

GTHT - ____001____

G-111s

Chavez, Carl J, EMNRD

From: Kacie Peterson <kacie.peterson@cyrgenergy.com>
Sent: Tuesday, July 07, 2015 2:37 PM
To: Chavez, Carl J, EMNRD
Cc: Griswold, Jim, EMNRD; Steve Brown; michelle@mhenrie.com; dwjanney160@gmail.com
Subject: Lightning Dock Geothermal HI-01, LLC Form G-111 Revisions
Attachments: LDG_G-111 2014 REPORT & Cover Letter_REVISED_7.7.15.pdf; Daily Operations Report 10.24.2014.xlsx; Daily Operations Report 11.08.2014.xlsx

Mr. Chavez,

Attached you will find the revised Form G-111 "Annual Geothermal Temperature and Pressure Test" for 2014 along with associated Daily Operation Reports. Please contact me if you have any questions regarding the revisions to the report.

Thanks.

Kacie Peterson

Lightning Dock Geothermal HI-01, LLC

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18 Greenhouse Drive | Animas, NM 88020 | www.cyrgenergy.com





Cyrq

Lightning Dock
geothermal

7 July 2015

Mr. Carl J. Chavez
New Mexico Energy, Minerals & Natural Resources Department
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

RE: Lightning Dock Geothermal HI-01, LLC (GTHT-001) Form G-111 Revisions

Dear Mr. Chavez:

Per your request, please find attached a revised Form G-111 for Cyrq Energy's Lightning Dock Geothermal (LDG) Power Plant for the year 2014. The G-111 calls for a report of a 24 hour shut-in test on production wells. LDG has only one production well, LDG 45-7. Any shut-in test, therefore, takes the production well off-line and interrupts the power supply to the Public Service Company of New Mexico (PNM) which in turn causes a loss of revenue for LDG. This situation is unlike an oil or gas well in that we have a power purchase agreement with PNM and they expect us to provide uninterrupted power in order to supply their customers. If multiple production wells were available a shut-in test would be more practical. In our situation it is not practical. LDG offers the following solution.

LDG indicated that it had an involuntary plant shut down on October 24, 2015 and a restart 336 hours later on November 8, 2015. The power plant operators record all operating temperatures and pressures for each production and injection well while the plant is in operation. If the single production well is shut-in or shut-down this data is not recorded.

Please find attached a revised G-111 that reflects the temperatures and pressures prior to the shut-down of October 24 and immediately after start-up on November 8. Also attached are "Daily Operation Reports" for October 24 and November 8 that confirm the figures entered on Form G-111. The average flow rate for LDG 45-7 for October 24 prior to shut-in was approximately 1664.8 gallons per minute.

LDG anticipates that there will be voluntary annual well shut-downs for maintenance. LDG will record temperatures and pressures prior to these events and immediately after resumed plant operations in order to provide information for the G-111 on an annual basis. These shut-downs may be greater than 24 hours in duration but the data is still useful in evaluating temperature and pressure within the reservoir. LDG feels strongly that the regulations should be revised in order to prevent any geothermal operator from interrupting power supply to its customers. Please contact me if you have any questions regarding this revised report.

Sincerely,
Lightning Dock Geothermal HI-01, LLC

Kacie Peterson
Manager, Permitting and Community Relations

Cc: J. Griswold, NMOCD
S. Brown, Cyrq Energy
M. Henrie, Cyrq Energy
D. Janney, Geo-Science Solutions

136 South Main Street, STE. 600
Salt Lake City, UT 84101
(p) 801.875.4200

Attachment

OIL CONSERVATION DIVISION
P. O. BOX 2088
SANTA FE, NEW MEXICO 87501
ANNUAL GEOTHERMAL TEMPERATURE AND PRESSURE TESTS

Operator Lightning Dock Geothermal HI-01, LLC					Address 18 Greenhouse Road, Animas, NM 88020			Field Lightning Dock		County Hidalgo		
LEASE	WELL NO.	LOCATION				Date & Hour Shut In	Production Last 24 Hrs.	Flowing Pres. psi	Flowing Temp. °F	Date & Hour of Tests	Time Shut-in Hrs., Mins.	SI Pres psig Dead-weight
Federal NM 34790	45-7	N	7	25S	19W	10/23/2014 2030 hrs.	2,397,312 gal.	83 avg. flow rate was 1664.8 gpm before shutdown	312	11/08/2014 2000 hrs.	336 hrs.	91

I hereby certify that the above information is true and complete to the best of my knowledge and belief.

