Inspection Report For Well: UT20736 - 04417

U.S. Environmental Protection Agency
Underground Injection Control Program, 8ENF-T
999 18th Street, Suite 300, Denver, CO 80202-2466

This form was printed on 7/27/2012

INSPECTOR(S): Lead: Breffle, Don — Date: 8/29/2012

Others: Zhang, Qian — Time: 9:42 (am) / pm

OPERATOR (only if different): Chad Stevenson Rodrigo Jurado

REPRESENTATIVE(S):

PRE-INSPECTION REVIEW

Petroglyph Operating Company, Inc

Well Name:	Ute Tribal 30-16		
Well Type:	Enhanced Recovery (2R)		
Operating Status:	AC (ACTIVE) as of 12/31/2002		
Oil Field:	Antelope Creek (Duchesne)		
Location:	SESE S30 T5S R3W		
Indian Country:	X, Uintah and Ouray		
Last Inspection:	7/14/2010	***Allowable Inj Pressure:***	2625 /
Last MIT:	Pass 4/12/2012	***Annulus Pressure From Last MIT:***	1540

BLACK = POSSIBLE VIOLATION — GREY = DATA MISSING

INSPECTION TYPE: **(Select One)**

- [ ] Construction / Workover
- [ ] Plugging
- [ ] Post-Closure
- [ ] Response to Complaint
- [x] Routine
- [ ] Witness MIT
- [ ] Other

ICIS Entered
Date 9/13/12
Initials DB

OBSERVED VALUES:

Tubing Gauge:	[x] Yes [ ] No	Pressure: U: 1690 / L: ____ psig Gauge Range: SCADA psig	Gauge Owner:	[ ] EPA [x] Operator
Annulus Gauge:	[x] Yes [ ] No	Pressure: 0 psig Gauge Range: opened annulus psig	Gauge Owner:	[ ] EPA [x] Operator
Bradenhead Gauge:	[ ] Yes [ ] No	Pressure: ____ psig Gauge Range: ____ psig	Gauge Owner:	[ ] EPA [ ] Operator
Pump Gauge:	[ ] Yes [ ] No	Pressure: ____ psig Gauge Range: ____ psig	Gauge Owner:	[ ] EPA [ ] Operator

Operating Status: (Select One)
- [x] Active
- [ ] Being Reworked
- [ ] Not Injecting
- [ ] Production
- [ ] Plugged and Abandoned
- [ ] Under Construction

U2 Entered
Date 9/20/12
Initial DB

See page 2 for photos, comments, and site conditions.

EN		CE
	1	

Inspection Report For Well: UT20736 - 04417 (PAGE 2)

PHOTOGRAPHS: ☐ Yes ☒ No List of photos taken: _____

Comments and site conditions observed during inspection: _____

GPS: GPS File ID: _____

Signature of EPA Inspector(s): _____ _____ _____

☐ Data Entry ☐ Compliance Staff ☐ Hard Copy Filing

NOTICE OF INSPECTION

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII, 999 18TH STREET - SUITE 500
DENVER, COLORADO 80202-2405

Date: 8/28/12

Hour: 8:00 AM

Notice of inspection is hereby given according to Section 1445(b) of the Safe Drinking Water Act (42 U.S.C. §300f et seq.).

Firm Name: Petroglyph Operating Co

Firm Address: 4116 W 3000 S Ioka La
Roosevelt, UT

REASON FOR INSPECTION:

For the purpose of inspecting records, files, papers, processes, controls and facilities, and obtaining samples to determine whether the person subject to an applicable underground injection control program has acted or is acting in compliance with the Safe Drinking Water Act and any applicable condition of permit or rule authorization.

SECTION 1445(b) of the SAFE DRINKING WATER ACT is quoted below:

Section 1445(b)(1): Except as provided in Paragraph (2), the Administrator, or representatives of the Administrator duly designated by him, upon presenting appropriate credentials, and a written notice to any supplier of water or other person subject to (a), or person subject (A) a national primary drinking water regulation prescribed under Section 1412(B) an applicable Underground Injection Control Program, or (C) any requirement to monitor an unregulated contaminant pursuant to subsection (a), or person in charge of any of the property of such supplier or other person referred to in clause (A), (B), or (C), is authorized to enter any establishment, ... facility, or other property of such supplier or other person in order to determine whether such supplier or other person has acted or is acting in compliance with this title, including for this purpose, inspection, at reasonable times, of records, files, papers, processes, controls, and facilities, or in order to test any feature of a public water system, including its raw water source. The Administrator or the Comptroller General (or any representative designated by either) shall have access for the purpose of audit and examination to any records, reports, or information of a grantee which are required to be maintained under subsection (a) or which are pertinent to any financial assistance under this title.

Don Breffle
Inspector's Name & Title (Print)

Qian Zhang

Don Breffle
Inspector's Signature

EPA R8 3560-1 (8-89)

Original - Regional Office Copy
Yellow Copy - Operator Copy

OMB No. 2040-0042 Approval Expires 11/30/2014

EPA

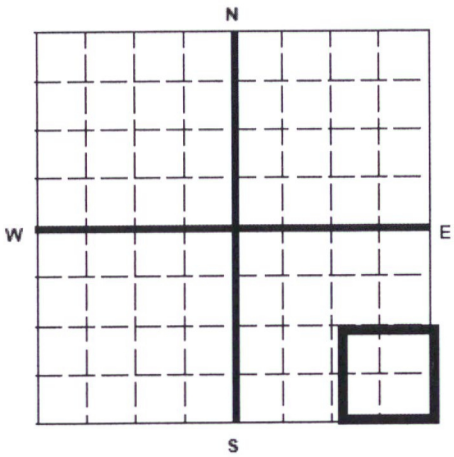
United States Environmental Protection Agency
Washington, DC 20460

ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

Name and Address of Existing Permittee
Petroglyph Operating Company, Inc. 2258
P.O. Box 7608
Boise, Idaho 83709

Name and Address of Surface Owner
Ute Indian Tribe
P.O. Box 70
Ft. Duchesne, Utah, 84026

Locate Well and Outline Unit on Section Plat - 640 Acres



State	County	Permit Number
Utah	Duchesne	UT2736-04417

Surface Location Description
___ 1/4 of ___ 1/4 of SE 1/4 of SE 1/4 of Section 30 Township 5S Range 3W

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface Location 518 ft. frm (N/S) S Line of quarter section
and 593 ft. from (E/W) E Line of quarter section.

WELL ACTIVITY	TYPE OF PERMIT
[ ] Brine Disposal	[ ] Individual
[X] Enhanced Recovery	[X] Area
[ ] Hydrocarbon Storage	Number of Wells 111

Lease Name Ute Indian Tribe Well Number UTE TRIBAL 30-16

		INJECTION PRESSURE		TOTAL VOLUME INJECTED		TUBING – CASING ANNULUS PRESSURE (OPTIONAL MONITORING)	
MONTH	YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG
January	16	1699	1725	596		0	0
February	16	1760	1777	950		0	0
March	16	1784	1797	977		0	0
April	16	1757	1781	778		0	0
May	16	1769	1782	943		0	0
June	16	1741	1782	804		0	0
July	16	1744	1753	796		0	0
August	16	1726	1750	783		0	0
September	16	1696	1721	650		0	0
October	16	1709	1731	860		0	0
November	16	1678	1725	449		0	0
December	16	1710	1733	877		0	0

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibliity of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title *(Please type or print)*	Signature	Date Signed
Chad Stevenson, Water Facilities Supervisor		03/21/2017

GREEN BLUE CBI TAB 2

UIC Entered
Date 4/7/17
Initial DB

EPA Form 7520-11 (Rev. 12-11)

Multi-Chem Analytical Laboratory
1553 East Highway 40
Vernal, UT 84078

multi-chem
A HALLIBURTON SERVICE

Units of Measurement: **Standard**

Water Analysis Report

Production Company:	**PETROGLYPH OPERATING CO INC - EBUS**	Sales Rep:	**James Patry**
Well Name:	**UTE TRIBAL 30-16 INJ, DUCHESNE**	Lab Tech:	**Kaitlyn Natelli**
Sample Point:	**Well Head**		
Sample Date:	**1/6/2017**		
Sample ID:	**WA-345345**		

Scaling potential predicted using ScaleSoftPitzer from Brine Chemistry Consortium (Rice University)

Sample Specifics

Test Date:	1/25/2017
System Temperature 1 (°F):	300
System Pressure 1 (psig):	2000
System Temperature 2 (°F):	130
System Pressure 2 (psig):	50
Calculated Density (g/ml):	1.0003
pH:	7.90
Calculated TDS (mg/L):	4408.18
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	30.00
H_2S in Gas (%):	
H2S in Water (mg/L):	5.00
Tot. SuspendedSolids(mg/L):	
Corrosivity(LanglierSat.Indx)	0.00
Alkalinity:	

Analysis @ Properties in Sample Specifics

Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	1406.06	Chloride (Cl):	1500.00
Potassium (K):	13.00	Sulfate (SO_4):	60.00
Magnesium (Mg):	20.71	Bicarbonate (HCO_3):	1342.00
Calcium (Ca):	40.80	Carbonate (CO_3):	
Strontium (Sr):	2.12	Hydroxide(HO):	
Barium (Ba):	5.82	Acetic Acid (CH_3COO)	
Iron (Fe):	4.76	Propionic Acid (C_2H_5COO)	
Zinc (Zn):	0.38	Butanoic Acid (C_3H_7COO)	
Lead (Pb):	0.02	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Ammonia NH_3:		Fluoride (F):	
Manganese (Mn):	0.12	Bromine (Br):	
Aluminum (Al):	1.46	Silica (SiO_2):	12.39
Lithium (Li):	2.76	Calcium Carbonate ($CaCO_3$):	
Boron (B):	2.03	Phosphates (PO_4):	9.26
Silicon (Si):	5.79	Oxygen (O_2):	

Notes:

(PTB = Pounds per Thousand Barrels)

