DOCKETED	
Docket Number:	09-AFC-05C
Project Title:	Abengoa Mojave Compliance
TN #:	261685
Document Title:	Segment 003 of COMPLIANCE7-08-00 Mojave Solar Project 2024 Annual Compliance Report (09-AFC-5C)
Description:	N/A
Filer:	Mahnaz Ghamati
Organization:	Abengoa Solar
Submitter Role:	Applicant
Submission Date:	2/11/2025 8:49:58 AM
Docketed Date:	2/11/2025



General Inform	ation
Plant: Alpha 🗆 Beta 🗹	Date: 16/24/24
Operator DIDAD Rodhaulz	*To be completed each time unit is operated
Reason for running pumps: Weekly test Z Maintenance	Emergency
Jockey Electric P	ump
Pre-start Inspection: Electrical Feed 💋 Mechanical 🖉	Valves Z
Check the jockey pump on pressure drop. Start up pressure: $153$	SpSI
Discharge Pressure: 165 pS1	
Pump Suction Pressure: v/h Pump Disc	harge pressure: 165 ps/
Comments:	, and the second s
Electric Pum	
Pre-start Inspection: Electrical Feed 🖉 Mechanical 🗹	Valves 🖉
Start the pump on pressure drop. Start up pressure: 145 ps1	
Start time: 2141	
	arge pressure: 150 ps1
Stop time: 2151 Total time running 10	mins.
Comments:	
Diesel Pum	p
Pre-start Inspection: Coolant Oil Mechanical	Valves 🖉 🛛 Water Jacket Heater 🖉
Fuel level > 2/3: Yes D No Z 1/2 Fuel Monthly Fu	el Consumption: NIA.
Battery volt Crank 1: 17 Battery volt Crank 2: 27 Batter	ery Condition: 🗸
Starting hour meter: 136.6. Start	t time: 2152
	Pressure finish: 54 ps1
	charge pressure: 156 PS1
Coolant temperature after 30 minutes running: 190 °F	
Stop time: 2155 Stop hour meter: 134.4	n. Total time running: 3 m.(n.s.
Comments:	
Sulfur Concentrations (less than or equal to 0.0015% on a weight per weig	ht basis).
his new direct drive fire pump engine shall be limited to use for emergency fire suppression, defined as in resp more than 30 minutes in any one hour and no more than 10 hours per year for initial start-up testing and comp of hours necessary to comply with the testing requirements of the National Fire Protection Association (NFPA (current edition). The hours of operation for source testing will not be counted towards either of the allowable a Note: Fuel consumption 27 gal/ h approximately. There is no limit on engine operation for emergency use; [Title 17 CCR 93115.6(a)(4)]	ponse to a fire or due to low fire water pressure. In addition, this engine shall be operated no pliance demonstrations. Additionally, this engine shall not be operated more than the number A) 25-"Standards for the Inspection, Testing, and Maintenance of Water Based Fire Systems"



			ed # 1 by			perator Anthony V.
No.	System	PSI	Viv. Pos.		Locked	Comments
1	SG Unit 1 4.311	0	0/C	ungnuge	YOND	FIRE SYSLEM OFFINE DUP
2	SG Unit 2	17-	0/C		YOND	Fire System offline due to underground leak
3	Reheaters A/87 3		0/C		YOND	TO MACISTONIC TICK
4	Rack 2 West HTF		0/C		YOND	
5	Rack 2 East HTF		0/C		YOND	
6	North Steel Pro		O/C	1	YOND	
7	HTF Pumps ABL7		0/0		YOND	
8	HTF Heaters		0/C		YOND	
9	South Steel Pro 4.81.9		0/0	11-16	YOND	
10	Lube Oil A/6 10		0/0		YOND	
11	Turbine Hose Stations A/31-11		0/0		YOND	
12	Turbine Bearings	1	0/C		YOND	
14	Turbine bearings	Valve SI	ned # 2 by	Overflo		
No.	Current and	PSI	Viv. Pos.	Signage	Locked	Comments
	System	0	0/C	Signage		Comments
1	Expansion Vessels A/82-1	- Y				
2	Ullage Area A/B2-2		0/C			
3	Ullage Structure A/B2-11	_	0/0		YOND	
4	Rack 1 Middle Area A/B2-5	+ +	0/C		YOND	
5	Overflow Tanks A/B2-9		0/C		YD ND	
6	Rack 1 South Area A/B2-6	_	0/C		YOND	
7	Rack 1 West A/B2-7		0/C	-	YOND	
8	Rack 1 North Area A/B2-4		O/C		YOND	
9	Over flow AFFF A/B2-8		O/C		YDND	
10	Expansion Vessel AFFF A/B2-3	V	O/C		YUND	
	1 10.00100	e Shed # 3 b				· · · · · · · · · · · · · · · · · · ·
No.	System	PSI	Viv. Pos.	Signage		Comments
1	Transformer Aux	Ø	O/C		YOND	
2	Transformer Main	0	0/C		YOND	
	Valve	e Shed # 4 k			Nest Side	
No.	System	PSI	Viv. Pos.	Signage		Comments
1	Cooling Tower West Side	0	0/C		YO NO	
		Valve Shed	# 5 by Co	ontrol Blo	lg 10	
No.	System	PSI		Signage		Comments
1	Control Room A/B4-5	0	O/C	1	YOND	
2	Offices A/84-3		0/0	1	YOND	
3	Electrical Room A/B4-4	1	0/C		YO NO	
	Turbine Sprinkler	Valves (The	ese are to	be locke	d in the o	pen position)
No.	System		Viv Pos.	li di terrest		Comments
1	Bearing 2	YOND	VOIC			
2	Bearing 3	YDAD				
3	Bearing 4	YOND				
4	Bearing 5	YUND				
	HTF Deluge Sy	stem Valve	s (To be l	locked in	the Open	Position)
No.	System		Viv. Pos.	l	the open	Comments
		YEND		A STREET	In the second	connents
2	MP-201 MP-200A	YOVNO				
	MP-200A MP-200B	YEND		1		
3		YZYD				
4	MP-200C	YUND				
5	MP-200D			aluga Sur	tom	
_		Fire Pump		10	Leni	
No.	System	PSI	0/C	Lockeet		Comments
1	Fire Pump House Deluge	0	open	YZND		
	A CONTRACTOR OF		PIV Chec	the state of the s	A	
Ma		Beattles	1	Date		Comments
No.	System	Position	Cycled	Cycled	N. A. A.	comments
1	Warehouse/Maintenance Shop Drive Way #7	9/CV	9			
2	Warehouse/Maintenance Shop Drive Way #8	V 0/C				
3	West Side Power Block by VS-3 # 9	-0/C				
4	West Side Power Block by VS-1 # 10	/0/C				
5	West Side Cooling Tower by VS-4 # 11	V Q/C				
6	West side Cooling Tower by VS-4 # 12	191C				
7	N.W. Corner Chemical Storage #1	JO/C				
8	N.E. Corner Chemical Storage # 2	VO/C	1			
9	East Side W.T. by Multimedia Filters # 3	O/CV	1			
10	East Side W.T. by Multimedia Filters # 5	O/CV				
10	North Side Bldg 10 # 6	VO/C	1			
			1			
11		010				
11 12	Between MP-444's and Water Treat # 4	0/0/		-		
11 12 13	Between MP-444's and Water Treat # 4 Beta Only West Side Power Block Valve Shed #1	V 0/C		av of Eve	ry Month	
11 12 13	Between MP-444's and Water Treat # 4 Beta Only West Side Power Block Valve Shed #1	e Cycled Fi			ry Month	Comments / Aprianse 403 of 12288

## Automated Fire Systems Inspection Checklist



	Plant: ALPHA 🗖	ВЕТА: 🗹				perator ANHON/
				Condens	er	
No.	System	PSI	Viv Pos.	Signage	Locked	Comments
1	SG Unit 1	-Q	V 0/C	V	YEND	NOR AWAL TO COOL A A
3	SG Unit 2 4.81 2 Reheaters 4.81 3	Q	2/0	~	YUND	FIRE System OFFLINE due to underground law
4	Rack 2 West HTF	6	10/0	V	YUND	TO UNDERSTOUND TELL
5	Rack 2 East HTF	8	10/5	14	YEND	
6	North Steel Pro	8 B	10/C	./	YEND	
7	HTF Pumps	Ő	NE		YEND	
8	HTF Heaters	0	10/c	V	YPND	
9	South Steel Pro	Q	1 yr	4	YEND	
10	Lube Oil A/81-10	<u> </u>	XC	1	YEND	
11	Turbine Hose Stations Ar31-11 Turbine Bearings Ar31-12	8	0/C	1	YDEND	
12	Turome bearings	Valve Sh		y Overflow		
No.	System	PSI	Viv. Pos.	Signage	Locked	Comments
1	Expansion Vessels A/32-1	0	DIC	V	YEND	
2	Ullage Area A/B2-2	Ø	SIC	1	YEND	
3	Ullage Structure A/B2-11	Ő	Varc	1	YUND	
4	Rack 1 Middle Area A/B2-5	Q	10/C	14	YEND	
5	Overflow Tanks A/82-9	<u> </u>	1 AC	V	YEND	
6	Rack 1 South Area         A/B2-6           Rack 1 West         A/B2-7	- <u>v</u>	2/C	V,	YEYNO	
8	Rack 1 West A/B2-7 Rack 1 North Area A/B2-4	- 8-	D/C	17	YUND	
9	Over flow AFFF A/B2-8	8	10/C		YEND	
10	Expansion Vessel AFFF A/B2-3	0	10/C	1	YEND	
		/e Shed # 3 b		GE Elect	rical Bldg	
No.	System	PSI	Viv. Pos.		Locked	Comments
1	Transformer Aux	0	V g/C	V/	YUND	
2	Transformer Main	0	V O/C		YDND	
		ve Shed # 4 b	and the second se		Vest Side	
No.	System	PSI	Viv Pos.	Signage	YEND	Gomments
1	Cooling Tower West Side	Valve Shed	# 5 by Co		a 10	
No.	System	PSI	Viv_Pos.		Locked	Comments
1	Control Room A/B4-5	0	1910	V	YNND	
2	Offices A/B4-3	Ø	Vyc	V,	YUND	
3	Electrical Room A/B4-4	O O	VO/C	V	YPND	
	Turbine Sprinkle	r Valves (The	ese are to	be locke	d in the o	
No.	System	Locked	Viv. Pos.			Comments
1	Bearing 2	YDND	120			
2	Bearing 3 Bearing 4	YUND				
4	Bearing 5	YOND				
	HTF Deluge S	System Valve	s (To be l	Locked in	the Open	Position)
No.	System	Locked	Viv. Pos.	E., 301		Comments
1	MP-201	YND	Voc			
2	MP-200A	YEND	- Q/C			
3	MP-2008	YDYD				
4	MP-200C	YOND	1 yc			
5	MP-200D	YOVNO	VO/C	alume Free	tom	
		Fire Pump	1 m	- 1920 - C. 19	uent	
No.	System	PSI	0/C	Locked		Comments
1	Fire Pump House Deluge	0	open	YUND		
			<b>PIV Chec</b>			
No.	System	Position	Cycled	Date Cycled	117-1	Comments
1	Warehouse/Maintenance Shop Drive Way #7	0/C		ALM AM		
2	Warehouse/Maintenance Shop Drive Way #8	9/C				
3	West Side Power Block by VS-3 # 9	V0/C				
4	West Side Power Block by VS-1 # 10	0/C				
5	West Side Cooling Tower by VS-4 # 11	0/C				V
6	West side Cooling Tower by VS-4 # 12	0/C				
7 8	N.W. Corner Chemical Storage #1 N.E. Corner Chemical Storage # 2	JOIC				
9	East Side W.T. by Multimedia Filters # 3	0/0/0	1			
10	East Side W.T. by Multimedia Filters # 5	0/0	-			
11	North Side Bldg 10 # 6	0/0				
12	Between MP-444's and Water Treat # 4	0/0	1			
13	Beta Only West Side Power Block Valve Shed #1	O/C				
OM-MIV		Be Cycled Fir	st Saturd	ay of Eve	ry Month	Comments / A அன்று 404 of 12 இது குடிய
		Debris	and the second second			Comments / Automatic / 1/2 of 1 / Automatic
No.	System		0972472019	I to I enel		7 Tage 404 01 1220