Signature

Dave Rans

Title Plant Manager

Date

7-7-2015

Plant Data Day Shift

JT

PLANT DATA					UNIT #1					UNIT #2						
READING	1	2	3	4	READING	1	2	3	4	READING	1	2	3	4		
TIME	12:00 AM	4:00 AM	8:00 AM	12:00 PM	TIME	12:00 AM	4:00 AM	8:00 AM	12:00 PM	TIME	12:00 AM	4:00 AM	8:00 AM	12:00 PM		
PLANT					Monthly Operating Hours		537.5	Daily Hours	12	Monthly Operating Hours		558.5	Hours	12		
GEO OUTLET PSI	66	66	65	66	NET KW	691	739	765	573	NET KW	629	661	677	508		
GEO OUTLET TEMP	169	165	168	178	GROSS KW	852	886	915	831	GROSS KW	774	801	824	714		
GEO OUTLET FLOW	1523	1518	1585	1581	EVAP PSI	196	198	204	204	EVAP PSI	183	182	186	186		
GEO INLET PSI	84	84	84	86	EVAP TEMP	208	208	210	213	EVAP TEMP	207	206	207	209		
GEO INLET TEMP	312	312	312	312	EVAP LEVEL	520	520	520	528	EVAP LEVEL	520	515	515	524		
GEO INLET FLOW	1645	1639	1711	1707	COND PSI	15	11	11	23	COND PSI	17	14	13	26		
Units NET KW	2483	2605	2716	1882	COND TEMP	84	78	78	100	COND TEMP	78	70	68	93		
Units GROSS KW	3017	3119	3245	2837	COND LEVEL	711	680	716	712	COND LEVEL	684	657	693	786		
202 KWH FWD	71	71	71	71	SEP LEVEL A	386	386	373	404	SEP LEVEL A	275	288	266	302		
203 KWH REV	5832	5839	5847	5854	SEP LEVEL B	342	337	337	342	SEP LEVEL B	284	271	271	284		
214 W REV Instant	1829	1954	2031	1378	GEO INLET TEMP	304	303	304	303	GEO INLET TEMP	301	301	301	301		
216 PF	0.8	0.83	0.81	0.77	GEO INLET FLOW	N/A	N/A	N/A	N/A	GEO INLET FLOW	N/A	N/A	N/A	N/A		
Plant Parasitic	1188	1165	1214	1459	GEO OUTLET TEMP	151	148	152	162	GEO OUTLET TEMP	150	147	153	162		
Total Net MWH	5761	5768	5776	5783	FANS OPERATING	100	100	100	100	FANS OPERATING	100	100	100	100		
INJECTION WELLS					AVG FAN SPEED		36	34	34	45	AVG FAN SPEED		30	30	30	40
55-7 TEMP	169	165	168	178	REFRIG PUMP OPERATING	4	4	4	4	REFRIG PUMP OPERATING	4	4	4	4	4	
55-7 PRESSURE	66	66	65	66	REFRIG PUMP SPEED	22	21	23	22	REFRIG PUMP SPEED	20	20	21	20		
55-7 FLOW	1523	1518	1585	1581	UNIT #3					UNIT #4						
63-7 TEMP					READING	1	2	3	4	READING	1	2	3	4		
63-7 PRESSURE					TIME	12:00 AM	4:00 AM	8:00 AM	12:00 PM	TIME	12:00 AM	4:00 AM	8:00 AM	12:00 PM		
63-7 FLOW					Monthly Operating Hours		453.5	Daily Hours	12	Monthly Operating Hours		558.25	Hours	12		
53-7 TEMP			137	153	NET KW	522	542	575	327	NET KW	641	663	699	474		
53-7 PRESSURE			60	45	GROSS KW	636	656	690	575	GROSS KW	755	776	816	717		
53-7 FLOW			55	20	EVAP PSI	154	152	160	155	EVAP PSI	181	181	188	184		
Total Inj Flow	1523	1518	1640	1601	EVAP TEMP	194	194	197	198	EVAP TEMP	203	202	206	208		
PRODUCTION WELL					EVAP LEVEL		453	453	448	444	EVAP LEVEL		484	488	484	480
45-7 TEMP	312	312	312	312	COND PSI	14	10	11	21	COND PSI	17	15	15	24		
45-7 PRESSURE	84	84	84	86	COND TEMP	76	68	69	90	COND TEMP	80	74	73	91		
45-7 FLOW	1645	1639	1711	1707	COND LEVEL	595	564	608	628	COND LEVEL	631	613	631	795		
45-7 BTP	320	320	320	320	SEP LEVEL A	244	257	257	257	SEP LEVEL A	342	333	333	337		
45-7 ANN	60	60	60	60	SEP LEVEL B	257	235	235	248	SEP LEVEL B	306	297	293	297		
45-7 Hz	42	42	43	43	GEO INLET TEMP	302	301	301	300	GEO INLET TEMP	271	271	272	270		
45-7 AMPS	457	456	469	467	GEO INLET FLOW	N/A	N/A	N/A	N/A	GEO INLET FLOW	N/A	N/A	N/A	N/A		
WEATHER					GEO OUTLET TEMP	146	142	146	154	GEO OUTLET TEMP	148	145	148	156		
TEMP					FANS OPERATING	100	100	100	100	FANS OPERATING	100	100	100	100		
DWP					AVG FAN SPEED	30	30	30	45	AVG FAN SPEED	30	30	30	45		
WET					REFRIG PUMP OPERATING	4	4	4	4	REFRIG PUMP OPERATING	4	4	4	4		
HUMIDITY					REFRIG PUMP SPEED	16	16	16	16	REFRIG PUMP SPEED	19	19	20	20		
BAROMETRIC					NOTES: started injecting to 53 @7:10 valve to 53 closed @12:30 high heat											
Avg Plant Parasitic		1256.5														
AVG Gross		3054.5														