		Calcium Carbonate		Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum CaSO4·2H2O		Celestite SrSO4		Halite NaCl		Zinc Sulfide	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
130.00	50.00	1.10	28.65	1.13	3.20	3.00	2.62	2.26	3.44	0.00	0.00	0.00	0.00	0.00	0.00	9.48	0.20
149.00	267.00	1.17	29.62	1.04	3.13	2.96	2.62	2.37	3.45	0.00	0.00	0.00	0.00	0.00	0.00	9.24	0.20
168.00	483.00	1.28	30.95	0.97	3.07	2.97	2.62	2.50	3.45	0.00	0.00	0.00	0.00	0.00	0.00	9.05	0.20
187.00	700.00	1.40	32.09	0.92	3.02	3.01	2.62	2.63	3.45	0.00	0.00	0.00	0.00	0.00	0.00	8.90	0.20
206.00	917.00	1.52	33.03	0.88	2.98	3.06	2.62	2.75	3.46	0.00	0.00	0.00	0.00	0.00	0.00	8.76	0.20
224.00	1133.00	1.65	33.78	0.86	2.96	3.13	2.62	2.87	3.46	0.00	0.00	0.00	0.00	0.00	0.00	8.65	0.20
243.00	1350.00	1.79	34.35	0.85	2.95	3.22	2.62	2.98	3.46	0.00	0.00	0.00	0.00	0.00	0.00	8.56	0.20
262.00	1567.00	1.93	34.76	0.85	2.95	3.32	2.62	3.09	3.46	0.00	0.00	0.00	0.00	0.00	0.00	8.49	0.20
281.00	1783.00	2.08	35.06	0.87	2.97	3.43	2.63	3.19	3.46	0.00	0.00	0.00	0.00	0.00	0.00	8.42	0.20
300.00	2000.00	2.22	35.26	0.89	2.99	3.54	2.63	3.27	3.46	0.00	0.00	0.00	0.00	0.00	0.00	8.37	0.20

Multi-Chem Analytical Laboratory
1553 East Highway 40
Vernal, UT 84078

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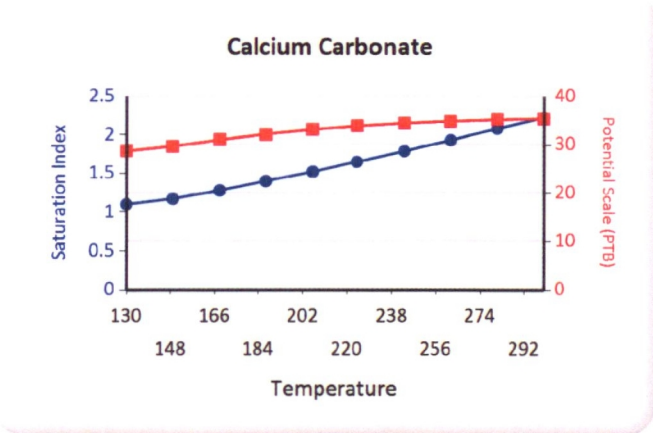
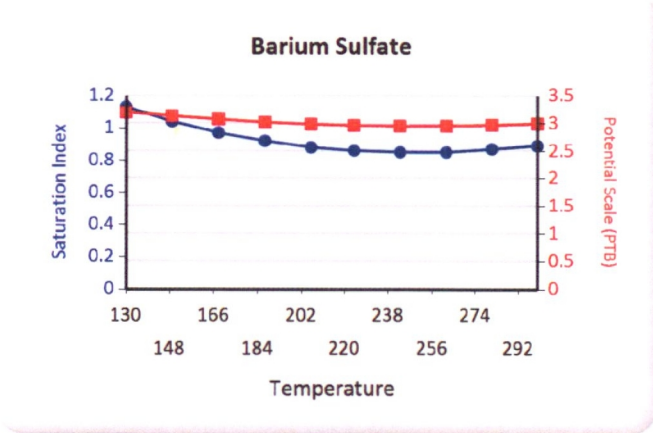
Water Analysis Report

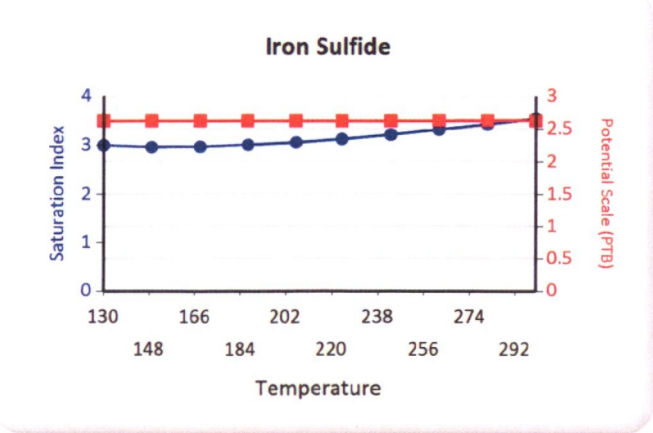
		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
130.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.84	0.22	9.91	0.01	1.07	5.81	0.00	0.15	7.12	3.68
149.00	267.00	0.00	0.00	0.00	0.00	0.00	0.00	1.06	0.23	9.49	0.01	1.88	10.33	0.45	2.75	7.66	3.69
168.00	483.00	0.00	0.00	0.00	0.00	0.00	0.00	1.29	0.24	9.15	0.01	2.85	15.90	1.02	6.05	8.37	3.69
187.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	1.50	0.25	8.85	0.01	3.81	21.07	1.58	9.19	9.10	3.70
206.00	917.00	0.00	0.00	0.00	0.00	0.00	0.00	1.70	0.25	8.58	0.01	4.75	25.39	2.14	11.87	9.82	3.70
224.00	1133.00	0.00	0.00	0.00	0.00	0.00	0.00	1.87	0.25	8.35	0.01	5.68	28.57	2.69	13.87	10.55	3.70
243.00	1350.00	0.00	0.00	0.00	0.00	0.00	0.00	2.03	0.25	8.14	0.01	6.57	30.55	3.23	15.17	11.26	3.70
262.00	1567.00	0.00	0.00	0.00	0.00	0.00	0.00	2.17	0.25	7.96	0.01	7.44	31.53	3.76	15.92	11.96	3.70
281.00	1783.00	0.00	0.00	0.00	0.00	0.00	0.00	2.30	0.26	7.81	0.01	8.27	31.93	4.26	16.32	12.64	3.70
300.00	2000.00	0.00	0.00	0.00	0.00	0.00	0.00	2.41	0.26	7.67	0.01	9.06	32.07	4.74	16.53	13.28	3.70

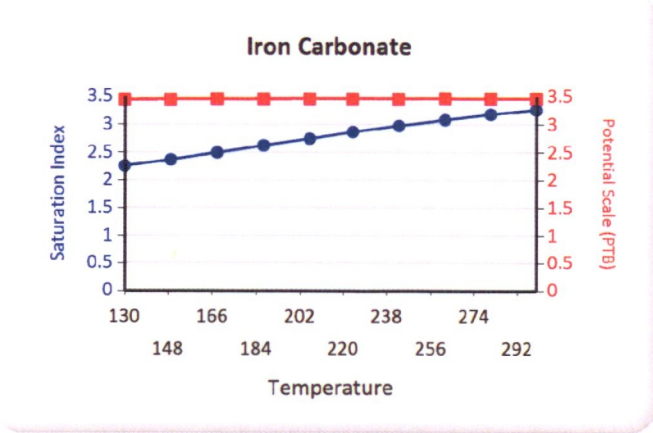
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Lead Sulfide Mg Silicate Fe Silicate

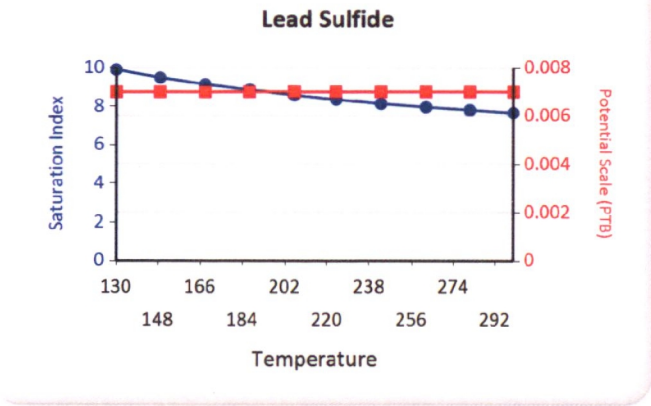
These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Lead Sulfide Mg Silicate Ca Mg Silicate Fe Silicate

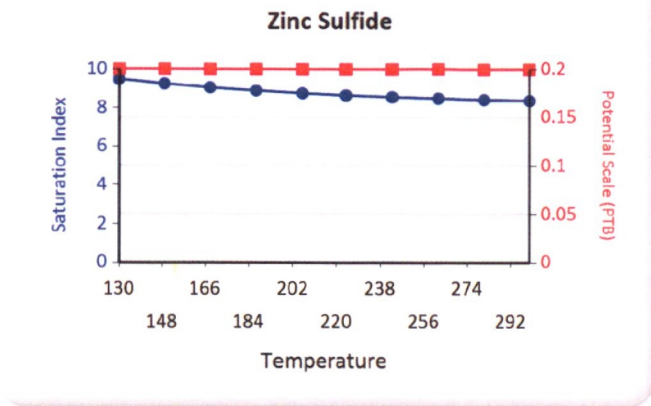


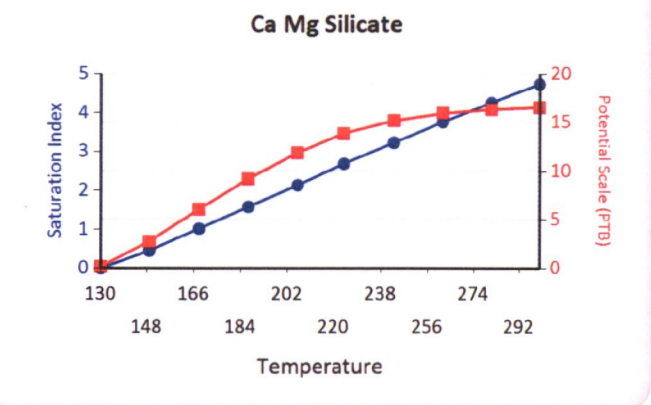


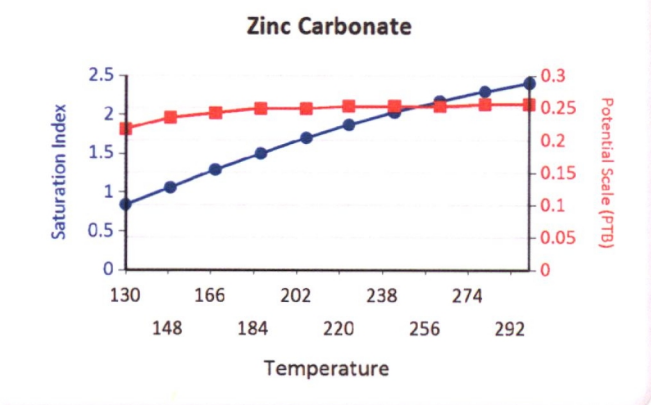





Lead Sulfide
Saturation Index
Potential Scale (PTB)
Temperature
130 166 202 238 274
148 184 220 256 292


