

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

Form U3C
June 2015
Form must be Typed
Form must be completed
on a per well basis

**ANNUAL REPORT OF PRESSURE MONITORING,
FLUID INJECTION AND ENHANCED RECOVERY**

Complete all blanks - add pages if needed. Copy to be retained for five (5) years after filing date.

OPERATOR: License # _____
Name: _____
Address 1: _____
Address 2: _____
City: _____ State: _____ Zip: _____ + _____
Contact Person: _____
Phone: (_____) _____
Lease Name: _____
Well Number: _____

API No.: _____
Permit No.: _____
Reporting Year: _____
(January 1 to December 31)
____ - ____ - ____ - ____ Sec. ____ Twp. ____ S. R. ____ E W
(a/a/a/a)
_____ feet from N / S Line of Section
_____ feet from E / W Line of Section
County: _____

I. Injection Fluid:

Type (Pick one): Fresh Water Treated Brine Untreated Brine Water/Brine
Source: Produced Water Other (Attach list)
Quality: Total Dissolved Solids: _____ mg/l Specific Gravity: _____ Additives: _____
(Attach water analysis, if available)

II. Well Data:

Maximum Authorized Injection Pressure: _____ psi Injection Zone: _____
Maximum Authorized Injection Rate: _____ barrels per day
Total Number of Enhanced Recovery Injection Wells Covered by this Permit: _____ (Include TA's)

III.	Month:	Total Fluid Injected BBL	Maximum Fluid Pressure	Total Gas Injected MCF	Maximum Gas Pressure	# Days of Injection
	January	_____	_____	_____	_____	_____
	February	_____	_____	_____	_____	_____
	March	_____	_____	_____	_____	_____
	April	_____	_____	_____	_____	_____
	May	_____	_____	_____	_____	_____
	June	_____	_____	_____	_____	_____
	July	_____	_____	_____	_____	_____
	August	_____	_____	_____	_____	_____
	September	_____	_____	_____	_____	_____
	October	_____	_____	_____	_____	_____
	November	_____	_____	_____	_____	_____
	December	_____	_____	_____	_____	_____
	TOTAL	_____	_____	_____	_____	_____



LINN OPERATING
JASON URWIN
FINNEY KS

OLOMAN SWDW
TANK BATTERY

Report Date: 03-14-2017 Sampled: 03-13-2017
Sample #: 3076 at 0000

Sample ID: 148042

CATIONS

Calcium (as Ca)	9425
Magnesium (as Mg)	3595
Barium (as Ba)	0.204
Strontium (as Sr)	204.10
Sodium (as Na)	55390
Potassium (as K)	734.00
Lithium (as Li)	8.85
Ammonia (as NH ₃)	0.00
Aluminum (as Al)	1.04
Iron (as Fe)	0.0510
Manganese (as Mn)	0.0120
Zinc (as Zn)	0.0820
Lead (as Pb)	0.00

ANIONS

Chloride (as Cl)	123800
Sulfate (as SO ₄)	1450
Bromine (as Br)	0.00
Dissolved CO ₂ (as CO ₂)	190.00
Bicarbonate (as HCO ₃)	80.00
Carbonate (as CO ₃)	0.00
Oxalic acid (as C ₂ O ₄)	0.00
Silica (as SiO ₂)	0.00
Phosphate(as PO ₄)	0.00
H ₂ S (as H ₂ S)	0.00
Fluoride (as F)	0.00
Nitrate (as NO ₃)	0.00
Boron (as B)	31.98

PARAMETERS

Calculated T.D.S.	187959
Molar Conductivity	307237
Resistivity	3.25
Sp.Gr.(g/mL)	1.13
Pressure(atm)	1.00
pCO ₂ (atm)	0.0184
pH ₂ S(atm)	0.00
Temperature (°F)	62.00
pH	6.20

COMMENTS

FINNEY KS

LINN OPERATING
JASON URWIN
FINNEY KSOLOMAN SWDW
TANK BATTERYReport Date: 03-14-2017 Sampled: 03-13-2017
Sample #: 3076 at 0000

