2/4/2016

Jason McMillan, Utilities Engineer for the CPUC visited CVGS this morning.

He went through our safety orientation, and we spoke about what he wanted to see.
I gave him aerial photo of the well pad and the plant. Showed him the Gas Storage area map, and the Structural Cross Section so he could have an appreciation of where the gas sits. He asked to see the serial number of the Southern Cross FlamePak-400 to witness that it matched the calibration of the certificate I provided to him prior to his arrival. Further he asked to see the photo identification of the OQ'd operator Stephen Ziglar from Dos Rios.

I asked if he wanted to visit the observation wells and he declined.

Daniel Perez, Stephen Ziglar, and I accompanied Jason to the well pad.

We swept each of the cellars, wellheads, flanges and pipe line connections on the well pad.
We had one small hit on a packing gland on a 2 1/16th valve stem on the 1AU which we will fix immediately.
No other indication of leaks were found. He took pictures throughout the inspection.
I asked if he wanted to survey the 16" pipelines and he declined.

I explained the temperature surveys and Neutron/Gamma Ray logs that we run and he asked to see an example. I showed him Temperature Surveys on the 1L from 2011 and present and explained what our engineers would be looking for should we find a leak, and the fact that we have both digital and paper records available here and with DOGGER should he have questions.

He requested that we document our daily sweeps on our well pad and observation wells.
The operators have made that change in the Daily Work Sheet all ready.

He asked that I send him documentation that the packing gland has been repaired, that will be done this afternoon. I'd like to add that he mentioned our reputation with the CPUC as a cooperative facility preceded us based on our audit of last week.

Mark Stephens
Manager
Central Valley Gas Storage

530-439-2606 office
530-491-8827 mobile
mstephen@aglresources.com

AGL Resources

SOUTHERN CROSS

CERTIFICATE

OF CALIBRATION

This certificate is presented to indicate this equipment has been tested and calibrated to the manufacturer's specifications.

INSTRUMENT FP400 SERIAL NO. 47675

TECHNICIAN C. ROYCROFT DATE 2-1-16

QA INSPECTOR [signature] DATE 2/1/16

Pacific Professional Solutions

February 1, 2016

Kellie Tongson
Dos Rios Inc.
PO Box 3034 Yuba City CA 95992 US
6843 Codorniz Road
Colusa CA 95932

Dear Kellie,

This letter is to inform you that the following employs have passed the Operator Qualification Evaluations listed below on February 1, 2016 and have submitted the evaluations to Veriforce for processing:

Stephen Ziglar- CCT 701 Patrolling Pipeline and Leakage Survey without instrument

Stephen Ziglar- CCT- 702 Leakage Survey with Detection Device

Garrett Agnew- CCT 701 Patrolling Pipeline and Leakage Survey without instrument

Garrett Agnew- CCT- 702 Leakage Survey with Detection Device

Best Regards,

Liza Sweet, President/Owner

Pacific Professional Solutions

326 Limerick Way ◦ Vacaville, CA 95688 ◦
◦ O: (916)800-7676 ◦ F: (707)676-4306 ◦

19054 (CVGS) Leaking Wing valve on 1AU 02/10/2016
Released CM

CVGS Central Valley Gas Storage

INJ WELL 1A-U (CVGS)	Injection Well 1A-U
INJ WELLS (CVGS)	Injection Wells
WELL PAD (CVGS)	CVGS Well Pad Site-Inj Wells, Security, Utilities
WELL SITES (CVGS)	Well Sites - Well Pad, Injection, Observation, BWD
CVGS (CVGS)	Central Valley Gas Storage

DPEREZ [02/10/2016 09:14]:
Herb and I Put packing in stem of valve on tubing on 1AU valve was not leaking anymore around 11 am on feb 4
10 * 1 1

19036 (CVGS) Valve leaking
Completed

CVGS Central Valley Gas Storage

02/08/2016
CM

JDEGROODT

INJ WELL 1A-U (CVGS)	Injection Well 1A-U
INJ WELLS (CVGS)	Injection Wells
WELL PAD (CVGS)	CVGS Well Pad Site-Inj Wells, Security, Utilities
WELL SITES (CVGS)	Well Sites - Well Pad, Injection, Observation, BWD
CVGS (CVGS)	Central Valley Gas Storage

JDEGROODT [02/08/2016 08:40]:

Top valve on well head leaking at valve stem.

