday, January 31, 2012 9:59 AM
To: Gomez, Maria S
Subject: Request on the El Paso VPR C #204WDW

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Bill

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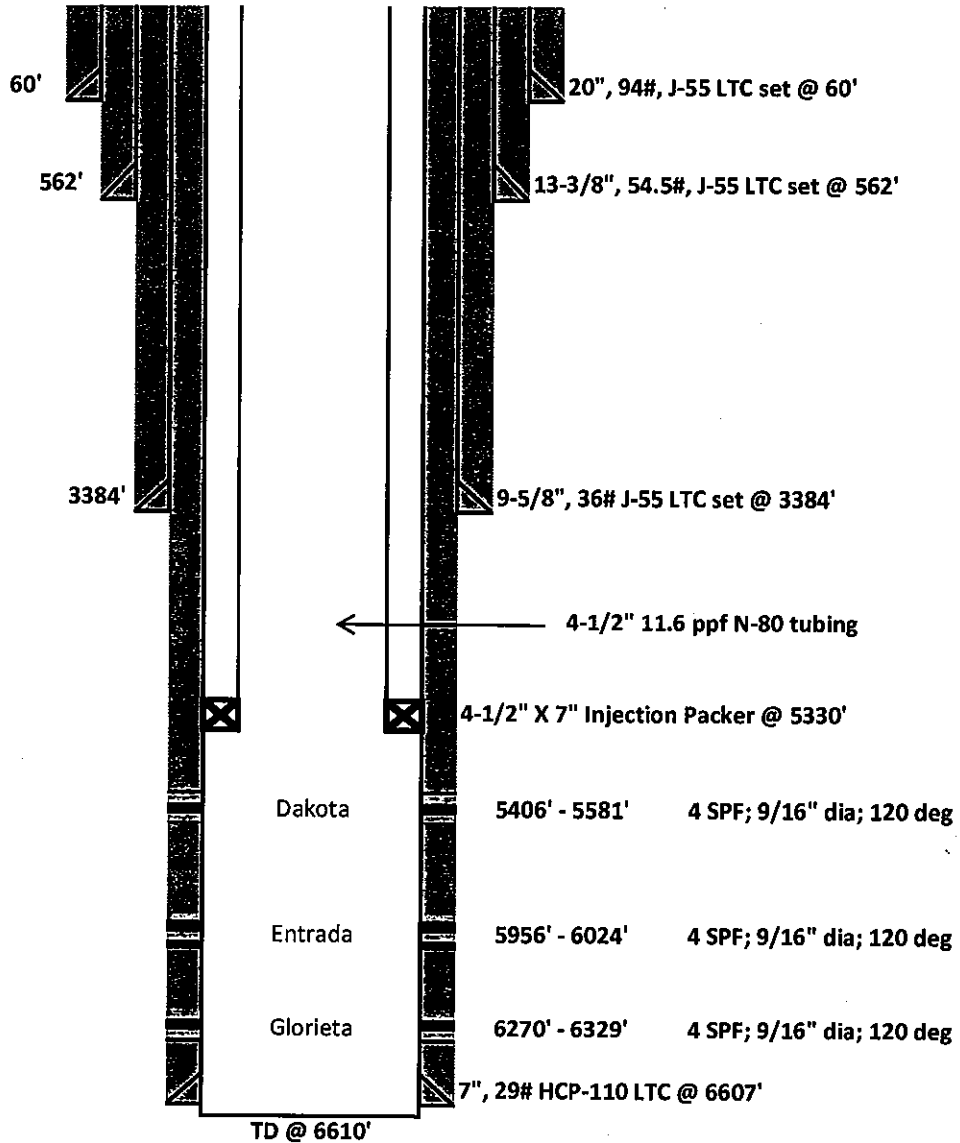
**AS BUILT
WELLBORE DIAGRAM**

LEASE: Vermejo Park Ranch
LOC: SE/4 SE/4
BHL: Vertical Well
CURRENT STATUS: WDW
INJECTION DATA:

WELL: VPR C-204 WDW
SEC: 1
GL: 7359'
KB: 7375'

FIELD: Purgatoire River
T/R: T35S, R67W
CTV/ST: Las Animas, CO
DF: 7374'

API NO: 05-071-09838-00
SPUD: 1/8/11
COMPL: 4/27/11
PBD: 6607'
TD: 6610'





January 17, 2012

Denise Onyskiw
Colorado Oil and Gas Conservation Commission
1120 Lincoln Street, Suite 801
Denver, Colorado 80203

RE: VPR C-204 Water Injection Permit

Dear Ms. Onyskiw:

In view of the recent comments concerning the latest round of seismic events in the Raton Basin, I would like to offer an opinion based on the numerous studies done on this and other seismically-active areas. The most recent study by USGS investigators, USGS Open-File Report 02-0073, Investigation of an Earthquake Swarm near Trinidad, Colorado, August - October 2001, by Meremonte, et al, discussed Raton seismicity with regard to historical activity and the possibility of induced seismicity due to coal-bed methane production, specifically fluid injection. Additionally, the New Mexico Tech Seismological Observatory published a map showing the most recent seismicity overlain on the 2002 USGS map showing the wide dispersal of earthquake epicenters with regard to water disposal wells. In every case, the authors of these and many other reports suggest that reinjection of produced water as a cause of local seismicity is inconclusive. The following discussion regarding faulting should be considered when analyzing Raton seismic activity.

Southern Raton Basin Faulting: The Southern Rockies, and the Raton Basin, in particular, are an area of complex tectonic and volcanic history. Nevertheless, there is little evidence of shallow faulting, either from well-log correlations or surface evidence, with wells on 160 acre spacing throughout the field. There is no shallow faulting apparent on E-W seismic lines through the Vermejo Park Ranch productive areas. Shallow depth is generally defined as less than 3 km (10,000 ft) with produced water being injected within this zone from 1.5-2.1 km (4000-7000 ft) into the Lower Cretaceous through Permian sandstones. The exception would be the main N-S transpressive "flower structure" expressed on the surface as the Tercio Anticline and Vermejo Park Anticline. This graben structure is present on the northernmost of three E-W seismic lines but not present on the southernmost line through the Van Bremmer canyon. This flower structure is a likely result of the Laramide orogeny and associated thrusting from 80 to 71 million years ago (ma). Subsequently, the region was subject to extension and cooling beginning 19 to 15 ma, coincident with Late Phase Extension Rio Grande rifting. Episodes of volcanism likely

resulted in magma being injected into zones weakened by basement-involved faulting. Associated faulting includes wrench faulting having a strike-slip component and probably still active. One study roughly estimates the plate movement over the Raton hotspot at 30 ± 20 mm/yr. Movement of this magnitude would most likely induce slippage of deep-seated faults. The subject well is approximately seven miles from the Tercio/Vermejo Anticline at its nearest point.

The nearest E-W El Paso seismic line is four miles to the south-southwest of the VPR C-204WDW location while the August-September 2011 swarm was over nine miles to the east-northeast. The most active fault in the area appears to be the 6 km long "Wild Boar fault" which has been the subject of investigations into local events. Earthquake swarms centered near the southwest quarter of Twp 34S-Rge65W of Las Animas Co., CO were studied by the USGS in 2001 and is currently under review since the M 5.3 event associated with the August -September 2011 swarm. Previous studies have suggested that this fault has been active in the past, most recently in 1966 and 1973. In conclusion, nearby 2D seismic data and surface geology show no indication of shallow faulting near the VPR C-204 WDW. Additionally, observed regional faults associated with the flower structure graben are approximately seven miles to the west and the periodically active "Wild Boar" fault is over nine miles to the east-northeast.

Sincerely,

A handwritten signature in black ink, appearing to read "John Scheldt", with a long horizontal flourish extending to the right.

John Scheldt
Staff Geologist

Onyskiw, Denise

From: Tammie Parker [tparker@trinidadchroniclenews.com]
Sent: Tuesday, November 29, 2011 2:06 PM
To: Onyskiw, Denise
Subject: Legal ad 37473

Denise~

This was mailed out on July 29th, 2011 to : Colorado Oil & Gas Conservation
1120 Lincoln Ave
St 801
Denver, CO 80203

Please be advised that you will be liable for payment on all ads proofed via
e-mail!

Tammie Parker
Classified Advertising
The Chronicle News
719-846-3311 Ext. 204
tparker@trinidadchroniclenews.com

"When you change the way you look at things, the things you look at change."

OIL AND GAS CONSERVATION COMMISSION
OF THE STATE OF COLORADO

PUBLIC NOTICE
OF
PROPOSED UNDERGROUND INJECTION
CONTROL PERMIT

PURPOSE OF PUBLIC NOTICE:

The purpose of this notice is to solicit public comment on the VPR C-204 WDW disposal well, a Class II injection permit submitted by El Paso E&P Company, L.P. The VPR C-204 WDW disposal well has been drilled at a location 1261 feet from the south line and 687 feet from the east line of Section 1, Township 35 South, Range 67 West, 6th P.M., Las Animas County, Colorado.

BACKGROUND

Class II injection wells are permitted and regulated in such a manner as to prevent the contamination of underground sources of drinking water and to ensure fluid emplacement and confinement within the permitted injection zones. Class II injection wells are permitted to inject waste generated from oil and gas exploratory and production operations. El Paso E&P Company, L.P., has proposed to inject these fluids into the Dakota, Entrada, and Glorieta formations in the VPR C-204 WDW well through perforations at depths of approximately 5,280-6,330 feet.

Public comments are encouraged and will be accepted, in writing at the Commission for a period of thirty (30) days after publication of this notice. If any data, information, or arguments submitted during the public comment period appear to raise substantial questions concerning proposed injection well permit, the Director may request that the Commission hold a hearing on the matter.

Additional information on the operation of the proposed injection well may be obtained at the Commission office.

IN THE NAME OF THE STATE OF
COLORADO

OIL AND GAS CONSERVATION
COMMISSION OF THE STATE OF
COLORADO

By: Denise M. Onyskiw, P.E.
UIC Supervisor, COGCC

Dated at 1120 Lincoln Street, Suite 801
Denver, Colorado 80203
July 28, 2011

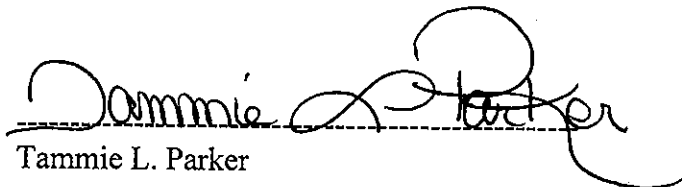
PROOF OF PUBLICATION

STATE OF COLORADO
COUNTY OF LAS ANIMAS} SS

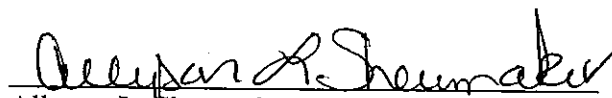
Tammie L. Parker, of lawful age, being first duly sworn upon oath, deposes and says that she is the authorized agent of The Chronicle-News, daily newspaper of general circulation which is published and circulated in the City of Trinidad, Las Animas County, Colorado, that said newspaper is a newspaper of general circulation complying with all of the requirements of Articles I to VII, Chapter 130, 1935, Colorado Statutes Annotated, and all other laws of said State, and that said legal / notice has been so published for the period of time prescribed in said newspaper proper and not a supplement.

The attached Notice was published in said newspaper in its issue(s) dated

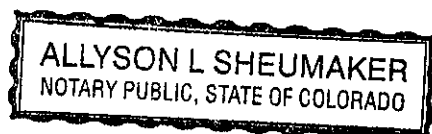
00037473 AUGUST 1, 2011


Tammie L. Parker

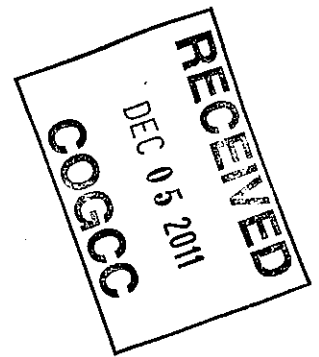
Subscribed and sworn to before me this
2 day of December
A. D., 2011.


Allyson L. Sheumaker

My commission expires on August 26, 2015



My Comm. Expires August 26, 2015



Onyskiw, Denise

From: Onyskiw, Denise
Sent: Tuesday, November 29, 2011 1:29 PM
To: 'maria.gomez@elpaso.com'
Subject: FW: seismic request
Attachments: VPR C-204.docx

Maria,

Per my voice mail, here is the memo from Colorado Geological Survey concerning seismic issues and the permitting of UIC wells in that area.

Denise

From: Matthews, Vince
Sent: Monday, November 28, 2011 4:55 PM
To: Onyskiw, Denise
Subject: RE: seismic request

No, see attached.

Vince

Vincent Matthews
State Geologist of Colorado
Director of the Colorado Geological Survey
1313 Sherman Street, Room 715
Denver CO 80203
Office: 303-866-2611, Ext 8340
Cell: 303-882-6580

From: Onyskiw, Denise
Sent: Monday, November 28, 2011 4:34 PM
To: Matthews, Vince
Subject: RE: seismic request

Do you need to see the file again? I can bring it over tomorrow.

Denise

From: Matthews, Vince
Sent: Monday, November 28, 2011 4:34 PM
To: Onyskiw, Denise
Subject: RE: seismic request

This one is not as simple as I thought.

Vince

Vincent Matthews
State Geologist of Colorado
Director of the Colorado Geological Survey
1313 Sherman Street, Room 715
Denver CO 80203

Office: 303-866-2611, Ext 8340
Cell: 303-882-6580

From: Onyskiw, Denise
Sent: Monday, November 28, 2011 3:38 PM
To: Matthews, Vince
Subject: seismic request

Vince,
Here's the attachment for the well we discussed today.

Denise M. Onyskiw, P.E.
Underground Injection Control Program Supervisor
Colorado Oil and Gas Conservation Commission
1120 Lincoln Street
Denver, CO 80203
303-894-2100 ext. 5145
denise.onyskiw@state.co.us



Onyskiw, Denise

From: Onyskiw, Denise
Sent: Tuesday, November 29, 2011 1:28 PM
To: 'stefanie@trinidadchroniclenews.com'
Subject: public notice invoice

Stefanie,

On July 28, 2011, I emailed a notice to be published in the Chronicle News with a request that the proof of publication be sent with the invoice. I have received the invoice but not the proof of publication. Would you please send me the proof and then I will authorize payment of this invoice. The Newspaper Ref. number is 00037473-0801.

Denise M. Onyskiw, P.E.
Underground Injection Control Program Supervisor
Colorado Oil and Gas Conservation Commission
1120 Lincoln Street
Denver, CO 80203
303-894-2100 ext. 5145
denise.onyskiw@state.co.us



Onyskiw, Denise

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Sent: Monday, November 28, 2011 4:55 PM
To: Onyskiw, Denise
Subject: RE: seismic request
Attachments: VPR C-204.docx

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Vince

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Colorado Oil and Gas Conservation Commission
1120 Lincoln Street
Denver, CO 80203
303-894-2100 ext. 5145
denise.onyskiw@state.co.us





MEMORANDUM

November 28, 2011

TO: Denise M. Onyskiw, P.E.
Oil and Gas Conservation Commission

FROM: Vincent Matthews, PhD.
Colorado Geological Survey

SUBJECT: Seismic Review: VPR C-204 (SESE Section 1 Township 35 South, Range 67 West)

I have reviewed the location for this proposed injection well. It is in a general area of significant historical seismicity. No faults are shown on existing surface geologic maps, although the area has not been mapped in detail. Neither subsurface data, nor seismic data were examined in the area, so it is also unknown whether there are subsurface faults in the area that are not expressed at the surface.

However, this location is along trend with, and less than ten miles southwest of, the fault zone that was generating the earthquake swarm of 2001 near Segundo. That fault trends northeast-southwest based on the seismicity, seismic data, and surface exposures. Because detailed studies of neither the surface, nor the subsurface, have been conducted between the southwest-most earthquake of that swarm and the disposal-well location, it is not known how far the fault that was generating the earthquakes extends to the southwest. Approximately ten earthquakes in the vicinity of this well could be interpreted to define a northeast-southwest trend. These factors raise precautionary signals about the potential to trigger earthquakes from water injection in this area.

Prudence suggests that an operator might do the following for self protection:

1. Examine all subsurface data for evidence of faulting in this area
2. Deploy a seismic network capable of pinpointing any earthquakes near the well
3. Establish background seismicity prior to injecting water
4. Monitor for earthquake activity after the initiation of injection
5. Develop a contingency plan in the event that earthquake activity is noted in the vicinity of the well during injection.

Onyskiw, Denise

From: Onyskiw, Denise
Sent: Monday, November 28, 2011 4:34 PM
To: Matthews, Vince
Subject: RE: seismic request

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Underground Injection Control Program Supervisor
Colorado Oil and Gas Conservation Commission
1120 Lincoln Street
Denver, CO 80203
303-894-2100 ext. 5145
denise.onyskiw@state.co.us



Onyskiw, Denise

From: Onyskiw, Denise
Sent: Monday, November 28, 2011 3:38 PM
To: Matthews, Vince
Subject: seismic request
Attachments: VPR C-204 WDW_CGS.docx

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Denise M. Onyskiw, P.E.
Underground Injection Control Program Supervisor
Colorado Oil and Gas Conservation Commission
1120 Lincoln Street
Denver, CO 80203
303-894-2100 ext. 5145
denise.onyskiw@state.co.us



Onyskiw, Denise

From: Onyskiw, Denise
Sent: Wednesday, October 05, 2011 10:53 AM
To: Matthews, Vince
Subject: Seismic Information Request for El Paso UIC well

Vince,

This well is within the 10-mile radius from the Trinidad earthquake. We need evaluation to know if this well is safe to permit.

Denise M. Onyskiw, P.E.
Underground Injection Control Program Supervisor
Colorado Oil and Gas Conservation Commission
1120 Lincoln Street
Denver, CO 80203
303-894-2100 ext. 5145
denise.onyskiw@state.co.us





DEPARTMENT OF NATURAL RESOURCES
 John W. Hickenlooper, Governor
 1120 Lincoln St. Suite 801
 Denver, CO 80203
 Phone: (303) 894-2100
 FAX: (303) 894-2109
 www.colorado.gov/cogcc

MEMORANDUM

October 5, 2011

TO: Vincent Matthews, PhD.
 Colorado Geological Survey

FROM: Denise M. Onyskiw, P.E.
 Oil and Gas Conservation Commission

SUBJECT: Need for Hydrologic Information

The Oil and Gas Conservation Commission (OGCC) has received an application for water injection project, summarized as follows:

LOCATION	COUNTY	FIELD
SESE Section 1 Township 35 South, Range 67 West, Las Animas, Colorado, 6th P.M.	Las Animas	Purgatoire River

1	WELL NAME	VPR C-204 WDW	
2	INJECTION ZONE FORMATION	Dakota, Entrada, and Glorieta	
3	DEPTH OF INJECTION INTERVAL	5280 to 6330	feet
4	PROPOSED INJECTION PRESSURE	0 to 1200	psig
5	FRAC GRADIENT OR PRESSURE (BHP)	0.65	psi/ft
6	VOLUME OF FLUID TO BE INJECTED	10,000 to 25,000	bbl/day
7	TDS OF INJECTION ZONE FLUID	13,237 to 22,318	mg/l
8	TDS OF FLUID TO BE INJECTED	unknown	mg/l

WELL CONSTRUCTION DATA					
CASING STRING	CASING SIZE	HOLE SIZE	DEPTH	AMOUNT CEMENT	TOP OF CEMENT
Surface	13-3/8"	17-1/2"	550'	470 sks	0'
1 st	9-5/8"	12-1/4"	1883'	240 sks	0'
2 nd	7"	8-3/4"	6458'	340 sks	1683'

Please furnish the OGCC with any concerns about faults in the area that may be affected by this underground injection control project. Thank you.

Onyskiw, Denise

From: Pottorff, Elizabeth
Sent: Thursday, August 11, 2011 9:28 AM
To: Onyskiw, Denise
Subject: wrong date on memo
Attachments: DOC003.PDF

Here is a replacement for the memo on the VPR C-204 WDW. See ya in a few minutes.

Elizabeth T. Pottorff
Hydrogeologist
Colorado Division of Water Resources
1313 Sherman Street Room 818
Denver, CO 80203

elizabeth.pottorff@state.co.us



DEPARTMENT OF NATURAL RESOURCES

DIVISION OF WATER RESOURCES

John W. Hickenlooper
Governor

Mike King
Executive Director

Dick Wolfe, P.E.
Director/State Engineer

August 11, 2011

MEMORANDUM

TO: Denise Onyskiw
Colorado Oil & Gas Conservation Commission
1120 Lincoln Street, Room 801
Denver, Colorado

FROM: Elizabeth Pottorff *EXP*

SUBJECT: Water Injection Project, Purgatoire River Field, Las Animas County

Your memo of July 28, 2011 describes a proposal to inject water into the Dakota-Purgatoire, Entrada and Glorieta Formations in intervals between 5280 to 6330 feet below ground surface in the VPR C-204 WDW Well, located in the SE ¼ of the SE ¼ of Section 1, Twp. 35 South, Rng. 67 West, Sixth P.M. Surface casing is set to a depth of 550 feet, intermediate casing to a depth of 1883 feet and production casing is set to a depth of 6458 feet.

There are two wells of record within one-half mile of this location, both are Coal Bed Methane wells. A spreadsheet of the records is attached.

Surface geology is the Poison Canyon Formation which may be developed as a water supply locally along with the underlying Raton, Vermejo and Trinidad Formations. The Pierre Shale forms a thick confining zone between near surface aquifers and the proposed production zone. Because of the great depth to the aquifers in the proposed production zone, they are not utilized for groundwater production anywhere in this area. The Dakota, Entrada, and Glorieta formations are classified as aquifers but are not utilized for this purpose in this area. The Dakota formation outcrops 14 miles to the north west in a steeply dipping and faulted section against the Culebra Range uplift. A few wells appear to be producing from the Dakota aquifer along the outcrop. The Dakota formation outcrops more than 40 miles to the north east.

This location is in Lorencito Canyon where the drainage flows intermittently to the north east, about 7 miles down the drainage Lorencito Canyon is tributary to the Purgatoire River.

The Division of Water Resources recommends that this well be plugged back to the injection interval. We also note that a plan to prevent runoff of surface spills would protect surface water. Based on the information you provided, it does not appear that there is any potential for injury to known or potential sources of fresh water in the area from a properly constructed injection well.

If you have any questions or require additional information, please feel free to contact me.

Office of the State Engineer

1313 Sherman Street, Suite 818 • Denver, CO 80203 • Phone: 303-866-3581 • Fax: 303-866-3589

<http://water.state.co.us>



DEPARTMENT OF NATURAL RESOURCES

John W. Hickenlooper, Governor

1120 Lincoln St. Suite 801

Denver, CO 80203

Phone: (303) 894-2100

FAX: (303) 894-2109

www.colorado.gov/cogcc

MEMORANDUM

July 28, 2011

TO: Elizabeth Pottorff
Division of Water Resources

FROM: Denise M. Onyskiw, P.E.
Oil and Gas Conservation Commission

SUBJECT: Need for Hydrologic Information

The Oil and Gas Conservation Commission (OGCC) has received an application to increase the radius for an existing water injection project, summarized as follows:

LOCATION	COUNTY	FIELD
SESE Section 1 Township 35 South, Range 67 West, Las Animas, Colorado, 6th P.M.	Las Animas	Purgatoire River

1	WELL NAME	VPR C-204 WDW	
2	INJECTION ZONE FORMATION	Dakota, Entrada, and Glorieta	
3	DEPTH OF INJECTION INTERVAL	5280 to 6330	feet
4	PROPOSED INJECTION PRESSURE	0 to 1200	psig
5	FRAC GRADIENT OR PRESSURE (BHP)	0.65	psi/ft
6	VOLUME OF FLUID TO BE INJECTED	10,000 to 25,000	bbbl/day
7	TDS OF INJECTION ZONE FLUID	13,237 to 22,318	mg/l
8	TDS OF FLUID TO BE INJECTED	unknown	mg/l

WELL CONSTRUCTION DATA					
CASING STRING	CASING SIZE	HOLE SIZE	DEPTH	AMOUNT CEMENT	TOP OF CEMENT
Surface	13-3/8"	17-1/2"	550'	470 sks	0'
1 st	9-5/8"	12-1/4"	1883'	240 sks	0'
2 nd	7"	8-3/4"	6458'	340 sks	1683'

Please furnish the OGCC with the name and depth of any aquifer in the area that is a known or potential fresh water stratum. We would also like a list of the water wells within one half mile of this location. Any other information with regard to distance to streams, ditches or outcrops would be very helpful. Thank you.

DEPARTMENT OF NATURAL RESOURCES: Mike King, Executive Director

COGCC COMMISSION: Richard Alward - Thomas L. Compton - DeAnn Craig - Mark Cutright - Michael Dowling - Joshua B. Epel - Mike King - Martha Rudolph
COGCC STAFF: David Neslin, Director - Margaret Ash, Field Inspection Manager - Debbie Baldwin, Environmental Manager - Stuart Ellsworth, Engineering Manager

Onyskiw, Denise

From: Tammie Parker [tparker@trinidadchroniclenews.com]
Sent: Thursday, July 28, 2011 3:56 PM
To: Onyskiw, Denise

Received.
It will run Monday.

Thanks -

Tammie Parker
Classified Advertising
The Chronicle News
719-846-3311 EXT 204
tparker@trinidadchroniclenews.com

Onyskiw, Denise

From: Onyskiw, Denise
Sent: Thursday, July 28, 2011 3:38 PM
To: 'stefanie@trinidadchroniclenews.com'
Subject: Public Notice for El Paso Underground Injection Permit
Attachments: VPR C-204 WDW_06-01-11 Pub.docx

Enclosed please find a "Public Notice of Proposed Underground Injection Control Permit" to be published in The Chronicle News on your next publication date, one time only.

Please send a copy of the publication with our invoice as soon as possible after publication.

Denise M. Onyskiw, P.E.
Underground Injection Control Program Supervisor
Colorado Oil and Gas Conservation Commission
1120 Lincoln Street
Denver, CO 80203
303-894-2100 ext. 5145
denise.onyskiw@state.co.us



Onyskiw, Denise

From: Granger, Mike [Michael.Granger@ElPaso.com]
Sent: Wednesday, June 01, 2011 9:20 AM
To: Onyskiw, Denise
Subject: FW: El Paso water analyses
Attachments: VPR C 204 KCL FLUID WATER ANA.pdf; VPR C 204 DAKOTA SR 12 WATER ANA.pdf; VPR C 204 DAKOTA SR 1 WATER ANA.pdf; VPR C 204 DAKOTA SR 2 WATER ANA.pdf; VPR C 204 DAKOTA SR 3 WATER ANA.pdf; VPR C 204 DAKOTA SR 4 WATER ANA.pdf; VPR C 204 DAKOTA SR 5 WATER ANA.pdf; VPR C 204 DAKOTA SR 6 WATER ANA.pdf; VPR C 204 DAKOTA SR 7 WATER ANA.pdf; VPR C 204 DAKOTA SR 8 WATER ANA.pdf; VPR C 204 DAKOTA SR 9 WATER ANA.pdf; VPR C 204 DAKOTA SR 10 WATER ANA.pdf; VPR C 204 DAKOTA SR 11 WATER ANA.pdf; VPR C 204 ENTRADA SR 1 WATER ANA.pdf; VPR C 204 ENTRADA SR 2 WATER ANA.pdf; VPR C 204 ENTRADA SR 3 WATER ANA.pdf; VPR C 204 ENTRADA SR 4 WATER ANA.pdf; VPR C 204 ENTRADA SR 5 WATER ANA.pdf; VPR C 204 ENTRADA SR 6 WATER ANA.pdf; VPR C 204 ENTRADA SR 7 WATER ANA.pdf; VPR C 204 GLORIETA SR 1 WATER ANA.pdf; VPR C 204 GLORIETA SR 2 WATER ANA.pdf; VPR C 204 GLORIETA SR 3 WATER ANA.pdf; VPR C 204 GLORIETA SR 4 WATER ANA.pdf; VPR C 204 GLORIETA SR 5 WATER ANA.pdf; VPR C 204 GLORIETA SWAB RUN 6 WATER ANA.pdf

Attached are water analysis reports from Baker Petrolite from the VPR C-204. This water disposal well is located in Las Animas County and was drilled in the first part of this year. Apparently John Duran is waiting on you to review these reports to make sure he can sign off on the injectivity test that we conducted a few weeks ago.

Let me know if you have any questions or need additional information. My number is 303-291-6420 (office) or 303-345-1777 (cell).

We are trying to get this well permitted in the next few months to replace an existing well that has almost reached its volume limit.