Automated Fire Systems Inspection Charklist

System Transformer Yard Refuse Check

1

Debris



### Fire Pump Weekly Test Log

General Inf	ormation
Plant: Alpha 🛛 Beta 🔽	Date: 11/17/24
Operator: Anthony	*To be completed each time unit is operated.
Reason for running pumps: Weekly test 🖌 Maintenan	ce 🗌 Emergency 🛛
Jockey Elec	tric Pump
Pre-start Inspection: Electrical Feed 🕑 Mechanical	Valves
Check the jockey pump on pressure drop. Start up pressure:	55
Discharge Pressure: 163	
Pump Suction Pressure: — Pump	Discharge pressure:
Comments:	
Electric	
Pre-start Inspection: Electrical Feed 🗹 Mechanical	Valves P
Start the pump on pressure drop. Start up pressure: $)45$	
Start time: 2220	
	Discharge pressure: 150
Stop time: 2230 Total time running	10 min
Comments:	
Diesel I	Pump
Pre-start Inspection: Coolant 🛛 Oil 🗌 Mechanical	
	ly Fuel Consumption: —
Battery volt Crank 1: 24 Battery volt Crank 2: 24	Battery Condition: Good
	Start time: 2234
Oil pressure start: (	Oil Pressure finish: 46
Pump Suction Pressure: 15 Pump	Discharge pressure: 150
Coolant temperature after 30 minutes running: 190@ 9 p	Jin
Stop time: 2243 Stop hour meter: 136	
Comments:	
Sulfur Concentrations (less than or equal to 0.0015% on a weight per	weight basis).
his new direct drive fire pump engine shall be limited to use for emergency fire suppression, defined as more than 30 minutes in any one hour and no more than 10 hours per year for initial start-up testing an of hours necessary to comply with the testing requirements of the National Fire Protection Association (current edition). The hours of operation for source testing will not be counted towards either of the allo Note: Fuel consumption 27 gal/ h approximately. There is no limit on engine operation for emergency use. [Title 17 CCR 93115.6(a)(4)]	d compliance demonstrations. Additionally, this engine shall not be operated more than the number n (NFPA) 25-"Standards for the Inspection, Testing, and Maintenance of Water Based Fire Systems"