Zinc Sulfide
Saturation Index
Potential Scale (PTB)
Temperature
130 166 202 238 274
148 184 220 256 292


Ca Mg Silicate
Saturation Index
Potential Scale (PTB)
Temperature
130 166 202 238 274
148 184 220 256 292


Zinc Carbonate
Saturation Index
Potential Scale (PTB)
Temperature
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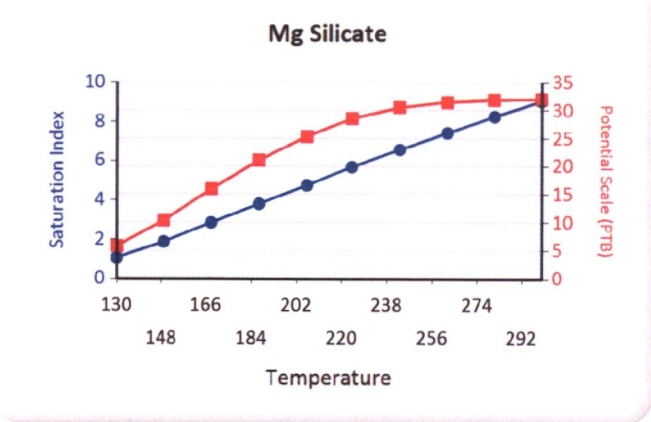
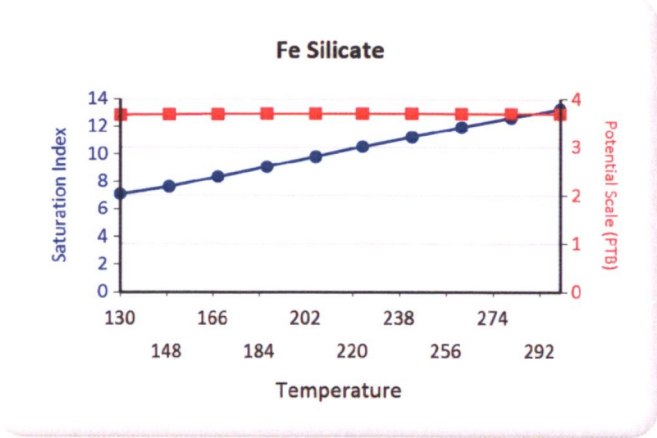
148 184 220 256 292


Mg Silicate
Saturation Index
Potential Scale (PTB)
Temperature
130 166 202 238 274
148 184 220 256 292


Fe Silicate
Saturation Index
Potential Scale (PTB)
Temperature
14
12
10
8
6
4
2
0
4
3
2
1
0
130
166
202
238
274
148
184
220
256
292

OMB No. 2040-0042 Approval Expires 11/30/2014

EPA

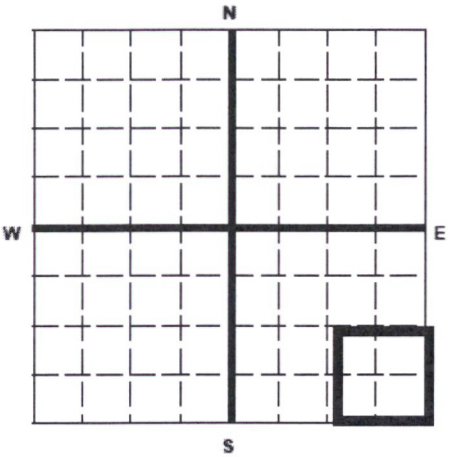
United States Environmental Protection Agency
Washington, DC 20460

ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

Name and Address of Existing Permittee
Petroglyph Operating Company, Inc. 2258
P.O. Box 7608
Boise, Idaho 83709

Name and Address of Surface Owner
Ute Indian Tribe
P.O. Box 70
Ft. Duchesne, Utah, 84026

Locate Well and Outline Unit on Section Plat - 640 Acres



State	County	Permit Number
Utah	Duchesne	UT2736-~~04434~~ 04417

Surface Location Description
___ 1/4 of ___ 1/4 of SE 1/4 of SE 1/4 of Section 30 Township 5S Range 3W

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface Location 518 ft. frm (N/S) S Line of quarter section
and 593 ft. from (E/W) E Line of quarter section.

U2 Entered
Date 3/3/16
Initial DB

WELL ACTIVITY
- [ ] Brine Disposal
- [X] Enhanced Recovery
- [ ] Hydrocarbon Storage

TYPE OF PERMIT
- [ ] Individual
- [X] Area

Number of Wells 111

Lease Name Ute Indian Tribe Well Number UTE TRIBAL 30-16

		INJECTION PRESSURE		TOTAL VOLUME INJECTED		TUBING – CASING ANNULUS PRESSURE (OPTIONAL MONITORING)	
MONTH	YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG
January	15	1699	1715	706		0	0
February	15	1725	1754	753		0	0
March	15	1756	1778	947		0	0
April	15	1724	1764	823		0	0
May	15	1759	1774	916		0	0
June	15	1761	1797	910		0	0
July	15	1781	1784	805		0	0
August	15	1762	1776	859		0	0
September	15	1736	1765	748		0	0
October	15	1747	1761	683		0	0
November	15	1761	1780	762		0	0
December	15	1758	1778	850		0	0

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibliity of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title *(Please type or print)*	Signature	Date Signed
Chad Stevenson, Water Facilities Supervisor		02/08/2016

TAB	GREEN	BLUE	CBI
		2	

EPA Form 7520-11 (Rev. 12-11)

Multi-Chem Analytical Laboratory
1553 East Highway 40
Vernal, UT 84078

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A HALLIBURTON SERVICE

Units of Measurement: **Standard**

Water Analysis Report

Production Company:	**PETROGLYPH OPERATING CO INC - EBUS**	Sales Rep:	**James Patry**
Well Name:	**UTE TRIBAL 30-16 INJ, DUCHESNE**	Lab Tech:	**Michele Pike**
Sample Point:	**Well Head**		
Sample Date:	**1/6/2016**		
Sample ID:	**WA-327689**		

Scaling potential predicted using ScaleSoftPitzer from Brine Chemistry Consortium (Rice University)

Sample Specifics

Test Date:	1/13/2016
System Temperature 1 (°F):	60
System Pressure 1 (psig):	2000
System Temperature 2 (°F):	180
System Pressure 2 (psig):	50
Calculated Density (g/ml):	1.0025
pH:	8.10
Calculated TDS (mg/L):	7532.29
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	40.00
H_2S in Gas (%):	
H2S in Water (mg/L):	0.00
Tot. SuspendedSolids(mg/L):	
Corrosivity(LanglierSat.Indx)	0.00
Alkalinity:	

Analysis @ Properties in Sample Specifics

Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	2413.09	Chloride (Cl):	3000.00
Potassium (K):	11.90	Sulfate (SO_4):	300.00
Magnesium (Mg):	60.07	Bicarbonate (HCO_3):	1586.00
Calcium (Ca):	127.64	Carbonate (CO_3):	
Strontium (Sr):	5.23	Acetic Acid (CH_3COO)	
Barium (Ba):	3.19	Propionic Acid (C_2H_5COO)	
Iron (Fe):	1.94	Butanoic Acid (C_3H_7COO)	
Zinc (Zn):	1.21	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Lead (Pb):	0.17	Fluoride (F):	
Ammonia NH_3:		Bromine (Br):	
Manganese (Mn):	0.09	Silica (SiO_2):	21.76
Aluminum (Al):	0.05	Calcium Carbonate ($CaCO_3$):	
Lithium (Li):	1.53	Phosphates (PO_4):	7.11
Boron (B):	2.64	Oxygen (O_2):	
Silicon (Si):	10.17		

Notes:

(PTB = Pounds per Thousand Barrels)