Mike Granger
Sr. Staff Production Engineer
El Paso Production
Raton Area

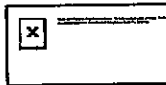
*use last
run for
each formation →
earlier runs were
KCL cleaner*

From: Olmstead, Bryan L
Sent: Wednesday, May 11, 2011 8:03 AM
To: Granger, Mike; Tonello, Meghan R
Subject: FW: El Paso water analyses

From: Clinesmith, Ty
Sent: Tuesday, May 10, 2011 8:41 PM
To: Olmstead, Bryan L
Subject: FW: El Paso water analyses

Attached are your water analysis from the C-204 that you requested. If you have any questions please let me know. Thanks.

Ty L. Clinesmith | Field Specialist IV
Baker Hughes | US Land / Central Area / Petrolite
Office: 575.445.6778 | Fax: 575.445.3464
Cell: 575.447.0621 | ty.clinesmith@bakerhughes.com
<http://www.bakerhughes.com> | *Advancing Reservoir Performance*



From: Hernandez, Sheila K.
Sent: Tuesday, May 10, 2011 8:31 PM
To: Clinesmith, Ty L.
Subject: El Paso water analyses

Ty,

Please see attached.

Thanks,
Sheila

Sheila Hernandez | Field Laboratory Supervisor
Baker Hughes | Baker Petrolite / Analytical Services / Midland Laboratory
Office: 1.432.495.7240 | Fax: 1.432.495.7252
sheila.hernandez@bakerhughes.com
<http://www.bakerhughes.com> | *Advancing Reservoir Performance*



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Rocky Mountain Region
1675 Broadway, Suite 1500
Denver, CO 80202
(303) 573-2772
Lab Team Leader - Sheila Hernandez
(432) 495-7240

Water Analysis Report by Baker Petrolite

Company:	EL PASO E & P	Sales RDT:	44625
Region:	ROCKY MOUNTAINS	Account Manager:	TY CLINESMITH (575) 447-0621
Area:	RATON, NM	Sample #:	47742
Lease/Platform:	VERMEJO PARK RANCH 'C'	Analysis ID #:	108265
Entity (or well #):	204	Analysis Cost:	\$90.00
Formation:	UNKNOWN		
Sample Point:	KCL FLUID		

Summary		Analysis of Sample 47742 @ 75 °F					
Sampling Date:	04/29/11	Anions	mg/l	meq/l	Cations	mg/l	meq/l
Analysis Date:	05/10/11	Chloride:	2581.0	72.8	Sodium:	1969.2	85.66
Analyst:	JENNIFER HARDELL	Bicarbonate:	1038.0	17.01	Magnesium:	12.0	0.99
TDS (mg/l or g/m3):	5691.2	Carbonate:	0.0	0.	Calcium:	31.0	1.55
Density (g/cm3, tonne/m3):	1.004	Sulfate:	3.0	0.06	Strontium:	9.0	0.21
Anion/Cation Ratio:	0.9999998	Phosphate:			Barium:	6.5	0.09
		Borate:			Iron:	30.0	1.08
		Silicate:			Potassium:	11.0	0.28
Carbon Dioxide:		Hydrogen Sulfide:			Aluminum:		
Oxygen:		pH at time of sampling:			Chromium:		
Comments:		pH at time of analysis:		8.03	Copper:		
		pH used in Calculation:		8.03	Lead:		
					Manganese:	0.500	0.02
					Nickel:		

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Gauge Press.	Calcite CaCO ₃		Gypsum CaSO ₄ *2H ₂ O		Anhydrite CaSO ₄		Celestite SrSO ₄		Barite BaSO ₄		CO ₂ Press
°F	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi
80	0	0.69	15.68	-3.94	0.00	-4.01	0.00	-2.72	0.00	0.24	0.70	0.12
100	0	0.74	17.08	-3.96	0.00	-3.96	0.00	-2.70	0.00	0.09	0.35	0.19
120	0	0.79	18.82	-3.96	0.00	-3.88	0.00	-2.67	0.00	-0.03	0.00	0.29
140	0	0.85	20.21	-3.95	0.00	-3.78	0.00	-2.63	0.00	-0.12	0.00	0.43

Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.

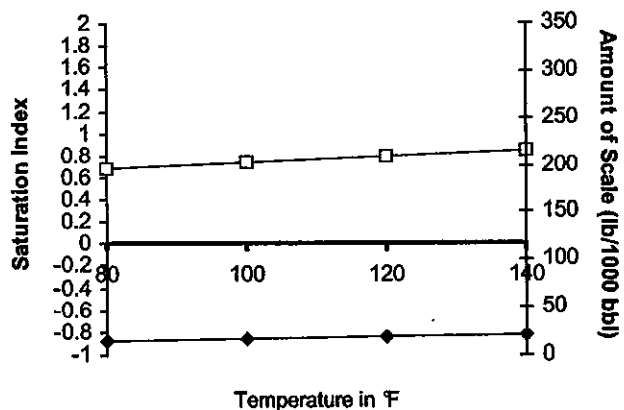
Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: The reported CO₂ pressure is actually the calculated CO₂ fugacity. It is usually nearly the same as the CO₂ partial pressure.

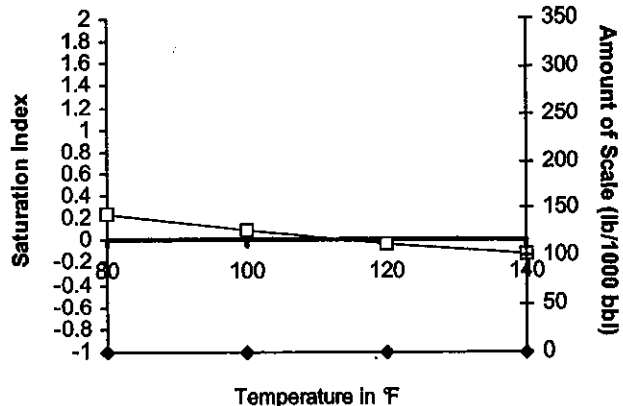
Scale Predictions from Baker Petrolite

Analysis of Sample 47742 @ 75 °F for EL PASO E & P, 05/10/11

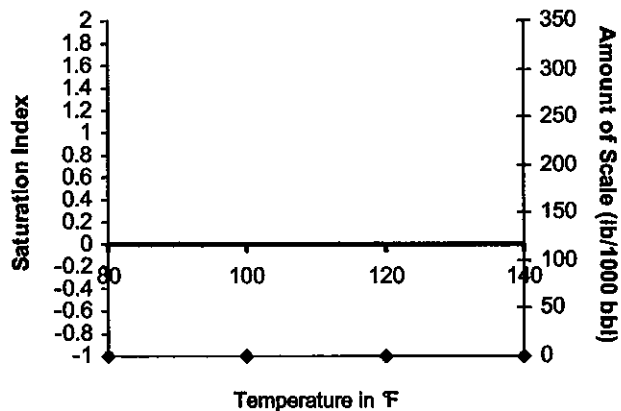
Calcite - CaCO_3



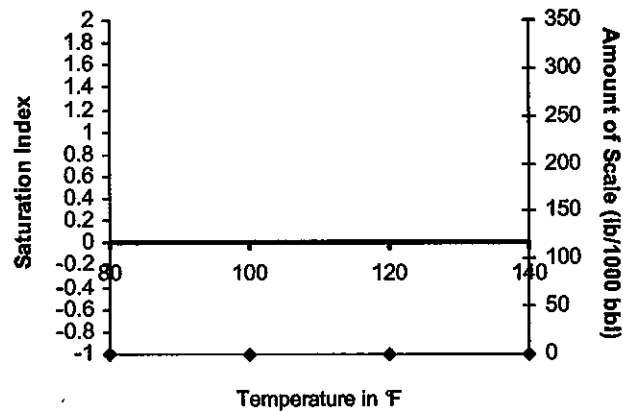
Barite - BaSO_4



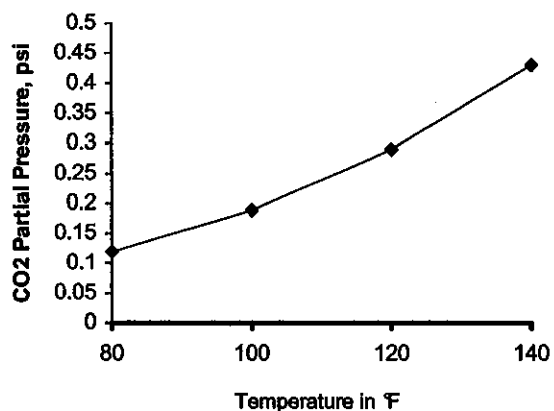
Gypsum - $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$



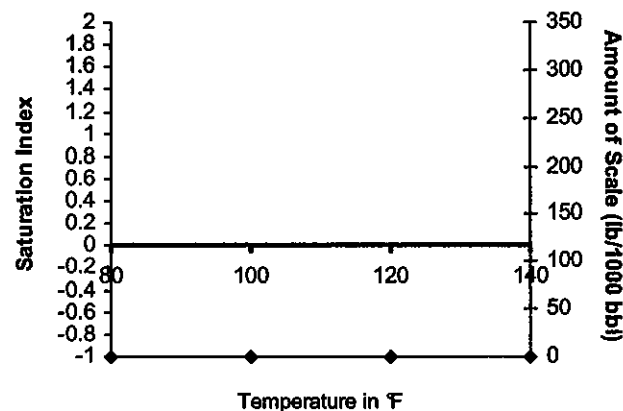
Anhydrite - CaSO_4



Carbon Dioxide Partial Pressure



Celestite - SrSO_4



Rocky Mountain Region
 1675 Broadway, Suite 1500
 Denver, CO 80202
 (303) 573-2772
 Lab Team Leader - Sheila Hernandez
 (432) 495-7240

Water Analysis Report by Baker Petrolite

Company:	EL PASO E & P	Sales RDT:	44625
Region:	ROCKY MOUNTAINS	Account Manager:	TY CLINESMITH (575) 447-0621
Area:	RATON, NM	Sample #:	47728
Lease/Platform:	VERMEJO PARK RANCH 'C'	Analysis ID #:	108251
Entity (or well #):	204	Analysis Cost:	\$90.00
Formation:	UNKNOWN		
Sample Point:	DAKOTA SWAB RUN 12		

Summary		Analysis of Sample 47728 @ 75 F					
Sampling Date:	04/29/11	Anions	mg/l	meq/l	Cations	mg/l	meq/l
Analysis Date:	05/10/11	Chloride:	9794.0	276.25	Sodium:	6030.5	262.31
Analyst:	JENNIFER HARDELL	Bicarbonate:	418.0	6.85	Magnesium:	74.0	6.09
TDS (mg/l or g/m3):	17786.2	Carbonate:	0.0	0.	Calcium:	289.0	14.42
Density (g/cm3, tonne/m3):	1.012	Sulfate:	692.0	14.41	Strontium:	19.0	0.43
Anion/Cation Ratio:	1	Phosphate:			Barium:	0.7	0.01
Carbon Dioxide:		Borate:			Iron:	207.0	7.48
Oxygen:		Silicate:			Potassium:	256.0	6.55
Comments:		Hydrogen Sulfide:			Aluminum:		
		pH at time of sampling:			Chromium:		
		pH at time of analysis:		6.74	Copper:		
		pH used In Calculation:		6.74	Lead:		
					Manganese:	6.000	0.22
					Nickel:		

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Gauge Press.	Calcite CaCO ₃		Gypsum CaSO ₄ *2H ₂ O		Anhydrite CaSO ₄		Celestite SrSO ₄		Barite BaSO ₄		CO ₂ Press
F	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi
80	0	-0.26	0.00	-1.05	0.00	-1.11	0.00	-0.46	0.00	1.22	0.34	0.8
100	0	-0.13	0.00	-1.07	0.00	-1.07	0.00	-0.46	0.00	1.06	0.34	1.05
120	0	0.00	0.00	-1.08	0.00	-0.99	0.00	-0.44	0.00	0.92	0.34	1.31
140	0	0.14	8.95	-1.08	0.00	-0.90	0.00	-0.42	0.00	0.81	0.34	1.59

Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.

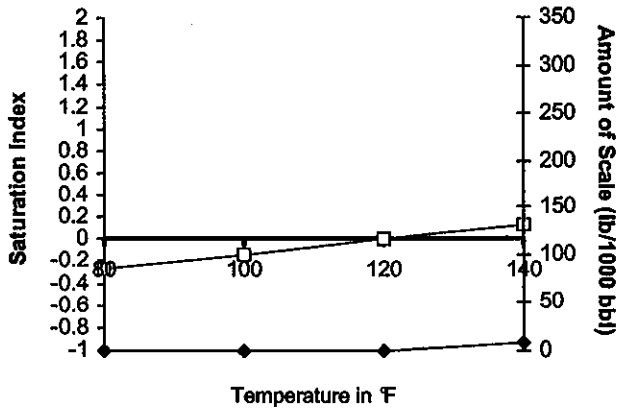
Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: The reported CO2 pressure is actually the calculated CO2 fugacity. It is usually nearly the same as the CO2 partial pressure.

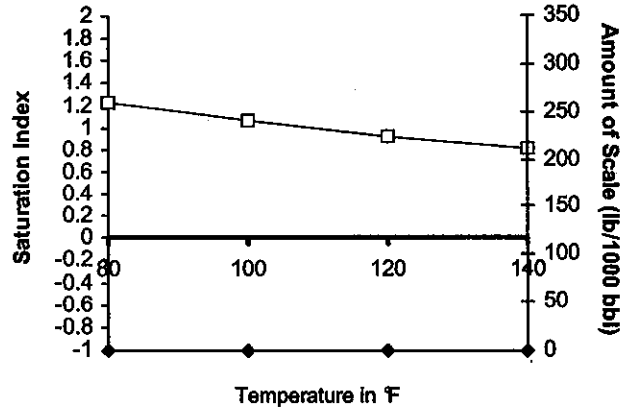
Scale Predictions from Baker Petrolite

Analysis of Sample 47728 @ 75 °F for EL PASO E & P, 05/10/11

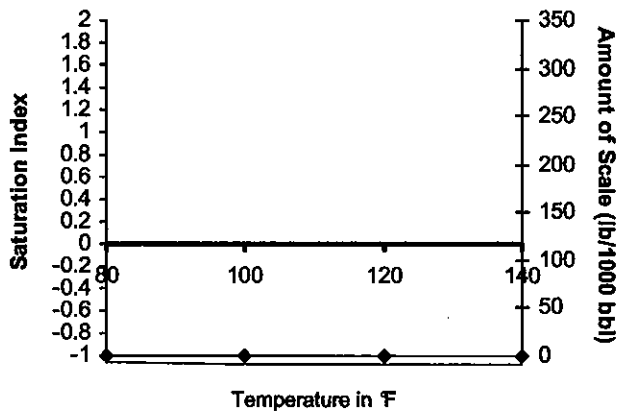
Calcite - CaCO_3



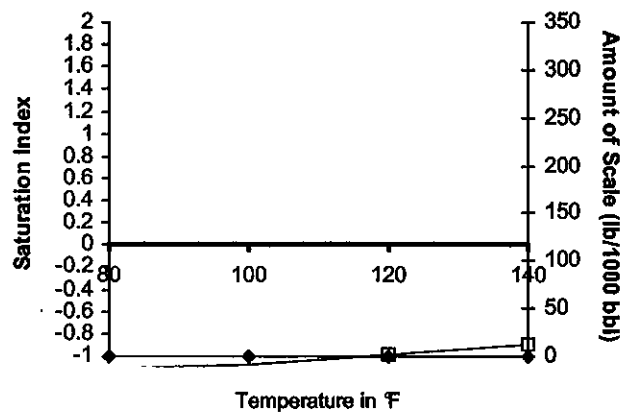
Barite - BaSO_4



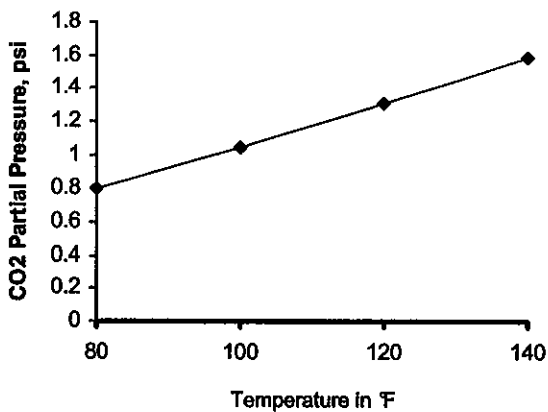
Gypsum - $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$



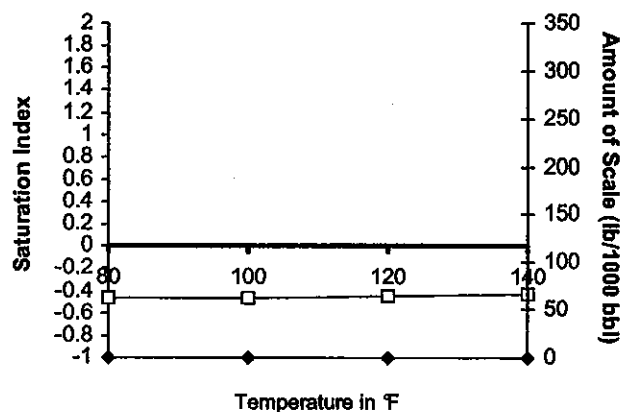
Anhydrite - CaSO_4



Carbon Dioxide Partial Pressure



Celestite - SrSO_4



Rocky Mountain Region
1675 Broadway, Suite 1500
Denver, CO 80202
(303) 573-2772

Lab Team Leader - Sheila Hernandez
(432) 495-7240

Water Analysis Report by Baker Petrolite

Company:	EL PASO E & P	Sales RDT:	44625
Region:	ROCKY MOUNTAINS	Account Manager:	TY CLINESMITH (575) 447-0621
Area:	RATON, NM	Sample #:	47717
Lease/Platform:	VERMEJO PARK RANCH 'C'	Analysis ID #:	108240
Entity (or well #):	204	Analysis Cost:	\$90.00
Formation:	UNKNOWN		
Sample Point:	DAKOTA SWAB RUN 1		

Summary		Analysis of Sample 47717 @ 75 °F					
Sampling Date:	04/29/11	Anions	mg/l	meq/l	Cations	mg/l	meq/l
Analysis Date:	05/10/11	Chloride:	2624.0	74.01	Sodium:	1741.1	75.73
Analyst:	JENNIFER HARDELL	Bicarbonate:	827.0	13.55	Magnesium:	7.0	0.58
TDS (mg/l or g/m3):	5870.1	Carbonate:	85.0	2.83	Calcium:	218.0	10.88
Density (g/cm3, tonne/m3):	1.004	Sulfate:	164.0	3.41	Strontium:	3.5	0.08
Anion/Cation Ratio:	1.0000002	Phosphate:			Barium:	2.5	0.04
Carbon Dioxide:		Borate:			Iron:	135.0	4.88
Oxygen:		Silicate:			Potassium:	61.0	1.56
Comments:		Hydrogen Sulfide:			Aluminum:		
		pH at time of sampling:			Chromium:		
		pH at time of analysis:		8.85	Copper:		
		pH used in Calculation:		8.85	Lead:		
					Manganese:	2.000	0.07
					Nickel:		

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Gauge Press.	Calcite CaCO ₃		Gypsum CaSO ₄ ·2H ₂ O		Anhydrite CaSO ₄		Celestite SrSO ₄		Barite BaSO ₄		CO ₂ Press
°F	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi
80	0	2.16	120.22	-1.48	0.00	-1.55	0.00	-1.51	0.00	1.46	1.39	0.02
100	0	2.14	126.49	-1.49	0.00	-1.49	0.00	-1.49	0.00	1.31	1.39	0.03
120	0	2.13	133.81	-1.49	0.00	-1.41	0.00	-1.46	0.00	1.20	1.39	0.05
140	0	2.13	141.13	-1.47	0.00	-1.30	0.00	-1.42	0.00	1.10	1.39	0.08

Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.

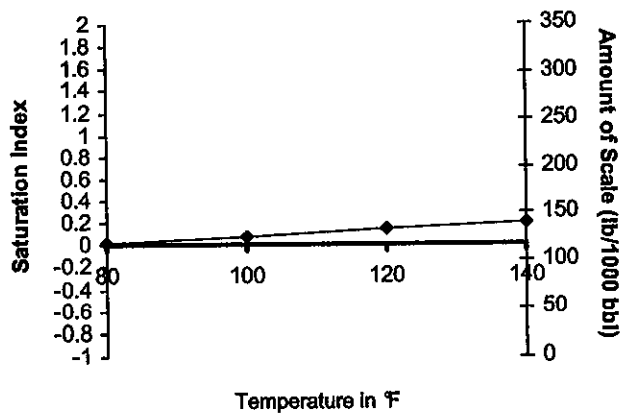
Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: The reported CO2 pressure is actually the calculated CO2 fugacity. It is usually nearly the same as the CO2 partial pressure.

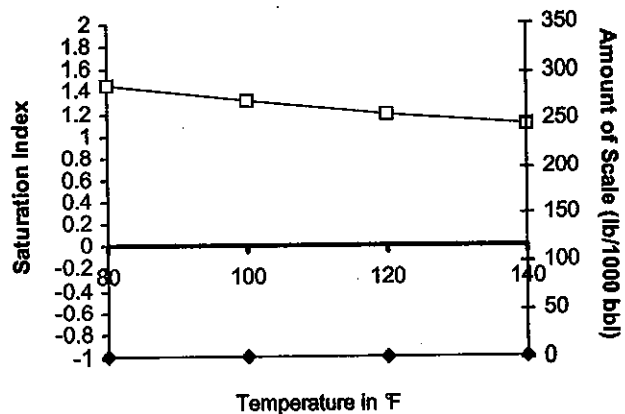
Scale Predictions from Baker Petrolite

Analysis of Sample 47717 @ 75 °F for EL PASO E & P, 05/10/11

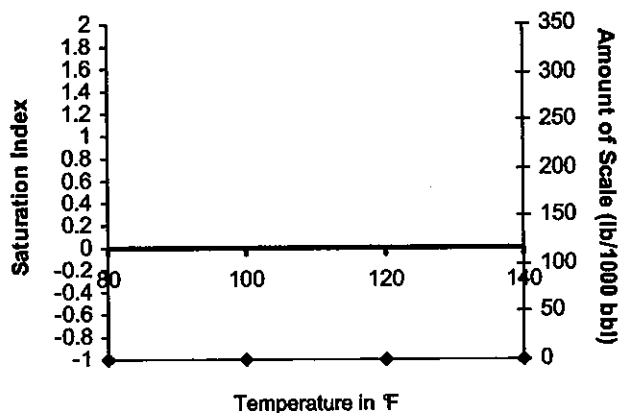
Calcite - CaCO_3



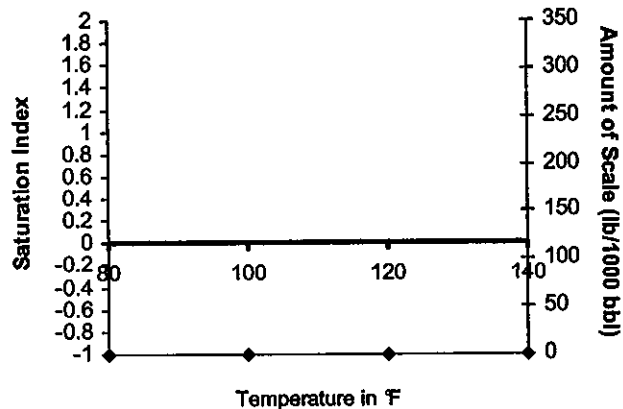
Barite - BaSO_4



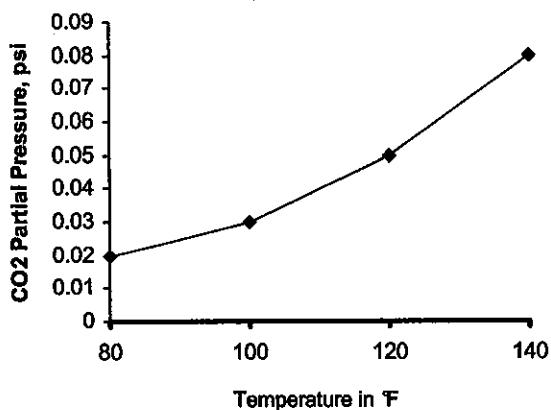
Gypsum - $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$



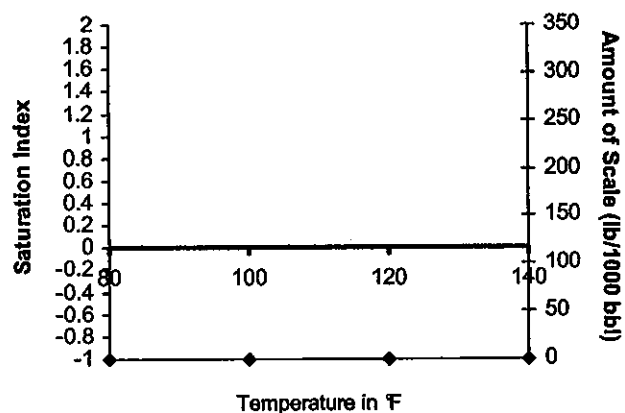
Anhydrite - CaSO_4



Carbon Dioxide Partial Pressure



Celestite - SrSO_4



Rocky Mountain Region
1675 Broadway, Suite 1500
Denver, CO 80202
(303) 573-2772
Lab Team Leader - Shella Hernandez
(432) 495-7240

Water Analysis Report by Baker Petrolite

Company:	EL PASO E & P	Sales RDT:	44625
Region:	ROCKY MOUNTAINS	Account Manager:	TY CLINESMITH (575) 447-0621
Area:	RATON, NM	Sample #:	47718
Lease/Platform:	VERMEJO PARK RANCH 'C'	Analysis ID #:	108241
Entity (or well #):	204	Analysis Cost:	\$90.00
Formation:	UNKNOWN		
Sample Point:	DAKOTA SWAB RUN 2		

Summary		Analysis of Sample 47718 @ 75 °F					
		Anions		mg/l		meq/l	
Sampling Date:	04/29/11	Chloride:	2686.0		75.76	Sodium:	2000.1
Analysis Date:	05/10/11	Bicarbonate:	844.0		13.83	Magnesium:	3.0
Analyst:	JENNIFER HARDELL	Carbonate:	49.0		1.63	Calcium:	72.0
TDS (mg/l or g/m3):	5886.3	Sulfate:	129.0		2.69	Strontium:	1.5
Density (g/cm3, tonne/m3):	1.004	Phosphate:				Barium:	1.0
Anion/Cation Ratio:	0.9999999	Borate:				Iron:	42.0
		Silicate:				Potassium:	58.0
Carbon Dioxide:		Hydrogen Sulfide:				Aluminum:	
Oxygen:		pH at time of sampling:				Chromium:	
Comments:		pH at time of analysis:			8.59	Copper:	
		pH used in Calculation:			8.59	Lead:	
						Manganese:	0.700
						Nickel:	0.03

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Gauge Press.	Calcite CaCO ₃		Gypsum CaSO ₄ ·2H ₂ O		Anhydrite CaSO ₄		Celestite SrSO ₄		Barite BaSO ₄		CO ₂ Press
°F	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi
80	0	1.48	45.30	-2.00	0.00	-2.07	0.00	-1.92	0.00	1.01	0.70	0.03
100	0	1.46	47.39	-2.01	0.00	-2.01	0.00	-1.90	0.00	0.87	0.35	0.05
120	0	1.46	49.83	-2.01	0.00	-1.93	0.00	-1.87	0.00	0.75	0.35	0.09
140	0	1.46	51.92	-1.99	0.00	-1.82	0.00	-1.83	0.00	0.66	0.35	0.16

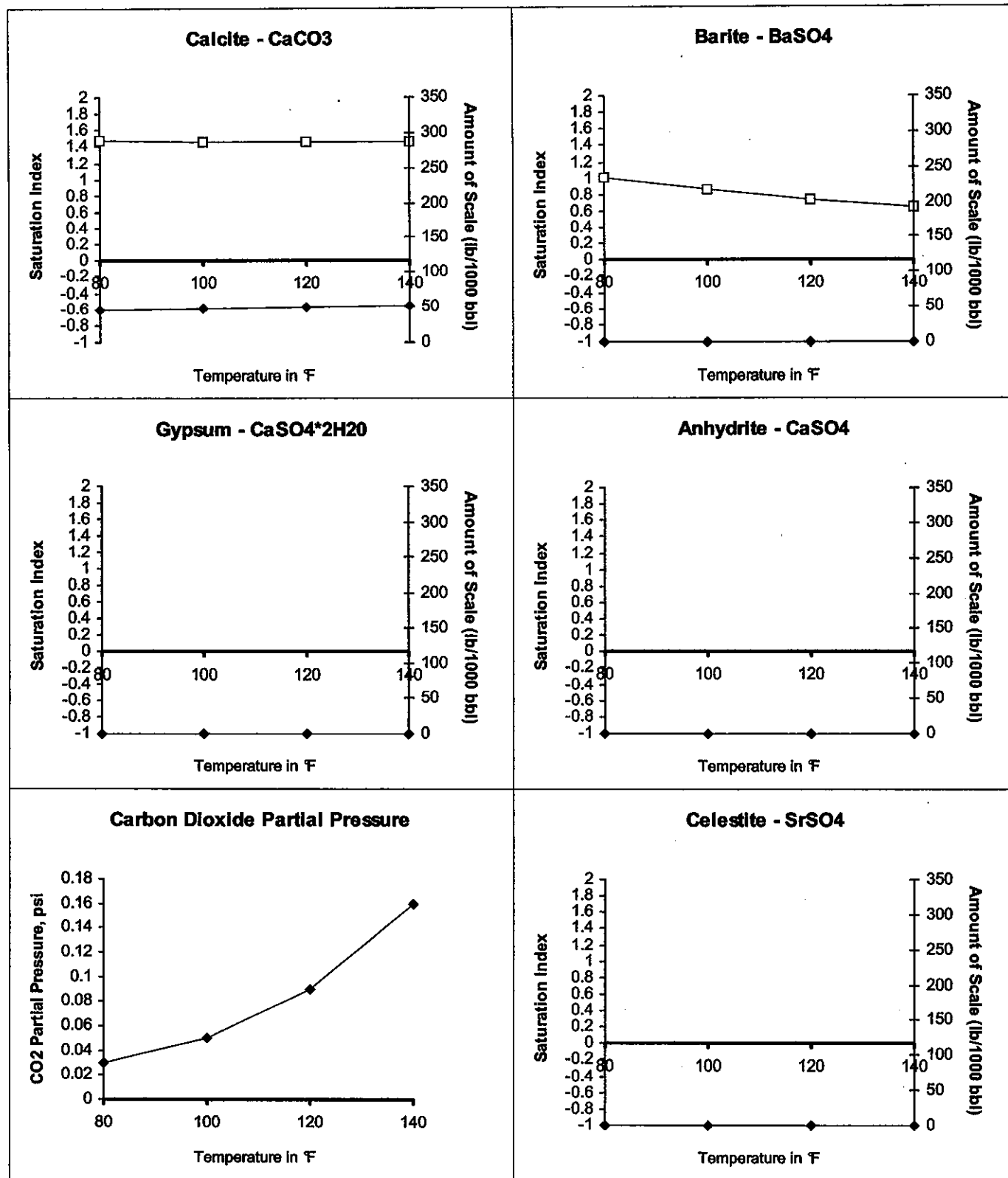
Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.

Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: The reported CO₂ pressure is actually the calculated CO₂ fugacity. It is usually nearly the same as the CO₂ partial pressure.

Scale Predictions from Baker Petrolite

Analysis of Sample 47718 @ 75 °F for EL PASO E & P, 05/10/11



Rocky Mountain Region
 1675 Broadway, Suite 1500
 Denver, CO 80202
 (303) 573-2772
 Lab Team Leader - Sheila Hernandez
 (432) 495-7240

Water Analysis Report by Baker Petrolite

Company:	EL PASO E & P	Sales RDT:	44625
Region:	ROCKY MOUNTAINS	Account Manager:	TY CLINESMITH (575) 447-0621
Area:	RATON, NM	Sample #:	47719
Lease/Platform:	VERMEJO PARK RANCH 'C'	Analysis ID #:	108242
Entity (or well #):	204	Analysis Cost:	\$90.00
Formation:	UNKNOWN		
Sample Point:	DAKOTA SWAB RUN 3		

Summary		Analysis of Sample 47719 @ 75 °F					
Sampling Date:	04/29/11	Anions	mg/l	meq/l	Cations	mg/l	meq/l
Analysis Date:	05/10/11	Chloride:	2579.0	72.74	Sodium:	1914.2	83.26
Analyst:	JENNIFER HARDELL	Bicarbonate:	908.0	14.88	Magnesium:	4.5	0.37
		Carbonate:	43.0	1.43	Calcium:	50.0	2.5
TDS (mg/l or g/m3):	5686.2	Sulfate:	59.0	1.23	Strontium:	3.0	0.07
Density (g/cm3, tonne/m3):	1.004	Phosphate:			Barium:	1.5	0.02
Anion/Cation Ratio:	0.9999998	Borate:			Iron:	84.0	3.04
		Silicate:			Potassium:	39.0	1.
					Aluminum:		
Carbon Dioxide:		Hydrogen Sulfide:			Chromium:		
Oxygen:		pH at time of sampling:			Copper:		
Comments:		pH at time of analysis:		8.54	Lead:		
		pH used in Calculation:		8.54	Manganese:	1.000	0.04
					Nickel:		

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Gauge Press.	Calcite CaCO ₃		Gypsum CaSO ₄ ·2H ₂ O		Anhydrite CaSO ₄		Celestite SrSO ₄		Barite BaSO ₄		CO ₂ Press
°F	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi
80	0	1.31	34.50	-2.48	0.00	-2.55	0.00	-1.94	0.00	0.87	0.70	0.04
100	0	1.30	35.55	-2.49	0.00	-2.49	0.00	-1.92	0.00	0.72	0.70	0.06
120	0	1.29	36.25	-2.49	0.00	-2.41	0.00	-1.89	0.00	0.61	0.70	0.11
140	0	1.29	37.29	-2.48	0.00	-2.31	0.00	-1.85	0.00	0.51	0.70	0.19

Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.

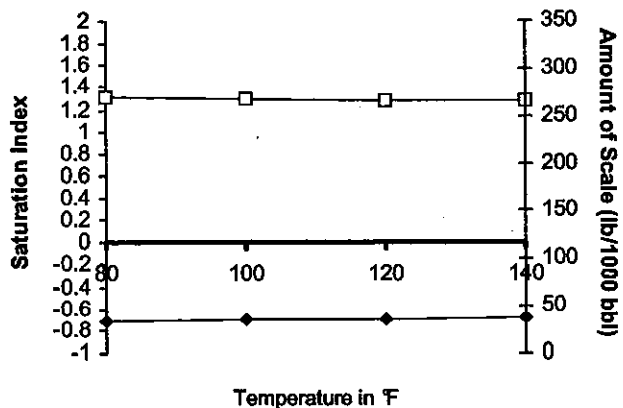
Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: The reported CO₂ pressure is actually the calculated CO₂ fugacity. It is usually nearly the same as the CO₂ partial pressure.

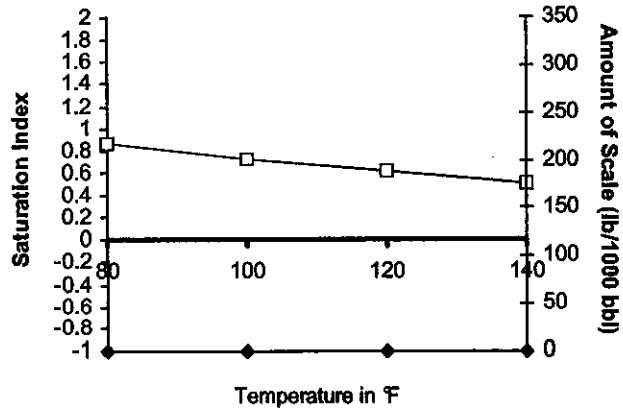
Scale Predictions from Baker Petrolite

Analysis of Sample 47719 @ 75 °F for EL PASO E & P, 05/10/11

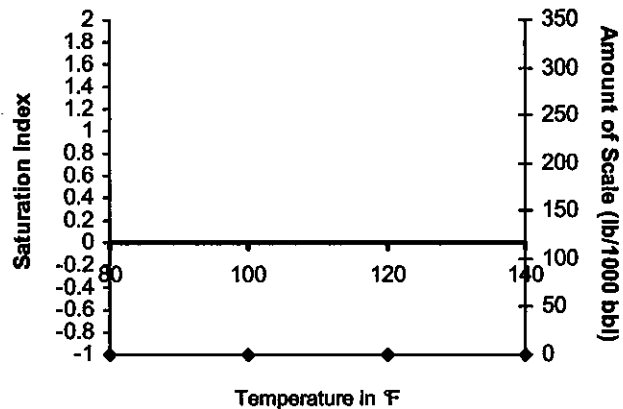
Calcite - CaCO_3



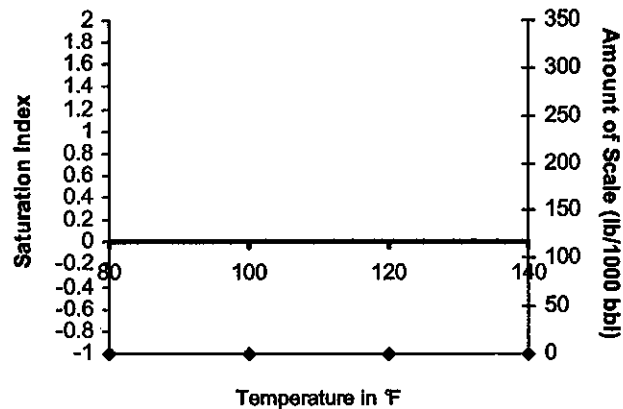
Barite - BaSO_4



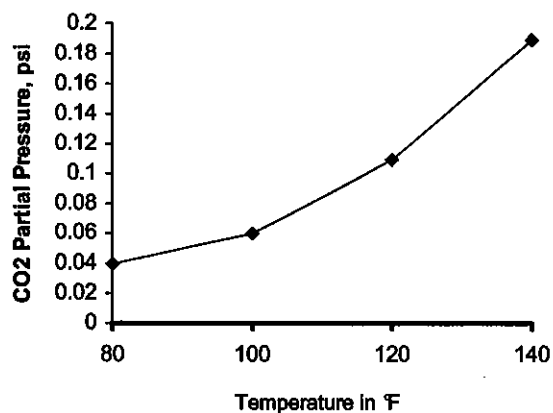
Gypsum - $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$



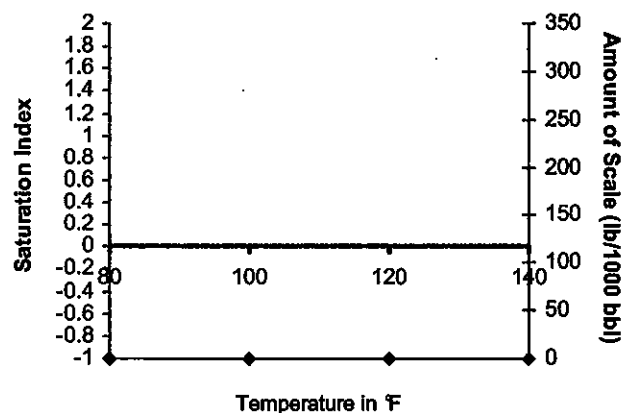
Anhydrite - CaSO_4



Carbon Dioxide Partial Pressure



Celestite - SrSO_4



Rocky Mountain Region
1675 Broadway, Suite 1500
Denver, CO 80202
(303) 573-2772

Lab Team Leader - Sheila Hernandez
(432) 495-7240

Water Analysis Report by Baker Petrolite

Company:	EL PASO E & P	Sales RDT:	44625
Region:	ROCKY MOUNTAINS	Account Manager:	TY CLINESMITH (575) 447-0621
Area:	RATON, NM	Sample #:	47720
Lease/Platform:	VERMEJO PARK RANCH 'C'	Analysis ID #:	108243
Entity (or well #):	204	Analysis Cost:	\$90.00
Formation:	UNKNOWN		
Sample Point:	DAKOTA SWAB RUN 4		

Summary		Analysis of Sample 47720 @ 75 °F					
Sampling Date:	04/29/11	Anions	mg/l	meq/l	Cations	mg/l	meq/l
Analysis Date:	05/10/11	Chloride:	3309.0	93.33	Sodium:	2458.5	106.94
Analyst:	JENNIFER HARDELL	Bicarbonate:	784.0	12.85	Magnesium:	4.0	0.33
TDS (mg/l or g/m3):	6874.2	Carbonate:	0.0	0.	Calcium:	8.0	0.4
Density (g/cm3, tonne/m3):	1.005	Sulfate:	205.0	4.27	Strontium:	2.0	0.05
Anion/Cation Ratio:	1	Phosphate:			Barium:	0.7	0.01
Carbon Dioxide:		Borate:			Iron:	8.5	0.31
Oxygen:		Silicate:			Potassium:	94.0	2.4
Comments:		Hydrogen Sulfide:			Aluminum:		
		pH at time of sampling:			Chromium:		
		pH at time of analysis:		8.27	Copper:		
		pH used in Calculation:		8.27	Lead:		
					Manganese:	0.500	0.02
					Nickel:		

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Gauge Press.	Calcite CaCO ₃		Gypsum CaSO ₄ ·2H ₂ O		Anhydrite CaSO ₄		Celestite SrSO ₄		Barite BaSO ₄		CO ₂ Press
°F	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi
80	0	0.15	1.74	-2.77	0.00	-2.83	0.00	-1.61	0.00	1.04	0.35	0.05
100	0	0.16	1.74	-2.78	0.00	-2.78	0.00	-1.60	0.00	0.89	0.35	0.09
120	0	0.17	1.74	-2.78	0.00	-2.70	0.00	-1.57	0.00	0.77	0.35	0.15
140	0	0.20	2.09	-2.77	0.00	-2.60	0.00	-1.54	0.00	0.67	0.35	0.24

Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.

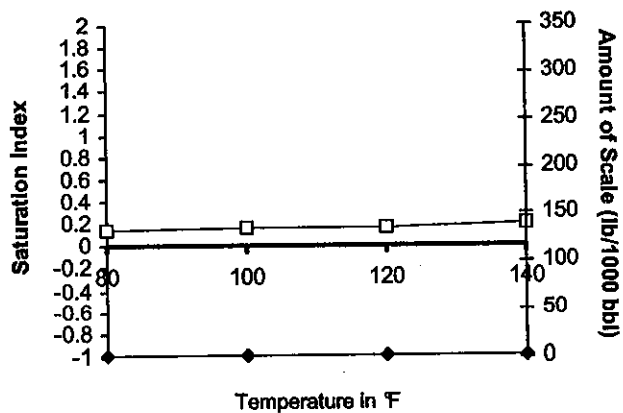
Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: The reported CO₂ pressure is actually the calculated CO₂ fugacity. It is usually nearly the same as the CO₂ partial pressure.

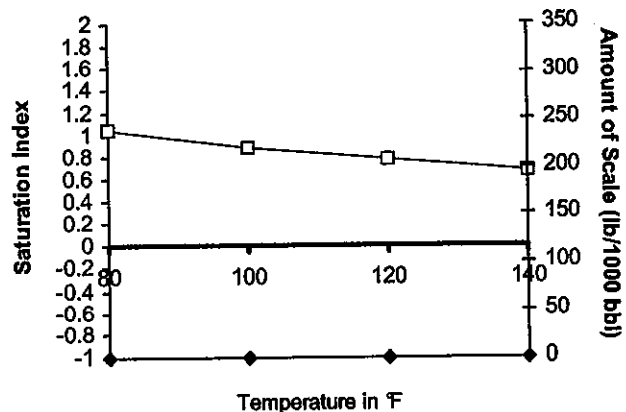
Scale Predictions from Baker Petrolite

Analysis of Sample 47720 @ 75 °F for EL PASO E & P, 05/10/11

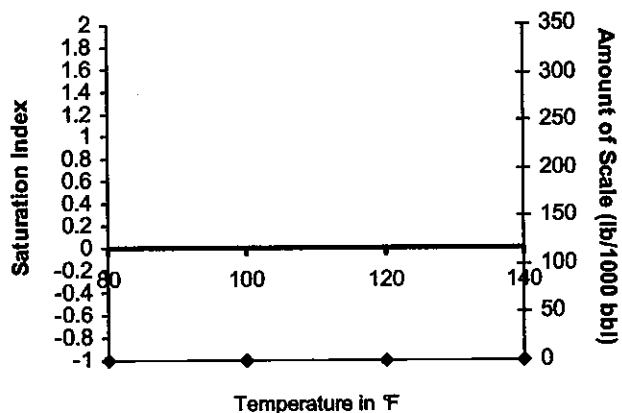
Calcite - CaCO_3



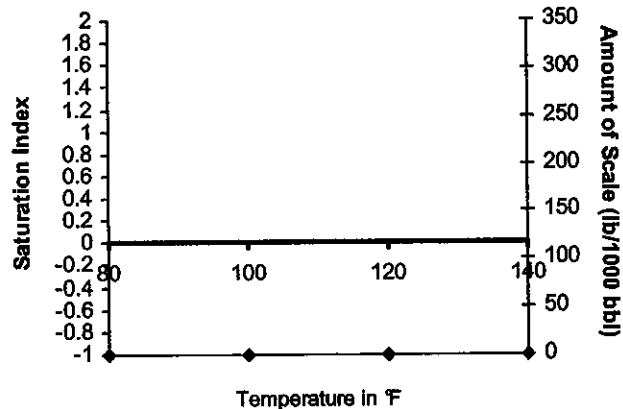
Barite - BaSO_4



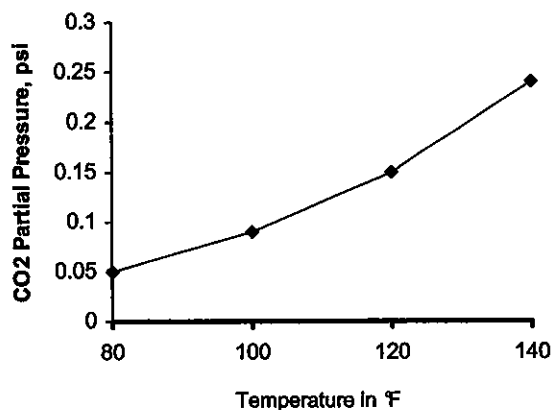
Gypsum - $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$



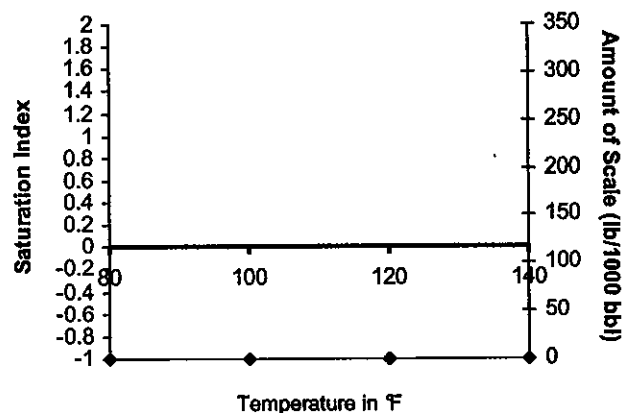
Anhydrite - CaSO_4



Carbon Dioxide Partial Pressure



Celestite - SrSO_4



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Lab Team Leader - Sheila Hernandez
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Water Analysis Report by Baker Petrolite

Company:	EL PASO E & P	Sales RDT:	44625
Region:	ROCKY MOUNTAINS	Account Manager:	TY CLINESMITH (575) 447-0621
Area:	RATON, NM	Sample #:	47721
Lease/Platform:	VERMEJO PARK RANCH 'C'	Analysis ID #:	108244
Entity (or well #):	204	Analysis Cost:	\$90.00
Formation:	UNKNOWN		
Sample Point:	DAKOTA SWAB RUN 5		

Summary		Analysis of Sample 47721 @ 75 F					
Sampling Date:	04/29/11	Anions	mg/l	meq/l	Cations	mg/l	meq/l
Analysis Date:	05/10/11	Chloride:	3498.0	98.67	Sodium:	2572.8	111.91
Analyst:	JENNIFER HARDELL	Bicarbonate:	724.0	11.87	Magnesium:	4.5	0.37
TDS (mg/l or g/m3):	7198.2	Carbonate:	0.0	0.	Calcium:	8.0	0.4
Density (g/cm3, tonne/m3):	1.005	Sulfate:	263.0	5.48	Strontium:	2.0	0.05
Anion/Cation Ratio:	0.9999999	Phosphate:			Barium:	0.5	0.01
		Borate:			Iron:	6.0	0.22
		Silicate:			Potassium:	119.0	3.04
Carbon Dioxide:		Hydrogen Sulfide:			Aluminum:		
Oxygen:		pH at time of sampling:			Chromium:		
Comments:		pH at time of analysis:		8.24	Copper:		
		pH used in Calculation:		8.24	Lead:		
					Manganese:	0.400	0.01
					Nickel:		

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Gauge Press.	Calcite CaCO ₃		Gypsum CaSO ₄ *2H ₂ O		Anhydrite CaSO ₄		Celestite SrSO ₄		Barite BaSO ₄		CO ₂ Press
F	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi
80	0	0.08	0.70	-2.67	0.00	-2.74	0.00	-1.53	0.00	0.98	0.35	0.05
100	0	0.09	1.04	-2.69	0.00	-2.69	0.00	-1.51	0.00	0.83	0.35	0.09
120	0	0.10	1.04	-2.69	0.00	-2.61	0.00	-1.49	0.00	0.71	0.35	0.15
140	0	0.13	1.39	-2.68	0.00	-2.51	0.00	-1.45	0.00	0.61	0.35	0.23

Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.

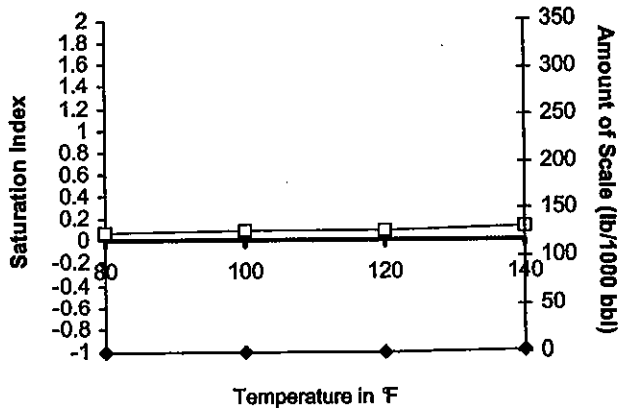
Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: The reported CO2 pressure is actually the calculated CO2 fugacity. It is usually nearly the same as the CO2 partial pressure.

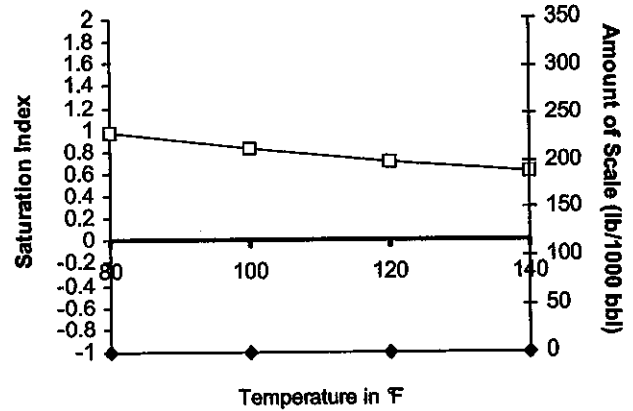
Scale Predictions from Baker Petrolite

Analysis of Sample 47721 @ 75 °F for EL PASO E & P, 05/10/11

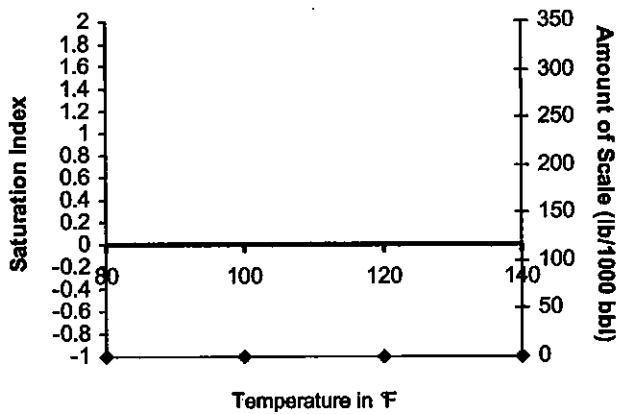
Calcite - CaCO_3



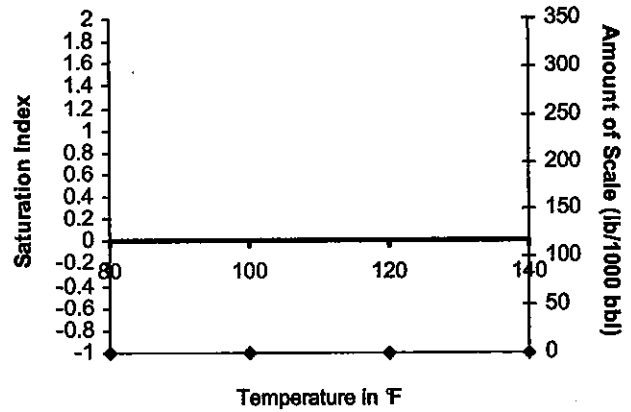
Barite - BaSO_4



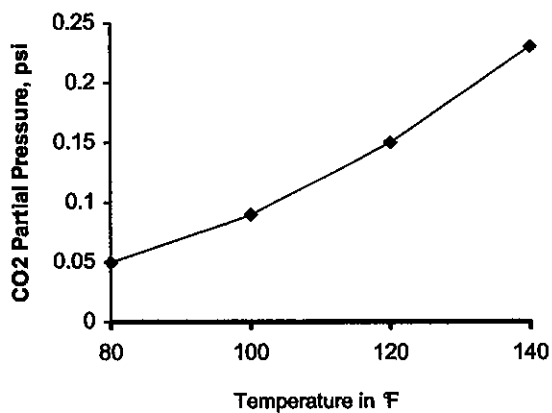
Gypsum - $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$



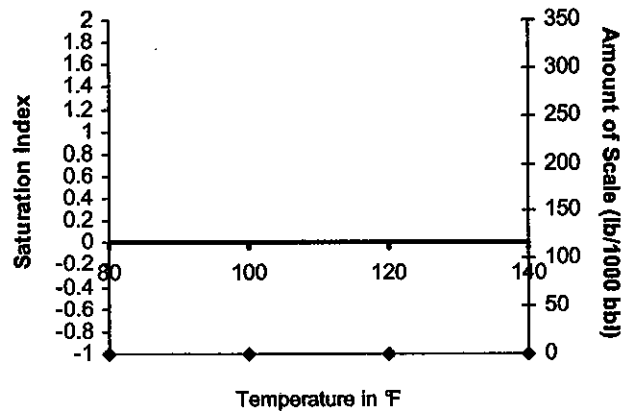
Anhydrite - CaSO_4



Carbon Dioxide Partial Pressure



Celestite - SrSO_4



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Lab Team Leader - Sheila Hernandez
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Water Analysis Report by Baker Petrolite

Company:	EL PASO E & P	Sales RDT:	44625
Region:	ROCKY MOUNTAINS	Account Manager:	TY CLINESMITH (575) 447-0621
Area:	RATON, NM	Sample #:	47722
Lease/Platform:	VERMEJO PARK RANCH 'C'	Analysis ID #:	108245
Entity (or well #):	204	Analysis Cost:	\$90.00
Formation:	UNKNOWN		
Sample Point:	DAKOTA SWAB RUN 6		

Summary		Analysis of Sample 47722 @ 75 F					
Sampling Date:	04/29/11	Anions	mg/l	meq/l	Cations	mg/l	meq/l
Analysis Date:	05/10/11	Chloride:	3664.0	103.35	Sodium:	2343.0	101.92
Analyst:	JENNIFER HARDELL	Bicarbonate:	705.0	11.55	Magnesium:	6.5	0.53
TDS (mg/l or g/m3):	7522	Carbonate:	0.0	0.	Calcium:	42.0	2.1
Density (g/cm3, tonne/m3):	1.005	Sulfate:	278.0	5.79	Strontium:	3.0	0.07
Anion/Cation Ratio:	1.0000001	Phosphate:			Barium:	1.5	0.02
Carbon Dioxide:		Borate:			Iron:	355.0	12.83
Oxygen:		Silicate:			Potassium:	119.0	3.04
Comments:		Hydrogen Sulfide:			Aluminum:		
		pH at time of sampling:			Chromium:		
		pH at time of analysis:		8.11	Copper:		
		pH used in Calculation:		8.11	Lead:		
					Manganese:	5.000	0.18
					Nickel:		

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Gauge Press.	Calcite CaCO ₃		Gypsum CaSO ₄ *2H ₂ O		Anhydrite CaSO ₄		Celestite SrSO ₄		Barite BaSO ₄		CO ₂ Press
°F	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi
80	0	0.64	15.31	-1.99	0.00	-2.06	0.00	-1.38	0.00	1.42	0.70	0.07
100	0	0.64	16.70	-2.00	0.00	-2.01	0.00	-1.37	0.00	1.27	0.70	0.12
120	0	0.64	18.79	-2.01	0.00	-1.93	0.00	-1.35	0.00	1.15	0.70	0.2
140	0	0.66	20.53	-2.00	0.00	-1.83	0.00	-1.32	0.00	1.04	0.70	0.32

Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.

