

SOUTHERN CALIFORNIA GAS COMPANY

CPUC/DOGGR DATA REQUEST DATED DECEMBER 11, 2015

REDACTED VERSION – FEBRUARY 9, 2016

Question 1:

Please complete the table for the following data for the following SoCalGas storage fields.

	Aliso Canyon	Honor Rancho	Playa del Rey	La Goleta
Total gas storage capacity as of 12/14/15 (FERC approved)				
Total gas in storage on 12/14/15				
Base gas				
Working gas				
Working gas capacity				
% of working gas capacity				
Cycling rate per year				
Deliverability rate (withdrawal) (MMscfd)				
Injection rate (MMscfd)				

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Response 1:

	Aliso Canyon	Honor Rancho	Playa del Rey	La Goleta
Total gas storage capacity as of 12/14/15 (FERC approved), MMcf	167,725	47,997	6,862	46,089
Total gas in storage on 12/14/15, MMcf	147,267	46,884	6,241	44,793
Base gas, MMcf	81,525	20,997	4,462	24,589
Working gas, MMcf	65,742	25,887	1,779	20,204
Working gas capacity, MMcf	86,200	27,000	2,400	21,500 **
% of working gas capacity	76%	96%	74%	94%
Cycling rate per year (number of cycles per year. varies by the year. shown = "2014 withdraw divided by inv capacity")	0.68	0.87	1.71	0.57
Deliverability rate (withdrawal) (MMscfd)	1,860	1,000	400	420
Minimum Injection rate (MMscfd)	413	235	75	127

** The Goleta maximum capacity has been 21.5 Bcf until October 2015 when a Transmission pressure constraint prompted a conservative estimate of capacity reduction to 19.7 Bcf. This 19.7 Bcf capacity was filed with EIA in October 2015. However, currently it is found that the original capacity reduction was too high. The current max capacity is estimated to be between 19.7 and 21.5 Bcf.

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Question 2:

Please state the allocation of inventory, withdrawal and injection capacity to:

- a. Core Customers
- b. Unbundled Storage
- c. Balancing

Response 2:

- a. The current allocation of storage inventory is: 83 BCF core, 50.9 BCF unbundled storage, and 4.2 BCF balancing.
- b. The current allocations of firm withdrawal rights are: 2225 MMCF per day core, 630 MMCF per day unbundled storage, and 340 MMCF per day balancing.
- c. The current allocations of firm injection capacity rights are: 388 MMCF per day core, 262 MMCF per day unbundled storage and 200 MMCF per day balancing.

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Question 3:

Please state the amount of gas in storage as of 12/14/15 for:

- a. Core Customers
- b. Unbundled Storage
- c. Balancing

Response 3:

	<u>Balances as of 12/13/2015</u>	
	<u>DTHS</u>	<u>Implied MCF</u>
<u>Most Data per Envoy Storage Balance Report</u>		<u>@1,048 Dth/Mcf</u>
<u>CORE</u>		
<u>NONCORE</u>		
<u>BALANCING (Per Envoy Daily Ops Page)</u>	<u>1,835,580</u>	<u>1,761,917</u>
<u>TOTAL</u>	<u>118,199,409</u>	<u>113,456,000</u>
<u>TOTAL MCF PER Envoy Daily Ops Page</u>		<u>113,456,000</u>

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Question 4:

What is the maximum withdrawal rate (MMscfd and approximate flowing pressure) from Aliso Canyon that SoCalGas would anticipate with field inventory at the following levels:

- a. Full
- b. 70 Bcf
- c. 60 Bcf
- d. 50 Bcf
- e. 40 Bcf
- f. 30 Bcf
- g. 20 Bcf
- h. 10 Bcf

Response 4:

The requested maximum withdrawals rates are as follows:

Inventory (Bcf)	Maximum WD Rate (MMscfd)
Full	1860
70	1860
60	1860
50	1860
40	1860
30	1688
20	1442
10	1196

This data reflects the winter storage curves SoCalGas had at the beginning of the winter. SoCalGas is in the process of re-evaluating those curves, particularly at Aliso Canyon and needs additional time to complete that analysis.

Note that these withdrawal rates assume that the Aliso Canyon turbine replacement project has been tied in. This tie-in is scheduled to occur on December 18, 2015. Until the tie-in, the maximum withdrawal rates at Aliso are substantially lower.

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Question 5:

Please provide an excel spreadsheet with daily physical injection and withdrawal volumes, working pressure, and % of working gas capacity for Aliso Canyon from January 1, 2014 to December 14, 2015. Injection and withdrawal volumes should be provided for each individual well and in total for the field.

- a. Please also indicate what portion of those injections or withdrawals were made for the purpose of providing balancing service.
- b. Please supplement your response to this question for each day following your response. Supplemental responses are due on Monday of each week by 5PM.

Response 5:

Please refer to the attached spreadsheet.



AC Daily Inj-WD
Quantities Jan14 - De

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Question 6:

Please provide an excel spreadsheet with monthly averages of injection and withdraw quantities, working pressures, and % of working gas capacity for Aliso Canyon from January 1, 2014 through the date of your response.

Response 6:

Please refer to the attached spreadsheet.



AC Inj-WD
Quantities Jan14 - De

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Question 7:

What is the maximum volume of gas SoCalGas can get out of Aliso Canyon per day?

- a. What is this maximum volume limited by?
- b. What is the expected average daily demand by customers?
- c. How much extra gas would SoCalGas estimate putting into the system assuming maximum withdraw rate less expected demand?
- d. Describe all options for moving gas out of the Aliso Storage field including moving gas to other storage fields, flaming off gas, packing your transmission lines, connecting to interstate transmission lines, physically moving gas out of the SoCalGas/SDG&E system.