		Calcium Carbonate		Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum CaSO4·2H2O		Celestite SrSO4		Halite NaCl		Zinc Sulfide	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
180.00	50.00	1.98	101.50	1.13	1.76	0.00	0.00	2.35	1.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
167.00	267.00	1.86	97.43	1.15	1.77	0.00	0.00	2.21	1.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
153.00	483.00	1.78	94.28	1.18	1.77	0.00	0.00	2.10	1.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140.00	700.00	1.70	90.83	1.23	1.79	0.00	0.00	2.00	1.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
127.00	917.00	1.62	87.14	1.28	1.80	0.00	0.00	1.89	1.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
113.00	1133.00	1.55	83.32	1.34	1.81	0.00	0.00	1.78	1.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	1350.00	1.49	79.47	1.42	1.83	0.00	0.00	1.67	1.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
87.00	1567.00	1.43	75.69	1.52	1.84	0.00	0.00	1.57	1.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
73.00	1783.00	1.38	72.07	1.63	1.85	0.00	0.00	1.46	1.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
60.00	2000.00	1.33	68.70	1.75	1.86	0.00	0.00	1.36	1.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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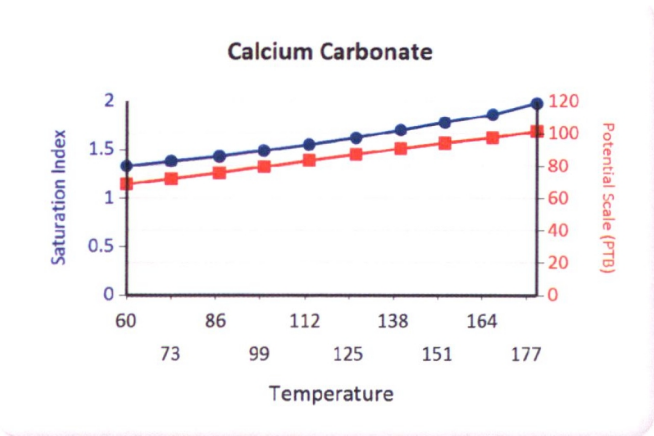
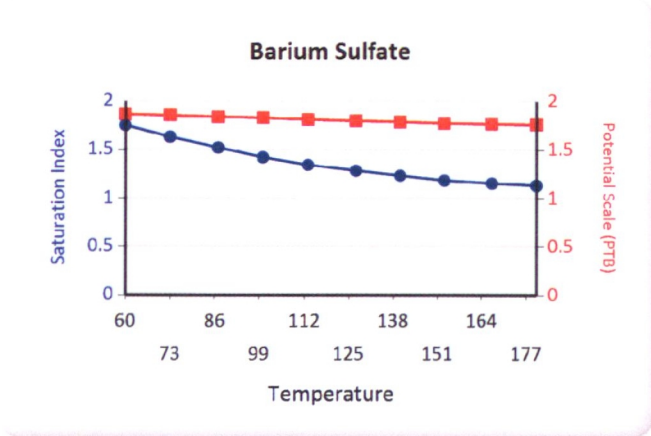
Water Analysis Report

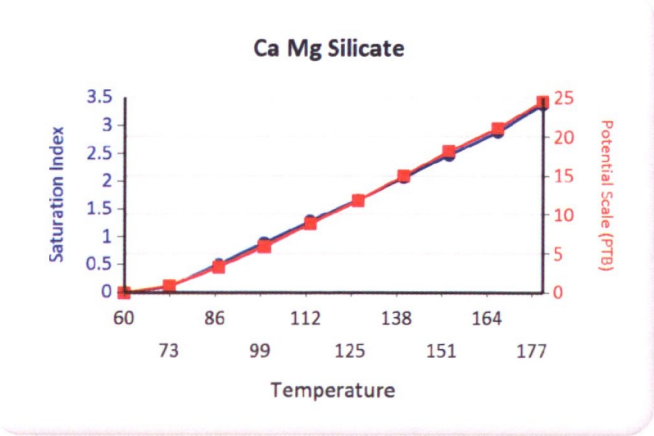
		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
180.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	2.05	0.81	0.00	0.00	6.19	49.36	3.38	24.51	9.01	1.51
167.00	267.00	0.00	0.00	0.00	0.00	0.00	0.00	1.86	0.80	0.00	0.00	5.35	42.00	2.88	21.07	8.34	1.51
153.00	483.00	0.00	0.00	0.00	0.00	0.00	0.00	1.70	0.80	0.00	0.00	4.67	35.71	2.47	18.14	7.82	1.50
140.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	1.52	0.79	0.00	0.00	3.98	29.21	2.07	15.01	7.32	1.50
127.00	917.00	0.00	0.00	0.00	0.00	0.00	0.00	1.34	0.77	0.00	0.00	3.29	22.94	1.67	11.86	6.82	1.50
113.00	1133.00	0.00	0.00	0.00	0.00	0.00	0.00	1.14	0.75	0.00	0.00	2.60	17.17	1.28	8.83	6.33	1.50
100.00	1350.00	0.00	0.00	0.00	0.00	0.00	0.00	0.94	0.72	0.00	0.00	1.91	11.99	0.89	5.99	5.86	1.49
87.00	1567.00	0.00	0.00	0.00	0.00	0.00	0.00	0.72	0.66	0.00	0.00	1.22	7.35	0.50	3.34	5.39	1.48
73.00	1783.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.55	0.00	0.00	0.53	3.14	0.11	0.85	4.93	1.47
60.00	2000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.36	0.00	0.00	0.00	0.00	0.00	0.00	4.49	1.45

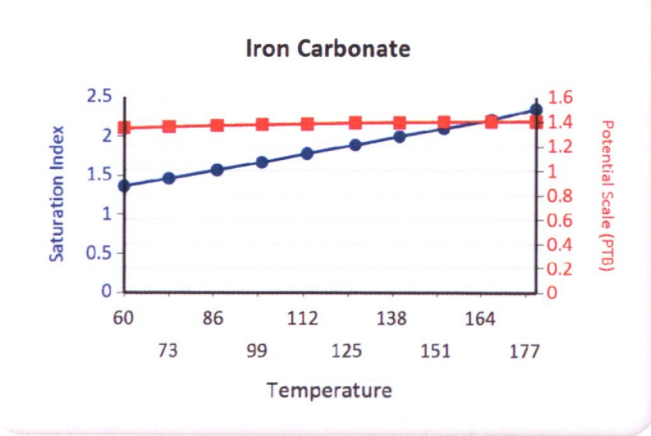
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Carbonate Zinc Carbonate Mg Silicate Ca Mg Silicate Fe Silicate

These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Carbonate Zinc Carbonate Fe Silicate









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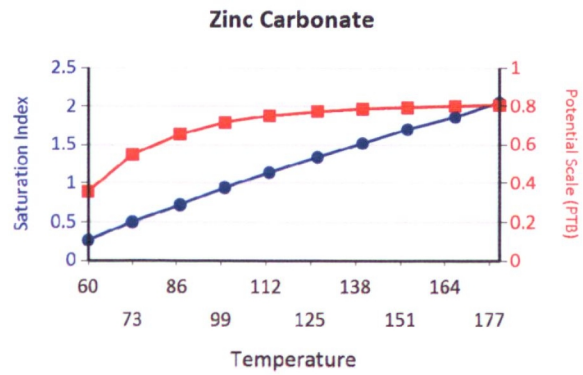
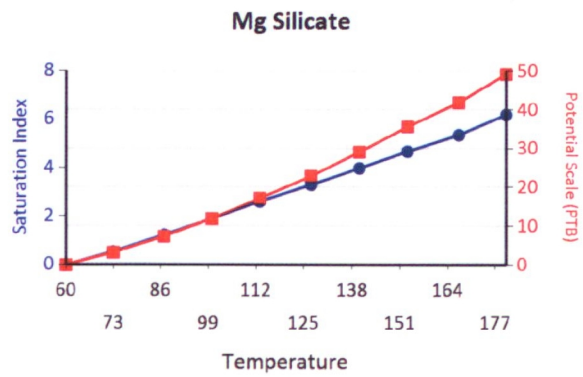
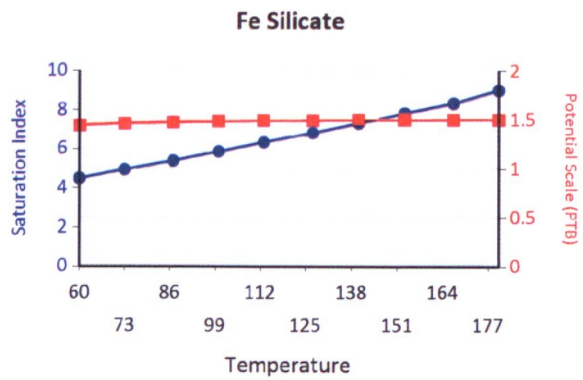
Water Analysis Report







OMB No. 2040-0042 Approval Expires 12/31/2011

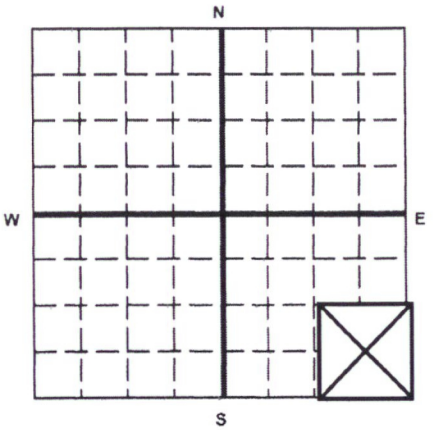
EPA

United States Environmental Protection Agency
Washington, DC 20460

ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

Name and Address of Existing Permittee	Name and Address of Surface Owner
Petroglyph Operating Company, Inc. 2258 P.O. Box 7608 Boise, Idaho 83709	Ute Indian Tribe P.O. Box 70 Ft. Duchesne, Utah 84026

Locate Well and Outline Unit on Section Plat - 640 Acres



State	County	Permit Number
Utah	Duchesne	UT2736-04417

Surface Location Description

___ 1/4 of ___ 1/4 of SE 1/4 of SE 1/4 of Section 30 Township 5S Range 3W

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface Location 518 ft. frm (N/S) S Line of quarter section and 593 ft. from (E/W) E Line of quarter section.