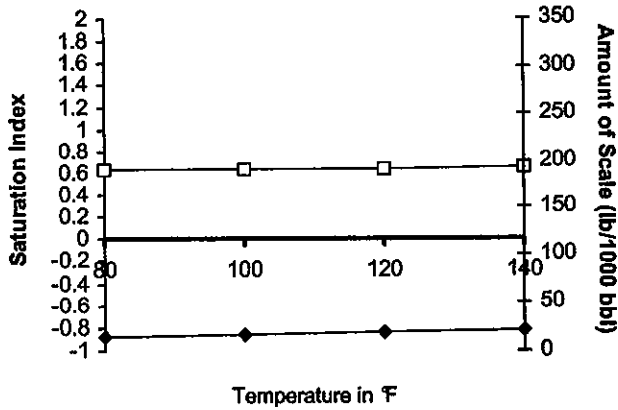
Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: The reported CO2 pressure is actually the calculated CO2 fugacity. It is usually nearly the same as the CO2 partial pressure.

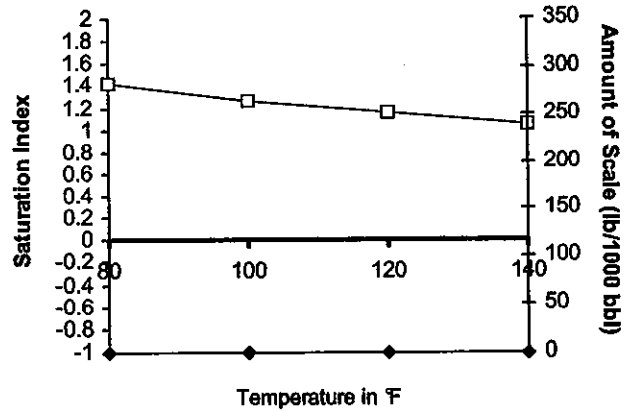
Scale Predictions from Baker Petrolite

Analysis of Sample 47722 @ 75 °F for EL PASO E & P, 05/10/11

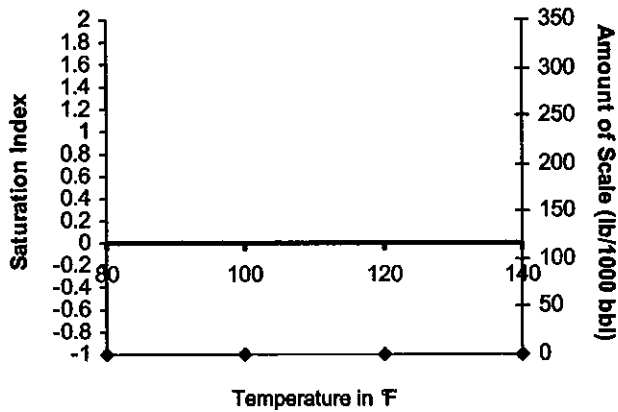
Calcite - CaCO_3



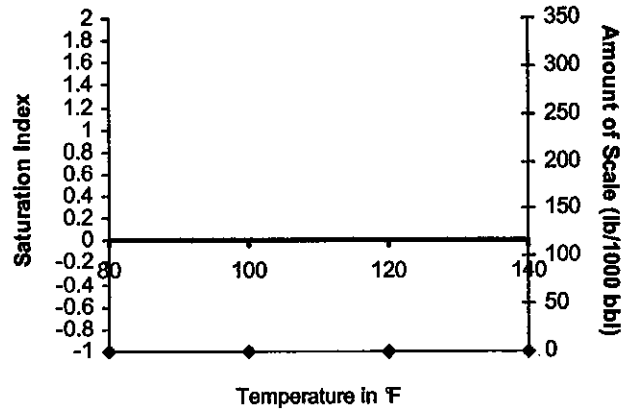
Barite - BaSO_4



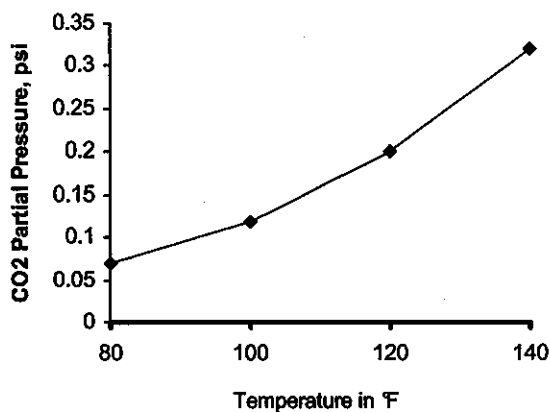
Gypsum - $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$



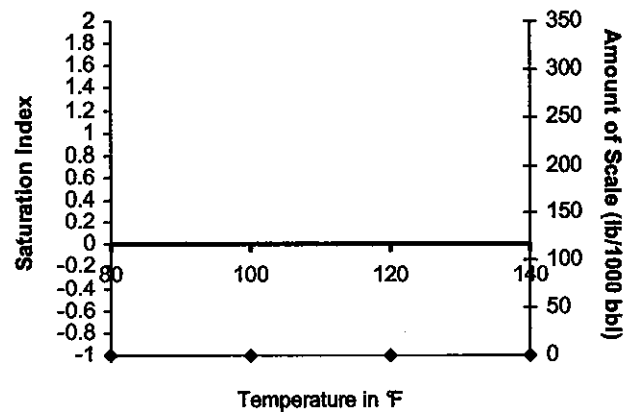
Anhydrite - CaSO_4



Carbon Dioxide Partial Pressure



Celestite - SrSO_4



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Lab Team Leader - Shella Hernandez
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Water Analysis Report by Baker Petrolite

Company: EL PASO E & P
Region: ROCKY MOUNTAINS
Area: RATON, NM
Lease/Platform: VERMEJO PARK RANCH 'C'
Entity (or well #): 204
Formation: UNKNOWN
Sample Point: DAKOTA SWAB RUN 7

Sales RDT: 44625
Account Manager: TY CLINESMITH (575) 447-0621
Sample #: 47723
Analysis ID #: 108246
Analysis Cost: \$90.00

Summary		Analysis of Sample 47723 @ 75 °F					
		Anions		Cations			
		mg/l	meq/l	mg/l	meq/l		
Sampling Date:	04/29/11	Chloride:	3877.0	109.36	Sodium:	1570.1	68.29
Analysis Date:	05/10/11	Bicarbonate:	900.0	14.75	Magnesium:	12.0	0.99
Analyst:	JENNIFER HARDELL	Carbonate:	0.0	0.0	Calcium:	107.0	5.34
TDS (mg/l or g/m3):	8358.1	Sulfate:	302.0	6.29	Strontium:	6.0	0.14
Density (g/cm3, tonne/m3):	1.006	Phosphate:			Barium:	3.0	0.04
Anion/Cation Ratio:	1.0000000	Borate:			Iron:	1418.0	51.24
Carbon Dioxide:		Silicate:			Potassium:	146.0	3.73
Oxygen:		Hydrogen Sulfide:			Aluminum:		
Comments:		pH at time of sampling:			Chromium:		
		pH at time of analysis:		8.17	Copper:		
		pH used in Calculation:		8.17	Lead:		
					Manganese:	17.000	0.62
					Nickel:		

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Gauge Press.	Calcite CaCO ₃		Gypsum CaSO ₄ ·2H ₂ O		Anhydrite CaSO ₄		Celestite SrSO ₄		Barite BaSO ₄		CO ₂ Press
°F	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi
80	0	1.14	50.75	-1.68	0.00	-1.75	0.00	-1.18	0.00	1.63	1.74	0.07
100	0	1.10	54.22	-1.71	0.00	-1.71	0.00	-1.18	0.00	1.47	1.74	0.14
120	0	1.08	58.05	-1.72	0.00	-1.64	0.00	-1.16	0.00	1.33	1.74	0.25
140	0	1.06	62.22	-1.72	0.00	-1.55	0.00	-1.14	0.00	1.22	1.74	0.42

Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.

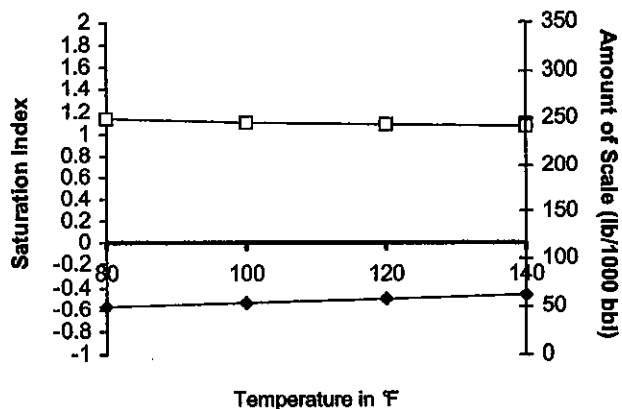
Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: The reported CO₂ pressure is actually the calculated CO₂ fugacity. It is usually nearly the same as the CO₂ partial pressure.

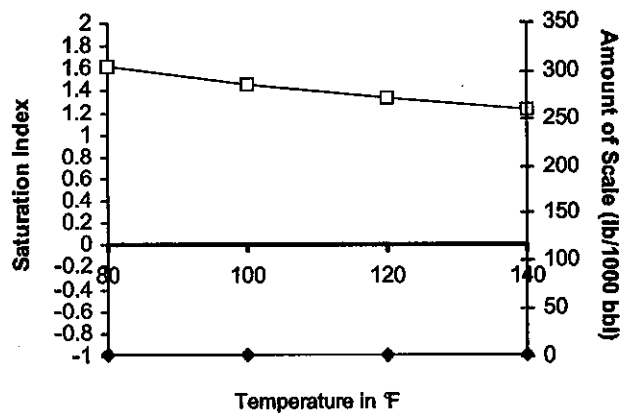
Scale Predictions from Baker Petrolite

Analysis of Sample 47723 @ 75 °F for EL PASO E & P, 05/10/11

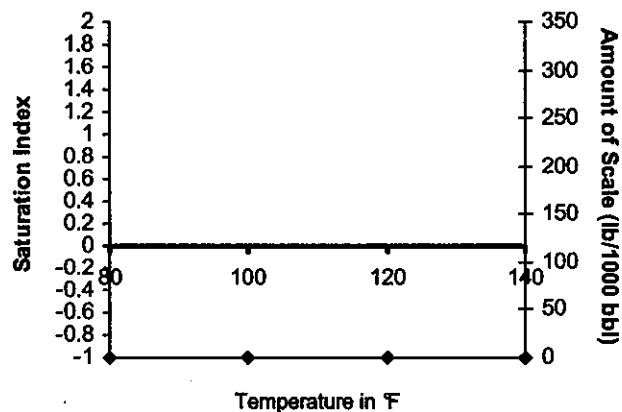
Calcite - CaCO_3



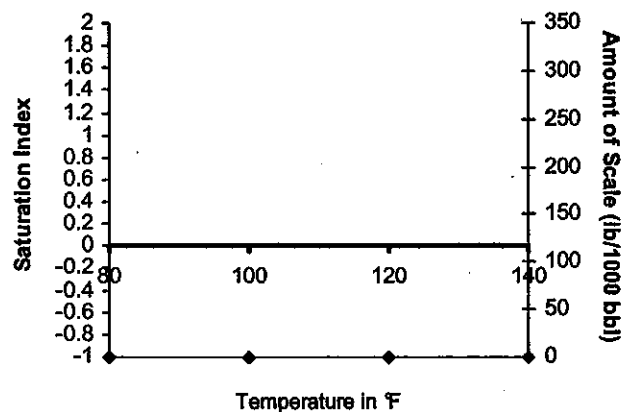
Barite - BaSO_4



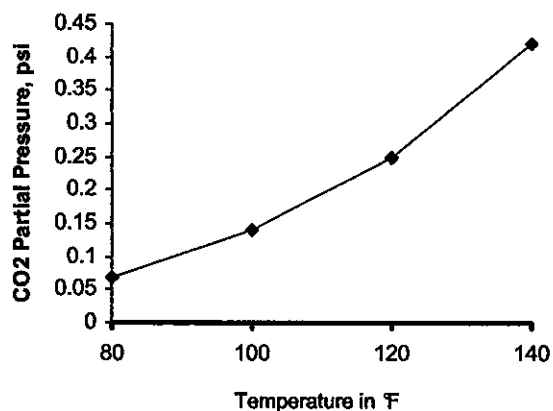
Gypsum - $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$



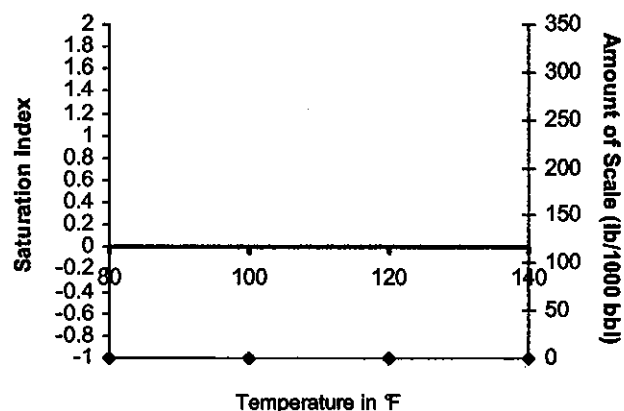
Anhydrite - CaSO_4



Carbon Dioxide Partial Pressure



Celestite - SrSO_4



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Water Analysis Report by Baker Petrolite

Company:	EL PASO E & P	Sales RDT:	44625
Region:	ROCKY MOUNTAINS	Account Manager:	TY CLINESMITH (575) 447-0621
Area:	RATON, NM	Sample #:	47724
Lease/Platform:	VERMEJO PARK RANCH 'C'	Analysis ID #:	108247
Entity (or well #):	204	Analysis Cost:	\$90.00
Formation:	UNKNOWN		
Sample Point:	DAKOTA SWAB RUN 8		

Summary		Analysis of Sample 47724 @ 75 °F					
Sampling Date:	04/29/11	Anions	mg/l	meq/l	Cations	mg/l	meq/l
Analysis Date:	05/10/11	Chloride:	4973.0	140.27	Sodium:	3305.4	143.78
Analyst:	JENNIFER HARDELL	Bicarbonate:	465.0	7.62	Magnesium:	15.0	1.23
TDS (mg/l or g/m3):	9581.4	Carbonate:	0.0	0.	Calcium:	55.0	2.74
Density (g/cm3, tonne/m3):	1.007	Sulfate:	451.0	9.39	Strontium:	6.0	0.14
Anion/Cation Ratio:	0.9999999	Phosphate:			Barium:	1.0	0.01
Carbon Dioxide:		Borate:			Iron:	135.0	4.88
Oxygen:		Silicate:			Potassium:	173.0	4.42
Comments:		Hydrogen Sulfide:			Aluminum:		
		pH at time of sampling:			Chromium:		
		pH at time of analysis:		7.73	Copper:		
		pH used in Calculation:		7.73	Lead:		
					Manganese:	2.000	0.07
					Nickel:		

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Gauge Press.	Calcite CaCO ₃		Gypsum CaSO ₄ ·2H ₂ O		Anhydrite CaSO ₄		Celestite SrSO ₄		Barite BaSO ₄		CO ₂ Press
°F	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi
80	0	0.17	3.47	-1.72	0.00	-1.79	0.00	-0.93	0.00	1.40	0.69	0.1
100	0	0.24	5.55	-1.73	0.00	-1.74	0.00	-0.92	0.00	1.25	0.69	0.15
120	0	0.30	7.98	-1.74	0.00	-1.66	0.00	-0.90	0.00	1.12	0.69	0.22
140	0	0.37	11.11	-1.73	0.00	-1.56	0.00	-0.88	0.00	1.02	0.69	0.32

Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.

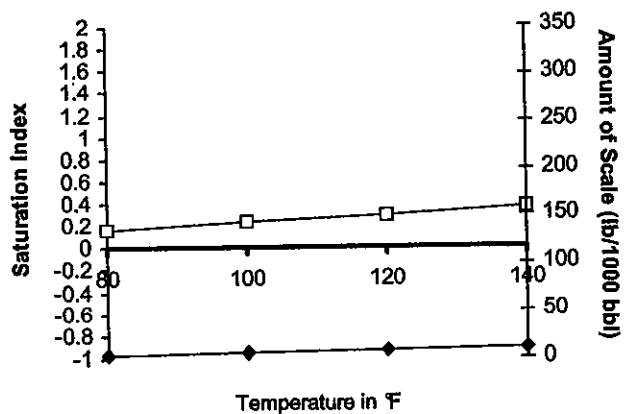
Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: The reported CO2 pressure is actually the calculated CO2 fugacity. It is usually nearly the same as the CO2 partial pressure.

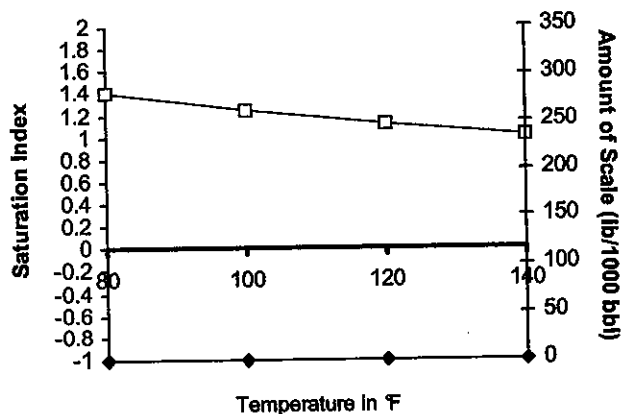
Scale Predictions from Baker Petrolite

Analysis of Sample 47724 @ 75 °F for EL PASO E & P, 05/10/11

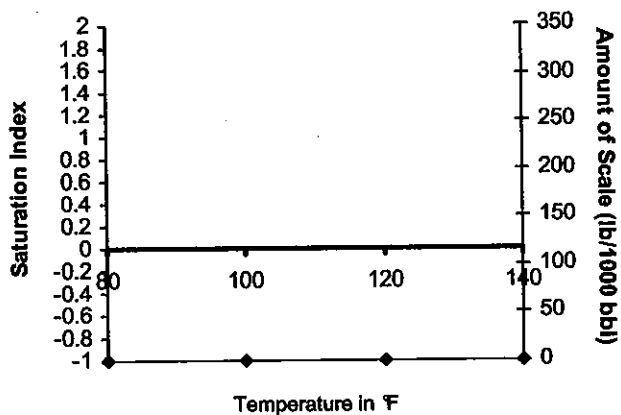
Calcite - CaCO_3



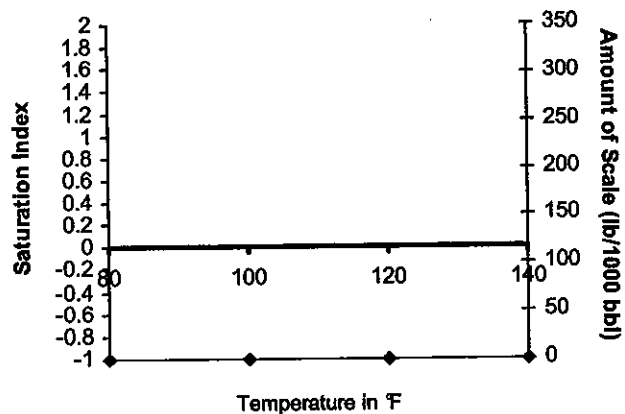
Barite - BaSO_4



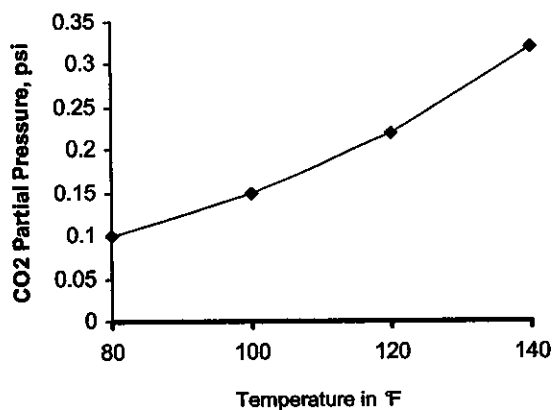
Gypsum - $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$



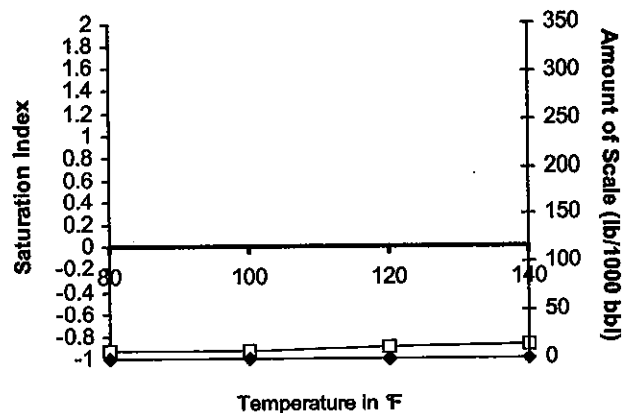
Anhydrite - CaSO_4



Carbon Dioxide Partial Pressure



Celestite - SrSO_4



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 Lab Team Leader - Sheila Hernandez
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Water Analysis Report by Baker Petrolite

Company:	EL PASO E & P	Sales RDT:	44625
Region:	ROCKY MOUNTAINS	Account Manager:	TY CLINESMITH (575) 447-0621
Area:	RATON, NM	Sample #:	47725
Lease/Platform:	VERMEJO PARK RANCH 'C'	Analysis ID #:	108248
Entity (or well #):	204	Analysis Cost:	\$90.00
Formation:	UNKNOWN		
Sample Point:	DAKOTA SWAB RUN 9		

Summary		Analysis of Sample 47725 @ 75 °F					
Sampling Date:	04/29/11	Anions	mg/l	meq/l	Cations	mg/l	meq/l
Analysis Date:	05/10/11	Chloride:	6600.0	186.16	Sodium:	3548.9	154.37
Analyst:	JENNIFER HARDELL	Bicarbonate:	375.0	6.15	Magnesium:	31.0	2.55
TDS (mg/l or g/m3):	12405.9	Carbonate:	0.0	0.	Calcium:	113.0	5.64
Density (g/cm3, tonne/m3):	1.008	Sulfate:	539.0	11.22	Strontium:	9.0	0.21
Anion/Cation Ratio:	0.9999999	Phosphate:			Barium:	1.0	0.01
		Borate:			Iron:	966.0	34.91
		Silicate:			Potassium:	210.0	5.37
Carbon Dioxide:		Hydrogen Sulfide:			Aluminum:		
Oxygen:		pH at time of sampling:			Chromium:		
Comments:		pH at time of analysis:		7.24	Copper:		
		pH used In Calculation:		7.24	Lead:		
					Manganese:	13.000	0.47
					Nickel:		

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Gauge Press.	Calcite CaCO ₃		Gypsum CaSO ₄ ·2H ₂ O		Anhydrite CaSO ₄		Celestite SrSO ₄		Barite BaSO ₄		CO ₂ Press
°F	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi
80	0	-0.16	0.00	-1.48	0.00	-1.54	0.00	-0.82	0.00	1.34	0.69	0.24
100	0	-0.06	0.00	-1.50	0.00	-1.50	0.00	-0.82	0.00	1.18	0.69	0.33
120	0	0.03	1.04	-1.51	0.00	-1.43	0.00	-0.80	0.00	1.04	0.69	0.45
140	0	0.11	4.85	-1.51	0.00	-1.34	0.00	-0.78	0.00	0.93	0.69	0.6

Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.

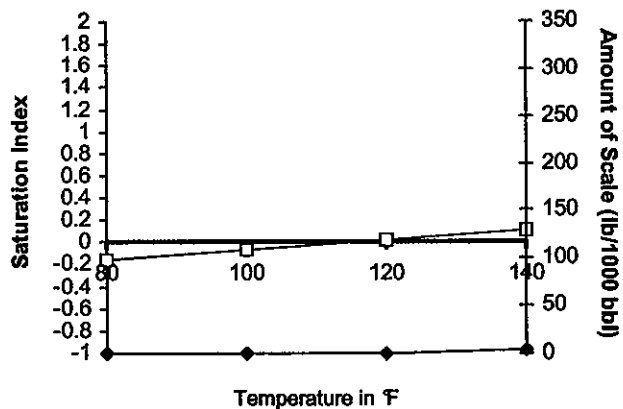
Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: The reported CO2 pressure is actually the calculated CO2 fugacity. It is usually nearly the same as the CO2 partial pressure.

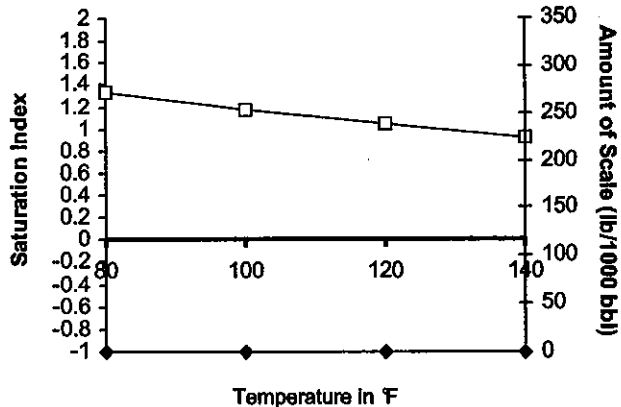
Scale Predictions from Baker Petrolite

Analysis of Sample 47725 @ 75 °F for EL PASO E & P, 05/10/11

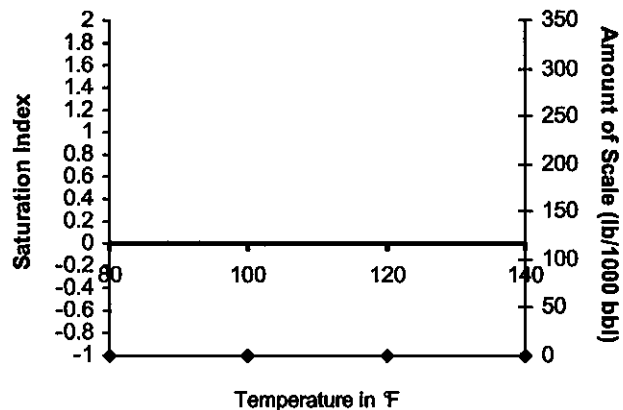
Calcite - CaCO_3



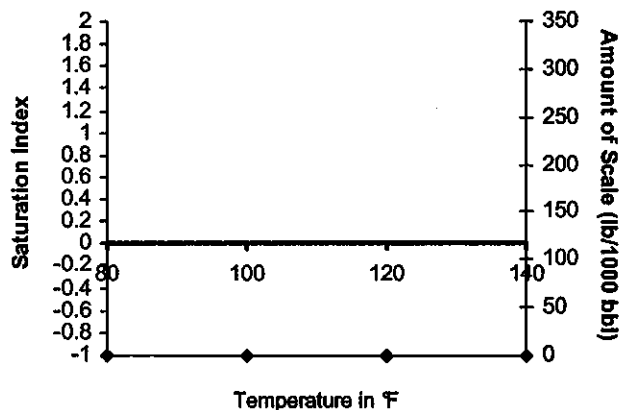
Barite - BaSO_4



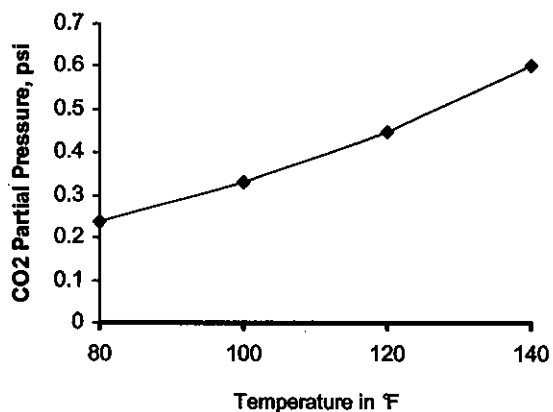
Gypsum - $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$



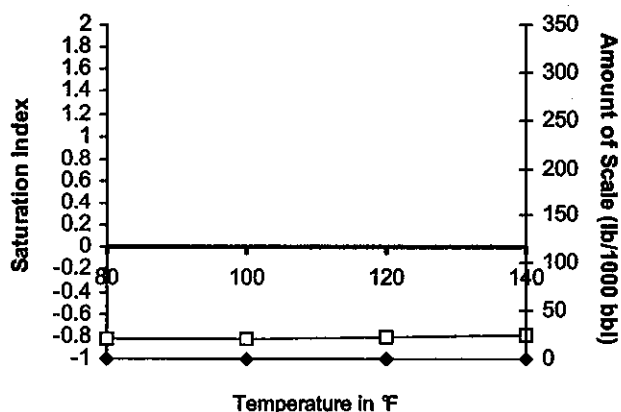
Anhydrite - CaSO_4



Carbon Dioxide Partial Pressure



Celestite - SrSO_4



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Water Analysis Report by Baker Petrolite

Company:	EL PASO E & P	Sales RDT:	44625
Region:	ROCKY MOUNTAINS	Account Manager:	TY CLINESMITH (575) 447-0621
Area:	RATON, NM	Sample #:	47726
Lease/Platform:	VERMEJO PARK RANCH 'C'	Analysis ID #:	108249
Entity (or well #):	204	Analysis Cost:	\$90.00
Formation:	UNKNOWN		
Sample Point:	DAKOTA SWAB RUN 10		

Summary		Analysis of Sample 47726 @ 75 F					
Sampling Date:	04/29/11	Anions	mg/l	meq/l	Cations	mg/l	meq/l
Analysis Date:	05/10/11	Chloride:	7502.0	211.6	Sodium:	4708.2	204.8
Analyst:	JENNIFER HARDELL	Bicarbonate:	304.0	4.98	Magnesium:	41.0	3.37
TDS (mg/l or g/m3):	13763.1	Carbonate:	0.0	0.	Calcium:	156.0	7.78
Density (g/cm3, tonne/m3):	1.009	Sulfate:	614.0	12.78	Strontium:	12.0	0.27
Anion/Cation Ratio:	0.9999999	Phosphate:			Barium:	0.9	0.01
Carbon Dioxide:		Borate:			Iron:	210.0	7.59
Oxygen:		Silicate:			Potassium:	211.0	5.4
Comments:		Hydrogen Sulfide:			Aluminum:		
		pH at time of sampling:			Chromium:		
		pH at time of analysis:		7.13	Copper:		
		pH used in Calculation:		7.13	Lead:		
					Manganese:	4.000	0.15
					Nickel:		

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Gauge Press.	Calcite CaCO ₃		Gypsum CaSO ₄ *2H ₂ O		Anhydrite CaSO ₄		Celestite SrSO ₄		Barite BaSO ₄		CO ₂ Press
F	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi
80	0	-0.22	0.00	-1.27	0.00	-1.34	0.00	-0.63	0.00	1.36	0.35	0.25
100	0	-0.11	0.00	-1.29	0.00	-1.29	0.00	-0.62	0.00	1.20	0.35	0.33
120	0	0.01	0.35	-1.29	0.00	-1.21	0.00	-0.61	0.00	1.07	0.35	0.43
140	0	0.13	4.84	-1.29	0.00	-1.12	0.00	-0.58	0.00	0.97	0.35	0.54

Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.