Response 7:

- a) The maximum volume is limited by (1) the demand in the LA Basin, (2) the withdrawal capacity of the field equipment, and (3) market forces.
- b) Based on historical data from the past 6 years, the expected average daily demand in the LA basin over the winter is 1.55 BCF. Aliso Canyon's volumes cannot serve other parts of the system.
- c) On an average winter day the maximum SoCalGas could normally withdraw from Aliso Canyon is 1.55 BCF, which is 310 MMCF less than the maximum withdrawal rate of 1.86 BCF at Aliso Canyon. The restriction of receipt point capacity is partially intended to help overcome this constraint. Note that the maximum withdrawal rate at Aliso is currently much lower, and will increase to the maximum withdrawal rate of 1.86 BCF once the Aliso Canyon turbine replacement project is tied in. This tie-in is currently scheduled to take place on December 18, 2015—at the end of this week.
- d)
 1. The only other storage field that physical gas from Aliso can be injected into is Playa Del Rey storage field, and it has a very small working capacity that is already near full. (See our response below to Q.14)
 2. SoCalGas is exploring alternatives to flaring. The possibility of "recovery wells" or other, more sophisticated methods of trying to "capture" and dispose of some of the leaking gas at Aliso Canyon. Two outside consulting firms have been hired to explore these options.
 3. The pipelines in the LA basin have a limited amount of linepack, and that linepack is used for daily operations.
 4. There are no intrastate pipelines nearby, and physical gas cannot leave the LA basin without new compression near the city gates. Physical supplies from Aliso cannot reach the Honor Ranch or Goleta storage fields because of the lower pressures in the LA basin.

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Question 8:

Please describe the SoCalGas and SDG&E system reliability issues that could arise at the following Aliso Canyon reservoir levels. For each level indicate all supply contingencies that could be put in place to mitigate the reliability risk including using mobile compressed natural gas units as well as the feasibility of such contingencies.

- a. Full
- b. 70 Bcf
- c. 60 Bcf
- d. 50 Bcf
- e. 40 Bcf
- f. 30 Bcf
- g. 20 Bcf
- h. 10 Bcf
- i. No working gas

Response 8:

SoCalGas believes that reducing Aliso working gas to below 20 BCF in January would jeopardize our ability to maintain system reliability. Mobile compressed natural gas will not be able to provide sufficient supply for the system.

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Question 9:

Which wells at Aliso Canyon can be safely used for either injections or withdrawals at this time?

Response 9:

As of 12/14/2015, the following wells are available;

F-5	FF-33	P-24A	P-32C	P-50B	P-69H	SS-03H	SS-31
F-6	FF-34BR	P-24B	P-32D	P-50C	P-69J	SS-05	SS-44B
F-7	FF-35A	P-26	P-32E	P-68A	P-69K	SS-06	W-3A
F-8	FF-35C	P-26A	P-32F	P-68B	P-72A	SS-09	
FF-32	FF-35E	P-26B	P-34	P-69A	P-72B	SS-11	
FF-32A	FF-38A	P-26D	P-35	P-69B	SF-1	SS-13	
FF-32B	FF-38B	P-30	P-42A	P-69C	SF-3	SS-14	
FF-32C	FF-38C	P-32	P-42C	P-69D	SF-8	SS-17	
FF-32D	MA-1A	P-32A	P-44	P-69E	PS-42	SS-24	
FF-32F	MA-1B	P-32B	P-46	P-69F	SS-02	SS-30	

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Question 10:

Which surface piping or other facilities have been isolated from piping in use?

Response 10:

The surface piping laterals at the SS25 wellsite.

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Question 11:

How has unsafe surface piping and facilities been isolated from piping in use?

Response 11:

While none of the surface piping was consider unsafe, the surface piping laterals at SS25 wellsite were unbolted at the wellhead and physically removed from the wellsite.

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Question 12:

How are injections or withdrawals into the Aliso Canyon reservoir affecting the casing leakage at Well SS25?

Response 12:

Aliso Canyon has been on continuous withdrawal since November 11th, resulting in a reduction in reservoir pressure which over time will slow the rate of casing leakage from SS25. Eleven wells in the immediate surrounding area of SS25 have been on priority withdrawal so as to maximize the rate of pressure decline in the area near SS25.

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Question 13:

Please describe the measures that SoCalGas has taken to increase or induce storage withdrawals from Aliso Canyon, including at least the following, and including SoCalGas' assessment of whether such measures have been successful or not:

- a. Avoiding calling Low OFOs
- b. Gas Acquisition Department storage withdrawals beyond what might normally have occurred
- c. Restriction of Receipt Point transmission capacity in the northern and Southern Zones.

Response 13:

- (a) No low OFOs have been triggered since our December 9 decision to allow the Gas Control department to override the low OFO formula and not institute a low OFO when the formula would otherwise call for a low OFO when an override will potentially increase withdrawals from Aliso and not impact system reliability. Accordingly, we cannot gauge the potential. To date, no other low OFOs have been triggered by the low OFO formula; therefore, it is impossible to quantify how successful this measure will be over this winter.

(b)

- (c) On Saturday and Sunday, December 12th and 13th, Northern Transmission Zone capacity was reduced by 776,000 Dth (beyond restrictions caused by maintenance activity in that zone) and Southern Transmission Capacity was reduced by 404,000 Dth each day. It is too early to quantify how successful this effort was or will be. SoCalGas hopes to provide an evaluation at its next weekly update to the CPUC on December 21, 2015.
- (d) In addition to the efforts referenced in this question, during the week of December 7 SoCalGas accelerated the termination of certain hub transactions, resulting in an additional 2 Bcf of noncore gas exiting storage in December. This gas should exit storage ratably over the remainder of the month.

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Question 14:

Please explain whether SoCalGas' system operator could withdraw gas from Aliso Canyon and inject gas into other SoCalGas storage facilities. Please explain any restrictions on such a measure and under what conditions the measure could be implemented.

Response 14:

Only Playa Del Rey (PDR) can receive supplies from Aliso Canyon, and PDR is a very small field that is already near capacity. SoCalGas will look for opportunities to fill PDR with supplies from Aliso, but it is unlikely that such opportunities will arise often or involve much gas.