Sample ID: 148042**SATURATION LEVEL**

Calcite (CaCO ₃)	0.226
Aragonite (CaCO ₃)	0.199
Witherite (BaCO ₃)	< 0.001
Strontianite (SrCO ₃)	0.00533
Calcium oxalate (CaC ₂ O ₄)	0.00
Magnesite (MgCO ₃)	0.0888
Anhydrite (CaSO ₄)	0.724
Gypsum (CaSO ₄ *2H ₂ O)	1.01
Barite (BaSO ₄)	0.654
Celestite (SrSO ₄)	0.352
Fluorite (CaF ₂)	0.00
Calcium phosphate	0.00
Hydroxyapatite	0.00
Silica (SiO ₂)	0.00
Brucite (Mg(OH) ₂)	< 0.001
Magnesium silicate	0.00
Iron hydroxide (Fe(OH) ₃)	< 0.001
Strengite (FePO ₄ *2H ₂ O)	0.00
Siderite (FeCO ₃)	< 0.001
Halite (NaCl)	0.140
Thenardite (Na ₂ SO ₄)	< 0.001
Iron sulfide (FeS)	0.00

MOMENTARY EXCESS (Lbs/1000 Barrels)

Calcite (CaCO ₃)	-0.00802
Aragonite (CaCO ₃)	-0.00943
Witherite (BaCO ₃)	-26.67
Strontianite (SrCO ₃)	-0.642
Calcium oxalate (CaC ₂ O ₄)	-0.00453
Magnesite (MgCO ₃)	-0.0203
Anhydrite (CaSO ₄)	-56.81
Gypsum (CaSO ₄ *2H ₂ O)	0.951
Barite (BaSO ₄)	-0.0640
Celestite (SrSO ₄)	-119.04
Fluorite (CaF ₂)	-2.13
Calcium phosphate	>-0.001
Hydroxyapatite	-265.35
Silica (SiO ₂)	-25.05
Brucite (Mg(OH) ₂)	< 0.001
Magnesium silicate	-84.55
Iron hydroxide (Fe(OH) ₃)	< 0.001
Strengite (FePO ₄ *2H ₂ O)	>-0.001
Siderite (FeCO ₃)	-0.392
Halite (NaCl)	-94053
Thenardite (Na ₂ SO ₄)	-86654
Iron sulfide (FeS)	-0.916

SIMPLE INDICES

Langelier	0.0432
Ryznar	6.11
Puckorius	5.28
Larson-Skold Index	3162
Stiff Davis Index	-0.232
Oddo-Tomson	-1.11

BOUND IONS

Calcium	9425	9177
Barium	0.204	0.204
Carbonate	0.560	0.00404
Phosphate	0.00	0.00
Sulfate	1450	307.98

TOTAL**FREE****OPERATING CONDITIONS**

Temperature (°F)	62.00
Time(secs)	0.00

DownHole SAT™ Water Analysis Report



JACAM LABORATORIES

SYSTEM IDENTIFICATION

LINN OPERATING
OLOMAN SWDW
JASON URWIN
TANK BATTERY
FINNEY KS

Sample ID#: 3076
ID: 148042
Report Date: 03-14-2017
Sample Date: 03-13-2017
at 0000

WATER CHEMISTRY

CATIONS

Calcium(as Ca)	9425
Magnesium(as Mg)	3595
Barium(as Ba)	0.204
Strontium(as Sr)	204.10
Sodium(as Na)	55390
Potassium(as K)	734.00
Lithium(as Li)	8.85
Iron(as Fe)	0.0510
Field Iron(as Fe)	14.00
Ammonia(as NH ₃)	0.00
Aluminum(as Al)	1.04
Manganese(as Mn)	0.0120
Zinc(as Zn)	0.0820
Lead(as Pb)	0.00

