Inspection Report For Well: UT20736 - 04381

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~~ 12/11/2013

Others: Ajayi, Christopher — Time: 9:05 (am) / pm

OPERATOR (only if different): _____

REPRESENTATIVE(S): Chad Stevinson

PRE-INSPECTION REVIEW

Petroglyph Operating Company, Inc

Well Name:	Ute Tribal 08-07
Well Type:	Enhanced Recovery (2R)
Operating Status:	AC (ACTIVE) as of 12/31/2002
Oil Field:	Antelope Creek (Duchesne)
Location:	SWNE S8 T5S R3W
Indian Country:	X, Uintah and Ouray

Last Inspection:	8/29/2012	***Allowable Inj Pressure:***	2579 /
Last MIT:	Pass 10/16/2012	***Annulus Pressure From Last MIT:***	1100

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: 1858 / L: ____ psig Gauge Range: Scada 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)
- [ ] Active
- [ ] Being Reworked
- [x] Not Injecting
- [ ] Production
- [ ] Plugged and Abandoned
- [ ] Under Construction

	GREEN	BLUE	CBI
AE		1	

U2 Entered
Date 12/17/13
Initial SR

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

Inspection Report For Well: UT20736 - 04381 (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: 12/10/13
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 11/30/2014

EPA

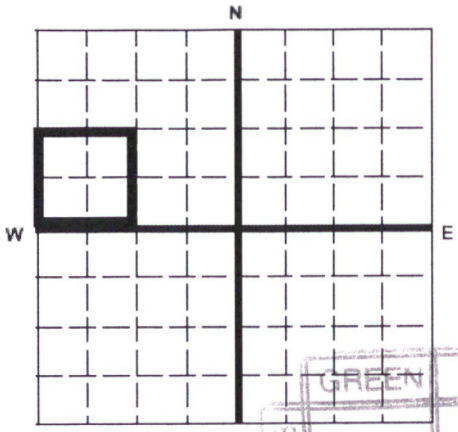
United States Environmental Protection Agency
Washington, DC 20460

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	UT2736-04381

Surface Location Description
___ 1/4 of ___ 1/4 of SW 1/4 of NW 1/4 of Section 8 Township 5S Range 3W

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

Surface Location 1700 ft. frm (N/S) N Line of quarter section
and 2133 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

U2 Entered
Date 3/29/17
Initial JB

GREEN BLUE CBI
TAC 2

Lease Name Ute Indian Tribe Well Number UTE TRIBAL 08-07

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	16	1802	1824	1294		0	0
February	16	1808	1832	1377		0	0
March	16	1826	1834	1602		0	0
April	16	1809	1822	1417		0	0
May	16	1774	1786	1222		0	0
June	16	1781	1798	1395		0	0
July	16	1791	1799	1344		0	0
August	16	1792	1803	1384		0	0
September	16	1785	1806	1255		0	0
October	16	1791	1798	1380		0	0
November	16	1779	1792	1164		0	0
December	16	1792	1800	1392		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

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

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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 08-07 INJ, DUCHESNE**	Lab Tech:	**Kaitlyn Natelli**
Sample Point:	**Well Head**		
Sample Date:	**1/6/2017**		
Sample ID:	**WA-345334**		

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):	1.0013
pH:	8.30
Calculated TDS (mg/L):	5883.30
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	0.00
H_2S in Gas (%):	
H2S in Water (mg/L):	10.00
Tot. SuspendedSolids(mg/L):	
Corrosivity(LanglierSat.Indx)	0.00
Alkalinity:	

Analysis @ Properties in Sample Specifics

Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	1999.61	Chloride (Cl):	2500.00
Potassium (K):	16.95	Sulfate (SO_4):	50.00
Magnesium (Mg):	20.26	Bicarbonate (HCO_3):	1220.00
Calcium (Ca):	37.00	Carbonate (CO_3):	
Strontium (Sr):	2.87	Hydroxide(HO):	
Barium (Ba):	7.82	Acetic Acid (CH_3COO)	
Iron (Fe):	10.36	Propionic Acid (C_2H_5COO)	
Zinc (Zn):	2.33	Butanoic Acid (C_3H_7COO)	
Lead (Pb):	0.00	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Ammonia NH_3:		Fluoride (F):	
Manganese (Mn):	0.12	Bromine (Br):	
Aluminum (Al):	0.12	Silica (SiO_2):	15.98
Lithium (Li):	2.85	Calcium Carbonate ($CaCO_3$):	
Boron (B):	2.79	Phosphates (PO_4):	15.45
Silicon (Si):	7.47	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	1.31	27.13	1.09	4.23	3.92	5.71	2.80	7.52	0.00	0.00	0.00	0.00	0.00	0.00	10.88	1.22
149.00	267.00	1.37	27.79	0.99	4.13	3.86	5.71	2.90	7.52	0.00	0.00	0.00	0.00	0.00	0.00	10.62	1.22
168.00	483.00	1.45	28.70	0.92	4.04	3.84	5.71	3.00	7.53	0.00	0.00	0.00	0.00	0.00	0.00	10.40	1.22
187.00	700.00	1.54	29.51	0.86	3.96	3.85	5.71	3.10	7.53	0.00	0.00	0.00	0.00	0.00	0.00	10.22	1.22
206.00	917.00	1.64	30.20	0.83	3.89	3.87	5.71	3.19	7.53	0.00	0.00	0.00	0.00	0.00	0.00	10.05	1.22
224.00	1133.00	1.74	30.76	0.80	3.85	3.91	5.71	3.28	7.53	0.00	0.00	0.00	0.00	0.00	0.00	9.91	1.22
243.00	1350.00	1.85	31.20	0.79	3.83	3.97	5.71	3.37	7.53	0.00	0.00	0.00	0.00	0.00	0.00	9.79	1.22
262.00	1567.00	1.96	31.53	0.79	3.83	4.04	5.71	3.44	7.53	0.00	0.00	0.00	0.00	0.00	0.00	9.69	1.22
281.00	1783.00	2.08	31.77	0.80	3.86	4.12	5.71	3.51	7.53	0.00	0.00	0.00	0.00	0.00	0.00	9.59	1.22
300.00	2000.00	2.20	31.95	0.82	3.89	4.21	5.71	3.57	7.53	0.00	0.00	0.00	0.00	0.00	0.00	9.51	1.22

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1553 East Highway 40
Vernal, UT 84078

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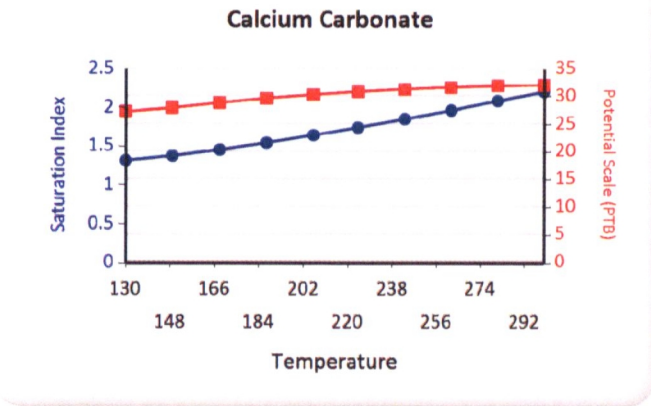
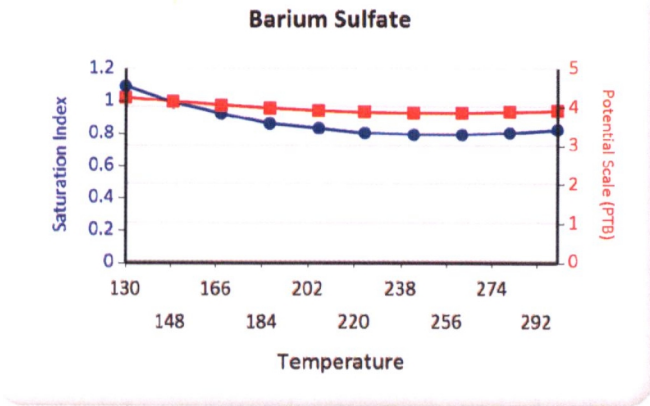
Water Analysis Report