RESPONSE 5

Date	Injection / Withdrawal	Inj / WD Quantity (MMcf)	% of Working Capacity
1/1/2014	Withdrawal	541	64.5%
1/2/2014	Withdrawal	672	63.8%
1/3/2014	Withdrawal	817	63.0%
1/4/2014	Withdrawal	941	62.1%
1/5/2014	Withdrawal	1202	61.0%
1/6/2014	Withdrawal	1319	59.6%
1/7/2014	Withdrawal	1143	58.1%
1/8/2014	Withdrawal	818	56.8%
1/9/2014	Withdrawal	349	55.8%
1/10/2014	Withdrawal	66	55.4%
1/11/2014	Withdrawal	214	55.3%
1/12/2014	Withdrawal	338	55.1%
1/13/2014	Withdrawal	417	54.7%
1/14/2014	Withdrawal	441	54.2%
1/15/2014	Withdrawal	503	53.7%
1/16/2014	Withdrawal	567	53.1%
1/17/2014	Withdrawal	148	52.5%
1/18/2014	Withdrawal	219	52.3%
1/19/2014	Withdrawal	538	52.0%
1/20/2014	Withdrawal	562	51.4%
1/21/2014	Withdrawal	712	50.8%
1/22/2014	Withdrawal	988	49.9%
1/23/2014	Withdrawal	961	48.8%
1/24/2014	Withdrawal	838	47.7%
1/25/2014	Withdrawal	788	46.7%
1/26/2014	Withdrawal	1172	45.8%
1/27/2014	Withdrawal	883	44.4%
1/28/2014	Withdrawal	902	43.4%
1/29/2014	Withdrawal	939	42.3%
1/30/2014	Withdrawal	920	41.3%
1/31/2014	Withdrawal	964	40.2%
2/1/2014	Withdrawal	1057	39.1%
2/2/2014	Withdrawal	940	37.8%
2/3/2014	Withdrawal	1416	36.8%
2/4/2014	Withdrawal	1411	35.1%
2/5/2014	Withdrawal	1439	33.5%
2/6/2014	Withdrawal	1210	31.8%
2/7/2014	Withdrawal	837	30.4%
2/8/2014	Withdrawal	828	29.4%
2/9/2014	Withdrawal	1107	28.5%
2/10/2014	Withdrawal	977	27.2%
2/11/2014	Withdrawal	969	26.1%
2/12/2014	Withdrawal	713	24.9%
2/13/2014	Withdrawal	461	24.1%

2/14/2014	Withdrawal	293	23.6%
2/15/2014	Withdrawal	94	23.2%
2/16/2014	Withdrawal	413	23.1%
2/17/2014	Withdrawal	826	22.6%
2/18/2014	Withdrawal	353	21.7%
2/19/2014	Withdrawal	663	21.3%
2/20/2014	Withdrawal	523	20.5%
2/21/2014	Withdrawal	512	19.9%
2/22/2014	Withdrawal	650	19.3%
2/23/2014	Withdrawal	725	18.5%
2/24/2014	Withdrawal	5026	17.7%
2/25/2014	Withdrawal	503	11.9%
2/26/2014	Withdrawal	511	11.3%
2/27/2014	Withdrawal	651	10.7%
2/28/2014	Withdrawal	263	9.9%
3/1/2014	Withdrawal	313	9.6%
3/2/2014	Withdrawal	382	9.3%
3/3/2014	Withdrawal	209	8.8%
3/4/2014	Withdrawal	426	8.6%
3/5/2014	Withdrawal	27	8.1%
3/6/2014	N/A	0	8.1%
3/7/2014	N/A	0	8.1%
3/8/2014	N/A	0	8.1%
3/9/2014	N/A	0	8.1%
3/10/2014	N/A	0	8.1%
3/11/2014	N/A	0	8.1%
3/12/2014	Injection	3	8.1%
3/13/2014	N/A	0	8.1%
3/14/2014	N/A	0	8.1%
3/15/2014	N/A	0	8.1%
3/16/2014	N/A	0	8.1%
3/17/2014	N/A	0	8.1%
3/18/2014	N/A	0	8.1%
3/19/2014	N/A	0	8.1%
3/20/2014	Injection	23	8.1%
3/21/2014	Injection	284	8.1%
3/22/2014	Injection	437	8.4%
3/23/2014	Withdrawal	102	8.9%
3/24/2014	Injection	218	8.8%
3/25/2014	Injection	2	9.1%
3/26/2014	Injection	326	9.1%
3/27/2014	Injection	495	9.4%
3/28/2014	Injection	583	10.0%
3/29/2014	Injection	584	10.7%
3/30/2014	Injection	335	11.4%
3/31/2014	Injection	143	11.8%
4/1/2014	Injection	19	11.9%

4/2/2014	Injection	82	12.0%
4/3/2014	Injection	539	12.0%
4/4/2014	Injection	595	12.7%
4/5/2014	Injection	544	13.4%
4/6/2014	Injection	85	14.0%
4/7/2014	Injection	113	14.1%
4/8/2014	Injection	356	14.2%
4/9/2014	Injection	375	14.6%
4/10/2014	Injection	510	15.1%
4/11/2014	Injection	580	15.7%
4/12/2014	Injection	563	16.3%
4/13/2014	Injection	373	17.0%
4/14/2014	Injection	453	17.4%
4/15/2014	Injection	485	17.9%
4/16/2014	Injection	401	18.5%
4/17/2014	Injection	545	19.0%
4/18/2014	Injection	546	19.6%
4/19/2014	Injection	531	20.2%
4/20/2014	Injection	378	20.9%
4/21/2014	Injection	543	21.3%
4/22/2014	Injection	486	21.9%
4/23/2014	Injection	385	22.5%
4/24/2014	Injection	448	22.9%
4/25/2014	Injection	475	23.5%
4/26/2014	Injection	545	24.0%
4/27/2014	Injection	456	24.6%
4/28/2014	Injection	481	25.2%
4/29/2014	Injection	446	25.7%
4/30/2014	Injection	452	26.2%
5/1/2014	Injection	461	26.8%
5/2/2014	Injection	490	27.3%
5/3/2014	Injection	552	27.9%
5/4/2014	Injection	388	28.5%
5/5/2014	Injection	530	29.0%
5/6/2014	Injection	557	29.6%
5/7/2014	Injection	460	30.2%
5/8/2014	Injection	442	30.8%
5/9/2014	Injection	505	31.3%
5/10/2014	Injection	427	31.9%
5/11/2014	Injection	239	32.3%
5/12/2014	Injection	95	32.6%
5/13/2014	Injection	130	32.7%
5/14/2014	Withdrawal	12	32.9%
5/15/2014	Injection	295	32.9%
5/16/2014	Injection	476	33.2%
5/17/2014	Injection	482	33.8%
5/18/2014	Injection	408	34.3%