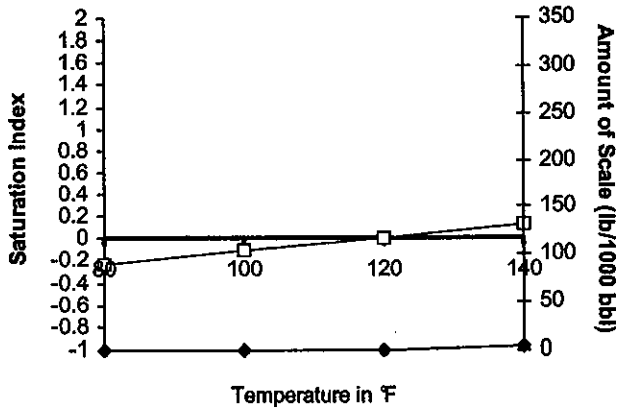
Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: The reported CO2 pressure is actually the calculated CO2 fugacity. It is usually nearly the same as the CO2 partial pressure.

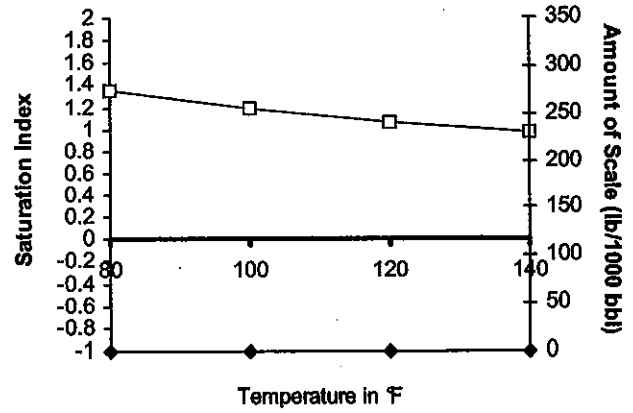
Scale Predictions from Baker Petrolite

Analysis of Sample 47726 @ 75 °F for EL PASO E & P, 05/10/11

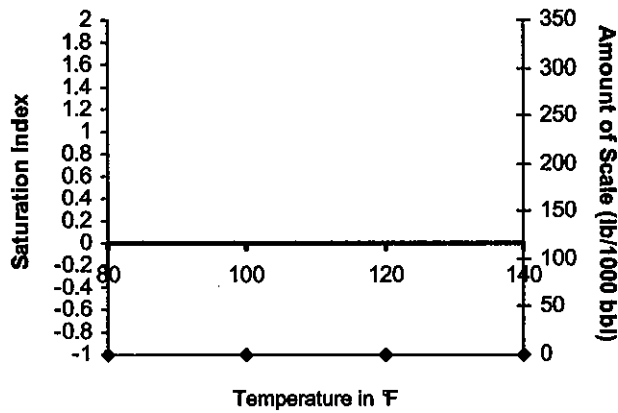
Calcite - CaCO_3



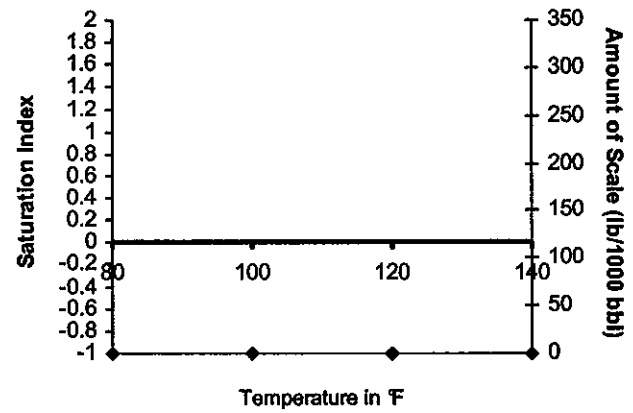
Barite - BaSO_4



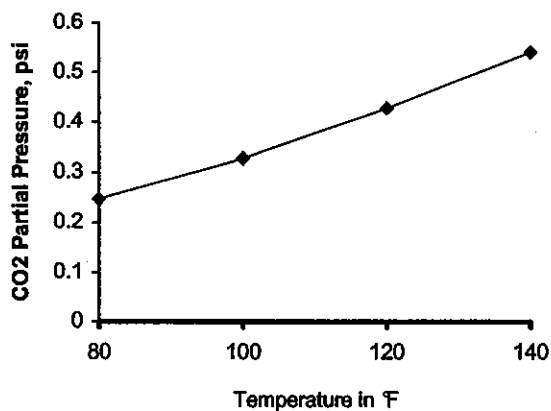
Gypsum - $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$



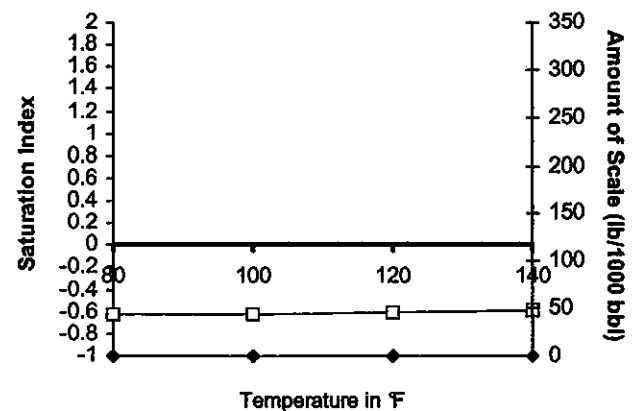
Anhydrite - CaSO_4



Carbon Dioxide Partial Pressure



Celestite - SrSO_4



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Water Analysis Report by Baker Petrolite

Company:	EL PASO E & P	Sales RDT:	44625
Region:	ROCKY MOUNTAINS	Account Manager:	TY CLINESMITH (575) 447-0621
Area:	RATON, NM	Sample #:	47727
Lease/Platform:	VERMEJO PARK RANCH 'C'	Analysis ID #:	108250
Entity (or well #):	204	Analysis Cost:	\$90.00
Formation:	UNKNOWN		
Sample Point:	DAKOTA SWAB RUN 11		

Summary		Analysis of Sample 47727 @ 75 F					
Sampling Date:	04/29/11	Anions	mg/l	meq/l	Cations	mg/l	meq/l
Analysis Date:	05/10/11	Chloride:	9328.0	263.11	Sodium:	5896.9	256.5
Analyst:	JENNIFER HARDELL	Bicarbonate:	504.0	8.26	Magnesium:	72.0	5.92
TDS (mg/l or g/m3):	17096	Carbonate:	0.0	0.	Calcium:	280.0	13.97
Density (g/cm3, tonne/m3):	1.012	Sulfate:	681.0	14.18	Strontium:	18.0	0.41
Anion/Cation Ratio:	1	Phosphate:			Barium:	0.6	0.01
Carbon Dioxide:		Borate:			Iron:	57.0	2.06
Oxygen:		Silicate:			Potassium:	253.0	6.47
Comments:		Hydrogen Sulfide:			Aluminum:		
		pH at time of sampling:			Chromium:		
		pH at time of analysis:		6.89	Copper:		
		pH used in Calculation:		6.89	Lead:		
					Manganese:	5.500	0.2
					Nickel:		

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Gauge Press.	Calcite CaCO ₃		Gypsum CaSO ₄ ·2H ₂ O		Anhydrite CaSO ₄		Celestite SrSO ₄		Barite BaSO ₄		CO ₂ Press
F	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi
80	0	-0.03	0.00	-1.05	0.00	-1.11	0.00	-0.48	0.00	1.16	0.34	0.69
100	0	0.09	6.20	-1.07	0.00	-1.06	0.00	-0.47	0.00	1.01	0.34	0.91
120	0	0.22	14.82	-1.08	0.00	-0.99	0.00	-0.45	0.00	0.87	0.34	1.14
140	0	0.36	24.81	-1.07	0.00	-0.90	0.00	-0.43	0.00	0.76	0.34	1.39

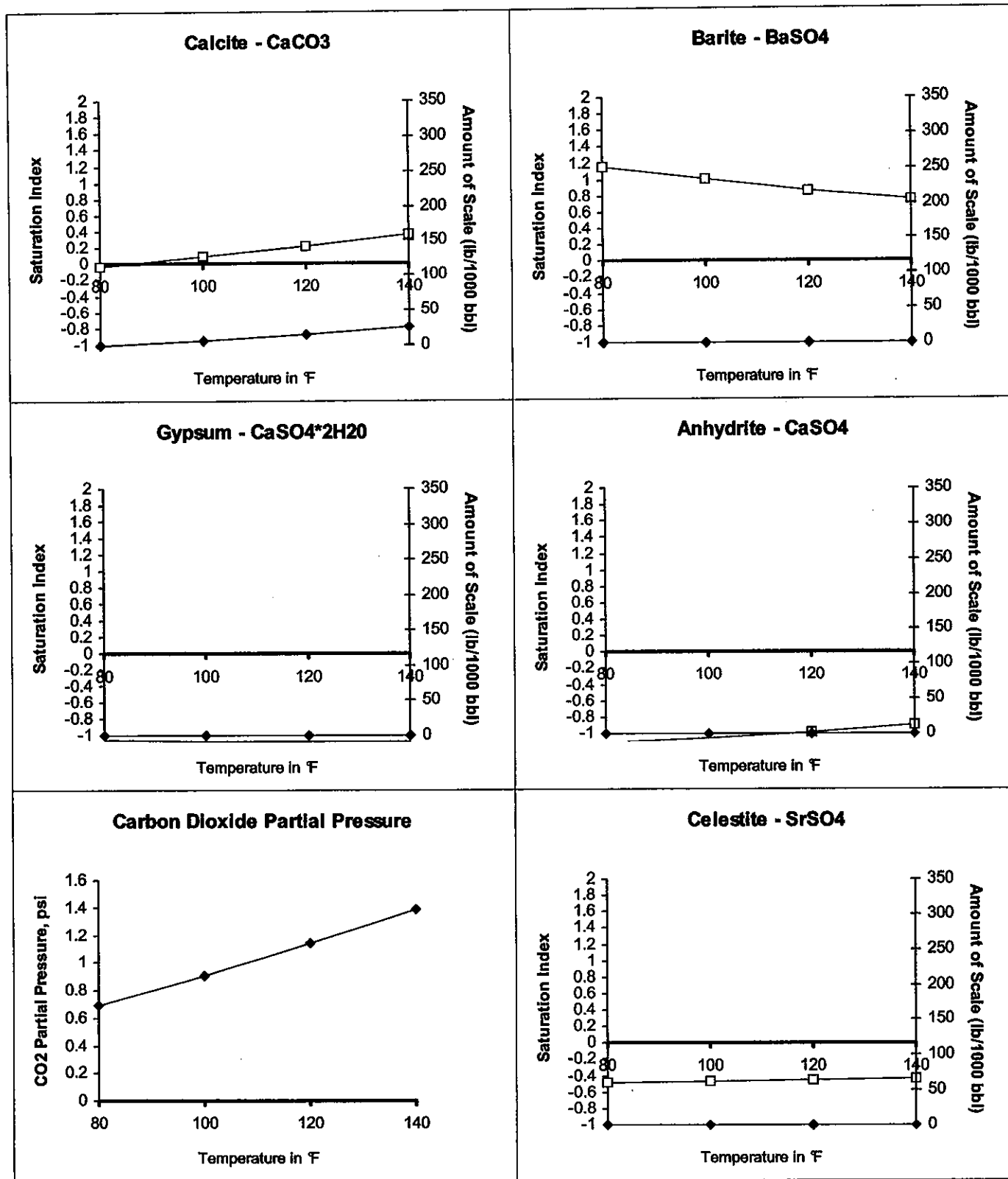
Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.

Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: The reported CO2 pressure is actually the calculated CO2 fugacity. It is usually nearly the same as the CO2 partial pressure.

Scale Predictions from Baker Petrolite

Analysis of Sample 47727 @ 75 °F for EL PASO E & P, 05/10/11



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Water Analysis Report by Baker Petrolite

Company:	EL PASO E & P	Sales RDT:	44625
Region:	ROCKY MOUNTAINS	Account Manager:	TY CLINESMITH (575) 447-0621
Area:	RATON, NM	Sample #:	47729
Lease/Platform:	VERMEJO PARK RANCH 'C'	Analysis ID #:	108252
Entity (or well #):	204	Analysis Cost:	\$90.00
Formation:	UNKNOWN		
Sample Point:	ENTRADA SWAB RUN 1		

Summary		Analysis of Sample 47729 @ 75 F					
Sampling Date:	04/29/11	Anions	mg/l	meq/l	Cations	mg/l	meq/l
Analysis Date:	05/10/11	Chloride:	2545.0	71.79	Sodium:	581.8	25.31
Analyst:	JENNIFER HARDELL	Bicarbonate:	700.0	11.47	Magnesium:	6.0	0.49
TDS (mg/l or g/m3):	6052.8	Carbonate:	68.0	2.27	Calcium:	82.0	4.09
Density (g/cm3, tonne/m3):	1.004	Sulfate:	314.0	6.54	Strontium:	5.5	0.13
Anion/Cation Ratio:	1.0000002	Phosphate:			Barium:	3.5	0.05
Carbon Dioxide:		Borate:			Iron:	1623.0	58.65
Oxygen:		Silicate:			Potassium:	108.0	2.76
Comments:		Hydrogen Sulfide:			Aluminum:		
		pH at time of sampling:			Chromium:		
		pH at time of analysis:		8.81	Copper:		
		pH used in Calculation:		8.81	Lead:		
					Manganese:	16.000	0.58
					Nickel:		

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Gauge Press.	Calcite CaCO ₃		Gypsum CaSO ₄ *2H ₂ O		Anhydrite CaSO ₄		Celestite SrSO ₄		Barite BaSO ₄		CO ₂ Press
F	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi
80	0	1.57	67.59	-1.74	0.00	-1.81	0.00	-1.16	0.00	1.75	2.09	0.01
100	0	1.51	66.89	-1.76	0.00	-1.76	0.00	-1.16	0.00	1.60	2.09	0.03
120	0	1.45	66.19	-1.77	0.00	-1.69	0.00	-1.14	0.00	1.46	2.09	0.06
140	0	1.40	65.50	-1.77	0.00	-1.60	0.00	-1.11	0.00	1.36	2.09	0.12

Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.

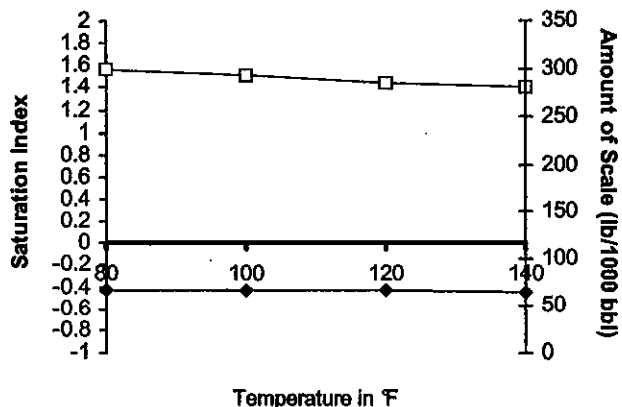
Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: The reported CO2 pressure is actually the calculated CO2 fugacity. It is usually nearly the same as the CO2 partial pressure.

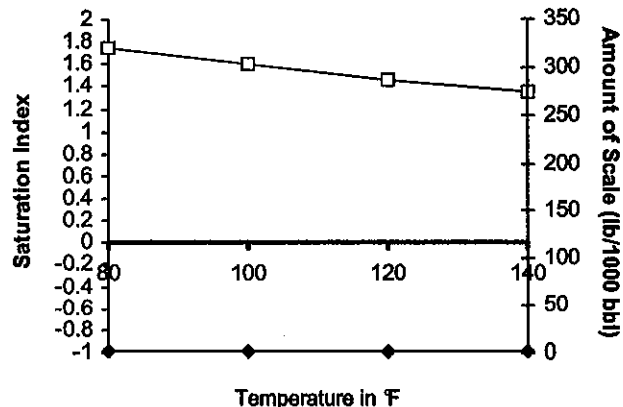
Scale Predictions from Baker Petrolite

Analysis of Sample 47729 @ 75 °F for EL PASO E & P, 05/10/11

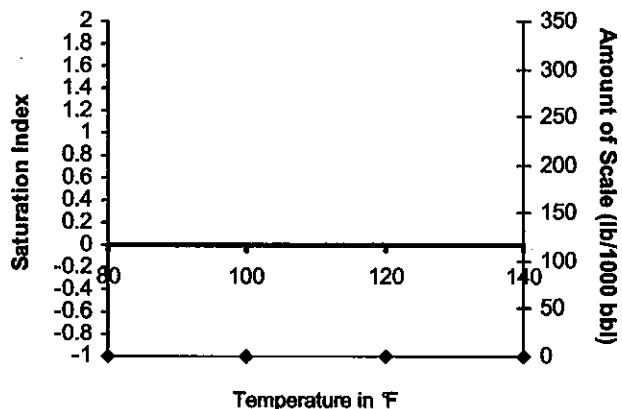
Calcite - CaCO_3



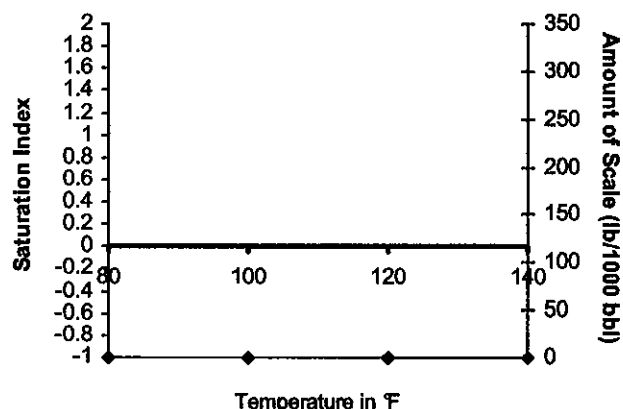
Barite - BaSO_4



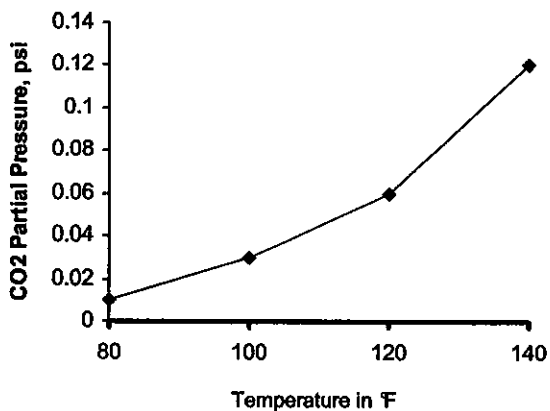
Gypsum - $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$



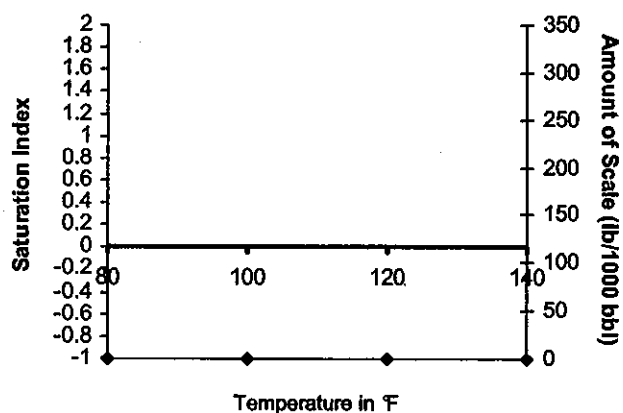
Anhydrite - CaSO_4



Carbon Dioxide Partial Pressure



Celestite - SrSO_4



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Lab Team Leader - Sheila Hernandez

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Water Analysis Report by Baker Petrolite

Company:	EL PASO E & P	Sales RDT:	44625
Region:	ROCKY MOUNTAINS	Account Manager:	TY CLINESMITH (575) 447-0621
Area:	RATON, NM	Sample #:	47730
Lease/Platform:	VERMEJO PARK RANCH 'C'	Analysis ID #:	108253
Entity (or well #):	204	Analysis Cost:	\$90.00
Formation:	UNKNOWN		
Sample Point:	ENTRADA SWAB RUN 2		

Summary		Analysis of Sample 47730 @ 75 F					
Sampling Date:	04/29/11	Anions	mg/l	meq/l	Cations	mg/l	meq/l
Analysis Date:	05/10/11	Chloride:	3275.0	92.38	Sodium:	1739.7	75.67
Analyst:	JENNIFER HARDELL	Bicarbonate:	693.0	11.36	Magnesium:	2.5	0.21
		Carbonate:	77.0	2.57	Calcium:	30.0	1.5
TDS (mg/l or g/m3):	7274.2	Sulfate:	387.0	8.06	Strontium:	2.0	0.05
Density (g/cm3, tonne/m3):	1.005	Phosphate:			Barium:	1.5	0.02
Anion/Cation Ratio:	1	Borate:			Iron:	903.0	32.63
		Silicate:			Potassium:	154.0	3.94
					Aluminum:		
Carbon Dioxide:		Hydrogen Sulfide:			Chromium:		
Oxygen:		pH at time of sampling:			Copper:		
Comments:		pH at time of analysis:		8.87	Lead:		
		pH used in Calculation:		8.87	Manganese:	9.500	0.35
					Nickel:		

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Gauge Press.	Calcite CaCO ₃		Gypsum CaSO ₄ ·2H ₂ O		Anhydrite CaSO ₄		Celestite SrSO ₄		Barite BaSO ₄		CO ₂ Press
°F	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi
80	0	1.18	24.01	-2.06	0.00	-2.13	0.00	-1.48	0.00	1.51	0.70	0.01
100	0	1.12	23.66	-2.08	0.00	-2.08	0.00	-1.47	0.00	1.36	0.70	0.03
120	0	1.07	23.31	-2.08	0.00	-2.00	0.00	-1.45	0.00	1.23	0.70	0.05
140	0	1.02	22.97	-2.07	0.00	-1.90	0.00	-1.42	0.00	1.13	0.70	0.1

Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.

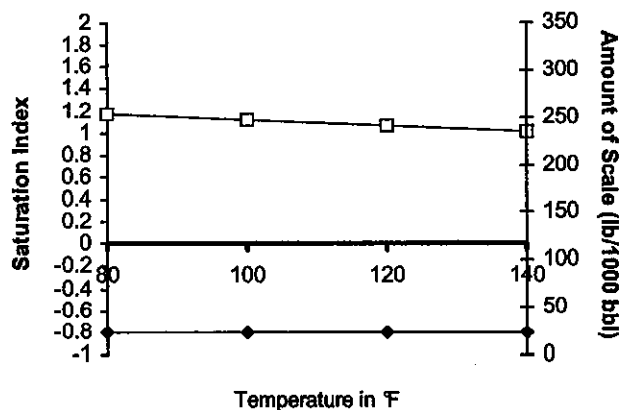
Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: The reported CO₂ pressure is actually the calculated CO₂ fugacity. It is usually nearly the same as the CO₂ partial pressure.

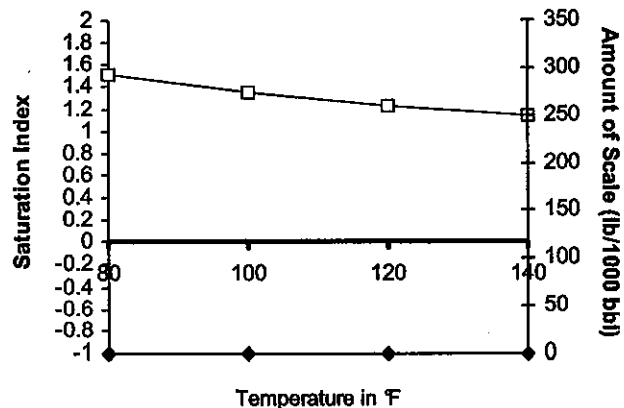
Scale Predictions from Baker Petrolite

Analysis of Sample 47730 @ 75 °F for EL PASO E & P, 05/10/11

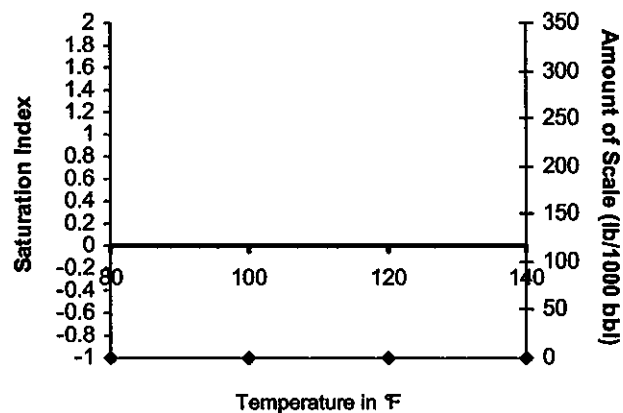
Calcite - CaCO_3



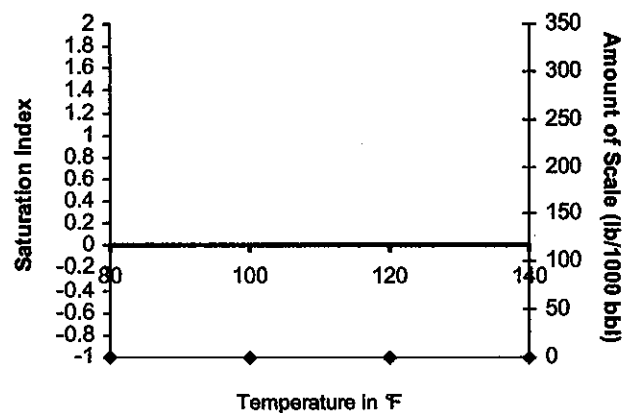
Barite - BaSO_4



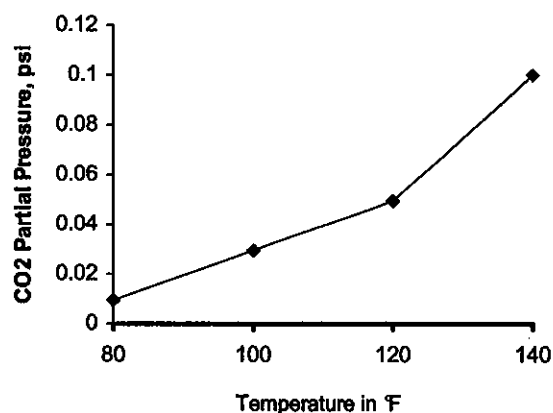
Gypsum - $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$



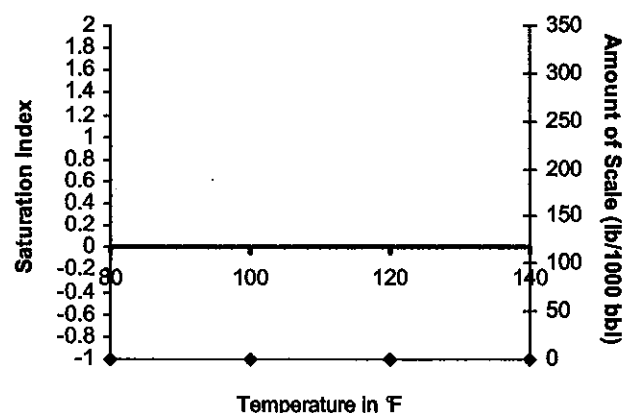
Anhydrite - CaSO_4



Carbon Dioxide Partial Pressure



Celestite - SrSO_4



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Water Analysis Report by Baker Petrolite

Company:	EL PASO E & P	Sales RDT:	44625
Region:	ROCKY MOUNTAINS	Account Manager:	TY CLINESMITH (575) 447-0621
Area:	RATON, NM	Sample #:	47731
Lease/Platform:	VERMEJO PARK RANCH 'C'	Analysis ID #:	108254
Entity (or well #):	204	Analysis Cost:	\$90.00
Formation:	UNKNOWN		
Sample Point:	ENTRADA SWAB RUN 3		

Summary		Analysis of Sample 47731 @ 75 F					
		Anions	mg/l	meq/l	Cations	mg/l	meq/l
Sampling Date:	04/29/11	Chloride:	4575.0	129.04	Sodium:	2807.8	122.13
Analysis Date:	05/10/11	Bicarbonate:	340.0	5.57	Magnesium:	1.5	0.12
Analyst:	JENNIFER HARDELL	Carbonate:	0.0	0.	Calcium:	79.0	3.94
TDS (mg/l or g/m3):	8823.7	Sulfate:	453.0	9.43	Strontium:	7.5	0.17
Density (g/cm3, tonne/m3):	1.006	Phosphate:			Barium:	0.9	0.01
Anion/Cation Ratio:	1.0000001	Borate:			Iron:	315.0	11.38
		Silicate:			Potassium:	240.0	6.14
Carbon Dioxide:		Hydrogen Sulfide:			Aluminum:		
Oxygen:		pH at time of sampling:			Chromium:		
Comments:		pH at time of analysis:		8.14	Copper:		
		pH used in Calculation:		8.14	Lead:		
					Manganese:	4.000	0.15
					Nickel:		

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Gauge Press.	Calcite CaCO ₃		Gypsum CaSO ₄ ·2H ₂ O		Anhydrite CaSO ₄		Celestite SrSO ₄		Barite BaSO ₄		CO ₂ Press
F	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi
80	0	0.58	10.42	-1.56	0.00	-1.62	0.00	-0.83	0.00	1.36	0.35	0.03
100	0	0.55	11.81	-1.57	0.00	-1.57	0.00	-0.82	0.00	1.21	0.35	0.06
120	0	0.54	13.20	-1.57	0.00	-1.49	0.00	-0.80	0.00	1.08	0.35	0.1
140	0	0.54	15.63	-1.57	0.00	-1.39	0.00	-0.77	0.00	0.97	0.35	0.17

Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.