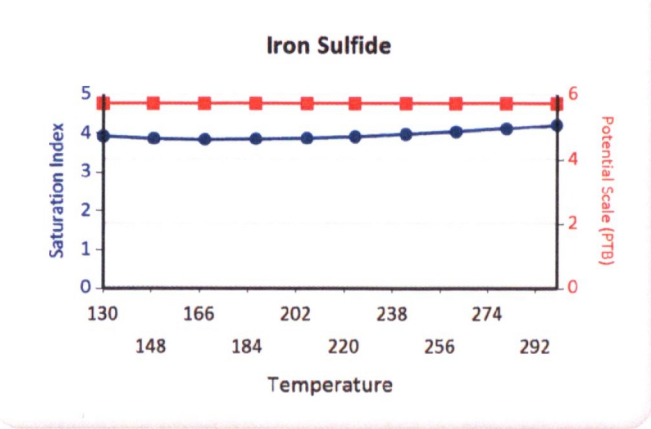
		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
130.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	1.86	1.54	0.00	0.00	3.27	15.03	1.51	7.94	10.24	8.05
149.00	267.00	0.00	0.00	0.00	0.00	0.00	0.00	2.07	1.55	0.00	0.00	4.01	18.56	1.91	9.99	10.70	8.05
168.00	483.00	0.00	0.00	0.00	0.00	0.00	0.00	2.27	1.56	0.00	0.00	4.82	22.92	2.36	12.54	11.24	8.05
187.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	2.45	1.56	0.00	0.00	5.61	27.11	2.81	15.02	11.80	8.05
206.00	917.00	0.00	0.00	0.00	0.00	0.00	0.00	2.61	1.56	0.00	0.00	6.39	30.82	3.26	17.20	12.36	8.05
224.00	1133.00	0.00	0.00	0.00	0.00	0.00	0.00	2.76	1.56	0.00	0.00	7.15	33.83	3.71	18.90	12.91	8.06
243.00	1350.00	0.00	0.00	0.00	0.00	0.00	0.00	2.89	1.56	0.00	0.00	7.88	36.09	4.14	20.06	13.46	8.06
262.00	1567.00	0.00	0.00	0.00	0.00	0.00	0.00	3.01	1.57	0.00	0.00	8.59	37.69	4.55	20.76	13.99	8.06
281.00	1783.00	0.00	0.00	0.00	0.00	0.00	0.00	3.10	1.57	0.00	0.00	9.26	38.75	4.95	21.15	14.51	8.06
300.00	2000.00	0.00	0.00	0.00	0.00	0.00	0.00	3.18	1.57	0.00	0.00	9.91	39.45	5.34	21.36	15.00	8.06

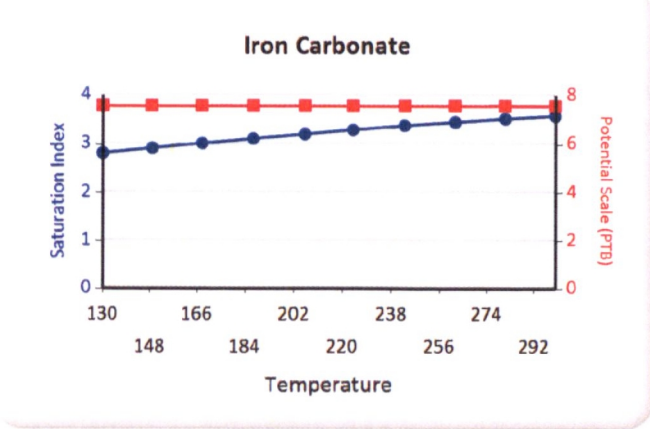
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Mg Silicate Ca Mg Silicate Fe Silicate

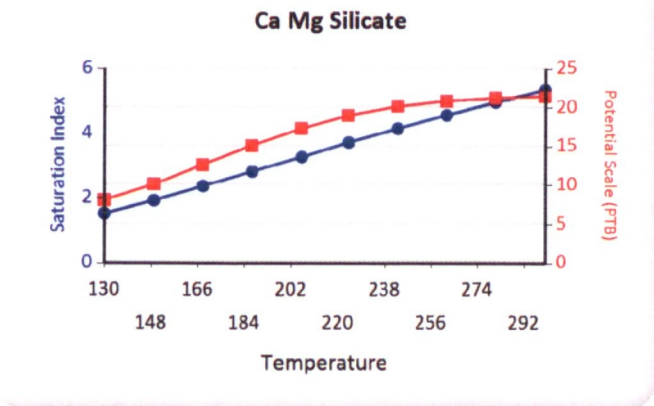
These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Mg Silicate Ca Mg Silicate Fe Silicate

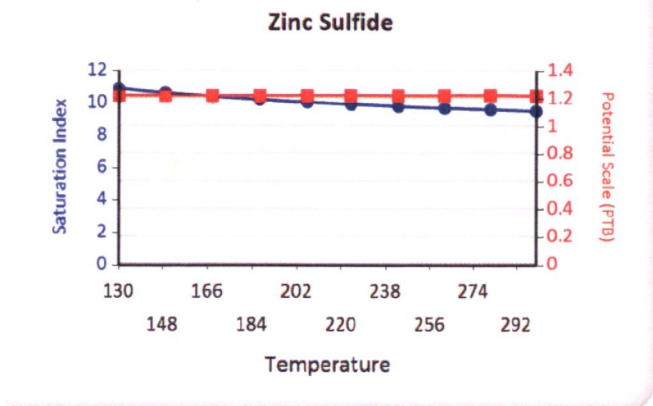


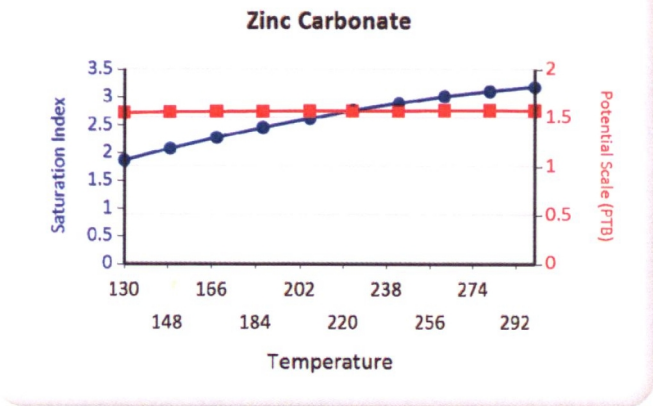







Ca Mg Silicate
Saturation Index
Potential Scale (PTB)
Temperature
130 166 202 238 274
148 184 220 256 292


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


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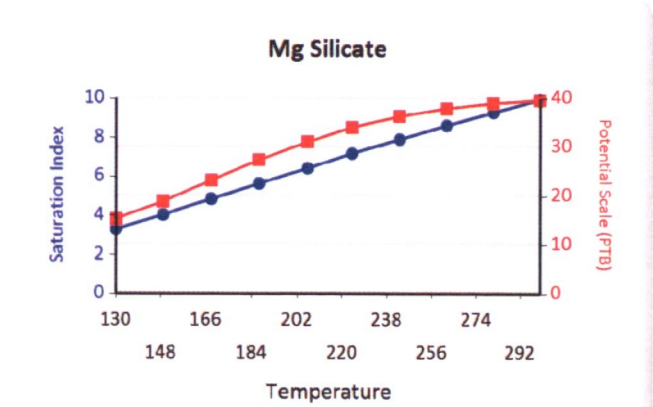
148 184 220 256 292


Mg Silicate
Saturation Index
Potential Scale (PTB)
Temperature
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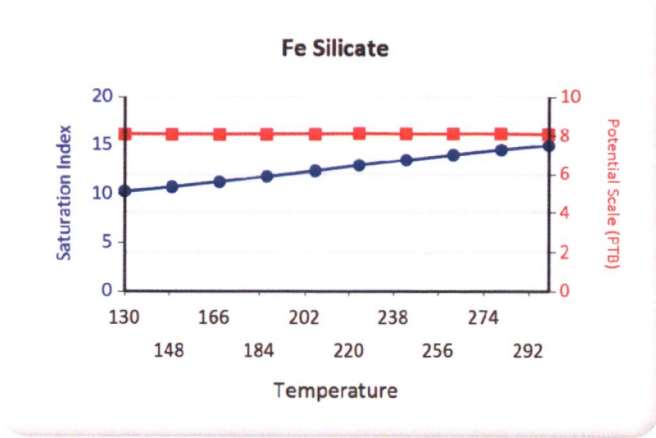
148 184 220 256 292