WELL ACTIVITY
- [ ] Brine Disposal
- [X] Enhanced Recovery
- [ ] Hydrocarbon Storage

TYPE OF PERMIT
- [ ] Individual
- [X] Area

Number of Wells 111

Lease Name Ute Indian Tribe Well Number UTE TRIBAL 30-16

		INJECTION PRESSURE		TOTAL VOLUME INJECTED		TUBING -- CASING ANNULUS PRESSURE (OPTIONAL MONITORING)	
MONTH	YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG
January	14	1794	1819	1075		0	0
February	14	1815	1829	912		0	0
March	14	1781	1786	990		0	0
April	14	1813	1831	1182		0	0
May	14	1792	1808	1158		0	0
June	14	1795	1825	905		0	0
July	14	1729	1771	417		0	0
August	14	1732	1795	720		0	0
September	14	1670	1734	809		0	0
October	14	1796	1792	1047		0	0
November	14	1799	1803	911		0	0
December	14	1724	1799	887		0	0

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibliity of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title *(Please type or print)*	Signature	Date Signed
Chad Stevenson, Water Facilities Supervisor		2/10/2015

EPA Form 7520-11 (Rev. 12-08)

U2 Entered
Date 3/31/15
Initial GW

TAB	GREEN	BLUE	CBI
		2	

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Units of Measurement: **Standard**

Water Analysis Report

Production Company:	**PETROGLYPH OPERATING CO INC - EBUS**	Sales Rep:	**James Patry**
Well Name:	**UTE TRIBAL 30-16 INJ, DUCHESNE**	Lab Tech:	**Gary Winegar**
Sample Point:	**WELLHEAD**		
Sample Date:	**1/7/2015**		
Sample ID:	**WA-297456**		

Scaling potential predicted using ScaleSoftPitzer from Brine Chemistry Consortium (Rice University)

Sample Specifics	
Test Date:	1/14/2015
System Temperature 1 (°F):	160
System Pressure 1 (psig):	1300
System Temperature 2 (°F):	80
System Pressure 2 (psig):	15
Calculated Density (g/ml):	1.0019
pH:	8.30
Calculated TDS (mg/L):	6073.04
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	0.00
H_2S in Gas (%):	
H2S in Water (mg/L):	50.00

Analysis @ Properties in Sample Specifics			
Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	2659.92	Chloride (Cl):	1000.00
Potassium (K):	45.64	Sulfate (SO_4):	31.00
Magnesium (Mg):	35.42	Bicarbonate (HCO_3):	2196.00
Calcium (Ca):	64.30	Carbonate (CO_3):	
Strontium (Sr):	5.33	Acetic Acid (CH_3COO)	
Barium (Ba):	7.88	Propionic Acid (C_2H_5COO)	
Iron (Fe):	0.78	Butanoic Acid (C_3H_7COO)	
Zinc (Zn):	0.61	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Lead (Pb):	0.00	Fluoride (F):	
Ammonia NH_3:		Bromine (Br):	
Manganese (Mn):	0.13	Silica (SiO_2):	26.03

Notes:
B=5.61 Al=.01 Li=1.41

(PTB = Pounds per Thousand Barrels)

		Calcium Carbonate		Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum CaSO4·2H2O		Celestite SrSO4		Halite NaCl		Zinc Sulfide	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
80.00	14.00	1.66	51.46	1.22	4.35	3.82	0.43	1.68	0.55	0.00	0.00	0.00	0.00	0.00	0.00	11.79	0.32
88.00	157.00	1.64	50.95	1.13	4.28	3.72	0.43	1.70	0.56	0.00	0.00	0.00	0.00	0.00	0.00	11.60	0.32
97.00	300.00	1.66	51.22	1.06	4.20	3.67	0.43	1.75	0.56	0.00	0.00	0.00	0.00	0.00	0.00	11.43	0.32
106.00	443.00	1.68	51.51	0.99	4.12	3.62	0.43	1.80	0.56	0.00	0.00	0.00	0.00	0.00	0.00	11.28	0.32
115.00	585.00	1.70	51.81	0.92	4.03	3.58	0.43	1.85	0.56	0.00	0.00	0.00	0.00	0.00	0.00	11.14	0.32
124.00	728.00	1.72	52.12	0.86	3.94	3.55	0.43	1.89	0.56	0.00	0.00	0.00	0.00	0.00	0.00	11.01	0.32
133.00	871.00	1.75	52.43	0.81	3.85	3.52	0.43	1.94	0.56	0.00	0.00	0.00	0.00	0.00	0.00	10.89	0.32
142.00	1014.00	1.78	52.74	0.77	3.75	3.50	0.43	1.98	0.56	0.00	0.00	0.00	0.00	0.00	0.00	10.78	0.32
151.00	1157.00	1.81	53.04	0.72	3.66	3.49	0.43	2.03	0.56	0.00	0.00	0.00	0.00	0.00	0.00	10.67	0.32
160.00	1300.00	1.84	53.33	0.69	3.58	3.48	0.43	2.07	0.56	0.00	0.00	0.00	0.00	0.00	0.00	10.57	0.32

		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
80.00	14.00	0.00	0.00	0.00	0.00	0.00	0.00	0.81	0.35	0.00	0.00	1.46	10.01	0.54	3.87	5.48	0.60
88.00	157.00	0.00	0.00	0.00	0.00	0.00	0.00	0.91	0.36	0.00	0.00	1.68	10.85	0.63	4.29	5.53	0.60
97.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	1.04	0.37	0.00	0.00	2.06	13.22	0.83	5.53	5.76	0.60
106.00	443.00	0.00	0.00	0.00	0.00	0.00	0.00	1.15	0.38	0.00	0.00	2.45	15.61	1.04	6.77	5.99	0.60
115.00	585.00	0.00	0.00	0.00	0.00	0.00	0.00	1.27	0.39	0.00	0.00	2.85	18.01	1.26	7.99	6.24	0.60
124.00	728.00	0.00	0.00	0.00	0.00	0.00	0.00	1.38	0.39	0.00	0.00	3.25	20.36	1.48	9.18	6.49	0.60
133.00	871.00	0.00	0.00	0.00	0.00	0.00	0.00	1.48	0.40	0.00	0.00	3.65	22.61	1.70	10.30	6.76	0.60
142.00	1014.00	0.00	0.00	0.00	0.00	0.00	0.00	1.58	0.40	0.00	0.00	4.06	24.69	1.93	11.36	7.03	0.60
151.00	1157.00	0.00	0.00	0.00	0.00	0.00	0.00	1.68	0.40	0.00	0.00	4.47	26.53	2.16	12.31	7.31	0.60
160.00	1300.00	0.00	0.00	0.00	0.00	0.00	0.00	1.78	0.40	0.00	0.00	4.88	28.05	2.39	13.14	7.59	0.61

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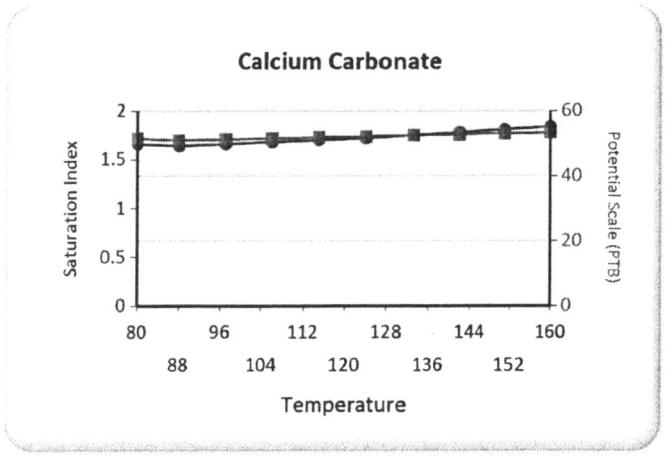
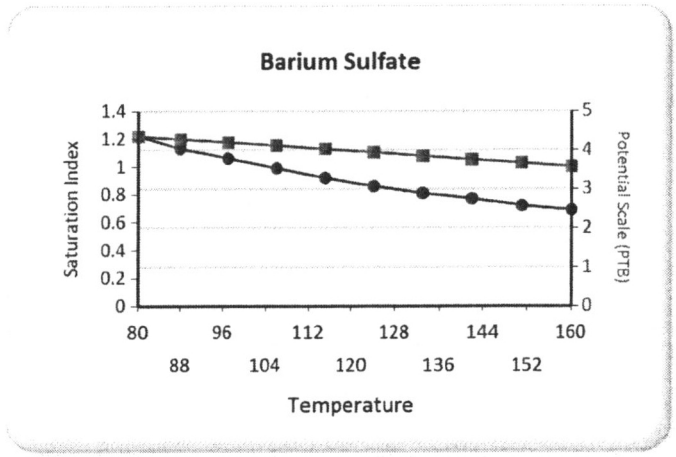
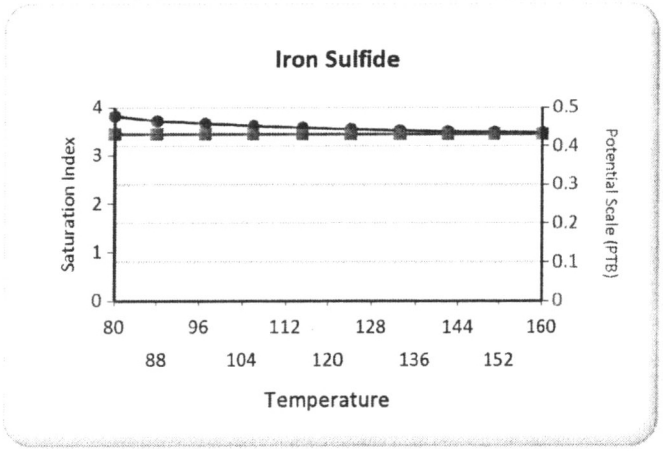
Water Analysis Report

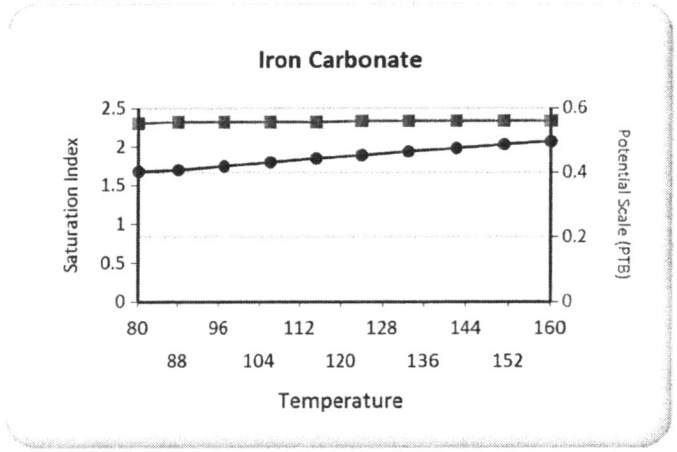
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Mg Silicate Ca Mg Silicate Fe Silicate