Rev. 09/24/2019



## **Automated Fire Systems Inspection Checklist**

	Plant: ALPHA 🗆	ВЕТА: 🗖	Date: ][	Juli	1 Op	erator 1 2010 K
			ed # 1 by			De port
No.	System	PSI	Viv. Pos.	Signage	Locked	Comments
1	SG Unit 1 A/B1-1	140	Ø/C			
2	SG Unit 2 A/B1-2	140	Ø/C	1	YD ND	
3	Reheaters A/B1-3	145	Ø/C		YD ND	
4	Rack 2 West HTF A/B1-4	190	Ø/C	$\sim$	YO ND	
5	Rack 2 East HTF A/B1-5	140	Ø/C	~	YUND	
6	North Steel Pro A/B1-6	160	Ø/C	-	YD N	
7	HTF Pumps A/B1-7	140	Ø/C		YEND	
			d/c		YUND	
8	HTF Heaters A/B1-8	155	dic	-	YUND	
9	South Steel Pro A/81-9	Teo		~		
10	Lube Oil A/81-10	luo	d/c			
11	Turbine Hose Stations A/B1-11	les	d/c			
12	Turbine Bearings A/B1-12	155	d/c	Out		
_			hed # 2 by			
No.	System	PSI	Viv. Pos.	Signage	Locked	Comments
1	Expansion Vessels A/B2-1	145	p/c	1	YD ND	
2	Ullage Area A/B2-2	1600	D/C	1	YD ND	
3	Ullage Structure A/B2-11	160	ф/с	1	YND ND	
4	Rack 1 Middle Area A/B2-5	160	ф/с	~	YO NO	
5	Overflow Tanks A/B2-9	165	ф/C	$\checkmark$		
6	Rack 1 South Area A/B2-6	leo	ф/с	1	үф мо	
7	Rack 1 West A/B2-7	1.65	¢/C	1	YOU NO	
8	Rack 1 North Area A/B2-4	140	Ø/C	1	YUND	
9	Over flow AFFF A/B2-8	140	Ø/C	1	YONZ	
10	Expansion Vessel AFEE A/B2-3	1/10	D/C	1	YOND	
10	Valv	e Shed # 31	oy Blda 3	GE Elect	rical Bldg	
No.	System	PSI	Viv. Pos.	Signage	Locked	Comments
1	Transformer Aux	160	D/C		YOUND	
2	Transformer Main	160	Ø/C	1	YOND	
6	Value Value	e Shed # 4	by Cooling	Tower V	Nest Side	
Ma		PSI	Viv. Pos.	Signage	1	Comments
<b>No.</b>	System	145	ØIC	J. J.	YPND	weeds Sugh.
	Cooling Tower West Side	Valve Shed	# 5 by Co	ntrol Blo	0 10	
	Contains	PSI	Viv, Pos.	Signage	Locked	Comments
No.	System	1100	Ø/C		YOND	
1	Control Room A/B4-5		0/C	5	YOND	
2	Offices A/B4-3	160		V	YOND	
3	Electrical Room A/B4-4 Turbine Sprinkle	160	p/c	he locks	d in the or	pen position)
			ese are to	De locke	u in the of	Comments
No.	System	Locked	Viv. Pos.			Comments
1	Bearing 2	YO NO				
2	Bearing 3	YC NO				
	Description A		O/C			
3	Bearing 4	YE NE				
3 4	Bearing 5	YCND	d/c			n 111 )
	and the second se	yd ND	es (To be	Locked in	the Open	Position)
	Bearing 5	yd ND ystem Valve Locked	o/c es (To be Viv. Pos.	Locked in	the Open	Position) Comments
4	Bearing 5 HTF Deluge S	Y O N O ystem Valve Locked Y O N O	0/C es (To be Viv. Pos. 0/C	Locked in	the Open	Position) Comments
4 <b>No.</b>	Bearing 5 HTF Deluge S System	Y N N ystem Valve Locked Y N N Y N N	0/C es (To be Viv. Pos.	Locked in	the Open	Position) Comments
4 <b>No.</b> 1	Bearing 5 HTF Deluge S System MP-201	Y N N System Valve Locked Y N N Y N N Y N N	0/C es (To be Viv. Pos. 0/C 0/C	Locked in	the Open	Position) Comments
4 <b>No.</b> 1 2	Bearing 5 HTF Deluge S System MP-201 MP-200A	Y N N ystem Valve Locked Y N N Y N N	0/C es (To be Viv. Pos. 0/C 0/C	Locked in	the Open	Position) Comments
4 <b>No.</b> 1 2 3	Bearing 5         HTF Deluge 5           System         MP-201           MP-200A         MP-2008		Viv. Pos. Viv. Pos. 0/C 0/C 0/C 0/C 0/C 0/C 0/C			Position) Comments
4 <b>No.</b> 1 2 3 4	Bearing 5         HTF Deluge 5           System           MP-201         MP-200A           MP-200B         MP-200C		Viv. Pos. Viv. Pos. 0/C 0/C 0/C 0/C 0/C 0/C 0/C			Position) Comments
4 1 2 3 4 5	Bearing 5         HTF Deluge S           System         MP-201           MP-200A         MP-200B           MP-200C         MP-200D	Y N N ystem Valve Y N V Y N V N V N V N V N V N V N V N V N V N	d/c           es (To be)           Viv. Pos.           b/c	eluge Sys		Position) Comments Comments
4 <b>No.</b> 1 2 3 4	Bearing 5         HTF Deluge S           System         MP-201           MP-200A         MP-200B           MP-200C         MP-200D           System         System	Y N N ystem Valve V N V Y N N Y N	d/c           es (To be)           Viv. Pos.           Ø/c	eluge Sys	tem	Comments
4 <b>No.</b> 1 2 3 4 5	Bearing 5         HTF Deluge S           System         MP-201           MP-200A         MP-200B           MP-200C         MP-200D	Y N N ystem Valve Y N V Y N V N V N V N V N V N V N V N V N V N	d/c     c	eluge Sys	tem	Comments
4 <b>No.</b> 1 2 3 4 5	Bearing 5         HTF Deluge S           System         MP-201           MP-200A         MP-200B           MP-200C         MP-200D           System         System	Y N N ystem Valve V N V Y N N Y N	d/c           es (To be)           Viv. Pos.           Ø/c	eluge Sys Locked Y Z N D	tem	Comments
4 <b>No.</b> 1 2 3 4 5 <b>No.</b> 1	Bearing 5         HTF Deluge S           System         MP-201           MP-200A         MP-200B           MP-200C         MP-200D           System         System	Y N N ystem Valve V N V Y N N Y N	d/c     c	eluge Sys Locked Y Ø N D ks Date	tem	Comments
4 <b>No.</b> 1 2 3 4 5 <b>No.</b> 1 <b>No.</b>	Bearing 5         HTF Deluge S           System         MP-201           MP-200A         MP-200B           MP-200B         MP-200C           MP-200D         System           Fire Pump House Deluge         System	Y N N ystem Valve Y N N Y N N N Y	d/c     c	eluge Sys Locked Y Z N D	tem	Comments
4 <b>No.</b> 1 2 3 4 5 <b>No.</b> 1 <b>No.</b> 1	HTF Deluge S         System         MP-200A       MP-200B         MP-200B       MP-200C         MP-200D       System         Fire Pump House Deluge       System         Warehouse/Maintenance Shop Drive Way #7	Y N N ystem Valve Y N N Y N N N Y	d/c     c	eluge Sys Locked Y Ø N D ks Date	tem	Comments
4 1 2 3 4 5 No. 1 No. 1 2	HTF Deluge S         System         MP-201         MP-2008         MP-2000C         MP-200D         System         Fire Pump House Deluge         System         Warehouse/Maintenance Shop Drive Way #7         Warehouse/Maintenance Shop Drive Way #8	Y         N           System Valve           Locked           Y         N           Position         0//           Q/C         0//	d/c     c	eluge Sys Locked Y Ø N D ks Date	tem	Comments
4 1 2 3 4 5 No. 1 No. 1 2 3	HTF Deluge S         System         MP-201       MP-200A         MP-2008       MP-200C         MP-200D       System         System         Fire Pump House Deluge         Warehouse/Maintenance Shop Drive Way #7         Warehouse/Maintenance Shop Drive Way #8       West Side Power Block by VS-3 # 9	Y         N           ystem Valve           Locked           Y         N           Pointion         0//           0//         0//	d/c     c	eluge Sys Locked Y Ø N D ks Date	tem	Comments
4 1 2 3 4 5 No. 1 No. 1 2 3 4	HTF Deluge S         System         MP-201       MP-200A         MP-2008       MP-200B         MP-200D       System         Fire Pump House Deluge         System         Warehouse/Maintenance Shop Drive Way #7         Warehouse/Maintenance Shop Drive Way #8         West Side Power Block by VS-3 # 9         West Side Power Block by VS-1 # 10	Y         N           ystem Valva           Locked           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Fire Pump         PSI           Pasition         0/2           Q/C         Q/C	d/c     c	eluge Sys Locked Y Ø N D ks Date	tem	Comments
4 1 2 3 4 5 No. 1 No. 1 2 3 4 5 1 2 3 4 5 5 1 1 2 3 4 5 5 1 1 1 1 1 1 1 1 1 1 1 1 1	HTF Deluge S         System         MP-200A       MP-200B         MP-200B       MP-200C         MP-200D       System         Fire Pump House Deluge       System         Warehouse/Maintenance Shop Drive Way #7       Warehouse/Maintenance Shop Drive Way #8         West Side Power Block by VS-3 # 9       West Side Power Block by VS-1 # 10         West Side Cooling Tower by VS-4 # 11       Metal State	Y         N           ystem Valva           Locked           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Position         0//C           0//C         0//C           0//C         0//C	d/c     c	eluge Sys Locked Y Ø N D ks Date	tem	Comments
4 1 2 3 4 5 <b>No.</b> 1 <b>No.</b> 1 2 3 4 5 6	HTF Deluge S         System         MP-201       MP-200A         MP-2008       MP-200C         MP-200D       System         Fire Pump House Deluge       System         Warehouse/Maintenance Shop Drive Way #7       Warehouse/Maintenance Shop Drive Way #8         West Side Power Block by VS-3 # 9       West Side Power Block by VS-1 # 10         West Side Cooling Tower by VS-4 # 11       West side Cooling Tower by VS-4 # 12	Y         N           ystem Valve           Locked           Y         N           Position         0//           0//         0//           0//         0//           0//         0//           0//         0//	d/c     c	eluge Sys Locked Y Ø N D ks Date	tem	Comments
4 <b>No.</b> 1 2 3 4 5 <b>No.</b> 1 1 2 3 4 5 5 6 7	HTF Deluge S         System         MP-200A       MP-200B         MP-200B       System         Fire Pump House Deluge       System         Fire Pump House Deluge       System         Warehouse/Maintenance Shop Drive Way #7       Warehouse/Maintenance Shop Drive Way #8         West Side Power Block by VS-3 # 9       West Side Power Block by VS-1 # 10         West Side Cooling Tower by VS-4 # 11       West Side Cooling Tower by VS-4 # 12         N.W. Corner Chemical Storage #1       Storage #1	Y         N           ystem Valve           Locked           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Pointion         0//           0//         0//           0//         0//           0//         0//           0//         0//	d/c     c	eluge Sys Locked Y Ø N D ks Date	tem	Comments
4 <b>No.</b> 1 2 3 4 5 <b>No.</b> 1 1 2 3 4 5 6 7 8	HTF Deluge S         System         MP-200A       MP-200B         MP-200B       System         Fire Pump House Deluge       System         Fire Pump House Deluge       System         Warehouse/Maintenance Shop Drive Way #7       Warehouse/Maintenance Shop Drive Way #8         West Side Power Block by VS-3 # 9       West Side Power Block by VS-1 # 10         West Side Cooling Tower by VS-4 # 11       West side Cooling Tower by VS-4 # 12         N.W. Corner Chemical Storage #1       N.E. Corner Chemical Storage # 2	Y         N           ystem Valve           Locked           Y         N           Position         0/2           0/2         0/2           0/2         0/2           0/2         0/2           0/2         0/2	d/c     c	eluge Sys Locked Y Ø N D ks Date	tem	Comments
4 <b>No.</b> 1 2 3 4 5 <b>No.</b> 1 1 2 3 4 5 6 6 7 8 9	HTF Deluge S         System         MP-200A         MP-200B         MP-200C         MP-200D         System         Fire Pump House Deluge         Warehouse/Maintenance Shop Drive Way #7         Warehouse/Maintenance Shop Drive Way #8         West Side Power Block by VS-3 # 9         West Side Power Block by VS-1 # 10         West Side Cooling Tower by VS-4 # 11         West Side Cooling Tower by VS-4 # 12         N.W. Corner Chemical Storage #1         N.E. Corner Chemical Storage # 2         East Side W.T. by Multimedia Filters # 3	Y         N           ystem Valva           Locked           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Position         0//           Q/C         Q/C           Q/C         Q/C           Q/C         Q/C           Q/C         Q/C	d/c     c	eluge Sys Locked Y Ø N D ks Date	tem	Comments
4 <b>No.</b> 1 2 3 4 5 <b>No.</b> 1 1 2 3 4 5 6 7 8	HTF Deluge S         System         MP-200A       MP-200B         MP-200B       MP-200D         System         Fire Pump House Deluge         Warehouse/Maintenance Shop Drive Way #7         Warehouse/Maintenance Shop Drive Way #8         West Side Power Block by VS-3 # 9         West Side Power Block by VS-1 # 10         West Side Cooling Tower by VS-4 # 11         West Side Cooling Tower by VS-4 # 12         N.W. Corner Chemical Storage #1         N.E. Corner Chemical Storage #2         East Side W.T. by Multimedia Filters # 3         East Side W.T. by Multimedia Filters # 5	Y         N           ystem Valva           Locked           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Pointion         0/2           Q/C         Q/C           Q/C         Q/C           Q/C         Q/C           Q/C         Q/C           Q/C         Q/C	d/c     c	eluge Sys Locked Y Ø N D ks Date	tem	Comments
4 <b>No.</b> 1 2 3 4 5 <b>No.</b> 1 1 2 3 4 5 6 6 7 8 9	HTF Deluge S         System         MP-201       MP-200A         MP-200B       MP-200D         MP-200D       System         Fire Pump House Deluge       System         Warehouse/Maintenance Shop Drive Way #7       Warehouse/Maintenance Shop Drive Way #8         West Side Power Block by VS-3 # 9       West Side Power Block by VS-1 # 10         West Side Cooling Tower by VS-4 # 11       West Side Cooling Tower by VS-4 # 12         N.W. Corner Chemical Storage #1       N.E. Corner Chemical Storage #1         N.E. Corner Chemical Storage # 2       East Side W.T. by Multimedia Filters # 3       East Side W.T. by Multimedia Filters # 5         North Side Bldg 10 # 6       Maintenance Stop Drive Source Sourc	Y         N           ystem Valve           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Position         0/2           0/2         0/2           0/2         0/2           0/2         0/2           0/2         0/2           0/2         0/2           0/2         0/2           0/2         0/2	d/c     c	eluge Sys Locked Y Ø N D ks Date	tem	Comments
4 No. 1 2 3 4 5 No. 1 1 No. 1 2 3 4 5 6 7 8 9 10	HTF Deluge S         System         MP-200A       MP-200B         MP-200B       MP-200D         System         Fire Pump House Deluge         Warehouse/Maintenance Shop Drive Way #7         Warehouse/Maintenance Shop Drive Way #8         West Side Power Block by VS-3 # 9         West Side Power Block by VS-1 # 10         West Side Cooling Tower by VS-4 # 11         West Side Cooling Tower by VS-4 # 12         N.W. Corner Chemical Storage #1         N.E. Corner Chemical Storage #2         East Side W.T. by Multimedia Filters # 3         East Side W.T. by Multimedia Filters # 5	Y         N           ystem Valve           Locked           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Position         0//           0//         0//           0//         0//           0//         0//           0//         0//           0//         0//           0//         0//           0//         0//           0//         0//           0//         0//           0//         0//           0//         0//           0//         0//           0//         0//           0//         0//           0//         0//           0//         0//           0//         0//	d/c     c	eluge Sys Locked Y Ø N D ks Date	tem	Comments
4 No. 1 2 3 4 5 No. 1 No. 1 2 3 4 5 6 7 8 9 9 10 11	HTF Deluge S         System         MP-201       MP-200A         MP-2008       MP-200B         MP-2000       MP-200D         System         Fire Pump House Deluge         Warehouse/Maintenance Shop Drive Way #7         Warehouse/Maintenance Shop Drive Way #8         West Side Power Block by VS-3 # 9         West Side Power Block by VS-1 # 10         West Side Cooling Tower by VS-4 # 11         West Side Cooling Tower by VS-4 # 12         N.E. Corner Chemical Storage #1         N.E. Side W.T. by Multimedia Filters # 3         East Side W.T. by Multimedia Filters # 5         North Side Bldg 10 # 6         Between MP-444's and Water Treat # 4         Between MP-444's and Water Treat # 4	Y □         N □           ystem Valve         Locked           Y □         N □           Y □         N □           Y □         N □           Y □         N □           Y □         N □           Y □         N □           Fire Pump         PSI           0 // C         0 // C	d/c es (To be     d/c es (To be     d/c     d/c	eluge Sys Locked Y Ø N D KS Date Cycled	tem	Comments
4 <b>No.</b> 1 2 3 4 5 <b>No.</b> 1 1 2 3 4 5 6 7 8 9 10 11 12 13	HTF Deluge S         System         MP-201       MP-200A         MP-2008       MP-200B         MP-2000       MP-200D         System         Fire Pump House Deluge         Warehouse/Maintenance Shop Drive Way #7         Warehouse/Maintenance Shop Drive Way #8         West Side Power Block by VS-3 # 9         West Side Power Block by VS-1 # 10         West Side Cooling Tower by VS-4 # 11         West Side Cooling Tower by VS-4 # 12         N.E. Corner Chemical Storage #1         N.E. Side W.T. by Multimedia Filters # 3         East Side W.T. by Multimedia Filters # 5         North Side Bldg 10 # 6         Between MP-444's and Water Treat # 4         Between MP-444's and Water Treat # 4	Y         N           ystem Valve           Locked           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Y         N           Position         0//           0//         0//           0//         0//           0//         0//           0//         0//           0//         0//           0//         0//           0//         0//           0//         0//           0//         0//           0//         0//           0//         0//           0//         0//           0//         0//           0//         0//           0//         0//           0//         0//           0//         0//	d/c es (To be     d/c es (To be     d/c     d/c	eluge Sys Locked Y Ø N D KS Date Cycled	tem	Comments



General Inf	ormation			
Plant: Alpha 🗆 Beta 🔽	Date: 11/7/24			
Operator: Taylor	*To be completed each time unit is operated.			
Reason for running pumps: Weekly test  Maintenan	ce 🗆 Emergency 🗆			
Jockey Elec	tric Pump			
Pre-start Inspection: Electrical Feed 🛛 Mechanical	Valves			
Check the jockey pump on pressure drop. Start up pressure:				
Discharge Pressure:				
Pump Suction Pressure: Pump	Discharge pressure:			
Comments:				
Electric				
Pre-start Inspection: Electrical Feed  Mechanical	Valves			
Start the pump on pressure drop. Start up pressure:				
Start time:				
Pump Suction Pressure: Pump	Discharge pressure:			
Stop time: Total time running	3			
Comments:				
Diesel	Pump			
Pre-start Inspection: Coolant 🗹 Oil 📝 Mechanical	Valves 🗹 🛛 Water Jacket Heater 🗹			
Fuel level > 2/3: Yes 🗹 No 🗆 Month	nly Fuel Consumption:			
Battery volt Crank 1: 🗸 Battery volt Crank 2:	Battery Condition: Good			
Starting hour meter: 136.6	Start time:			
Oil pressure start:	Oil Pressure finish: 74			
Pump Suction Pressure: 71 Pump	o Discharge pressure:			
Coolant temperature after 30 minutes running:				
Stop time: Stop hour meter:	Total time running:			
Comments:				
Sulfur Concentrations (less than or equal to 0.0015% on a weight per	r weight basis).			
his new direct drive fire pump engine shall be limited to use for emergency fire suppression, defined a more than 30 minutes in any one hour and no more than 10 hours per year for initial start-up testing a of hours necessary to comply with the testing requirements of the National Fire Protection Associatie (current edition). The hours of operation for source testing will not be counted towards either of the all Note: Fuel consumption 27 gal/ h approximately. There is no limit on engine operation for emergency use. [Title 17 CCR 93115.6(a)(4)]	as in response to a fire or due to low fire water pressure. In addition, this engine shall be operated no and compliance demonstrations. Additionally, this engine shall not be operated more than the number on (NFPA) 25-"Standards for the Inspection, Testing, and Maintenance of Water Based Fire Systems"			