Fe Silicate
Saturation Index
Potential Scale (PTB)
Temperature
20
15
10
5
0
10
8
6
4
2
0
130
148
166
184
202
220
238
256
274
292

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

EPA

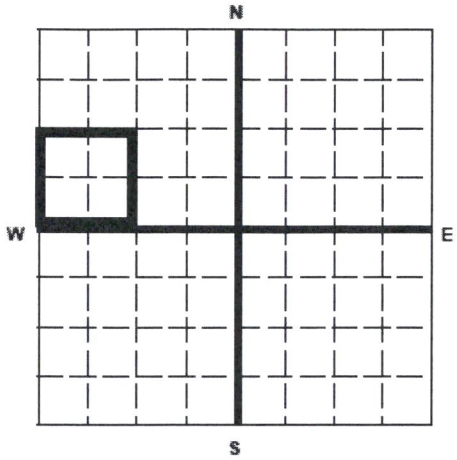
United States Environmental Protection Agency
Washington, DC 20460

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~~ 04381

Surface Location Description
___ 1/4 of ___ 1/4 of SW 1/4 of NW 1/4 of Section 8 Township 5S Range 3W

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

Surface Location 1700 ft. frm (N/S) N Line of quarter section
and 2133 ft. from (E/W) E Line of quarter section.

U2 Entered
Date 3/1/16
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 08-07

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	15	1787	1809	1905		0	0
February	15	1786	1808	1754		0	0
March	15	1822	1836	2328		0	0
April	15	1816	1827	1990		0	0
May	15	1822	1844	2026		0	0
June	15	1806	1818	1773		0	0
July	15	1808	1816	1879		0	0
August	15	1810	1824	1815		0	0
September	15	1811	1827	1664		0	0
October	15	1809	1810	1614		0	0
November	15	1823	1843	1826		0	0
December	15	1797	1814	1599		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

GREEN BLUE CBI
AB 2

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

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

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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 08-07 INJ, DUCHESNE**	Lab Tech:	**Michele Pike**
Sample Point:	**Well Head**		
Sample Date:	**1/6/2016**		
Sample ID:	**WA-327563**		

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

Sample Specifics

Test Date:	1/14/2016
System Temperature 1 (°F):	60
System Pressure 1 (psig):	2000
System Temperature 2 (°F):	180
System Pressure 2 (psig):	50
Calculated Density (g/ml):	1.0017
pH:	6.80
Calculated TDS (mg/L):	6307.79
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	80.00
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):	1939.89	Chloride (Cl):	2500.00
Potassium (K):	6.15	Sulfate (SO_4):	490.00
Magnesium (Mg):	71.67	Bicarbonate (HCO_3):	1098.00
Calcium (Ca):	160.20	Carbonate (CO_3):	
Strontium (Sr):	4.87	Acetic Acid (CH_3COO)	
Barium (Ba):	3.10	Propionic Acid (C_2H_5COO)	
Iron (Fe):	2.41	Butanoic Acid (C_3H_7COO)	
Zinc (Zn):	1.03	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Lead (Pb):	0.87	Fluoride (F):	
Ammonia NH_3:		Bromine (Br):	
Manganese (Mn):	0.01	Silica (SiO_2):	29.59
Aluminum (Al):	0.09	Calcium Carbonate ($CaCO_3$):	
Lithium (Li):	1.15	Phosphates (PO_4):	3.48
Boron (B):	0.38	Oxygen (O_2):	
Silicon (Si):	13.83		

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	0.79	81.61	1.35	1.76	0.00	0.00	1.13	1.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
167.00	267.00	0.62	67.04	1.37	1.77	0.00	0.00	0.94	1.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
153.00	483.00	0.52	56.93	1.40	1.77	0.00	0.00	0.81	1.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140.00	700.00	0.41	46.67	1.44	1.78	0.00	0.00	0.68	1.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
127.00	917.00	0.31	36.42	1.49	1.79	0.00	0.00	0.54	1.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
113.00	1133.00	0.22	26.37	1.55	1.79	0.00	0.00	0.41	1.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	1350.00	0.14	16.67	1.63	1.80	0.00	0.00	0.28	0.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
87.00	1567.00	0.06	7.48	1.72	1.81	0.00	0.00	0.16	0.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
73.00	1783.00	0.00	0.00	1.83	1.82	0.00	0.00	0.03	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
60.00	2000.00	0.00	0.00	1.95	1.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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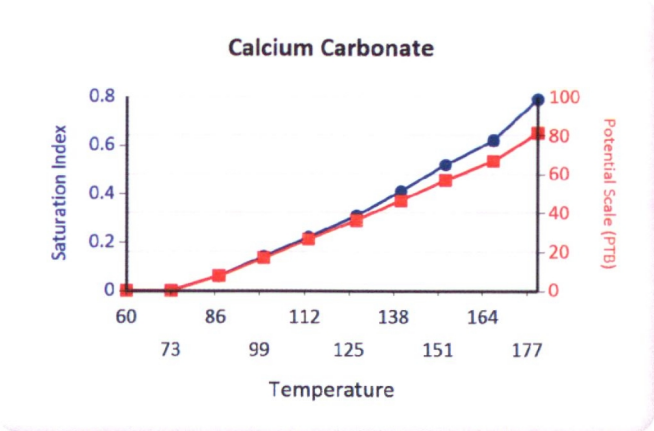
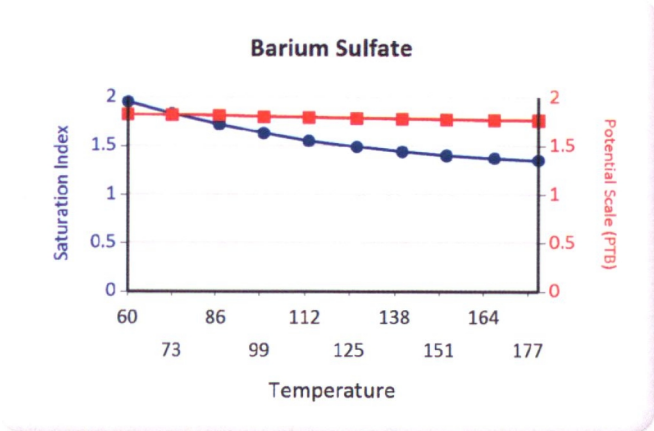
Water Analysis Report

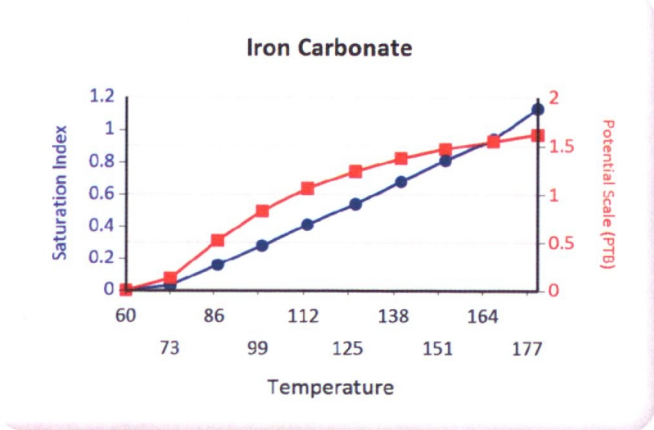
		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
180.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.72	0.56	0.00	0.00	0.00	0.00	0.00	0.00	2.64	1.62
167.00	267.00	0.00	0.00	0.00	0.00	0.00	0.00	0.48	0.46	0.00	0.00	0.00	0.00	0.00	0.00	1.64	1.32
153.00	483.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.34	0.00	0.00	0.00	0.00	0.00	0.00	0.97	0.96
140.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.32	0.39
127.00	917.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
113.00	1133.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	1350.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
87.00	1567.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
73.00	1783.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
60.00	2000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