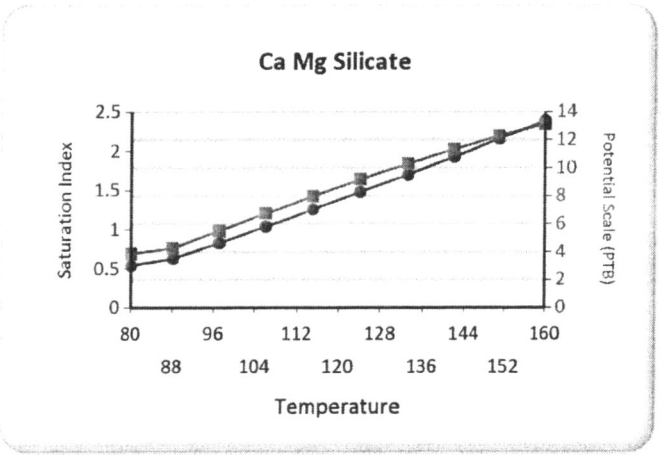
These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Mg Silicate Ca Mg Silicate Fe Silicate

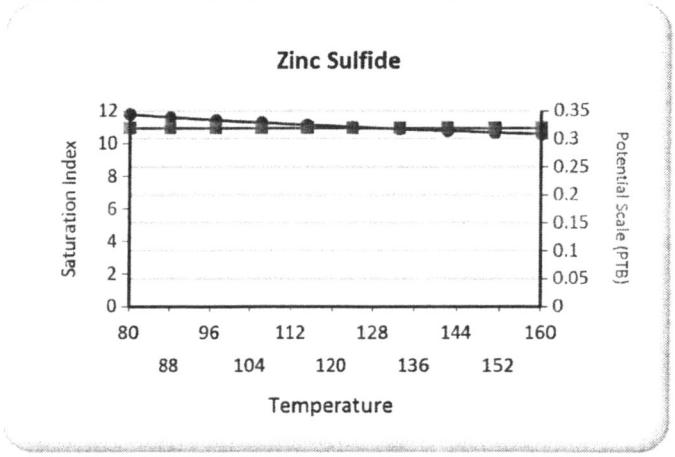


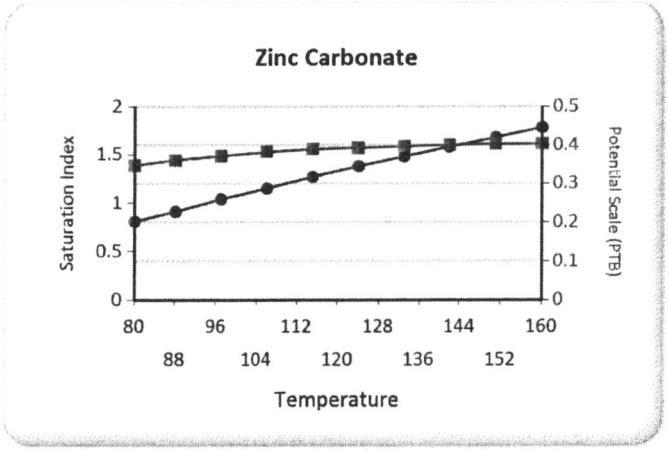


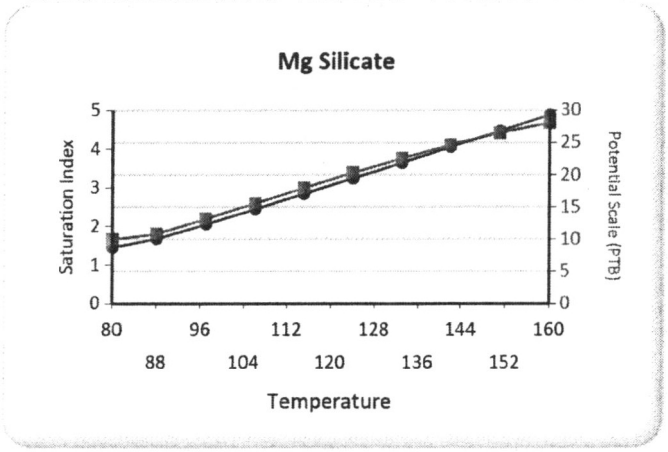


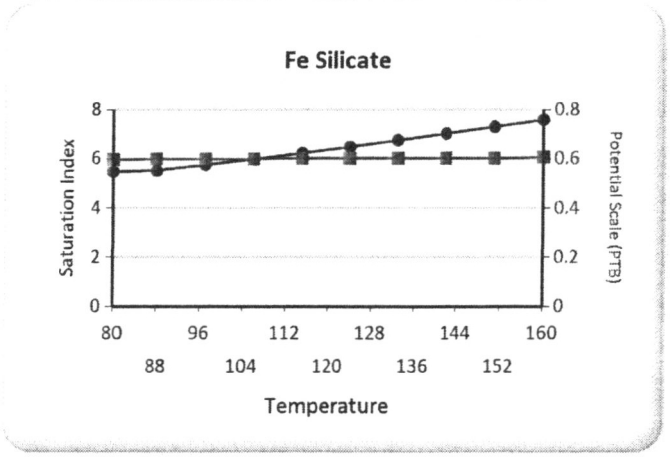







Zinc Carbonate
Saturation Index
Potential Scale (PTB)
Temperature
0
0.5
1
1.5
2
0.1
0.2
0.3
0.4
0.5
80
88
96
104
112
120
128
136
144
152
160


Mg Silicate
Saturation Index
Potential Scale (PTB)
Temperature
0
1
2
3
4
5
5
10
15
20
25
30
80
88
96
104
112
120
128
136
144
152
160


Fe Silicate
Saturation Index
Potential Scale (PTB)
Temperature
0
2
4
6
8
0.2
0.4
0.6
0.8
80
88
96
104
112
120
128
136
144
152
160

Inspection Report For Well: UT20736 - 04417

U.S. Environmental Protection Agency
Underground Injection Control Program, 8ENF-T
999 18th Street, Suite 300, Denver, CO 80202-2466

This form was printed on 9/24/2013

INSPECTOR(S): Lead: Roberts, Sarah — Date: ~~10~~ 12/10/2013

Others: Ajayi, Christopher — Time: 2:40 am / pm

OPERATOR (only if different): _____

REPRESENTATIVE(S): Chad Steinsen

PRE-INSPECTION REVIEW

Petroglyph Operating Company, Inc

Well Name:	Ute Tribal 30-16
Well Type:	Enhanced Recovery (2R)
Operating Status:	AC (ACTIVE) as of 12/31/2002
Oil Field:	Antelope Creek (Duchesne)
Location:	SESE S30 T5S R3W
Indian Country:	X, Uintah and Ouray

Last Inspection:	8/29/2012	***Allowable Inj Pressure:***	2625 /
Last MIT:	Pass 4/12/2012	***Annulus Pressure From Last MIT:***	1540

BLACK = POSSIBLE VIOLATION GREY = DATA MISSING

INSPECTION TYPE: **(Select One)**

- [ ] Construction / Workover
- [ ] Plugging
- [ ] Post-Closure
- [ ] Response to Complaint
- [x] Routine
- [ ] Witness MIT
- [ ] Other

ICIS Entered
Date 12/30/13
Initials DB

OBSERVED VALUES:

Tubing Gauge:	[x] Yes [ ] No	Pressure: U: 1787 / L: ____ psig Gauge Range: Sinda psig	Gauge Owner:	[ ] EPA [x] Operator
Annulus Gauge:	[x] Yes [ ] No	Pressure: 0 psig Gauge Range: opened psig	Gauge Owner:	[x] EPA [ ] Operator
Bradenhead Gauge:	[ ] Yes [ ] No	Pressure: ____ psig Gauge Range: ____ psig	Gauge Owner:	[ ] EPA [ ] Operator
Pump Gauge:	[ ] Yes [ ] No	Pressure: ____ psig Gauge Range: ____ psig	Gauge Owner:	[ ] EPA [ ] Operator

Operating Status: (Select One)
- [x] Active
- [ ] Being Reworked
- [ ] Not Injecting
- [ ] Production
- [ ] Plugged and Abandoned
- [ ] Under Construction

U2 Entered
Date 12/17/13
Initial SR

See page 2 for photos, comments, and site conditions.

TAB	GREEN	BLUE	CBI
		1	

Inspection Report For Well: UT20736 - 04417 (PAGE 2)

PHOTOGRAPHS: ☐ Yes ☒ No List of photos taken: _____

Comments and site conditions observed during inspection:

Valve on injection string leaking - dripping
I asked Chad to notify me when replaced
12/11/13 - Returned to well and witnessed that the leaky valve was replaced with one that does not leak

GPS: GPS File ID: _____

Signature of EPA Inspector(s): _____ _____

☐ Data Entry ☐ Compliance Staff ☐ Hard Copy Filing

NOTICE OF INSPECTION

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII, 999 18TH STREET - SUITE 500
DENVER, COLORADO 80202-2405

Date: 12/16/13
Hour: 8:00a

Notice of inspection is hereby given according to Section 1445(b) of the Safe Drinking Water Act (42 U.S.C. §300f et seq.).

Firm Name: Petroglyph Operating Inc

Firm Address: Roosevelt, UT, Antelope Creek Oil Field

REASON FOR INSPECTION:

For the purpose of inspecting records, files, papers, processes, controls and facilities, and obtaining samples to determine whether the person subject to an applicable underground injection control program has acted or is acting in compliance with the Safe Drinking Water Act and any applicable condition of permit or rule authorization.