1

	Plant: ALPHA	D BETA: 🗹 Valve She	d # 1 by	Condense	er	
		Valve Sne	Viv. Pos.	Signage	Locked	Comments
<b>)</b> .	System	160	Ø/C	~	YO ND	
	SG Unit 1 81-1	160	Ø/C	5	YO NO	
2	SG Unit 2 B1-2	140	Ø/C	J	YOND	
3	Reheaters B1-3	160	O/C	V	YO NO	
ł	Rack 2 West HTF B1-4	llas	Ø/C	U	YDND	
5	Rack 2 East HTF         B1-5           North Steel Pro         B1-6	la	Ø/C	J	YOND	
5	Hord Bicchie	160	Ø/C	J	YOND	
7		100	Ø/C	V	YOND	
8		160	Ø/C	V.	YOND	
9	active and a second sec	160	Ø/C	V	YUND	
0	Lube Oil B1-10 Turbine Hose Stations B1-11	60	Ø/C	V	YOND	
1	Turbine Bearings B1-12	160	¢/C		YU ND	
2	Turbine bearings BT re	Valve Sh	ned # 2 by	y Overflo	W	Comments
	System	PSI	Viv. Pos.	Signage	Locked	
<b>o.</b>	Expansion Vessels B2-1	160	Ø/C	V		
	Ullage Area B2-2	160	Ø/C	J		
2	Ullage Structure B2-11	160	Ø/C	1	and the second se	
3	Rack 1 Middle Area B2-5	100	D/C	V		
4 5	Overflow Tanks B2-9	60	O/C	V	YOND	
5	Rack 1 South Area B2-6	160	¢/C	4	YOND	
7	Rack 1 West B2-7	160	Ø/C	V	YO NO	
8	Rack 1 North Area B2-4	160	0/C	V	YU NU	
9	Over flow AFFF B2-8		0/C	Y.	YUND	
10	Expansion Vessel AFFF 82-3	Valve Shed # 3 b	O/C	E GE Eloc	trical Bldg	
	ROBALIST	Valve Shed # 3 t	Viv. Pos.	Signage	Locked	Comments
lo.	System	PSI		Signage	YOND	
1	Transformer Aux	155	0/C	1	YUND	
2	Transformer Main	Valve Shed # 4 l	Coolin	Tower		
		Valve Sned # 4 1	Viv. Pos.	Signage		Comments
No.	System	11 . 40	DIC	1	YVND	
1	Cooling Tower West Side	Valve Shed	# 5 by C	ontrol Bl	dq 10	
		PSI	Viv Pos	. Signage	Locked	Comments
No.	System	160	D/C	V	YD ND	
1	Control Room 84-5	160	Ø/C	J	YD ND	
2	Offices B4-3		0.10	V	YEND	
3	Electrical Room B4-4	rinkler Valves (Th	iese are t	o be lock	ed in the o	pen position)
		Locked	Viv. Pos	i.		Comments
No.	System	YUND				
	Bearing 2					
1		YOND	1 Ø/C	-		
2	Bearing 3					
2 3	Bearing 3 Bearing 4	YO NE	1 0/C			
2	Bearing 3 Bearing 4	YO NE	1 0/C	e Locked i	n the Open	Position)
2 3 4	Bearing 3 Bearing 4 Bearing 5 HTF De	YO NO	1 0/C 1 0/C res (To be Viv. Por	e Locked i	n the Open	Position) Comments
2 3 4 <b>No.</b>	Bearing 3 Bearing 4 Bearing 5 HTF De System	Y NE Y NE luge System Valv	1 0/C 1 0/C es (To be Viv. Po: 1 0/C	e Locked i s.	n the Open	Position) Comments
2 3 4 <b>No.</b>	Bearing 3 Bearing 4 Bearing 5 HTF De System	マロト N E Y I N E luge System Valv Locked Y 印 N E Y 田 N E	1 0/C 1 0/C res (To be Viv. Pos 1 0/C 1 0/C 1 0/C	e Locked i s.	n the Open	Position) Comments
2 3 4 <b>No.</b> 1 2	Bearing 3 Bearing 4 Bearing 5 HTF De System MP-201 MP-200A	Iuge System Valv Locked	1 0/C 1 0/C res (To be Viv. Pos 1 0/C 1 0/C 1 0/C	e Locked i	n the Open	Position) Comments
2 3 4 No. 1 2 3	Bearing 3           Bearing 4           Bearing 5           HTF De           System           MP-201           MP-200A           MP-2008	マロト N E Y I N E luge System Valv Locked Y 田 N E	0         0/C           0         0/C           ves (To be         0/C           0         0/C           0         0/C           0         0/C           0         0/C           0         0/C           0         0/C	e Locked i	n the Open	Position) Comments
2 3 4 <b>No.</b> 1 2 3 4	Bearing 3           Bearing 4           Bearing 5           HTF De           System           MP-201           MP-200A           MP-200B           MP-200C	V N N V N N Iuge System Valv Locked V N N V N N V N N V N N	1 0/C 1 0/C 1 0/C 1 0/C 1 0/C 1 0/C 1 0/C 1 0/C 1 0/C 1 0/C	5.		Position) Comments
2 3 4 No. 1 2 3	Bearing 3           Bearing 4           Bearing 5           HTF De           System           MP-201           MP-200A           MP-2008	V N N V N N Iuge System Valv Locked V N N V N N V N N V N N	1 0/C 1 0/C 1 0/C 1 0/C 1 0/C 1 0/C 1 0/C 1 0/C 1 0/C 1 0/C	E Locked i		
2 3 4 <b>No.</b> 1 2 3 4 5	Bearing 3           Bearing 4           Bearing 5           HTF De           System           MP-201           MP-200A           MP-200B           MP-200C           MP-200D	V N N V N N Iuge System Valv Locked V N N V N N V N N V N N	1 0/C 1 0/C 1 0/C 1 0/C 1 0/C 1 0/C 1 0/C 1 0/C 1 0/C 1 0/C	Deluge S	ystem	Position) Comments Comments
2 3 4 <b>No.</b> 1 2 3 4	Bearing 3           Bearing 4           Bearing 5           HTF De           System           MP-201           MP-200A           MP-200B           MP-200C           MP-200D	Y     N       Y     N       Iuge System Valv       Locked       Y     N       Y <td< td=""><td>1         0/C           1         0/C           res (To be         Viv. Post           1         0/C           2         0/C           3         0/C           3         0/C           3         0/C           3         0/C           3         0/C           9         0/C           0/C         0/C           0/C         0/C           0/C         0/C</td><td>Deluge S</td><td>ystem</td><td></td></td<>	1         0/C           1         0/C           res (To be         Viv. Post           1         0/C           2         0/C           3         0/C           3         0/C           3         0/C           3         0/C           3         0/C           9         0/C           0/C         0/C           0/C         0/C           0/C         0/C	Deluge S	ystem	
2 3 4 <b>No.</b> 1 2 3 4 5	Bearing 3           Bearing 4           Bearing 5           HTF De           System           MP-201           MP-200A           MP-200B           MP-200C           MP-200D	Y     N       Y     N       Iuge System Valv       Locked       Y     N       Y     N       Y     N       Y     N       Y     N       Y     N       Y     N       Y     N       Y     N       Y     N       Y     N       Y     N       Y     N       Y     N       Y     N       Y     N       Y     N       Fire Pum	1         \$\phi/c\$           1         \$\phi/c\$           es (To be         \$\phi/c\$           1         \$\phi/c\$           2         \$\phi/c\$           3         \$\phi/c\$           3         \$\phi/c\$           4         \$\phi/c\$           5         \$\phi/c\$           6         \$\phi/c\$           7         \$\phi/c\$           9         \$\phi/c\$           9         \$\phi/c\$           0/c         \$\phi/c\$           0/c         \$\phi/c\$	Deluge S Lockec	ystem	
2 3 4 1 2 3 4 5 No.	Bearing 3           Bearing 4           Bearing 5           HTF De           System           MP-201           MP-200A           MP-200B           MP-200C           MP-200D	Iuge System Valv Locked Y P NC Y NC Y NC Y NC Y NC Y NC Y NC Y NC Y		Deluge S Lockee Y N ecks	ystem	
2 3 4 1 2 3 4 5 <b>No.</b> 1	Bearing 3           Bearing 4           Bearing 5           HTF De           System           MP-201           MP-200A           MP-200B           MP-200C           MP-200D	Y     N       Y     N       Iuge System Valv       Locked       Y     NC       Y     NC </td <td></td> <td>Deluge S Lockee Y N ecks</td> <td>ystem</td> <td>Comments</td>		Deluge S Lockee Y N ecks	ystem	Comments
2 3 4 1 2 3 4 5 No. 1 No.	Bearing 3 Bearing 4 Bearing 5 HTF De System MP-201 MP-2008 MP-2008 MP-2000 MP-200C MP-200C System Fire Pump House Deluge System	Y     N       Y     N       Y     N       Iuge System Valv       Locked       Y     N       Y     N       Y     N       Y     N       Y     N       Y     N       Y     N       Y     N       Y     N       Y     N       Fire Pum       PSI       V       Position       0/%		Deluge S Lockee Y N ecks	ystem	Comments
2 3 4 No. 1 2 3 4 5 No. 1 No. 1	Bearing 3           Bearing 4           Bearing 5           HTF De           System           MP-201           MP-200A           MP-200B           MP-200C           MP-200D           System           Fire Pump House Deluge           System           Maintenance Shop Drive Way #7           Maintenance Shop Drive Way #8	Y     N       Y     N       Y     N       Iuge System Valv       Locked       Y     NC       Fire Pum     Pst       NO     O/Ø       Ø/C     Ø/C		Deluge S Lockee Y N ecks	ystem	Comments
2 3 4 No. 1 2 3 4 5 No. 1 No. 1 2	Bearing 3           Bearing 4           Bearing 5           HTF De           System           MP-201           MP-200A           MP-200B           MP-200C           MP-200D           System           Fire Pump House Deluge           Maintenance Shop Drive Way #7           Maintenance Shop Drive Way #8	Y     N       Y     N       Y     N       Iuge System Valv       Locked       Y     NC       Y     NC       Y     NC       Y     NC       Y     NC       Y     NC       Fire Pum     PSI       V     NC       Position     0/9/       Ø/C     Ø/C		Deluge S Lockee Y N ecks	ystem	Comments
2 3 4 No. 1 2 3 4 5 No. 1 No. 1 2 3	Bearing 3           Bearing 4           Bearing 5           HTF De           System           MP-201           MP-200A           MP-200B           MP-200C           MP-200D           System           Fire Pump House Deluge           System           Maintenance Shop Drive Way #7           Maintenance Shop Drive Way #8           Weer Side Power Block by VS-3 # 9	Y         N E           Y         N E           Y         N E           Iuge System Valve         Locked           Y         N E           Y         N E           Y         N E           Y         N E           Y         N E           Y         N E           Y         N E           Fire Pum         Pst           V         N E           Position         Ø/C           Ø/C         Ø/C		Deluge S Lockee Y N ecks	ystem	Comments
2 3 4 1 2 3 4 5 <b>No.</b> 1 <b>No.</b> 1 2 3 4	Bearing 3         Bearing 4         Bearing 5         HTF De         System         MP-200A         MP-200B         MP-200C         MP-200D         System         Fire Pump House Deluge         System         Maintenance Shop Drive Way #7         Maintenance Shop Drive Way #8         West Side Power Block by VS-3 # 9         West Side Power Block by VS-1 # 10         West Side Cooling Tower by VS-4 # 11	Y         N E           YE         N E           Juge System Valv         Locked           Y         N E           Y         N E           Y         N E           Y         N E           Y         N E           Y         N E           Y         N E           Y         N E           Y         N E           Position         O/Ø           Ø/C         Ø/C           Ø/C         Ø/C		Deluge S Lockee Y N ecks	ystem	Comments
2 3 4 1 2 3 4 5 <b>No.</b> 1 1 2 3 4 5 5 3 4 5	Bearing 3         Bearing 4         Bearing 5         HTF De         System         MP-200A         MP-200B         MP-200C         MP-200D         System         Fire Pump House Deluge         System         Maintenance Shop Drive Way #7         Maintenance Shop Drive Way #8         West Side Power Block by VS-3 # 9         West Side Power Block by VS-1 # 10         West Side Cooling Tower by VS-4 # 11	Y         N E           YE         N E           luge System Valv         Locked           Y         N E           Y         N E           Y         N E           Y         N E           Y         N E           Y         N E           Y         N E           Y         N E           Y         N E           Fire Pum         PSI           NO         Ø/C           Ø/C         Ø/C           Ø/C         Ø/C		Deluge S Lockee Y N ecks	ystem	Comments
2 3 4 1 2 3 4 5 No. 1 2 3 4 5 5 6	Bearing 3         Bearing 4         Bearing 5         HTF De         System         MP-200A         MP-200B         MP-200C         MP-200D         System         Fire Pump House Deluge         System         Maintenance Shop Drive Way #7         Maintenance Shop Drive Way #8         West Side Power Block by VS-3 # 9         West Side Cooling Tower by VS-4 # 11         West Side Cooling Tower by VS-4 # 12	Y         N E           Y         N E           Y         N E           Iuge System Valv         Locked           Y         N E           Y         N E           Y         N E           Y         N E           Y         N E           Y         N E           Y         N E           Y         N E           Y         N E           Fire Pum         PSI           N         O/Ø           Ø/C         Ø/C           Ø/C         Ø/C           Ø/C         Ø/C		Deluge S Lockee Y N ecks	ystem	Comments
2 3 4 No. 1 2 3 4 5 <b>No.</b> 1 1 2 <b>No.</b> 1 2 3 4 5 5 6 7	Bearing 3         Bearing 4         Bearing 5         HTF De         System         MP-201         MP-200A         MP-200B         MP-200C         MP-200D         System         Fire Pump House Deluge         Maintenance Shop Drive Way #7         Maintenance Shop Drive Way #8         West Side Power Block by VS-3 # 9         West Side Cooling Tower by VS-4 # 11         West Side Cooling Tower by VS-4 # 11         West Side Cooling Tower by VS-4 # 12         N.W. Corner Chemical Storage #1	Y         N E           Y         N E           Y         N E           Iuge System Valv         Locked           Y         N E           Y         N E           Y         N E           Y         N E           Y         N E           Y         N E           Y         N E           Y         N E           Y         N E           Y         N E           Y         N E           Y         N E           Fire Pum         PSI           Ø/C         Ø/C           Ø/C         Ø/C           Ø/C         Ø/C           Ø/C         Ø/C		Deluge S Lockee Y N ecks	ystem	Comments
2 3 4 No. 1 2 3 4 5 No. 1 1 2 3 4 5 5 6 7 8	Bearing 3         Bearing 4         Bearing 5         HTF De         System         MP-201         MP-2008         MP-2008         MP-2000         MP-2000         MP-2000         MP-2000         System         Fire Pump House Deluge         System         Maintenance Shop Drive Way #7         Maintenance Shop Drive Way #8         West Side Power Block by VS-3 # 9         West Side Power Block by VS-1 # 10         West Side Cooling Tower by VS-4 # 11         West Side Cooling Tower by VS-4 # 12         N.W. Corner Chemical Storage #1         N.E. Corner Chemical Storage # 2         East Side W/T by Multimedia Filters # 3	Y         N E           Y         N E           Y         N E           Iuge System Valve         Locked           Y         N E           Y         N E           Y         N E           Y         N E           Y         N E           Y         N E           Fire Pum         PSI           0/2         Ø/C           Ø/C         Ø/C           Ø/C         Ø/C           Ø/C         Ø/C           Ø/C         Ø/C           Ø/C         Ø/C		Deluge S Lockee Y N ecks	ystem	Comments
2 3 4 1 2 3 4 5 <b>No.</b> 1 1 2 3 4 5 5 <b>No.</b> 1 2 3 4 5 5 7 7 8 9	Bearing 3         Bearing 4         Bearing 5         HTF De         System         MP-201         MP-2008         MP-2008         MP-2000         MP-2000         MP-2000         MP-2000         System         Fire Pump House Deluge         System         Maintenance Shop Drive Way #7         Maintenance Shop Drive Way #8         West Side Power Block by VS-3 # 9         West Side Power Block by VS-1 # 10         West Side Cooling Tower by VS-4 # 11         West Side Cooling Tower by VS-4 # 12         N.W. Corner Chemical Storage #1         N.E. Corner Chemical Storage # 2         East Side W/T by Multimedia Filters # 3	Y         N E           YE         N E           Juge System Valve         Locked           Y         N E           Y         N E           Y         N E           Y         N E           Y         N E           Y         N E           Y         N E           Y         N E           Y         N E           Y         N E           Y         N E           Y         N E           Position         0/Ø           Ø/C         Ø/C           Ø/C         Ø/C           Ø/C         Ø/C           Ø/C         Ø/C           Ø/C         Ø/C           Ø/C         Ø/C		Deluge S Lockee Y N ecks	ystem	Comments
2 3 4 1 2 3 4 5	Bearing 3         Bearing 4         Bearing 5         HTF De         System         MP-200A         MP-200B         MP-200C         MP-200D         System         Fire Pump House Deluge         System         Maintenance Shop Drive Way #7         Maintenance Shop Drive Way #8         West Side Power Block by VS-3 # 9         West Side Cooling Tower by VS-4 # 11         West Side Cooling Tower by VS-4 # 12         N.W. Corner Chemical Storage #1         N.E. Corner Chemical Storage # 2         East Side W.T. by Multimedia Filters # 3         East Side W.T. by Multimedia Filters # 5         North Side Blog 10 # 6	Y         N E           YE         N E           Iuge System Valv         Locked           Y         N E           Y         N E           Y         N E           Y         N E           Y         N E           Y         N E           Y         N E           Y         N E           Y         N E           Position         O/Ø           Ø/C         Ø/C		Deluge S Lockee Y N ecks	ystem	Comments
2 3 4 1 2 3 4 5 <b>No.</b> 1 1 2 3 4 5 5 <b>No.</b> 1 2 3 4 5 5 7 7 8 9	Bearing 3         Bearing 4         Bearing 5         HTF De         System         MP-201         MP-2008         MP-2008         MP-2000         MP-2000         MP-2000         MP-2000         System         Fire Pump House Deluge         System         Maintenance Shop Drive Way #7         Maintenance Shop Drive Way #8         West Side Power Block by VS-3 # 9         West Side Power Block by VS-1 # 10         West Side Cooling Tower by VS-4 # 11         West Side Cooling Tower by VS-4 # 12         N.W. Corner Chemical Storage #1         N.E. Corner Chemical Storage # 2         East Side W/T by Multimedia Filters # 3	Y         N E           YE         N E           Juge System Valve         Locked           Y         N E           Y         N E           Y         N E           Y         N E           Y         N E           Y         N E           Y         N E           Y         N E           Y         N E           Y         N E           Y         N E           Y         N E           Position         0/Ø           Ø/C         Ø/C           Ø/C         Ø/C           Ø/C         Ø/C           Ø/C         Ø/C           Ø/C         Ø/C           Ø/C         Ø/C		Deluge S Lockee Y N ecks	ystem	Comments

