Inspection Report For Well: UT20736 - 04365

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

This form was printed on 9/24/2013

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

Others: Ajayi, Christopher — Time: 12:15 am / pm

OPERATOR (only if different): _____

REPRESENTATIVE(S): Chad Stevinson

PRE-INSPECTION REVIEW

Petroglyph Operating Company, Inc

Well Name:	Ute Tribal 21-11		
Well Type:	Enhanced Recovery (2R)		
Operating Status:	AC (ACTIVE) as of 12/31/2002		
Oil Field:	Antelope Creek (Duchesne)		
Location:	NESW S21 T5S R3W		
Indian Country:	X, Uintah and Ouray		
Last Inspection:	8/28/2012	***Allowable Inj Pressure:***	2196 /
Last MIT:	Pass 2/8/2012	***Annulus Pressure From Last MIT:***	1940

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 12/20/13
Initials DB

OBSERVED VALUES:

Tubing Gauge:	[x] Yes [ ] No	Pressure: U: 2031 / 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)
- [x] Active
- [ ] Being Reworked
- [ ] Not Injecting
- [ ] Production
- [ ] Plugged and Abandoned
- [ ] Under Construction

U2 Entered
Date 12/17/13
Initial SR

GREEN	BLUE	CBI
	1	

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

Inspection Report For Well: UT20736 - 04365 (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

United States Environmental Protection Agency
Washington, DC 20460

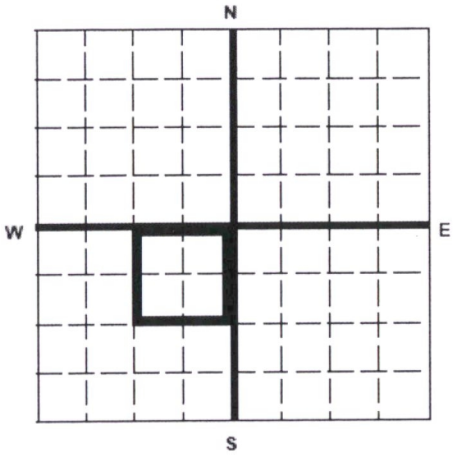
EPA

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	UT2736-04365

Surface Location Description

___ 1/4 of 1/4 of NE 1/4 of SW 1/4 of Section 21 Township 5S Range 3W

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

Surface Location 2057 ft. frm (N/S) S Line of quarter section
and 2141 ft. from (E/W) W 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 21-11

		INJECTION PRESSURE		TOTAL VOLUME INJECTED		TUBING -- CASING ANNULUS PRESSURE (OPTIONAL MONITORING)	
MONTH	YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG
January	16	1899	1939	1989		0	0
February	16	1983	2010	2294		0	0
March	16	1996	2005	2393		0	0
April	16	1967	1992	2139		0	0
May	16	1966	1989	2283		0	0
June	16	1949	2001	2250		0	0
July	16	1949	1970	2082		0	0
August	16	1943	1983	2125		0	0
September	16	1923	1955	2031		0	0
October	16	1934	1955	1752		0	0
November	16	1862	1923	1378		0	0
December	16	1906	1931	1941		0	0

Certification

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

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

GREEN BLUE CBI
TAB 2

UIC Entered
Date 4/5/17
Initial DB

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

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

multi-chem
A HALLIBURTON SERVICE

Units of Measurement: **Standard**

Water Analysis Report

Production Company:	**PETROGLYPH OPERATING CO INC - EBUS**	Sales Rep:	**James Patry**
Well Name:	**UTE TRIBAL 21-11 INJ, DUCHESNE**	Lab Tech:	**Kaitlyn Natelli**
Sample Point:	**Well Head**		
Sample Date:	**1/6/2017**		
Sample ID:	**WA-345328**		

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

Sample Specifics

Test Date:	1/26/2017
System Temperature 1 (°F):	300
System Pressure 1 (psig):	2000
System Temperature 2 (°F):	130
System Pressure 2 (psig):	50
Calculated Density (g/ml):	0.9982
pH:	7.00
Calculated TDS (mg/L):	1418.46
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	50.00
H_2S in Gas (%):	
H2S in Water (mg/L):	5.00
Tot. SuspendedSolids(mg/L):	
Corrosivity(LanglierSat.Indx)	0.00
Alkalinity:	

Analysis @ Properties in Sample Specifics

Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	290.35	Chloride (Cl):	32.00
Potassium (K):	3.41	Sulfate (SO_4):	140.00
Magnesium (Mg):	24.65	Bicarbonate (HCO_3):	854.00
Calcium (Ca):	48.01	Carbonate (CO_3):	
Strontium (Sr):	0.66	Hydroxide(HO):	
Barium (Ba):	0.30	Acetic Acid (CH_3COO)	
Iron (Fe):	17.48	Propionic Acid (C_2H_5COO)	
Zinc (Zn):	0.76	Butanoic Acid (C_3H_7COO)	
Lead (Pb):	0.04	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Ammonia NH_3:		Fluoride (F):	
Manganese (Mn):	0.10	Bromine (Br):	
Aluminum (Al):	0.21	Silica (SiO_2):	6.70
Lithium (Li):	2.67	Calcium Carbonate ($CaCO_3$):	
Boron (B):	0.52	Phosphates (PO_4):	3.77
Silicon (Si):	3.13	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	0.25	13.04	0.48	0.12	2.66	4.65	1.90	12.52	0.00	0.00	0.00	0.00	0.00	0.00	8.95	0.40
149.00	267.00	0.34	16.58	0.39	0.11	2.65	4.64	2.02	12.57	0.00	0.00	0.00	0.00	0.00	0.00	8.73	0.40
168.00	483.00	0.47	21.52	0.32	0.09	2.71	4.65	2.18	12.61	0.00	0.00	0.00	0.00	0.00	0.00	8.59	0.40
187.00	700.00	0.61	26.05	0.28	0.08	2.78	4.65	2.33	12.64	0.00	0.00	0.00	0.00	0.00	0.00	8.48	0.40
206.00	917.00	0.76	29.98	0.24	0.08	2.88	4.65	2.49	12.66	0.00	0.00	0.00	0.00	0.00	0.00	8.39	0.40
224.00	1133.00	0.92	33.24	0.23	0.07	2.99	4.66	2.64	12.67	0.00	0.00	0.00	0.00	0.00	0.00	8.32	0.40
243.00	1350.00	1.08	35.81	0.23	0.07	3.12	4.66	2.79	12.68	0.00	0.00	0.00	0.00	0.00	0.00	8.27	0.40
262.00	1567.00	1.26	37.74	0.24	0.07	3.26	4.66	2.93	12.69	0.00	0.00	0.00	0.00	0.00	0.00	8.24	0.40
281.00	1783.00	1.44	39.14	0.26	0.08	3.42	4.67	3.07	12.70	0.00	0.00	0.00	0.00	0.00	0.00	8.22	0.40
300.00	2000.00	1.62	40.13	0.28	0.08	3.59	4.67	3.21	12.70	0.00	0.00	0.00	0.00	0.00	0.00	8.22	0.40