10/24/2014 SHIFT: NIGHT

OPERATOR

RICK

PLANT DATA					UNIT #1					UNIT #2				
READING	1	2	3	4	READING	1	2	3	4	READING	1	2	3	4
TIME	12:00 PM	4:00 PM	8:00 PM	12:00 AM	TIME	12:00 PM	4:00 PM	8:00 PM	12:00 AM	TIME	12:00 PM	4:00 PM	8:00 PM	12:00 AM
PLANT					Monthly Operating Hours		0	Daily Hours	8.5	Monthly Operating Hours			Hours	8.5
GEO OUTLET PSI	66	66	65		NET KW	573	496	601		NET KW	508	548	555	
GEO OUTLET TEMP	178	180	174		GROSS KW	831	746	856		GROSS KW	714	667	765	
GEO OUTLET FLOW	1581	1517	1527		EVAP PSI	204	198	198		EVAP PSI	186	187	185	
GEO INLET PSI	86	83	83		EVAP TEMP	213	211	210		EVAP TEMP	209	210	207	
GEO INLET TEMP	312	312	312		EVAP LEVEL	528	520	520		EVAP LEVEL	524	511	520	
GEO INLET FLOW	1707	1638	1649		COND PSI	23	28	16		COND PSI	26	31	20	
Units NET KW	1882	1732	2132	0	COND TEMP	100	108	89		COND TEMP	93	105	86	
Units GROSS KW	2837	2586	2919	0	COND LEVEL	712	563	651		COND LEVEL	786	642	568	
202 KWH FWD	71	71	71		SEP LEVEL A	404	404	386		SEP LEVEL A	302	302	297	
203 KWH REV	5854	5859	5864		SEP LEVEL B	342	337	337		SEP LEVEL B	284	297	284	
214 W REV Instant	1378	1135	1584		GEO INLET TEMP	303	302	304		GEO INLET TEMP	301	300	299	
216 PF	0.77	0.75	0.75		GEO INLET FLOW	N/A	N/A	N/A	N/A	GEO INLET FLOW	N/A	N/A	N/A	N/A
Plant Parasitic	1459	1451	1335	0	GEO OUTLET TEMP	162	156	147		GEO OUTLET TEMP	162	156	146	
Total Net MWH	5783	5788	5793	0	FANS OPERATING	100	100	100		FANS OPERATING	100	100	100	
INJECTION WELLS					AVG FAN SPEED		45	45	45	AVG FAN SPEED		40	40	40
55-7 TEMP	178	180	174		REFRIG PUMP OPERATING	4	4	4		REFRIG PUMP OPERATING	4	4	4	
55-7 PRESSURE	66	66	65		REFRIG PUMP SPEED	22	22	22		REFRIG PUMP SPEED	20	23	21	
55-7 FLOW	1581	1517	1527		UNIT #3					UNIT #4				
63-7 TEMP	0				READING	1	2	3	4	READING	1	2	3	4
63-7 PRESSURE	0				TIME	12:00 PM	4:00 PM	8:00 PM	12:00 AM	TIME	12:00 PM	4:00 PM	8:00 PM	12:00 AM
63-7 FLOW	0				Monthly Operating Hours		0	Daily Hours	8.5	Monthly Operating Hours		0	Hours	8.25
53-7 TEMP	153				NET KW	327	268	458		NET KW	474	420	518	
53-7 PRESSURE	45				GROSS KW	575	511	566		GROSS KW	717	662	732	
53-7 FLOW	20				EVAP PSI	155	154	151		EVAP PSI	184	180	179	
Total Inj Flow	1601	1517	1527	0	EVAP TEMP	198	195	193		EVAP TEMP	208	206	191	
PRODUCTION WELL					EVAP LEVEL		444	448	453	EVAP LEVEL		480	484	493
45-7 TEMP	312	312	312		COND PSI	21	28	20		COND PSI	24	27	18	
45-7 PRESSURE	86	83	83		COND TEMP	90	99	85		COND TEMP	91	101	81	
45-7 FLOW	1707	1638	1649		COND LEVEL	628	600	628		COND LEVEL	795	744	714	
45-7 BTP	320	320	320		SEP LEVEL A	257	271	257		SEP LEVEL A	337	351	342	
45-7 ANN	60	60	60		SEP LEVEL B	248	248	248		SEP LEVEL B	297	324	306	
45-7 Hz	43	42	42		GEO INLET TEMP	300	299	302		GEO INLET TEMP	270	271	271	
45-7 AMPS	467	456	456		GEO INLET FLOW	N/A	N/A	N/A	N/A	GEO INLET FLOW	N/A	N/A	N/A	N/A
WEATHER					GEO OUTLET TEMP		154	153	149	GEO OUTLET TEMP		156	156	140
TEMP	0				FANS OPERATING	100	100	100		FANS OPERATING	100	100	100	
DWP	0				AVG FAN SPEED	45	45	31		AVG FAN SPEED	45	45	43	
WET	0				REFRIG PUMP OPERATING	4	4	4		REFRIG PUMP OPERATING	4	4	4	
HUMIDITY	0				REFRIG PUMP SPEED	16	15	15		REFRIG PUMP SPEED	20	19	18	
BAROMETRIC	0				NOTES: unit 4 down reverse power fault at 8:06p back online at 8:16p plant down at 8:35p well trip									
Avg Plant Parasitic		1415												
AVG Gross		2085.5												