# Automated Fire Systems Inspection Checklist

Transformer Yard Refuse Check Y D N Z Page 1 of 1Revised 09/24/2019 Page 408 of 1228



General Information								
Plant: Alpha Date: 11/9/24								
Operator:     Apthony       *To be completed each time unit is operated.								
Reason for running pumps: Weekly test V Maintenance  Emergency								
Jockey Electric Pump								
Pre-start Inspection: Electrical Feed 🕼 Mechanical 🖻 Valves 🖻								
Check the jockey pump on pressure drop. Start up pressure: 155								
Discharge Pressure: 162								
Pump Suction Pressure: — Pump Discharge pressure: —								
Comments:								
Electric Pump								
Pre-start Inspection: Electrical Feed 🗹 Mechanical 🗗 Valves 🗗								
Start the pump on pressure drop. Start up pressure: 145								
Start time: 2143								
Pump Suction Pressure: 15 Pump Discharge pressure: 150								
Stop time: 2/53 Total time running 10 m/jn								
Comments:								
Diesel Pump								
Pre-start Inspection: Coolant 🛛 Oil 🗌 Mechanical 🔲 Valves 🗆 Water Jacket Heater 🗆								
Fuel level > 2/3:     Yes     No     Monthly Fuel Consumption:								
Battery volt Crank 1: Battery volt Crank 2: Battery Condition:								
Starting hour meter: Start time:								
Oil pressure start: Oil Pressure finish:								
Pump Suction Pressure: Pump Discharge pressure:								
Coolant temperature after 30 minutes running:								
Stop time: Stop hour meter: Total time running:								
Comments:								
Sulfur Concentrations (less than or equal to 0.0015% on a weight per weight basis).								
his new direct drive fire pump engine shall be limited to use for emergency fire suppression, defined as in response to a fire or due to low fire water pressure. In addition, this engine shall be operated more than 30 minutes in any one hour and no more than 10 hours per year for initial start-up testing and compliance demonstrations. Additionally, this engine shall not be operated more than the num of hours necessary to comply with the testing requirements of the National Fire Protection Association (NFPA) 25-"Standards for the Inspection, Testing, and Maintenance of Water Based Fire Syste (current edition). The hours of operation for source testing will not be counted towards either of the allowable annual limits above. Note: Fuel consumption 27 gal/ h approximately. There is no limit on engine operation for emergency use. [Title 17 CCR 93115.6(a)(4)]								