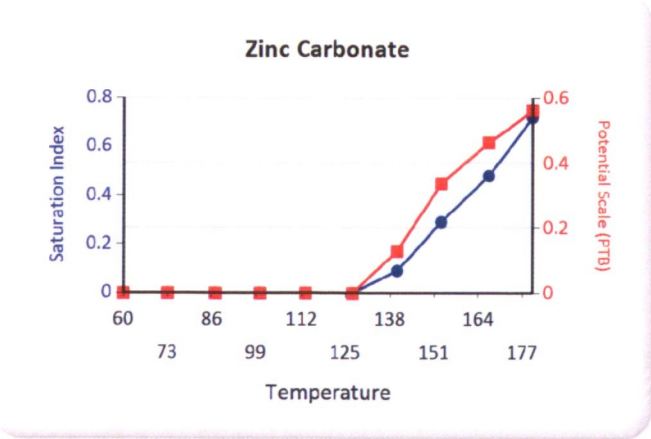
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Carbonate Zinc Carbonate Fe Silicate

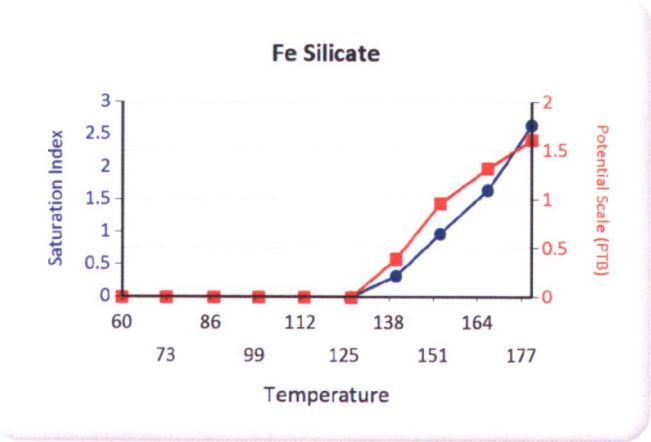
These scales have positive scaling potential under final temperature and pressure: Barium Sulfate








Zinc Carbonate
Saturation Index
Potential Scale (PTB)
0.8
0.6
0.4
0.2
0
0.6
0.4
0.2
0
60
86
112
138
164
73
99
125
151
177
Temperature


Fe Silicate
Saturation Index
Potential Scale (PTB)
3
2.5
2
1.5
1
0.5
0
2
1.5
1
0.5
0
60
86
112
138
164
73
99
125
151
177
Temperature

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

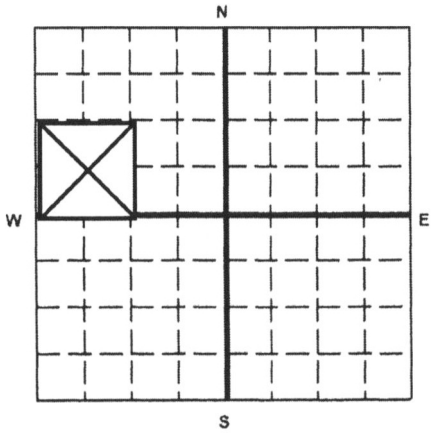
United States Environmental Protection Agency
Washington, DC 20460

EPA

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	UT2736-04381

Surface Location Description

____ 1/4 of ____ 1/4 of SW 1/4 of NW 1/4 of Section 8 Township 5S Range 3W

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

Surface Location 1700 ft. frm (N/S) N Line of quarter section and 2133 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 08-07

		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	1822	1846	305		0	0
February	14	1823	1843	264		0	0
March	14	1818	1841	290		0	0
April	14	1833	1840	234		0	0
May	14	1811	1815	438		0	0
June	14	1371	1815	~~1607~~	1636 inj mnthly	0	0
July	14	1699	1737	3032		0	0
August	14	1683	1760	4002		0	0
September	14	1785	1810	3658		0	0
October	14	1827	1832	3931		0	0
November	14	1818	1821	3520		0	0
December	14	1837	1851	3286		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 3/10/15
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 08-07 INJ, DUCHESNE**	Lab Tech:	**Gary Winegar**
Sample Point:	**WELLHEAD**		
Sample Date:	**1/7/2015**		
Sample ID:	**WA-297474**		

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):	1.0027
pH:	8.10
Calculated TDS (mg/L):	8318.90
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	0.00
H_2S in Gas (%):	
H2S in Water (mg/L):	5.00

Analysis @ Properties in Sample Specifics			
Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	2204.91	Chloride (Cl):	4000.00
Potassium (K):	34.48	Sulfate (SO_4):	233.00
Magnesium (Mg):	39.70	Bicarbonate (HCO_3):	1708.00
Calcium (Ca):	67.58	Carbonate (CO_3):	
Strontium (Sr):	4.84	Acetic Acid (CH_3COO)	
Barium (Ba):	2.04	Propionic Acid (C_2H_5COO)	
Iron (Fe):	1.12	Butanoic Acid (C_3H_7COO)	
Zinc (Zn):	0.55	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Lead (Pb):	0.04	Fluoride (F):	
Ammonia NH_3:		Bromine (Br):	
Manganese (Mn):	0.08	Silica (SiO_2):	22.56

Notes:
B=4.65 Al=0 Li=1.09

(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	1.40	49.29	1.41	1.17	2.72	0.62	1.51	0.79	0.00	0.00	0.00	0.00	0.00	0.00	10.51	0.29
88.00	157.00	1.39	48.23	1.33	1.16	2.62	0.62	1.53	0.79	0.00	0.00	0.00	0.00	0.00	0.00	10.31	0.29
97.00	300.00	1.41	48.84	1.25	1.15	2.56	0.62	1.58	0.79	0.00	0.00	0.00	0.00	0.00	0.00	10.15	0.29
106.00	443.00	1.43	49.48	1.18	1.14	2.52	0.62	1.63	0.80	0.00	0.00	0.00	0.00	0.00	0.00	10.00	0.29
115.00	585.00	1.45	50.13	1.12	1.12	2.48	0.62	1.68	0.80	0.00	0.00	0.00	0.00	0.00	0.00	9.86	0.29
124.00	728.00	1.48	50.78	1.06	1.11	2.45	0.62	1.73	0.80	0.00	0.00	0.00	0.00	0.00	0.00	9.74	0.29
133.00	871.00	1.51	51.43	1.01	1.09	2.43	0.62	1.77	0.80	0.00	0.00	0.00	0.00	0.00	0.00	9.62	0.29
142.00	1014.00	1.54	52.06	0.96	1.08	2.41	0.62	1.82	0.80	0.00	0.00	0.00	0.00	0.00	0.00	9.51	0.29
151.00	1157.00	1.57	52.68	0.92	1.07	2.41	0.61	1.87	0.80	0.00	0.00	0.00	0.00	0.00	0.00	9.40	0.29
160.00	1300.00	1.61	53.28	0.88	1.06	2.40	0.61	1.92	0.81	0.00	0.00	0.00	0.00	0.00	0.00	9.31	0.29

		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	0.46	0.24	11.65	0.02	0.48	2.99	0.00	0.00	4.61	0.84
88.00	157.00	0.00	0.00	0.00	0.00	0.00	0.00	0.55	0.27	11.33	0.02	0.64	3.73	0.00	0.00	4.61	0.84
97.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.68	0.29	11.06	0.02	1.05	6.05	0.08	0.62	4.85	0.85
106.00	443.00	0.00	0.00	0.00	0.00	0.00	0.00	0.80	0.31	10.82	0.02	1.46	8.45	0.30	1.91	5.11	0.85
115.00	585.00	0.00	0.00	0.00	0.00	0.00	0.00	0.92	0.33	10.58	0.02	1.88	10.92	0.54	3.23	5.38	0.86
124.00	728.00	0.00	0.00	0.00	0.00	0.00	0.00	1.03	0.34	10.36	0.02	2.31	13.42	0.77	4.55	5.65	0.86
133.00	871.00	0.00	0.00	0.00	0.00	0.00	0.00	1.14	0.34	10.16	0.02	2.74	15.91	1.01	5.85	5.94	0.86
142.00	1014.00	0.00	0.00	0.00	0.00	0.00	0.00	1.24	0.35	9.96	0.02	3.17	18.30	1.26	7.10	6.23	0.86
151.00	1157.00	0.00	0.00	0.00	0.00	0.00	0.00	1.34	0.35	9.78	0.02	3.60	20.51	1.50	8.29	6.53	0.87
160.00	1300.00	0.00	0.00	0.00	0.00	0.00	0.00	1.44	0.36	9.61	0.02	4.04	22.45	1.75	9.39	6.83	0.87