JDEGROODT [02/08/2016 08:46]:

Mark asked me to check out the leak found on well head valve stem. We tried to put stem seal in at the stem several times, but the leak was not repaired. I hooked up to the valve greasing ports on the valve itself. After servicing the valve ,I was able to stop the leak. No CH4 was present with portable gas detector.

10	MECH	4	1

central valley gas storage LLC

(AGL Resources Companies)

Revised on:2/23/12

Created on: 6/30/09

FORM OM200-11 – GAS LEAKAGE REPORT/GAS LEAKAGE REPAIR REPORT

GAS DETECTION SURVEY:
- [X] Outside Consultant
- [ ] Company Owned Equipment

Last Calibration Check Date

SURVEY EQUIPMENT USED:
- [X] FI Equipment
- [ ] Gas Monitor
- [ ] Gas Trac
- [ ] Bar Test / CGI
- [ ] Other

- [X] Gas Leakage Report
- [X] Gas Leakage Repair Report

Facility: Central Valley Gas Storage

Date: 2/3/16

(1) PRESSURE
- H = High Pressure
- I = Intermediate
- L = Low Pressure

(2) SURVEY LOCATION
- MS = Meter Station
- SLD = Service Line downstream of meter
- M = Main
- T = Transmission Pipeline
- W = Wellhead (indicate cavern #-W1, W2, etc.)

(3) LEAK CLASSIFICATION
- 1 = Requires Immediate Attn
- 2 = Scheduled Action
- 3 = Other Leaks

(4) LEAK TYPE
- C = Corrosion
- NF = Natural Forces
- EX = Excavation
- OFD = Outside Force Damage
- MW = Material & Welds
- EQ = Equipment and Operation
- O = Other

(5) SYSTEM that FAILED
- P = Pipe
- V = Valve
- F = Fitting
- D = Drip
- R = Regulator
- T = Tap
- O = Other

(6) TYPE OF SYSTEM
- S = Steel System
- P = Plastic System

(7) DATE AND TIME OF REPAIRS

Indicate in the REMARKS COLUMN if repair is temporary or permanent. Temporary repairs to be followed up with permanent repairs. Also indicate detail of repair.

Note: When filling out form electronically, to add more lines/pages, simply place cursor in last line, last cell and press tab. Next page will automatically appear with headers. Repeat as needed.

Leak No.	System Name	Block No., Address or GPS cords	1 Press	Date & Time Leak Found	Date & Time Leak Classified	By Whom	Test 2 Loc	Test 3 Class	4 Type	System that Failed 5	System that Failed 6	7 Date & Time of Repair	By Whom	Remarks/Detail of Repair
02-01	IAU	5181 McAuslan Road Princeton	H	2/4/16 11AM	2/4/16 EQ	David	W1AU	3	EQ	F	S	2/4/16 11:AM	Herb/David	Put In packing In valve stem
02/02	1 AU	5181 mc Auslan Road Princeton	H	2/5/16 1PM	2/5/16	Mark S.	W 1AU	3	EQ	F	S	2/5/16 1PM	JAMES D.	Service Valve/leak stopped

Daily Work Sheet

"Remember to DATE your paper"

Date: February 5, 2016	Fuel Readings			Leak Check
	Total Fuel Usage Prev. Day:			
	Unit #1 Fuel cum:			
	#1 P.Day & Hr.			
	Unit #2 Fuel cum:	111656		0
	#2 P.Day & Hr.	408	24	
	Unit #3 Fuel cum:			
	#3 P.Day & Hr.			
		Prev. Day usage:	Total Cum:	
	Regen fuel	2.1	10827	0
	VRU Fuel	50	22846	0
	Heater Fuel	3.09	1389.4	0
	Generator Fuel	0	240.98	0

Daily Well Press.	Tubing	Casing	Temp	Leak Check
1-AU	887.0			0
2-U	855.5			0
3-U	862.3			0
4-U	855.0			0
5-U	858.2			0
7-U	895.5			0
1-L	851.8			0
2-L	851.3			0

Observation Wells	Tubing	Casing	Outer	Leak Check
Sara Louise #1 :			5.2	0
SWD :			0	0
Southam #2 :	766.7	663.5	0	0
Southam #3 :		2.6	2.6	0
Southam #4 :		0	2.0	0