		·	2	1/20/2	il a	perator Marcelino 5.
	Plant: ALPHA 🎼					berator
	ř	Valve She			er Locked	Comments
No.	System	PSI 150	Viv. Pos.	Signage	YE NO	Comments
1	SG Unit 1		¥ 0/C	1	YZND	
2	SG Unit 2 4 31 2	160	V 0/C	1	YEND	
3	Reheaters A. 5 S Rack 2 West HTF A. 8 4	150	10/C	1	YEND	
5	Rack 2 East HTF 4/31/5	150	10/C	1	YZND	
6	North Steel Pro A/B1-6	150	10/C	1	YZND	
7	HTF Pumps 4/31-7	155	✓ O/C	/	YØ NO	
8	HTF Heaters A/B1-8	160	✓ O/C	1	YEND	
9	South Steel Pro A/81-9	160	/ O/C		YEND	
10	Lube Oil A/B1/10	170	10/C		YDND	
11	Turbine Hose Stations A/31-11	160	<ul><li>✓ O/C</li><li>✓ O/C</li></ul>		YZYND	
12	Turbine Bearings A/81/12	Valve Sh	red # 2 b	Overflow		
	Suctor	PSI	Viv. Pos.	Signage	Locked	Comments
1	Expansion Vessels A/82-1	110	1 0/C	V	YOND	
2	Ullage Area A/B2-2	155	V 0/C	1	YOND	
3	Ullage Structure A/B2-11	160	1 O/C	1	YOND	
4	Rack 1 Middle Area A/B2-5	160	V O/C	1,	YOND	
5	Overflow Tanks A/B2-9	155	1 0/C		YOND	
6	Rack 1 South Area A/B2-6	160	1 0/C	1		
7	Rack 1 West A/B2-7	179	1 0/C		YO NO	
8	Rack 1 North Area A/82-4	160	V 0/C	1	YUND	
9	Over flow AFFF A/B2-8	160	1 0/C	V	YOND	
10	Expansion Vessel AFFF A/B2-3	ve Shed # 3 b	v Bldg 3	5 GE Elect		
No.	System	PSI	Viv. Pos.	Signage	Locked	Comments
1	Transformer Aux	160	VO/C		-Y-Z ND	
2	Transformer Main	170	VO/C	/	YPYND	
_	Va	ve Shed # 4 b			Nest Side	
No.	System	PSI	Viv. Pos.	Signage		Comments
1	Cooling Tower West Side		0/C	Dia Dia	YD ND	
		Valve Shed			Locked	Comments
No.	System	PSI	Viv. Pos.		Y P N D	Comments
1	Control Room A/B4-5	170	- O/C	1	YEND	
2	Offices A/B4-3 Electrical Room A/B4-4	170	- O/C	1	YEND	
3	Turbine Sprinkl	er Valves (Th	ese are to	be locke	d in the o	pen position)
No.	System		Viv. Pos.			Comments
1	Bearing 2	YUND	- O/C			
2	Bearing 3	YEND				
3	Bearing 4	Y 🖬 N 🗆				
4	Bearing 5	YZYND	0/C			Desition)
22		System Valve	s (lobe	госкеа п	the Oper	Comments
No.	System		Viv. Pos.	-		Comments
1	MP-201	Y N N W	0/0			
2	MP-200A	YPKND				
3	MP-200B	YEND				
4	MP-200C MP-200D	YEND	-0/C			
C	An a contra	Fire Pump	House D	eluge Sys	stem	
5		PSI	0/C	Locked		Comments
				YEND		
No.	System	the second second	12			
	Fire Pump House Deluge	170	PIV Che			
No.	Fire Pump House Deluge	170	PIV Che			Commants
No.	Fire Pump House Deluge System	170 Position		cks		Comments
<b>No.</b> 1	Fire Pump House Deluge System Warehouse/Maintenance Shop Drive Way #7	170 Position	PIV Cher	cks Date		Comments
No. 1 No. 1 2	Fire Pump House Deluge System Warehouse/Maintenance Shop Drive Way #7 Warehouse/Maintenance Shop Drive Way #8	170 Position √0/C 0/C /	PIV Cher	cks Date		Comments
No. 1 No. 1 2 3	Fire Pump House Deluge System Warehouse/Maintenance Shop Drive Way #7 Warehouse/Maintenance Shop Drive Way #8 West Side Power Block by VS-3 # 9	170 Position √0/C 0/C ↓ 0/C	PIV Cher	cks Date		Comments
No. 1 No. 1 2 3 4	Fire Pump House Deluge System Warehouse/Maintenance Shop Drive Way #7 Warehouse/Maintenance Shop Drive Way #8 West Side Power Block by VS-3 # 9 West Side Power Block by VS-1 # 10	I70           Position           √0/C           0/C           0/C           √0/C	PIV Cher	cks Date		Comments
No. 1 No. 1 2 3 4 5	Fire Pump House Deluge  System  Warehouse/Maintenance Shop Drive Way #7  Warehouse/Maintenance Shop Drive Way #8 West Side Power Block by VS-3 # 9 West Side Power Block by VS-1 # 10 West Side Cooling Tower by VS-4 # 11	170           Position           √0/C           0/C           0/C           √0/C           √0/C           √0/C           √0/C	PIV Cher	cks Date		Comments
No. 1 No. 1 2 3 4 5 6	System         Warehouse/Maintenance Shop Drive Way #7         Warehouse/Maintenance Shop Drive Way #8         West Side Power Block by VS-3 # 9         West Side Power Block by VS-1 # 10         West Side Cooling Tower by VS-4 # 11         West side Cooling Tower by VS-4 # 12	I70           Position           √0/C           0/C           0/C           √0/C           √0/C           √0/C	PIV Cher	cks Date		Comments
No. 1 No. 1 2 3 4 5 6 7	Fire Pump House Deluge  System  Warehouse/Maintenance Shop Drive Way #7  Warehouse/Maintenance Shop Drive Way #8 West Side Power Block by VS-3 # 9 West Side Power Block by VS-1 # 10 West Side Cooling Tower by VS-4 # 11 West side Cooling Tower by VS-4 # 12 N.W. Corner Chemical Storage #1	170           Position           √0/C           0/C           √0/C           √0/C           √0/C           √0/C           √0/C           √0/C	PIV Cher	cks Date		Comments
No. 1 No. 1 2 3 4 5 6 7 8	Fire Pump House Deluge  System  Warehouse/Maintenance Shop Drive Way #7  Warehouse/Maintenance Shop Drive Way #8  West Side Power Block by VS-3 # 9  West Side Power Block by VS-1 # 10  West Side Cooling Tower by VS-4 # 11  West side Cooling Tower by VS-4 # 12  N.W. Corner Chemical Storage #1  N.E. Corner Chemical Storage # 2	I70           Position           √0/C           0/C           0/C           √0/C           √0/C           √0/C	PIV Cher	cks Date		Comments
No. 1 No. 1 2 3 4 5 6 7 8 9	System         Warehouse/Maintenance Shop Drive Way #7         Warehouse/Maintenance Shop Drive Way #8         West Side Power Block by VS-3 # 9         West Side Power Block by VS-3 # 9         West Side Cooling Tower by VS-4 # 11         West side Cooling Tower by VS-4 # 11         West side Cooling Tower by VS-4 # 12         N.W. Corner Chemical Storage #1         N.E. Corner Chemical Storage # 2         East Side W.T. by Multimedia Filters # 3	170           Position           √0/C           0/C           √0/C	PIV Cher	cks Date		Comments
No. 1 No. 1 2 3 4 5 6 7 8 9 10	System         Warehouse/Maintenance Shop Drive Way #7         Warehouse/Maintenance Shop Drive Way #8         West Side Power Block by VS-3 # 9         West Side Power Block by VS-1 # 10         West Side Cooling Tower by VS-4 # 11         West side Cooling Tower by VS-4 # 12         N.W. Corner Chemical Storage #1         N.E. Corner Chemical Storage #2         East Side W.T. by Multimedia Filters # 3         East Side W.T. by Multimedia Filters # 5	170           Position           √0/C           0/C           √0/C	PIV Cher	cks Date		Comments
No. 1 No. 1 2 3 4 5 6 7 8 9	System         Warehouse/Maintenance Shop Drive Way #7         Warehouse/Maintenance Shop Drive Way #8         West Side Power Block by VS-3 # 9         West Side Power Block by VS-3 # 9         West Side Cooling Tower by VS-4 # 11         West side Cooling Tower by VS-4 # 11         West side Cooling Tower by VS-4 # 12         N.W. Corner Chemical Storage #1         N.E. Corner Chemical Storage # 2         East Side W.T. by Multimedia Filters # 3	170           Position           √0/C           0/C           √0/C	PIV Cher	cks Date		Comments
No. 1 No. 1 2 3 4 5 6 7 8 9 10 11 12 13	System         Warehouse/Maintenance Shop Drive Way #7         Warehouse/Maintenance Shop Drive Way #8         West Side Power Block by VS-3 # 9         West Side Power Block by VS-3 # 9         West Side Cooling Tower by VS-4 # 10         West Side Cooling Tower by VS-4 # 11         West Side Cooling Tower by VS-4 # 12         N.W. Corner Chemical Storage #1         N.E. Corner Chemical Storage # 2         East Side W.T. by Multimedia Filters # 3         East Side W.T. by Multimedia Filters # 5         North Side Bldg 10 # 6         Between MP -444's and Water Treat # 4         Beta Only West Side Power Block Valve Shed #1	170           Position           √0/C           0/C           √0/C           √0/C	PIV Che Cycled	Cks Date Cvcled		
No. 1 No. 1 2 3 4 5 6 7 8 9 10 11 12 13	System         Warehouse/Maintenance Shop Drive Way #7         Warehouse/Maintenance Shop Drive Way #8         West Side Power Block by VS-3 # 9         West Side Power Block by VS-1 # 10         West Side Cooling Tower by VS-4 # 11         West Side Cooling Tower by VS-4 # 12         N.W. Corner Chemical Storage #1         N.E. Corner Chemical Storage #1         N.E. Corner Chemical Storage #2         East Side W.T. by Multimedia Filters # 3         East Side W.T. by Multimedia Filters # 5         North Side Bidg 10 # 6         Between MP -444's and Water Treat # 4         Power Block Water Side Dower Block Valve Shed #1	170           Position           √0/C           0/C           √0/C	PIV Che Cycled	Cks Date Cvcled		



	, ,		
General Infor			
Plant: Alpha 🖄 Beta 🗆	Date: 11/23/24		
Operator:	*To be completed each time unit is operated.		
Reason for running pumps: Weekly test 🗹 Maintenance	E Emergency		
Jockey Electric	Pump		
Pre-start Inspection: Electrical Feed 🗹 Mechanical 🗹	Valves 🗗		
Check the jockey pump on pressure drop. Start up pressure:	35		
Discharge Pressure: 162			
Pump Suction Pressure: Pump	Discharge pressure:		
Comments:			
Electric Pur			
Pre-start Inspection: Electrical Feed 🗹 Mechanical 🗹	Valves 환		
Start the pump on pressure drop. Start up pressure: 145			
Start time: 0600			
	Discharge pressure: \SO		
Stop time: 0610 Total time running	10 n114		
Comments:			
Diesel Pur			
	y Fuel Consumption:		
	ttery Condition:		
	art time:		
Starting floar meter.	Pressure finish:		
	mp Discharge pressure:		
Coolant temperature after 30 minutes running:	Total time running:		
Stop time: Stop hour meter:	rotar ame roming.		
Comments:			
5. If the constructions (less than as equal to 0.0015% on a weight particulate	ight basis)		
Sulfur Concentrations (less than or equal to 0.0015% on a weight per we his new direct drive fire pump engine shall be limited to use for emergency fire suppression, defined as in re-	sponse to a fire or due to low fire water pressure. In addition, this engine shall be operated no		
his new direct drive fire pump engine shall be infined to use for entergency in e soppression, defined and co more than 30 minutes in any one hour and no more than 10 hours per year for initial start-up testing and co of hours necessary to comply with the testing requirements of the National Fire Protection Association (N (current edition). The hours of operation for source testing will not be counted towards either of the allow Note: Fuel consumption 27 gal/ h approximately. There is no limit on engine operation for emergency use. [Title 17 CCR 93115.6(a)(4)]	ompliance demonstrations. Additionally, this engine shall not be operated inote than the number JFPA) 25 - "Standards for the Inspection, Testing, and Maintenance of Water Based Fire Systems"		



