



HYDRO-TEST DESIGN FORM

Line Name:

GREGORY PAD to BIG HORN CTB

Line Type:

SDR 7 HDPE

AFE #

FC13698 & 16GNP01P

Footage:

2,603

Volume:

96 BBL

Duration of Test = 8 hr

Elevation Data

Elevation at GREGORY PAD

= 8,125 ft

Elevation at Tie-in Location

= 8,145 ft

Elevation at Highest Point

= 8,145 ft

Elevation at Lowest Point

= 8,094 ft

ELEVATION PROFILE REQUIRED

Hydro-Test Specifications

Absolute Minimum Test Pressure

= 341 psig

Absolute Maximum Test Pressure

= 440 psig

Test Location: GREGORY PAD

Pressure Range at Test Location:

Minimum = 350 psig

Maximum = 427 psig

Hydro Test Designed by: Ashley Hail

Date: 11/22/2016

Gregory to Bighorn
Liquid

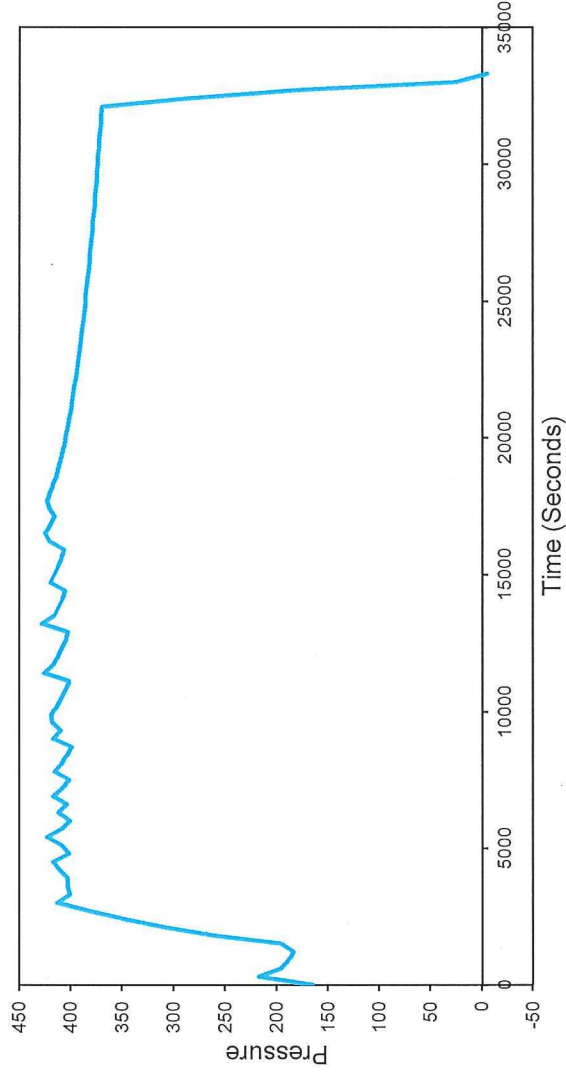
FC13698

Data Collection Report

Gauge Information	
Serial Number	476178
Model	10KPSIXP2I
Message Store	
Units	PSI

Run Info	
Start Time	11/10/16 10:47:48 AM
Stop Time	11/10/16 8:04:34 PM
Logging Interval	300

Pressure



Gregory 11-10-16

11-10-16

Serial Number	476178	
Model	10KPSIXP2I	
Units	PSI	Message Store -----
Firmware Version	R0223	
Run Index	35	
Logging Type	Actual	
Logging Interval	300	
Start Time	11/10/2016 10:47	
Stop Time	11/10/2016 20:04	
Time	Reading	
	0	
	0	
	0	
	0	165
	300	218
	600	196
	900	189
	1200	184
	1500	196
	1800	260
	2100	308
	2400	348
	2700	382
	3000	413
	3300	401
	3600	403
	3900	403
	4200	411
	4500	417
	4800	402
	5100	409
	5400	423
	5700	409
	6000	401
	6300	412
	6600	404
	6900	417
	7200	408
	7500	402
	7800	416
	8100	409
	8400	404
	8700	399
	9000	417
	9300	410
	9600	418
	9900	419
	10200	413
	10500	409
	10800	405
	11100	402
	11400	426

