Inspection Report For Well: UT20736 - 04541

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: 1:50 am / pm

OPERATOR (only if different): _____

REPRESENTATIVE(S): Chad Stevenson

PRE-INSPECTION REVIEW

Petroglyph Operating Company, Inc

Well Name:	Ute Tribal 29-03		
Well Type:	Enhanced Recovery (2R)		
Operating Status:	AC (ACTIVE) as of 12/31/2002		
Oil Field:	Antelope Creek (Duchesne)		
Location:	NENW S29 T5S R3W		
Indian Country:	X, Uintah and Ouray		
Last Inspection:	8/28/2012	***Allowable Inj Pressure:***	1700 /
Last MIT:	Pass 9/15/2010	***Annulus Pressure From Last MIT:***	1180

BLACK = POSSIBLE VIOLATION — GREY = DATA MISSING

INSPECTION TYPE: **(Select One)**

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

ICIS Entered
Date 12/30/13
Initials DB

OBSERVED VALUES:

Tubing Gauge:	[x] Yes [ ] No	Pressure: U: 1655 / 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

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

TAB	GREEN	BLUE	CBI
		1	

Inspection Report For Well: UT20736 - 04541 (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

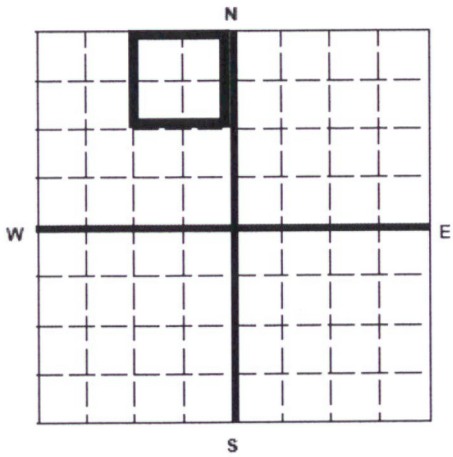
United States Environmental Protection Agency
Washington, DC 20460

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	UT2736-04541

Surface Location Description
___ 1/4 of 1/4 of NE 1/4 of NW 1/4 of Section 29 Township 5S Range 3W

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

Surface Location 624 ft. frm (N/S) N Line of quarter section
and 1987 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 29-03

		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	1574	1660	457		0	0
February	16	1640	1664	551		0	0
March	16	1637	1662	572		0	0
April	16	1625	1646	520		0	0
May	16	1642	1654	568		0	0
June	16	1520	1644	362		0	0
July	16	1085	1157	0		0	0
August	16	932	981	0		0	0
September	16	841	1029	0		0	0
October	16	815	831	0		0	0
November	16	769	790	0		0	0
December	16	706	723	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 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

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

TAB GREEN BLUE CBI 2

Entered
Date 4/6/17
Initial

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

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Units of Measurement: **Standard**

Water Analysis Report

Production Company:	**PETROGLYPH OPERATING CO INC - EBUS**	Sales Rep:	**James Patry**
Well Name:	**UTE TRIBAL 29-03 INJ, DUCHESNE**	Lab Tech:	**Kaitlyn Natelli**
Sample Point:	**Well Head**		
Sample Date:	**1/6/2017**		
Sample ID:	**WA-345317**		

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):	1.0059
pH:	10.00
Calculated TDS (mg/L):	11330.88
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	0.00
H_2S in Gas (%):	
H2S in Water (mg/L):	50.00
Tot. SuspendedSolids(mg/L):	
Corrosivity(LanglierSat.Indx)	0.00
Alkalinity:	

Analysis @ Properties in Sample Specifics

Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	1545.96	Chloride (Cl):	4500.00
Potassium (K):	30.54	Sulfate (SO_4):	0.00
Magnesium (Mg):	32.74	Bicarbonate (HCO_3):	2562.00
Calcium (Ca):	323.63	Carbonate (CO_3):	
Strontium (Sr):	10.98	Hydroxide(HO):	
Barium (Ba):	22.69	Acetic Acid (CH_3COO)	
Iron (Fe):	2183.14	Propionic Acid (C_2H_5COO)	
Zinc (Zn):	97.90	Butanoic Acid (C_3H_7COO)	
Lead (Pb):	0.22	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Ammonia NH_3:		Fluoride (F):	
Manganese (Mn):	7.77	Bromine (Br):	
Aluminum (Al):	1.86	Silica (SiO_2):	13.31
Lithium (Li):	2.76	Calcium Carbonate ($CaCO_3$):	
Boron (B):	4.42	Phosphates (PO_4):	33.04
Silicon (Si):	6.22	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	3.00	282.77	0.00	0.00	7.99	45.21	5.48	839.07	0.00	0.00	0.00	0.00	0.00	0.00	14.65	50.11
149.00	267.00	3.05	282.83	0.00	0.00	7.88	45.21	5.57	839.24	0.00	0.00	0.00	0.00	0.00	0.00	14.34	50.11
168.00	483.00	3.11	282.89	0.00	0.00	7.79	45.21	5.65	839.42	0.00	0.00	0.00	0.00	0.00	0.00	14.05	50.11
187.00	700.00	3.19	282.94	0.00	0.00	7.72	45.21	5.73	839.61	0.00	0.00	0.00	0.00	0.00	0.00	13.79	50.11
206.00	917.00	3.27	283.00	0.00	0.00	7.67	45.21	5.80	839.81	0.00	0.00	0.00	0.00	0.00	0.00	13.55	50.11
224.00	1133.00	3.36	283.05	0.00	0.00	7.64	45.21	5.88	840.02	0.00	0.00	0.00	0.00	0.00	0.00	13.34	50.11
243.00	1350.00	3.45	283.09	0.00	0.00	7.62	45.21	5.94	840.24	0.00	0.00	0.00	0.00	0.00	0.00	13.14	50.11
262.00	1567.00	3.56	283.12	0.00	0.00	7.62	45.21	6.01	840.46	0.00	0.00	0.00	0.00	0.00	0.00	12.97	50.11
281.00	1783.00	3.67	283.15	0.00	0.00	7.63	45.21	6.07	840.67	0.00	0.00	0.00	0.00	0.00	0.00	12.81	50.11
300.00	2000.00	3.78	283.18	0.00	0.00	7.66	45.21	6.12	840.89	0.00	0.00	0.00	0.00	0.00	0.00	12.67	50.11

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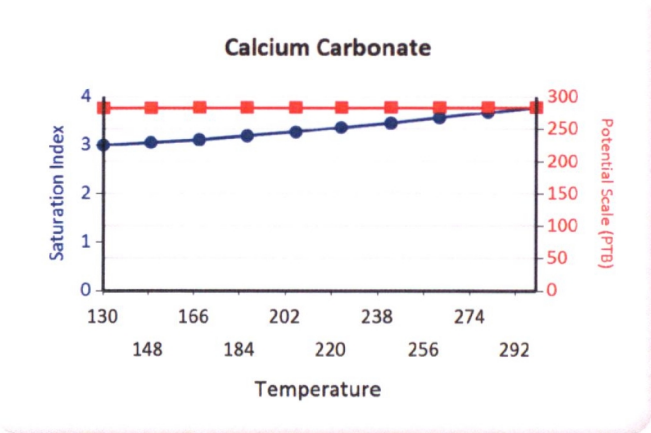
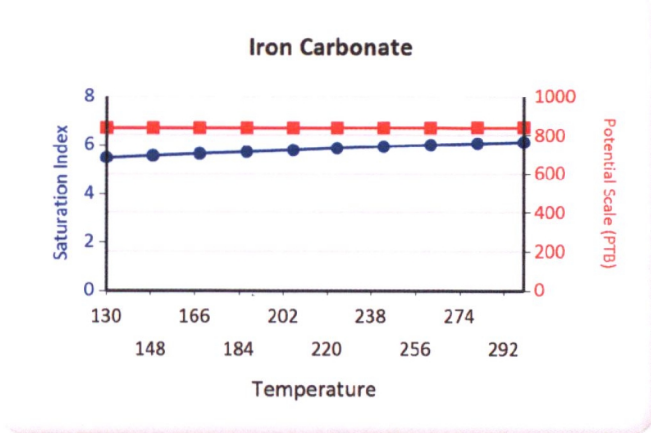
Water Analysis Report

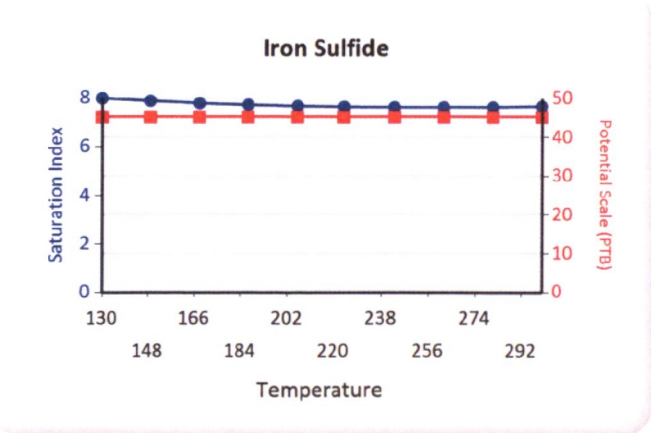
		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
130.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	4.24	65.82	13.71	0.09	11.84	34.52	7.47	17.98	23.91	30.88
149.00	267.00	0.00	0.00	0.00	0.00	0.00	0.00	4.44	65.82	13.22	0.09	12.26	34.52	7.66	17.98	24.05	30.88
168.00	483.00	0.00	0.00	0.00	0.00	0.00	0.00	4.62	65.82	12.78	0.09	12.66	34.52	7.85	17.98	24.20	30.88
187.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	4.78	65.82	12.37	0.09	13.05	34.52	8.04	17.98	24.35	30.88
206.00	917.00	0.00	0.00	0.00	0.00	0.00	0.00	4.92	65.82	12.00	0.09	13.44	34.52	8.23	17.98	24.51	30.88
224.00	1133.00	0.00	0.00	0.00	0.00	0.00	0.00	5.05	65.82	11.66	0.09	13.81	34.52	8.42	17.98	24.67	30.88
243.00	1350.00	0.00	0.00	0.00	0.00	0.00	0.00	5.17	65.82	11.35	0.09	14.17	34.52	8.62	17.98	24.84	30.88
262.00	1567.00	0.00	0.00	0.00	0.00	0.00	0.00	5.27	65.82	11.07	0.09	14.53	34.52	8.81	17.98	25.01	30.88
281.00	1783.00	0.00	0.00	0.00	0.00	0.00	0.00	5.36	65.82	10.82	0.09	14.88	34.52	9.00	17.98	25.19	30.88
300.00	2000.00	0.00	0.00	0.00	0.00	0.00	0.00	5.43	65.82	10.59	0.09	15.23	34.52	9.20	17.98	25.38	30.88