Date: February 6, 2016	Fuel Readings			Leak Check
	Total Fuel Usage Prev. Day:			
	Unit #1 Fuel cum:			
	#1 P.Day & Hr.			
	Unit #2 Fuel cum:	111867		0
	#2 P.Day & Hr.	211	11	
	Unit #3 Fuel cum:			
	#3 P.Day & Hr.			
		Prev. Day usage:	Total Cum:	
	Regen fuel	21	10848	0
	VRU Fuel	50	228.96	0
	Heater Fuel	1.94	1391.90	0
	Generator Fuel	1.69	242.58	0

Daily Well Press.	Tubing	Casing	Temp	Leak Check
1-AU		884.6		0
2-U		849.3		0
3-U		857.3		0
4-U		848.0		0
5-U		853.2		0
7-U		857.9		0
1-L		850.7		0
2-L		780.2		0

Observation Wells	Tubing	Casing	Outer	Leak Check
Sara Louise #1 :			6.4	0
SWD :			0	0
Southam #2 :	763.4	663.2	0	0
Southam #3 :		3.2	3.2	0
Southam #4 :		0	2.1	0

370/212

370/182

Daily Work Sheet

"Remember to DATE your paper"

Date: 2/7/16	Fuel Readings			Leak Check
	Total Fuel Usage Prev. Day:			
	Unit #1 Fuel cum:			
	#1 P.Day & Hr.			
	Unit #2 Fuel cum:			
	#2 P.Day & Hr.			
	Unit #3 Fuel cum:			
	#3 P.Day & Hr.			
		Prev. Day usage:	Total Cum:	
	Regen fuel	15	10,863	∅
	VRU Fuel	48	22,944	∅
	Heater Fuel	.98	1392.88	∅
	Generator Fuel		242.58	∅

Daily Well Press.	Tubing	Casing	Temp	Leak Check
1-AU	881.8	882.4		∅
2-U	851.9	851.7		∅
3-U	859.5	860.6		∅
4-U	852.5	852.9		∅
5-U	855.3	856.1		∅
7-U	857.0	858.1		∅
1-L	763.5	765.1		∅
2-L	763.8	765.8		∅

Observation Wells	Tubing	Casing	Outer	Leak Check
Sara Louise #1 :	115	168	6.5	∅
SWD :	-5	-1	0	∅
Southam #2 :	764	667.5	0	∅
Southam #3 :	870	3.5	3.5	∅
Southam #4 :	284	0	1.9	∅

Date: 2/8/16	Fuel Readings			Leak Check
	Total Fuel Usage Prev. Day:			
	Unit #1 Fuel cum:			
	#1 P.Day & Hr.			
	Unit #2 Fuel cum:			
	#2 P.Day & Hr.			
	Unit #3 Fuel cum:			
	#3 P.Day & Hr.			
		Prev. Day usage:	Total Cum:	
	Regen fuel	13	10,876	∅
	VRU Fuel	38	22,982	∅
	Heater Fuel	.97	1393.85	∅
	Generator Fuel		242.58	

Daily Well Press.	Tubing	Casing	Temp	Leak Check
1-AU	880.8	881.8		∅
2-U	854.5	854.2		∅
3-U	859.8	861.9		∅
4-U	854.2	855.5		∅
5-U	856.4	858.1		∅
7-U	858.3	860.0		∅
1-L	766.4	767.7		∅
2-L	765.8	769.0		∅

Observation Wells	Tubing	Casing	Outer	Leak Check
Sara Louise #1 :	124	169	6.5	∅
SWD :	-5	0.0	0.0	∅
Southam #2 :	766.0	659.0	0.0	∅
Southam #3 :	870	3.8	3.8	∅
Southam #4 :	283.0	0.0	1.9	∅

370°/104°

Daily Work Sheet

"Remember to DATE your paper"

Date: 2/9/16	Fuel Readings			Leak Check
	Total Fuel Usage Prev. Day:			
	Unit #1 Fuel cum:			
	#1 P.Day & Hr.			
	Unit #2 Fuel cum:			
	#2 P.Day & Hr.			
	Unit #3 Fuel cum:	54,799		∅
	#3 P.Day & Hr.			
		Prev. Day usage:	Total Cum:	
	Regen fuel		10,893	∅
	VRU Fuel		23,029	∅
	Heater Fuel		1395.30	∅
	Generator Fuel		242.58	∅

Daily Well Press.	Tubing	Casing	Temp	Leak Check
1-AU	880.3	880.5		∅
2-U	857.1	856.8		∅
3-U	861.1	862.5		∅
4-U	856.8	857.4		∅
5-U	858.1	859.3		∅
7-U	860.3	862.5		∅
1-L	766.0	767.1		∅
2-L	765.4	768.3		∅