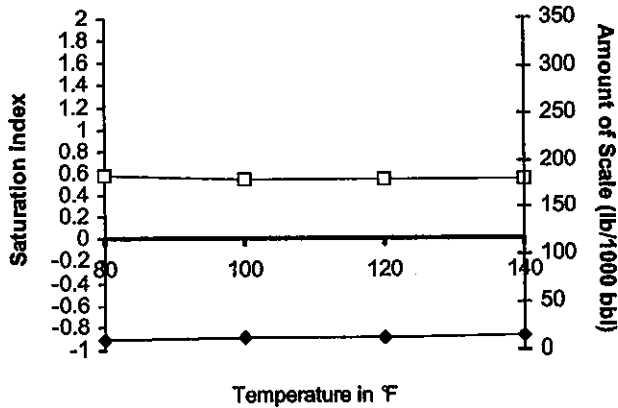
Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: The reported CO₂ pressure is actually the calculated CO₂ fugacity. It is usually nearly the same as the CO₂ partial pressure.

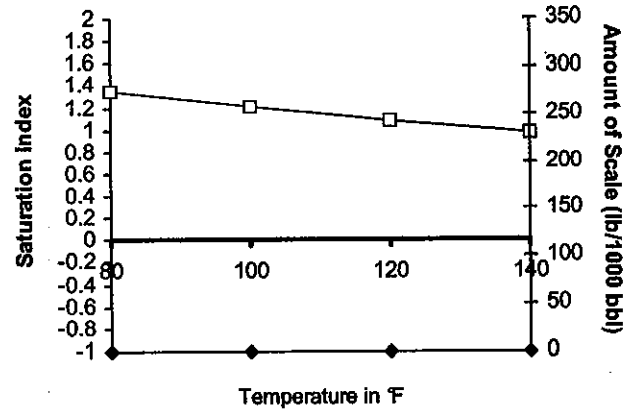
Scale Predictions from Baker Petrolite

Analysis of Sample 47731 @ 75 °F for EL PASO E & P, 05/10/11

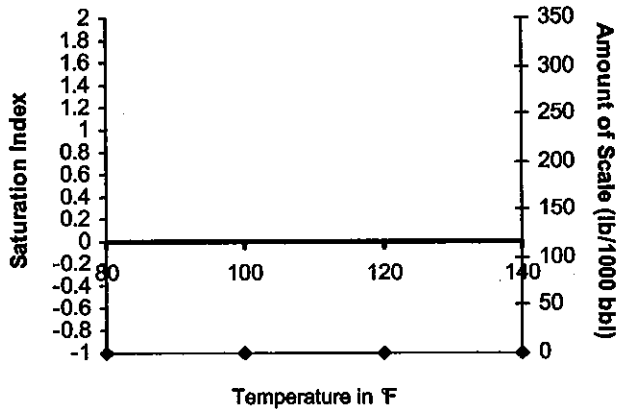
Calcite - CaCO_3



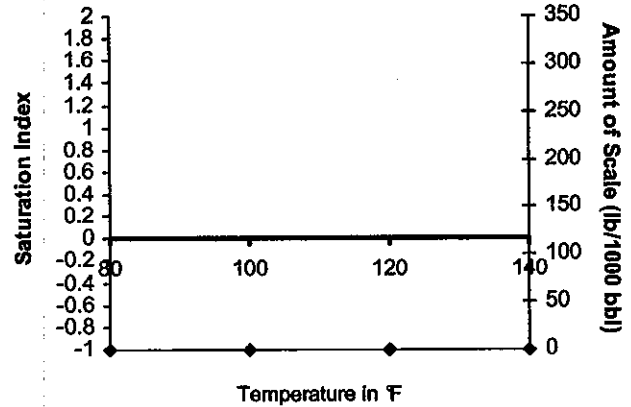
Barite - BaSO_4



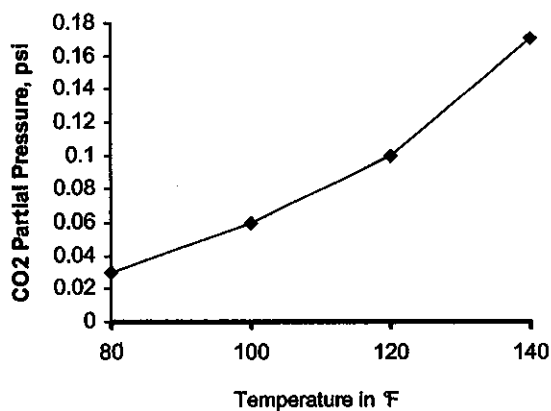
Gypsum - $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$



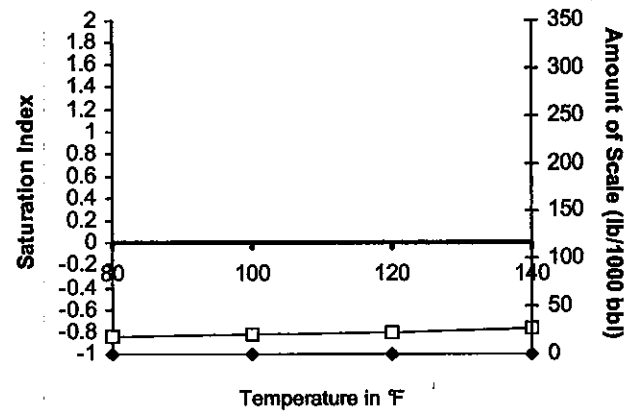
Anhydrite - CaSO_4



Carbon Dioxide Partial Pressure



Celestite - SrSO_4



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Water Analysis Report by Baker Petrolite

Company:	EL PASO E & P	Sales RDT:	44625
Region:	ROCKY MOUNTAINS	Account Manager:	TY CLINESMITH (575) 447-0621
Area:	RATON, NM	Sample #:	47732
Lease/Platform:	VERMEJO PARK RANCH 'C'	Analysis ID #:	108255
Entity (or well #):	204	Analysis Cost:	\$90.00
Formation:	UNKNOWN		
Sample Point:	ENTRADA SWAB RUN 4		

Summary		Analysis of Sample 47732 @ 75 F					
Sampling Date:	04/29/11	Anions	mg/l	meq/l	Cations	mg/l	meq/l
Analysis Date:	05/10/11	Chloride:	7978.0	225.03	Sodium:	0.0	0.
Analyst:	JENNIFER HARDELL	Bicarbonate:	374.0	6.13	Magnesium:	8.0	0.66
		Carbonate:	0.0	0.	Calcium:	333.0	16.62
TDS (mg/l or g/m3):	21144	Sulfate:	600.0	12.49	Strontium:	23.0	0.52
Density (g/cm3, tonne/m3):	1.01	Phosphate:			Barium:	7.0	0.1
Anion/Cation Ratio:	1.8078999	Borate:			Iron:	11269.0	407.21
		Silicate:			Potassium:	435.0	11.12
Carbon Dioxide:		Hydrogen Sulfide:			Aluminum:		
Oxygen:		pH at time of sampling:			Chromium:		
Comments:		pH at time of analysis:		7.67	Copper:		
		pH used in Calculation:		7.67	Lead:		
					Manganese:	117.000	4.26
					Nickel:		

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Gauge Press.	Calcite CaCO ₃		Gypsum CaSO ₄ ·2H ₂ O		Anhydrite CaSO ₄		Celestite SrSO ₄		Barite BaSO ₄		CO ₂ Press
F	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi
80	0	0.42	22.31	-1.42	0.00	-1.49	0.00	-0.83	0.00	1.75	4.12	0.06
100	0	0.32	19.90	-1.47	0.00	-1.46	0.00	-0.84	0.00	1.57	4.12	0.14
120	0	0.24	17.16	-1.49	0.00	-1.41	0.00	-0.85	0.00	1.42	4.12	0.27
140	0	0.19	15.10	-1.51	0.00	-1.34	0.00	-0.85	0.00	1.29	3.77	0.48

Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.

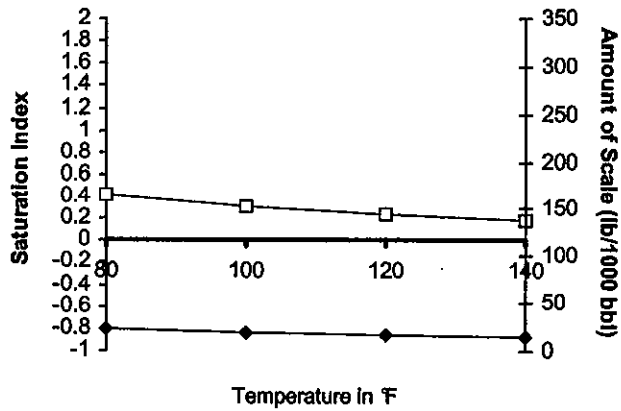
Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: The reported CO2 pressure is actually the calculated CO2 fugacity. It is usually nearly the same as the CO2 partial pressure.

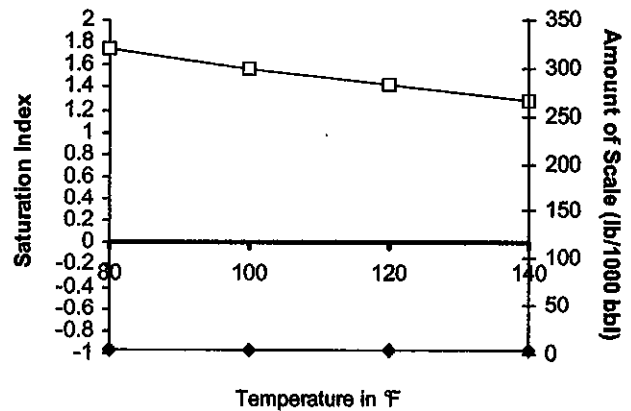
Scale Predictions from Baker Petrolite

Analysis of Sample 47732 @ 75 °F for EL PASO E & P, 05/10/11

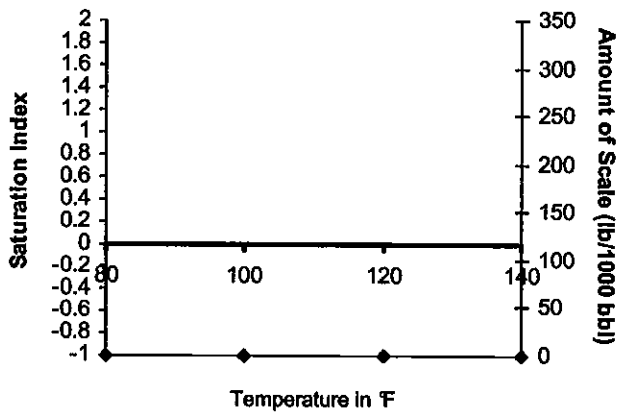
Calcite - CaCO_3



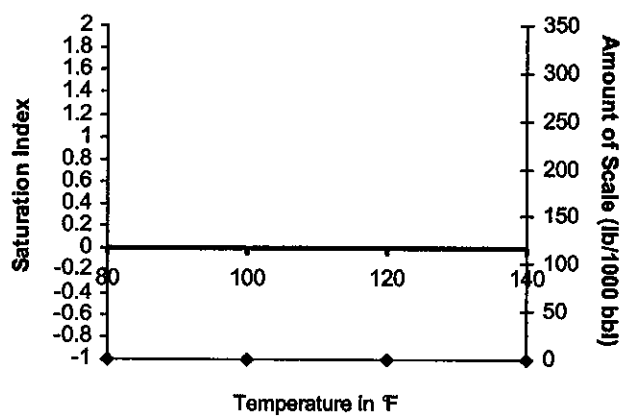
Barite - BaSO_4



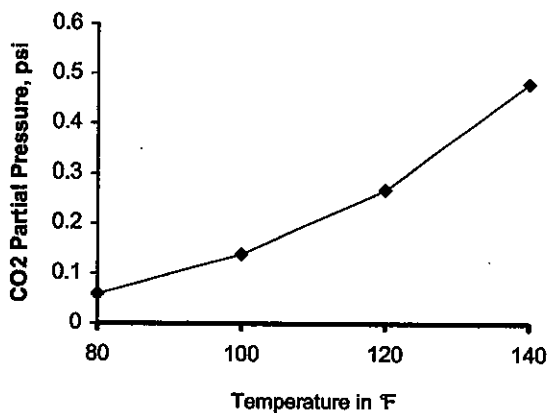
Gypsum - $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$



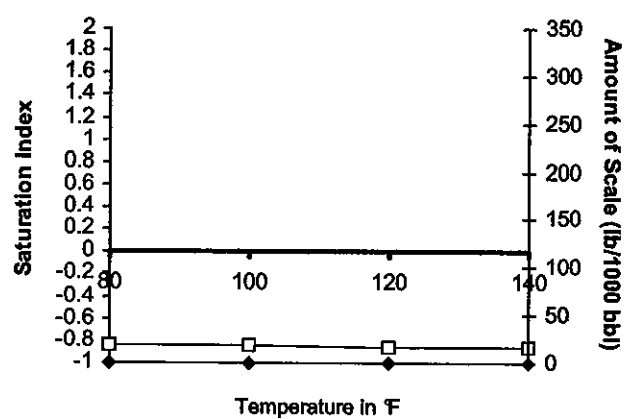
Anhydrite - CaSO_4



Carbon Dioxide Partial Pressure



Celestite - SrSO_4



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Water Analysis Report by Baker Petrolite

Company:	EL PASO E & P	Sales RDT:	44625
Region:	ROCKY MOUNTAINS	Account Manager:	TY CLINESMITH (575) 447-0621
Area:	RATON, NM	Sample #:	47733
Lease/Platform:	VERMEJO PARK RANCH 'C'	Analysis ID #:	108256
Entity (or well #):	204	Analysis Cost:	\$90.00
Formation:	UNKNOWN		
Sample Point:	ENTRADA SWAB RUN 5		

Summary		Analysis of Sample 47733 @ 75 °F							
Sampling Date:	04/29/11	Anions		mg/l	meq/l	Cations		mg/l	meq/l
Analysis Date:	05/10/11	Chloride:	11568.0		326.29	Sodium:	2613.1		113.66
Analyst:	JENNIFER HARDELL	Bicarbonate:	376.0		6.16	Magnesium:	6.5		0.53
		Carbonate:	0.0		0.	Calcium:	804.0		40.12
TDS (mg/l or g/m3):	21529.6	Sulfate:	669.0		13.93	Strontium:	44.0		1.
Density (g/cm3, tonne/m3):	1.021	Phosphate:				Barium:	4.0		0.06
Anion/Cation Ratio:	1.0000000	Borate:				Iron:	4855.0		175.44
		Silicate:				Potassium:	546.0		13.96
Carbon Dioxide:						Aluminum:			
Oxygen:		Hydrogen Sulfide:				Chromium:			
Comments:		pH at time of sampling:				Copper:			
		pH at time of analysis:			7.36	Lead:			
		pH used in Calculation:			7.36	Manganese:	44.000		1.6
						Nickel:			

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Gauge Press.	Calcite CaCO ₃		Gypsum CaSO ₄ *2H ₂ O		Anhydrite CaSO ₄		Celestite SrSO ₄		Barite BaSO ₄		CO ₂ Press
°F	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi
80	0	0.61	23.33	-0.87	0.00	-0.93	0.00	-0.36	0.00	1.71	2.40	0.15
100	0	0.61	27.45	-0.90	0.00	-0.90	0.00	-0.37	0.00	1.54	2.40	0.25
120	0	0.61	31.57	-0.92	0.00	-0.84	0.00	-0.36	0.00	1.39	2.40	0.39
140	0	0.62	36.37	-0.94	0.00	-0.76	0.00	-0.35	0.00	1.27	2.06	0.6

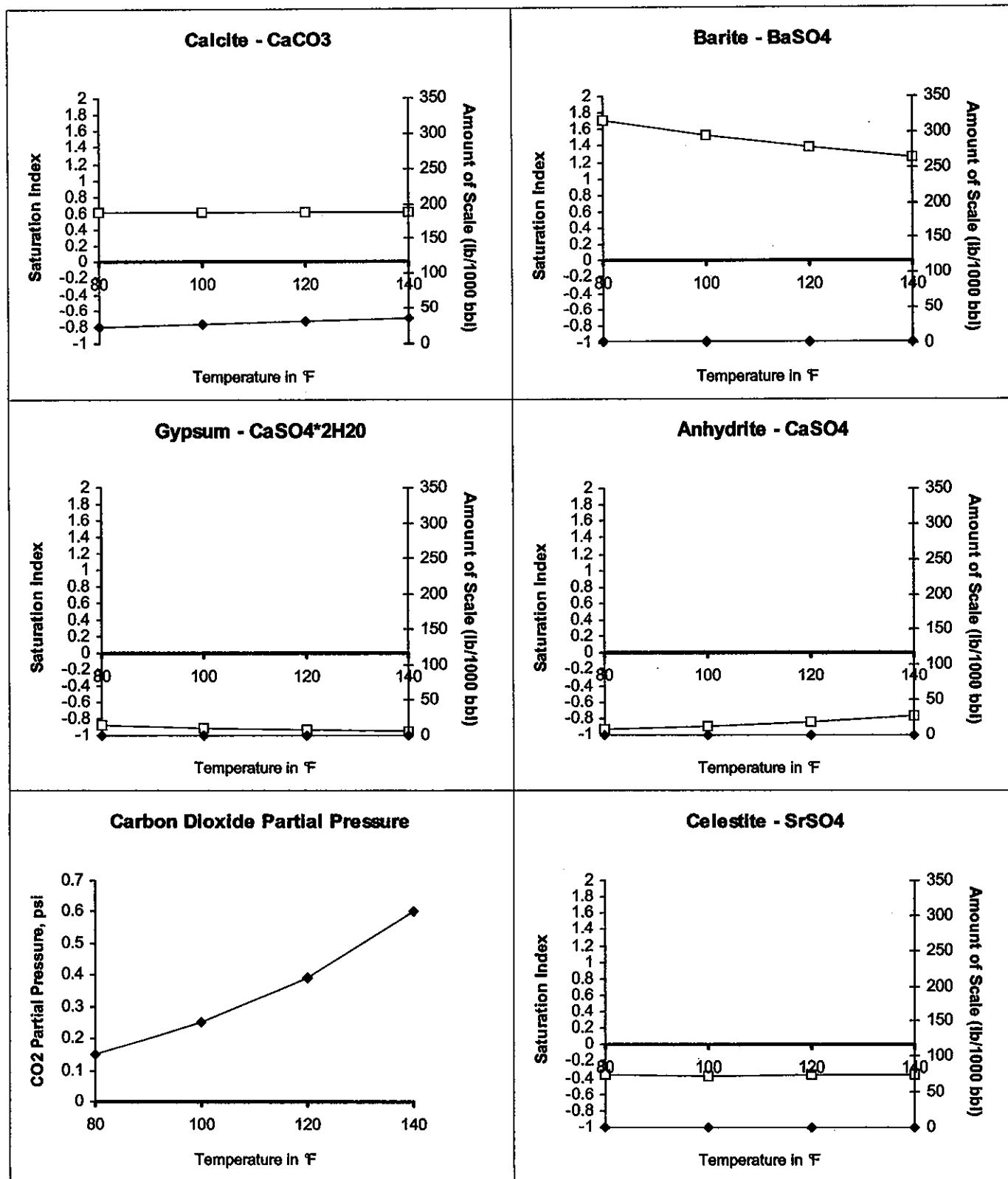
Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.

Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: The reported CO₂ pressure is actually the calculated CO₂ fugacity. It is usually nearly the same as the CO₂ partial pressure.

Scale Predictions from Baker Petrolite

Analysis of Sample 47733 @ 75 °F for EL PASO E & P, 05/10/11



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Water Analysis Report by Baker Petrolite

Company:	EL PASO E & P	Sales RDT:	44625
Region:	ROCKY MOUNTAINS	Account Manager:	TY CLINESMITH (575) 447-0621
Area:	RATON, NM	Sample #:	47734
Lease/Platform:	VERMEJO PARK RANCH 'C'	Analysis ID #:	108257
Entity (or well #):	204	Analysis Cost:	\$90.00
Formation:	UNKNOWN		
Sample Point:	ENTRADA SWAB RUN 6		

Summary		Analysis of Sample 47734 @ 75 °F					
Sampling Date:	04/29/11	Anions	mg/l	meq/l	Cations	mg/l	meq/l
Analysis Date:	05/10/11	Chloride:	5703.0	160.86	Sodium:	619.9	26.96
Analyst:	JENNIFER HARDELL	Bicarbonate:	252.0	4.13	Magnesium:	4.5	0.37
TDS (mg/l or g/m3):	10803.4	Carbonate:	0.0	0.	Calcium:	433.0	21.61
Density (g/cm3, tonne/m3):	1.007	Sulfate:	308.0	6.41	Strontium:	25.0	0.57
Anion/Cation Ratio:	1.0000001	Phosphate:			Barium:	3.0	0.04
Carbon Dioxide:		Borate:			Iron:	3137.0	113.36
Oxygen:		Silicate:			Potassium:	285.0	7.29
Comments:		Hydrogen Sulfide:			Aluminum:		
		pH at time of sampling:			Chromium:		
		pH at time of analysis:		7.51	Copper:		
		pH used in Calculation:		7.51	Lead:		
					Manganese:	33.000	1.2
					Nickel:		

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Gauge Press.	Calcite CaCO ₃		Gypsum CaSO ₄ ·2H ₂ O		Anhydrite CaSO ₄		Celestite SrSO ₄		Barite BaSO ₄		CO ₂ Press
°F	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi
80	0	0.46	12.48	-1.26	0.00	-1.33	0.00	-0.74	0.00	1.44	1.73	0.08
100	0	0.43	13.87	-1.29	0.00	-1.29	0.00	-0.74	0.00	1.27	1.73	0.15
120	0	0.41	15.60	-1.31	0.00	-1.23	0.00	-0.74	0.00	1.13	1.73	0.25
140	0	0.40	17.68	-1.32	0.00	-1.14	0.00	-0.72	0.00	1.01	1.73	0.4

Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.

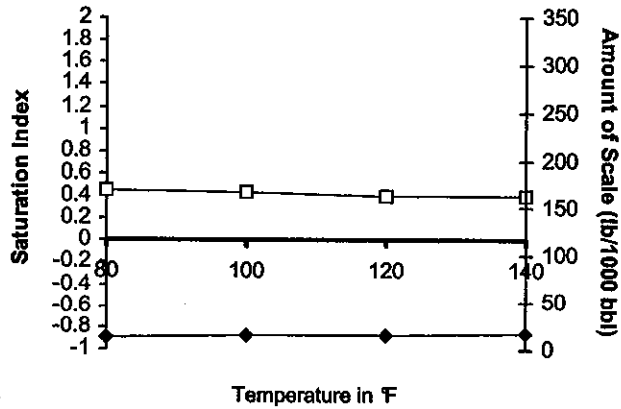
Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: The reported CO₂ pressure is actually the calculated CO₂ fugacity. It is usually nearly the same as the CO₂ partial pressure.

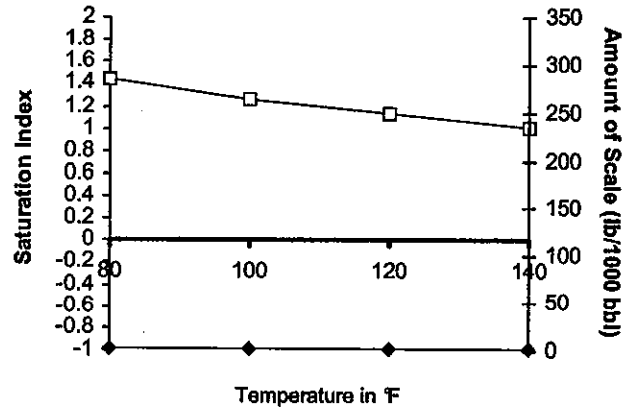
Scale Predictions from Baker Petrolite

Analysis of Sample 47734 @ 75 °F for EL PASO E & P, 05/10/11

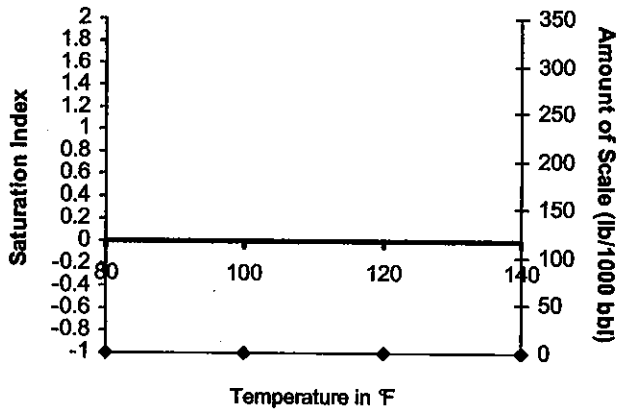
Calcite - CaCO_3



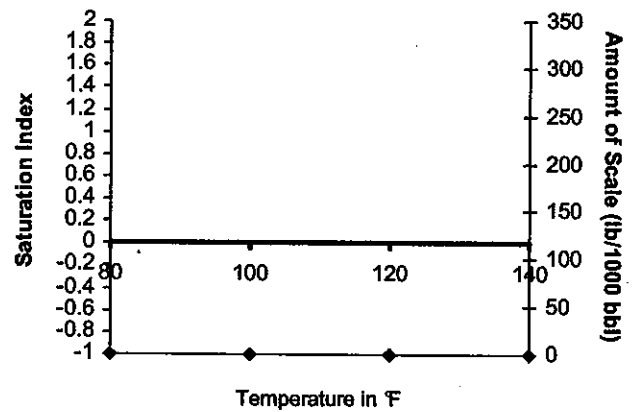
Barite - BaSO_4



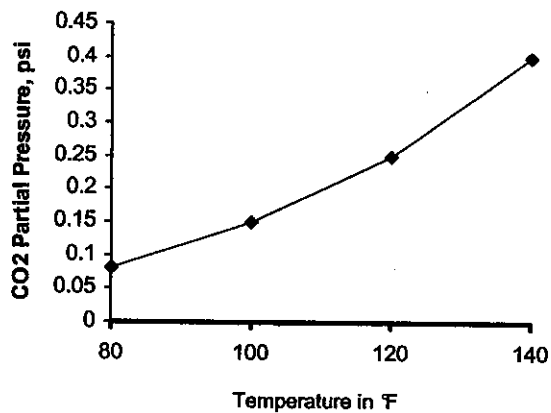
Gypsum - $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$



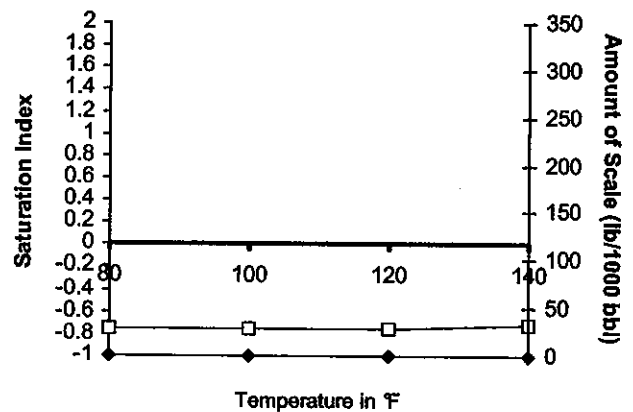
Anhydrite - CaSO_4



Carbon Dioxide Partial Pressure



Celestite - SrSO_4



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Water Analysis Report by Baker Petrolite

Company:	EL PASO E & P	Sales RDT:	44625
Region:	ROCKY MOUNTAINS	Account Manager:	TY CLINESMITH (575) 447-0621
Area:	RATON, NM	Sample #:	47735
Lease/Platform:	VERMEJO PARK RANCH 'C'	Analysis ID #:	108258
Entity (or well #):	204	Analysis Cost:	\$90.00
Formation:	UNKNOWN		
Sample Point:	ENTRADA SWAB RUN 7		

Summary		Analysis of Sample 47735 @ 75 °F					
Sampling Date:	04/29/11	Anions	mg/l	meq/l	Cations	mg/l	meq/l
Analysis Date:	05/10/11	Chloride:	12585.0	354.98	Sodium:	5731.2	249.29
Analyst:	JENNIFER HARDELL	Bicarbonate:	384.0	5.97	Magnesium:	6.5	0.53
TDS (mg/l or g/m3):	22317.7	Carbonate:	0.0	0.	Calcium:	989.0	49.35
Density (g/cm3, tonne/m3):	1.015	Sulfate:	579.0	12.05	Strontium:	52.0	1.19
Anion/Cation Ratio:	1.0000000	Phosphate:			Barium:	2.0	0.03
		Borate:			Iron:	1982.0	71.62
		Silicate:			Potassium:		
Carbon Dioxide:		Hydrogen Sulfide:			Aluminum:		
Oxygen:		pH at time of sampling:			Chromium:		
Comments:		pH at time of analysis:		7.01	Copper:		
		pH used in Calculation:		7.01	Lead:		
					Manganese:	27.000	0.98
					Nickel:		

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Gauge Press.	Calcite CaCO ₃		Gypsum CaSO ₄ *2H ₂ O		Anhydrite CaSO ₄		Celestite SrSO ₄		Barite BaSO ₄		CO ₂ Press
°F	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi
80	0	0.40	18.51	-0.78	0.00	-0.84	0.00	-0.27	0.00	1.42	1.03	0.34
100	0	0.49	23.65	-0.80	0.00	-0.80	0.00	-0.28	0.00	1.25	1.03	0.46
120	0	0.57	29.82	-0.82	0.00	-0.73	0.00	-0.27	0.00	1.11	1.03	0.61
140	0	0.66	35.99	-0.82	0.00	-0.65	0.00	-0.25	0.00	1.00	1.03	0.81

Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.