5/19/2014	Injection	450	34.8%
5/20/2014	Injection	449	35.3%
5/21/2014	Injection	369	35.8%
5/22/2014	Injection	410	36.3%
5/23/2014	Injection	486	36.7%
5/24/2014	Injection	474	37.3%
5/25/2014	Injection	386	37.9%
5/26/2014	Injection	330	38.3%
5/27/2014	Injection	357	38.7%
5/28/2014	Injection	307	39.1%
5/29/2014	Injection	313	39.5%
5/30/2014	Injection	394	39.8%
5/31/2014	Injection	396	40.3%
6/1/2014	Injection	332	40.7%
6/2/2014	Injection	346	41.1%
6/3/2014	Injection	339	41.5%
6/4/2014	Injection	341	41.9%
6/5/2014	Injection	448	42.3%
6/6/2014	Injection	350	42.8%
6/7/2014	Injection	315	43.2%
6/8/2014	Injection	93	43.6%
6/9/2014	Injection	197	43.7%
6/10/2014	Injection	331	43.9%
6/11/2014	Injection	351	44.3%
6/12/2014	Injection	370	44.7%
6/13/2014	Injection	340	45.2%
6/14/2014	Injection	321	45.6%
6/15/2014	Injection	324	45.9%
6/16/2014	Injection	429	46.3%
6/17/2014	Injection	511	46.8%
6/18/2014	Injection	305	47.4%
6/19/2014	Injection	390	47.8%
6/20/2014	Injection	437	48.2%
6/21/2014	Injection	424	48.7%
6/22/2014	Injection	311	49.2%
6/23/2014	Injection	262	49.6%
6/24/2014	Injection	288	49.9%
6/25/2014	Injection	316	50.2%
6/26/2014	Injection	422	50.6%
6/27/2014	Injection	425	51.1%
6/28/2014	Injection	375	51.6%
6/29/2014	Injection	26	52.0%
6/30/2014	Injection	68	52.0%
7/1/2014	Injection	277	52.1%
7/2/2014	Injection	267	52.4%
7/3/2014	Injection	390	52.7%
7/4/2014	Injection	392	53.2%

7/5/2014	Injection	388	53.6%
7/6/2014	Injection	44	54.1%
7/7/2014	Injection	85	54.1%
7/8/2014	Injection	1	54.2%
7/9/2014	Injection	375	54.2%
7/10/2014	Injection	401	54.7%
7/11/2014	Injection	393	55.1%
7/12/2014	Injection	321	55.6%
7/13/2014	Withdrawal	17	56.0%
7/14/2014	Injection	121	55.9%
7/15/2014	Injection	410	56.1%
7/16/2014	Injection	429	56.6%
7/17/2014	Injection	394	57.1%
7/18/2014	Injection	423	57.5%
7/19/2014	Injection	420	58.0%
7/20/2014	Injection	305	58.5%
7/21/2014	Injection	506	58.8%
7/22/2014	Injection	80	59.4%
7/23/2014	Injection	4	59.5%
7/24/2014	Injection	126	59.5%
7/25/2014	Injection	330	59.7%
7/26/2014	Injection	377	60.1%
7/27/2014	Injection	43	60.5%
7/28/2014	Injection	53	60.5%
7/29/2014	Withdrawal	112	60.6%
7/30/2014	Withdrawal	18	60.5%
7/31/2014	Injection	56	60.5%
8/1/2014	Injection	399	60.5%
8/2/2014	Injection	408	61.0%
8/3/2014	Injection	391	61.5%
8/4/2014	Injection	410	61.9%
8/5/2014	Injection	377	62.4%
8/6/2014	Injection	324	62.8%
8/7/2014	Injection	405	63.2%
8/8/2014	Injection	391	63.7%
8/9/2014	Injection	373	64.1%
8/10/2014	Withdrawal	50	64.6%
8/11/2014	Withdrawal	22	64.5%
8/12/2014	Injection	60	64.5%
8/13/2014	Injection	57	64.5%
8/14/2014	Injection	88	64.6%
8/15/2014	Injection	312	64.7%
8/16/2014	Injection	298	65.1%
8/17/2014	Injection	10	65.4%
8/18/2014	Injection	313	65.4%
8/19/2014	Injection	341	65.8%
8/20/2014	Injection	228	66.2%

8/21/2014	Injection	306	66.5%
8/22/2014	Injection	406	66.8%
8/23/2014	Injection	360	67.3%
8/24/2014	Injection	342	67.7%
8/25/2014	Injection	299	68.1%
8/26/2014	Injection	258	68.4%
8/27/2014	Injection	174	68.7%
8/28/2014	Injection	195	68.9%
8/29/2014	Injection	370	69.2%
8/30/2014	Injection	402	69.6%
8/31/2014	Injection	335	70.1%
9/1/2014	Injection	94	70.5%
9/2/2014	Injection	243	70.6%
9/3/2014	Injection	336	70.8%
9/4/2014	Injection	385	71.2%
9/5/2014	Injection	258	71.7%
9/6/2014	Injection	349	72.0%
9/7/2014	Injection	190	72.4%
9/8/2014	Injection	273	72.6%
9/9/2014	Injection	80	72.9%
9/10/2014	Withdrawal	13	73.0%
9/11/2014	Withdrawal	3	73.0%
9/12/2014	Injection	212	73.0%
9/13/2014	Injection	76	73.2%
9/14/2014	Withdrawal	171	73.3%
9/15/2014	Withdrawal	94	73.1%
9/16/2014	Withdrawal	129	73.0%
9/17/2014	Injection	239	72.9%
9/18/2014	Injection	283	73.1%
9/19/2014	Injection	373	73.5%
9/20/2014	Injection	372	73.9%
9/21/2014	Injection	277	74.3%
9/22/2014	Injection	386	74.7%
9/23/2014	Injection	157	75.1%
9/24/2014	Injection	11	75.3%
9/25/2014	Injection	261	75.3%
9/26/2014	Injection	401	75.6%
9/27/2014	Injection	370	76.1%
9/28/2014	Injection	319	76.5%
9/29/2014	Injection	301	76.9%
9/30/2014	Injection	82	77.2%
10/1/2014	Injection	22	77.3%
10/2/2014	Injection	100	77.3%
10/3/2014	Injection	365	77.5%
10/4/2014	Injection	311	77.9%
10/5/2014	Injection	73	78.2%
10/6/2014	Withdrawal	29	78.3%

10/7/2014	Withdrawal	15	78.3%
10/8/2014	Injection	274	78.3%
10/9/2014	Injection	325	78.6%
10/10/2014	Injection	316	79.0%
10/11/2014	Injection	272	79.3%
10/12/2014	Withdrawal	29	79.7%
10/13/2014	Injection	287	79.6%
10/14/2014	Injection	298	80.0%
10/15/2014	Injection	277	80.3%
10/16/2014	Injection	270	80.6%
10/17/2014	Injection	267	80.9%
10/18/2014	Injection	292	81.2%
10/19/2014	Injection	54	81.6%
10/20/2014	Injection	344	81.6%
10/21/2014	Injection	20	82.0%
10/22/2014	Injection	28	82.1%
10/23/2014	Injection	206	82.1%
10/24/2014	Injection	336	82.3%
10/25/2014	Injection	371	82.7%
10/26/2014	Withdrawal	38	83.2%
10/27/2014	Injection	292	83.1%
10/28/2014	Injection	358	83.5%
10/29/2014	Injection	320	83.9%
10/30/2014	Injection	354	84.2%
10/31/2014	Injection	206	84.7%
11/1/2014	Injection	60	84.9%
11/2/2014	Withdrawal	5	85.0%
11/3/2014	Withdrawal	3	85.0%
11/4/2014	Withdrawal	2	85.0%
11/5/2014	Withdrawal	3	84.9%
11/6/2014	Withdrawal	2	84.9%
11/7/2014	Withdrawal	2	84.9%
11/8/2014	Withdrawal	2	84.9%
11/9/2014	Withdrawal	1	84.9%
11/10/2014	Withdrawal	2	84.9%
11/11/2014	Withdrawal	1	84.9%
11/12/2014	Withdrawal	2	84.9%
11/13/2014	Withdrawal	1	84.9%
11/14/2014	Withdrawal	2	84.9%
11/15/2014	Withdrawal	1	84.9%
11/16/2014	Injection	1	84.9%
11/17/2014	Withdrawal	1	84.9%
11/18/2014	Withdrawal	213	84.9%
11/19/2014	Withdrawal	683	84.7%
11/20/2014	Withdrawal	223	83.9%
11/21/2014	Withdrawal	172	83.6%
11/22/2014	Withdrawal	107	83.4%

11/23/2014	Withdrawal	118	83.3%
11/24/2014	Withdrawal	61	83.2%
11/25/2014	Withdrawal	105	83.1%
11/26/2014	Withdrawal	43	83.0%
11/27/2014	Injection	12	82.9%
11/28/2014	Withdrawal	44	82.9%
11/29/2014	Withdrawal	171	82.9%
11/30/2014	Withdrawal	110	82.7%
12/1/2014	Withdrawal	278	82.6%
12/2/2014	Withdrawal	57	82.2%
12/3/2014	Withdrawal	18	82.2%
12/4/2014	Withdrawal	96	82.2%
12/5/2014	Withdrawal	4	82.0%
12/6/2014	Withdrawal	61	82.0%
12/7/2014	Withdrawal	78	82.0%
12/8/2014	Withdrawal	55	81.9%
12/9/2014	Withdrawal	15	81.8%
12/10/2014	Withdrawal	5	81.8%
12/11/2014	Withdrawal	1	81.8%
12/12/2014	Injection	2	81.8%
12/13/2014	Withdrawal	125	81.8%
12/14/2014	Withdrawal	223	81.6%
12/15/2014	Withdrawal	295	81.4%
12/16/2014	Withdrawal	240	81.0%
12/17/2014	Withdrawal	510	80.8%
12/18/2014	Withdrawal	81	80.2%
12/19/2014	Withdrawal	4	80.1%
12/20/2014	Injection	9	80.1%
12/21/2014	Injection	34	80.1%
12/22/2014	Injection	15	80.1%
12/23/2014	Injection	15	80.1%
12/24/2014	Withdrawal	105	80.2%
12/25/2014	Withdrawal	520	80.0%
12/26/2014	Withdrawal	742	79.4%
12/27/2014	Withdrawal	763	78.6%
12/28/2014	Withdrawal	1024	77.7%
12/29/2014	Withdrawal	1237	76.5%
12/30/2014	Withdrawal	1297	75.1%
12/31/2014	Withdrawal	960	73.6%
1/1/2015	Withdrawal	1096	72.4%
1/2/2015	Withdrawal	1120	71.2%
1/3/2015	Withdrawal	837	69.9%
1/4/2015	Withdrawal	701	68.9%
1/5/2015	Withdrawal	540	68.1%
1/6/2015	Withdrawal	433	67.5%
1/7/2015	Withdrawal	438	67.0%
1/8/2015	Withdrawal	257	66.5%