Observation Wells	Tubing	Casing	Outer	Leak Check
Sara Louise #1 :	123	170	5.6	∅
SWD :	-5	0	0.0	∅
Southam #2 :	766.0	642.5	0.0	∅
Southam #3 :	870	4.0	4.0	∅
Southam #4 :	280	0	2.0	∅

Date: 2/10/16	Fuel Readings			Leak Check
	Total Fuel Usage Prev. Day:			
	Unit #1 Fuel cum:			
	#1 P.Day & Hr.			
	Unit #2 Fuel cum:			
	#2 P.Day & Hr.			
	Unit #3 Fuel cum:	55,085		∅
	#3 P.Day & Hr.			
		Prev. Day usage:	Total Cum:	
	Regen fuel		10,911	∅
	VRU Fuel		23,077	∅
	Heater Fuel		1397.39	∅
	Generator Fuel		242.58	∅

Daily Well Press.	Tubing	Casing	Temp	Leak Check
1-AU	879.1	879.2		∅
2-U	858.4	858.1		∅
3-U	861.5	863.2		∅
4-U	858.1	859.3		∅
5-U	858.8	860.0		∅
7-U	861.2	863.2		∅
1-L	754.1	753.0		∅
2-L	753.2	753.0		∅

Observation Wells	Tubing	Casing	Outer	Leak Check
Sara Louise #1 :	120	170	5.6	∅
SWD :	-5	0	0.0	∅
Southam #2 :	766.2	615.2	0.0	∅
Southam #3 :	869	0.3	0.3	∅
Southam #4 :	277	0	2.0	∅

372'/204'

367'/212'

Daily Work Sheet

"Remember to DATE your paper"

Date: 2/11/16	Fuel Readings			Leak Check
	Total Fuel Usage Prev. Day:			
	Unit #1 Fuel cum:			
	#1 P.Day & Hr.			
	Unit #2 Fuel cum:			
	#2 P.Day & Hr.			
	Unit #3 Fuel cum:	55,085		ϕ
	#3 P.Day & Hr.	0	0	
		Prev. Day usage:	Total Cum:	
	Regen fuel	16	10,927	ϕ
	VRU Fuel	47	23,124	ϕ
	Heater Fuel	.87	1398.06	ϕ
	Generator Fuel	1.4	1443.98	ϕ

Daily Well Press.	Tubing	Casing	Temp	Leak Check
1-AU	877.7			ϕ
2-U	859.5			ϕ
3-U	861.7			ϕ
4-U	859.0			ϕ
5-U	859.3			ϕ
7-U	861.9			ϕ
1-L	764.7			ϕ
2-L	764.1			ϕ

Observation Wells	Tubing	Casing	Outer	Leak Check
Sara Louise #1 :			5.6	ϕ
SWD :			0.0	ϕ
Southam #2 :	767.3	635.0	0.0	ϕ
Southam #3 :		1.0	1.0	ϕ
Southam #4 :			0.0	ϕ

Date: 2/12/16	Fuel Readings			Leak Check
	Total Fuel Usage Prev. Day:			
	Unit #1 Fuel cum:			
	#1 P.Day & Hr.			
	Unit #2 Fuel cum:			
	#2 P.Day & Hr.			
	Unit #3 Fuel cum:	55,148		ϕ
	#3 P.Day & Hr.	163	9	ϕ
		Prev. Day usage:	Total Cum:	
	Regen fuel	17	10,944	ϕ
	VRU Fuel	47	23,171	ϕ
	Heater Fuel	1.52	1399.78	ϕ
	Generator Fuel	0	1443.98	ϕ

Daily Well Press.	Tubing	Casing	Temp	Leak Check
1-AU	877.5			ϕ
2-U	861.0			ϕ
3-U	862.7			ϕ
4-U	860.8			ϕ
5-U	860.5			ϕ
7-U	863.1			ϕ
1-L	763.8			ϕ
2-L	763.0			ϕ

Observation Wells	Tubing	Casing	Outer	Leak Check
Sara Louise #1 :			5.6	ϕ
SWD :			0.0	ϕ
Southam #2 :	767.0	648.8	0.0	ϕ
Southam #3 :		1.5	1.5	ϕ
Southam #4 :			0.1	ϕ

313/16

30/35

313/18