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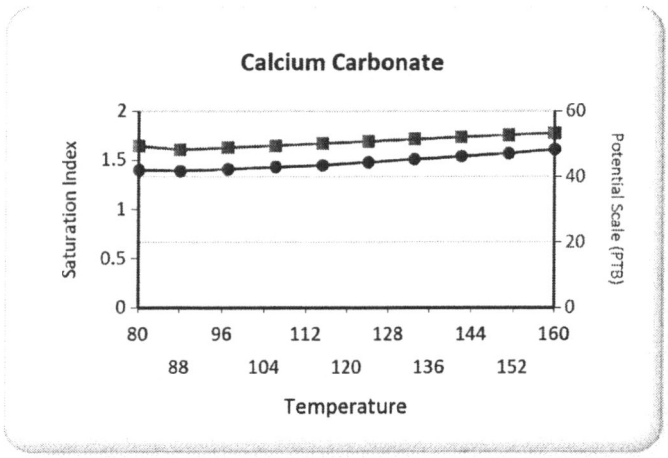
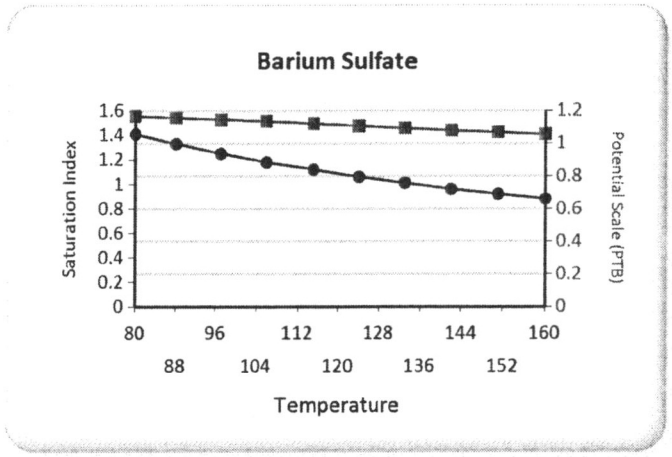
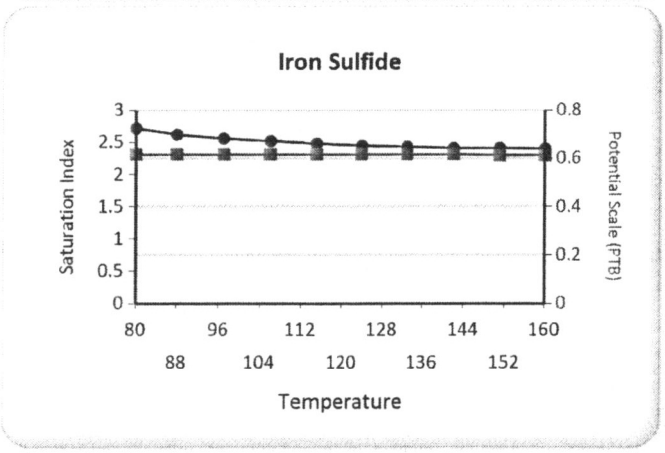
Water Analysis Report

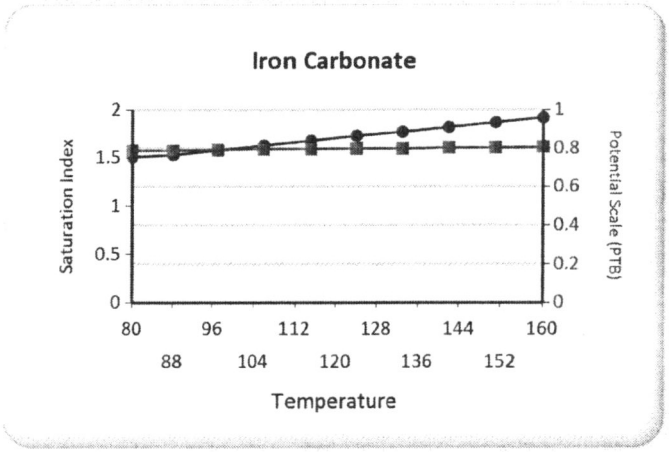
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Lead Sulfide Mg Silicate Fe Silicate

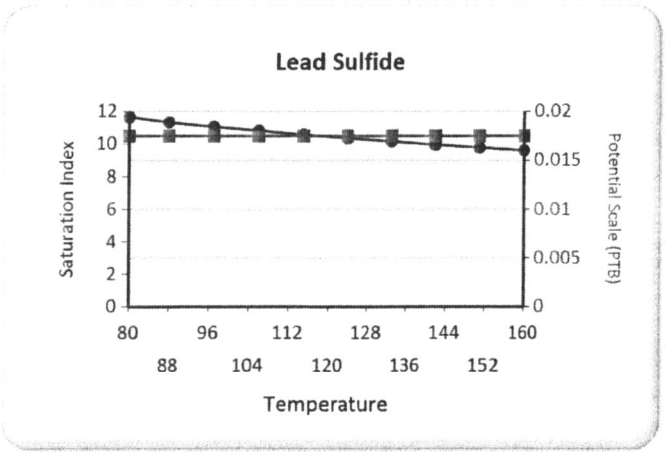
These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Lead Sulfide Mg Silicate Ca Mg Silicate Fe Silicate