	Plant: ALPHA		Date: _\\	123/24	Ор	erator <u>Marvil 110</u> 5,
		Valve Sh				
ю.	System	PSI	Viv. Pos.		Locked	Comments
1	SG Unit 1 4/81/1	160	10/C	V	YEND	
2	SG Unit 2 4.31-2	165	10/C		YDND	
3	Reheaters A(85.3	160	VOIC		YEND	
4	Rack 2 West HTF 4/3*-4	160	10/C		YND	
5	Rack 2 East HTF A/B1 S	160	<b>√</b> 0/C	V	YØND	
6	North Steel Pro A:B3-6	160	VO/C	1	YØND	
7	HTF Pumps A/81 7	160	VO/C	1	YZND	
8	HTF Heaters A/B <sup>3</sup> -8	160	YO/C	1	YZND	
9	South Steel Pro A/81-9	166	√ 0/C	1	YDND	
10	Lube Oil A/81-10	160	VO/C	1	YOND	
11	Turbine Hose Stations 4/81-11	166	YO/C	1	YEND	
12	Turbine Bearings 4/31/12	16	10/C	V	YZND	
			ned # 2 by			Comments
No.	System	PSI	Viv. Pos.	Signage	Locked	Comments
1	Expansion Vessels A/B2-1	160	1 O/C		YO NO	
2	Ullage Area A/B2-2	155	V 0/C		YEND	
3	Ullage Structure A/B2-11	155	1 O/C	1	YZND	
4	Rack 1 Middle Area A/B2-5	110	1 0/C	1	YEND	
5	Overflow Tanks A/B2-9	155	1, O/C	/	YZND	
6	Rack 1 South Area A/B2-6	160	0/C			
7	Rack 1 West A/B2-7	140	0/C		YEND	
8	Rack 1 North Area A/B2-4	165	1 0/C	1	YOND	
9	Over flow AFFF A/82-8	150	20/C		YUND	
10	Expansion Vessel AFFF A/B2-3	Valve Shed # 3 h	-0/C	CE Elos	trical Rida	
			by Blug S	Signage	Locked	Comments
No.	System	PSI	Viv. Pos.	Signage	YZND	Letititiene.
1	Transformer Aux	150	- 0/C	V	YDYND	
2	Transformer Main	Valve Shed # 4 I	W Coolin	a Tower		
211		PSI PSI	Viv. Pos.		1 Dial	Comments
No.	System	150	1/0/C	Jighage	YEND	Contraction of the second s
1	Cooling Tower West Side	Valve Shed	# 5 by C			
		PSI	Viv Pos	Signage	Locked	Comments
No.	System	150	VIV. POS.	Jignage	YPND	
1	Control Room A/B4-5 Offices A/B4-3	155	1 0/C	V	YDND	
2		150	V O/C	-	YEND	
3	Electrical Room A/B4-4	nkler Valves (Th	ese are to	be locke	d in the o	pen position)
	System	Locked	Viv. Pos.			Comments
No.		YPND				
1	Bearing 2	YZYND				
2	Bearing 3	YZND				
3	Bearing 4	YPYND	V OIC			
4	Bearing 5	ge System Valv	es (To be	Locked in	n the Open	Position)
him	System		Viv. Pos.			Comments
<b>No.</b>	MP-201	YONE				
2	MP-200A		1 /0/C			
3	MP-200A MP-200B		VO/C			
	MP-2000 MP-200C		V O/C			
	MP-200C MP-200D	YZNE	1 O/C			
4			House D	eluge Sy	stem	
	MIF-200D	Fire Pump	110450			
4					1.000	Comments
4	System	PSI	• 0/C	Locked		Comments
4			• 0/C	Y Z N D	1	Comments
4 5 <b>No.</b>	System	PSI	• o/c PIV Che	Locked YEND	1	
4 5 <b>No.</b> 1	System	PSI	• 0/C	Locked YEND CKS Date	1	Comments
4 5 <b>No.</b> 1 <b>No.</b>	System Fire Pump House Deluge System	PSI 159	• o/c PIV Che	Locked YEND	1	
4 5 <b>No.</b> 1 <b>No.</b> 1	System Fire Pump House Deluge System Warehouse/Maintenance Shop Drive Way #7	PSI 139 Position	• o/c PIV Che	Locked YEND CKS Date	1	
4 5 <b>No.</b> 1 <b>No.</b> 1 2	System Fire Pump House Deluge System Warehouse/Maintenance Shop Drive Way #7 Warehouse/Maintenance Shop Drive Way #8	PSI 159 Position 0/C	• o/c PIV Che	Locked YEND CKS Date	1	
4 5 <b>No.</b> 1 <b>No.</b> 1 2 3	System Fire Pump House Deluge System Warehouse/Maintenance Shop Drive Way #7 Warehouse/Maintenance Shop Drive Way #8 West Side Power Block by VS-3 # 9	PSI 159 Position 0/C 0/C	• o/c PIV Che	Locked YEND CKS Date		
4 5 <b>No.</b> 1 <b>No.</b> 1 2 3 4	System Fire Pump House Deluge System Warehouse/Maintenance Shop Drive Way #7 Warehouse/Maintenance Shop Drive Way #8 West Side Power Block by VS-3 # 9 West Side Power Block by VS-1 # 10	PSI     139     Position     0/C     0/C     ✓ 0/C	• o/c PIV Che	Locked YEND CKS Date		
4 5 <b>No.</b> 1 <b>No.</b> 1 2 3 4 5	System           Fire Pump House Deluge           System           Warehouse/Maintenance Shop Drive Way #7           Warehouse/Maintenance Shop Drive Way #8           West Side Power Block by VS-3 # 9           West Side Power Block by VS-1 # 10           West Side Cooling Tower by VS-4 # 11	PSI           15%           Position           0/C           0/C           ✓ 0/C           ✓ 0/C           ✓ 0/C	• o/c PIV Che	Locked YEND CKS Date		
4 5 <b>No.</b> 1 <b>No.</b> 1 2 3 4 5 6	System           Fire Pump House Deluge           System           Warehouse/Maintenance Shop Drive Way #7           Warehouse/Maintenance Shop Drive Way #8           West Side Power Block by VS-3 # 9           West Side Power Block by VS-3 # 9           West Side Cooling Tower by VS-4 # 11           West side Cooling Tower by VS-4 # 12	PSI           15%           Position           0/C           0/C           ✓ 0/C           ✓ 0/C           ✓ 0/C	• o/c PIV Che	Locked YEND CKS Date		
4 5 <b>No.</b> 1 <b>No.</b> 1 2 3 4 5 6 7	System           Fire Pump House Deluge           System           Warehouse/Maintenance Shop Drive Way #7           Warehouse/Maintenance Shop Drive Way #8           West Side Power Block by VS-3 # 9           West Side Power Block by VS-3 # 9           West Side Cooling Tower by VS-4 # 10           West Side Cooling Tower by VS-4 # 11           West Side Cooling Tower by VS-4 # 12           N.W. Corner Chemical Storage #1	PSI           159           Position           0/C	• o/c PIV Che	Locked YEND CKS Date		
4 5 <b>No.</b> 1 <b>No.</b> 1 2 3 4 5 6 7 8	System           Fire Pump House Deluge           System           Warehouse/Maintenance Shop Drive Way #7           Warehouse/Maintenance Shop Drive Way #8           West Side Power Block by VS-3 # 9           West Side Power Block by VS-3 # 9           West Side Cooling Tower by VS-4 # 11           West side Cooling Tower by VS-4 # 12           N.W. Corner Chemical Storage #1           N.E. Corner Chemical Storage #2	PSI           154           Position           0/C	• o/c PIV Che	Locked YEND CKS Date		
4 5 <b>No.</b> 1 <b>No.</b> 1 2 3 4 5 6 7 8 9	System Fire Pump House Deluge System Warehouse/Maintenance Shop Drive Way #7 Warehouse/Maintenance Shop Drive Way #8 West Side Power Block by VS-3 # 9 West Side Power Block by VS-1 # 10 West Side Cooling Tower by VS-4 # 11 West Side Cooling Tower by VS-4 # 12 N.W. Corner Chemical Storage #1 N.E. Corner Chemical Storage # 2 East Side W.T. by Multimedia Filters # 3	PSI           134           Position           0/C	• o/c PIV Che	Locked YEND CKS Date		
4 5 No. 1 No. 1 2 3 4 5 6 7 8 9 10	System           Fire Pump House Deluge           System           Warehouse/Maintenance Shop Drive Way #7           Warehouse/Maintenance Shop Drive Way #8           West Side Power Block by VS-3 # 9           West Side Power Block by VS-3 # 9           West Side Power Block by VS-1 # 10           West Side Cooling Tower by VS-4 # 11           West side Cooling Tower by VS-4 # 12           N.W. Corner Chemical Storage #1           N.E. Corner Chemical Storage # 2           East Side W.T. by Multimedia Filters # 3           East Side W.T. by Multimedia Filters # 5	PSI           15%           Position           0/C	• o/c PIV Che	Locked YEND CKS Date		
4 5 <b>No.</b> 1 1 2 3 4 5 6 7 8 9 10 11	System           Fire Pump House Deluge           System           Warehouse/Maintenance Shop Drive Way #7           Warehouse/Maintenance Shop Drive Way #8           West Side Power Block by VS-3 # 9           West Side Power Block by VS-3 # 9           West Side Power Block by VS-1 # 10           West Side Cooling Tower by VS-4 # 11           West Side Cooling Tower by VS-4 # 12           N.W. Corner Chemical Storage #1           N.E. Corner Chemical Storage #1           N.E. Corner Chemical Filters # 3           East Side W.T. by Multimedia Filters # 3           East Side W.T. by Multimedia Filters # 5           North Side Blog 10 # 6	PSI           155           Position           0/C	• O/C • PIV Che Cycled	Locked YEND CKS Date		
4 5 <b>No.</b> 1 1 2 3 4 5 6 7 8 9 10 11 11	System           Fire Pump House Deluge           System           Warehouse/Maintenance Shop Drive Way #7           Warehouse/Maintenance Shop Drive Way #8           West Side Power Block by VS-3 # 9           West Side Power Block by VS-3 # 9           West Side Cooling Tower by VS-4 # 10           West Side Cooling Tower by VS-4 # 11           West side Cooling Tower by VS-4 # 12           N.W. Corner Chemical Storage #1           N.E. Corner Chemical Storage # 2           East Side W.T. by Multimedia Filters # 3           East Side W.T. by Multimedia Filters # 5           North Side Bldg 10 # 6           Between MP-444's and Water Treat # 4	PSI           134           Position           0/C           0/C	PIV Che Cycled	Locked Y Z N C CKS Date Cvcled		Comments
4 5 No. 1 1 2 3 4 5 6 7 7 8 9 10 11 11 12 13	System           Fire Pump House Deluge           System           Warehouse/Maintenance Shop Drive Way #7           Warehouse/Maintenance Shop Drive Way #8           West Side Power Block by VS-3 # 9           West Side Power Block by VS-3 # 9           West Side Power Block by VS-1 # 10           West Side Cooling Tower by VS-4 # 11           West Side Cooling Tower by VS-4 # 12           N.W. Corner Chemical Storage #1           N.E. Corner Chemical Storage #1           N.E. Corner Chemical Filters # 3           East Side W.T. by Multimedia Filters # 3           East Side W.T. by Multimedia Filters # 5           North Side Blog 10 # 6	PSI           159           Position           0/C           0/C	PIV Che Cycled	Locked Y Z N C CKS Date Cvcled		Comments



General Infor	
Plant: Alpha 🔽 Beta 🗆	Date: 11/18/24
Operator: Anthony	*To be completed each time unit is operated.
Reason for running pumps: Weekly test 📝 Maintenance	
Jockey Electric	1
Pre-start Inspection: Electrical Feed 🗹 Mechanical 🖸	
Check the jockey pump on pressure drop. Start up pressure: $15$	5
Discharge Pressure: 16 2	
Pump Suction Pressure: Pump	Discharge pressure: —
Comments:	
Electric Pu	1
Pre-start Inspection: Electrical Feed 🛛 Mechanical 🕻	Valves 🛛
Start the pump on pressure drop. Start up pressure: $\mu_b$	
Start time: 0087	
Pump Suction Pressure: 15 Pump	Discharge pressure: 150
Stop time: ()) 7 Total time running	10 m;n
Comments:	
Diesel Pu	
Pre-start Inspection: Coolant 🗹 Oil 🗹 Mechanical 🖡	
	Ily Fuel Consumption:
	attery Condition: GOOL
	art time: OOIG
Oil pressure start: Oi	il Pressure finish: 39
Pump Suction Pressure: 15 Pump	Discharge pressure: 150
Coolant temperature after 30 minutes running: 190 @ 12 r	nin
Stop time: (703) Stop hour meter: 132	.9 Total time running: 12 Μ. η
Comments:	
Sulfur Concentrations (less than or equal to 0.0015% on a weight per we	eight basis).
his new direct drive fire pump engine shall be limited to use for emergency fire suppression, defined as in r more than 30 minutes in any one hour and no more than 10 hours per year for initial start-up testing and c of hours necessary to comply with the testing requirements of the National Fire Protection Association ( (current edition). The hours of operation for source testing will not be counted towards either of the allo Note: Fuel consumption 27 gal/ h approximately. There is no limit on engine operation for emergency use. [Title 17 CCR 93115.6(a)(4)]	compliance demonstrations. Additionally, this engine shall not be operated more than the number (NFPA) 25 - "Standards for the Inspection, Testing, and Maintenance of Water Based Fire Systems"