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

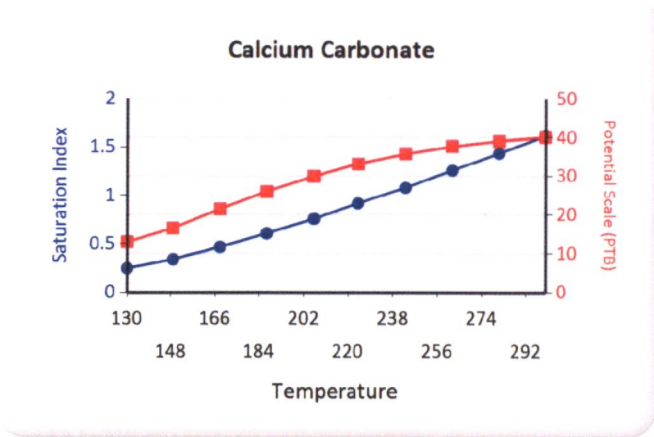
multi-chem
A HALLIBURTON SERVICE

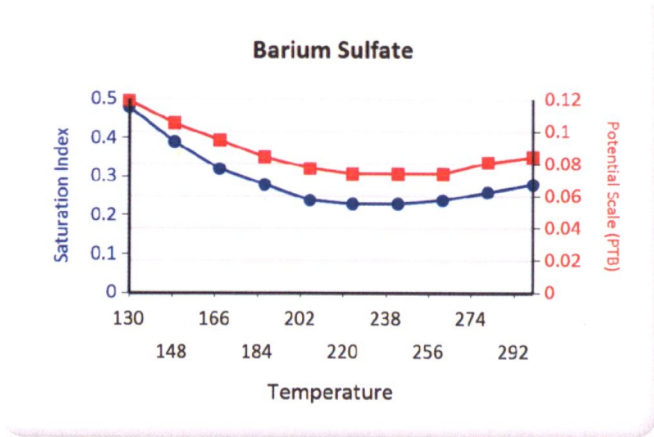
Water Analysis Report

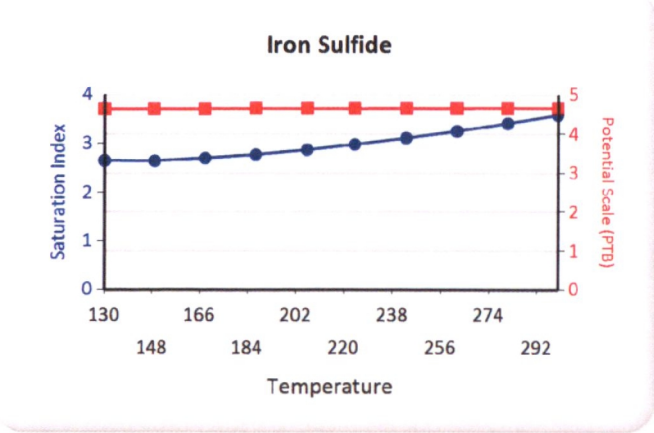
		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
130.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.25	9.38	0.02	0.00	0.00	0.00	0.00	3.28	10.38
149.00	267.00	0.00	0.00	0.00	0.00	0.00	0.00	0.52	0.35	8.99	0.02	0.00	0.00	0.00	0.00	3.88	11.25
168.00	483.00	0.00	0.00	0.00	0.00	0.00	0.00	0.77	0.42	8.69	0.02	0.00	0.00	0.00	0.00	4.73	12.13
187.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	1.01	0.46	8.43	0.02	0.00	0.00	0.00	0.00	5.59	12.72
206.00	917.00	0.00	0.00	0.00	0.00	0.00	0.00	1.23	0.48	8.20	0.02	0.00	0.00	0.00	0.00	6.48	13.11
224.00	1133.00	0.00	0.00	0.00	0.00	0.00	0.00	1.44	0.49	8.01	0.02	1.01	7.67	0.00	0.00	7.38	13.33
243.00	1350.00	0.00	0.00	0.00	0.00	0.00	0.00	1.64	0.50	7.85	0.02	2.09	13.07	0.08	0.62	8.28	13.46
262.00	1567.00	0.00	0.00	0.00	0.00	0.00	0.00	1.82	0.50	7.72	0.02	3.15	15.81	0.74	4.33	9.20	13.53
281.00	1783.00	0.00	0.00	0.00	0.00	0.00	0.00	1.99	0.50	7.61	0.02	4.21	16.87	1.39	6.59	10.11	13.56
300.00	2000.00	0.00	0.00	0.00	0.00	0.00	0.00	2.14	0.51	7.52	0.02	5.24	17.22	2.04	7.83	11.01	13.58

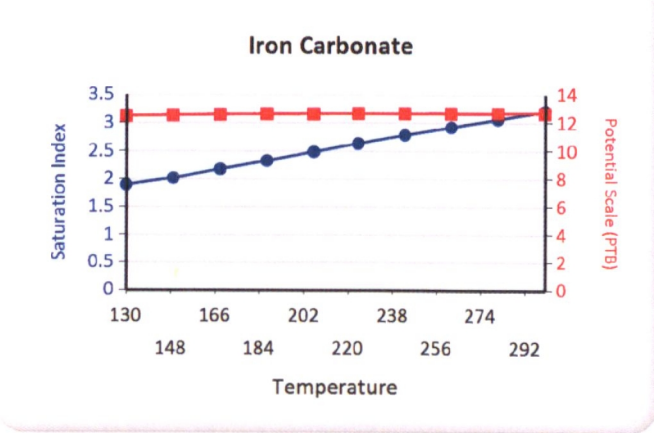
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Lead Sulfide Fe Silicate

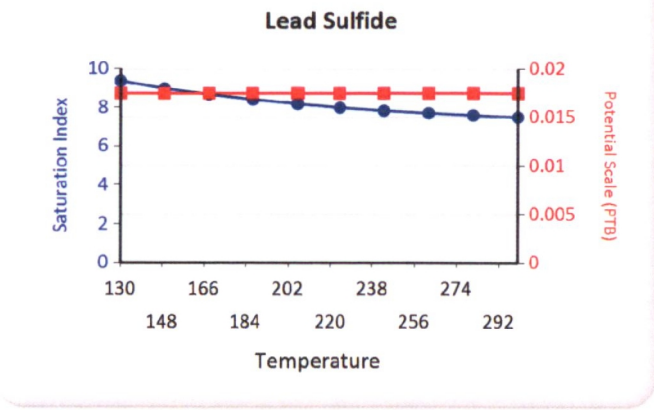
These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Lead Sulfide Mg Silicate Ca Mg Silicate Fe Silicate

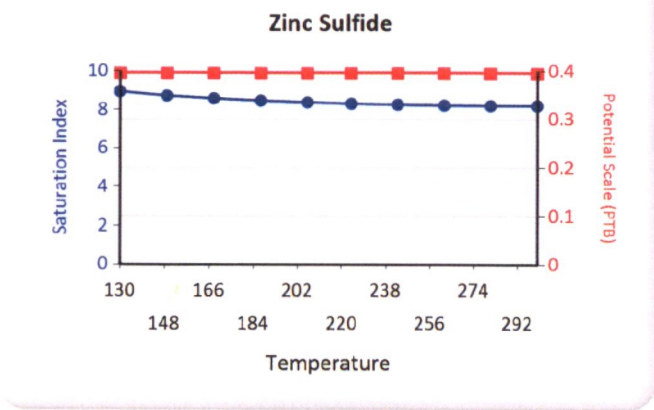


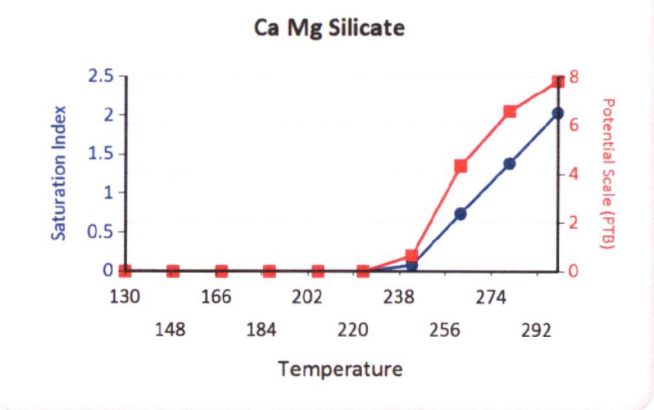


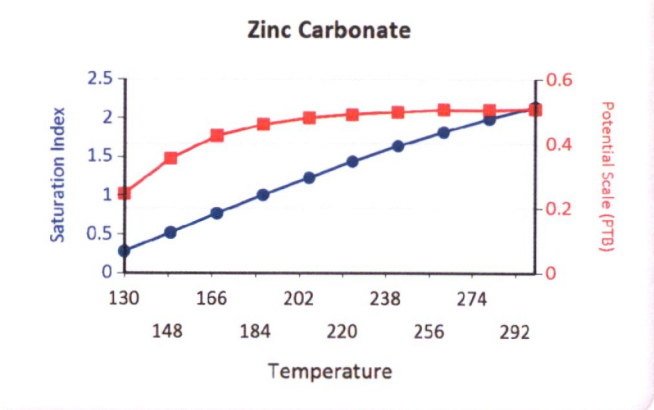





Lead Sulfide
Saturation Index
Potential Scale (PTB)
Temperature
130 166 202 238 274
148 184 220 256 292


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


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


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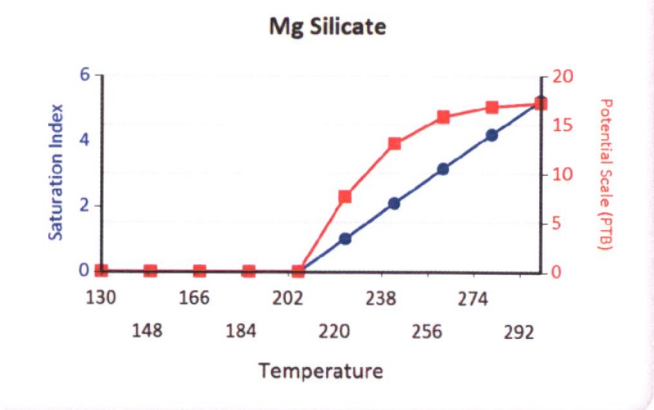
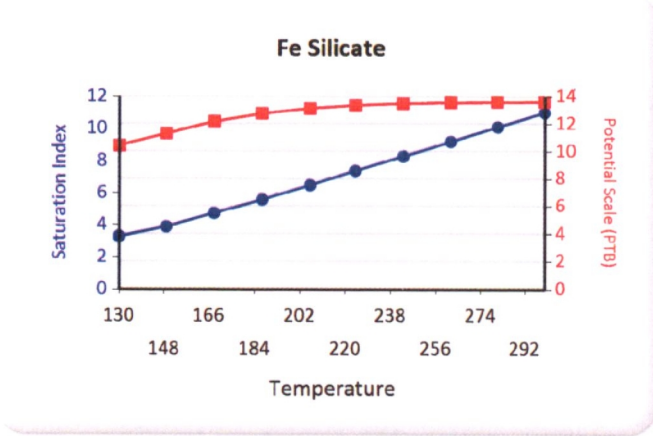
148 184 220 256 292


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


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

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

EPA

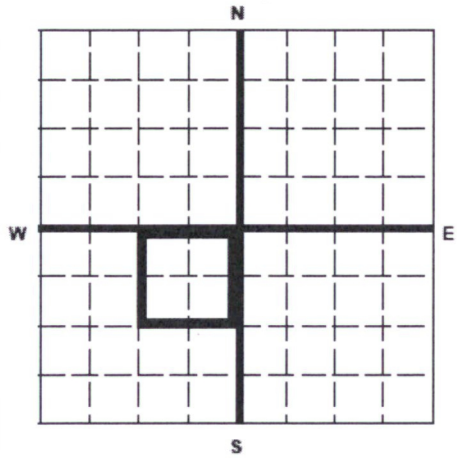
United States Environmental Protection Agency
Washington, DC 20460

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~~ 04365

Surface Location Description
___ 1/4 of ___ 1/4 of NE 1/4 of SW 1/4 of Section 21 Township 5S Range 3W

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

Surface Location 2057 ft. frm (N/S) S Line of quarter section
and 2141 ft. from (E/W) W Line of quarter section.