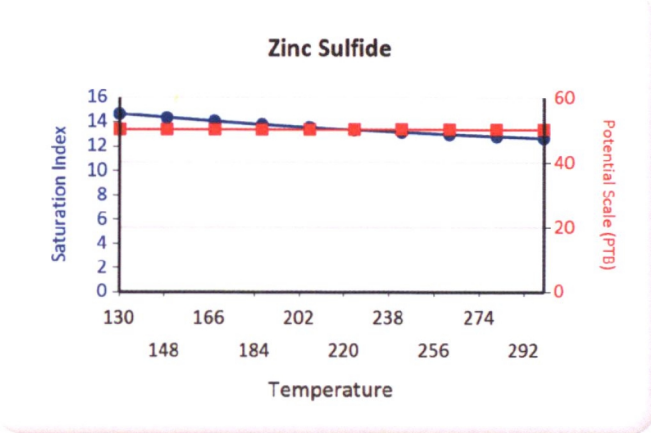
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Lead Sulfide Mg Silicate Ca Mg Silicate Fe Silicate

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









Multi-Chem Analytical Laboratory
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Vernal, UT 84078

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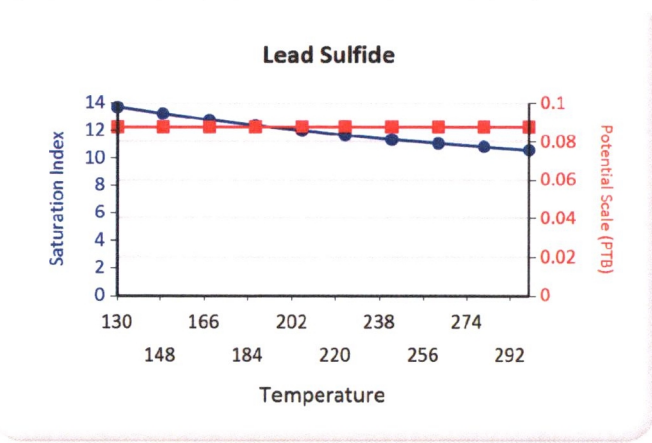
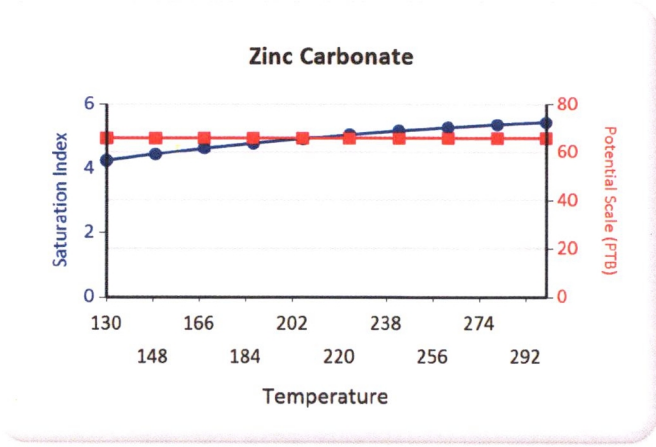
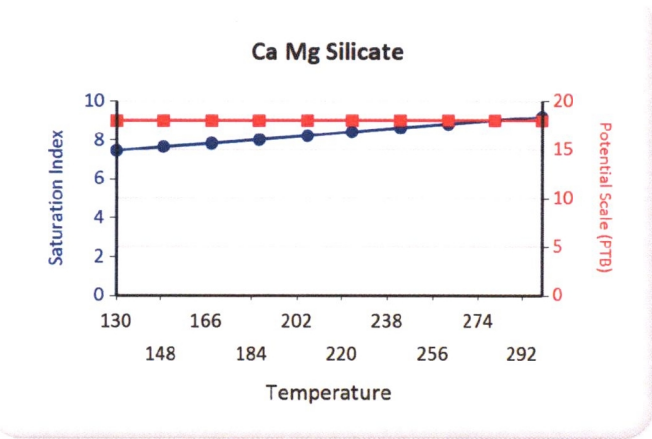
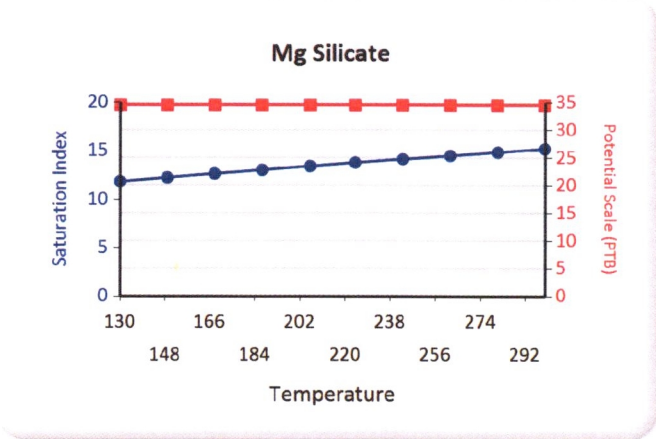
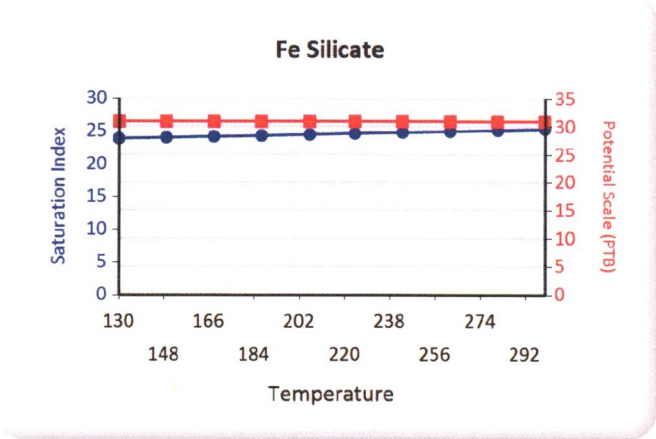
Water Analysis Report











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

EPA

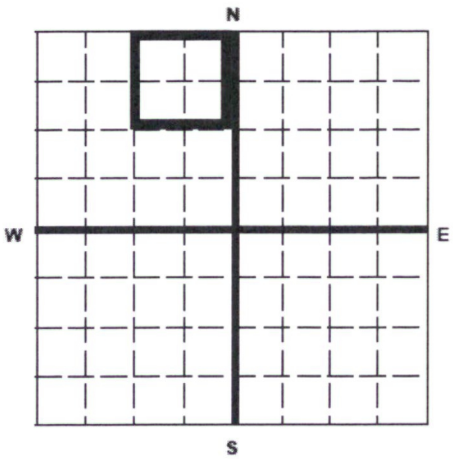
United States Environmental Protection Agency
Washington, DC 20460

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~~ 04541

Surface Location Description
___ 1/4 of ___ 1/4 of NE 1/4 of NW 1/4 of Section 29 Township 5S Range 3W

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

Surface Location 624 ft. frm (N/S) N Line of quarter section
and 1987 ft. from (E/W) W Line of quarter section. U2 Entered

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

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

Number of Wells 111

Date 3/2/16
Initial B

Lease Name Ute Indian Tribe Well Number UTE TRIBAL 29-03

MONTH	YEAR	INJECTION PRESSURE AVERAGE PSIG	INJECTION PRESSURE MAXIMUM PSIG	TOTAL VOLUME INJECTED BBL	TOTAL VOLUME INJECTED MCF	TUBING – CASING ANNULUS PRESSURE (OPTIONAL MONITORING) MINIMUM PSIG	TUBING – CASING ANNULUS PRESSURE (OPTIONAL MONITORING) MAXIMUM PSIG
January	15	1583	1626	439		0	0
February	15	1617	1649	479		0	0
March	15	1606	1671	592		0	0
April	15	1587	1661	591		0	0
May	15	1633	1655	619		0	0
June	15	1647	1657	552		0	0
July	15	1625	1656	531		0	0
August	15	1627	1644	559		0	0
September	15	1631	1660	539		0	0
October	15	1619	1620	573		0	0
November	15	1597	1669	512		0	0
December	15	1611	1638	639		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 2

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

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

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Units of Measurement: **Standard**

Water Analysis Report

Production Company:	**PETROGLYPH OPERATING CO INC - EBUS**	Sales Rep:	**James Patry**
Well Name:	**UTE TRIBAL 29-03 INJ, DUCHESNE**	Lab Tech:	**Michele Pike**
Sample Point:	**Well Head**		
Sample Date:	**1/6/2016**		
Sample ID:	**WA-327653**		

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

Sample Specifics

Test Date:	1/13/2016
System Temperature 1 (°F):	60
System Pressure 1 (psig):	2000
System Temperature 2 (°F):	180
System Pressure 2 (psig):	50
Calculated Density (g/ml):	1.0064
pH:	8.50
Calculated TDS (mg/L):	13109.55
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	0.00
H2S in Gas (%):	
H2S in Water (mg/L):	45.00
Tot. SuspendedSolids(mg/L):	
Corrosivity(LanglierSat.Indx)	0.00
Alkalinity:	

Notes:

Analysis @ Properties in Sample Specifics

Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	4484.00	Chloride (Cl):	5500.00
Potassium (K):	29.10	Sulfate (SO_4):	0.00
Magnesium (Mg):	31.40	Bicarbonate (HCO_3):	2928.00
Calcium (Ca):	85.04	Carbonate (CO_3):	
Strontium (Sr):	7.36	Acetic Acid (CH_3COO)	
Barium (Ba):	17.26	Propionic Acid (C_2H_5COO)	
Iron (Fe):	1.03	Butanoic Acid (C_3H_7COO)	
Zinc (Zn):	0.96	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Lead (Pb):	0.52	Fluoride (F):	
Ammonia NH_3:		Bromine (Br):	
Manganese (Mn):	0.45	Silica (SiO_2):	24.43
Aluminum (Al):	0.07	Calcium Carbonate ($CaCO_3$):	
Lithium (Li):	1.69	Phosphates (PO_4):	16.92
Boron (B):	4.50	Oxygen (O_2):	
Silicon (Si):	11.42		

(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	2.25	73.27	0.00	0.00	3.65	0.57	2.57	0.75	0.00	0.00	0.00	0.00	0.00	0.00	10.54	0.50
167.00	267.00	2.17	72.90	0.00	0.00	3.64	0.57	2.47	0.75	0.00	0.00	0.00	0.00	0.00	0.00	10.67	0.50
153.00	483.00	2.10	72.58	0.00	0.00	3.64	0.57	2.38	0.75	0.00	0.00	0.00	0.00	0.00	0.00	10.81	0.50
140.00	700.00	2.04	72.22	0.00	0.00	3.66	0.57	2.29	0.75	0.00	0.00	0.00	0.00	0.00	0.00	10.97	0.50
127.00	917.00	1.98	71.82	0.00	0.00	3.69	0.57	2.20	0.74	0.00	0.00	0.00	0.00	0.00	0.00	11.15	0.50
113.00	1133.00	1.93	71.40	0.00	0.00	3.74	0.57	2.11	0.74	0.00	0.00	0.00	0.00	0.00	0.00	11.34	0.50
100.00	1350.00	1.88	70.95	0.00	0.00	3.80	0.57	2.02	0.74	0.00	0.00	0.00	0.00	0.00	0.00	11.55	0.50
87.00	1567.00	1.83	70.50	0.00	0.00	3.88	0.57	1.93	0.74	0.00	0.00	0.00	0.00	0.00	0.00	11.79	0.50
73.00	1783.00	1.79	70.06	0.00	0.00	3.97	0.57	1.84	0.74	0.00	0.00	0.00	0.00	0.00	0.00	12.04	0.50
60.00	2000.00	1.76	69.64	0.00	0.00	4.08	0.57	1.75	0.74	0.00	0.00	0.00	0.00	0.00	0.00	12.32	0.50

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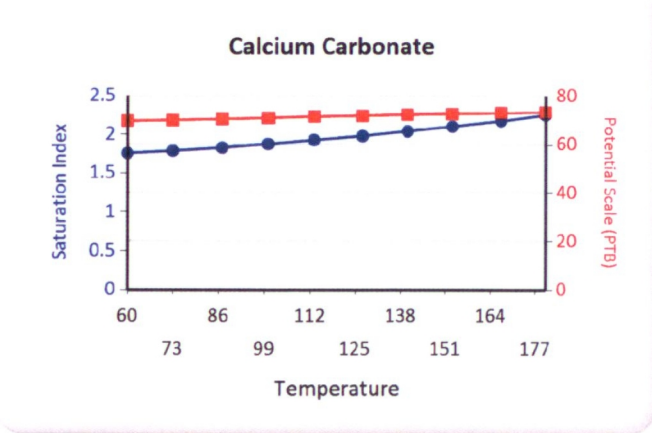
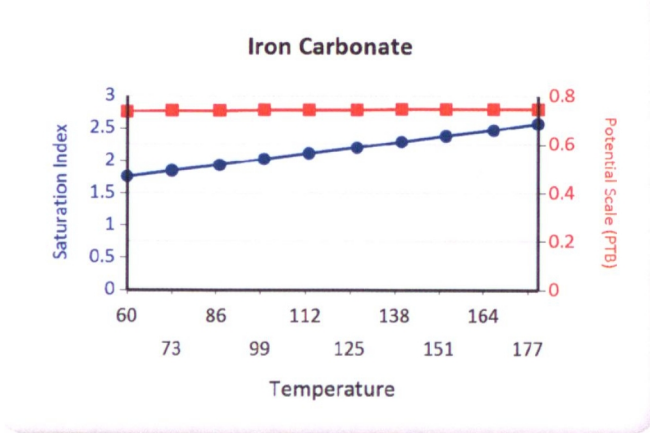
Water Analysis Report

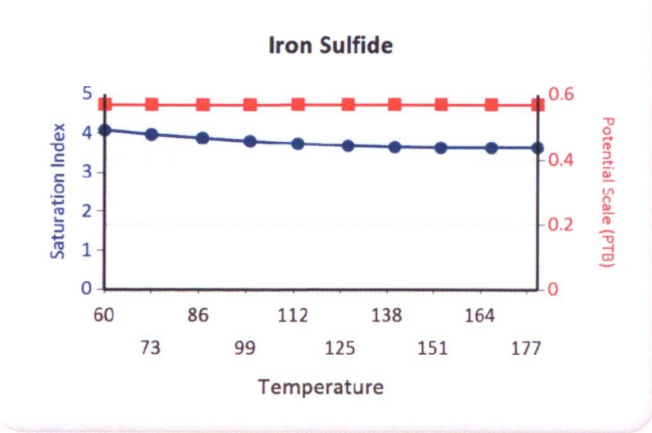
		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
180.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	2.33	0.64	11.56	0.21	7.11	55.45	4.10	31.65	10.05	0.80
167.00	267.00	0.00	0.00	0.00	0.00	0.00	0.00	2.18	0.64	11.78	0.21	6.48	52.32	3.73	30.71	9.58	0.80
153.00	483.00	0.00	0.00	0.00	0.00	0.00	0.00	2.04	0.64	12.04	0.21	5.89	49.36	3.40	29.62	9.17	0.80
140.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	1.88	0.64	12.32	0.21	5.30	45.96	3.06	28.19	8.77	0.80
127.00	917.00	0.00	0.00	0.00	0.00	0.00	0.00	1.71	0.63	12.62	0.21	4.70	42.18	2.73	26.42	8.38	0.80
113.00	1133.00	0.00	0.00	0.00	0.00	0.00	0.00	1.53	0.63	12.96	0.21	4.10	38.06	2.40	24.33	7.99	0.80
100.00	1350.00	0.00	0.00	0.00	0.00	0.00	0.00	1.35	0.62	13.32	0.21	3.50	33.63	2.07	21.94	7.61	0.80
87.00	1567.00	0.00	0.00	0.00	0.00	0.00	0.00	1.15	0.60	13.71	0.21	2.89	28.89	1.74	19.28	7.24	0.80
73.00	1783.00	0.00	0.00	0.00	0.00	0.00	0.00	0.94	0.57	14.13	0.21	2.28	23.79	1.41	16.36	6.87	0.80
60.00	2000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.71	0.52	14.59	0.21	1.66	18.24	1.08	13.19	6.51	0.80

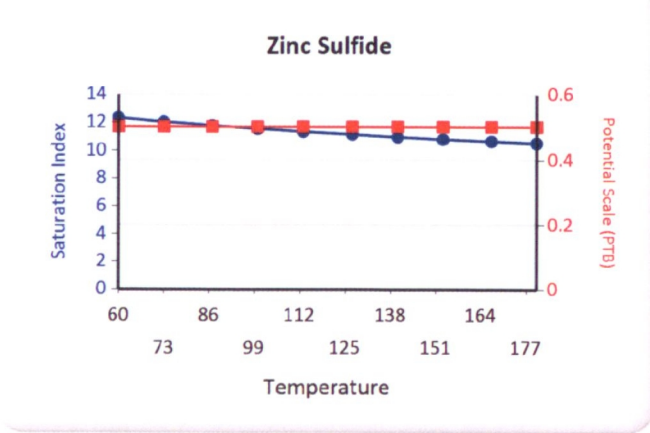
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Lead Sulfide Mg Silicate Ca Mg Silicate Fe Silicate

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









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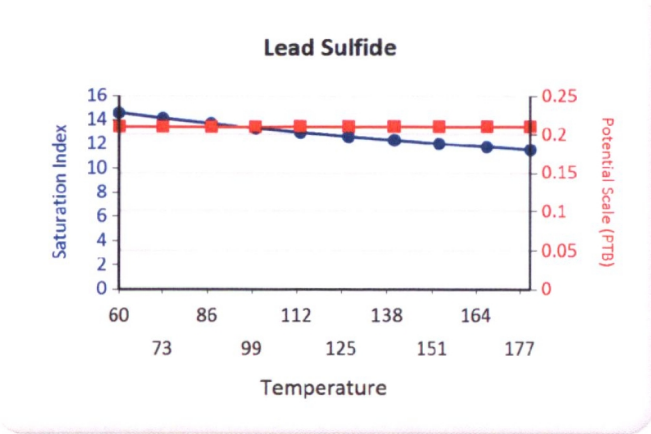
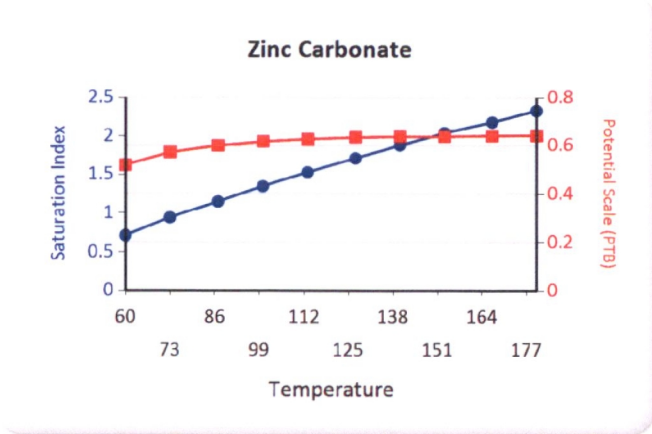
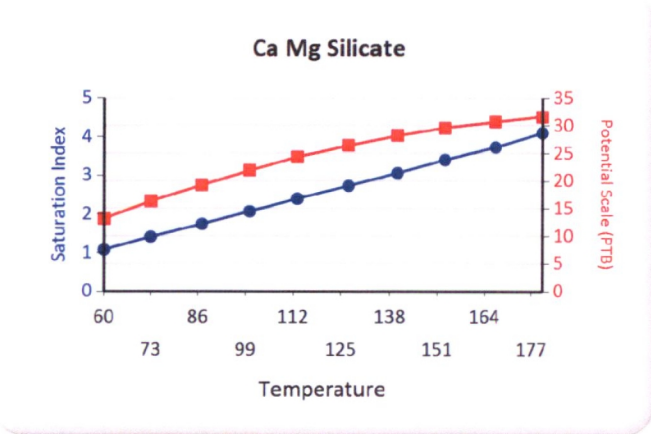
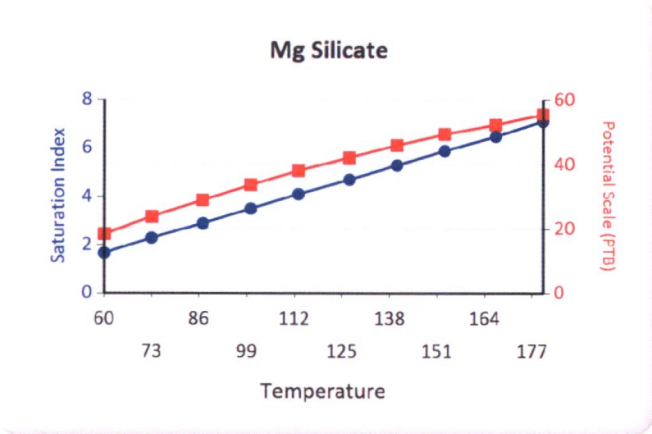
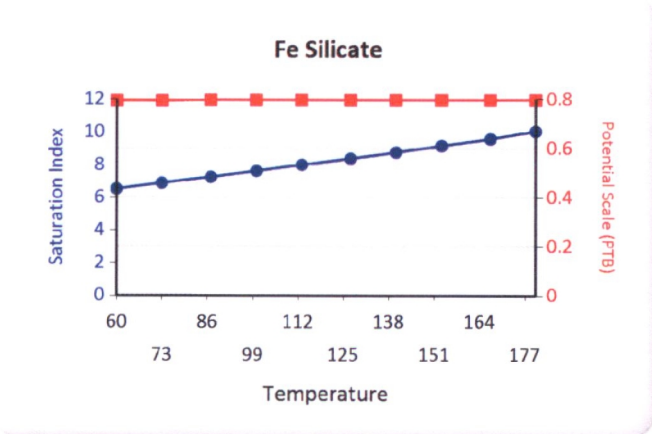
Water Analysis Report











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

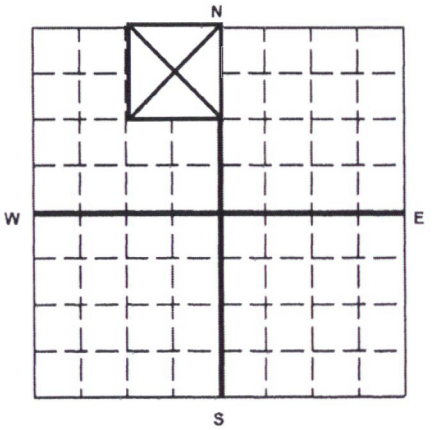
EPA

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	UT2736-04541

Surface Location Description

____ 1/4 of 1/4 of NE 1/4 of NW 1/4 of Section 29 Township 5S Range 3W

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

Surface Location 624 ft. frm (N/S) N Line of quarter section and 1987 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 29-03

		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	1646	1666	690		0	0
February	14	1656	1666	480		0	0
March	14	1631	1644	616		0	0
April	14	1651	1657	721		0	0
May	14	1635	1652	696		0	0
June	14	1645	1642	726		0	0
July	14	1550	1656	462		0	0
August	14	1649	1673	~~731~~	749 inj mnthly	0	0
September	14	1485	1661	547		0	0
October	14	1644	1644	710		0	0
November	14	1650	1657	641		0	0
December	14	1645	1656	629		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 3/3/15
Initial GW

	GREEN	BLUE	CBI
TAB		2	

Multi-Chem Analytical Laboratory
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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 29-03 INJ, DUCHESNE**	Lab Tech:	**Gary Winegar**
Sample Point:	**WELLHEAD**		
Sample Date:	**1/7/2015**		
Sample ID:	**WA-297531**		

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):	11305.73
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	0.00
H_2S in Gas (%):	
H2S in Water (mg/L):	20.00

Analysis @ Properties in Sample Specifics			
Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	3249.57	Chloride (Cl):	4000.00
Potassium (K):	55.42	Sulfate (SO_4):	249.00
Magnesium (Mg):	12.20	Bicarbonate (HCO_3):	3660.00
Calcium (Ca):	25.63	Carbonate (CO_3):	
Strontium (Sr):	5.52	Acetic Acid (CH_3COO)	
Barium (Ba):	4.85	Propionic Acid (C_2H_5COO)	
Iron (Fe):	7.56	Butanoic Acid (C_3H_7COO)	
Zinc (Zn):	8.49	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Lead (Pb):	0.04	Fluoride (F):	
Ammonia NH_3:		Bromine (Br):	
Manganese (Mn):	0.15	Silica (SiO_2):	27.30

Notes:
B=7.82 Al=.13 Li=1.81

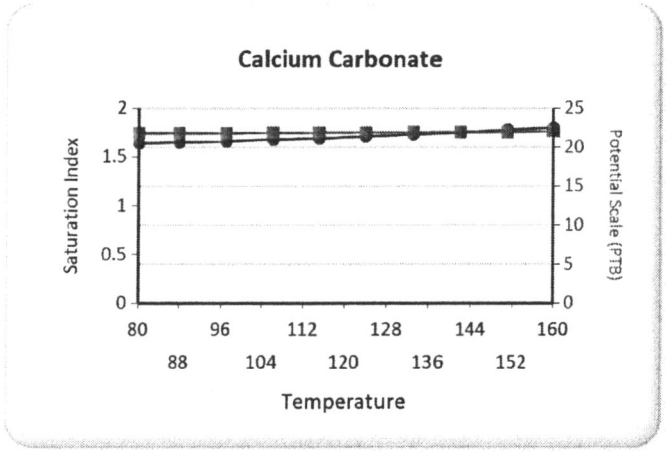
(PTB = Pounds per Thousand Barrels)

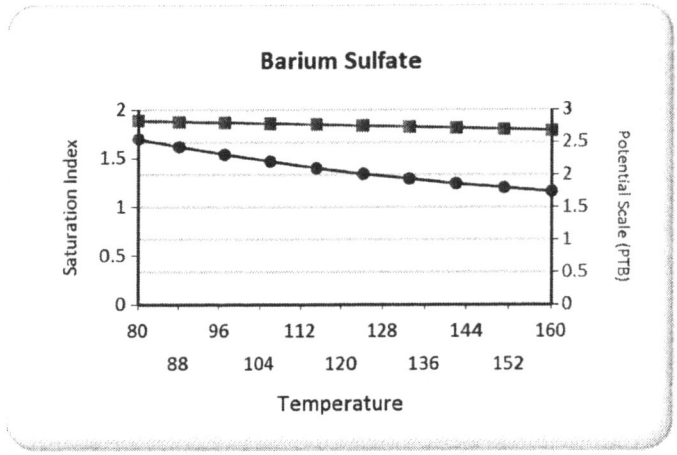
		Calcium Carbonate		Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum CaSO4·2H2O		Celestite SrSO4		Halite NaCl		Zinc Sulfide	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
80.00	14.00	1.64	21.79	1.70	2.83	4.64	4.17	3.12	5.49	0.00	0.00	0.00	0.00	0.00	0.00	12.64	4.43
88.00	157.00	1.65	21.79	1.62	2.82	4.56	4.17	3.15	5.49	0.00	0.00	0.00	0.00	0.00	0.00	12.46	4.43
97.00	300.00	1.66	21.81	1.54	2.80	4.50	4.17	3.19	5.49	0.00	0.00	0.00	0.00	0.00	0.00	12.29	4.43
106.00	443.00	1.68	21.83	1.47	2.79	4.45	4.17	3.24	5.50	0.00	0.00	0.00	0.00	0.00	0.00	12.13	4.43
115.00	585.00	1.69	21.86	1.40	2.77	4.40	4.17	3.28	5.50	0.00	0.00	0.00	0.00	0.00	0.00	11.99	4.43
124.00	728.00	1.71	21.88	1.34	2.75	4.36	4.17	3.32	5.50	0.00	0.00	0.00	0.00	0.00	0.00	11.85	4.43
133.00	871.00	1.73	21.91	1.29	2.74	4.33	4.17	3.36	5.50	0.00	0.00	0.00	0.00	0.00	0.00	11.72	4.43
142.00	1014.00	1.75	21.94	1.24	2.72	4.31	4.17	3.40	5.50	0.00	0.00	0.00	0.00	0.00	0.00	11.60	4.43
151.00	1157.00	1.78	21.97	1.20	2.70	4.29	4.17	3.44	5.50	0.00	0.00	0.00	0.00	0.00	0.00	11.49	4.43
160.00	1300.00	1.80	21.99	1.16	2.68	4.27	4.17	3.48	5.50	0.00	0.00	0.00	0.00	0.00	0.00	11.38	4.43

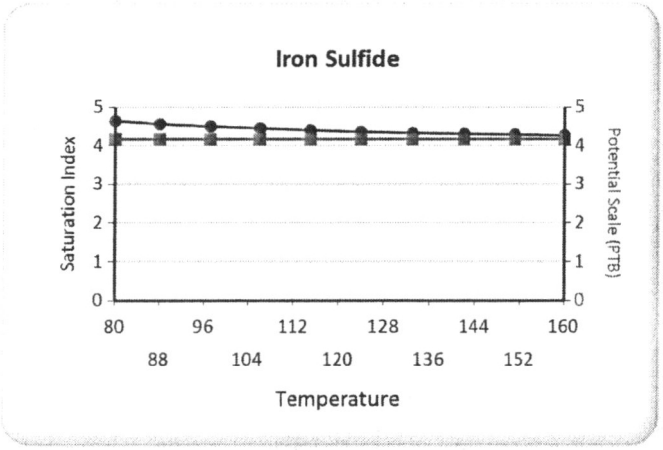
		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
80.00	14.00	0.00	0.00	0.00	0.00	0.00	0.00	2.27	5.68	12.59	0.02	1.30	9.95	0.52	5.18	9.89	5.88
88.00	157.00	0.00	0.00	0.00	0.00	0.00	0.00	2.38	5.69	12.29	0.02	1.60	11.61	0.66	6.26	10.02	5.88
97.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	2.50	5.69	12.02	0.02	1.97	13.53	0.85	7.63	10.22	5.88
106.00	443.00	0.00	0.00	0.00	0.00	0.00	0.00	2.61	5.70	11.76	0.02	2.33	15.27	1.04	8.92	10.43	5.88
115.00	585.00	0.00	0.00	0.00	0.00	0.00	0.00	2.72	5.70	11.52	0.02	2.71	16.83	1.24	10.13	10.64	5.88
124.00	728.00	0.00	0.00	0.00	0.00	0.00	0.00	2.83	5.70	11.29	0.02	3.09	18.21	1.44	11.23	10.87	5.88
133.00	871.00	0.00	0.00	0.00	0.00	0.00	0.00	2.93	5.70	11.07	0.02	3.47	19.40	1.65	12.23	11.10	5.88
142.00	1014.00	0.00	0.00	0.00	0.00	0.00	0.00	3.02	5.70	10.87	0.02	3.85	20.41	1.86	13.11	11.34	5.88
151.00	1157.00	0.00	0.00	0.00	0.00	0.00	0.00	3.11	5.70	10.68	0.02	4.23	21.26	2.07	13.88	11.59	5.88
160.00	1300.00	0.00	0.00	0.00	0.00	0.00	0.00	3.20	5.71	10.49	0.02	4.61	21.96	2.28	14.54	11.84	5.88

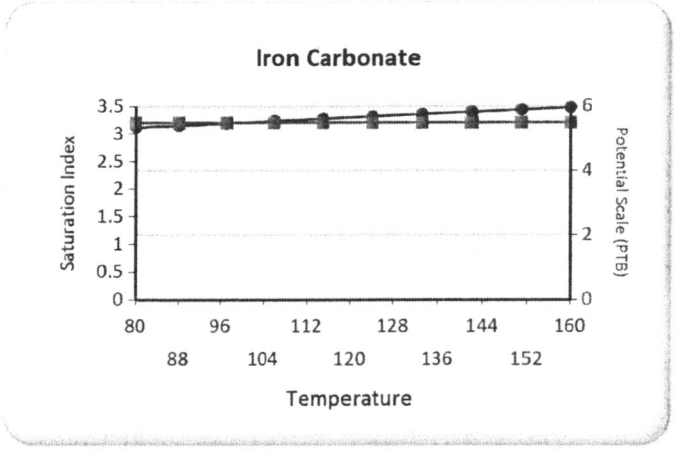
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Lead Sulfide Mg Silicate Ca Mg Silicate Fe Silicate

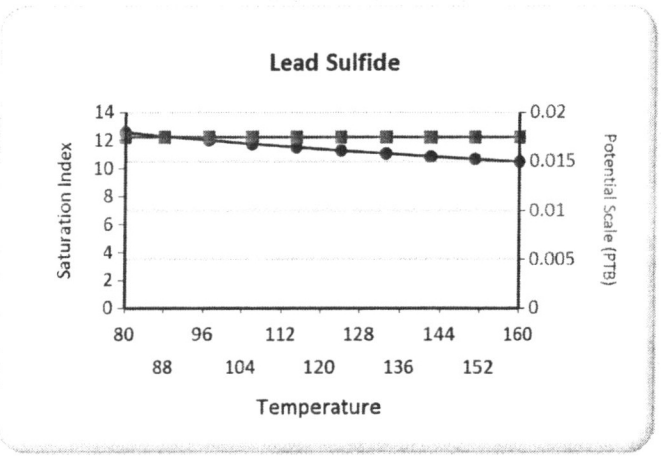
These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Lead Sulfide Mg Silicate Ca Mg Silicate Fe Silicate

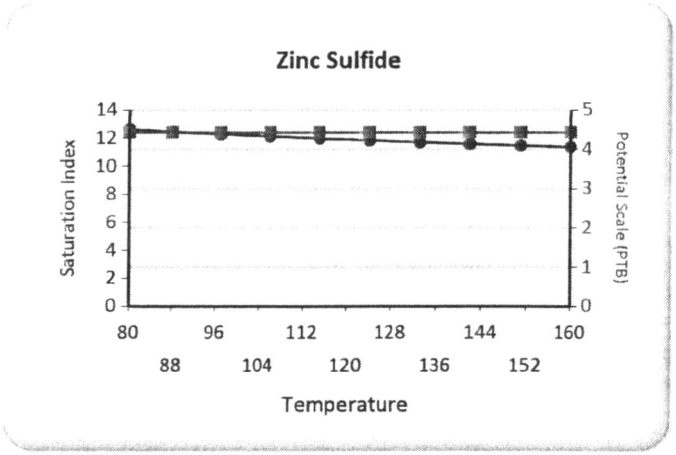


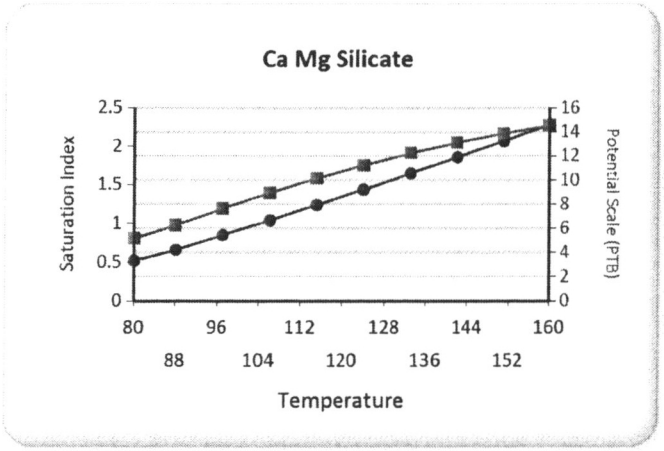


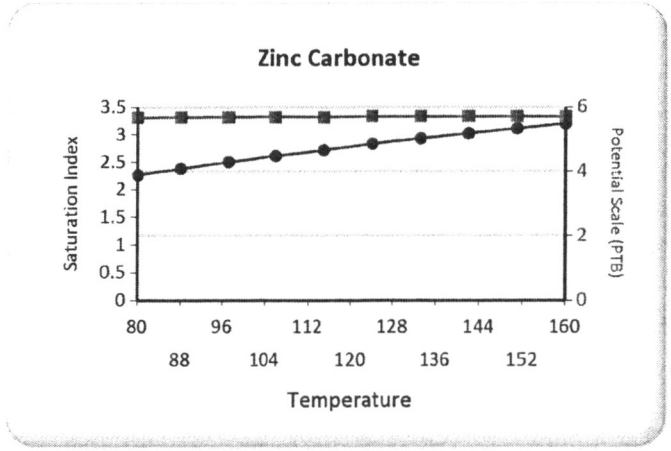


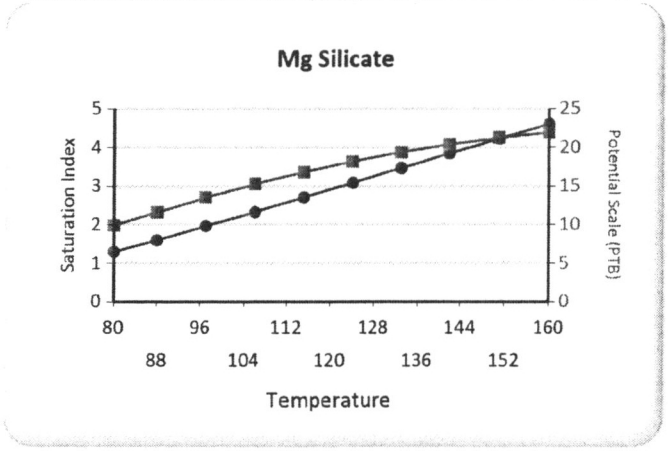


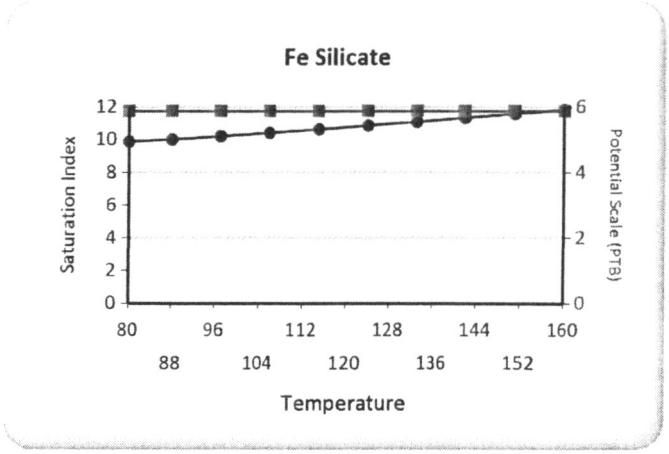





Ca Mg Silicate
Saturation Index
Potential Scale (PTB)
Temperature
2.5
2
1.5
1
0.5
0
16
14
12
10
8
6
4
2
0
80
96
112
128
144
160
88
104
120
136
152


Zinc Carbonate
Saturation Index
Potential Scale (PTB)
Temperature
3.5
3
2.5
2
1.5
1
0.5
0
6
4
2
0
80
96
112
128
144
160
88
104
120
136
152


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


Fe Silicate
Saturation Index
Potential Scale (PTB)
Temperature
12
10
8
6
4
2
0
6
4
2
0
80
96
112
128
144
160
88
104
120
136
152

September 14, 2015

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

RE: EPA AREA PERMIT NO. UT2736-04541
Mechanical Integrity Test
Standard Five year retesting for Ute Tribal 29-03

Mr. Breffle:
The enclose Mechanical Integrity Test was performed on the above referenced well on September 11, 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 29-03

U2 Entered
Date 10/1/15
Initial SB

TAB	GREEN	BLUE	CBI
		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: 9 / 11 / 13

Test conducted by: CHAD STEVENSON

Others present: _____

Well Name: 29-03 Type: ER SWD **Status:** AC TA UC

Field: ANTELOPE CREEK

Location: 29-03 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: 18 **bpd**
Pre-test annulus pressure: **psig**

MIT DATA TABLE	*Test #1*	*Test #2*	*Test #3*
TUBING		***PRESSURE RECORD***	
Initial Pressure	1635 psig	psig	psig
End of test pressure	1635 psig	psig	psig
CASING / TUBING ANNULUS		***PRESSURE RECORD***	
0 minutes	1020 psig	psig	psig
5 minutes	1020 psig	psig	psig
10 minutes	1020 psig	psig	psig
15 minutes	1020 psig	psig	psig
20 minutes	1020 psig	psig	psig
25 minutes	1020 psig	psig	psig
30 minutes	1020 psig	psig	psig
4 HOURS ~~*minutes*~~	1020 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.

PRINTED IN U.S.A.
CALIBRATED CHARTS
MW-MP 2000
TIME PUT ON
DATE PUT ON
TIME TAKEN OFF
DATE TAKEN OFF
12 NOON
12 MIDNIGHT

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

EPA

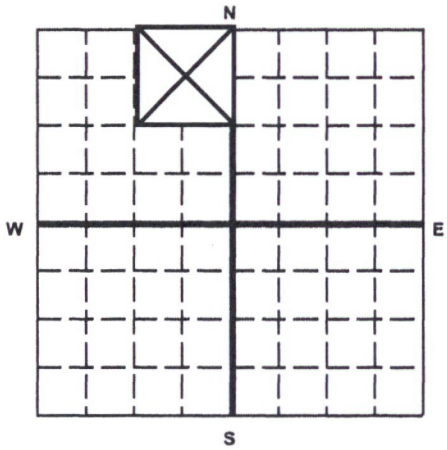
United States Environmental Protection Agency
Washington, DC 20460

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	UT2736-04541

Surface Location Description
___ 1/4 of ___ 1/4 of NE 1/4 of NW 1/4 of Section 29 Township 5S Range 3W

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

Surface Location 624 ft. frm (N/S) N Line of quarter section
and 1987 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 29-03

		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	1645	1675	233		0	0
February	13	1634	1667	202		0	0
March	13	1612	1657	146		0	0
April	13	1574	1620	447		0	0
May	13	1647	1661	532		0	0
June	13	1624	1663	343		0	0
July	13	1621	1630	378		0	0
August	13	1630	1645	463		0	0
September	13	1623	1643	465		0	0
October	13	1622	1635	580		0	0
November	13	1638	1645	691		0	0
December	13	1642	1657	748		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)

GREEN BLUE CBL TAB ✓

U2 Entered
Date 3/21/14
Initial DB

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

multi-chem®
A HALLIBURTON SERVICE

Units of Measurement: **Standard**

Water Analysis Report

Production Company: **PETROGLYPH ENERGY INC**
Well Name: **UTE TRIBAL 29-03 INJ**
Sample Point: **Wellhead**
Sample Date: **1/8/2014**
Sample ID: **WA-263025**

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):	1.007
pH:	8.50
Calculated TDS (mg/L):	13599.47
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	0.00
H_2S in Gas (%):	
H2S in Water (mg/L):	40.00

Analysis @ Properties in Sample Specifics			
Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	4176.83	Chloride (Cl):	5000.00
Potassium (K):	77.00	Sulfate (SO_4):	83.00
Magnesium (Mg):	24.00	Bicarbonate (HCO_3):	3733.20
Calcium (Ca):	101.00	Carbonate (CO_3):	
Strontium (Sr):	8.40	Acetic Acid (CH_3COO)	
Barium (Ba):	7.90	Propionic Acid (C_2H_5COO)	
Iron (Fe):	360.00	Butanoic Acid (C_3H_7COO)	
Zinc (Zn):	1.30	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Lead (Pb):	0.19	Fluoride (F):	
Ammonia NH_3:		Bromine (Br):	
Manganese (Mn):	0.97	Silica (SiO_2):	25.68

Notes:
B=5 Al=1.3 Li=1.1

(PTB = Pounds per Thousand Barrels)

		Calcium Carbonate		Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum $CaSO_4 \cdot 2H_2O$		Celestite $SrSO_4$		Halite NaCl		Zinc Sulfide	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
60.00	14.00	2.16	87.02	1.52	4.56	6.70	36.22	4.59	261.69	0.00	0.00	0.00	0.00	0.00	0.00	12.49	0.68
73.00	157.00	2.17	87.03	1.38	4.49	6.56	36.22	4.65	261.70	0.00	0.00	0.00	0.00	0.00	0.00	12.19	0.68
86.00	300.00	2.19	87.10	1.25	4.42	6.45	36.22	4.72	261.72	0.00	0.00	0.00	0.00	0.00	0.00	11.91	0.68
100.00	443.00	2.21	87.18	1.13	4.34	6.35	36.22	4.79	261.73	0.00	0.00	0.00	0.00	0.00	0.00	11.66	0.68
113.00	585.00	2.24	87.27	1.03	4.24	6.28	36.22	4.86	261.74	0.00	0.00	0.00	0.00	0.00	0.00	11.44	0.68
126.00	728.00	2.27	87.36	0.95	4.14	6.22	36.22	4.92	261.75	0.00	0.00	0.00	0.00	0.00	0.00	11.23	0.68
140.00	871.00	2.30	87.46	0.87	4.04	6.18	36.22	4.98	261.76	0.00	0.00	0.00	0.00	0.00	0.00	11.04	0.68
153.00	1014.00	2.34	87.55	0.81	3.94	6.15	36.22	5.04	261.76	0.00	0.00	0.00	0.00	0.00	0.00	10.87	0.68
166.00	1157.00	2.39	87.65	0.76	3.83	6.13	36.22	5.10	261.77	0.00	0.00	0.00	0.00	0.00	0.00	10.72	0.68
180.00	1300.00	2.44	87.74	0.71	3.74	6.13	36.22	5.16	261.77	0.00	0.00	0.00	0.00	0.00	0.00	10.58	0.68

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

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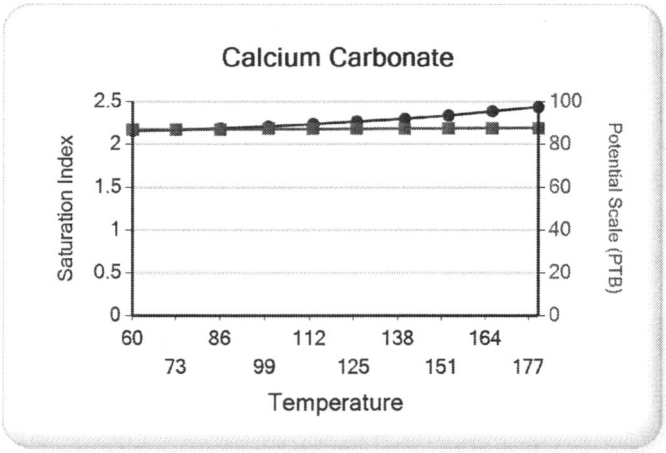
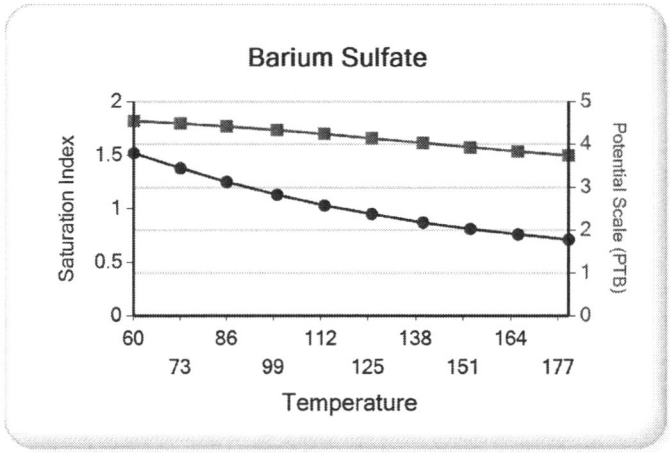
Water Analysis Report

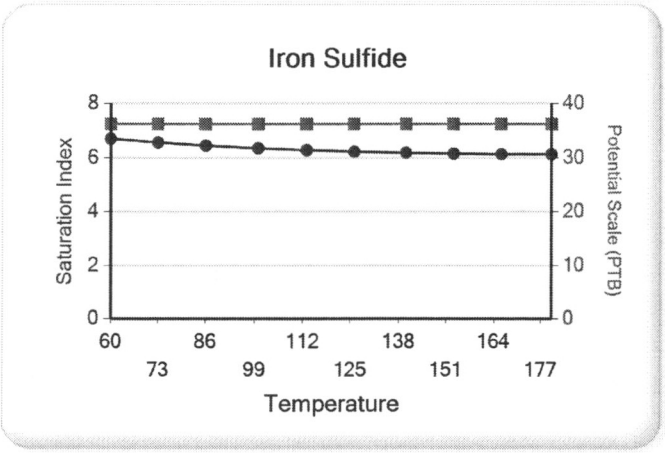
		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
60.00	14.00	0.00	0.00	0.00	0.00	0.00	0.00	1.10	0.80	14.20	0.08	1.18	13.06	0.84	8.46	14.17	27.85
73.00	157.00	0.00	0.00	0.00	0.00	0.00	0.00	1.29	0.83	13.71	0.08	1.66	16.99	1.08	9.97	14.38	27.85
86.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	1.48	0.84	13.26	0.08	2.19	20.71	1.35	11.43	14.65	27.85
100.00	443.00	0.00	0.00	0.00	0.00	0.00	0.00	1.66	0.86	12.86	0.08	2.73	23.83	1.63	12.65	14.95	27.85
113.00	585.00	0.00	0.00	0.00	0.00	0.00	0.00	1.83	0.86	12.48	0.08	3.29	26.31	1.92	13.62	15.27	27.85
126.00	728.00	0.00	0.00	0.00	0.00	0.00	0.00	1.99	0.87	12.14	0.08	3.85	28.15	2.22	14.37	15.61	27.85
140.00	871.00	0.00	0.00	0.00	0.00	0.00	0.00	2.13	0.87	11.82	0.08	4.41	29.40	2.53	14.92	15.96	27.85
153.00	1014.00	0.00	0.00	0.00	0.00	0.00	0.00	2.27	0.87	11.53	0.08	4.97	30.19	2.84	15.32	16.32	27.85
166.00	1157.00	0.00	0.00	0.00	0.00	0.00	0.00	2.40	0.87	11.27	0.08	5.54	30.63	3.16	15.61	16.70	27.85
180.00	1300.00	0.00	0.00	0.00	0.00	0.00	0.00	2.52	0.87	11.02	0.08	6.10	30.88	3.47	15.80	17.08	27.85

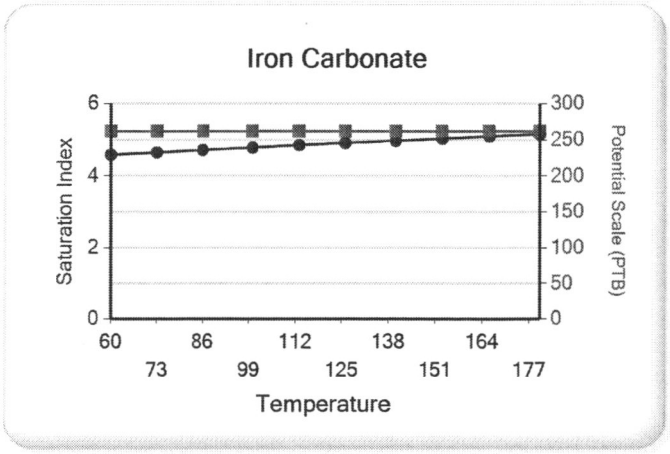
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Lead Sulfide Mg Silicate Ca Mg Silicate Fe Silicate

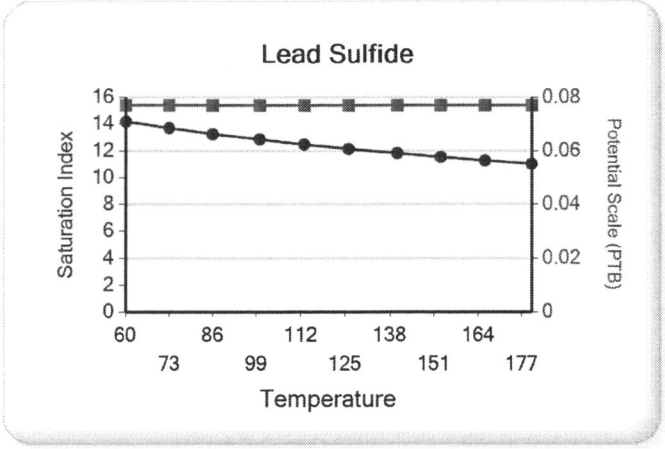
These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Lead Sulfide Mg Silicate Ca Mg Silicate Fe Silicate

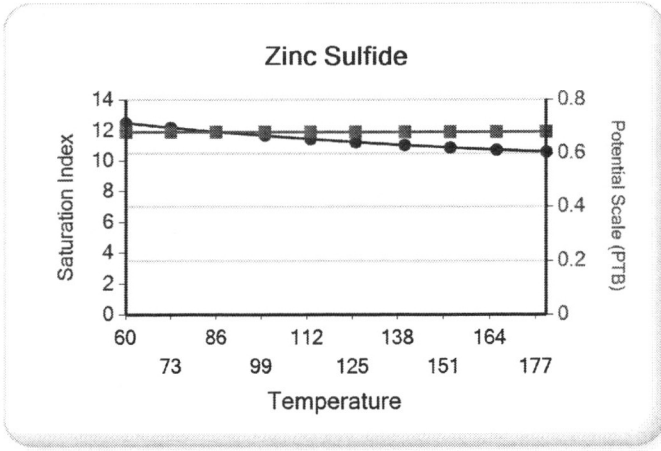


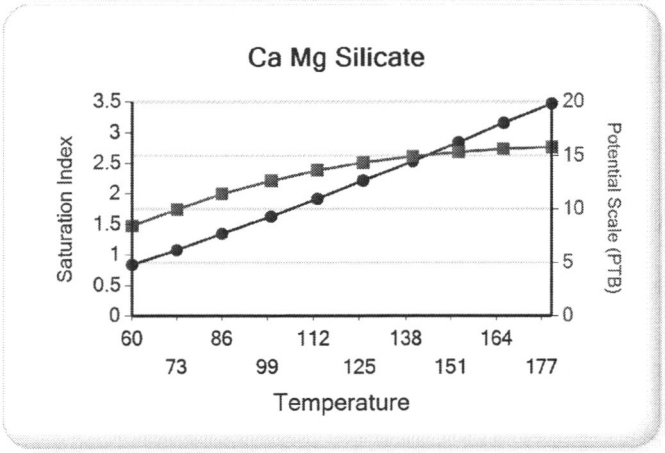


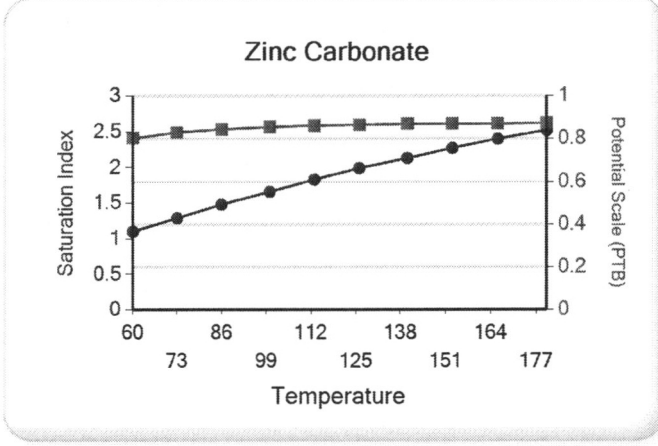


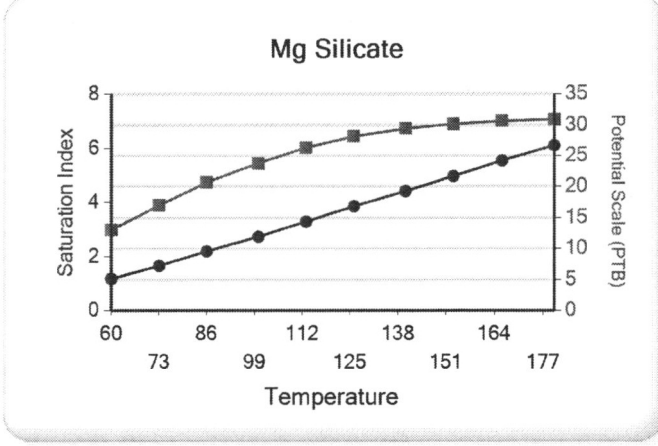


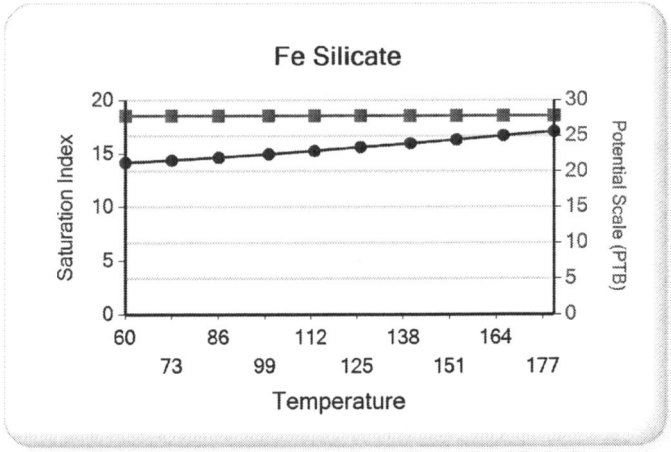

Lead Sulfide
Saturation Index
Potential Scale (PTB)
Temperature
60 86 112 138 164
73 99 125 151 177


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
20
15
10
5
0
30
25
20
15
10
5
0
60
86
112
138
164
73
99
125
151
177

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

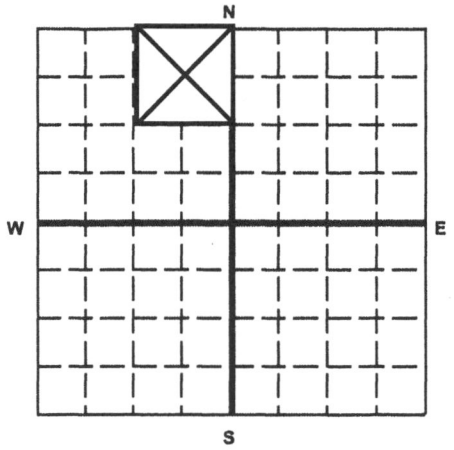
United States Environmental Protection Agency
Washington, DC 20460

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	UT2736-04541

Surface Location Description
___ 1/4 of ___ 1/4 of NE 1/4 of NW 1/4 of Section 29 Township 5S Range 3W

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

Surface Location 624 ft. frm (N/S) N Line of quarter section
and 1987 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 29-03

		INJECTION PRESSURE		TOTAL VOLUME INJECTED		TUBING -- CASING ANNULUS PRESSURE (OPTIONAL MONITORING)	
MONTH	YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG
January	12	1621	1673	627		0	0
February	12	1594	1597	333		0	0
March	12	1635	1654	532		0	0
April	12	1614	1647	456		0	0
May	12	1623	1670	522		0	0
June	12	1625	1636	456		0	0
July	12	1595	1605	421		0	0
August	12	1574	1599	325		0	0
September	12	1627	1659	407		0	0
October	12	1599	1648	306		0	0
November	12	1513	1645	332		0	0
December	12	1602	1613	363		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		2/6/2013

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

TAB	GREEN	BLUE	CBI
		2	

U2 Entered
Date 4/3/13
Initial DB

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

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A HALLIBURTON SERVICE

Units of Measurement: **Standard**

Water Analysis Report

Production Company: **PETROGLYPH ENERGY INC**
Well Name: **UTE TRIBAL 29-03 INJ**
Sample Point: **Injection Well**
Sample Date: **1/8/2013**
Sample ID: **WA-231822**

Sales Rep: **James Patry**
Lab Tech: **Layne Wilkerson**

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

Sample Specifics	
Test Date:	1/23/2013
System Temperature 1 (°F):	60.00
System Pressure 1 (psig):	1300.0000
System Temperature 2 (°F):	180.00
System Pressure 2 (psig):	14.7000
Calculated Density (g/ml):	1.001
pH:	8.70
Calculated TDS (mg/L):	4857.99
CO_2 in Gas (%):	
Dissolved CO_2 (mg/L)):	0.00
H_2S in Gas (%):	
H_2S in Water (mg/L):	0.00

Analysis @ Properties in Sample Specifics			
Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	1509.16	Chloride (Cl):	2000.00
Potassium (K):	9.40	Sulfate (SO_4):	180.00
Magnesium (Mg):	52.00	Bicarbonate (HCO_3):	976.00
Calcium (Ca):	93.00	Carbonate (CO_3):	
Strontium (Sr):		Acetic Acid (CH_3COO)	
Barium (Ba):	1.20	Propionic Acid (C_2H_5COO)	
Iron (Fe):	37.00	Butanoic Acid (C_3H_7COO)	
Zinc (Zn):	0.02	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Lead (Pb):	0.01	Fluoride (F):	
Ammonia NH_3:		Bromine (Br):	
Manganese (Mn):	0.20	Silica (SiO_2):	

Notes:

(PTB = Pounds per Thousand Barrels)

		Calcium Carbonate		Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum $CaSO_4 \cdot 2H_2O$		Celestite $SrSO_4$		Halite NaCl		Zinc Sulfide	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
180.00	14.00	2.28	75.08	0.71	0.57	0.00	0.00	3.92	26.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
166.00	157.00	2.19	69.94	0.74	0.58	0.00	0.00	3.82	26.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
153.00	300.00	2.12	67.73	0.77	0.59	0.00	0.00	3.73	26.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140.00	443.00	2.05	65.41	0.81	0.61	0.00	0.00	3.64	26.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
126.00	585.00	1.99	63.03	0.87	0.62	0.00	0.00	3.54	26.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
113.00	728.00	1.93	60.66	0.94	0.63	0.00	0.00	3.45	26.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	871.00	1.88	58.37	1.02	0.64	0.00	0.00	3.36	26.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
86.00	1014.00	1.83	56.20	1.12	0.66	0.00	0.00	3.27	26.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
73.00	1157.00	1.79	54.22	1.23	0.67	0.00	0.00	3.18	26.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
60.00	1300.00	1.76	52.47	1.36	0.68	0.00	0.00	3.09	26.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

		Hemihydrate $CaSO_4 \sim 0.5H_2O$		Anhydrate $CaSO_4$		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	14.00	0.00	0.00	0.00	0.00	0.00	0.00	0.67	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
166.00	157.00	0.00	0.00	0.00	0.00	0.00	0.00	0.51	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
153.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.36	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140.00	443.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
126.00	585.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
113.00	728.00	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	871.00	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
86.00	1014.00	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	1157.00	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	1300.00	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

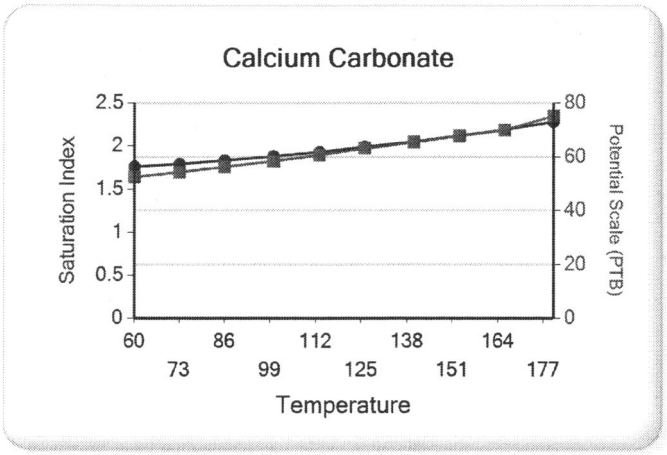
Multi-Chem Analytical Laboratory
1553 East Highway 40
Vernal, UT 84078

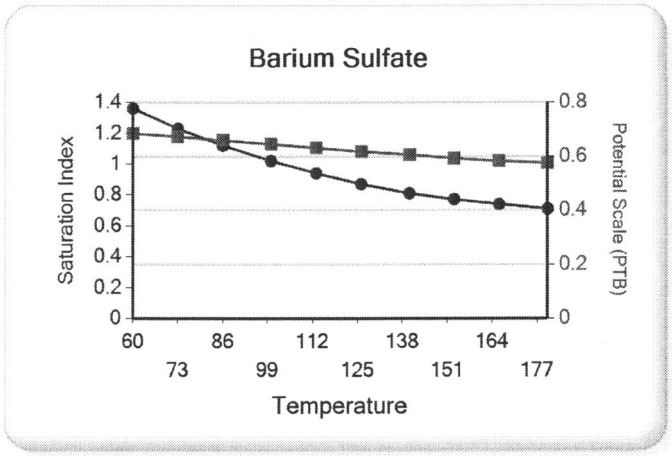
multi-chem®
A HALLIBURTON SERVICE

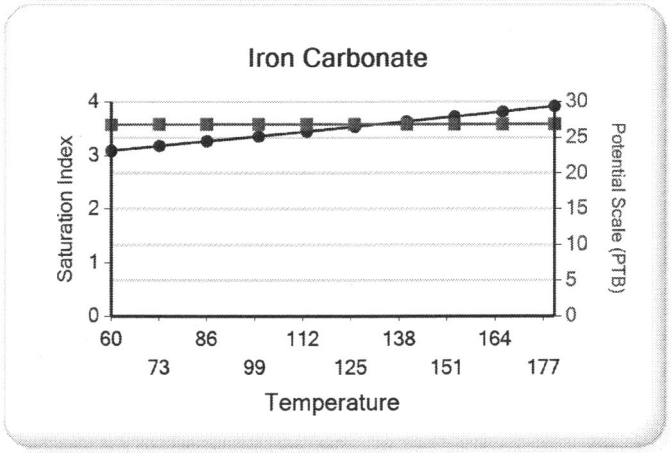
Water Analysis Report

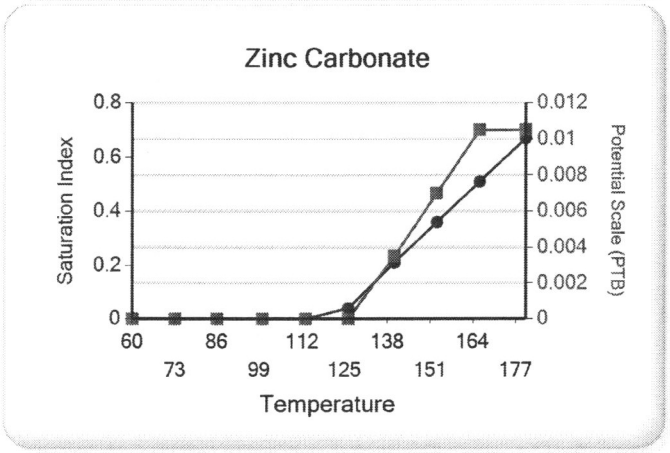
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Carbonate Zinc Carbonate