SECTION 1445(b) of the SAFE DRINKING WATER ACT is quoted below:

Section 1445(b)(1): Except as provided in Paragraph (2), the Administrator, or representatives of the Administrator duly designated by him, upon presenting appropriate credentials, and a written notice to any supplier of water or other person subject to (a), or person subject (A) a national primary drinking water regulation prescribed under Section 1412(B) an applicable Underground Injection Control Program, or (C) any requirement to monitor an unregulated contaminant pursuant to subsection (a), or person in charge of any of the property of such supplier or other person referred to in clause (A), (B), or (C), is authorized to enter any establishment, ... facility, or other property of such supplier or other person in order to determine whether such supplier or other person has acted or is acting in compliance with this title, including for this purpose, inspection, at reasonable times, of records, files, papers, processes, controls, and facilities, or in order to test any feature of a public water system, including its raw water source. The Administrator or the Comptroller General (or any representative designated by either) shall have access for the purpose of audit and examination to any records, reports, or information of a grantee which are required to be maintained under subsection (a) or which are pertinent to any financial assistance under this title.

Sarah Roberts
Inspector's Name & Title (Print)

Inspector's Signature

EPA R8 3560-1 (8-89)

Original - Regional Office Copy
Yellow Copy - Operator Copy

OMB No. 2040-0042 Approval Expires 12/31/2011

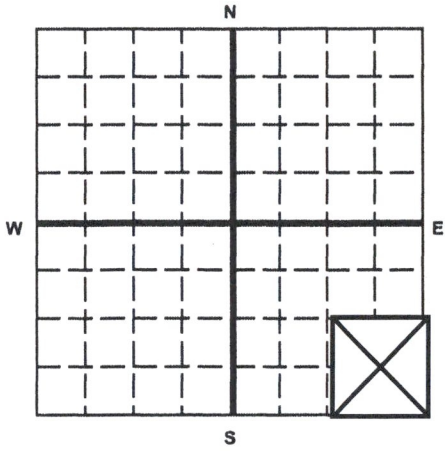
United States Environmental Protection Agency
Washington, DC 20460

ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

Name and Address of Existing Permittee
Petroglyph Operating Company, Inc. 2258
P.O. Box 7608
Boise, Idaho 83709

Name and Address of Surface Owner
Ute Indian Tribe
P.O. Box 70
Ft. Duchesne, Utah 84026

Locate Well and Outline Unit on Section Plat - 640 Acres



State	County	Permit Number
Utah	Duchesne	UT2736-04417

Surface Location Description
___ 1/4 of ___ 1/4 of SE 1/4 of SE 1/4 of Section 30 Township 5S Range 3W

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface Location 518 ft. frm (N/S) S Line of quarter section
and 593 ft. from (E/W) E Line of quarter section.

WELL ACTIVITY
- [ ] Brine Disposal
- [X] Enhanced Recovery
- [ ] Hydrocarbon Storage

TYPE OF PERMIT
- [ ] Individual
- [X] Area

Number of Wells 111

Lease Name Ute Indian Tribe Well Number UTE TRIBAL 30-16

MONTH	YEAR	INJECTION PRESSURE AVERAGE PSIG	INJECTION PRESSURE MAXIMUM PSIG	TOTAL VOLUME INJECTED BBL	TOTAL VOLUME INJECTED MCF	TUBING -- CASING ANNULUS PRESSURE (OPTIONAL MONITORING) MINIMUM PSIG	TUBING -- CASING ANNULUS PRESSURE (OPTIONAL MONITORING) MAXIMUM PSIG
January	13	1745	1780	728		0	0
February	13	1796	1813	967		0	0
March	13	1765	1776	373		0	0
April	13	1758	1833	1029		0	0
May	13	1841	1859	1238		0	0
June	13	1813	1838	952		0	0
July	13	1807	1849	876		0	0
August	13	1796	1853	1009		0	0
September	13	1775	1802	911		0	0
October	13	1790	1825	1099		0	0
November	13	1796	1821	1005		0	0
December	13	1785	1790	957		0	0

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibliity of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title *(Please type or print)*	Signature	Date Signed
Chad Stevenson, Water Facilities Supervisor		2/11/2014

EPA Form 7520-11 (Rev. 12-08)

GREEN BLUE CBI
TAB 2

U2 Entered
Date 3/21/14
Initial DB

Multi-Chem Analytical Laboratory
1553 East Highway 40
Vernal, UT 84078

multi-chem®
A HALLIBURTON SERVICE

Units of Measurement: **Standard**

Water Analysis Report

Production Company: **PETROGLYPH ENERGY INC**
Well Name: **UTE TRIBAL 30-16 INJ**
Sample Point: **Wellhead**
Sample Date: **1/8/2014**
Sample ID: **WA-263016**

Sales Rep: **James Patry**
Lab Tech: **Gary Winegar**

Scaling potential predicted using ScaleSoftPitzer from Brine Chemistry Consortium (Rice University)

Sample Specifics	
Test Date:	1/15/2014
System Temperature 1 (°F):	180
System Pressure 1 (psig):	1300
System Temperature 2 (°F):	60
System Pressure 2 (psig):	15
Calculated Density (g/ml):	1.004
pH:	8.30
Calculated TDS (mg/L):	9606.94
CO_2 in Gas (%):	
Dissolved CO_2 (mg/L)):	0.00
H_2S in Gas (%):	
H_2S in Water (mg/L):	0.00

Analysis @ Properties in Sample Specifics			
Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	3267.69	Chloride (Cl):	4000.00
Potassium (K):	60.00	Sulfate (SO_4):	147.00
Magnesium (Mg):	22.00	Bicarbonate (HCO_3):	2000.80
Calcium (Ca):	51.00	Carbonate (CO_3):	
Strontium (Sr):	4.30	Acetic Acid (CH_3COO)	
Barium (Ba):	29.00	Propionic Acid (C_2H_5COO)	
Iron (Fe):	3.00	Butanoic Acid (C_3H_7COO)	
Zinc (Zn):	0.44	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Lead (Pb):	0.08	Fluoride (F):	
Ammonia NH_3:		Bromine (Br):	
Manganese (Mn):	0.23	Silica (SiO_2):	21.40

Notes:
B=5 Al=.03 Li=.9

(PTB = Pounds per Thousand Barrels)

		Calcium Carbonate		Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum $CaSO_4 \cdot 2H_2O$		Celestite $SrSO_4$		Halite NaCl		Zinc Sulfide	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
60.00	14.00	1.44	39.14	2.50	17.21	0.00	0.00	2.03	2.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
73.00	157.00	1.44	38.98	2.36	17.19	0.00	0.00	2.09	2.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
86.00	300.00	1.47	39.42	2.23	17.16	0.00	0.00	2.16	2.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	443.00	1.50	39.89	2.12	17.12	0.00	0.00	2.24	2.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
113.00	585.00	1.53	40.36	2.02	17.08	0.00	0.00	2.31	2.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
126.00	728.00	1.57	40.84	1.93	17.04	0.00	0.00	2.38	2.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140.00	871.00	1.61	41.30	1.86	17.00	0.00	0.00	2.45	2.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
153.00	1014.00	1.66	41.74	1.80	16.96	0.00	0.00	2.52	2.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
166.00	1157.00	1.71	42.14	1.75	16.92	0.00	0.00	2.59	2.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
180.00	1300.00	1.76	42.52	1.71	16.88	0.00	0.00	2.65	2.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Multi-Chem Analytical Laboratory
1553 East Highway 40
Vernal, UT 84078

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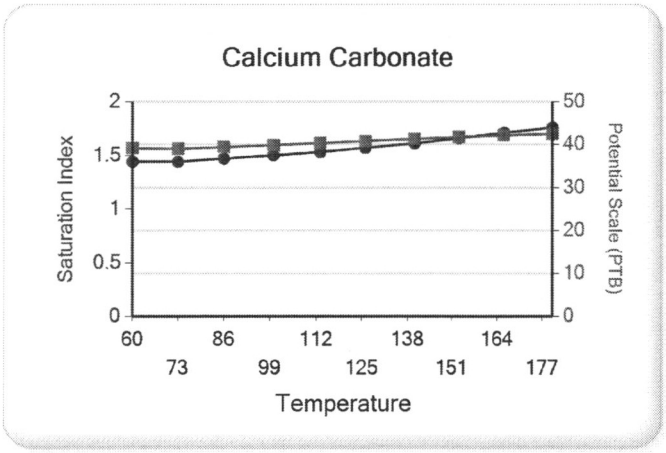
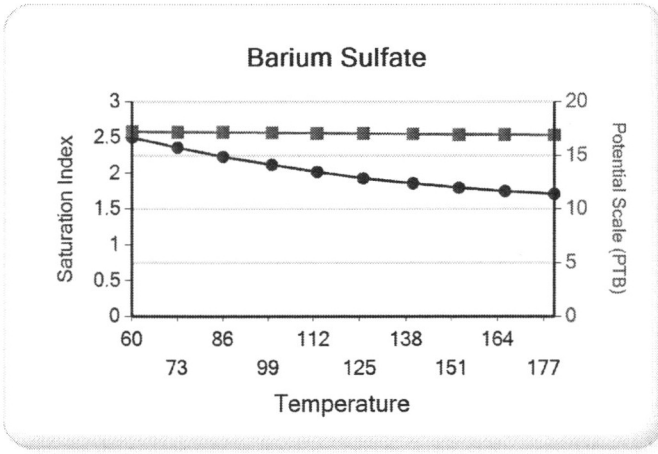
Water Analysis Report