DATE:
11/8/2014

SHIFT: DAY

OPERATOR

RICK

PLANT DATA					UNIT #1					UNIT #2				
READING	1	2	3	4	READING	1	2	3	4	READING	1	2	3	4
TIME	12:00 AM	4:00 AM	8:00 AM	12:00 PM	TIME	12:00 AM	4:00 AM	8:00 AM	12:00 PM	TIME	12:00 AM	4:00 AM	8:00 AM	12:00 PM
PLANT					Monthly Operating Hours		0	Hours	0	Monthly Operating Hours			Hours	
GEO OUTLET PSI					NET KW					NET KW				
GEO OUTLET TEMP					GROSS KW					GROSS KW				
GEO OUTLET FLOW					EVAP PSI					EVAP PSI				
GEO INLET PSI					EVAP TEMP					EVAP TEMP				
GEO INLET TEMP					EVAP LEVEL					EVAP LEVEL				
GEO INLET FLOW					COND PSI					COND PSI				
Units NET KW		0	0	0	COND TEMP					COND TEMP				
Units GROSS KW		0	0	0	COND LEVEL					COND LEVEL				
202 KWH FWD					SEP LEVEL A					SEP LEVEL A				
203 KWH REV					SEP LEVEL B					SEP LEVEL B				
214 W REV Instant					GEO INLET TEMP					GEO INLET TEMP				
216 PF					GEO INLET FLOW	N/A	N/A	N/A	N/A	GEO INLET FLOW	N/A	N/A	N/A	N/A
Plant Parasitic	0	0	0	0	GEO OUTLET TEMP					GEO OUTLET TEMP				
Total Net MWH	0	0	0	0	FANS OPERATING					FANS OPERATING				
INJECTION WELLS					AVG FAN SPEED					AVG FAN SPEED				
55-7 TEMP					REFRIG PUMP OPERATING					REFRIG PUMP OPERATING				
55-7 PRESSURE					REFRIG PUMP SPEED					REFRIG PUMP SPEED				
55-7 FLOW					UNIT #3					UNIT #4				
63-7 TEMP					READING	1	2	3	4	READING	1	2	3	4
63-7 PRESSURE					TIME	12:00 AM	4:00 AM	8:00 AM	12:00 PM	TIME	12:00 AM	4:00 AM	8:00 AM	12:00 PM
63-7 FLOW					Monthly Operating Hours			Hours		Monthly Operating Hours		0	Hours	0
53-7 TEMP					NET KW					NET KW				
53-7 PRESSURE					GROSS KW					GROSS KW				
53-7 FLOW					EVAP PSI					EVAP PSI				
Total Inj Flow		0	0	0	EVAP TEMP					EVAP TEMP				
PRODUCTION WELL					EVAP LEVEL					EVAP LEVEL				
45-7 TEMP					COND PSI					COND PSI				
45-7 PRESSURE					COND TEMP					COND TEMP				
45-7 FLOW					COND LEVEL					COND LEVEL				
45-7 BTP					SEP LEVEL A					SEP LEVEL A				
45-7 ANN					SEP LEVEL B					SEP LEVEL B				
45-7 Hz					GEO INLET TEMP					GEO INLET TEMP				
45-7 AMPS					GEO INLET FLOW	N/A	N/A	N/A	N/A	GEO INLET FLOW	N/A	N/A	N/A	N/A
WEATHER					GEO OUTLET TEMP					GEO OUTLET TEMP				
TEMP					FANS OPERATING					FANS OPERATING				
DWP					AVG FAN SPEED					AVG FAN SPEED				
WET					REFRIG PUMP OPERATING					REFRIG PUMP OPERATING				
HUMIDITY					REFRIG PUMP SPEED					REFRIG PUMP SPEED				
BAROMETRIC					NOTES:									
Avg Plant Parasitic		#DIV/0!												
AVG Gross		0												