1/9/2015	Withdrawal	217	66.2%
1/10/2015	Withdrawal	163	65.9%
1/11/2015	Withdrawal	428	65.7%
1/12/2015	Withdrawal	419	65.2%
1/13/2015	Withdrawal	414	64.7%
1/14/2015	Withdrawal	181	64.3%
1/15/2015	Withdrawal	28	64.0%
1/16/2015	Withdrawal	29	64.0%
1/17/2015	Withdrawal	13	64.0%
1/18/2015	Withdrawal	270	64.0%
1/19/2015	Withdrawal	356	63.6%
1/20/2015	Withdrawal	101	63.2%
1/21/2015	Withdrawal	304	63.1%
1/22/2015	Withdrawal	262	62.8%
1/23/2015	Injection	22	62.5%
1/24/2015	Injection	22	62.5%
1/25/2015	Withdrawal	88	62.5%
1/26/2015	Withdrawal	64	62.4%
1/27/2015	Withdrawal	17	62.3%
1/28/2015	Withdrawal	1	62.3%
1/29/2015	Withdrawal	33	62.3%
1/30/2015	Withdrawal	4	62.3%
1/31/2015	Withdrawal	17	62.3%
2/1/2015	Withdrawal	2	62.3%
2/2/2015	N/A	0	62.3%
2/3/2015	Withdrawal	26	62.3%
2/4/2015	Withdrawal	3	62.2%
2/5/2015	Withdrawal	33	62.2%
2/6/2015	Injection	13	62.2%
2/7/2015	Injection	14	62.2%
2/8/2015	Injection	12	62.2%
2/9/2015	Withdrawal	23	62.2%
2/10/2015	Withdrawal	40	62.2%
2/11/2015	Injection	7	62.2%
2/12/2015	Injection	6	62.2%
2/13/2015	Injection	5	62.2%
2/14/2015	Withdrawal	7	62.2%
2/15/2015	Withdrawal	31	62.2%
2/16/2015	Withdrawal	124	62.1%
2/17/2015	Withdrawal	36	62.0%
2/18/2015	N/A	0	61.9%
2/19/2015	Withdrawal	21	61.9%
2/20/2015	Withdrawal	35	61.9%
2/21/2015	Withdrawal	305	61.9%
2/22/2015	Withdrawal	618	61.5%
2/23/2015	Withdrawal	481	60.8%
2/24/2015	Withdrawal	398	60.2%

2/25/2015	Withdrawal	332	59.8%
2/26/2015	Withdrawal	595	59.4%
2/27/2015	Withdrawal	383	58.7%
2/28/2015	Withdrawal	440	58.3%
3/1/2015	Withdrawal	845	57.8%
3/2/2015	Withdrawal	748	56.8%
3/3/2015	Withdrawal	818	55.9%
3/4/2015	Withdrawal	495	55.0%
3/5/2015	Withdrawal	156	54.4%
3/6/2015	Injection	17	54.2%
3/7/2015	Injection	21	54.2%
3/8/2015	Withdrawal	29	54.2%
3/9/2015	Withdrawal	14	54.2%
3/10/2015	Injection	4	54.2%
3/11/2015	Injection	260	54.2%
3/12/2015	Injection	282	54.5%
3/13/2015	Injection	275	54.8%
3/14/2015	Injection	286	55.2%
3/15/2015	Injection	4	55.5%
3/16/2015	Injection	189	55.5%
3/17/2015	Injection	283	55.7%
3/18/2015	Injection	285	56.0%
3/19/2015	Injection	281	56.4%
3/20/2015	Injection	289	56.7%
3/21/2015	Injection	275	57.0%
3/22/2015	Injection	160	57.3%
3/23/2015	Injection	77	57.5%
3/24/2015	Injection	188	57.6%
3/25/2015	Injection	201	57.8%
3/26/2015	Injection	279	58.1%
3/27/2015	Injection	294	58.4%
3/28/2015	Injection	278	58.7%
3/29/2015	Injection	47	59.1%
3/30/2015	Injection	232	59.1%
3/31/2015	Injection	245	59.4%
4/1/2015	Injection	314	59.7%
4/2/2015	Injection	300	60.0%
4/3/2015	Injection	289	60.4%
4/4/2015	Injection	311	60.7%
4/5/2015	Injection	260	61.1%
4/6/2015	Injection	167	61.4%
4/7/2015	Injection	313	61.6%
4/8/2015	Injection	307	61.9%
4/9/2015	Injection	348	62.3%
4/10/2015	Injection	300	62.7%
4/11/2015	Injection	263	63.0%
4/12/2015	Injection	312	63.3%

4/13/2015	Injection	348	63.7%
4/14/2015	Injection	282	64.1%
4/15/2015	Injection	291	64.4%
4/16/2015	Injection	172	64.8%
4/17/2015	Injection	350	65.0%
4/18/2015	Injection	348	65.4%
4/19/2015	Injection	351	65.8%
4/20/2015	Injection	340	66.2%
4/21/2015	Injection	187	66.6%
4/22/2015	Injection	319	66.8%
4/23/2015	Injection	371	67.2%
4/24/2015	Injection	334	67.6%
4/25/2015	Injection	356	68.0%
4/26/2015	Injection	264	68.4%
4/27/2015	Injection	307	68.7%
4/28/2015	Injection	315	69.1%
4/29/2015	Injection	156	69.4%
4/30/2015	Injection	201	69.6%
5/1/2015	Injection	343	69.8%
5/2/2015	Injection	361	70.2%
5/3/2015	Injection	314	70.7%
5/4/2015	Injection	298	71.0%
5/5/2015	Injection	351	71.4%
5/6/2015	Injection	92	71.8%
5/7/2015	Injection	305	71.9%
5/8/2015	Injection	358	72.2%
5/9/2015	Injection	350	72.7%
5/10/2015	Injection	288	73.1%
5/11/2015	Injection	319	73.4%
5/12/2015	Injection	235	73.8%
5/13/2015	Injection	182	74.0%
5/14/2015	Injection	206	74.3%
5/15/2015	Injection	346	74.5%
5/16/2015	Injection	356	74.9%
5/17/2015	Injection	295	75.3%
5/18/2015	Injection	318	75.6%
5/19/2015	Injection	30	76.0%
5/20/2015	Injection	290	76.1%
5/21/2015	Injection	247	76.4%
5/22/2015	Injection	74	76.7%
5/23/2015	Injection	33	76.8%
5/24/2015	Injection	33	76.8%
5/25/2015	Withdrawal	29	76.8%
5/26/2015	Injection	6	76.8%
5/27/2015	Withdrawal	20	76.8%
5/28/2015	Withdrawal	38	76.8%
5/29/2015	Injection	17	76.7%