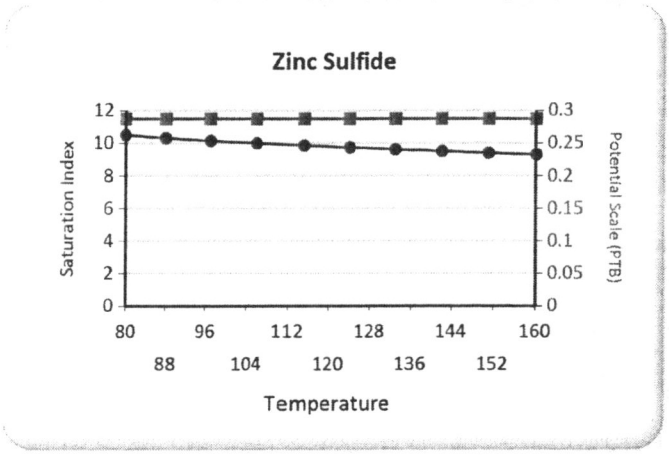












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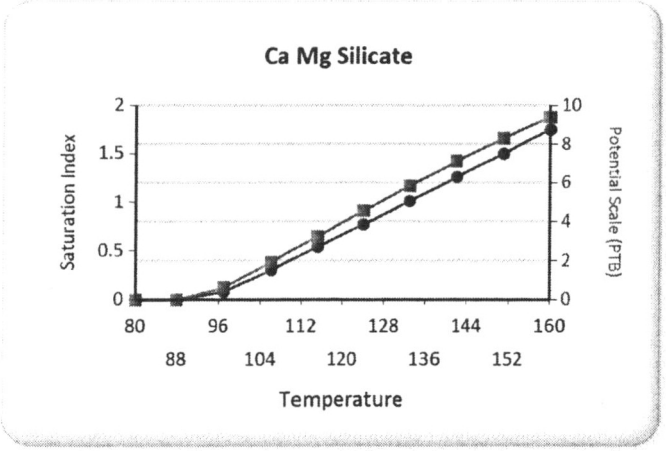
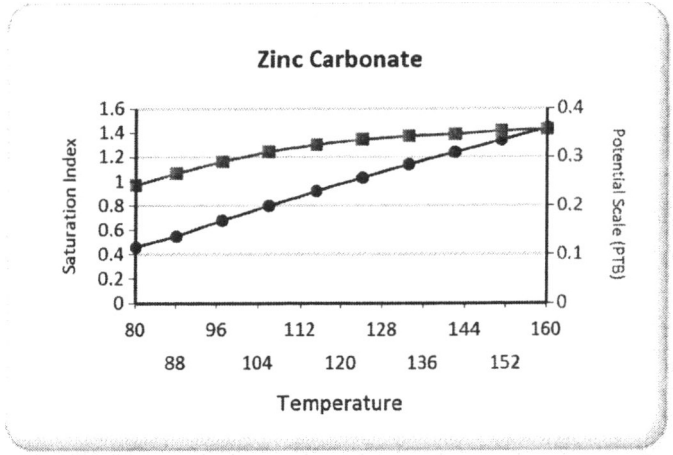
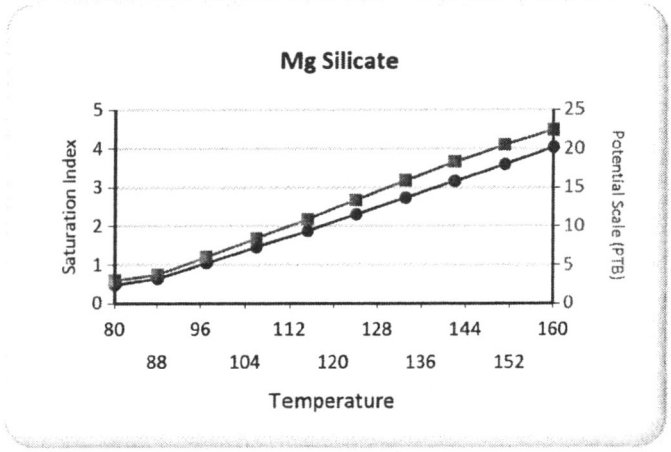
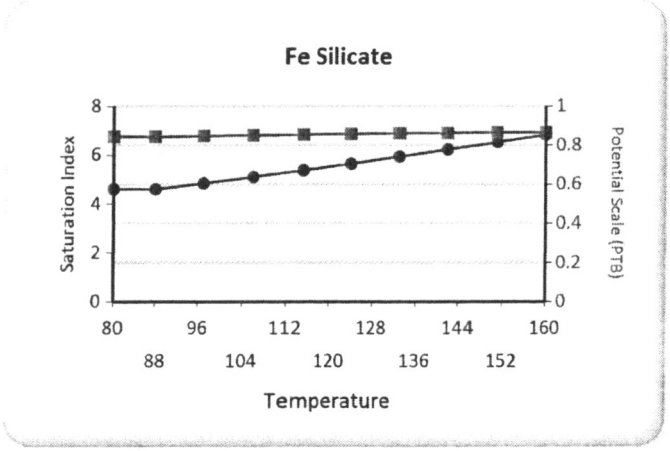
Water Analysis Report









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

United States Environmental Protection Agency
Washington, DC 20460

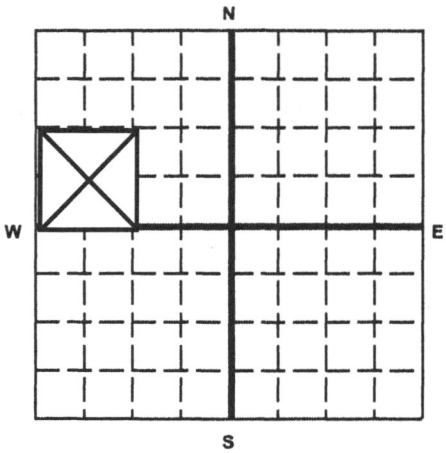
EPA

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	UT2736-04381

Surface Location Description
___ 1/4 of ___ 1/4 of SW 1/4 of NW 1/4 of Section 8 Township 5S Range 3W

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

Surface Location 1700 ft. frm (N/S) N Line of quarter section
and 2133 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 08-07

		INJECTION PRESSURE		TOTAL VOLUME INJECTED		TUBING -- CASING ANNULUS PRESSURE (OPTIONAL MONITORING)	
MONTH	YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG
January	13	1672	1844	89		0	0
February	13	1770	1781	99		0	0
March	13	1774	2490	228		0	0
April	13	1620	1839	238		0	0
May	13	1817	1836	259		0	0
June	13	1810	1831	206		0	0
July	13	1817	1829	183		0	0
August	13	1827	1852	228		0	0
September	13	1829	1846	196		0	0
October	13	1730	1863	194		0	0
November	13	1703	1839	243		0	0
December	13	1808	1857	213		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)

TAB GREEN BLUE OBI ✓

U2 Entered
Date 3/18/14
Initial

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

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Units of Measurement: **Standard**

Water Analysis Report

Production Company: **PETROGLYPH ENERGY INC**
Well Name: **UTE TRIBAL 08-07 INJ**
Sample Point: **Wellhead**
Sample Date: **1/8/2014**
Sample ID: **WA-262954**

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

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

Sample Specifics	
Test Date:	1/8/2014
System Temperature 1 (°F):	180
System Pressure 1 (psig):	1300
System Temperature 2 (°F):	60
System Pressure 2 (psig):	15
Calculated Density (g/ml):	1.005
pH:	8.30
Calculated TDS (mg/L):	11300.86
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	0.00
H_2S in Gas (%):	
H2S in Water (mg/L):	0.00

Analysis @ Properties in Sample Specifics			
Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	3892.68	Chloride (Cl):	5000.00
Potassium (K):	76.00	Sulfate (SO_4):	116.00
Magnesium (Mg):	29.00	Bicarbonate (HCO_3):	2074.00
Calcium (Ca):	68.00	Carbonate (CO_3):	
Strontium (Sr):	5.30	Acetic Acid (CH_3COO)	
Barium (Ba):	11.00	Propionic Acid (C_2H_5COO)	
Iron (Fe):	2.50	Butanoic Acid (C_3H_7COO)	
Zinc (Zn):	0.31	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Lead (Pb):	0.09	Fluoride (F):	
Ammonia NH_3:		Bromine (Br):	
Manganese (Mn):	0.30	Silica (SiO_2):	25.68

Notes:
B=5 Al=.02 Li=1.2

(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
60.00	14.00	1.55	51.98	1.91	6.47	0.00	0.00	1.93	1.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
73.00	157.00	1.56	51.72	1.77	6.43	0.00	0.00	1.99	1.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
86.00	300.00	1.58	52.34	1.64	6.39	0.00	0.00	2.07	1.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	443.00	1.61	52.99	1.53	6.34	0.00	0.00	2.14	1.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
113.00	585.00	1.64	53.65	1.43	6.29	0.00	0.00	2.21	1.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
126.00	728.00	1.68	54.31	1.34	6.24	0.00	0.00	2.28	1.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140.00	871.00	1.72	54.95	1.27	6.18	0.00	0.00	2.35	1.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
153.00	1014.00	1.76	55.56	1.21	6.12	0.00	0.00	2.41	1.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
166.00	1157.00	1.81	56.13	1.16	6.07	0.00	0.00	2.48	1.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
180.00	1300.00	1.87	56.64	1.11	6.02	0.00	0.00	2.54	1.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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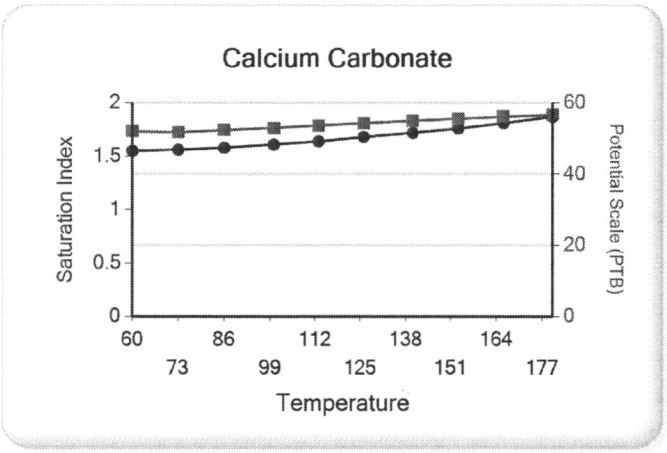
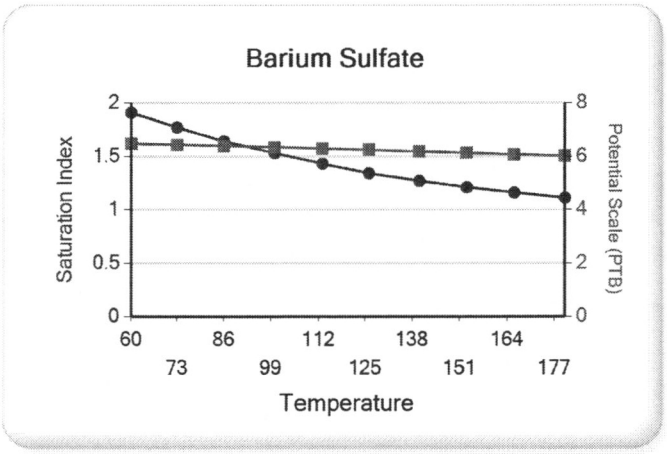
Water Analysis Report

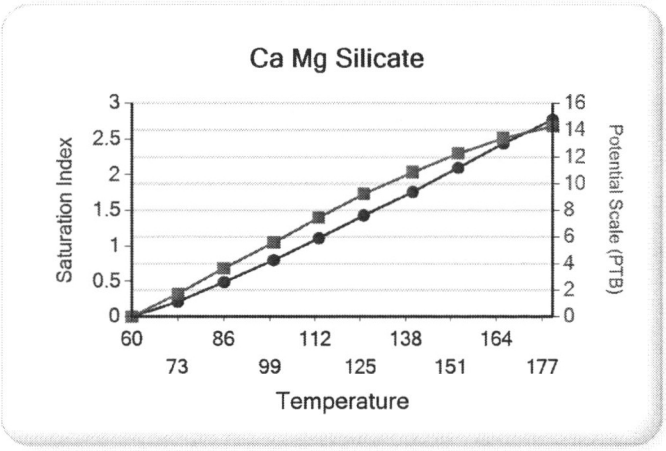
		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
60.00	14.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.03	0.00	0.00	0.30	2.38	0.00	0.00	6.32	1.93
73.00	157.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.09	0.00	0.00	0.76	5.31	0.21	1.72	6.51	1.93
86.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.45	0.13	0.00	0.00	1.31	8.84	0.49	3.66	6.81	1.93
100.00	443.00	0.00	0.00	0.00	0.00	0.00	0.00	0.64	0.16	0.00	0.00	1.88	12.36	0.80	5.59	7.13	1.93
113.00	585.00	0.00	0.00	0.00	0.00	0.00	0.00	0.81	0.18	0.00	0.00	2.46	15.84	1.11	7.47	7.48	1.94
126.00	728.00	0.00	0.00	0.00	0.00	0.00	0.00	0.97	0.19	0.00	0.00	3.05	19.23	1.43	9.24	7.85	1.94
140.00	871.00	0.00	0.00	0.00	0.00	0.00	0.00	1.12	0.19	0.00	0.00	3.64	22.42	1.76	10.85	8.24	1.94
153.00	1014.00	0.00	0.00	0.00	0.00	0.00	0.00	1.27	0.20	0.00	0.00	4.24	25.24	2.10	12.25	8.64	1.94
166.00	1157.00	0.00	0.00	0.00	0.00	0.00	0.00	1.40	0.20	0.00	0.00	4.83	27.52	2.44	13.40	9.04	1.94
180.00	1300.00	0.00	0.00	0.00	0.00	0.00	0.00	1.53	0.20	0.00	0.00	5.42	29.14	2.77	14.28	9.46	1.94

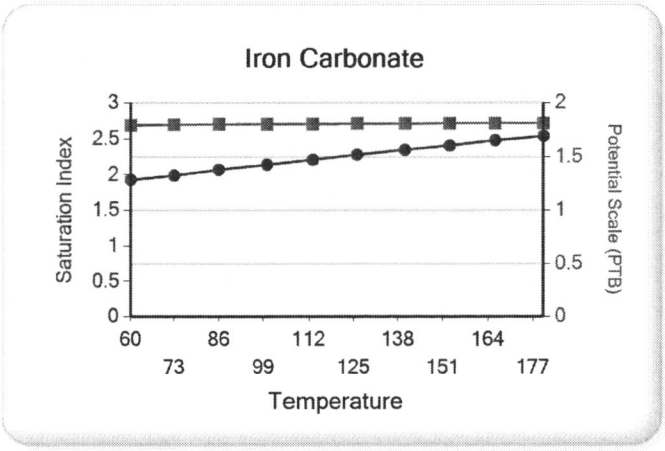
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Carbonate Zinc Carbonate Mg Silicate Fe Silicate

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









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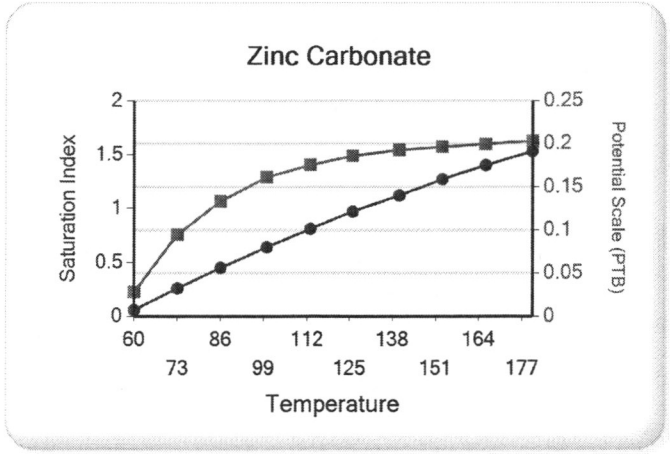
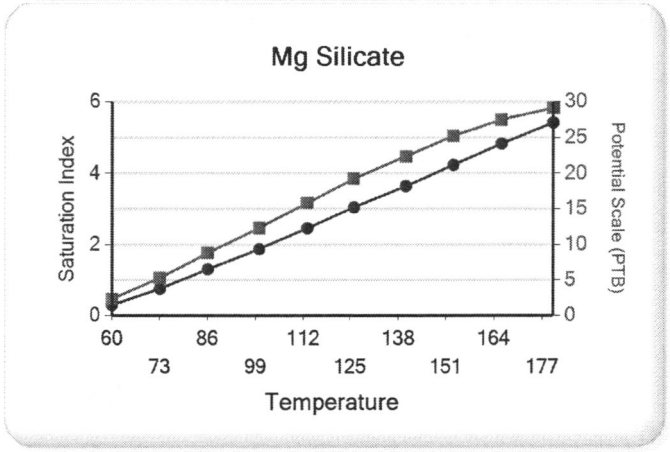
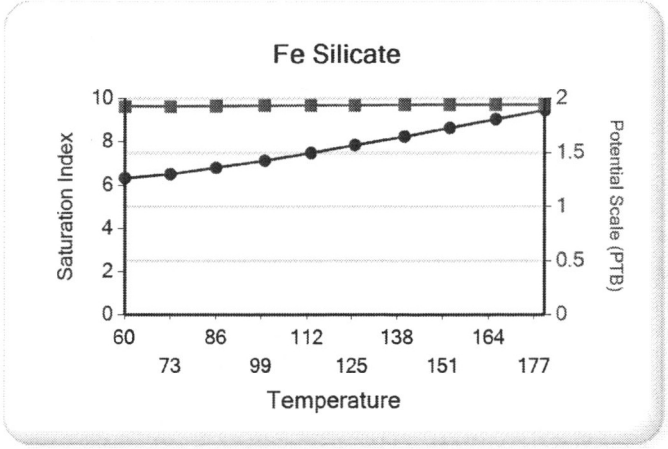
Water Analysis Report







UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII
999 18th STREET - SUITE 500
DENVER, COLORADO 80202-2466

SEP 10 1997

Ref: 8P2-W-GW

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Ms. Kathy Turner
Geology/Petroleum Engineering Technician
Petroglyph Operating Company, Inc.
P. O. Box 1839
Hutchinson, KS 67504-1839

RE: UNDERGROUND INJECTION CONTROL (UIC)
Authorization to Inject
Ute Tribal #08-07 (UT04381)
Antelope Creek Waterflood
EPA Area Permit No. UT2736-00000
Duchesne County, Utah

Dear Ms. Turner:

Thank you for the recently submitted information pertaining to the above-referenced area permit and well. The Well Rework Record, injection zone fluid pore pressure survey, fracture treatment reports showing average ISIP of 2579 psi, and the successfully run mechanical integrity test, with chart, on the Ute Tribal #08-07 (UT2736-04381) have been reviewed and approved. Petroglyph Operating Company, Inc., has complied with all of the pertinent permit conditions (Part II, Section C. 2.) for the Antelope Creek Waterflood Area Permit.

Pleased be advised that administrative approval has been granted for injection of Class II fluids into the above referenced well for enhanced recovery of oil and gas. Please also be aware of the monitoring, recordkeeping and reporting requirements described in Part II, Section D of the permit and that the current **maximum surface injection pressure (Pmax) is limited to 2579 psig,** as modified by UIC Minor Permit Modification dated May 30, 1997.

Upon receipt of this letter, the Compliance Officer, Mr. John Carson will then take over routine matters involving well operations, future correspondence, forms, and reports. Please direct all correspondence to the attention of Mr. Carson at the above letterhead **(MAIL CODE ENF-T)** or contact Mr. Carson at (303) 312-6203. Thank you for your continued cooperation.

Sincerely,

D. Edwin Hogle
Director, Groundwater Program
Office of Pollution Prevention
State and Tribal Assistance

Printed on Recycled Paper

cc: Mr. Ronald Wopsock, 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

Scan under
UT20736 - 04381
Authorization to
Inject - Final

9/11/97 CW 3115C
P 164 014 346
#08-07

US Postal Service
Receipt for Certified Mail
No Insurance Coverage Provided.
Do not use for International Mail *(See reverse)*

Sent to Ms. Kathy Turner	
Street, Apt. No.; or PO Box No. Geology/Petroleum Engineering Technician	
Post Office, State, & ZIP Code Petroglyph Operating Company, Inc. P.O. Box 1839 ~~Hutchinson, KS 67504-1839~~	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date	

PS Form 3800, April 1995

9/11/97 CW 3115C

SENDER:
- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write *"Return Receipt Requested"* on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

SEP 12 1997

I also wish to receive the following services (for an extra fee):
1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
Ms. Kathy Turner
Geology/Petroleum Engineering Technician
Petroglyph Operating Company, Inc.
P.O. Box 1839
Hutchinson, KS 67504-1839

4a. Article Number
P 164 014 346

4b. Service Type
☐ Registered ☒ Certified
☐ Express Mail ☐ Insured
☐ Return Receipt for Merchandise ☐ COD

7. Date of Delivery
SEP 15 1997

5. Received By: *(Print Name)*
Gail Dennis

8. Addressee's Address *(Only if requested and fee is paid)*
SEP 18 1997

6. Signature: *(Addressee or Agent)*
X Gail Dennis

D

PS Form 3811, December 1994 Domestic Return Receipt

Is your RETURN ADDRESS completed on the reverse side?

Thank you for using Return Receipt Service.

SEP 10 1997

CONCURRENCE COPY

Ref: 8P2-W-GW

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Ms. Kathy Turner
Geology/Petroleum Engineering Technician
Petroglyph Operating Company, Inc.
P. O. Box 1839
Hutchinson, KS 67504-1839

RE: UNDERGROUND INJECTION CONTROL (UIC)
Authorization to Inject
Ute Tribal #08-07 (UT04381)
Antelope Creek Waterflood
EPA Area Permit No. UT2736-00000
Duchesne County, Utah

Dear Ms. Turner:

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Sincerely,

CEW 8P2-W-GW 9/5/97

8P2-W-GW 9/6/97

Hogle 8P2-W-GW 9/9/97

D. Edwin Hogle
Director, Groundwater Program
Office of Pollution Prevention
State and Tribal Assistance

cc: Mr. Ronald Wopsock, 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

FCD: September 5, 1997, Chuck W., F:\DATA\WP\PETROGLF\AUT-IN08.07

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII
999 18th STREET - SUITE 500
DENVER, COLORADO 80202-2466

SEP 10 1997

Ref: 8P2-W-GW

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Ms. Kathy Turner
Geology/Petroleum Engineering Technician
Petroglyph Operating Company, Inc.
P. O. Box 1839
Hutchinson, KS 67504-1839

RE: UNDERGROUND INJECTION CONTROL (UIC)
Authorization to Inject
Ute Tribal #08-07 (UT04381)
Antelope Creek Waterflood
EPA Area Permit No. UT2736-00000
Duchesne County, Utah

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Sincerely,

D. Edwin Hogle
Director, Groundwater Program
Office of Pollution Prevention
State and Tribal Assistance

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cc: Mr. Ronald Wopsock, 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

CONCURRENCE COPY

Ref: 8P2-W-GW

MAY 30 1997

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Ms. April Menzies
Geology/Petroleum Engineering Technician
Petroglyph Operating Company, Inc.
6209 North Highway 61
Hutchinson, Kansas 67502

RE: **UIC Minor Permit Modification**
Conversion of Additional Well to
EPA Area Permit UT2736-00000
Antelope Creek Waterflood
Duchesne County, Utah

Dear Ms. Menzies:

Your letter of May 6, 1997, requesting that the following production well be converted to a Class II enhanced oil recovery well and added to the Antelope Creek Waterflood, as authorized under EPA Area Permit #UT2736-00000, is hereby granted.

NAME	LOCATION	EPA WELL PERMIT NO.
Ute Tribal #08-07	*SW/NW Section 8* T 5 S - R 3 W Duchesne County, UT	*#UT2736-04381*

This additional well is within the boundary of the existing area permit for the Antelope Creek Waterflood (UT2736-00000), and this addition is made by minor permit modification according to the terms and conditions of that permit. Unless specifically mentioned in this Minor Permit Modification, all terms and conditions of the original permit will apply to the construction, operation, monitoring, and plugging and abandonment of this additional injection well. The proposed well location, well schematic, conversion procedures, plugging and abandonment plan and schematic, submitted by your office, have been reviewed and approved as follows:

(1) The **conversion** of this production well has been reviewed, and found satisfactory, therefore, no corrective action is required.

(2) **Maximum injection pressure (Pmax)** - the permittee submitted a list of five (5) individual zones, within the Ute Tribal #08-07, which were individually fraced and established an average fracture gradient (Fg) of

CEW 8P2-W-GW 5/22/97
8P2-W-GW 5/22/97
5/27/97
P2-W-GW 5/28/97
P2-W 5/29/97

1.02 psi/ft. which was derived from instantaneous shut-in pressures (ISIP) from each zone. This Fg is acceptable to the Environmental Protection Agency (EPA), and a theoretical maximum allowable surface injection pressure (Pmax), for this well, may be calculated as shown below:

$$Pmax = [Fg - 0.433\ (Sg)]\ d$$

Where: Pmax = Maximum surface injection pressure at wellhead

d = 4394' shallowest perforations

Sg = Specific gravity of injected water

Pmax = [1.02 - .433 (1.00)] 4394

Pmax = 2579 psig

Until such time as the permittee demonstrates that a fracture gradient other than 1.02 psi/ft applies to the disposal zones of this newly converted well, the maximum allowable wellhead injection pressure **(Pmax) for this well will be 2579 psig.**

(3) The **plugging and abandonment plan and schematic**, submitted by your office, has been reviewed, and approved.

Prior to commencing injection into this well, permittee must fulfill permit condition Part II, C. 2. and have received **written authorization** to inject **by the Environmental Protection Agency.** In summary, these requirements for your newly permitted injection well are:

(1) All conversion is complete and the permittee has submitted a completed **Well Rework Record (EPA Form 7520-12).**

(2) The **pore pressure has been determined.**

(3) The well has successfully completed and passed a **mechanical integrity test (MIT)**; MIT guidance and EPA form enclosed.

All other provisions and conditions of the permit remain as originally issued.

If you have any questions, please contact Mr. Chuck Williams at (303) 312-6625.

Also, please direct the above requirements to Mr. Williams at the above letterhead address, citing **MAIL CODE 8P2-W-GW.** Thank you for your continued cooperation.

Sincerely,

Original signed
Kerrigan G. Clough
Assistant Regional Administrator
Office of Pollution Prevention,
State and Tribal Assistance

Kerrigan G. Clough
Assistant Regional Administrator
Office of Pollution Prevention,
State and Tribal Assistance

Enclosure: MIT Guidance and EPA Form

cc: Mr. Ferron Secakuku
Energy & Mineral Resource Dep't.
Ute Indian Tribe

Mr. Ronald Wopsock, Chairman
Uintah & Ouray Business Committee
Northern Ute Tribe

Mr. Jonas Grant, Director
Division of Natural Resources
Northern Ute 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

FCD: May 21, 1997, Chuck W., F:\DATA\WP\PETROGLF\MNRMD-08.07