

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
STANTON KS

KELLAM #1 SWDW
STOCK TANK

Report Date: 03-08-2017 Sampled: 03-08-2017
Sample #: 3076 at 0000
Sample ID: 147902

CATIONS

Calcium (as Ca)	4717
Magnesium (as Mg)	3130
Barium (as Ba)	0.204
Strontium (as Sr)	125.80
Sodium (as Na)	78963
Potassium (as K)	577.90
Lithium (as Li)	12.72
Ammonia (as NH ₃)	0.00
Aluminum (as Al)	1.09
Iron (as Fe)	0.0510
Manganese (as Mn)	0.370
Zinc (as Zn)	0.0820
Lead (as Pb)	0.00

ANIONS

Chloride (as Cl)	158800
Sulfate (as SO ₄)	2100
Bromine (as Br)	0.00
Dissolved CO ₂ (as CO ₂)	75.00
Bicarbonate (as HCO ₃)	31.00
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)	17.09

PARAMETERS

Calculated T.D.S.	234472
Molar Conductivity	423915
Resistivity	2.36
Sp.Gr.(g/mL)	1.17
Pressure(atm)	1.00
pCO ₂ (atm)	0.00187
pH ₂ S(atm)	0.00
Temperature (°F)	60.00
pH	7.00

COMMENTS

STANTON KS



DownHole R_x

DEPOSITION POTENTIAL INDICATORS

LINN OPERATING
JASON URWIN
STANTON KS

KELLAM #1 SWDW
STOCK TANK

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SATURATION LEVEL

Calcite (CaCO ₃)	0.219
Aragonite (CaCO ₃)	0.193
Witherite (BaCO ₃)	< 0.001
Strontianite (SrCO ₃)	0.00504
Calcium oxalate (CaC ₂ O ₄)	0.00
Magnesite (MgCO ₃)	0.156
Anhydrite (CaSO ₄)	0.686
Gypsum (CaSO ₄ *2H ₂ O)	0.884
Barite (BaSO ₄)	1.00
Celestite (SrSO ₄)	0.318
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)	0.0281
Strengite (FePO ₄ *2H ₂ O)	0.00
Siderite (FeCO ₃)	< 0.001
Halite (NaCl)	0.290
Thenardite (Na ₂ SO ₄)	< 0.001
Iron sulfide (FeS)	0.00

MOMENTARY EXCESS (Lbs/1000 Barrels)

Calcite (CaCO ₃)	-0.0132
Aragonite (CaCO ₃)	-0.0154
Witherite (BaCO ₃)	-26.97
Strontianite (SrCO ₃)	-1.06
Calcium oxalate (CaC ₂ O ₄)	-0.00722
Magnesite (MgCO ₃)	-0.0169
Anhydrite (CaSO ₄)	-106.53
Gypsum (CaSO ₄ *2H ₂ O)	-35.13
Barite (BaSO ₄)	< 0.001
Celestite (SrSO ₄)	-120.58
Fluorite (CaF ₂)	-2.65
Calcium phosphate	>-0.001
Hydroxyapatite	-234.19
Silica (SiO ₂)	-21.98
Brucite (Mg(OH) ₂)	0.00143
Magnesium silicate	-78.82
Iron hydroxide (Fe(OH) ₃)	< 0.001
Strengite (FePO ₄ *2H ₂ O)	>-0.001
Siderite (FeCO ₃)	-0.404
Halite (NaCl)	-63744
Thenardite (Na ₂ SO ₄)	-87726
Iron sulfide (FeS)	-0.365

SIMPLE INDICES

Langelier	0.172
Ryznar	6.66
Puckorius	7.31
Larson-Skold Index	12687
Stiff Davis Index	0.0599
Oddo-Tomson	-0.932

BOUND IONS

Calcium	4717	4498
Barium	0.204	0.204
Carbonate	1.97	0.00637
Phosphate	0.00	0.00
Sulfate	2100	501.70

TOTAL

FREE

OPERATING CONDITIONS

Temperature (°F) 60.00
Time(secs) 0.00

DownHole SAT™ Water Analysis Report



JACAM LABORATORIES

SYSTEM IDENTIFICATION

LINN OPERATING
KELLAM #1 SWD
JASON URWIN
STOCK TANK
STANTON KS

Sample ID#: 3076
ID: 147902
Report Date: 03-08-2017
Sample Date: 03-08-2017
at 0000

WATER CHEMISTRY

CATIONS

Calcium(as Ca)	4717
Magnesium(as Mg)	3130
Barium(as Ba)	0.204
Strontium(as Sr)	125.80
Sodium(as Na)	78963
Potassium(as K)	577.90
Lithium(as Li)	12.72
Iron(as Fe)	0.0510
Field Iron(as Fe)	0.00
Ammonia(as NH ₃)	0.00
Aluminum(as Al)	1.09
Manganese(as Mn)	0.370
Zinc(as Zn)	0.0820
Lead(as Pb)	0.00

ANIONS

Chloride(as Cl)	158800
Sulfate(as SO ₄)	2100
Bromine(as Br)	0.00
Dissolved CO ₂ (as CO ₂)	75.00
Bicarbonate(as HCO ₃)	31.00
Carbonate(as CO ₃)	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)	17.09

PARAMETERS

Temperature(°F)	60.00
T.D.S.	234472
Conductivity:	423915
Sample pH	7.00
Resistivity:	2.36

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	0.181	-0.0150	0.747	-83.68	0.979	-5.99	1.41	0.0354	0.355	-106.93	< 0.001	-0.439	0.00	-0.361	0.0326	0.00187
65.45	0.00	0.239	-0.0123	0.661	-115.26	0.839	-49.68	0.839	-0.0231	0.303	-126.17	< 0.001	-0.387	0.00	-0.366	0.0610	0.00187
80.91	0.00	0.291	-0.0102	0.620	-126.66	0.733	-85.85	0.530	-0.107	0.275	-136.75	0.00134	-0.344	0.00	-0.372	0.0192	0.00187
96.36	0.00	0.325	-0.00883	0.611	-121.15	0.654	-114.75	0.353	-0.221	0.258	-142.17	0.00165	-0.310	0.00	-0.378	0.0252	0.00187
111.82	0.00	0.334	-0.00797	0.631	-103.26	0.637	-113.92	0.246	-0.369	0.246	-145.12	0.00186	-0.281	0.00	-0.384	0.0264	0.00187
127.27	0.00	0.323	-0.00751	0.680	-77.76	0.659	-96.70	0.175	-0.569	0.234	-148.36	0.00196	-0.257	0.00	-0.392	0.0222	0.00187
142.73	0.00	0.294	-0.00732	0.760	-48.91	0.676	-83.81	0.125	-0.840	0.221	-152.12	0.00194	-0.237	0.00	-0.399	0.0180	0.00187
158.18	0.00	0.255	-0.00730	0.880	-20.05	0.689	-74.22	0.0909	-1.20	0.209	-156.36	0.00182	-0.221	0.00	-0.408	0.0187	0.00187
173.64	0.00	0.214	-0.00736	1.05	6.58	0.698	-67.13	0.0667	-1.68	0.198	-161.06	0.00164	-0.207	0.00	-0.417	0.0194	0.00187
189.09	0.00	0.175	-0.00745	1.29	29.71	0.705	-61.99	0.0494	-2.30	0.186	-166.27	0.00142	-0.195	0.00	-0.427	0.00976	0.00187
204.55	0.00	0.141	-0.00756	1.62	48.92	0.708	-58.40	0.0370	-3.10	0.175	-172.00	0.00121	-0.185	0.00	-0.438	0.00818	0.00187
220.00	0.171	0.108	-0.00798	2.07	65.53	0.703	-59.18	0.0277	-4.15	0.164	-181.75	< 0.001	-0.181	0.00	-0.455	0.0111	0.00219
		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.