1/8/2014

SHIFT: NIGHT

OPERATOR

JT

Night Shift Report											Day Shift Report									
Date:	11/8/2014	Shift:	NIGHT		Operator:	JT					Date:	11/8/2014	Shift:	DAY		Operator:	RICK			
			SHIFT TOTALS											SHIFT TOTALS						
		KW-HRS			AVG KW								KW-HRS			AVG KW				
	Actual		Predicted		Actual		Predicted					Actual		Predicted		Actual		Predicted		
	5869				489							0				0				
Scheduled				Unscheduled Downtime							Scheduled				Unscheduled Downtime					
Total hours	12		Equipment	Time Down	Reason for Downtime						Total hours	12		Equipment	Time Down	Reason for Downtime				
Downtime	0		unit 1	8.75	expander stuck						Downtime	0								
Oper Hrs	12		unit 2	12	standby						Oper Hrs	12								
			unit 3	12	standby															
			unit 4	5.25	45-7 repair															
			GENERATION											GENERATION						
			TRISTATE											TRISTATE						
				Received	Delivered	Net MWH									Received	Delivered	Net MWH			
			Shift Start	0	0	0								Shift Start	0	0	0			
			Shift End	5869	80	5789								Shift End	0	0	0			
			Shift Total	5869	80	5789								Shift Total	0	0	0			
			OPERATIONS											OPERATIONS						
Operating System		Kaishan			Prod Wells	Inj Wells					Operating System		Kaishan			Prod Wells	Inj Wells			
Total units		4			1	3					Total units		4			1	3			
Units operating		3			1	3					Units operating		3			1	3			
Total Flow		1699									Total Flow		0							
Avg Flow/Unit		566.3									Avg Flow/Unit		0							
Temp In		312									Temp In		0							
Temp Out		269									Temp Out		0							
Avg KW/Unit		188									Avg KW/Unit		0							
Avg KW/Avg gpm		0.3									Avg KW/Avg gpm		#DIV/0!							
Power Factor		0.74									Power Factor		0							
Well field											Well field									
Well Operating Data		45-7									Well Operating Data		45-7							
Wellhead Press		84									Wellhead Press		0							
Wellhead Temp		312									Wellhead Temp		0							
Flow		1699									Flow		0							
Injection Operating Data		55-7	63-7	53-7		Total	Avg				Injection Operating Data		55-7	63-7	53-7		Total	Avg		
Pressure		71	0	0			71				Pressure		0	0	0			#DIV/0!		
Temperature		269	0	0			269				Temperature		0	0	0			#DIV/0!		
Flow		1574	0	0		1574	1574				Flow		0	0	0		0	#DIV/0!		
Shift Total MW		5869									Shift Total MW		0							
Avg Hourly MW		489.0833333									Avg Hourly MW		0							
Total Revenue		\$578,096.50									Total Revenue		\$0.00							
Plant Parasitic		5892									Plant Parasitic		#DIV/0!							
Daily Summary											Daily Summary									
Daily Total MW		5869									Daily Total MW		5869							
Avg Daily Total MW		244.5416667									Avg Daily Total MW		244.5416667							
Daily Ttl Revenue		\$578,096.50									Daily Ttl Revenue		\$578,096.50							
Total Plt Parasitic		#DIV/0!									Total Plt Parasitic		#DIV/0!							