



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	_____	_____	_____	_____	_____

DownHole SAT™ Water Analysis Report



JACAM LABORATORIES

SYSTEM IDENTIFICATION

LINN OPERATING
 PADEN SWD
 MICHAEL BELLOMY
 FLOWLINE
 SUMNER KS

Sample ID#: 3076
 ID: 117387
 Report Date: 01-22-2016
 Sample Date: 01-13-2016
 at 0000

WATER CHEMISTRY

CATIONS

Calcium(as Ca)	12590
Magnesium(as Mg)	3229
Barium(as Ba)	0.204
Strontium(as Sr)	248.30
Sodium(as Na)	64788
Potassium(as K)	686.10
Lithium(as Li)	9.46
Iron(as Fe)	26.71
Field Iron(as Fe)	0.00
Ammonia(as NH ₃)	0.00
Aluminum(as Al)	0.00
Manganese(as Mn)	1.51
Zinc(as Zn)	2.12
Lead(as Pb)	0.00

ANIONS

Chloride(as Cl)	147200
Sulfate(as SO ₄)	950.00
Bromine(as Br)	0.00
Dissolved CO ₂ (as CO ₂)	145.00
Bicarbonate(as HCO ₃)	30.50
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)	0.500
Fluoride(as F)	0.00
Nitrate(as NO ₃)	0.00
Boron(as B)	6.14

PARAMETERS

Temperature(°F)	56.00
T.D.S.	219036
Conductivity:	391042
Resistivity:	2.56
Sample pH	5.68

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	0.0276	-0.00659	0.646	-45.52	0.873	-13.63	0.448	-0.148	0.222	-158.34	0.0197	-0.0108	0.0353	-0.864	0.106	0.0110
65.45	0.00	0.0372	-0.00576	0.577	-56.07	0.755	-28.16	0.269	-0.327	0.192	-173.49	0.0297	-0.00841	0.0345	-0.892	0.357	0.0110
80.91	0.00	0.0483	-0.00510	0.547	-58.83	0.668	-40.11	0.172	-0.579	0.176	-179.25	0.0430	-0.00666	0.0332	-0.923	0.182	0.0110
96.36	0.00	0.0604	-0.00456	0.546	-55.08	0.602	-49.57	0.116	-0.911	0.168	-179.84	0.0596	-0.00536	0.0316	-0.958	0.238	0.0110
111.82	0.00	0.0733	-0.00412	0.571	-46.65	0.594	-47.91	0.0822	-1.33	0.162	-178.26	0.0797	-0.00436	0.0297	-0.997	0.258	0.0110
127.27	0.00	0.0874	-0.00377	0.622	-35.48	0.622	-40.19	0.0591	-1.89	0.156	-177.40	0.104	-0.00359	0.0280	-1.04	0.236	0.0110
142.73	0.00	0.102	-0.00347	0.703	-23.26	0.645	-34.33	0.0430	-2.62	0.150	-177.48	0.133	-0.00299	0.0265	-1.09	0.210	0.0110
158.18	0.00	0.118	-0.00323	0.823	-11.28	0.665	-29.85	0.0316	-3.56	0.144	-178.44	0.166	-0.00250	0.0251	-1.13	0.191	0.0110
173.64	0.00	0.133	-0.00304	0.993	-0.368	0.682	-26.47	0.0234	-4.76	0.137	-180.27	0.203	-0.00211	0.0237	-1.19	0.173	0.0110
189.09	0.00	0.146	-0.00289	1.23	9.03	0.695	-23.93	0.0176	-6.27	0.131	-182.97	0.241	-0.00180	0.0223	-1.25	0.0678	0.0110
204.55	0.00	0.157	-0.00279	1.56	16.81	0.705	-22.06	0.0133	-8.12	0.124	-186.56	0.278	-0.00155	0.0208	-1.31	0.0460	0.0110
220.00	0.171	0.161	-0.00282	2.02	23.58	0.707	-21.82	0.0101	-10.46	0.118	-195.35	0.307	-0.00142	0.0219	-1.40	0.0611	0.0129
		xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 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.