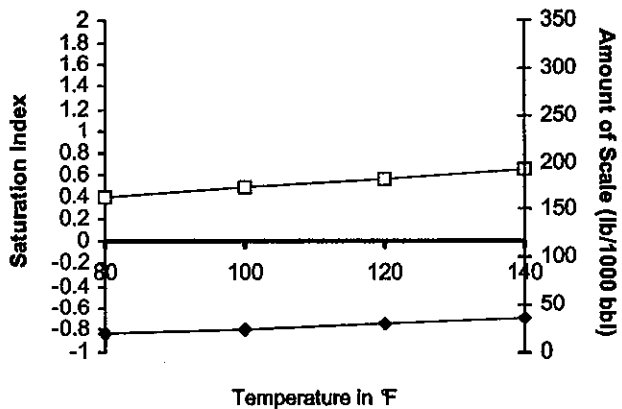
Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: The reported CO₂ pressure is actually the calculated CO₂ fugacity. It is usually nearly the same as the CO₂ partial pressure.

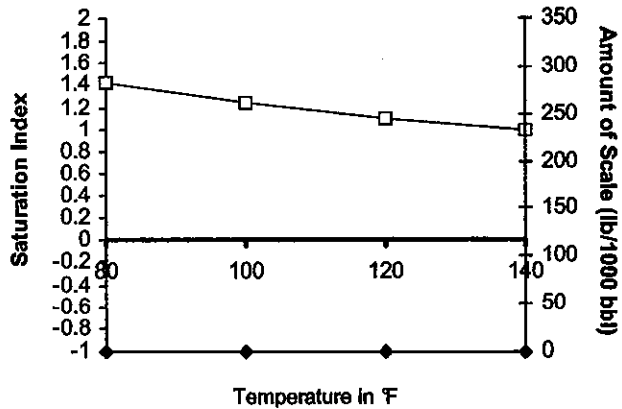
Scale Predictions from Baker Petrolite

Analysis of Sample 47735 @ 75 °F for EL PASO E & P, 05/10/11

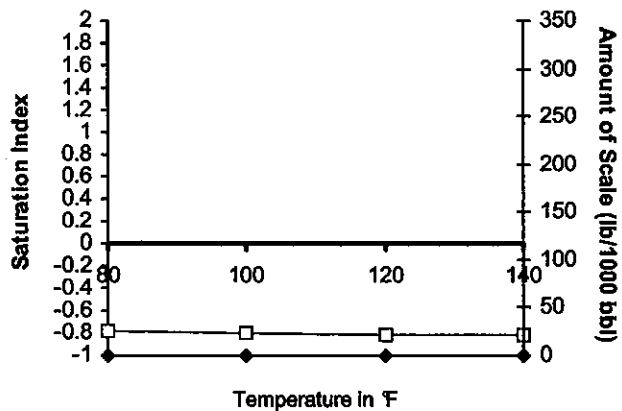
Calcite - CaCO_3



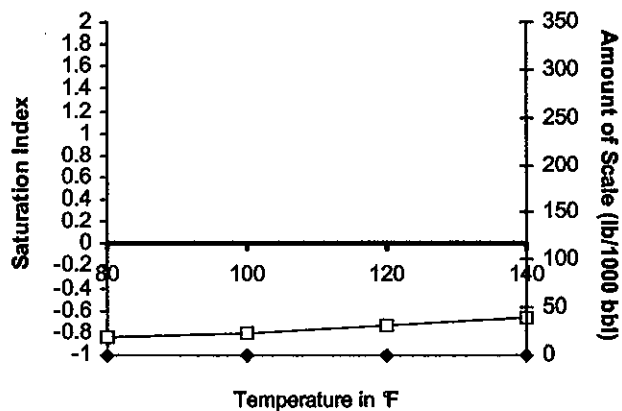
Barite - BaSO_4



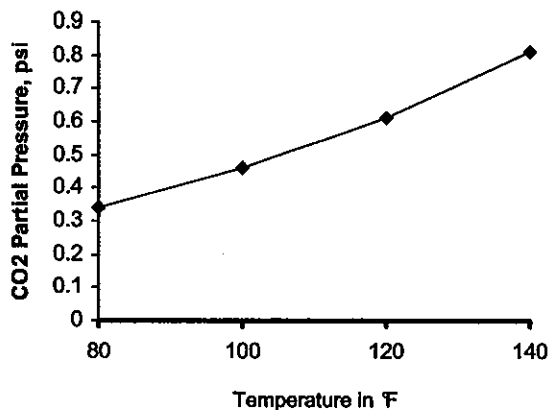
Gypsum - $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$



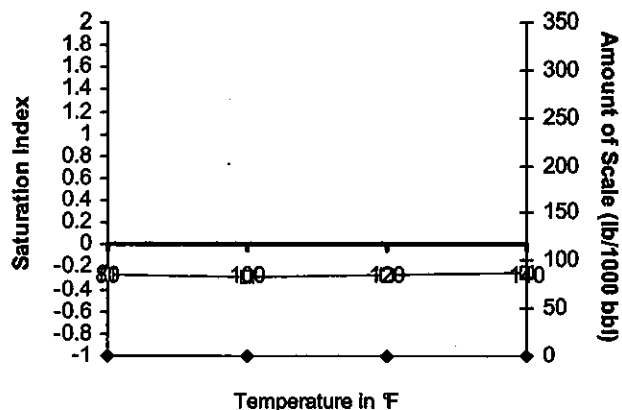
Anhydrite - CaSO_4



Carbon Dioxide Partial Pressure



Celestite - SrSO_4



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Water Analysis Report by Baker Petrolite

Company:	EL PASO E & P	Sales RDT:	44625
Region:	ROCKY MOUNTAINS	Account Manager:	TY CLINESMITH (575) 447-0621
Area:	RATON, NM	Sample #:	47736
Lease/Platform:	VERMEJO PARK RANCH 'C'	Analysis ID #:	108259
Entity (or well #):	204	Analysis Cost:	\$90.00
Formation:	UNKNOWN		
Sample Point:	GLORIETA SWAB RUN 1		

Summary		Analysis of Sample 47736 @ 75 F					
Sampling Date:	04/29/11	Anions	mg/l	meq/l	Cations	mg/l	meq/l
Analysis Date:	05/10/11	Chloride:	2545.0	71.79	Sodium:	1705.4	74.18
Analyst:	JENNIFER HARDELL	Bicarbonate:	854.0	14.	Magnesium:	4.0	0.33
TDS (mg/l or g/m3):	5427.4	Carbonate:	0.0	0.	Calcium:	17.0	0.85
Density (g/cm3, tonne/m3):	1.004	Sulfate:	5.0	0.1	Strontium:	3.5	0.08
Anion/Cation Ratio:	0.9999998	Phosphate:			Barium:	1.5	0.02
Carbon Dioxide:		Borate:			Iron:	277.0	10.01
Oxygen:		Silicate:			Potassium:	12.0	0.31
Comments:		Hydrogen Sulfide:			Aluminum:		
		pH at time of sampling:			Chromium:		
		pH at time of analysis:		8.15	Copper:		
		pH used in Calculation:		8.15	Lead:		
					Manganese:	3.000	0.11
					Nickel:		

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Gauge Press.	Calcite CaCO ₃		Gypsum CaSO ₄ *2H ₂ O		Anhydrite CaSO ₄		Celestite SrSO ₄		Barite BaSO ₄		CO ₂ Press
F	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi
80	0	0.46	7.32	-4.00	0.00	-4.07	0.00	-2.93	0.00	-0.20	0.00	0.08
100	0	0.46	7.67	-4.02	0.00	-4.02	0.00	-2.91	0.00	-0.35	0.00	0.13
120	0	0.48	8.37	-4.02	0.00	-3.94	0.00	-2.89	0.00	-0.47	0.00	0.22
140	0	0.50	8.72	-4.02	0.00	-3.85	0.00	-2.85	0.00	-0.57	0.00	0.35

Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.

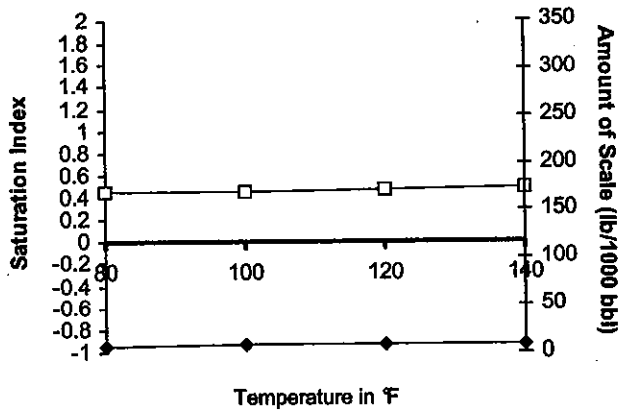
Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: The reported CO2 pressure is actually the calculated CO2 fugacity. It is usually nearly the same as the CO2 partial pressure.

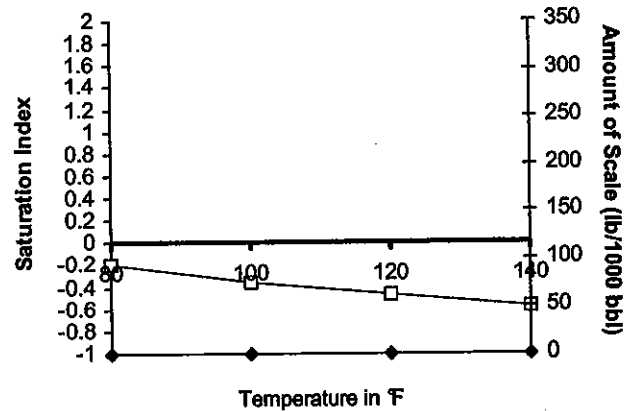
Scale Predictions from Baker Petrolite

Analysis of Sample 47736 @ 75 °F for EL PASO E & P, 05/10/11

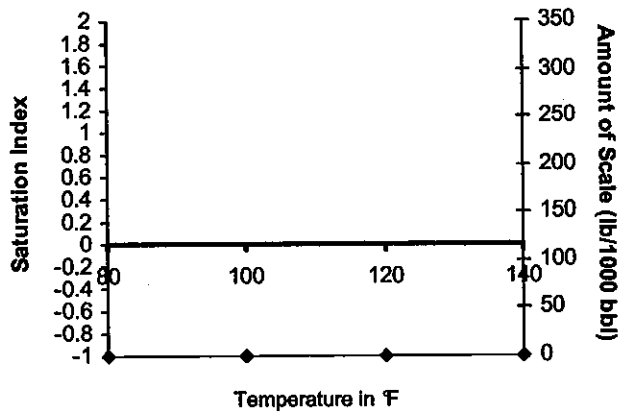
Calcite - CaCO_3



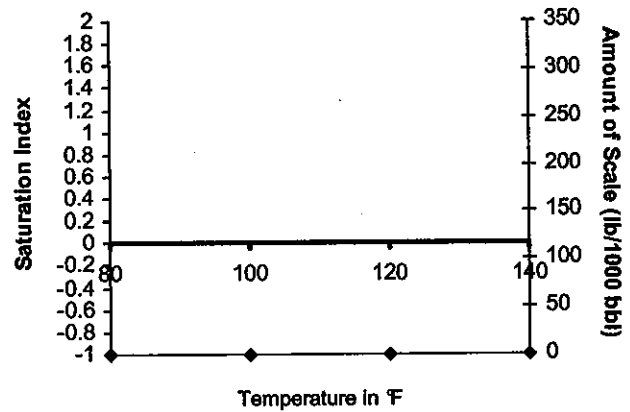
Barite - BaSO_4



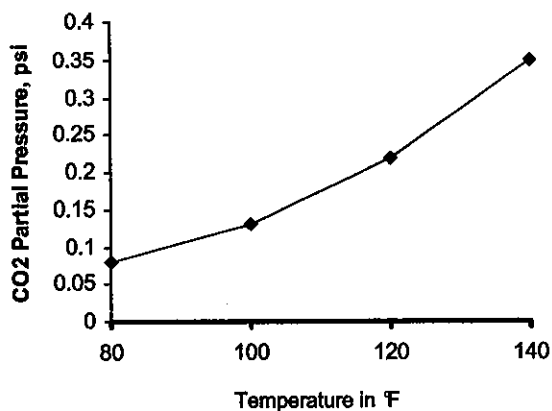
Gypsum - $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$



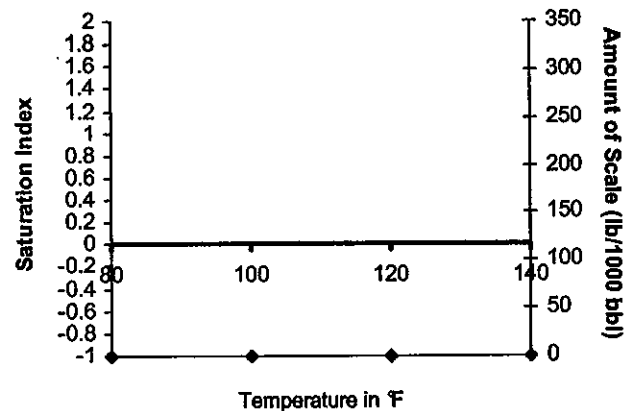
Anhydrite - CaSO_4



Carbon Dioxide Partial Pressure



Celestite - SrSO_4



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Water Analysis Report by Baker Petrolite

Company:	EL PASO E & P	Sales RDT:	44625
Region:	ROCKY MOUNTAINS	Account Manager:	TY CLINESMITH (575) 447-0621
Area:	RATON, NM	Sample #:	47737
Lease/Platform:	VERMEJO PARK RANCH 'C'	Analysis ID #:	108260
Entity (or well #):	204	Analysis Cost:	\$90.00
Formation:	UNKNOWN		
Sample Point:	GLORIETA SWAB RUN 2		

Summary		Analysis of Sample 47737 @ 75 °F					
		Anions			Cations		
		mg/l	meq/l		mg/l	meq/l	
Sampling Date:	04/29/11	Chloride:	2433.0	68.63	Sodium:	0.0	0.0
Analysis Date:	05/10/11	Bicarbonate:	626.0	10.26	Magnesium:	21.0	1.73
Analyst:	JENNIFER HARDELL	Carbonate:	35.0	1.17	Calcium:	241.0	12.03
TDS (mg/l or g/m3):	6958	Sulfate:	20.0	0.42	Strontium:	12.0	0.27
Density (g/cm3, tonne/m3):	1.003	Phosphate:			Barium:	10.0	0.15
Anion/Cation Ratio:	1.7685227	Borate:			Iron:	3467.0	125.28
		Silicate:			Potassium:	49.0	1.25
Carbon Dioxide:		Hydrogen Sulfide:			Aluminum:		
Oxygen:		pH at time of sampling:			Chromium:		
Comments:		pH at time of analysis:		8.54	Copper:		
		pH used in Calculation:		8.54	Lead:		
					Manganese:	44.000	1.6
					Nickel:		

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Gauge Press.	Calcite CaCO ₃		Gypsum CaSO ₄ ·2H ₂ O		Anhydrite CaSO ₄		Celestite SrSO ₄		Barite BaSO ₄		CO ₂ Press
°F	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi
80	0	1.65	130.18	-2.64	0.00	-2.71	0.00	-2.19	0.00	0.83	4.87	0.02
100	0	1.57	130.53	-2.67	0.00	-2.67	0.00	-2.19	0.00	0.66	4.18	0.04
120	0	1.49	131.22	-2.69	0.00	-2.61	0.00	-2.19	0.00	0.51	3.48	0.09
140	0	1.41	132.62	-2.70	0.00	-2.53	0.00	-2.18	0.00	0.39	3.13	0.18

Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.

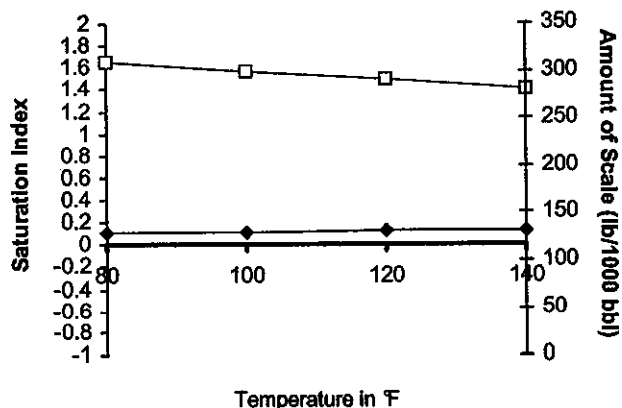
Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: The reported CO₂ pressure is actually the calculated CO₂ fugacity. It is usually nearly the same as the CO₂ partial pressure.

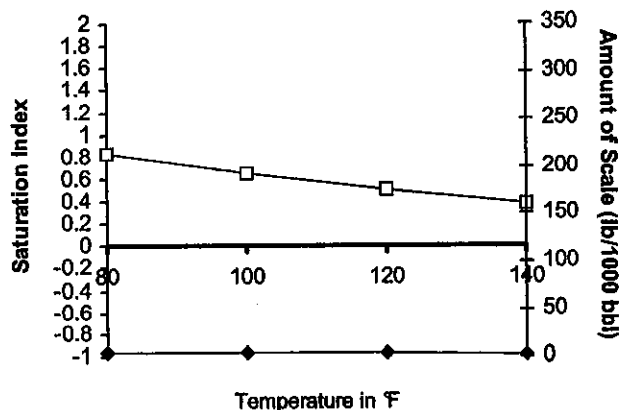
Scale Predictions from Baker Petrolite

Analysis of Sample 47737 @ 75 °F for EL PASO E & P, 05/10/11

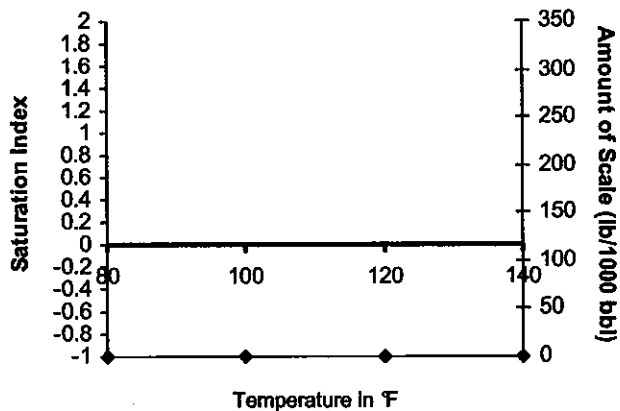
Calcite - CaCO_3



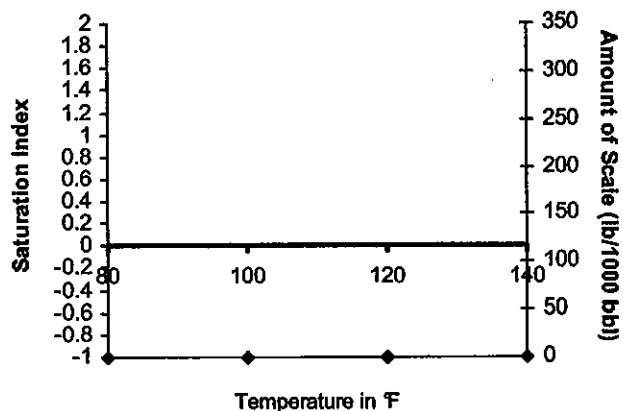
Barite - BaSO_4



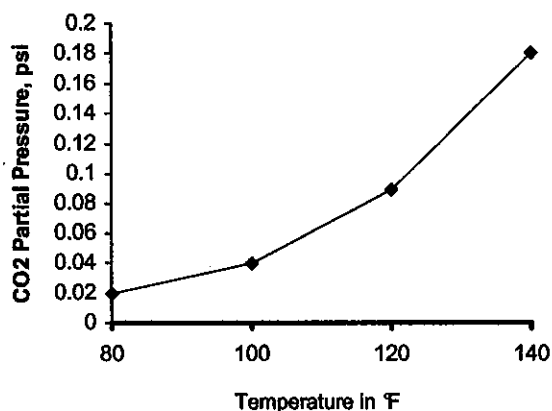
Gypsum - $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$



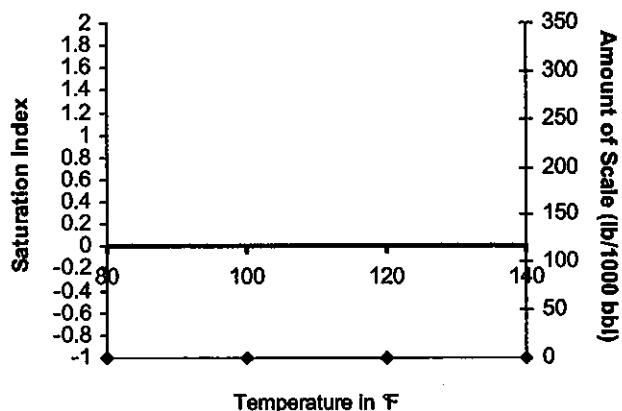
Anhydrite - CaSO_4



Carbon Dioxide Partial Pressure



Celestite - SrSO_4



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Water Analysis Report by Baker Petrolite

Company:	EL PASO E & P	Sales RDT:	44625
Region:	ROCKY MOUNTAINS	Account Manager:	TY CLINESMITH (575) 447-0621
Area:	RATON, NM	Sample #:	47738
Lease/Platform:	VERMEJO PARK RANCH 'C'	Analysis ID #:	108261
Entity (or well #):	204	Analysis Cost:	\$90.00
Formation:	UNKNOWN		
Sample Point:	GLORIETA SWAB RUN 3		

Summary		Analysis of Sample 47738 @ 75 F					
		Anions	mg/l	meq/l	Cations	mg/l	meq/l
Sampling Date:	04/29/11	Chloride:	2785.0	78.55	Sodium:	0.0	0.0
Analysis Date:	05/10/11	Bicarbonate:	693.0	11.36	Magnesium:	24.0	1.97
Analyst:	JENNIFER HARDELL	Carbonate:	36.0	1.2	Calcium:	226.0	11.28
TDS (mg/l or g/m3):	9999	Sulfate:	28.0	0.58	Strontium:	11.0	0.25
Density (g/cm3, tonne/m3):	1.004	Phosphate:			Barium:	12.0	0.17
Anion/Cation Ratio:	2.5752049	Borate:			Iron:	6022.0	217.61
		Silicate:			Potassium:	97.0	2.48
Carbon Dioxide:		Hydrogen Sulfide:			Aluminum:		
Oxygen:		pH at time of sampling:			Chromium:		
Comments:		pH at time of analysis:		8.53	Copper:		
		pH used in Calculation:		8.53	Lead:		
					Manganese:	65.000	2.37
					Nickel:		

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Gauge Press.	Calcite CaCO ₃		Gypsum CaSO ₄ ·2H ₂ O		Anhydrite CaSO ₄		Celestite SrSO ₄		Barite BaSO ₄		CO ₂ Press
F	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi
80	0	1.54	154.42	-2.68	0.00	-2.75	0.00	-2.24	0.00	0.88	5.90	0.02
100	0	1.45	150.61	-2.72	0.00	-2.72	0.00	-2.26	0.00	0.71	5.21	0.04
120	0	1.36	146.44	-2.74	0.00	-2.67	0.00	-2.26	0.00	0.56	4.86	0.09
140	0	1.28	143.32	-2.76	0.00	-2.59	0.00	-2.25	0.00	0.44	4.16	0.19

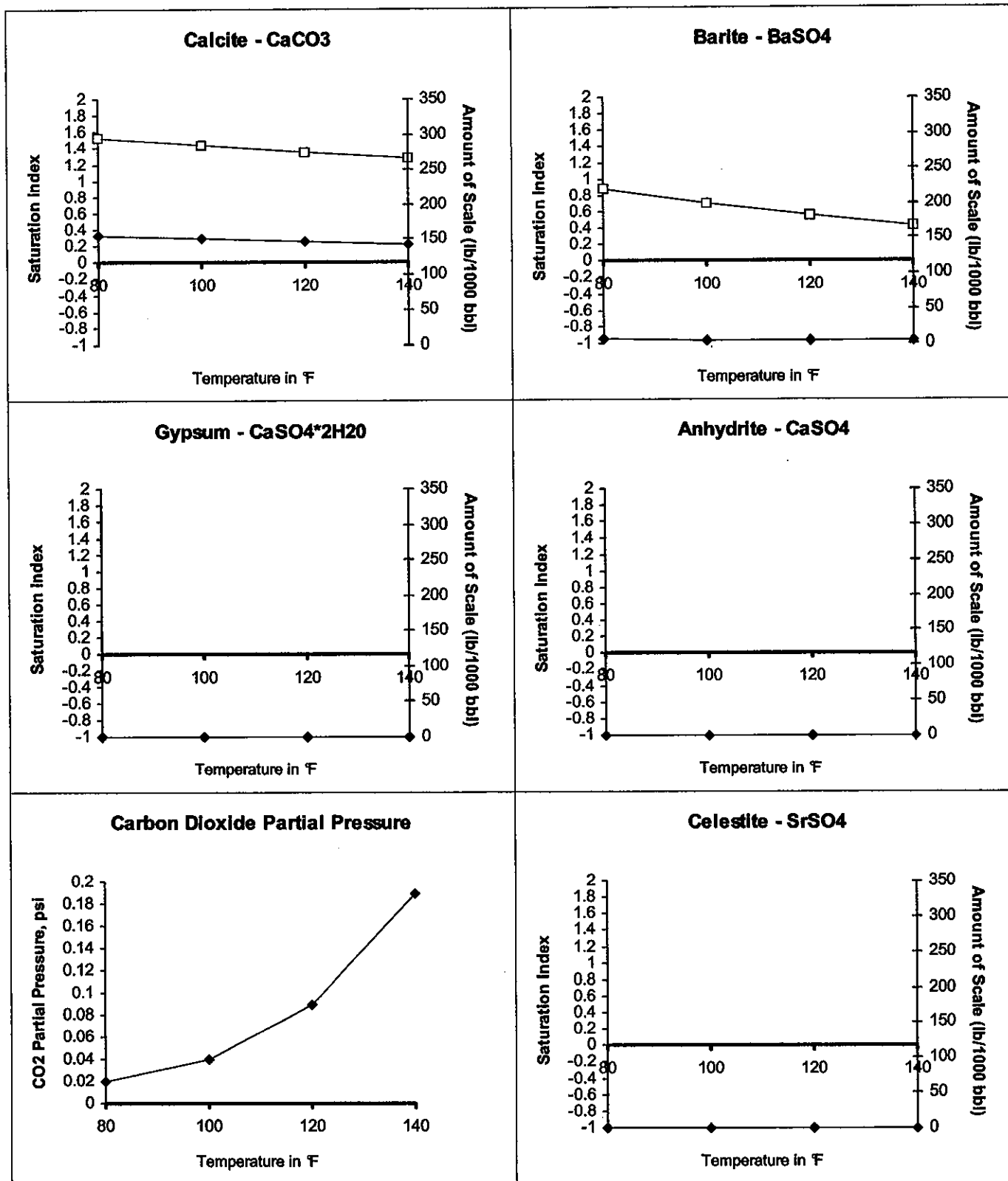
Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.

Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: The reported CO₂ pressure is actually the calculated CO₂ fugacity. It is usually nearly the same as the CO₂ partial pressure.

Scale Predictions from Baker Petrolite

Analysis of Sample 47738 @ 75 °F for EL PASO E & P, 05/10/11



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Water Analysis Report by Baker Petrolite

Company:	EL PASO E & P	Sales RDT:	44625
Region:	ROCKY MOUNTAINS	Account Manager:	TY CLINESMITH (575) 447-0621
Area:	RATON, NM	Sample #:	47739
Lease/Platform:	VERMEJO PARK RANCH 'C'	Analysis ID #:	108262
Entity (or well #):	204	Analysis Cost:	\$90.00
Formation:	UNKNOWN		
Sample Point:	GLORIETA SWAB RUN 4		

Summary		Analysis of Sample 47739 @ 75 °F					
Sampling Date:	04/29/11	Anions	mg/l	meq/l	Cations	mg/l	meq/l
Analysis Date:	05/10/11	Chloride:	2618.0	73.84	Sodium:	1138.4	49.52
Analyst:	JENNIFER HARDELL	Bicarbonate:	716.0	11.73	Magnesium:	5.5	0.45
TDS (mg/l or g/m3):	5664.4	Carbonate:	61.0	2.03	Calcium:	50.0	2.5
Density (g/cm3, tonne/m3):	1.004	Sulfate:	42.0	0.87	Strontium:	3.0	0.07
Anion/Cation Ratio:	1.0000000	Phosphate:			Barium:	2.0	0.03
Carbon Dioxide:		Borate:			Iron:	901.0	32.56
Oxygen:		Silicate:			Potassium:	118.0	3.02
Comments:		Hydrogen Sulfide:			Aluminum:		
		pH at time of sampling:			Chromium:		
		pH at time of analysis:		8.78	Copper:		
		pH used in Calculation:		8.78	Lead:		
					Manganese:	9.500	0.35
					Nickel:		

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Gauge Press.	Calcite CaCO ₃		Gypsum CaSO ₄ *2H ₂ O		Anhydrite CaSO ₄		Celestite SrSO ₄		Barite BaSO ₄		CO ₂ Press
°F	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi
80	0	1.39	40.43	-2.73	0.00	-2.80	0.00	-2.19	0.00	0.74	1.05	0.02
100	0	1.34	40.08	-2.75	0.00	-2.75	0.00	-2.17	0.00	0.59	1.05	0.03
120	0	1.29	39.73	-2.75	0.00	-2.67	0.00	-2.15	0.00	0.46	0.70	0.07
140	0	1.24	39.38	-2.75	0.00	-2.58	0.00	-2.12	0.00	0.36	0.70	0.13

Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.

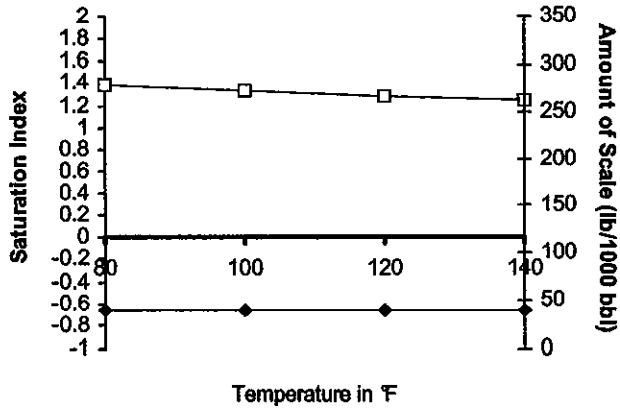
Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: The reported CO2 pressure is actually the calculated CO2 fugacity. It is usually nearly the same as the CO2 partial pressure.

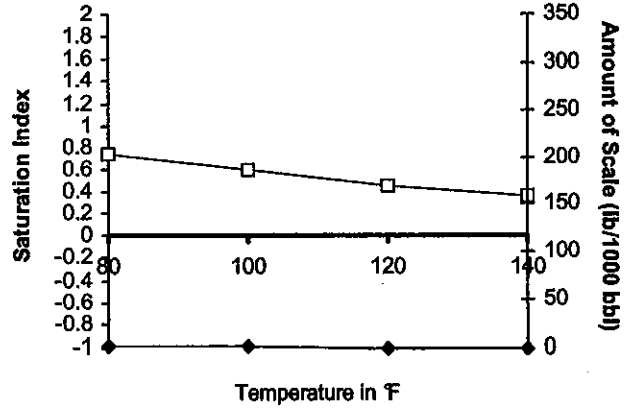
Scale Predictions from Baker Petrolite

Analysis of Sample 47739 @ 75 °F for EL PASO E & P, 05/10/11

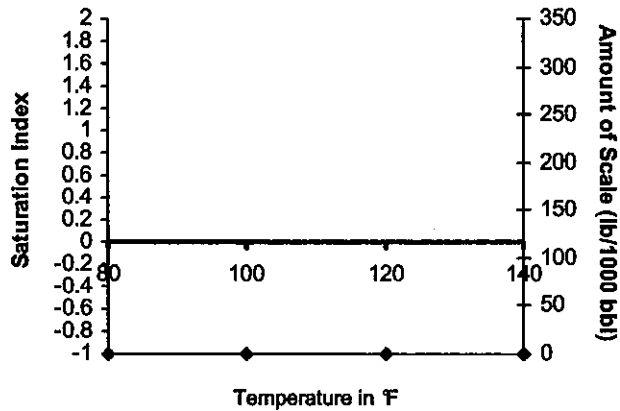
Calcite - CaCO_3



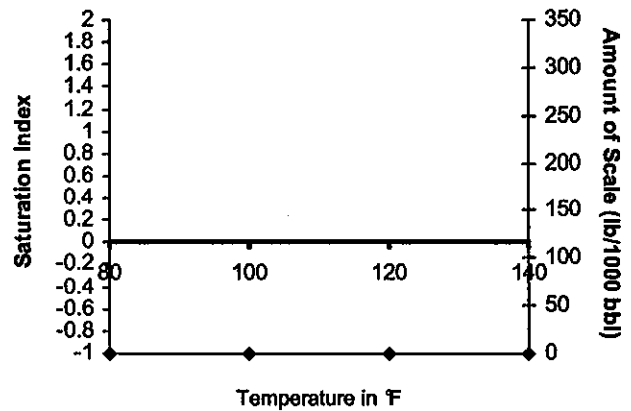
Barite - BaSO_4



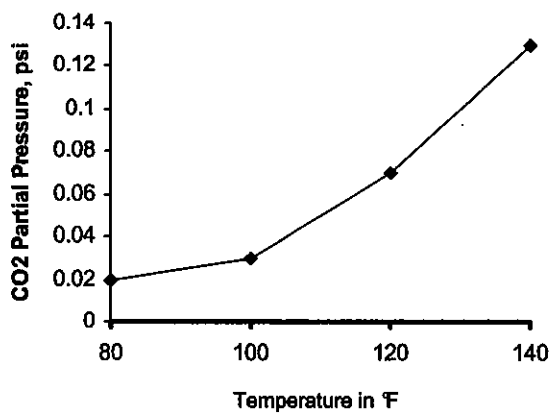
Gypsum - $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$



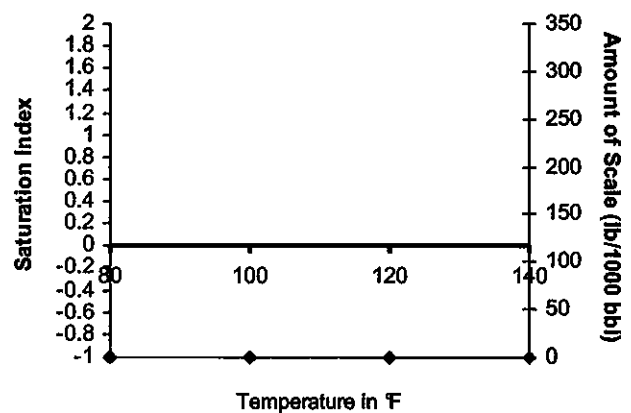
Anhydrite - CaSO_4



Carbon Dioxide Partial Pressure



Celestite - SrSO_4



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Water Analysis Report by Baker Petrolite

Company:	EL PASO E & P	Sales RDT:	44625
Region:	ROCKY MOUNTAINS	Account Manager:	TY CLINESMITH (575) 447-0621
Area:	RATON, NM	Sample #:	47740
Lease/Platform:	VERMEJO PARK RANCH 'C'	Analysis ID #:	108263
Entity (or well #):	204	Analysis Cost:	\$90.00
Formation:	UNKNOWN		
Sample Point:	GLORIETA SWAB RUN 5		

Summary		Analysis of Sample 47740 @ 75 F					
		Anions				Cations	
		mg/l	meq/l			mg/l	meq/l
Sampling Date:	04/29/11	Chloride:	3062.0	86.37	Sodium:	0.0	0.
Analysis Date:	05/10/11	Bicarbonate:	959.0	15.72	Magnesium:	4.0	0.33
Analyst:	JENNIFER HARDELL	Carbonate:	147.0	4.9	Calcium:	23.0	1.15
TDS (mg/l or g/m3):	11038	Sulfate:	1397.0	29.09	Strontium:	1.5	0.03
Density (g/cm3, tonne/m3):	1.006	Phosphate:			Barium:	2.5	0.04
Anion/Cation Ratio:	1.4197522	Borate:			Iron:	4911.0	177.46
Carbon Dioxide:		Silicate:			Potassium:	476.0	12.17
Oxygen:		Hydrogen Sulfide:			Aluminum:		
Comments:		pH at time of sampling:			Chromium:		
		pH at time of analysis:		9.17	Copper:		
		pH used in Calculation:		9.17	Lead:		
					Manganese:	55.000	2.
					Nickel:		

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Gauge Press.	Calcite CaCO ₃		Gypsum CaSO ₄ ·2H ₂ O		Anhydrite CaSO ₄		Celestite SrSO ₄		Barite BaSO ₄		CO ₂ Press
°F	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi
80	0	1.23	18.72	-1.95	0.00	-2.02	0.00	-1.39	0.00	1.96	1.39	0.01
100	0	1.18	18.72	-1.97	0.00	-1.97	0.00	-1.39	0.00	1.80	1.39	0.01
120	0	1.14	18.37	-1.98	0.00	-1.90	0.00	-1.37	0.00	1.67	1.39	0.03
140	0	1.09	18.37	-1.98	0.00	-1.81	0.00	-1.35	0.00	1.55	1.39	0.07

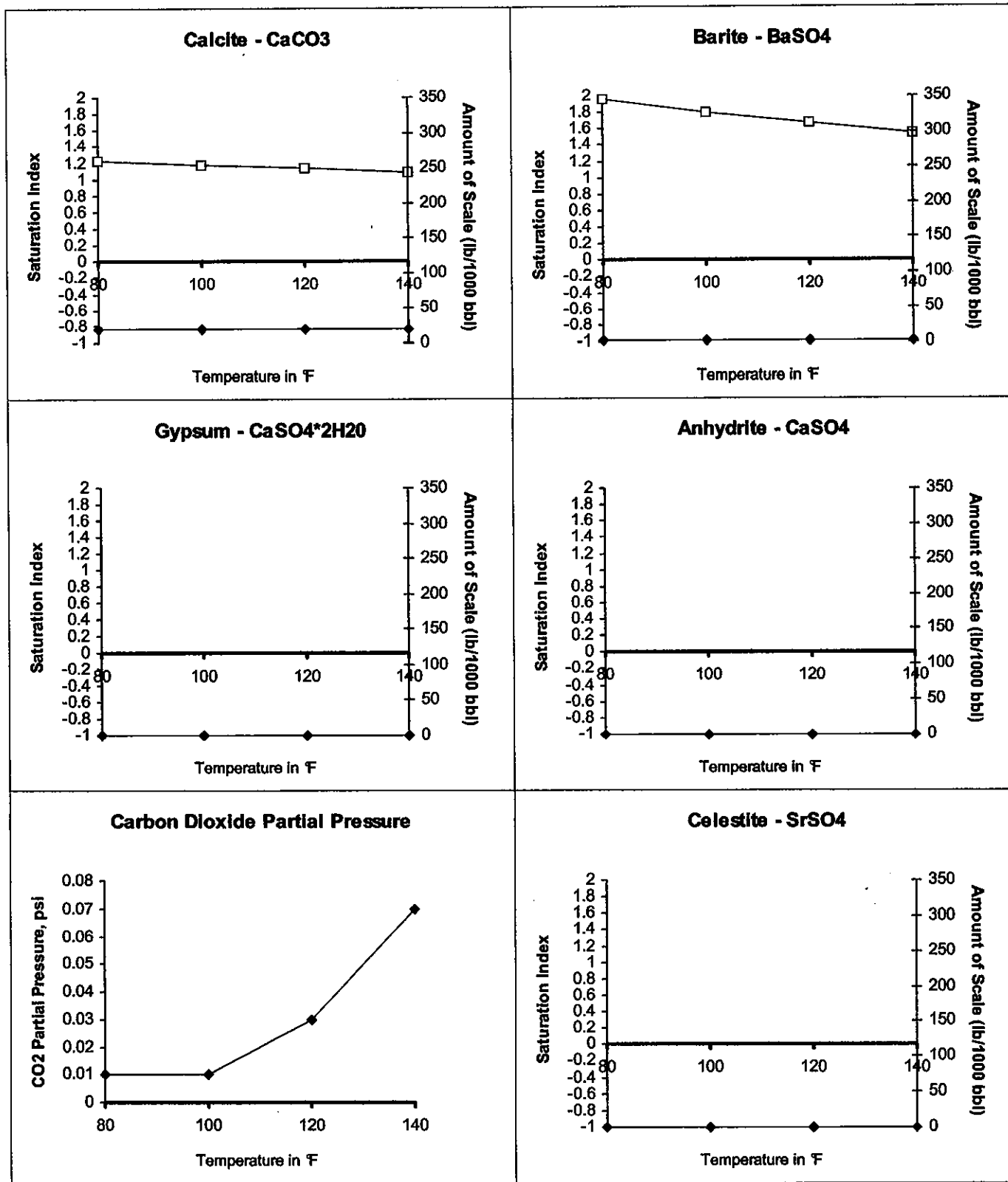
Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.

Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: The reported CO₂ pressure is actually the calculated CO₂ fugacity. It is usually nearly the same as the CO₂ partial pressure.

Scale Predictions from Baker Petrolite

Analysis of Sample 47740 @ 75 °F for EL PASO E & P, 05/10/11



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Water Analysis Report by Baker Petrolite

Company:	EL PASO E & P	Sales RDT:	44625
Region:	ROCKY MOUNTAINS	Account Manager:	TY CLINESMITH (575) 447-0621
Area:	RATON, NM	Sample #:	47741
Lease/Platform:	VERMEJO PARK RANCH 'C'	Analysis ID #:	108264
Entity (or well #):	204	Analysis Cost:	\$90.00
Formation:	UNKNOWN		
Sample Point:	GLORIETA SWAB RUN 6		

Summary		Analysis of Sample 47741 @ 75 F					
Sampling Date:	04/29/11	Anions	mg/l	meq/l	Cations	mg/l	meq/l
Analysis Date:	05/10/11	Chloride:	4135.0	116.63	Sodium:	1833.8	79.77
Analyst:	JENNIFER HARDELL	Bicarbonate:	1262.0	20.68	Magnesium:	3.5	0.29
TDS (mg/l or g/m3):	13236.8	Carbonate:	421.0	14.03	Calcium:	45.0	2.25
Density (g/cm3, tonne/m3):	1.009	Sulfate:	2172.0	45.22	Strontium:	3.0	0.07
Anion/Cation Ratio:	1.0000001	Phosphate:			Barium:	1.5	0.02
Carbon Dioxide:		Borate:			Iron:	2648.0	95.69
Oxygen:		Silicate:			Potassium:	686.0	17.54
Comments:		Hydrogen Sulfide:			Aluminum:		
		pH at time of sampling:			Chromium:		
		pH at time of analysis:		10	Copper:		
		pH used In Calculation:		10	Lead:		
					Manganese:	26.000	0.95
					Nickel:		

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Gauge Press.	Calcite CaCO ₃		Gypsum CaSO ₄ ·2H ₂ O		Anhydrite CaSO ₄		Celestite SrSO ₄		Barite BaSO ₄		CO ₂ Press
F	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi
80	0	2.02	38.74	-1.55	0.00	-1.62	0.00	-0.94	0.00	1.93	1.04	0
100	0	2.01	38.74	-1.55	0.00	-1.56	0.00	-0.92	0.00	1.80	1.04	0
120	0	2.01	38.74	-1.54	0.00	-1.46	0.00	-0.88	0.00	1.69	1.04	0
140	0	2.01	38.74	-1.51	0.00	-1.34	0.00	-0.83	0.00	1.60	0.69	0.01

Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.

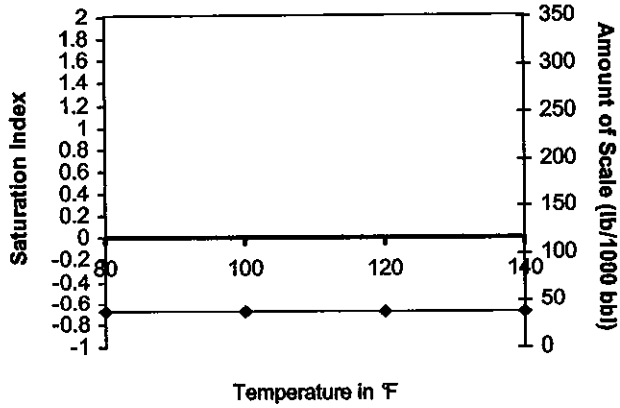
Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: The reported CO2 pressure is actually the calculated CO2 fugacity. It is usually nearly the same as the CO2 partial pressure.

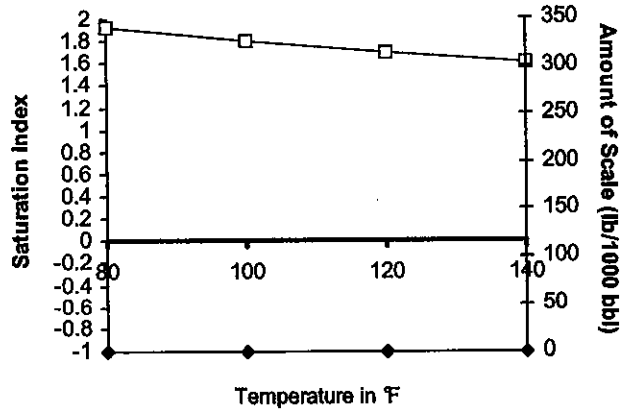
Scale Predictions from Baker Petrolite

Analysis of Sample 47741 @ 75 °F for EL PASO E & P, 05/10/11

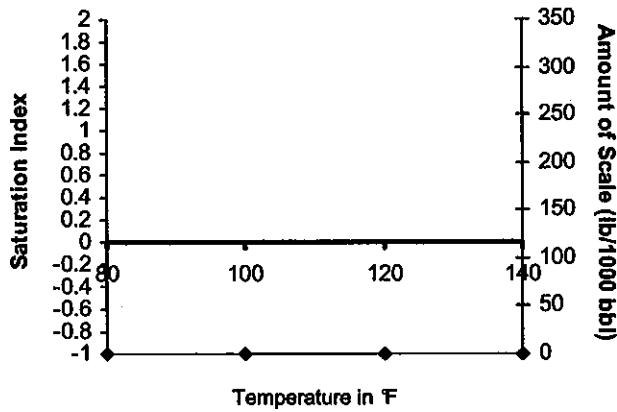
Calcite - CaCO_3



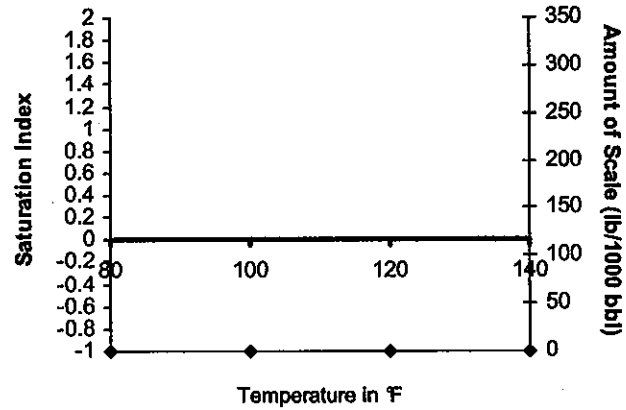
Barite - BaSO_4



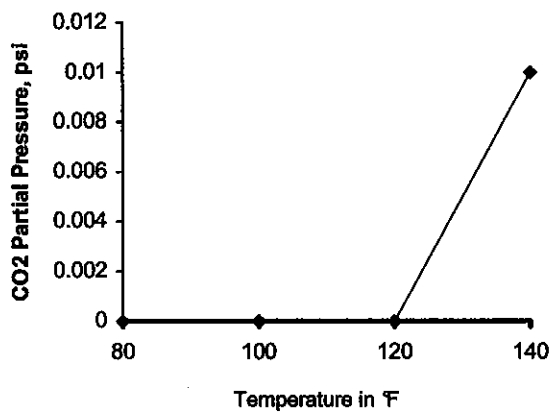
Gypsum - $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$



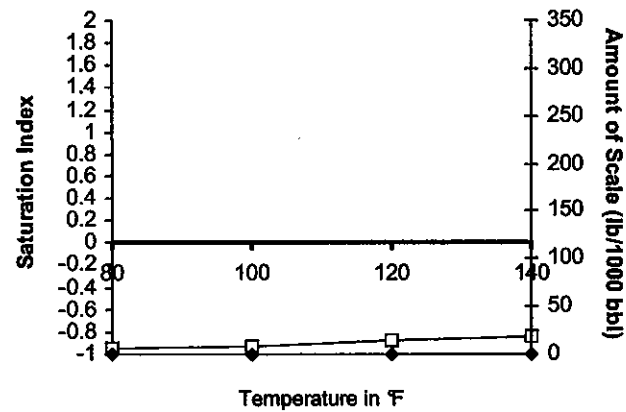
Anhydrite - CaSO_4



Carbon Dioxide Partial Pressure



Celestite - SrSO_4



Onyskiw, Denise

From: Gomez, Maria S [Maria.Gomez@ElPaso.com]
Sent: Friday, May 06, 2011 7:41 AM
To: Onyskiw, Denise
Subject: VPR C-204 WDW 90 day extension request
Attachments: 90 Day extension 050311.pdf

Denise:

Attached is a copy of the sundry overnighted to you on Tuesday, May 3, 2011.

Thanks for all your help. Have a wonderful weekend.

Maria S. Gomez
Sr. Regulatory Analyst
713-420-5038 office
713-445-8554 fax
832-683-0361 cell

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State of Colorado
Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203 Phone: (303)894-2100 Fax: (303)894-2109



SUNDRY NOTICE

Submit original plus one copy. This form is to be used for general, technical and environmental sundry information. For proposed or completed operations, describe in full on Technical Information Page (Page 2 of this form.) Identify well or other facility by API Number or by OGCC Facility ID. Operator shall send an informational copy of all sundry notices for wells located in High Density Areas to the Local Government Designee (Rule 603b.)

1. OGCC Operator Number: 100872	4. Contact Name: Maria S. Gomez	Complete the Attachment Checklist OP OGCC
2. Name of Operator: El Paso E&P Company, L.P.	Phone: 713-420-5038/832-883-0361	
3. Address: 1001 Louisiana	Fax: 713-445-6554	
City: Houston State: TX Zip: 77002		
5. API Number 05-071-09838-00	OGCC Facility ID Number	Survey Plat
6. Well/Facility Name: VPRC	7. Well/Facility Number 204 WDW	Directional Survey
8. Location (Qtr/Qtr, Sec, Twp, Rng, Meridian): SESE, S1, T35S, R87W, 6 PM		Surface Eqmpt Diagram
9. County: Las Animas	10. Field Name:	Technical Info Page
11. Federal, Indian or State Lease Number:		Other

General Notice

<input type="checkbox"/> CHANGE OF LOCATION: Attach New Survey Plat (a change of surface qtr/qtr is substantive and requires a new permit)	
Change of Surface Footage from Exterior Section Lines:	<input type="checkbox"/> FNUF-SL <input type="checkbox"/> FNUF-WL
Change of Surface Footage to Exterior Section Lines:	<input type="checkbox"/> <input type="checkbox"/>
Change of Bottomhole Footage from Exterior Section Lines:	<input type="checkbox"/> <input type="checkbox"/>
Change of Bottomhole Footage to Exterior Section Lines:	<input type="checkbox"/> <input type="checkbox"/>
Bottomhole location Qtr/Qtr, Sec, Twp, Rng, Mer	<input type="checkbox"/> attach directional survey
Latitude _____	Distance to nearest property line _____ Distance to nearest bldg, public rd, utility or RR _____
Longitude _____	Distance to nearest lease line _____ Is location in a High Density Area (rule 603b)? Yes/No _____
Ground Elevation _____	Distance to nearest well same formation _____ Surface owner consultation date: _____
GPS DATA: Date of Measurement _____ PDOP Reading _____ Instrument Operator's Name _____	
<input type="checkbox"/> CHANGE SPACING UNIT Formation _____ Formation Code _____ Spacing order number _____ Unit Acreage _____ Unit configuration _____	<input type="checkbox"/> Remove from surface bond Signed surface use agreement attached _____
<input type="checkbox"/> CHANGE OF OPERATOR (prior to drilling): Effective Date: _____ Plugging Bond: <input type="checkbox"/> Blanket <input type="checkbox"/> Individual	<input type="checkbox"/> CHANGE WELL NAME From: _____ NUMBER _____ To: _____ Effective Date: _____
<input type="checkbox"/> ABANDONED LOCATION: Was location ever built? <input type="checkbox"/> Yes <input type="checkbox"/> No Is site ready for inspection? <input type="checkbox"/> Yes <input type="checkbox"/> No Date Ready for inspection: _____	<input type="checkbox"/> NOTICE OF CONTINUED SHUT IN STATUS Date well shut in or temporarily abandoned: _____ Has Production Equipment been removed from site? <input type="checkbox"/> Yes <input type="checkbox"/> No MIT required if shut in longer than two years. Date of last MIT _____
<input type="checkbox"/> SPUD DATE: _____	<input type="checkbox"/> REQUEST FOR CONFIDENTIAL STATUS (6 mos from date casing set)
<input type="checkbox"/> SUBSEQUENT REPORT OF STAGE, SQUEEZE OR REMEDIAL CEMENT WORK *submit cbl and cement job summaries Method used _____ Cementing tool setting/perf depth _____ Cement volume _____ Cement top _____ Cement bottom _____ Date _____	
<input type="checkbox"/> RECLAMATION: Attach technical page describing final reclamation procedures per Rule 1004. Final reclamation will commence on approximately _____ <input type="checkbox"/> Final reclamation is completed and site is ready for inspection.	

Technical Engineering/Environmental Notice

<input type="checkbox"/> Notice of Intent Approximate Start Date: _____	<input type="checkbox"/> Report of Work Done Date Work Completed: _____	
Details of work must be described in full on Technical Information Page (Page 2 must be submitted.)		
<input type="checkbox"/> Intent to Recomplete (submit form 2)	<input type="checkbox"/> Request to Vent or Flare	<input type="checkbox"/> E&P Waste Disposal
<input type="checkbox"/> Change Drilling Plans	<input type="checkbox"/> Repair Well	<input type="checkbox"/> Beneficial Reuse of E&P Waste
<input type="checkbox"/> Gross Interval Changed?	<input type="checkbox"/> Rule 502 variance requested	<input type="checkbox"/> Status Update/Change of Remediation Plans
<input type="checkbox"/> Casing/Cementing Program Change	<input checked="" type="checkbox"/> Other: Request for 90 day extension	for Spills and Releases

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct and complete.

Signed: Maria S. Gomez Date: 05/03/2011 Email: maria.gomez@elpaso.com
Print Name: Maria S. Gomez Title: Sr. Regulatory Analyst

OGCC Approved: _____ Title _____ Date: _____

CONDITIONS OF APPROVAL, IF ANY: