Inspection Report For Well: UT20736 - 04204

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: 10:28 am / pm

OPERATOR (only if different): _____

REPRESENTATIVE(S): Chad Stevinson

PRE-INSPECTION REVIEW

Petroglyph Operating Company, Inc

Well Name:	Ute Tribal 18-09 (old 5-18)		
Well Type:	Enhanced Recovery (2R)		
Operating Status:	AC (ACTIVE) as of 12/31/2002		
Oil Field:	Antelope Creek (Duchesne)		
Location:	NESE S18 T5S R3W		
Indian Country:	X, Uintah and Ouray		
Last Inspection:	8/29/2012	***Allowable Inj Pressure:***	2100 /
Last MIT:	Pass 1/20/2010	***Annulus Pressure From Last MIT:***	1025

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 1/2/14
Initials DB

OBSERVED VALUES:

Tubing Gauge:	[x] Yes [ ] No	Pressure: U: 1907 / 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

U2 Entered
Date 12/17/13
Initial AC

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

TAB	GREEN	BLUE	CBI
		1	

Inspection Report For Well: UT20736 - 04204 (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: 12/16/13
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 11/30/2014

EPA

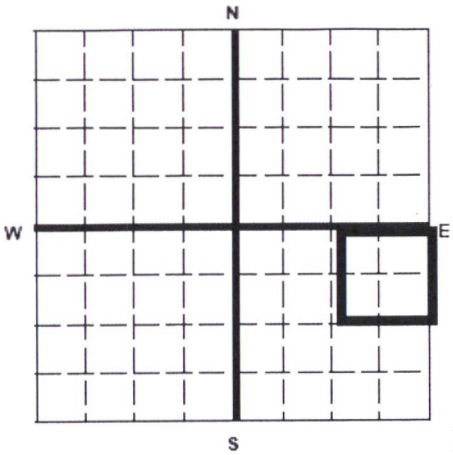
United States Environmental Protection Agency
Washington, DC 20460

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	UT2736-04204

Surface Location Description
___ 1/4 of ___ 1/4 of NE 1/4 of SE 1/4 of Section 18 Township 5S Range 3W

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

Surface Location 2151 ft. frm (N/S) S Line of quarter section
and 667 ft. from (E/W) E Line of quarter section.

U2 Entered
Date 4/4/17
Initial BS

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 18-09

GREEN BLUE CBI
TAE 2

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	2016	2052	213		0	0
February	16	2025	2044	261		0	0
March	16	2014	2022	399		0	0
April	16	2026	2044	223		0	0
May	16	2048	2058	283		0	0
June	16	2032	2071	251		0	0
July	16	2049	2066	297		0	0
August	16	2045	2061	231		0	0
September	16	2033	2050	208		0	0
October	16	2053	2069	276		0	0
November	16	2014	2074	211		0	0
December	16	2031	2058	232		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	Chad Stevenson	03/21/2017

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 18-09 INJ, DUCHESNE**	Lab Tech:	**Kaitlyn Natelli**
Sample Point:	**Well Head**		
Sample Date:	**1/6/2017**		
Sample ID:	**WA-345372**		

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

Sample Specifics

Test Date:	1/23/2017
System Temperature 1 (°F):	300
System Pressure 1 (psig):	2000
System Temperature 2 (°F):	130
System Pressure 2 (psig):	50
Calculated Density (g/ml):	1.0021
pH:	8.40
Calculated TDS (mg/L):	6965.86
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):	2383.43	Chloride (Cl):	3000.00
Potassium (K):	25.15	Sulfate (SO_4):	50.00
Magnesium (Mg):	18.02	Bicarbonate (HCO_3):	1403.00
Calcium (Ca):	35.11	Carbonate (CO_3):	
Strontium (Sr):	3.10	Hydroxide(HO):	
Barium (Ba):	4.37	Acetic Acid (CH_3COO)	
Iron (Fe):	20.24	Propionic Acid (C_2H_5COO)	
Zinc (Zn):	7.74	Butanoic Acid (C_3H_7COO)	
Lead (Pb):	0.00	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Ammonia NH_3:		Fluoride (F):	
Manganese (Mn):	0.17	Bromine (Br):	
Aluminum (Al):	0.18	Silica (SiO_2):	15.53
Lithium (Li):	3.57	Calcium Carbonate ($CaCO_3$):	
Boron (B):	5.42	Phosphates (PO_4):	15.45
Silicon (Si):	7.26	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	1.40	27.32	0.77	2.14	4.29	9.06	3.22	14.70	0.00	0.00	0.00	0.00	0.00	0.00	11.46	4.04
149.00	267.00	1.46	27.75	0.68	2.03	4.23	9.05	3.31	14.71	0.00	0.00	0.00	0.00	0.00	0.00	11.19	4.04
168.00	483.00	1.54	28.31	0.60	1.92	4.20	9.05	3.41	14.71	0.00	0.00	0.00	0.00	0.00	0.00	10.97	4.04
187.00	700.00	1.62	28.82	0.55	1.84	4.20	9.05	3.50	14.71	0.00	0.00	0.00	0.00	0.00	0.00	10.78	4.04
206.00	917.00	1.71	29.26	0.51	1.77	4.22	9.06	3.59	14.71	0.00	0.00	0.00	0.00	0.00	0.00	10.61	4.04
224.00	1133.00	1.81	29.62	0.49	1.72	4.25	9.06	3.67	14.71	0.00	0.00	0.00	0.00	0.00	0.00	10.46	4.04
243.00	1350.00	1.91	29.90	0.48	1.70	4.30	9.06	3.75	14.71	0.00	0.00	0.00	0.00	0.00	0.00	10.34	4.04
262.00	1567.00	2.02	30.12	0.48	1.70	4.36	9.06	3.82	14.71	0.00	0.00	0.00	0.00	0.00	0.00	10.23	4.04
281.00	1783.00	2.14	30.29	0.48	1.71	4.44	9.06	3.88	14.71	0.00	0.00	0.00	0.00	0.00	0.00	10.13	4.04
300.00	2000.00	2.25	30.41	0.50	1.75	4.52	9.06	3.94	14.71	0.00	0.00	0.00	0.00	0.00	0.00	10.04	4.04

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

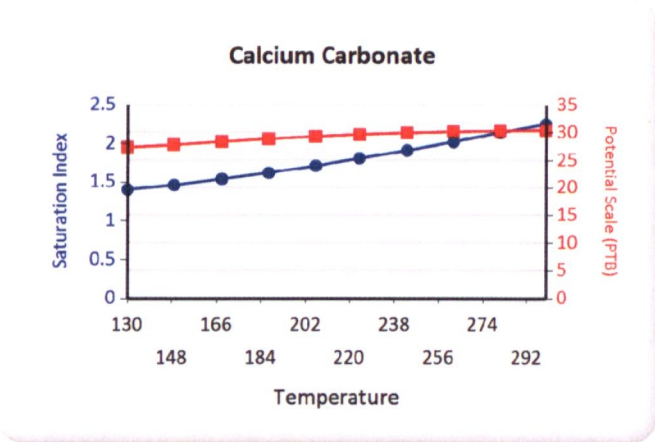
multi-chem®
A HALLIBURTON SERVICE

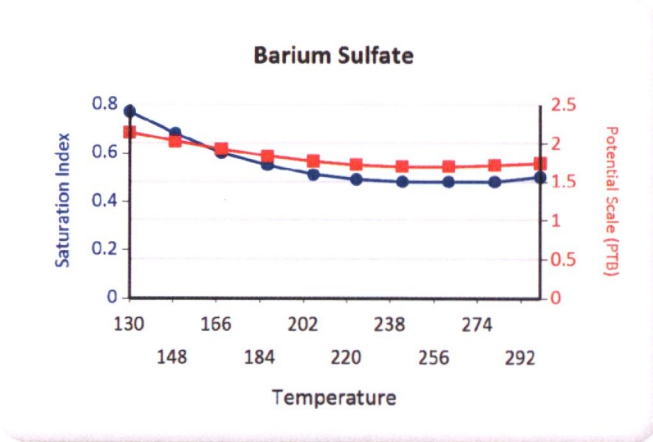
Water Analysis Report

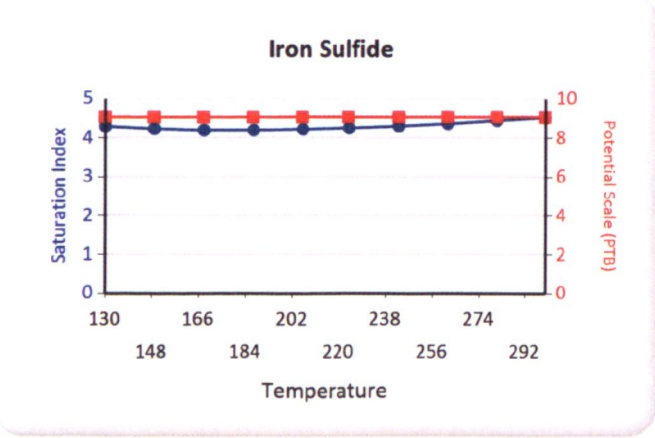
		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
130.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	2.49	5.18	0.00	0.00	3.59	17.50	1.73	9.97	11.59	15.72
149.00	267.00	0.00	0.00	0.00	0.00	0.00	0.00	2.69	5.19	0.00	0.00	4.31	20.67	2.12	11.92	12.04	15.73
168.00	483.00	0.00	0.00	0.00	0.00	0.00	0.00	2.89	5.20	0.00	0.00	5.08	24.29	2.55	14.16	12.55	15.73
187.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	3.06	5.20	0.00	0.00	5.84	27.58	2.98	16.20	13.07	15.74
206.00	917.00	0.00	0.00	0.00	0.00	0.00	0.00	3.22	5.20	0.00	0.00	6.59	30.33	3.41	17.89	13.59	15.74
224.00	1133.00	0.00	0.00	0.00	0.00	0.00	0.00	3.36	5.20	0.00	0.00	7.32	32.42	3.83	19.13	14.12	15.74
243.00	1350.00	0.00	0.00	0.00	0.00	0.00	0.00	3.49	5.20	0.00	0.00	8.03	33.89	4.24	19.93	14.63	15.74
262.00	1567.00	0.00	0.00	0.00	0.00	0.00	0.00	3.60	5.20	0.00	0.00	8.70	34.82	4.64	20.40	15.14	15.74
281.00	1783.00	0.00	0.00	0.00	0.00	0.00	0.00	3.69	5.20	0.00	0.00	9.35	35.37	5.02	20.67	15.62	15.74
300.00	2000.00	0.00	0.00	0.00	0.00	0.00	0.00	3.76	5.20	0.00	0.00	9.97	35.67	5.39	20.81	16.09	15.74

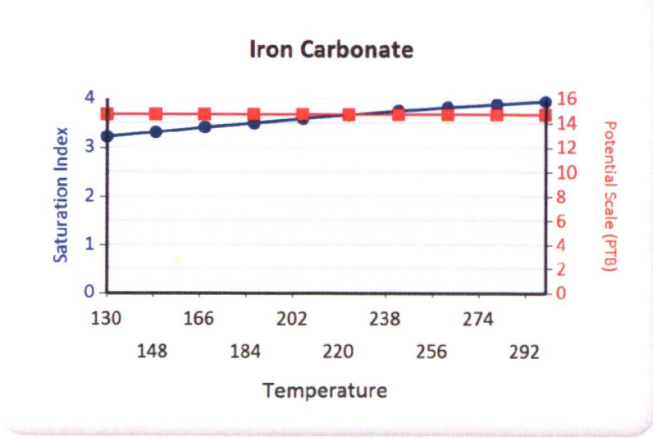
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Mg Silicate Ca Mg Silicate Fe Silicate

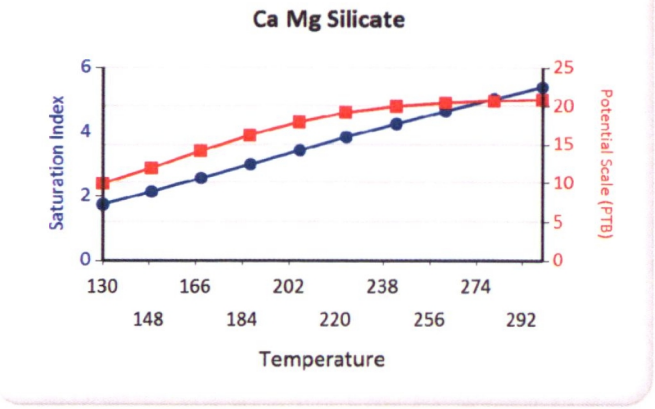
These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Mg Silicate Ca Mg Silicate Fe Silicate

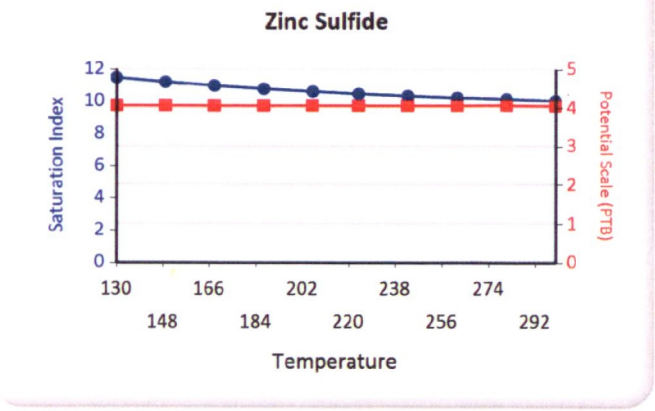









Ca Mg Silicate
Saturation Index
Potential Scale (PTB)
Temperature
130 166 202 238 274
148 184 220 256 292


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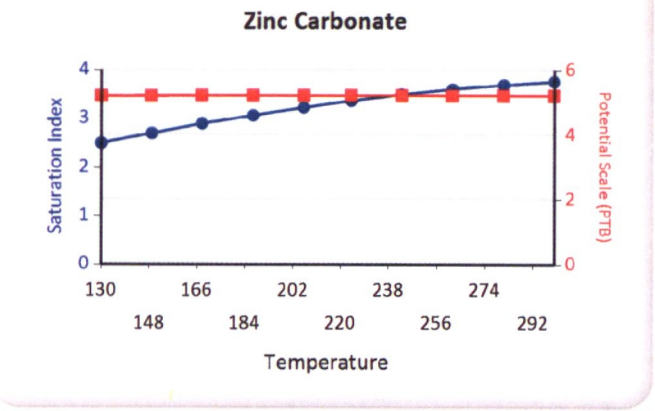
148 184 220 256 292


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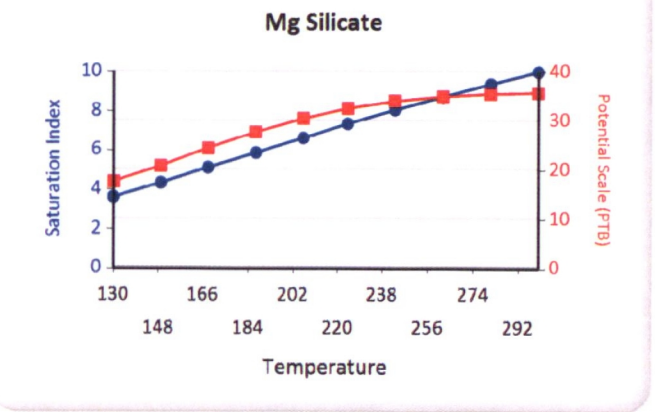
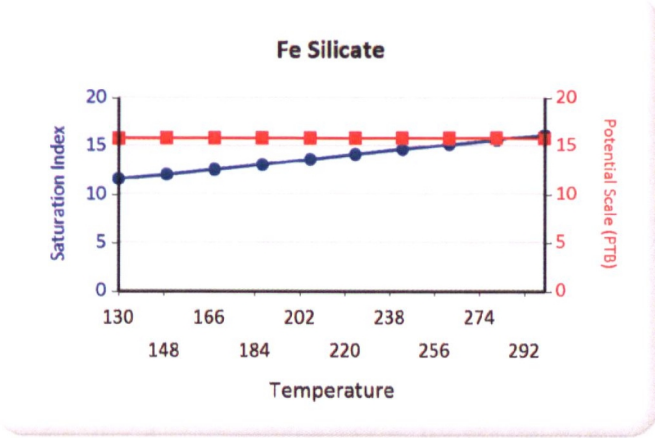
148 184 220 256 292


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
20
15
10
5
0
130
148
166
184
202
220
238
256
274
292

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

EPA

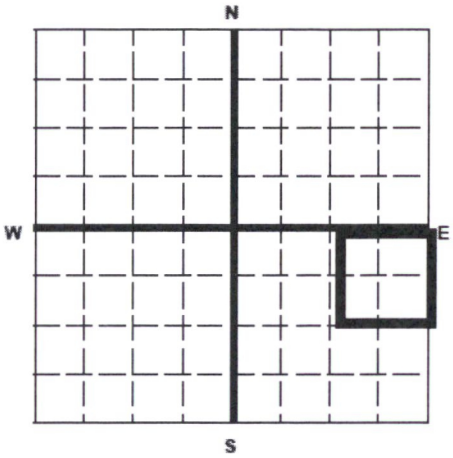
United States Environmental Protection Agency
Washington, DC 20460

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~~ 04204

Surface Location Description
___ 1/4 of ___ 1/4 of NE 1/4 of SE 1/4 of Section 18 Township 5S Range 3W

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

Surface Location 2151 ft. frm (N/S) S Line of quarter section
and 667 ft. from (E/W) E Line of quarter section.

U2 Entered
Date 3/1/16
Initial BB

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 18-09

		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	1994	2006	280		0	0
February	15	2042	2057	302		0	0
March	15	2044	2074	329		0	0
April	15	2012	2023	258		0	0
May	15	1917	2064	316		0	0
June	15	1938	2071	274		0	0
July	15	2053	2059	304		0	0
August	15	2054	2068	300		0	0
September	15	2045	2069	273		0	0
October	15	2052	2058	343		0	0
November	15	2054	2058	390		0	0
December	15	2050	2062	251		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
TAB

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 18-09 INJ, DUCHESNE**	Lab Tech:	**Michele Pike**
Sample Point:	**Well Head**		
Sample Date:	**1/6/2016**		
Sample ID:	**WA-327545**		

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):	1.0021
pH:	7.70
Calculated TDS (mg/L):	6888.01
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	0.00
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):	2109.59	Chloride (Cl):	3000.00
Potassium (K):	9.06	Sulfate (SO_4):	430.00
Magnesium (Mg):	71.04	Bicarbonate (HCO_3):	976.00
Calcium (Ca):	179.18	Carbonate (CO_3):	
Strontium (Sr):	5.63	Acetic Acid (CH_3COO)	
Barium (Ba):	1.61	Propionic Acid (C_2H_5COO)	
Iron (Fe):	59.94	Butanoic Acid (C_3H_7COO)	
Zinc (Zn):	15.38	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Lead (Pb):	0.68	Fluoride (F):	
Ammonia NH_3:		Bromine (Br):	
Manganese (Mn):	0.29	Silica (SiO_2):	29.61
Aluminum (Al):	0.18	Calcium Carbonate ($CaCO_3$):	
Lithium (Li):	1.18	Phosphates (PO_4):	6.39
Boron (B):	0.29	Oxygen (O_2):	
Silicon (Si):	13.84		

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	1.62	107.28	0.98	0.86	0.00	0.00	3.27	43.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
167.00	267.00	1.48	96.62	1.00	0.86	0.00	0.00	3.11	43.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
153.00	483.00	1.38	89.55	1.03	0.87	0.00	0.00	2.98	43.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140.00	700.00	1.28	82.57	1.07	0.88	0.00	0.00	2.86	43.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
127.00	917.00	1.20	75.81	1.12	0.89	0.00	0.00	2.74	43.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
113.00	1133.00	1.11	69.36	1.18	0.90	0.00	0.00	2.62	43.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	1350.00	1.04	63.31	1.26	0.91	0.00	0.00	2.50	43.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
87.00	1567.00	0.96	57.73	1.35	0.91	0.00	0.00	2.38	42.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
73.00	1783.00	0.90	52.69	1.46	0.93	0.00	0.00	2.26	42.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
60.00	2000.00	0.84	48.22	1.59	0.94	0.00	0.00	2.15	42.47	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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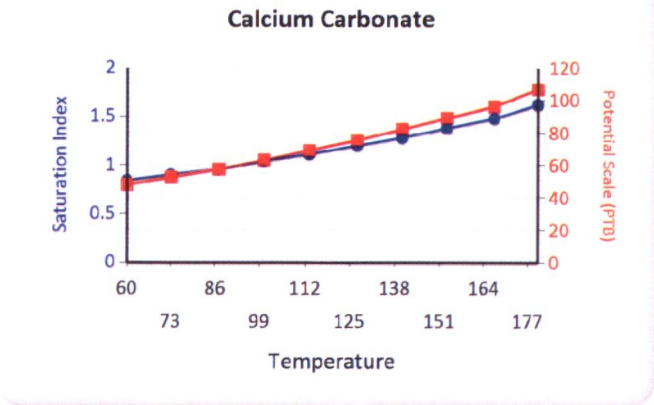
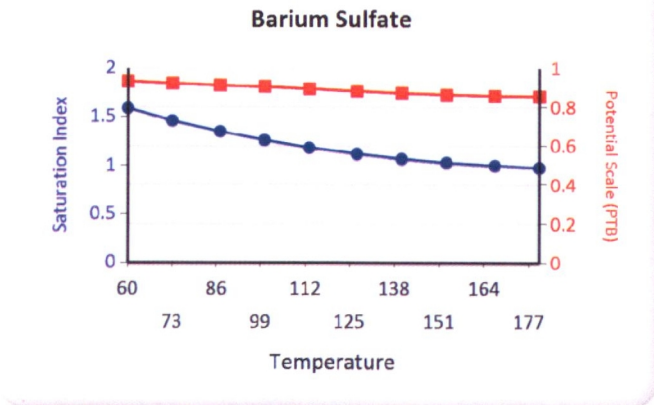
Water Analysis Report

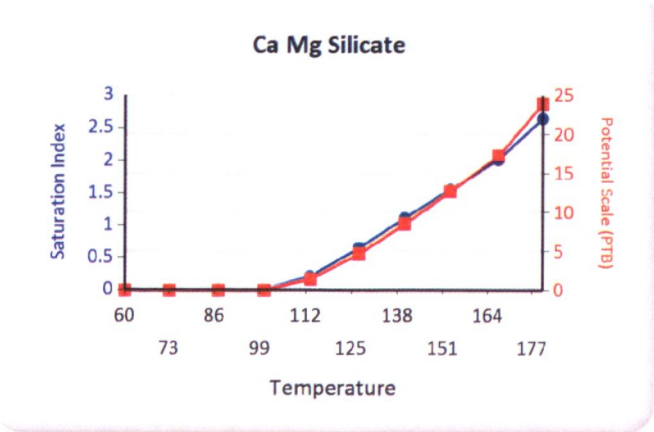
		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
180.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	2.65	10.31	0.00	0.00	4.79	45.53	2.64	23.96	11.72	46.39
167.00	267.00	0.00	0.00	0.00	0.00	0.00	0.00	2.44	10.29	0.00	0.00	3.78	32.80	2.01	17.27	10.86	46.12
153.00	483.00	0.00	0.00	0.00	0.00	0.00	0.00	2.26	10.26	0.00	0.00	3.01	24.38	1.55	12.72	10.27	45.81
140.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	2.07	10.22	0.00	0.00	2.25	16.78	1.10	8.50	9.68	45.33
127.00	917.00	0.00	0.00	0.00	0.00	0.00	0.00	1.87	10.15	0.00	0.00	1.48	10.15	0.64	4.71	9.10	44.62
113.00	1133.00	0.00	0.00	0.00	0.00	0.00	0.00	1.67	10.03	0.00	0.00	0.71	4.51	0.20	1.39	8.53	43.63
100.00	1350.00	0.00	0.00	0.00	0.00	0.00	0.00	1.45	9.82	0.00	0.00	0.00	0.00	0.00	0.00	7.97	42.28
87.00	1567.00	0.00	0.00	0.00	0.00	0.00	0.00	1.22	9.47	0.00	0.00	0.00	0.00	0.00	0.00	7.42	40.58
73.00	1783.00	0.00	0.00	0.00	0.00	0.00	0.00	0.98	8.86	0.00	0.00	0.00	0.00	0.00	0.00	6.89	38.51
60.00	2000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.73	7.78	0.00	0.00	0.00	0.00	0.00	0.00	6.37	36.14

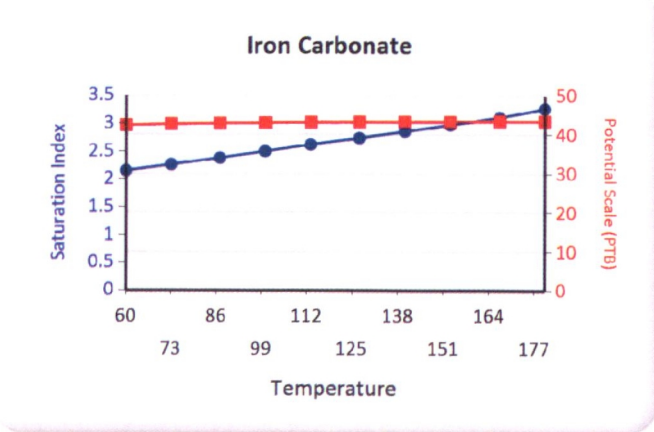
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Carbonate Zinc Carbonate Mg Silicate Ca Mg Silicate Fe Silicate

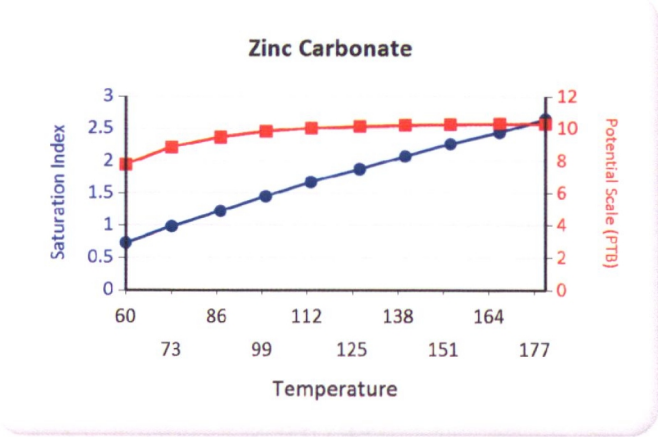
These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Carbonate Zinc Carbonate Fe Silicate

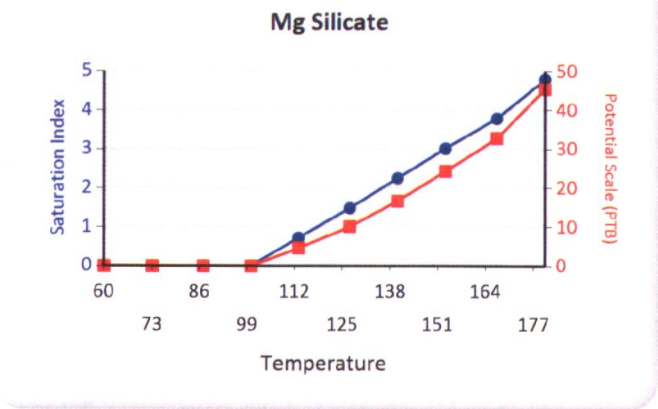


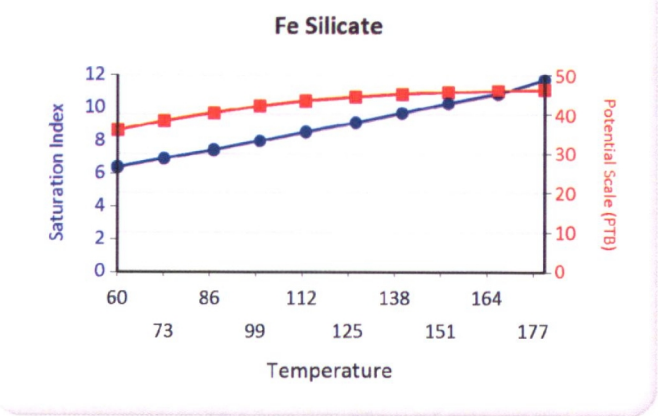







Zinc Carbonate
Saturation Index
Potential Scale (PTB)
Temperature
0
0.5
1
1.5
2
2.5
3
0
2
4
6
8
10
12
60
73
86
99
112
125
138
151
164
177


Mg Silicate
Saturation Index
Potential Scale (PTB)
Temperature
0
1
2
3
4
5
0
10
20
30
40
50
60
73
86
99
112
125
138
151
164
177


Fe Silicate
Saturation Index
Potential Scale (PTB)
Temperature
0
2
4
6
8
10
12
0
10
20
30
40
50
60
73
86
99
112
125
138
151
164
177

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

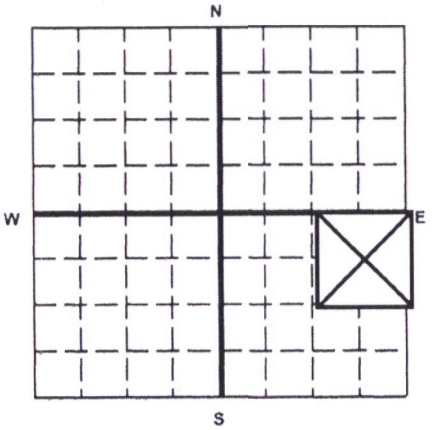
EPA

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	UT2736-04204

Surface Location Description

___ 1/4 of ___ 1/4 of NE 1/4 of SE 1/4 of Section 18 Township 5S Range 3W

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

Surface Location 2151 ft. frm (N/S) S Line of quarter section and 667 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 18-09

		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	2014	2054	102		0	0
February	14	1966	1967	174		0	0
March	14	2032	2048	283		0	0
April	14	1754	2051	250		0	0
May	14	2054	2062	581		0	0
June	14	2046	2067	444		0	0
July	14	2012	2039	280		0	0
August	14	2017	2032	327		0	0
September	14	2024	2055	300		0	0
October	14	2050	2048	344		0	0
November	14	2041	2049	280		0	0
December	14	1999	2009	317		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 3/23/15
Initial GW

TAB	GREEN	BLUE	CBI
		2	

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 18-09 INJ, DUCHESNE**	Lab Tech:	**Gary Winegar**
Sample Point:	**WELLHEAD**		
Sample Date:	**1/7/2015**		
Sample ID:	**WA-297468**		

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):	1.0015
pH:	6.80
Calculated TDS (mg/L):	6315.93
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):	1670.36	Chloride (Cl):	3000.00
Potassium (K):	33.23	Sulfate (SO_4):	216.00
Magnesium (Mg):	50.46	Bicarbonate (HCO_3):	1220.00
Calcium (Ca):	92.22	Carbonate (CO_3):	
Strontium (Sr):	4.96	Acetic Acid (CH_3COO)	
Barium (Ba):	3.41	Propionic Acid (C_2H_5COO)	
Iron (Fe):	0.66	Butanoic Acid (C_3H_7COO)	
Zinc (Zn):	0.11	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Lead (Pb):	0.02	Fluoride (F):	
Ammonia NH_3:		Bromine (Br):	
Manganese (Mn):	0.08	Silica (SiO_2):	24.42

Notes:
B=3.29 Al=0 Li=1.01

(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	0.14	13.85	1.69	1.99	0.91	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.28	0.06
88.00	157.00	0.09	8.33	1.61	1.98	0.76	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.03	0.06
97.00	300.00	0.12	11.50	1.53	1.97	0.74	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.90	0.06
106.00	443.00	0.16	14.83	1.46	1.96	0.73	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.79	0.06
115.00	585.00	0.19	18.29	1.40	1.95	0.72	0.29	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	7.69	0.06
124.00	728.00	0.24	21.84	1.34	1.94	0.73	0.29	0.09	0.09	0.00	0.00	0.00	0.00	0.00	0.00	7.59	0.06
133.00	871.00	0.28	25.45	1.29	1.92	0.74	0.29	0.16	0.15	0.00	0.00	0.00	0.00	0.00	0.00	7.50	0.06
142.00	1014.00	0.33	29.11	1.24	1.91	0.75	0.29	0.22	0.19	0.00	0.00	0.00	0.00	0.00	0.00	7.42	0.06
151.00	1157.00	0.37	32.75	1.20	1.90	0.77	0.30	0.29	0.23	0.00	0.00	0.00	0.00	0.00	0.00	7.35	0.06
160.00	1300.00	0.42	36.38	1.16	1.89	0.80	0.30	0.35	0.26	0.00	0.00	0.00	0.00	0.00	0.00	7.28	0.06

		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	0.00	0.00	9.81	0.01	0.00	0.00	0.00	0.00	0.00	0.00
88.00	157.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.45	0.01	0.00	0.00	0.00	0.00	0.00	0.00
97.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.22	0.01	0.00	0.00	0.00	0.00	0.00	0.00
106.00	443.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
115.00	585.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.80	0.01	0.00	0.00	0.00	0.00	0.00	0.00
124.00	728.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.62	0.01	0.00	0.00	0.00	0.00	0.00	0.00
133.00	871.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.44	0.01	0.00	0.00	0.00	0.00	0.00	0.00
142.00	1014.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.28	0.01	0.00	0.00	0.00	0.00	0.00	0.00
151.00	1157.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.12	0.01	0.00	0.00	0.00	0.00	0.00	0.00
160.00	1300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.98	0.01	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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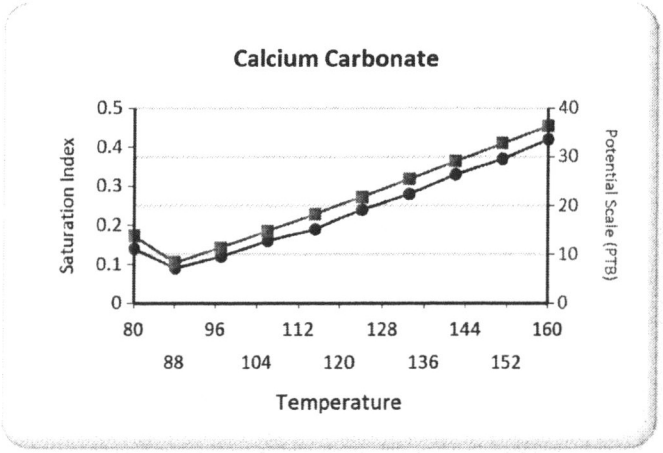
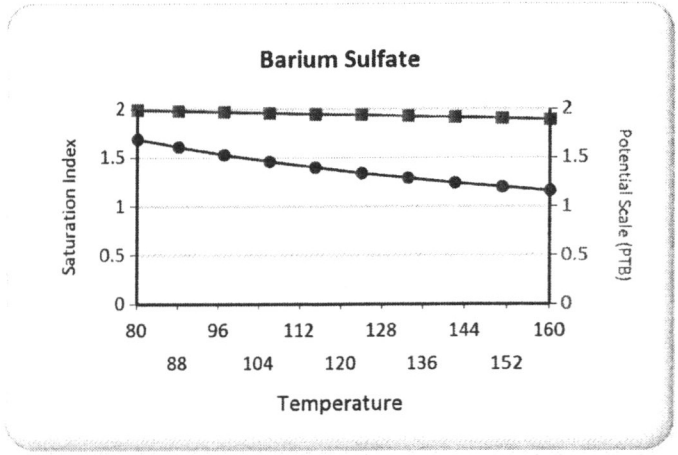
A HALLIBURTON SERVICE

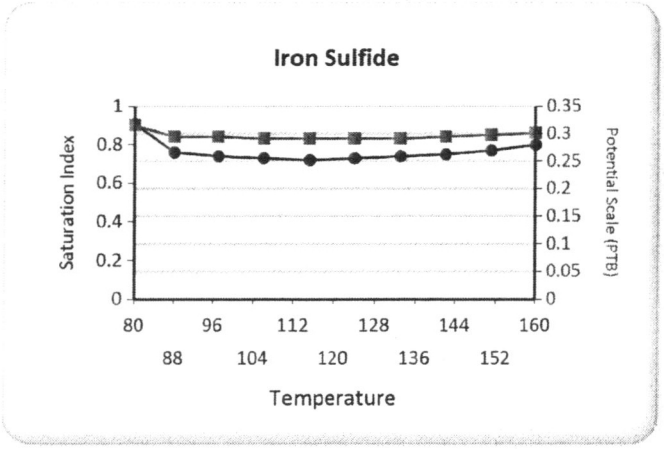
Water Analysis Report

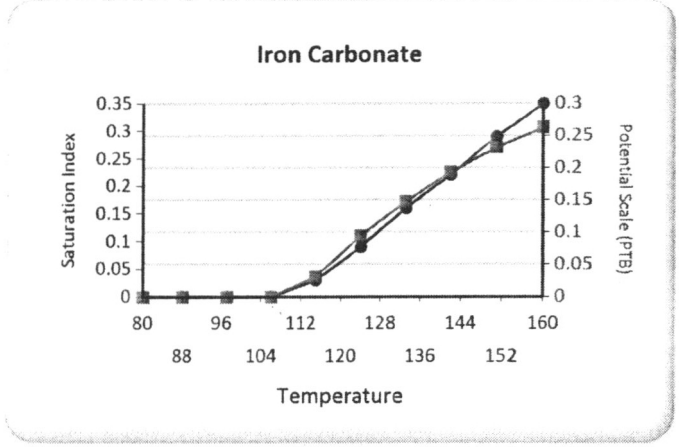
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Zinc Sulfide Lead Sulfide

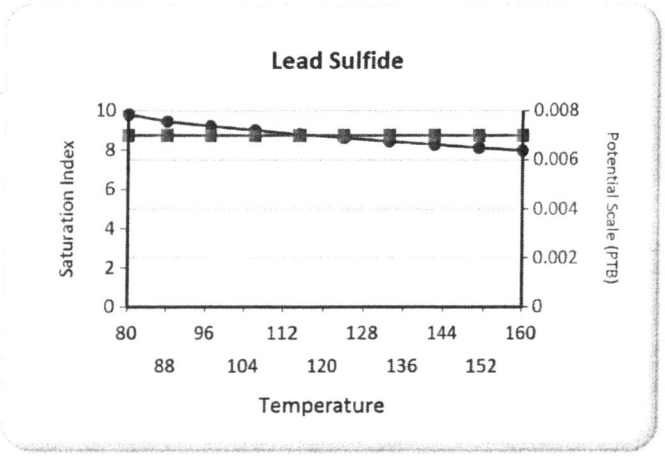
These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Lead Sulfide