Event Event Data
Battery OK
Logging Interval, 300
Tare, 0

Serial Number	476178	
Model	10KPSIXP2I	
Units	PSI	
Firmware Version	R0223	Message Store -----
Run Index	35	
Logging Type	Actual	
Logging Interval	300	
Start Time	11/10/2016 10:47	
Stop Time	11/10/2016 20:04	
Time	Reading	Event
11700	417	Event Data
12000	412	
12300	409	
12600	405	
12900	403	
13200	428	
13500	416	
13800	412	
14100	408	
14400	406	
14700	420	
15000	416	
15300	412	
15600	409	
15900	407	
16200	421	
16500	425	
16800	420	
17100	416	
17400	421	
17700	423	
18000	420	
18300	417	
18600	414	
18900	412	
19200	410	
19500	408	
19800	406	
20100	405	
20400	403	
20700	402	
21000	400	
21300	399	
21600	398	
21900	397	
22200	395	
22500	394	
22800	393	
23100	392	
23400	391	
23700	390	
24000	389	

Serial Number	476178	
Model	10KPSIXP2I	
Units	PSI	
Firmware Version	R0223	Message Store -----
Run Index	35	
Logging Type	Actual	
Logging Interval	300	
Start Time	11/10/2016 10:47	
Stop Time	11/10/2016 20:04	
Time	Reading	Event
	24300	388
	24600	387
	24900	386
	25200	386
	25500	385
	25800	384
	26100	383
	26400	382
	26700	382
	27000	381
	27300	380
	27600	379
	27900	379
	28200	378
	28500	377
	28800	377
	29100	376
	29400	375
	29700	375
	30000	374
	30300	374
	30600	373
	30900	373
	31200	372
	31500	371
	31800	371
	32100	370
	32400	286
	32700	180
	33000	25
	33300	-5

Event Data

EXHIBIT 3

Hydro Test Number: Crossfire AFE: FC13698 Date: 11/10/2016 Page of

Testing Contractor: Big Horn to Gregory Exposed Pipe: ft
 Name: Justin Triplett Buried Pipe: ft
 Inspector: Justin Triplett Pipe Size: 8" DR7

Test Section Name: Big Horn to Gregory Liquid Circle type of instrument used to get reading noted in the log.
 C = Chart or D = Digital

Test Range		Circle Instrument Used DIGITAL/ OR DEADWEIGHT PRESSURE	C / D AMBIENT TEMP	C / D BURIED PIPE TEMP	C / D EXPOSED PIPE TEMP	C / D GROUND TEMP	Circle type of instrument used to get reading noted in the log. C = Chart or D = Digital	NOTES: List leak inspections, changes in weather, work activities or problems that may influence the data recorded for this test.
DATE	TIME							
11/10/16	11:15	418	36		62			ON test
	11:30	400	37		63			Add pressure
	12:00	411	38		64			
	12:30	400	39		66			pipe settling add pressure
	12:45	412	41		66			
	1:00	411	44		66			
	1:15	412	45		67			
	1:30	402	49		66			
	1:45	412	52		64			
	2:00	403	54		63			
	2:15	407	53		62			add pressure
	2:30	419	53		60			
	2:45	409	53		59			
	3:00	417	51		59			
	3:15	418	51		58			Leak check (NO Leaks)
	3:30	418	50		57			
	3:45	410	50		56			
	4:00	410	50		56			
	4:15	389	50		55			
	4:30	386	50		54			
	4:45	385	48		52			
	5:00	389	45		50			
	5:15	387	45		48			pressure drop due to temp change
	5:30	385	43		47			
	5:45	382	41		46			
	6:00	380	41		46			
	6:15	378	41		44			
	6:30	376	40		44			
	6:45	374	39		42			
	7:00	373	39		42			
	7:15	371	38		41			End test

Certificate of Calibration

Report number FASTCAL-C00114

Manufacturer	Model	Gauge Number	Serial Number	Calibration Date	Expiration Date
Crystal	10KXP21	476178	476178	7/5/2016	1/1/2017

Model Uncertainty
+/- ASME 4A of span (0.1%)

All instrument calibrations are verified for accuracy before they are shipped. The recommended calibration interval for this instrument is 6 months from the date of verification. Your particular quality assurance requirements may supersede this recommendation.