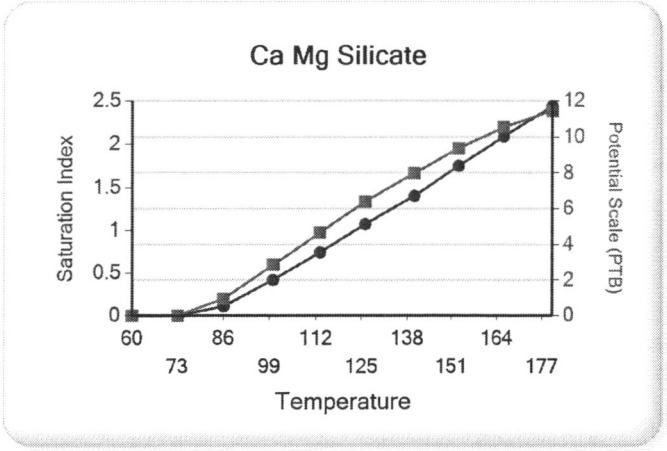
		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
60.00	14.00	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.13	0.00	0.00	0.00	0.00	0.00	0.00	6.44	2.31
73.00	157.00	0.00	0.00	0.00	0.00	0.00	0.00	0.43	0.19	0.00	0.00	0.26	1.81	0.00	0.00	6.62	2.31
86.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.63	0.23	0.00	0.00	0.82	5.11	0.11	0.96	6.93	2.32
100.00	443.00	0.00	0.00	0.00	0.00	0.00	0.00	0.82	0.25	0.00	0.00	1.40	8.36	0.42	2.84	7.27	2.32
113.00	585.00	0.00	0.00	0.00	0.00	0.00	0.00	0.99	0.27	0.00	0.00	1.99	11.55	0.74	4.66	7.63	2.32
126.00	728.00	0.00	0.00	0.00	0.00	0.00	0.00	1.16	0.27	0.00	0.00	2.59	14.63	1.07	6.40	8.01	2.33
140.00	871.00	0.00	0.00	0.00	0.00	0.00	0.00	1.31	0.28	0.00	0.00	3.19	17.51	1.40	7.99	8.40	2.33
153.00	1014.00	0.00	0.00	0.00	0.00	0.00	0.00	1.46	0.28	0.00	0.00	3.80	20.09	1.75	9.38	8.81	2.33
166.00	1157.00	0.00	0.00	0.00	0.00	0.00	0.00	1.59	0.29	0.00	0.00	4.41	22.22	2.09	10.55	9.23	2.33
180.00	1300.00	0.00	0.00	0.00	0.00	0.00	0.00	1.72	0.29	0.00	0.00	5.01	23.80	2.44	11.45	9.66	2.33

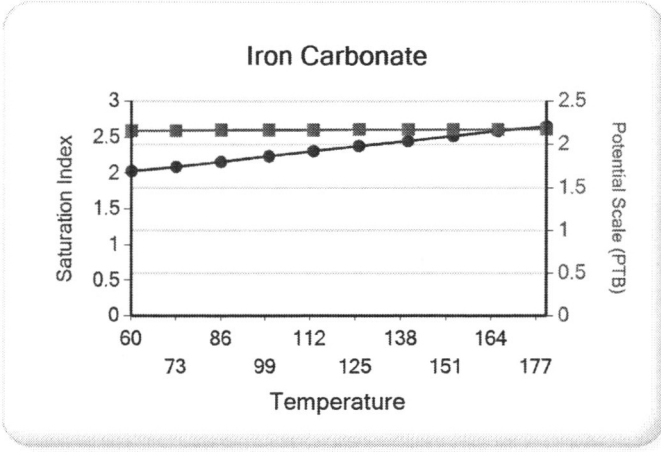
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Carbonate Zinc Carbonate Fe Silicate

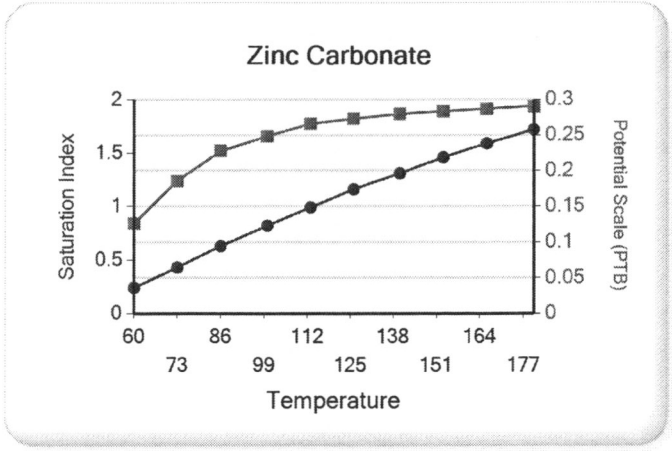
These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Carbonate Zinc Carbonate Mg Silicate Ca Mg Silicate Fe Silicate

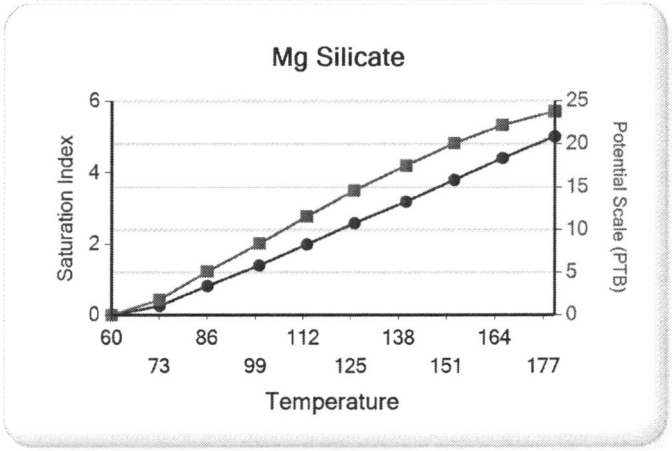


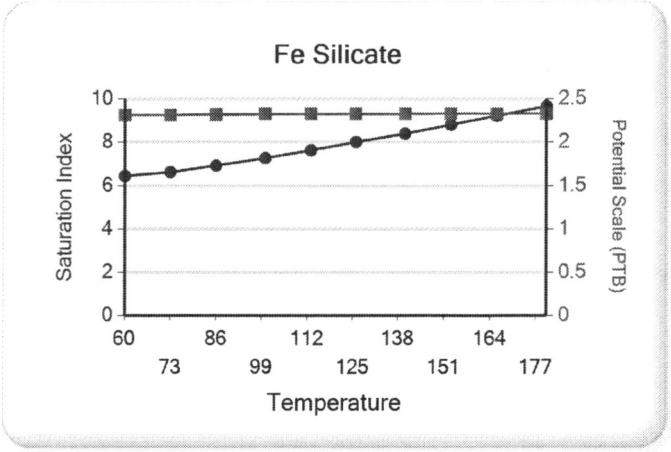







Zinc Carbonate
Saturation Index
Potential Scale (PTB)
Temperature
0
0.5
1
1.5
2
0
0.05
0.1
0.15
0.2
0.25
0.3
60
73
86
99
112
125
138
151
164
177


Mg Silicate
Saturation Index
Potential Scale (PTB)
Temperature
0
2
4
6
0
5
10
15
20
25
60
73
86
99
112
125
138
151
164
177


Fe Silicate
Saturation Index
Potential Scale (PTB)
Temperature
0
2
4
6
8
10
0
0.5
1
1.5
2
2.5
60
73
86
99
112
125
138
151
164
177

UT2736-04417

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
999 18TH STREET - SUITE 300
DENVER, CO 80202-2466

JAN 4 2001

Ref: 8P-W-GW

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Micheal Safford
Operations Coordinator
Petroglyph Operating Company, Inc.
P.O. Box 607
Roosevelt, UT 84066

Re: AUTHORIZATION TO COMMENCE INJECTION
Ute Tribal #30-16 (UT04417)
Antelope Creek Field
EPA AREA PERMIT UT2736-00000
Duchesne County, Utah

Dear Mr. Safford:

Thank you for submitting information pertaining to Ute Tribal #30-16 to the Environmental Protection Agency (EPA) Region VIII Ground Water Program. Requirements of UIC Area Permit UT2736-00000 Part II Sections (C)(2) "Prior To Commencing Injection" required submittal of the following information:

1. **Well Rework Record (*EPA Form 7520-12*) with after conversion well schematic**; and

2. the well has successfully completed and passed a Mechanical Integrity Test (MIT), with pressure chart demonstrating **Part I (internal) mechanical integrity**; and

3. a **pore pressure survey has been determined** of the injection zones.

The conversion plan for this production well has been reviewed, and found satisfactory. EPA analysis of the cement bond log (CBL) for this well identified a minimum interval of adequate cement within the confining zone, pursuant to Region VIII Ground Water Section Guidance No. 34. Therefore, it is determinant that the annulus cement in the Ute Tribal #30-16 provides an effective barrier to upper movement of fluids through vertical channels adjacent to the wellbore.

Printed on Recycled Paper

All required information has been submitted, and has been reviewed and approved by the EPA. Petroglyph has complied with all pertinent conditions of UIC Area Permit UT2736-00000 Part II Section (C)(2). Therefore, effective upon your receipt of this letter, Administrative approval hereby is granted for injection into the Ute Tribal #30-16 under the conditions of UIC Area Permit UT2736-00000. The Director has determined that the **maximum surface injection pressure for the Ute Tribal #30-16 shall not exceed 1900 psig.** per Final Area Permit UT2736-00000, Part II, Section C.5.(b).

Please be reminded that it is the responsibility of the permittee to be aware of, and to comply with, all conditions of the Permit. Effective upon receipt of this letter, EPA administration of this well is transferred to Mr. Al Craver, Compliance Officer in the Office of Enforcement, Compliance, and Environmental Justice Technical Enforcement Program, who is your point of contact for routine compliance matters and reports.

Please send all reporting forms and other required correspondence to Mr. Craver at the address listed below, referencing **EPA WELL ID: UT04417** on all reports and correspondence.

Mr. Al Craver,
Technical Enforcement Program, Mail Code 8ENF-T
U.S. Environmental Protection Agency
999 18th Street, Suite 300
Denver, Colorado, USA, 80202-2466

If you have any questions concerning this authorization or the Permit, please contact Mr. Dan Jackson of my staff at 303.312.6155 or Mr. Craver at 303.312.7821.

Sincerely,

D. Edwin Hogle
Director
Ground Water Program

cc: Mr. Ronald McCook, Chairman
Uintah & Ouray Business Committee
Ute Indian Tribe

Ms. Elaine Willie, Environmental Director
Ute Indian Tribe

Mr. Norman Cambridge
BIA - Uintah & Ouray Agency

Mr. Gil Hunt
State of Utah Natural Resources
Division of Oil, Gas, and Mining

Mr. Jerry Kenczka
BLM - Vernal District Office