5/30/2015	Injection	25	76.8%
5/31/2015	Injection	30	76.8%
6/1/2015	Injection	29	76.8%
6/2/2015	Injection	19	76.9%
6/3/2015	Injection	14	76.9%
6/4/2015	Injection	181	76.9%
6/5/2015	Injection	152	77.1%
6/6/2015	Injection	89	77.3%
6/7/2015	Withdrawal	391	77.4%
6/8/2015	Withdrawal	11	76.9%
6/9/2015	Injection	115	76.9%
6/10/2015	Injection	341	77.1%
6/11/2015	Injection	208	77.5%
6/12/2015	Injection	337	77.7%
6/13/2015	Injection	227	78.1%
6/14/2015	Withdrawal	84	78.3%
6/15/2015	Withdrawal	15	78.2%
6/16/2015	Injection	4	78.2%
6/17/2015	Injection	142	78.2%
6/18/2015	Injection	52	78.4%
6/19/2015	Injection	264	78.5%
6/20/2015	Injection	253	78.8%
6/21/2015	Injection	19	79.1%
6/22/2015	Withdrawal	23	79.1%
6/23/2015	Withdrawal	55	79.1%
6/24/2015	Withdrawal	330	79.0%
6/25/2015	Withdrawal	135	78.6%
6/26/2015	Injection	207	78.5%
6/27/2015	Injection	60	78.7%
6/28/2015	Withdrawal	324	78.8%
6/29/2015	Withdrawal	415	78.4%
6/30/2015	Withdrawal	399	77.9%
7/1/2015	Withdrawal	295	77.4%
7/2/2015	Injection	128	77.1%
7/3/2015	Injection	371	77.2%
7/4/2015	Injection	229	77.7%
7/5/2015	Injection	67	77.9%
7/6/2015	Injection	97	78.0%
7/7/2015	Injection	169	78.1%
7/8/2015	Injection	64	78.3%
7/9/2015	Injection	79	78.4%
7/10/2015	Injection	2	78.5%
7/11/2015	Injection	14	78.5%
7/12/2015	Withdrawal	74	78.5%
7/13/2015	Injection	15	78.4%
7/14/2015	Injection	244	78.4%
7/15/2015	Injection	250	78.7%

7/16/2015	Injection	123	79.0%
7/17/2015	Injection	332	79.2%
7/18/2015	Injection	278	79.5%
7/19/2015	Withdrawal	57	79.9%
7/20/2015	Withdrawal	27	79.8%
7/21/2015	Injection	19	79.8%
7/22/2015	Injection	50	79.8%
7/23/2015	Injection	43	79.9%
7/24/2015	Injection	348	79.9%
7/25/2015	Injection	325	80.3%
7/26/2015	Injection	120	80.7%
7/27/2015	Withdrawal	175	80.8%
7/28/2015	Withdrawal	259	80.6%
7/29/2015	Withdrawal	333	80.3%
7/30/2015	Withdrawal	120	79.9%
7/31/2015	Injection	287	79.8%
8/1/2015	Injection	311	80.1%
8/2/2015	Injection	111	80.5%
8/3/2015	Injection	30	80.6%
8/4/2015	Withdrawal	89	80.7%
8/5/2015	Withdrawal	94	80.5%
8/6/2015	Injection	278	80.4%
8/7/2015	Injection	307	80.8%
8/8/2015	Injection	300	81.1%
8/9/2015	Injection	248	81.5%
8/10/2015	Injection	95	81.8%
8/11/2015	Withdrawal	154	81.9%
8/12/2015	Withdrawal	383	81.7%
8/13/2015	Withdrawal	375	81.2%
8/14/2015	Withdrawal	140	80.8%
8/15/2015	Withdrawal	143	80.6%
8/16/2015	Withdrawal	200	80.5%
8/17/2015	Withdrawal	153	80.2%
8/18/2015	Injection	158	80.1%
8/19/2015	Injection	317	80.3%
8/20/2015	Injection	359	80.6%
8/21/2015	Injection	358	81.0%
8/22/2015	Injection	352	81.5%
8/23/2015	Injection	17	81.9%
8/24/2015	Withdrawal	175	81.9%
8/25/2015	Withdrawal	142	81.7%
8/26/2015	Withdrawal	484	81.5%
8/27/2015	Withdrawal	393	80.9%
8/28/2015	Injection	81	80.5%
8/29/2015	Injection	341	80.6%
8/30/2015	Injection	162	81.0%
8/31/2015	Injection	212	81.2%