ANIONS

Chloride(as Cl)	123800
Sulfate(as SO ₄)	1450
Bromine(as Br)	0.00
Dissolved CO ₂ (as CO ₂)	190.00
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Silica(as SiO ₂)	0.00
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H ₂ S (as H ₂ S)	0.00
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Nitrate(as NO ₃)	0.00
Boron(as B)	31.98

PARAMETERS

Temperature(°F)	62.00
T.D.S.	187959
Resistivity:	3.25
Sample pH	6.20
Conductivity:	307237

SCALE AND CORROSION POTENTIAL

Temp. (°F)	Press. (atm)	Calcite CaCO ₃		Anhydrite CaSO ₄		Gypsum CaSO ₄ *2H ₂ O		Barite BaSO ₄		Celestite SrSO ₄		Siderite FeCO ₃		Mackawenite FeS		CO ₂ (mpy)	pCO ₂ (atm)
50.00	0.00	0.177	-0.00942	0.796	-40.75	1.13	21.05	0.980	-0.00250	0.398	-104.49	< 0.001	-0.433	0.00	-0.907	0.0936	0.0184
65.45	0.00	0.242	-0.00766	0.709	-59.99	0.975	-4.35	0.586	-0.0853	0.343	-122.01	< 0.001	-0.381	0.00	-0.919	0.240	0.0184
80.91	0.00	0.316	-0.00618	0.669	-66.80	0.858	-25.48	0.373	-0.203	0.313	-130.50	< 0.001	-0.340	0.00	-0.932	0.139	0.0184
96.36	0.00	0.396	-0.00494	0.665	-63.22	0.770	-42.49	0.251	-0.360	0.296	-133.84	0.00130	-0.305	0.00	-0.947	0.181	0.0184
111.82	0.00	0.478	-0.00391	0.692	-52.11	0.757	-42.62	0.177	-0.561	0.285	-134.85	0.00173	-0.276	0.00	-0.963	0.192	0.0184
127.27	0.00	0.564	-0.00303	0.750	-36.48	0.787	-33.46	0.126	-0.832	0.273	-136.28	0.00224	-0.252	0.00	-0.980	0.164	0.0184
142.73	0.00	0.651	-0.00227	0.844	-18.99	0.813	-26.74	0.0914	-1.19	0.261	-138.33	0.00282	-0.232	0.00	-1.000	0.134	0.0184
158.18	0.00	0.732	-0.00165	0.983	-1.67	0.835	-21.82	0.0668	-1.67	0.249	-140.98	0.00345	-0.215	0.00	-1.02	0.129	0.0184
173.64	0.00	0.800	-0.00117	1.18	14.16	0.851	-18.26	0.0494	-2.29	0.237	-144.20	0.00407	-0.201	0.00	-1.04	0.123	0.0184
189.09	0.00	0.846	>-0.001	1.46	27.80	0.864	-15.73	0.0369	-3.09	0.225	-148.02	0.00464	-0.189	0.00	-1.07	0.0577	0.0184
204.55	0.00	0.864	>-0.001	1.85	39.05	0.873	-14.00	0.0278	-4.10	0.213	-152.47	0.00508	-0.179	0.00	-1.09	0.0457	0.0184
220.00	0.171	0.834	>-0.001	2.37	49.11	0.872	-14.04	0.0210	-5.43	0.200	-160.92	0.00524	-0.173	0.00	-1.13	0.0614	0.0215
		Lbs per xSAT 1000 Barrels		Lbs per xSAT 1000 Barrels		Lbs per xSAT 1000 Barrels		Lbs per xSAT 1000 Barrels		Lbs per xSAT 1000 Barrels		Lbs per xSAT 1000 Barrels		Lbs per xSAT 1000 Barrels			

Saturation Levels (xSAT) are the ratio of ion activity to solubility, e.g. {Ca}{CO₃}/K_{sp}. pCO₂ (atm) is the partial pressure of CO₂ in the gas phase. Lbs/1000 Barrels scale is the quantity of precipitation (or dissolution) required to instantaneously bring the water to equilibrium.