U2 Entered
Date 3/2/16
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 21-11

		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	1879	1919	2679		0	0
February	15	1933	1962	2542		0	0
March	15	1928	1962	2637		0	0
April	15	1911	1958	2468		0	0
May	15	1929	1944	2551		0	0
June	15	1939	1970	2583		0	0
July	15	1950	1968	2526		0	0
August	15	1899	1949	2077		0	0
September	15	1926	1957	2389		0	0
October	15	1892	1943	1962		0	0
November	15	1893	1903	2033		0	0
December	15	1939	1965	2419		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

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

TAB	GREEN	BLUE	CBI
		2	

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 21-11 INJ, DUCHESNE**	Lab Tech:	**Gary Peterson**
Sample Point:	**Well Head**		
Sample Date:	**1/6/2016**		
Sample ID:	**WA-327627**		

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

Sample Specifics

Test Date:	1/7/2016
System Temperature 1 (°F):	60
System Pressure 1 (psig):	2000
System Temperature 2 (°F):	180
System Pressure 2 (psig):	50
Calculated Density (g/ml):	1.0013
pH:	6.50
Calculated TDS (mg/L):	5697.98
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	40.00
H_2S in Gas (%):	
H2S in Water (mg/L):	0.00
Tot. SuspendedSolids(mg/L):	
Corrosivity(LanglierSat.Indx)	0.00
Alkalinity:	

Analysis @ Properties in Sample Specifics

Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	1741.35	Chloride (Cl):	2500.00
Potassium (K):	0.45	Sulfate (SO_4):	540.00
Magnesium (Mg):	81.98	Bicarbonate (HCO_3):	610.00
Calcium (Ca):	185.67	Carbonate (CO_3):	
Strontium (Sr):	5.27	Acetic Acid (CH_3COO)	
Barium (Ba):	0.18	Propionic Acid (C_2H_5COO)	
Iron (Fe):	4.27	Butanoic Acid (C_3H_7COO)	
Zinc (Zn):	0.20	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Lead (Pb):	0.47	Fluoride (F):	
Ammonia NH_3:		Bromine (Br):	
Manganese (Mn):	0.03	Silica (SiO_2):	28.11
Aluminum (Al):	0.08	Calcium Carbonate ($CaCO_3$):	
Lithium (Li):	1.05	Phosphates (PO_4):	3.72
Boron (B):	0.65	Oxygen (O_2):	
Silicon (Si):	13.14		

Notes:
S=186.12

(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	0.31	30.39	0.17	0.04	0.00	0.00	0.78	2.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
167.00	267.00	0.15	14.46	0.18	0.04	0.00	0.00	0.59	2.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
153.00	483.00	0.04	3.66	0.21	0.04	0.00	0.00	0.45	1.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140.00	700.00	0.00	0.00	0.25	0.05	0.00	0.00	0.32	1.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
127.00	917.00	0.00	0.00	0.30	0.05	0.00	0.00	0.19	1.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
113.00	1133.00	0.00	0.00	0.36	0.06	0.00	0.00	0.05	0.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	1350.00	0.00	0.00	0.44	0.07	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	0.53	0.08	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	0.64	0.08	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	0.76	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Multi-Chem Analytical Laboratory
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Vernal, UT 84078

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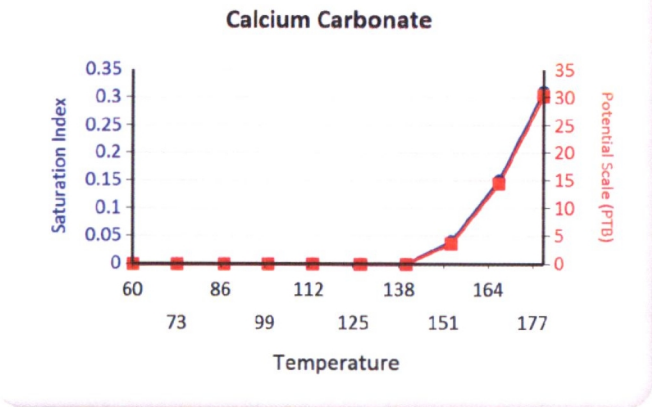
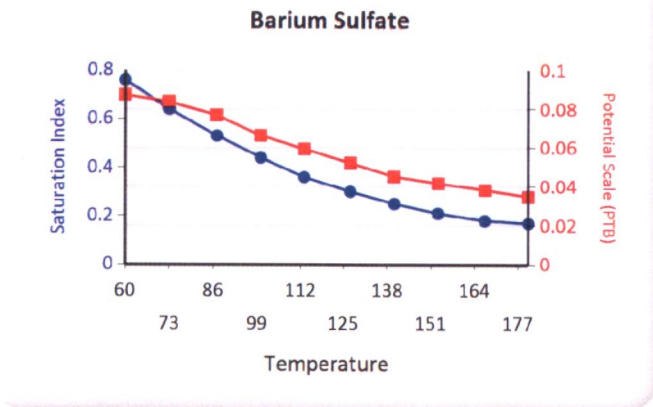
Water Analysis Report

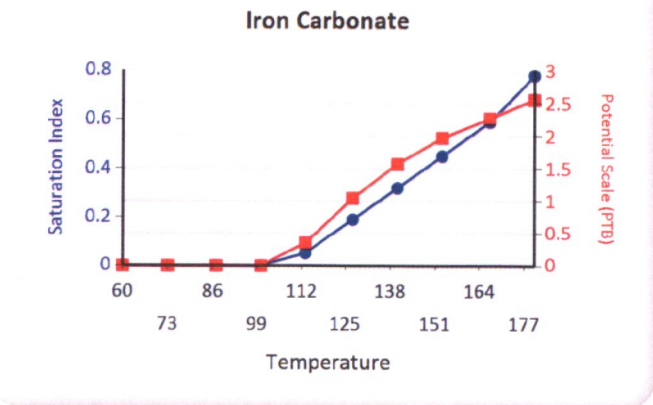
		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
180.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.40	2.10
167.00	267.00	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	0.39	0.79
153.00	483.00	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
140.00	700.00	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
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

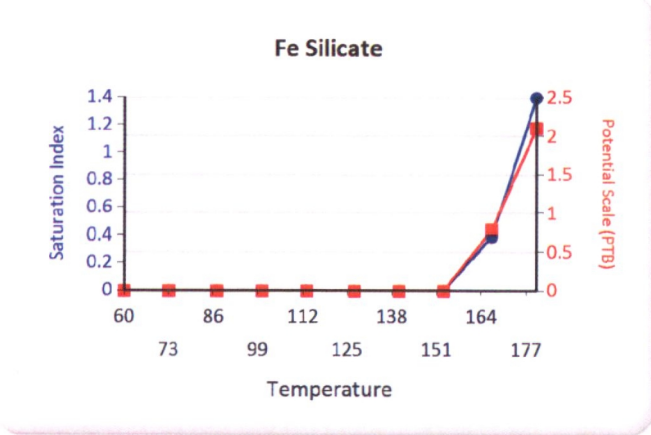
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Carbonate Fe Silicate

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








Fe Silicate
Saturation Index
1.4
1.2
1
0.8
0.6
0.4
0.2
0
Potential Scale (PTB)
2.5
2
1.5
1
0.5
0
60
73
86
99
112
125
138
151
164
177
Temperature

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

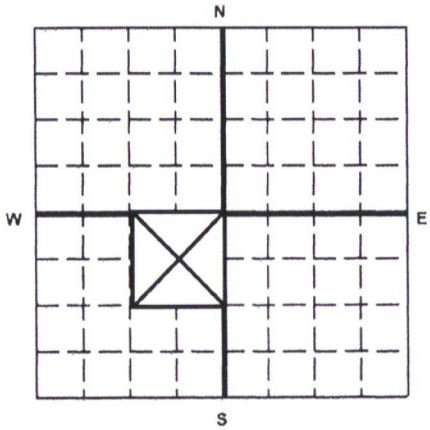
EPA

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	UT2736-04365

Surface Location Description

___ 1/4 of ___ 1/4 of NE 1/4 of SW 1/4 of Section 21 Township 5S Range 3W

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

Surface Location 2057 ft. frm (N/S) S Line of quarter section and 2141 ft. from (E/W) W 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 21-11

		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	1999	2012	0		0	0
February	14	1975	1983	0		0	0
March	14	1947	1958	0		0	0
April	14	1930	1937	0		0	0
May	14	1899	1909	0		0	0
June	14	625	1883	~~1134~~	931 inj mnthly	0	0
July	14	1324	1708	4250		0	0
August	14	1840	1861	4544		0	0
September	14	1805	1909	3583		0	0
October	14	1962	1972	3399		0	0
November	14	1988	2000	3415		0	0
December	14	1986	2014	3233		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 possiblity 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 3/9/15
Initial GW

	GREEN	BLUE	CBI
TAB		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 21-11 INJ, DUCHESNE**	Lab Tech:	**Gary Winegar**
Sample Point:	**WELLHEAD**		
Sample Date:	**1/7/2015**		
Sample ID:	**WA-297524**		

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):	1.0049
pH:	8.50
Calculated TDS (mg/L):	11480.09
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	0.00
H_2S in Gas (%):	
H2S in Water (mg/L):	10.00

Analysis @ Properties in Sample Specifics			
Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	3247.28	Chloride (Cl):	5000.00
Potassium (K):	55.80	Sulfate (SO_4):	290.00
Magnesium (Mg):	9.81	Bicarbonate (HCO_3):	2806.00
Calcium (Ca):	20.51	Carbonate (CO_3):	
Strontium (Sr):	5.03	Acetic Acid (CH_3COO)	
Barium (Ba):	5.49	Propionic Acid (C_2H_5COO)	
Iron (Fe):	6.43	Butanoic Acid (C_3H_7COO)	
Zinc (Zn):	6.62	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Lead (Pb):	0.00	Fluoride (F):	
Ammonia NH_3:		Bromine (Br):	
Manganese (Mn):	0.19	Silica (SiO_2):	26.93

Notes:
B=7.9 Al=.05 Li=1.48

(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	1.43	17.11	1.82	3.22	4.20	3.55	2.86	4.67	0.00	0.00	0.00	0.00	0.00	0.00	12.24	3.46
88.00	157.00	1.43	17.10	1.73	3.21	4.12	3.55	2.89	4.67	0.00	0.00	0.00	0.00	0.00	0.00	12.05	3.46
97.00	300.00	1.45	17.13	1.66	3.20	4.06	3.55	2.94	4.67	0.00	0.00	0.00	0.00	0.00	0.00	11.88	3.46
106.00	443.00	1.46	17.16	1.58	3.18	4.00	3.55	2.98	4.67	0.00	0.00	0.00	0.00	0.00	0.00	11.73	3.46
115.00	585.00	1.48	17.19	1.52	3.17	3.95	3.55	3.02	4.67	0.00	0.00	0.00	0.00	0.00	0.00	11.58	3.46
124.00	728.00	1.50	17.23	1.46	3.15	3.92	3.55	3.06	4.67	0.00	0.00	0.00	0.00	0.00	0.00	11.44	3.46
133.00	871.00	1.52	17.26	1.41	3.14	3.88	3.55	3.10	4.67	0.00	0.00	0.00	0.00	0.00	0.00	11.31	3.46
142.00	1014.00	1.54	17.30	1.36	3.13	3.86	3.55	3.14	4.67	0.00	0.00	0.00	0.00	0.00	0.00	11.19	3.46
151.00	1157.00	1.56	17.33	1.31	3.11	3.84	3.55	3.18	4.67	0.00	0.00	0.00	0.00	0.00	0.00	11.08	3.46
160.00	1300.00	1.59	17.37	1.28	3.09	3.83	3.55	3.22	4.67	0.00	0.00	0.00	0.00	0.00	0.00	10.97	3.46

		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	2.05	4.41	0.00	0.00	1.06	7.04	0.33	3.25	9.46	5.00
88.00	157.00	0.00	0.00	0.00	0.00	0.00	0.00	2.16	4.42	0.00	0.00	1.36	8.52	0.48	4.31	9.59	5.00
97.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	2.28	4.43	0.00	0.00	1.71	10.22	0.66	5.65	9.79	5.00
106.00	443.00	0.00	0.00	0.00	0.00	0.00	0.00	2.39	4.43	0.00	0.00	2.08	11.77	0.85	6.94	9.99	5.00
115.00	585.00	0.00	0.00	0.00	0.00	0.00	0.00	2.50	4.44	0.00	0.00	2.45	13.15	1.05	8.17	10.21	5.00
124.00	728.00	0.00	0.00	0.00	0.00	0.00	0.00	2.60	4.44	0.00	0.00	2.82	14.36	1.25	9.33	10.43	5.00
133.00	871.00	0.00	0.00	0.00	0.00	0.00	0.00	2.70	4.44	0.00	0.00	3.20	15.40	1.45	10.41	10.66	5.00
142.00	1014.00	0.00	0.00	0.00	0.00	0.00	0.00	2.80	4.44	0.00	0.00	3.57	16.29	1.66	11.40	10.89	5.00
151.00	1157.00	0.00	0.00	0.00	0.00	0.00	0.00	2.89	4.44	0.00	0.00	3.95	17.02	1.87	12.30	11.14	5.00
160.00	1300.00	0.00	0.00	0.00	0.00	0.00	0.00	2.98	4.45	0.00	0.00	4.33	17.62	2.08	13.10	11.38	5.00

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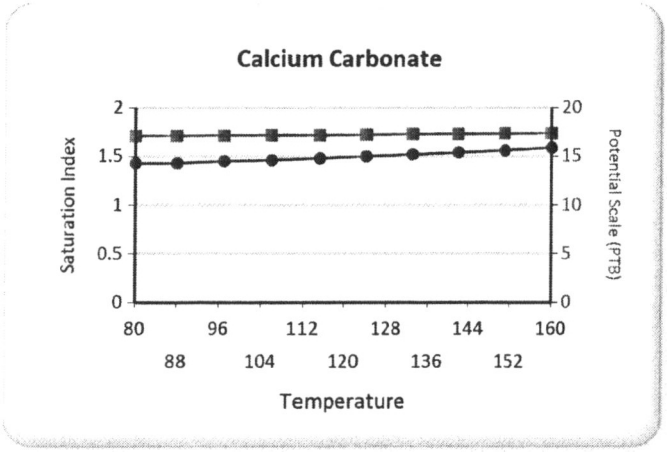
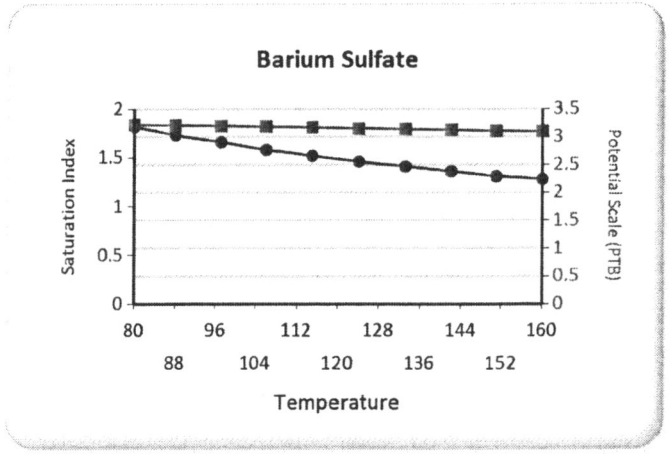
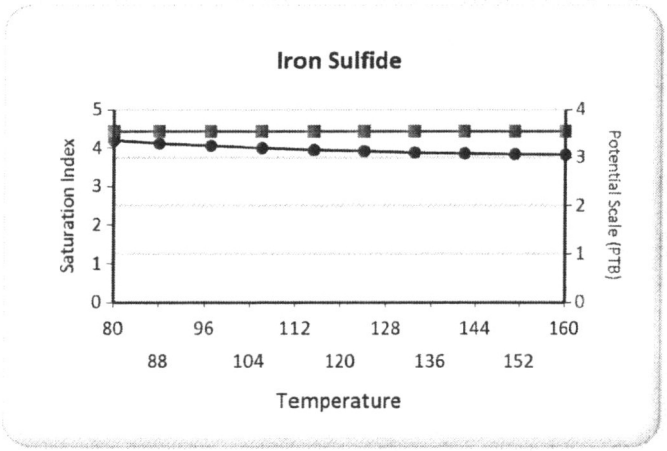
Water Analysis Report

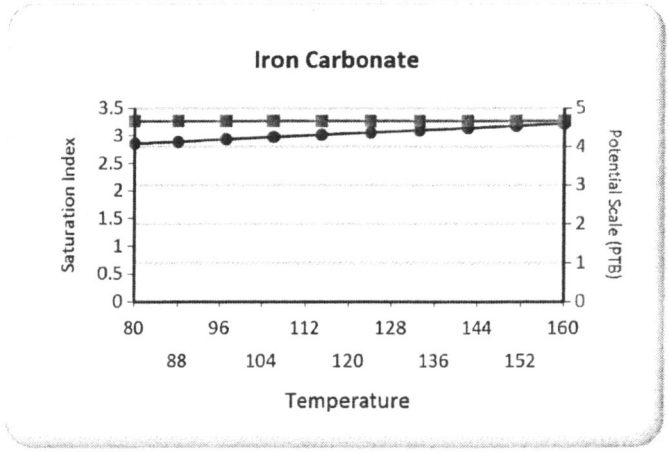
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Mg Silicate Ca Mg Silicate Fe Silicate

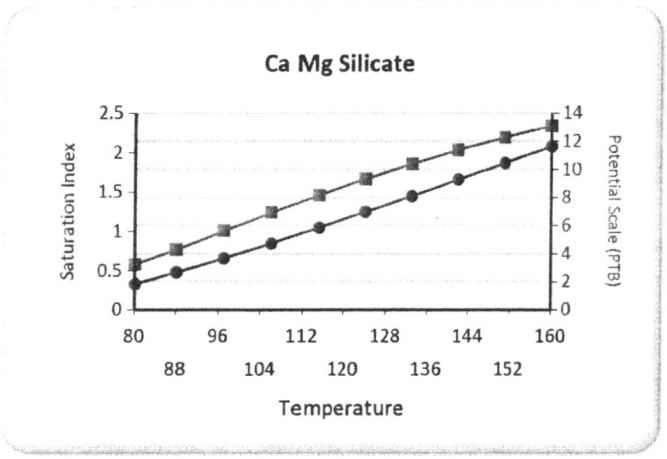
These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Mg Silicate Ca Mg Silicate Fe Silicate

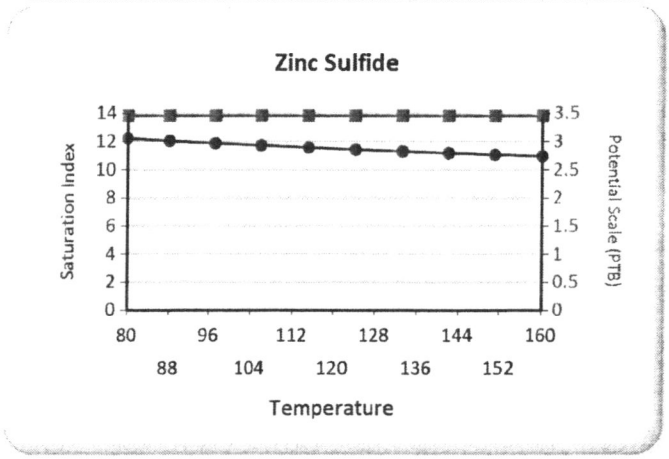












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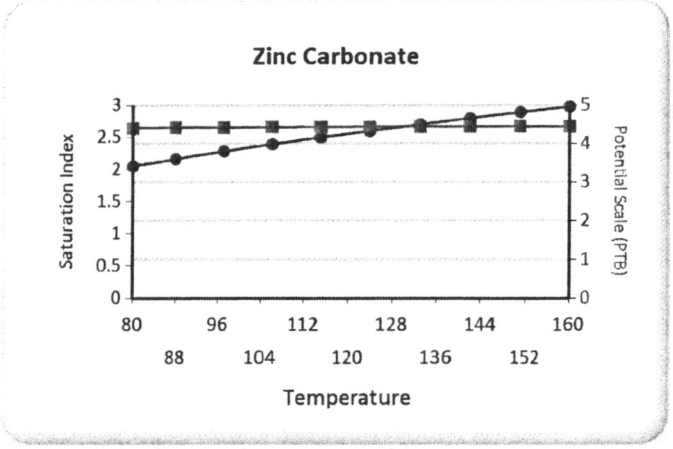
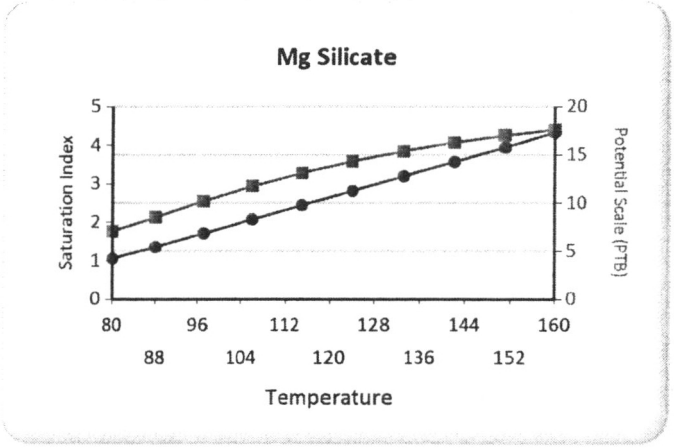
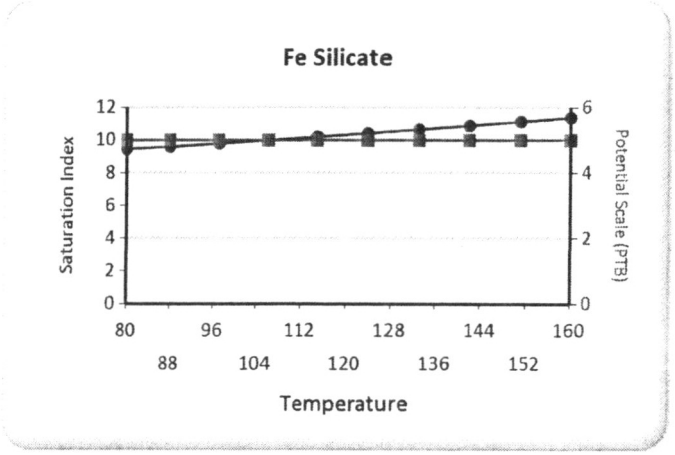






January 27, 2014

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

RE: EPA AREA PERMIT NO. UT2736-04365
Mechanical Integrity Test
Standard Five year retesting for Ute Tribal 21-11

Mr. Breffle:
The enclose Mechanical Integrity Test was performed on the above referenced well on January 20, 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 21-11

U2 Entered
Date 2/5/15
Initial DB

TAB	GREEN	BLUE	CBI
		✓	

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: 1/20/15
Test conducted by: CHAD STEVENSON
Others present: _____

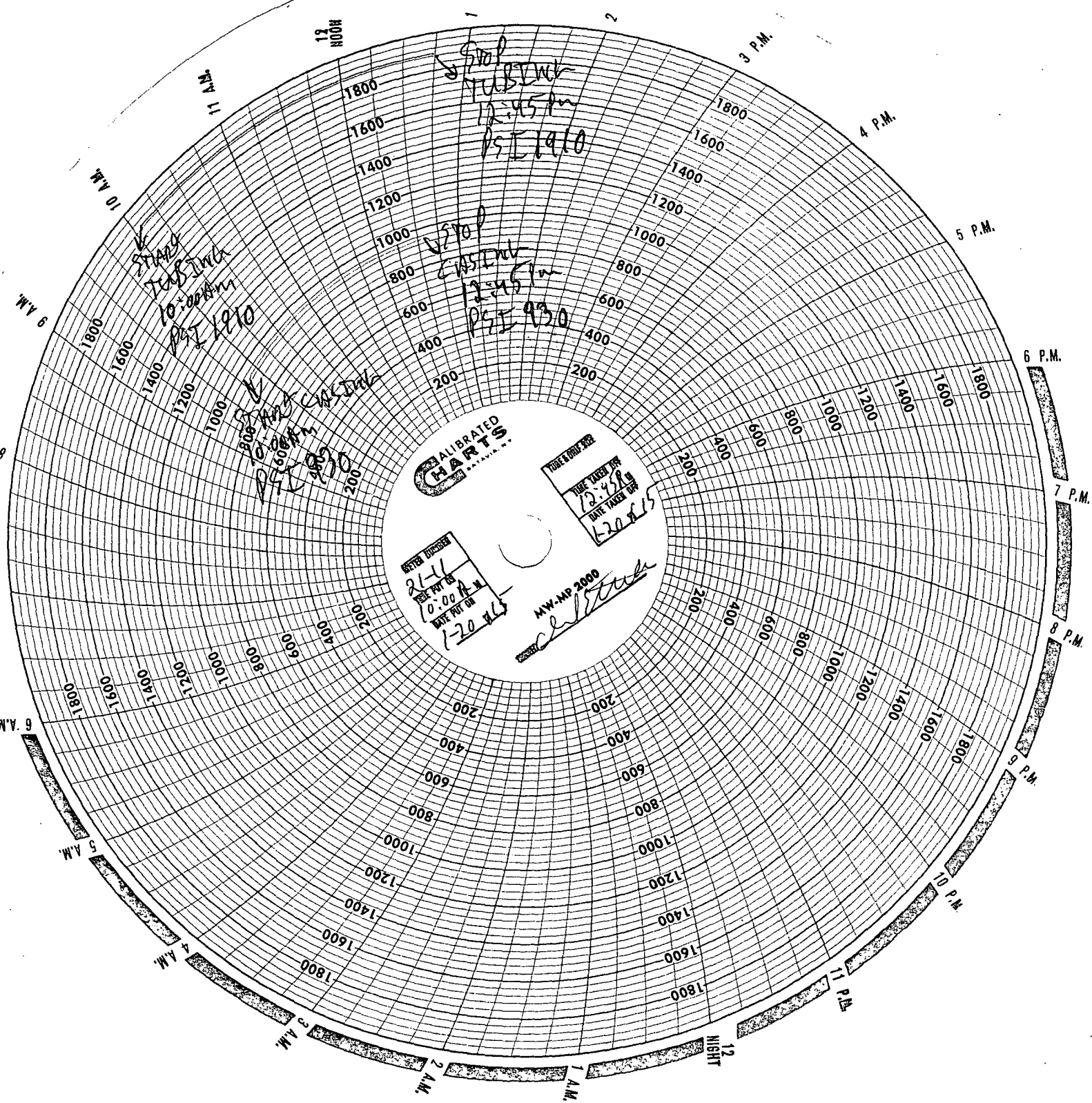
Well Name: 21-11 Type: ER SWD **Status: AC TA UC**
Field: ANTELOPE CREEK
Location: _____ Sec: ____ T ____ N / S R ____ E / W County: DUCHESNE State: UT
Operator: PETROGLYPH ENERG
Last MIT: ___/___/___ **Maximum Allowable Pressure:** _____ **PSIG**

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: 84 **bpd**
Pre-test annulus pressure: _____ **psig**

MIT DATA TABLE	*Test #1*	*Test #2*	*Test #3*
TUBING		***PRESSURE RECORD***	
Initial Pressure	1910 psig	psig	psig
End of test pressure	1910 psig	psig	psig
CASING / TUBING ANNULUS		***PRESSURE RECORD***	
0 minutes	930 psig	psig	psig
5 minutes	930 psig	psig	psig
10 minutes	930 psig	psig	psig
15 minutes	930 psig	psig	psig
20 minutes	930 psig	psig	psig
25 minutes	930 psig	psig	psig
30 minutes	930 psig	psig	psig
2 1/2 HOURS ~~minutes~~	930 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.


12 NOON
1
2
3 P.M.
4 P.M.
5 P.M.
6 P.M.
7 P.M.
8 P.M.
9 P.M.
10 P.M.
11 P.M.
12 NIGHT
1 A.M.
2 A.M.
3 A.M.
4 A.M.
5 A.M.
6 A.M.
7 A.M.
8 A.M.
9 A.M.
10 A.M.
11 A.M.
CALIBRATED CHARTS BATAVIA, N.Y.
MW-MP 2000
TIME TAKEN OFF
DATE TAKEN OFF
TIME PUT ON
DATE PUT ON
PRINTED IN U.S.A.

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

EPA

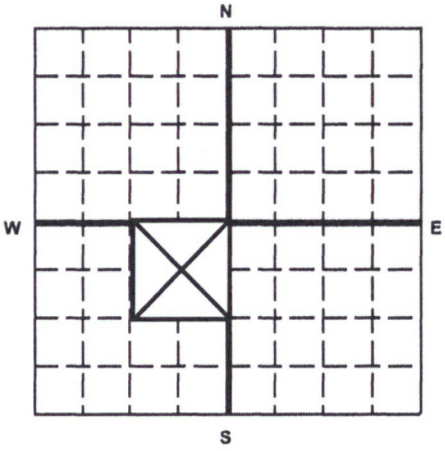
United States Environmental Protection Agency
Washington, DC 20460

ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

Name and Address of Existing Permittee
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	UT2736-04365

Surface Location Description
___ 1/4 of ___ 1/4 of NE 1/4 of SW 1/4 of Section 21 Township 5S Range 3W

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

Surface Location 2057 ft. frm (N/S) S Line of quarter section
and 2141 ft. from (E/W) W 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 21-11

MONTH	YEAR	INJECTION PRESSURE AVERAGE PSIG	INJECTION PRESSURE MAXIMUM PSIG	TOTAL VOLUME INJECTED BBL	TOTAL VOLUME INJECTED MCF	TUBING -- CASING ANNULUS PRESSURE (OPTIONAL MONITORING) MINIMUM PSIG	TUBING -- CASING ANNULUS PRESSURE (OPTIONAL MONITORING) MAXIMUM PSIG
January	13	1941	2004	247		0	0
February	13	2018	2047	360		0	0
March	13	1982	2019	272		0	0
April	13	2094	2139	5		0	0
May	13	2117	2127	0		0	0
June	13	2093	2101	0		0	0
July	13	2065	2086	0		0	0
August	13	2000	2040	0		0	0
September	13	2006	2085	34		0	0
October	13	2073	2088	0		0	0
November	13	2054	2064	0		0	0
December	13	2025	2036	0		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	Chad Stevenson	2/11/2014

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

U2 Entered
Date 3/20/14
Initial JB

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 21-11 INJ**
Sample Point: **Wellhead**
Sample Date: **1/8/2014**
Sample ID: **WA-262982**

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):	1.005
pH:	8.30
Calculated TDS (mg/L):	11040.28
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	0.00
H_2S in Gas (%):	
H2S in Water (mg/L):	10.00

Analysis @ Properties in Sample Specifics			
Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	3881.05	Chloride (Cl):	5000.00
Potassium (K):	52.00	Sulfate (SO_4):	392.00
Magnesium (Mg):	16.00	Bicarbonate (HCO_3):	1586.00
Calcium (Ca):	42.00	Carbonate (CO_3):	
Strontium (Sr):	6.00	Acetic Acid (CH_3COO)	
Barium (Ba):	6.00	Propionic Acid (C_2H_5COO)	
Iron (Fe):	38.00	Butanoic Acid (C_3H_7COO)	
Zinc (Zn):	0.41	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Lead (Pb):	0.15	Fluoride (F):	
Ammonia NH_3:		Bromine (Br):	
Manganese (Mn):	0.77	Silica (SiO_2):	19.90

Notes:
B=5 Al=.08 Li=1.1

(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	1.21	29.88	2.18	3.55	4.82	9.06	2.94	27.56	0.00	0.00	0.00	0.00	0.00	0.00	11.23	0.21
73.00	157.00	1.22	29.72	2.03	3.54	4.68	9.06	3.00	27.56	0.00	0.00	0.00	0.00	0.00	0.00	10.92	0.21
86.00	300.00	1.24	30.17	1.90	3.53	4.57	9.06	3.07	27.58	0.00	0.00	0.00	0.00	0.00	0.00	10.65	0.21
100.00	443.00	1.27	30.68	1.79	3.52	4.48	9.06	3.15	27.59	0.00	0.00	0.00	0.00	0.00	0.00	10.41	0.21
113.00	585.00	1.30	31.21	1.69	3.50	4.41	9.06	3.22	27.59	0.00	0.00	0.00	0.00	0.00	0.00	10.19	0.21
126.00	728.00	1.34	31.75	1.61	3.48	4.35	9.06	3.28	27.60	0.00	0.00	0.00	0.00	0.00	0.00	9.99	0.21
140.00	871.00	1.38	32.29	1.53	3.47	4.32	9.06	3.35	27.61	0.00	0.00	0.00	0.00	0.00	0.00	9.80	0.21
153.00	1014.00	1.42	32.82	1.47	3.45	4.29	9.06	3.42	27.61	0.00	0.00	0.00	0.00	0.00	0.00	9.64	0.21
166.00	1157.00	1.47	33.33	1.42	3.44	4.28	9.06	3.48	27.62	0.00	0.00	0.00	0.00	0.00	0.00	9.49	0.21
180.00	1300.00	1.52	33.80	1.38	3.42	4.28	9.06	3.54	27.62	0.00	0.00	0.00	0.00	0.00	0.00	9.35	0.21

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

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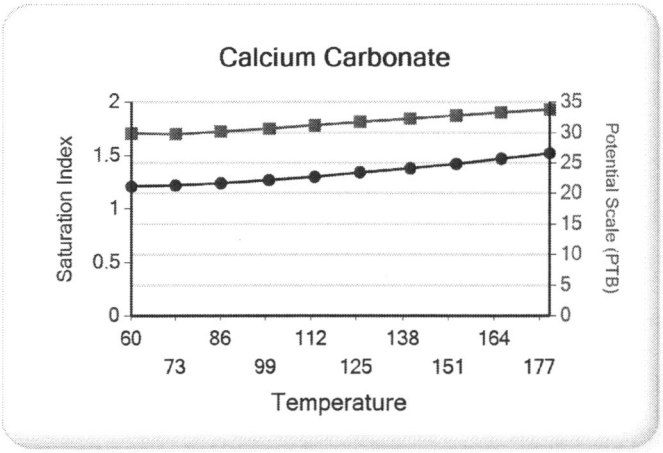
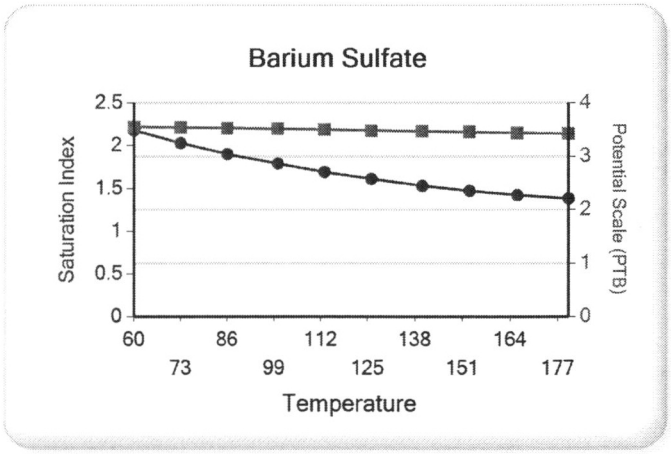
Water Analysis Report

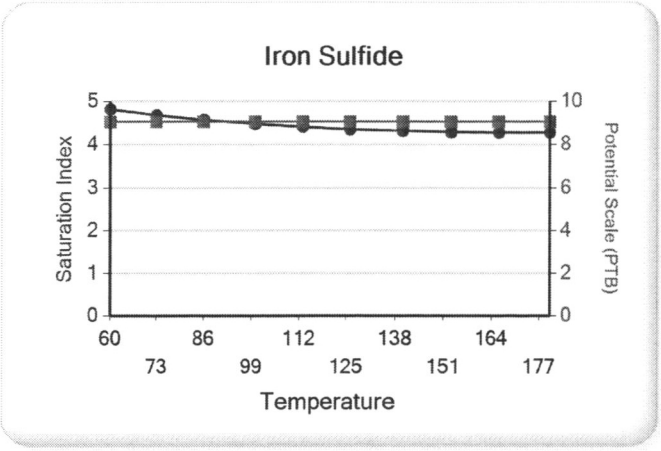
		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
60.00	14.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.04	13.34	0.06	0.00	0.00	0.00	0.00	9.49	21.48
73.00	157.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.12	12.84	0.06	0.00	0.00	0.00	0.00	9.67	21.48
86.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.46	0.18	12.40	0.06	0.32	1.88	0.00	0.00	9.96	21.52
100.00	443.00	0.00	0.00	0.00	0.00	0.00	0.00	0.64	0.21	12.00	0.06	0.89	4.69	0.09	0.81	10.29	21.54
113.00	585.00	0.00	0.00	0.00	0.00	0.00	0.00	0.81	0.23	11.63	0.06	1.46	7.43	0.41	2.51	10.63	21.56
126.00	728.00	0.00	0.00	0.00	0.00	0.00	0.00	0.97	0.25	11.29	0.06	2.05	10.11	0.73	4.16	11.00	21.57
140.00	871.00	0.00	0.00	0.00	0.00	0.00	0.00	1.12	0.26	10.98	0.06	2.64	12.70	1.06	5.72	11.38	21.57
153.00	1014.00	0.00	0.00	0.00	0.00	0.00	0.00	1.27	0.26	10.70	0.06	3.23	15.15	1.39	7.17	11.77	21.58
166.00	1157.00	0.00	0.00	0.00	0.00	0.00	0.00	1.40	0.27	10.44	0.06	3.83	17.40	1.72	8.46	12.18	21.58
180.00	1300.00	0.00	0.00	0.00	0.00	0.00	0.00	1.52	0.27	10.20	0.06	4.41	19.37	2.06	9.56	12.58	21.58

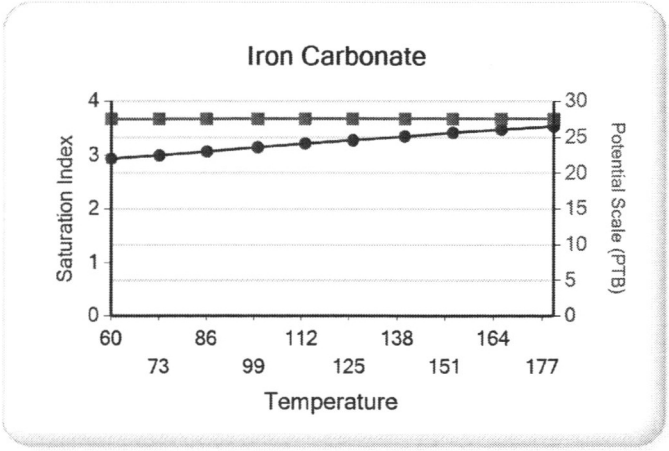
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Lead Sulfide Fe Silicate

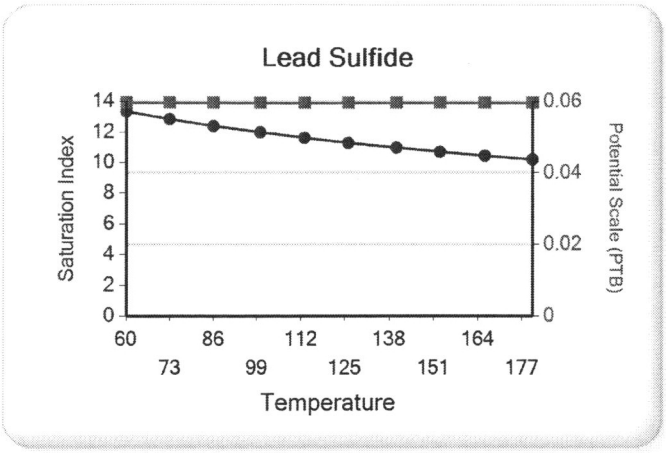
These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Lead Sulfide Mg Silicate Ca Mg Silicate Fe Silicate