9/1/2015	Injection	269	81.4%
9/2/2015	Injection	315	81.7%
9/3/2015	Injection	382	82.1%
9/4/2015	Injection	324	82.5%
9/5/2015	Injection	271	82.9%
9/6/2015	Withdrawal	217	83.2%
9/7/2015	Withdrawal	508	83.0%
9/8/2015	Withdrawal	597	82.4%
9/9/2015	Withdrawal	416	81.7%
9/10/2015	Withdrawal	268	81.2%
9/11/2015	Injection	76	80.9%
9/12/2015	Injection	290	81.0%
9/13/2015	Injection	289	81.3%
9/14/2015	Injection	389	81.7%
9/15/2015	Injection	377	82.1%
9/16/2015	Injection	373	82.5%
9/17/2015	Injection	296	83.0%
9/18/2015	Injection	309	83.3%
9/19/2015	Injection	132	83.7%
9/20/2015	Injection	19	83.8%
9/21/2015	Injection	278	83.9%
9/22/2015	Injection	70	84.2%
9/23/2015	Withdrawal	54	84.3%
9/24/2015	Injection	38	84.2%
9/25/2015	Injection	74	84.2%
9/26/2015	Injection	66	84.3%
9/27/2015	Injection	27	84.4%
9/28/2015	Injection	65	84.4%
9/29/2015	Injection	71	84.5%
9/30/2015	Injection	169	84.6%
10/1/2015	Injection	281	84.8%
10/2/2015	Injection	338	85.1%
10/3/2015	Injection	362	85.5%
10/4/2015	Injection	289	85.9%
10/5/2015	Injection	349	86.3%
10/6/2015	Injection	257	86.7%
10/7/2015	Injection	73	87.0%
10/8/2015	Withdrawal	64	87.1%
10/9/2015	Injection	327	87.0%
10/10/2015	Injection	297	87.4%
10/11/2015	Injection	178	87.7%
10/12/2015	Withdrawal	105	87.9%
10/13/2015	Withdrawal	32	87.8%
10/14/2015	Injection	102	87.7%
10/15/2015	Injection	197	87.9%
10/16/2015	Injection	348	88.1%
10/17/2015	Injection	381	88.5%

10/18/2015	Injection	282	88.9%
10/19/2015	Injection	136	89.3%
10/20/2015	Injection	98	89.4%
10/21/2015	Injection	38	89.5%
10/22/2015	Injection	82	89.6%
10/23/2015	Injection	8	89.7%
10/24/2015	Injection	3	89.7%
10/25/2015	Withdrawal	8	89.7%
10/26/2015	Withdrawal	1	89.7%
10/27/2015	Withdrawal	1	89.7%
10/28/2015	Withdrawal	1	89.7%
10/29/2015	Withdrawal	1	89.7%
10/30/2015	Withdrawal	1	89.7%
10/31/2015	Withdrawal	1	89.7%
11/1/2015	Withdrawal	1	89.7%
11/2/2015	Withdrawal	1	89.7%
11/3/2015	N/A	0	89.7%
11/4/2015	Withdrawal	1	89.7%
11/5/2015	Withdrawal	1	89.7%
11/6/2015	N/A	0	89.7%
11/7/2015	Withdrawal	1	89.7%
11/8/2015	N/A	0	89.7%
11/9/2015	Withdrawal	1	89.7%
11/10/2015	Withdrawal	96	89.7%
11/11/2015	Withdrawal	170	89.6%
11/12/2015	Withdrawal	201	89.4%
11/13/2015	Withdrawal	155	89.1%
11/14/2015	Withdrawal	177	88.9%
11/15/2015	Withdrawal	176	88.7%
11/16/2015	Withdrawal	39	88.5%
11/17/2015	Withdrawal	123	88.5%
11/18/2015	Withdrawal	131	88.4%
11/19/2015	Withdrawal	143	88.2%
11/20/2015	Withdrawal	139	88.0%
11/21/2015	Withdrawal	136	87.9%
11/22/2015	Withdrawal	133	87.7%
11/23/2015	Withdrawal	187	87.6%
11/24/2015	Withdrawal	384	87.3%
11/25/2015	Withdrawal	382	86.9%
11/26/2015	Withdrawal	533	86.5%
11/27/2015	Withdrawal	646	85.8%
11/28/2015	Withdrawal	686	85.1%
11/29/2015	Withdrawal	927	84.3%
11/30/2015	Withdrawal	630	83.2%
12/1/2015	Withdrawal	478	82.5%
12/2/2015	Withdrawal	332	81.9%
12/3/2015	Withdrawal	313	81.5%

12/4/2015	Withdrawal	570	81.2%
12/5/2015	Withdrawal	265	80.5%
12/6/2015	Withdrawal	407	80.2%
12/7/2015	Withdrawal	88	79.7%
12/8/2015	Withdrawal	486	79.6%
12/9/2015	Withdrawal	274	79.1%

RESPONSE 6

Aliso Canyon Injection / Withdrawal Quantities
(January 2014 - December 9th, 2015)

Year	Month	Injection / Withdrawal	Average Inj / WD Quantity (MMcf)	Average % of Working Capacity	
2014	January	Withdrawal	706	52.8%	
	February	Withdrawal	906	24.3%	
	March	Injection	137	8.7%	
		Withdrawal	243		
	April	Injection	426	18.5%	
	May	Injection	402	33.8%	
		Withdrawal	12		
	June	Injection	326	46.4%	
	July	Injection	265	56.8%	
		Withdrawal	49		
	August	Injection	298	65.4%	
		Withdrawal	36		
	September	Injection	253	73.6%	
		Withdrawal	82		
	October	Injection	246	80.6%	
		Withdrawal	28		
	November	Injection	24	84.3%	
		Withdrawal	77		
	December	Injection	15	80.4%	
		Withdrawal	338		
	2015	January	Injection	22	65.0%
			Withdrawal	305	
		February	Injection	7	61.6%
			Withdrawal	197	
March		Injection	198	56.3%	
		Withdrawal	444		
April		Injection	293	64.6%	
May		Injection	218	74.4%	
		Withdrawal	29		
June		Injection	143	78.0%	
		Withdrawal	198		
July		Injection	159	79.1%	
		Withdrawal	168		
August		Injection	224	80.9%	
		Withdrawal	225		
September		Injection	207	83.0%	
		Withdrawal	343		
October		Injection	211	88.1%	
		Withdrawal	22		
November		Withdrawal	230	88.2%	
December*	Withdrawal	357	80.7%		

* Up to December 9th, 2015