As Received Condition: In tolerance **As Left Condition:** In tolerance

Laboratory ambient conditions throughout this calibration were:

Temperature 70 to 72° F
Humidity 30 to 32% RH
Pressure 82 to 84 kPa

Reference Standards used in this calibration are traceable to the National Institute of Standards and Technology of the United States, through the following report numbers:

Manufacturer	Model	Serial Number	Report Number	Due Date	Reference Uncertainty
Crystal Engineering	15KPSIBXP21	465591	10514	12-May-17	0-20% of FS: $\pm 0.02\%$ of FS; 20%-100% of FS: $\pm 0.1\%$ of Rdd

This certificate shall not be reproduced except in full, without written approval.


Justin Anthony

Laboratory Representative

Quality Representative

Test Results

Report number FASTCAL-C00114

As Received Test Results					10000 PSI		
Reference Reading	Gauge Reading	Allowable Tolerance	Difference	Difference (% of fs)	Condition		
0	0	10	0	0.00%	Pass		
2000	1998	10	-2	-0.02%	Pass		
5000	5002	10	2	0.02%	Pass		
8000	8003	10	3	0.03%	Pass		
10000	10005	10	5	0.05%	Pass		
8000	8004	10	4	0.04%	Pass		
5000	5003	10	3	0.03%	Pass		
2000	2000	10	0	0.00%	Pass		
0	0	10	0	0.00%	Pass		

As Left Test Results					10000 PSI		
Reference Reading	Gauge Reading	Allowable Tolerance	Difference	Difference (% of fs)	Condition		
0	0	10	0	0.00%	Pass		
2000	1998	10	-2	-0.02%	Pass		
5000	5002	10	2	0.02%	Pass		
8000	8003	10	3	0.03%	Pass		
10000	10005	10	5	0.05%	Pass		
8000	8004	10	4	0.04%	Pass		
5000	5003	10	3	0.03%	Pass		
2000	2000	10	0	0.00%	Pass		
0	0	10	0	0.00%	Pass		

AR Head correction:
AL Head correction:

0 PSI
0 PSI

PSS-COMPANIES



9700 E. 104TH AVE, UNIT F- HENDERSON, CO 80640 - Phone (303)857-7986 - Fax (303)389-4945

CALIBRATION CERTIFICATE

CERTIFICATE NUMBER: CO

Details +/-: 1.0% ACCURACY

DATE CALIBRATED: 10/18/2016
DUE DATE: 10/18/2017

INDICATED TEMPERATURE RANGE: # 0 – 150°F
INDICATED PRESSURE RANGE: #0 – 3000 PSI
SERIAL NO: 242-126440 / ID: 011216
MANUFACTURER: BARTON/ 12" RECORDER

TYPE OF INSTRUMENT CALIBRATED: TEMPERATURE / PRESSURE RECORDER

INSTRUMENT FINDINGS/STATUS: UNIT IS IN TOLERANCE/ INSTRUMENT MEETS OR EXCEEDS SPECIFICATIONS.

BASED ON INTERNATIONAL STANDARDS OF GRAVITY: (980.665 cm./sq.).

TYPE OF STANDARD USED TO CALIBRATE: REFINERY DEADWEIGHT TEST UNIT SPT. (35225-3) SERIAL No. 5268: KESSLER TEST THERMOMETERS; SERIAL NO. CALIBRATION DATE: SEPTEMBER 14, 2015

ALL STANDARD DIRECTLY TRACEABLE TO NATIONAL INSTITUTE OF STANDARDS & TECHNOLOGIES TEST NO: (N.I.S.T.) 2.6/172490 & 6.6/139577.

CALCULATED USING MASS VALUES, AREA, AO, AND STATED GRAVITY.
ROOM TEMPERATURE/HUMIDITY (AT TIME OF TEST): 66°F / 25%.

CALIBRATED BY: NICK BEDFORD