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









UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
999 18TH STREET - SUITE 300
DENVER, CO 80202-2466
http://www.epa.gov/region08

JUL 31 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

Authorization to Inject - Final

RE: ~~Authorization to Continue Injection~~
Ute Tribal #29-03
EPA Area Permit No. UT2736-00000
EPA Well Permit No. UT04541
Duchesne County, Utah

Dear Mr. Safford:

Thank you for submitting to the Region VIII Ground Water Program office of the Environmental Protection Agency (EPA) the results from the July 2, 2001, radioactive tracer survey (RATS) used to demonstrate Part II (External) Mechanical Integrity (MI) test on the Ute Tribal #29-03 injection well. In the letter accompanying the RATS results, you requested an extension on the time allowed to inject in order to allow for continued stabilization of pressure, and indicated your willingness to run RATS at set intervals until a maximum injection pressure of 1900 psig could be obtained, tested and approved. A limited injection period of up to one hundred and eighty days, beginning December 8, 2000, was authorized to allow for stabilization of the injection formation pressure prior to the demonstration of Part II (External) MI.

The results of the RATS have been reviewed and the EPA has determined that the test adequately demonstrated Part II MI, that injected fluids will remain in the authorized injection interval, at the tested pressure of 1700 psig. Therefore, EPA hereby approves this demonstration of Part II (External) MI and authorizes continued injection into the Ute Tribal #29-03 under the terms and conditions of EPA Area Permit UT2736-00000 and the

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UNITED STATES ENVIRONMENTAL
REGION 8
999 18TH STREET - SU
DENVER, CO 8020
http://www.epa.gov/re

Scan under
UT20736-04541
220 Authorization
to Inject - Final
7/31/2001
Will need to link
with UT20736-04541
66 Modification -
Minor Mod Approved
in new database also ...
MAIP changed

JUL 31 2001

Ref: 8P-W-GW

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

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Operations Coordinator
Petroglyph Operating Company, Inc.
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Roosevelt, UT 84066

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EPA Area Permit No. UT2736-00000
EPA Well Permit No. UT04541
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Authorization for Additional Well UT2736-04541 issued under this Area Permit. The maximum allowable injection pressure (MAIP) for this well is 1700 psig.

Please note that the maximum pressure used during a RATS MI demonstration becomes the maximum allowable injection pressure for the well. However, you may apply for a higher maximum allowable injection pressure at a later date after the formation pressure has further stabilized. Your application should be accompanied by the interpreted results from a step rate test that measure the formation fracture pressure and fracture gradient at this location. A copy of EPA guidelines for running and interpreting a step rate test are included with this letter. Should the step rate test result in approval of a higher MAIP, a new Part II (External MI demonstration must be run. Please note that to use a pressure greater than the present MAIP of 1700 psig during a step rate test and RATS, you must first receive prior written authorization from the Director. EPA noted during the review of the submitted RATS that there was no indication on the log of fluid flow into the top set of perforations. Therefore in future RATS run on this well, we recommend you hold the tool just above the uppermost perforations while injecting tracer (see Step No. 8 of the enclosed guidelines), and hold the tool at this depth for thirty (30) minutes rather than fifteen (15) minutes to ensure recording of any tracer fluid flow into or above the top set of perforations.

If you have any questions in regard to the above action, please contact Chuck Tinsley at 303.312.6266 or Dan Jackson at 303.312.6155. Results from temperature log or other Part II MI test should be mailed directly to the Ground Water Program Director, Mail Code 8P-W-GW.

Sincerely,

D. Edwin Hogle
Director
Ground Water Program

enclosure: Step-Rate Test Procedure

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

Ms. Elaine Willie
Environmental Director
Ute Indian Tribe

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

Mr. Jerry Kenczka
Bureau of Land management
Vernal District Office

Mr. Nathan Wiser, ENF-T
USEPA

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: 7/31/01 CW 4114C
Mr. Micheal Safford
Operations Coordinator
Petroglyph Operating Co., Inc.
P.O. Box 607
Roosevelt, UT 84066

JUL 31 2001

UTE TRIBAL #29-03
(UT2136-04541)

COMPLETE THIS SECTION ON DELIVERY

A. Received by *(Please Print Clearly)* B. Date of Delivery 8-6-01

C. Signature
X ☐ Agent ☒ Addressee

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

AUG 10 2001
rec'd LG

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)*
7001 0320 0005 9387 1567

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

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

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Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$

Postmark Here
(#4114C)
JUL 31 2001

Sent To Mr. Micheal Safford
Operations Coordinator
Street, Apt. No.; or PO Box No. Petroglyph Operating Co., Inc.
City, State, ZIP+4 P.O. BOX 607
Roosevelt, UT 84066

7001 0320 0005 9387 1567

PS Form 3800, January 2001 See Reverse for Instructions

FEBRUARY 28, 1996

U.S. EPA REGION VIII

RADIOACTIVE TRACER SURVEY GUIDELINES AND PROCEDURES

The purpose of running a Radioactive Tracer Survey (RATS) in the referenced injection well is to show whether injected fluids will migrate vertically outside the casing after reaching the perforations. This guidance should be used to develop a specific procedure which accounts for the actual construction and operation procedures of the well in question. The actual procedure to be used must be approved prior to running the log.

GUIDELINES

a. The gamma ray log may be run up to 60 feet/minute at a time constant (TC) of 1 second, or up to 30 feet/minute at a TC of 2 seconds, or up to 15 feet/minute at a TC of 4 seconds. INDICATE LOGGING SPEED AND TIME CONSTANT ON THE LOG HEADING.

b. The logging must be done while the well is injecting at normal operating pressure and injection volume. The injection rate and pressure should be brought to equilibrium conditions prior to conducting the RATS.

c. INCLUDE A COLLAR LOCATOR for depth control, an injector, and two detectors (one above and one below the injector).

d. Vertical scale may be 1 inch, 2 inches, or 5 inches per 100 feet.

e. INDICATE IN API UNITS (OR COUNTS PER SECOND) THE HORIZONTAL SCALE. If one gamma curve is recorded, make sure the sensitivity used is such that the tracer material will be obvious when detected and will not be confused with normal "hot spots" in the formations (i.e., gamma ray sensitivity should be such that lithology can be correlated).

f. INDICATE BEGINNING AND ENDING CLOCK TIMES on each log pass.

g. INDICATE INJECTION RATE AND PRESSURE during each log pass.

h. INDICATE VOLUME OF FLUID INJECTED between log passes.

i. INDICATE VOLUME AND CONCENTRATION OF EACH SLUG of tracer material.

j. PROVIDE A PROFILE SHOWING THE PERCENTAGE OF FLUID LOSS ACROSS THE PERFORATED INTERVAL.

PROCEDURE

1. Using the same gamma ray sensitivity for the correlation log as outlined in paragraph (d) in the Guidelines, run a base log from the injection zone to at least 500 feet above the zone (or at least 200 feet above the top of the confining zone);

2. Commence operating well at normal operating injection rate and pressure and do so until pressure and rate stabilize;

3. Set injector just below the tubing packer assembly and inject a concentrated slug of tracer;

4. Reduce gamma ray sensitivity enough to keep the entire slug of tracer radiation within the width of the chart paper. To do this, a non-recorded pass through the slug may be run, setting the sensitivity appropriately. Drop tools to an appropriate depth below the slug and record log pass #1. Log above the upper interface until the radiation level returns to the same level as below the slug. Drop tools to an appropriate depth below the slug and record log pass #2 in the same manner as #1. Repeat this process until the slug dissipates to 1/10 of its original level (log pass #1). At this point, increase gamma ray sensitivity to the same as the base log. Make a log pass from the injection zone to 500 feet above the zone (or 200 feet above the confining zone). Drop tools to an appropriate depth below the slug, reduce sensitivity to the same as log pass #1, and record log pass up to the packer. Repeat this process until the tracer slug is gone or has stopped completely. Increase sensitivity to the same as the base log and make a final log pass from the injection zone to 500 feet above the zone (or 200 feet above the confining zone). This pass should duplicate the base log;

5. More than one pass may be shown on a log segment as long as each gamma ray curve along with its collar locator is distinguishable. Otherwise, make each pass on a separate log segment;

6. Set the RATS tool where the bottom detector is located just above the uppermost perforation and inject tracer;

7. As the slug is pumped past the bottom detector, the log trace should show an increase in gamma response;

1/2 Hr.

8. Hold tool in this location for fifteen (15) minutes while pumping;
No fluid in Top set of perfs.

9. **An interpretation of the log must be supplied by the logging company, including a fluid loss profile across the perforations (in, at least, 25 percent increments);**

10. **Include a schematic diagram of the well on the log. The diagram should show the casing diameters and depths, tubing diameter and depth (if any), perforated intervals or open hole, total or plugged back total depth, and location of tool when slug injected. Indicate the pathway the tracer material appears to have taken by arrows.**

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
999 18TH STREET - SUITE 300
DENVER, CO 80202-2466
http://www.epa.gov/region08

JUL 31 2001 CONCURRENCE COPY

Ref: 8P-W-GW

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

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

RE: **Authorization to Continue Injection**
Ute Tribal #29-03
EPA Area Permit No. UT2736-00000
EPA Well Permit No. UT04541
Duchesne County, Utah

Dear Mr. Safford:

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Concur

The results of the RATS have been reviewed and the EPA has determined that the test adequately demonstrated Part II MI, that injected fluids will remain in the authorized injection interval, at the tested pressure of 1700 psig. Therefore, EPA hereby approves this demonstration of Part II (External) MI and authorizes continued injection into the Ute Tribal #29-03 under the terms and conditions of EPA Area Permit UT2736-00000 and the

CEW 7/24/01

8P-W-GW Duplicate 7/25/01

8P-W-GW 7/27/01 LG

w/ MOD 7/31/01

mailed 7/31/01 LG

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Authorization for Additional Well UT2736-04541 issued under this Area Permit. The maximum allowable injection pressure (MAIP) for this well is 1700 psig.

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D. Edwin Hogle
Director
Ground Water Program

enclosure: Step-Rate Test Procedure

cc: Mr. D. Floyd Wopsock, Chairman
Uintah & Ouray Business Council
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Ms. Elaine Willie
Environmental Director
Ute Indian Tribe

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

Mr. Jerry Kenczka
Bureau of Land management
Vernal District Office

Mr. Nathan Wiser, ENF-T
USEPA