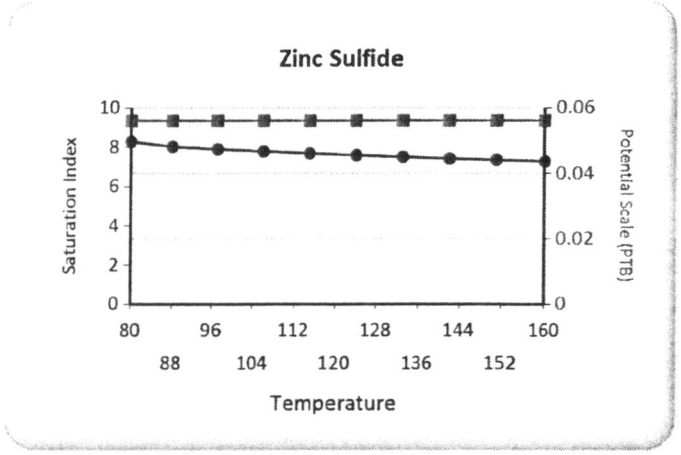












RECEIVED

FEB 05 2015

Office of Enforcement, Compliance
and Environmental Justice (UFO)

January 27, 2014

Don Breffle
Mail Code: 8ENF-UFO
US EPA Region 8
1595 Wyncoop Street
Denver, CO 80202-1129

RE: EPA AREA PERMIT NO. UT2736-04204
Mechanical Integrity Test
Standard Five year retesting for Ute Tribal 18-09

Mr. Breffle:
The enclose Mechanical Integrity Test was performed on the above referenced well on January 18, 2015. This MIT was performed because the well was due for the regular five year Mechanical Integrity Test.

If you need any more information please call at (435) 722-5302.

Sincerely,
Petroglyph Operating Co., Inc.

Rodrigo Jurado
Regulatory Compliance Specialist

Encl: MIT for the Ute Tribal 18-09

U2 Entered
Date 2/5/15
Initial JB

TAB	GREEN	BLUE	CB
		2	

Mechanical Integrity Test
Tubing/Casing Annulus Pressure Test

U.S. Environmental Protection Agency
Underground Injection Control Program
1595 Wynkoop Street, Denver, CO 80202

EPA Witness: _____ Date: 1/18/15
Test conducted by: CHAD STEVENSON
Others present: _____

Well Name: 18-09 Type: ER SWD **Status: AC TA UC**
Field: ANTELOPE CREEK
Location: 18-09 Sec: ____ T ____ N / S R ____ E / W County: DUCHESNE State: UT
Operator: PETROGLYPH ENERGY
Last MIT: ____/____/____ **Maximum Allowable Pressure:** _____ **PSIG**

Regularly scheduled test? [X] Yes [ ] No
Initial test for permit? [ ] Yes [ ] No
Test after well rework? [ ] Yes [ ] No

Well injecting during test? If Yes, rate: 19 **bpd**
Pre-test annulus pressure: _____ **psig**

MIT DATA TABLE	*Test #1*	*Test #2*	*Test #3*
TUBING		***PRESSURE RECORD***	
Initial Pressure	2030 psig	psig	psig
End of test pressure	2030 psig	psig	psig
CASING / TUBING ANNULUS		***PRESSURE RECORD***	
0 minutes	1100 psig	psig	psig
5 minutes	1100 psig	psig	psig
10 minutes	1100 psig	psig	psig
15 minutes	1100 psig	psig	psig
20 minutes	1100 psig	psig	psig
25 minutes	1100 psig	psig	psig
30 minutes	1100 psig	psig	psig
3 HOURS *minutes*	1100 psig	psig	psig
____ *minutes*	psig	psig	psig
RESULT	*[ ] Pass [ ]Fail*	*[ ] Pass [ ]Fail*	*[ ] Pass [ ]Fail*

Does the annulus pressure build back up after the test ? If Yes, _____ psig.

GRAPHIC CONTROLS CORPORATION
BUFFALO, NEW YORK
CHART NO. MC MP-3000
METER 1-18-15
CHART PUT ON 11:15 A.M.
LOCATION 18-09
TAKEN OFF 2:30 P.M.
REMARKS
MIDNIGHT
6 AM
NOON
6 PM
Start Tuesday 3:30pm
PSI 3030
Stop Wednesday 7:30am
PSI 1100
Start Tuesday 11:15am
PSI 3030
Stop Wednesday 11:15am
PSI 1100

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

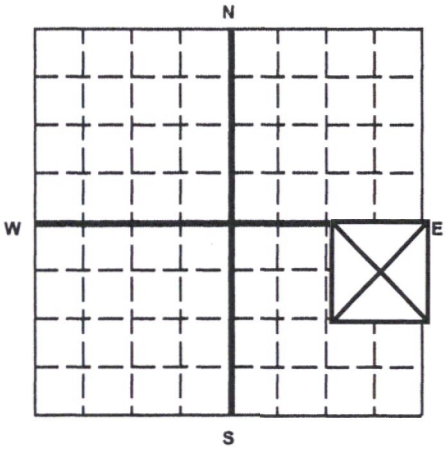
United States Environmental Protection Agency
Washington, DC 20460

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	UT2736-04204

Surface Location Description
___ 1/4 of ___ 1/4 of NE 1/4 of SE 1/4 of Section 18 Township 5S Range 3W

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

Surface Location 2151 ft. frm (N/S) S Line of quarter section
and 667 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 18-09

		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	1938	2058	23		0	0
February	13	1822	1848	0		0	0
March	13	1884	2038	67		0	0
April	13	1977	2054	85		0	0
May	13	1951	2061	139		0	0
June	13	1949	1973	46		0	0
July	13	1019	2044	26		0	0
August	13	1444	1447	0		0	0
September	13	1845	2018	589		0	0
October	13	2028	2045	640		0	0
November	13	2044	2069	266		0	0
December	13	1972	2067	124		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 possibility 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)

CBI

UIC Entered
Date 2/20/14
Initial

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 18-09 INJ**
Sample Point: **Wellhead**
Sample Date: **1/8/2014**
Sample ID: **WA-262975**

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):	1.002
pH:	8.30
Calculated TDS (mg/L):	6429.27
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):	2147.75	Chloride (Cl):	3000.00
Potassium (K):	50.00	Sulfate (SO_4):	305.00
Magnesium (Mg):	45.00	Bicarbonate (HCO_3):	756.40
Calcium (Ca):	95.00	Carbonate (CO_3):	
Strontium (Sr):	4.30	Acetic Acid (CH_3COO)	
Barium (Ba):	1.60	Propionic Acid (C_2H_5COO)	
Iron (Fe):	2.30	Butanoic Acid (C_3H_7COO)	
Zinc (Zn):	0.28	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Lead (Pb):	0.00	Fluoride (F):	
Ammonia NH_3:		Bromine (Br):	
Manganese (Mn):	0.24	Silica (SiO_2):	21.40

Notes:
B=2.4 Al=0 Li=.51

(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	1.32	36.67	1.69	0.93	0.00	0.00	1.43	1.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
73.00	157.00	1.32	35.88	1.54	0.93	0.00	0.00	1.49	1.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
86.00	300.00	1.35	37.64	1.41	0.91	0.00	0.00	1.56	1.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	443.00	1.38	39.66	1.30	0.90	0.00	0.00	1.64	1.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
113.00	585.00	1.41	41.91	1.20	0.89	0.00	0.00	1.71	1.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
126.00	728.00	1.45	44.37	1.12	0.88	0.00	0.00	1.78	1.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140.00	871.00	1.49	47.02	1.05	0.87	0.00	0.00	1.85	1.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
153.00	1014.00	1.54	49.83	0.99	0.86	0.00	0.00	1.92	1.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
166.00	1157.00	1.58	52.74	0.94	0.84	0.00	0.00	1.98	1.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
180.00	1300.00	1.64	55.71	0.90	0.83	0.00	0.00	2.05	1.66	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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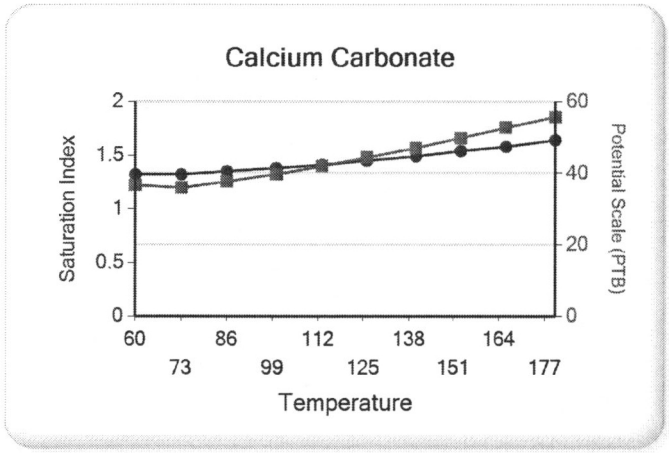
A HALLIBURTON SERVICE

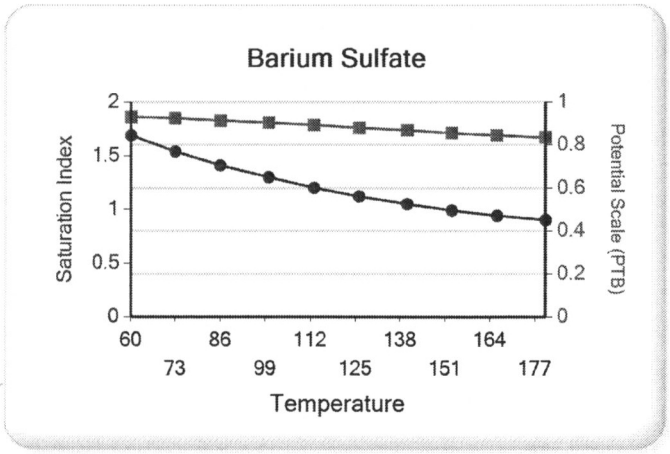
Water Analysis Report

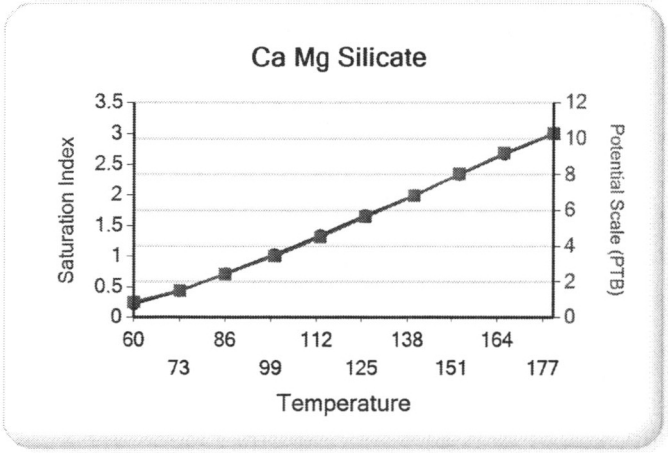
		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
60.00	14.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.86	2.74	0.22	0.86	5.81	1.76
73.00	157.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.30	3.89	0.43	1.50	5.99	1.76
86.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.04	0.00	0.00	1.85	5.56	0.72	2.45	6.30	1.77
100.00	443.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.09	0.00	0.00	2.43	7.39	1.03	3.45	6.64	1.77
113.00	585.00	0.00	0.00	0.00	0.00	0.00	0.00	0.46	0.12	0.00	0.00	3.01	9.42	1.35	4.51	6.99	1.78
126.00	728.00	0.00	0.00	0.00	0.00	0.00	0.00	0.62	0.14	0.00	0.00	3.60	11.69	1.67	5.65	7.37	1.78
140.00	871.00	0.00	0.00	0.00	0.00	0.00	0.00	0.78	0.16	0.00	0.00	4.20	14.20	2.00	6.83	7.76	1.78
153.00	1014.00	0.00	0.00	0.00	0.00	0.00	0.00	0.92	0.16	0.00	0.00	4.79	16.86	2.34	8.04	8.16	1.78
166.00	1157.00	0.00	0.00	0.00	0.00	0.00	0.00	1.05	0.17	0.00	0.00	5.38	19.51	2.67	9.21	8.56	1.78
180.00	1300.00	0.00	0.00	0.00	0.00	0.00	0.00	1.18	0.18	0.00	0.00	5.96	21.87	3.00	10.30	8.96	1.79

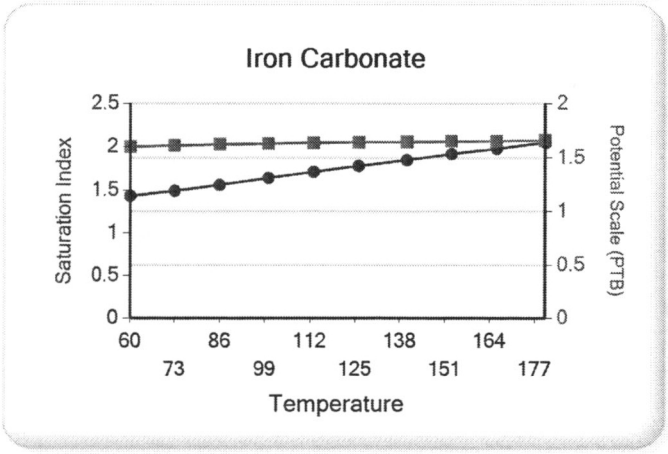
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Carbonate Mg Silicate Ca Mg Silicate Fe Silicate

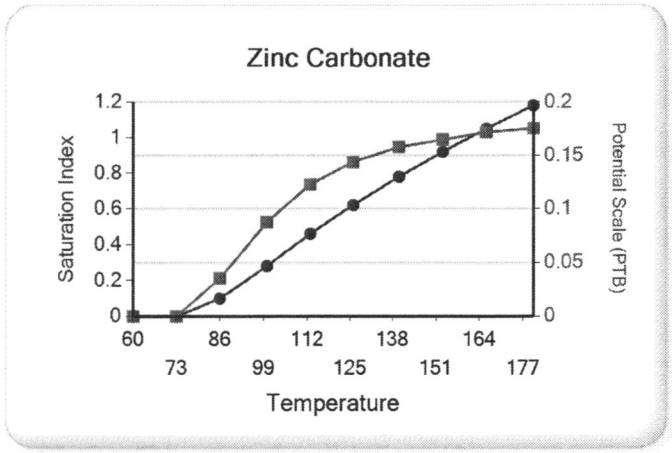
These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Carbonate Zinc Carbonate Mg Silicate Ca Mg Silicate Fe Silicate

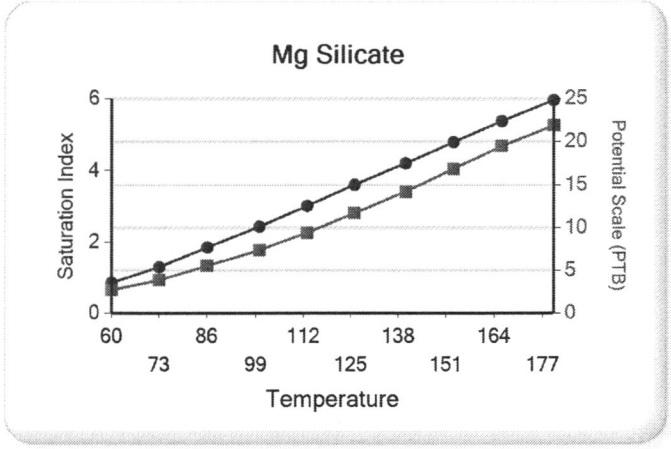


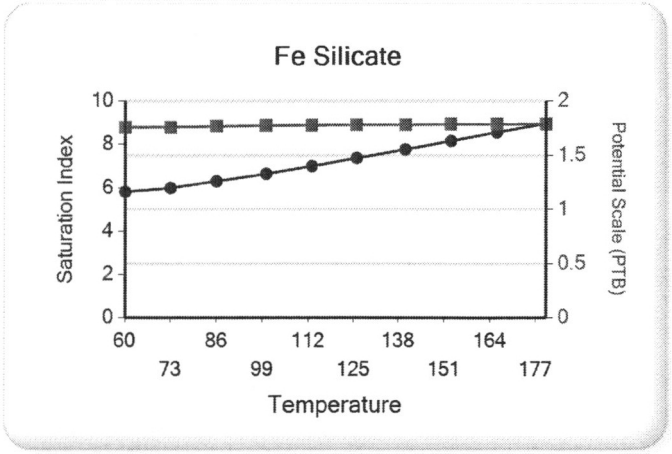







Zinc Carbonate
Saturation Index
Potential Scale (PTB)
Temperature
1.2
1
0.8
0.6
0.4
0.2
0
0.2
0.15
0.1
0.05
0
60
86
112
138
164
73
99
125
151
177


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


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

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

AUG 30 1994

Ref: 8WM-DW

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

R. A. Christensen
President
Petroglyph Operating Company, Inc.
6209 North Highway 61
Hutchinson, Kansas 67502

RE: UNDERGROUND INJECTION CONTROL (UIC)
Authorization to Inject
Antelope Creek Field Waterflood
EPA Area Permit No. UT2736-00000
Duchesne County, Utah

Dear Mr. Christensen: #1-8

Thank you for the recently submitted Well Rework Records and mechanical integrity test results for the Ute Tribal enhanced recovery wells #1-18, #4-18, and #5-18 in the Antelope Creek Field. Petroglyph has complied with all pertinent conditions [Part II, C. 1.] of the area permit which includes these three wells, and may begin injection operations.

Please be aware of the monitoring, recordkeeping, and reporting obligations described in Part II, Section D of the permit. If you have any questions on this action, you may call Chuck Williams at (303) 293-1550. Also, please direct all correspondence to the attention of Chuck Williams at Mail Code 8WM-DW.

Sincerely,

John A. Carson

for Thomas J. Pike
Chief
UIC Implementation Section

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

AUG 30 1994

Ref: 8WM-DW

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Sean under
UT2736-04204
Authorization to
Inject - Final

R. A. Christensen
President
Petroglyph Operating Company, Inc.
6209 North Highway 61
Hutchinson, Kansas 67502

RE: UNDERGROUND INJECTION CONTROL (UIC)
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EPA Area Permit No. UT2736-00000
Duchesne County, Utah

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John A. Carson

for Thomas J. Pike
Chief
UIC Implementation Section

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

#4098C

JUL 23 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: **UNDERGROUND INJECTION CONTROL (UIC)**
APPROVAL TO INCREASE MAXIMUM
SURFACE INJECTION PRESSURE
EPA Area Permit No. UT2736-00000
Ute Tribal No. 18-09
EPA Well Authority No. UT2736-04204
Antelope Creek Waterflood
Duchesne County, Utah

Dear Mr. Safford:

The Environmental Protection Agency (EPA) Antelope Creek Final Area Permit UT2736-00000 (Effective July 12, 1994) Part II, Section C. 5. (b), permits the "Director" to authorize, by letter, an increase in the maximum surface injection pressure (MIP) for the Ute Tribal No. 18-09, following receipt and approval of a valid step-rate test (SRT).

On July 3, 2001, Petroglyph Energy, Inc. (Petroglyph) submitted an SRT to the EPA, dated June 27, 2001. The SRT was received by the EPA on July 6, 2001. The SRT was reviewed and approved by the EPA on July 9, 2001. The SRT shows the fracture gradient (FG) for the Green River Formation injection interval between the approximate depths of 4442' and 5377' to be 0.910 psi/ft.

As of the date of this letter, the EPA authorizes an increase in the maximum surface injection pressure (MIP) from 1900 psig to 2100 psig. The following modified injection pressure will provide for higher injectivity capacity which will improve the waterflood efficiency without endangering any underground sources of drinking water (USDWs).

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

(#4098C)

JUL 23 2001

Scan under
UT20736 - 04204
MAIP Change
Request

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: **UNDERGROUND INJECTION CONTROL (UIC)**
APPROVAL TO INCREASE MAXIMUM
SURFACE INJECTION PRESSURE
EPA Area Permit No. UT2736-00000
Ute Tribal No. 18-09
EPA Well Authority No. UT2736-04204
Antelope Creek Waterflood
Duchesne County, Utah

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FG	=	0.910 psi/ft
D	=	4442 feet: Top perforation
SG	=	Specific gravity of injectate: 1.01
0.433	=	Density of injectate fluid

MIP = [(0.910) - (.433)(1.01)] 4442

MIP = 2100 psig

Please send all compliance correspondence relative to this well to the **ATTENTION: Nathan Wiser, at the letterhead address, citing Mail Code: 8ENF-T very prominently.** You may call Mr. Wiser at 303.312.6211.

All other provisions and conditions of the Permit remain as originally issued July 12, 1994 and Revised April 30, 1998.

Sincerely,

for Stephen Tuber

Kerrigan G. Clough
Assistant Regional Administrator
Office of Partnerships and
Regulatory Assistance

cc: Mr. D. Floyd Wopsock, Chairman
Uintah & Ouray Business Committee
Ute Indian Tribe

Ms. Elaine Willie, Environmental Coordinator
Ute Indian Tribe

Norman Cambridge
BIA - Uintah & Ouray Agency

Mr. Jerry Kenczka
BLM - Vernal District Office

Mr. Gilbert Hunt
State of Utah Natural Resources
Division of Oil, Gas & Mining

Mr. Nathan Wiser
8ENF-T

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to: 7/23/01 CW 4098C – 4100C
Mr. Micheal Safford
Operations Coordinator
Petroglyph Operating Co., Inc.
P.O. Box 607
Roosevelt, UT 84066

JUL 23 2001

COMPLETE THIS SECTION ON DELIVERY

A. Received by (Please Print Clearly) B. Date of Delivery 7/30/01

C. Signature
X
☐ Agent
☒ Addressee

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

JUL 30 2001

3. Service Type
XX Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article Number (Copy from service label) ORIGINAL GREEN CARD
Z 159 952 415 UTE TRIBAL NO. 18-09 (UT2736-04204)
(#4098C)

PS Form 3811, July 1999 Domestic Return Receipt 102595-00-M-0952

7/23/01 To Micheal Safford
Certified Petroglyph Operating Co., Inc.
Mailed together
1. Original Green card; (#4098C)
Ute Tribal #18-09 (UT2736-04204)
(#4099C)
2. Ute Tribal #08-06 (UT2736-04203)
(#4100C)
3. Ute Tribal #18-08 (UT2736-04355)

~~Z 159 952 415~~ OK!

US Postal Service 7/23/01 CW 4098C –
Receipt for Certified Mail 4100C
No Insurance Coverage Provided.
Do not use for International Mail (See reverse)

Sent to Mr. Micheal Safford	
Street & Number Operations Coordinator	
Post Office, State, & ZIP Code Petroglyph Operating Co., Inc. P.O. Box 607 Roosevelt, UT 84066	
Postage	$
Certified Fee Original green card	
Special Delivery Fee Ute Tribal #18-09	
Restricted Delivery Fee (UT2736-04204)	
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

Z 159 952 415

US Postal Service 7/23/01 CW 4098C –
Receipt for Certified Mail 4100C
No Insurance Coverage Provided.
Do not use for International Mail (See reverse)

Sent to Mr. Micheal Safford	
Street & Number Operations Coordinator	
Post Office, State, & ZIP Code Petroglyph Operating Co., Inc. P.O. Box 607 Roosevelt, UT 84066	
Postage	$
Certified Fee Original green card	
Special Delivery Fee Ute Tribal 18-09	
Restricted Delivery Fee (UT2736-04204)	
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