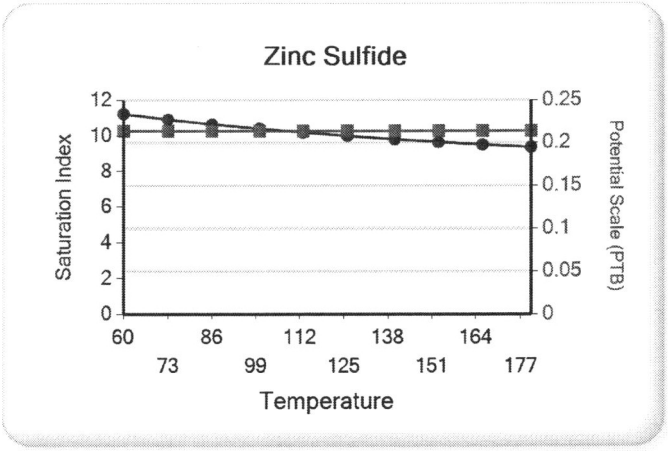


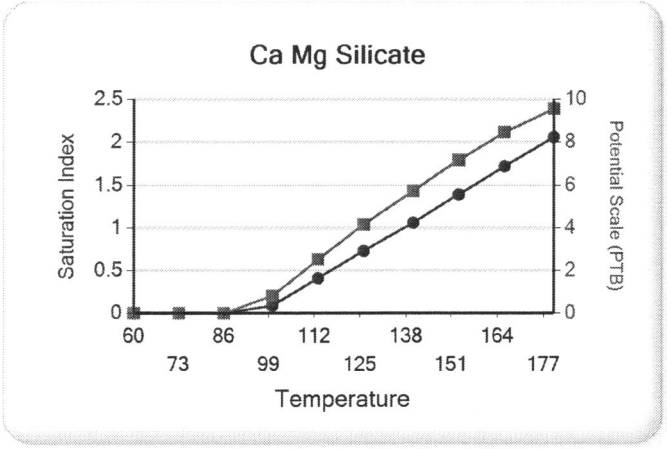


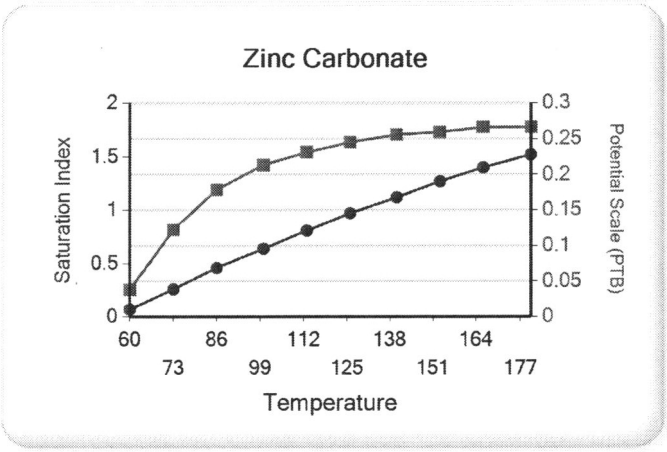


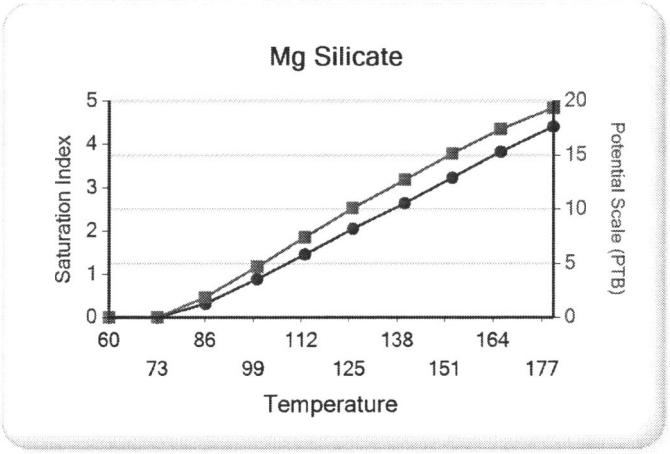


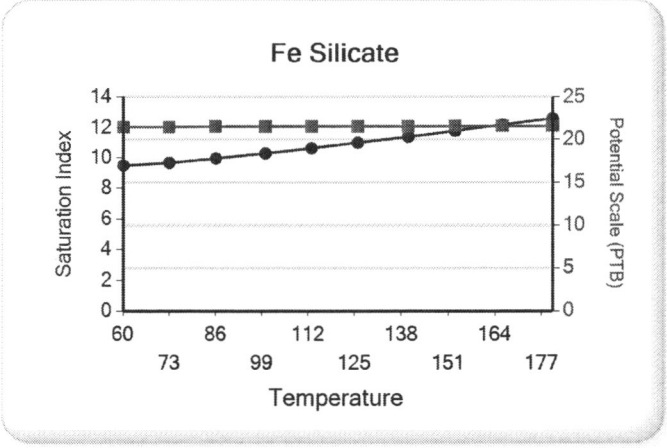

Lead Sulfide
Saturation Index
Potential Scale (PTB)
Temperature
60 86 112 138 164
73 99 125 151 177


Zinc Sulfide
Saturation Index
Potential Scale (PTB)
Temperature
60 86 112 138 164
73 99 125 151 177


Ca Mg Silicate
Saturation Index
Potential Scale (PTB)
Temperature
60 86 112 138 164
73 99 125 151 177


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


Mg Silicate
Saturation Index
Potential Scale (PTB)
Temperature
60 86 112 138 164
73 99 125 151 177


Fe Silicate
Saturation Index
Potential Scale (PTB)
Temperature
14
12
10
8
6
4
2
0
25
20
15
10
5
0
60
73
86
99
112
125
138
151
164
177

U4365

CONCURRENCE COPY

MAY 13 1997

Ref: 8ENF-T

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Ms. April Menzies
Geology/Petroleum Engineer Technician
Petroglyph Operating Company, Inc.
P.O. Box 1839
Hutchinson, KS 67504

Re: UNDERGROUND INJECTION CONTROL (UIC)
Allowable Maximum Injection Pressures
Antelope Creek Field
Duchesne County, UT

Dear Ms. Menzies:

This letter is being sent as a reminder of the current allowable surface injection pressures for Petroglyph Operating's injection wells in the Antelope Creek Field on the Uintah/Ouray Indian Reservation in Utah. The allowable injection pressures are shown below:

Well Number	EPA Number	Allowable Pressure
Ute Tribal #04-01	UT2736-04322	1915 psig
Ute Tribal #04-05	UT2736-04328	1915 psig
Ute Tribal #04-07	UT2497-03100	1900 psig
Ute Tribal #05-08	UT2736-04324	1915 psig
Ute Tribal #05-10	UT2736-04234	1900 psig
Ute Tribal #05-16	UT2736-04327	1915 psig
Ute Tribal #08-04	UT2736-04201	1900 psig
Ute Tribal #08-06	UT2736-04203	1900 psig
Ute Tribal #18-02	UT2736-04202	1900 psig
Ute Tribal #18-09	UT2736-04204	1900 psig
Ute Tribal #29-08A	UT2736-04325	1915 psig
Ute Tribal #29-09	UT2736-04233	1900 psig
Ute Tribal #4	UT2680-02550	800 psig
Ute Tribal #3-10D	UT2537-03514	1375 psig
Ute Tribal #04-03	UT2736-04349	2192 psig
Ute Tribal #21-11	UT2736-04365	2196 psig
Ute Tribal #18-03	UT2736-02459	2459 psig
Ute Tribal #21-03	UT2736-04363	2451 psig
Ute Tribal #30-01	UT2736-04362	2497 psig
Ute Tribal #04-02	UT2736-04356	2344 psig
Ute Tribal #18-08	UT2736-04355	1960 psig

8ENF-T
5/6/97

8ENF-T
JMOSUG
5/13/97 Jim Shanahan

These injection pressures are recorded in our computer data base, and will be available for use during field inspections in order to verify that allowable injection pressures are not being exceeded, and for comparison with maximum pressures recorded on Annual Monitoring Reports. If you require a higher injection pressure for continued operation of a well(s), you may conduct a step-rate test of the injection zone and request an increase based on the test results. However, this test may, or may not, indicate that a higher injection pressure can be approved for the well(s).

If you have any questions concerning this letter, or do not agree with the listed pressure limits, you may contact John Carson at (303) 312-6203. Also, please direct all correspondence to the attention of John Carson at Mail Code 8ENF-T.

Sincerely,

Sharon L. Kercher, Director
Technical Enforcement Program

cc: State of Utah-Division of Oil, Gas and Mining
Attention: Mr. Gil Hunt
1594 West North Temple, Suite 1210
P.O. Box 145801
Salt Lake City, UT 84114-5801

FCD: May 5, 1997, jac, car, C:\DATA\WP\JC\PETROGLY.PSI

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

MAY 13 1997

Ref: 8ENF-T

CERTIFIED MAIL
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Ms. April Menzies
Geology/Petroleum Engineer Technician
Petroglyph Operating Company, Inc.
P.O. Box 1839
Hutchinson, KS 67504

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Ute Tribal #05-10	UT2736-04234	1900 psig
Ute Tribal #05-16	UT2736-04327	1915 psig
Ute Tribal #08-04	UT2736-04201	1900 psig
Ute Tribal #08-06	UT2736-04203	1900 psig
Ute Tribal #18-02	UT2736-04202	1900 psig
Ute Tribal #18-09	UT2736-04204	1900 psig
Ute Tribal #29-08A	UT2736-04325	1915 psig
Ute Tribal #29-09	UT2736-04233	1900 psig
Ute Tribal #4	UT2680-02550	800 psig
Ute Tribal #3-10D	UT2537-03514	1375 psig
Ute Tribal #04-03	UT2736-04349	2192 psig
Ute Tribal #21-11	UT2736-04365	2196 psig
Ute Tribal #18-03	UT2736-02459	2459 psig
Ute Tribal #21-03	UT2736-04363	2451 psig
Ute Tribal #30-01	UT2736-04362	2497 psig
Ute Tribal #04-02	UT2736-04356	2344 psig
Ute Tribal #18-08	UT2736-04355	1960 psig

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Sincerely,

for J.R. Osborne

Sharon L. Kercher, Director
Technical Enforcement Program

cc: State of Utah-Division of Oil, Gas and Mining
Attention: Mr. Gil Hunt
1594 West North Temple, Suite 1210
P.O. Box 145801
Salt Lake City, UT 84114-5801

P 142 092 652

PS Form 3800, June 1991

Sent
Stree
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Return Date,
TOTAL & Fees
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MS APRIL MENZIES
GEOLOGY/PETROLEUM ENGINEER TECHNICIAN
PETROGLYPH OPERATING COMPANY INC
POST OFFICE BOX 1839
HUTCHINSON KS 67504

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ational Mail

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- 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

MAY 13 1997

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

MS APRIL MENZIES
GEOLOGY/PETROLEUM ENGINEER TECHNICIAN
PETROGLYPH OPERATING COMPANY INC
POST OFFICE BOX 1839
HUTCHINSON KS 67504

4a. Article Number P 142 092 652

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

7. Date of Delivery MAY 13 1997

5. Signature (Addressee) Susan Bowlby

6. Signature (Agent)

8. Addressee's Address (only if requested and fee is paid)

HUTCHINSON, KS 67504 MAY 16 1997 P.M.

PS Form 3811, December 1991 U.S. GPO: 1993—352-714

DOMESTIC RETURN RECEIPT

Thank you for using Return Receipt Service.

For the reverse side, see your RETURN

CONCURRENCE COPY

APR 29 1997

Ref: 8P2-W-GW

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
Antelope Creek Waterflood
EPA Area Permit UT2736-00000
Duchesne County, Utah

Dear Ms. Menzies:

Your letter of April 8, 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 #21-11	NE/SW Section 21 T 5 S - R 3 W Duchesne County, UT	**#UT2736-04365**

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 three (3) individual zones, within the Ute Tribal #21-11, which were individually fraced and established an average fracture gradient (Fg) of

CEW 8P2-W-GW 4/22/97

8P2-W-GW 4/23/97

8P2-W-GW 4/29/97

0.905 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 = 4652' shallowest perforations

Sg = Specific gravity of injected water

Pmax = [0.905 - .433 (1.00)] 4652

Pmax = 2196 psig

Until such time as the permittee demonstrates that a fracture gradient other than 0.905 psi/ft applies to the disposal zones of this newly converted well, the maximum allowable wellhead injection pressure **(Pmax) for this well will be 2196 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 & 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

Ms. Ruby Atwine, Chairperson
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