		Plant: ALPHA		Date: 11-	15-24	0	perator FCM
		Plant: ALPHA D	Valve She				
1.	1	Custom	PSI	Viv. Pos.	Signage	Locked	Comments
1 1	SG Uhit 1	System A Bini	150	-0/C	unging -	YUND	
2	SG Unit 2	4(gr:2)	180	-0/C		YEND	
3	Reheaters	4313	150	VO/C	/	YEND	
4	Rack 2 West HTF	A/3' 4	155	/0/C	/	YEND	
5	Rack 2 East HTF	A/81-5	180	-0/C	1	YEND	
6	North Steel Pro	A/31 6	166	-9/C		YEYND	
7	HTF Pumps	A/81-7	155	-9/C	/	YZYND	
8	HTF Heaters	4 81-3	180	-0/C	/	YEND	
9	South Steel Pro	A/81 9	160	/9/C	1	YZND	
10	Lube Oil	A/B1-10	160	/o/c	1	YZND	
11	Turbine Hose Stations	A/ 3 * - *	160			YEND	
12	Turbine Bearings	A/ 31 12	160	-0/C	1	YEND	
					Overflo		Companya
No.		System	PSI	Viv. Pos.	Signage	Locked	Comments
1	Expansion Vessels	A/B2-1	160	VO/C	V	YEND	
2	Ullage Area	A/B2-2	160	VO/C	V	YEND	
3	Ullage Structure	A/B2-11	155	V 0/C		YZNU	
4	Rack 1 Middle Area	A/B2-5	155	V0/C	1	YEND	
5	Overflow Tanks	A/B2-9	150	V.O/C	1	YZND	
6	Rack 1 South Area	A/82-6 A/82-7	160	O/C		YEND	
7	Rack 1 West Rack 1 North Area	A/82-4	140	• O/C	11	YEND	
8	Over flow AFFF	A/82-8	0	O/CV	1	YEND	
9	Expansion Vessel AFF		0	O/C V	1	YPND	
10	Expansion vesser Ann	Valy	ve Shed # 3 b	v Blda 3	GE Elect	trical Bldg	
No.	The second second	System	PSI	Viv. Pos.	Signage	Locked	Comments
1	Transformer Aux		160	~0/C		YOND	
2	Transformer Main		190	~0/C		YEYND	
	Tridinard	Valv	ve Shed # 4 b	y Coolin	Tower \	West Side	
No.		System	PSI	Viv. Pos.	Signage		Comments
1	Cooling Tower West S	ide	155	V0/C	N	YOND	
			Valve Shed				Commente
No.		System	PSI	Viv. Pos.	Signage	YOND	Comments
1	Control Room	A/B4-5	160	(C		YUND	
2	Offices	A/B4-3	160	-0/C		YEND	
3	Electrical Room	A/B4-4 Turbine Sprinkle	Valves /The		be locke		nen position)
	1		Locked	Viv. Pos.	De locite	a in are s	Comments
No.	Design 2	System	YE NO	V0/C			
1	Bearing 2 Bearing 3		YEND				
3	Bearing 4		YMND	VOIC			
4	Bearing 5		YZND	VO/C			
4	Dearing 5	HTF Deluge	System Valve	s (To be	Locked in	n the Oper	n Position)
No.	A COMPANY OF A COMPANY	System	Locked	Viv Pos.			Comments
1	MP-201		Y D N D	Q/C			
2	MP-200A		YPAND	V9/C			
3	MP-200B		YEND				
4	MP-200C		YEND				
5	MP-200D		YUND	V O/C			
			Fire Pump	House D	eluge Sys	stem	
No.	14-15 NO. 16	System	PSI	0/C	Locked	10.00	Comments
4	Fire Pump House Delt	The second se	170	1	YOND		
	The Fullip House Del	ige		<b>PIV</b> Chee			
		Custom - The second	Position	Cycled	Date	4	Comments
No.		System	the second se		Cycled		
1	Warehouse/Maintena	nce Shop Drive Way #7	0/C •				
2		nce Shop Drive Way #8	10/C				
-	West Side Power Bloc	k by VS-3 # 9	✓ 0/C ✓ 0/C				
3	West Side Power Bloc	K DY VS-1 # 10	V 0/C		-	1	
4		wer by VS-4 # 11	V 0/C		1		
4 5			V U/C				
4 5 6	West side Cooling To	wer by VS-4 # 12	VOIC			-	
4 5 6 7	West side Cooling To N.W. Corner Chemica	l Storage #1	✓ O/C				
4 5 6 7 8	West side Cooling To N.W. Corner Chemica N.E. Corner Chemical	l Storage #1 Storage # 2	✓ O/C				
4 5 6 7 8 9	West side Cooling To N.W. Corner Chemica N.E. Corner Chemical East Side W.T. by Mu	l Storage #1 Storage # 2 timedia Filters # 3	✓ 0/C ✓ 0/C				
4 5 6 7 8 9 10	West side Cooling To N.W. Corner Chemical N.E. Corner Chemical East Side W.T. by Mu East Side W.T. by Mu	l Storage #1 Storage # 2 timedia Filters # 3 timedia Filters # 5	✓ O/C ✓ O/C ✓ O/C				
4 5 7 8 9 10 11	West side Cooling To N.W. Corner Chemical N.E. Corner Chemical East Side W.T. by Mul East Side W.T. by Mul North Side Bldg 10 #	I Storage #1 Storage # 2 timedia Filters # 3 timedia Filters # 5 6	✓ O/C ✓ O/C ✓ O/C ✓ O/C				
4 5 6 7 8 9 10	West side Cooling To N.W. Corner Chemical East Side W.T. by Mu East Side W.T. by Mu North Side Bldg 10 # Between MP-444's ar	I Storage #1 Storage # 2 timedia Filters # 3 timedia Filters # 5 6 id Water Treat # 4 2000 a Block Value Sped #1	✓ O/C ✓ O/C ✓ O/C				Page 414 of 1228



The Fullip Wee						
General Info						
Plant: Alpha 🗹 🛛 Beta 🗆	Date: 1/- フー ヱ ハ					
Operator: Run	*To be completed each time unit is operated.					
Reason for running pumps: Weekly test 🛛 Maintenand	ce 🗌 Emergency 🛛					
Jockey Elect	ric Pump					
Pre-start Inspection: Electrical Feed 🗹 Mechanical	Valves					
Check the jockey pump on pressure drop. Start up pressure: 195						
Discharge Pressure: 162						
Pump Suction Pressure: - Pun	np Discharge pressure: 🧹					
Comments:						
Electric I						
Pre-start Inspection: Electrical Feed 🗗 Mechanical	Valves					
Start the pump on pressure drop. Start up pressure: $146$						
Start time: 1423						
	p Discharge pressure: 160					
Stop time: 1538 Total time runn	ing 10					
Comments:	6					
Diesel F	Pump					
Pre-start Inspection: Coolant 🗹 Oil 🖻 Mechanical	Valves 🗹 Water Jacket Heater 🗹					
Fuel level > 2/3: Yes 🗹 No 🗆 Mor	nthly Fuel Consumption:					
Battery volt Crank 1:27.   Battery volt Crank 2: 27. [	Battery Condition: Crood					
Starting hour meter: 132.7	Start time: 10とう					
Oil pressure start: 59 pSi	Oil Pressure finish: 4こ					
	mp Discharge pressure: 150 p51					
Coolant temperature after 30 minutes running: 185	4					
Stop time: 1035 Stop hour meter: 1	32. S Total time running://のパパ					
Comments:						
Sulfur Concentrations (less than or equal to 0.0015% on a weight per	weight basis).					
his new direct drive fire pump engine shall be limited to use for emergency fire suppression, defined as more than 30 minutes in any one hour and no more than 10 hours per year for initial start -up testing a of hours necessary to comply with the testing requirements of the National Fire Protection Associati (current edition). The hours of operation for source testing will not be counted towards either of the Note: Fuel consumption 27 gal/ h approximately. There is no limit on engine operation for emergency use. [Title 17 CCR 93115.5(a)(4)]	on (NFPA) 25 - "Standards for the Inspection, Testing, and Maintenance of Water Based Fire Systems"					



		Plant: ALPHA	вета:	Date: 11	15/24	, 0r	perator Marceline
		Plant: ALPHA 🕌	Valve She				
No.	S	stem	PSI	Viv. Pos.		Locked	Comments
1	SG Unit 1	31.1		V O/C	1	YOND	
2		31 3	140	10/C	-	YUND	
3	Reheaters A	3' 3	180	/ O/C	1	YOND	
4	Rack 2 West HTF	31.4		/ 0/C			
5	INGOVE EGSETTIC	/8115	-180	10/C			
6		/草1:0	160	10/0	1	YUND	
7		/81-7	Kange	0/0/	1	YOND	
8		/81-8 /81-9	140	10/0	1	YOND	
9 10		/81.10	160	10/C	1	YOND	
11		V31-1T	160	1 O/C	1,	YO NO	
12		V31 12	160	✔ O/C	1	YOND	
	[ and a detailing a		Valve Sh	ed # 2 by			
No.	S	ystem	PSI	Viv. Pos.	Signage	Locked	Comments
1	art a de transfer de la de	/82-1	160	10/C		YEND	
2	and interesting the second sec	/B2-2	160	✓ O/C	~	YEND	
3	and the second se	/B2-11	135	V 0/C	~	YEND	
4		/B2-5	155	V 0/C		YEND	
5		A/B2-6	100	V 0/C	V	YZND	
7		/82-7	160	✓ O/C	V	YZND	
8	Fillent I treat	A/B2-4	160	V 0/C	V	YZYND	
9		A/B2-8	ల	0/0	V	YO NO	Loto
10	Expansion Vessel AFFF	A/B2-3	0	O/C V		YONE	1.37.572
			e Shed # 3 b		GE Elec	Locked	Comments
No.		ystem	PSI	Viv. Pos.	Signage	Y I ND	Committio
1	Transformer Aux		160	V 0/C		YPND	
2	Transformer Main	Valv	e Shed # 4 b	v Cooline	Tower		
No.	5	ystem	PSI	Viv. Pos.	Signage		Comments
1	Cooling Tower West Side		155	√0/C	N	YO NM	
			Valve Shed				
No.	S	ystem	PSI	Viv. Pos.	- Hannes Hannes Hannes		Comments
1	Control to Control	V/B4-5	160	V 0/C	1	YEND	
2		/B4-3 //B4-4	160	V O/C	1	YOYND	
3	Electrical Room	Turbine Sprinkle	Valves (The	ese are to	be locke	d in the o	pen position)
No.	( )	ystem	Locked	Viv. Pos.	1		Comments
140.	Bearing 2	y 300000	YEND	and the second se			
2	Bearing 3		YEND				
3	Bearing 4		YZND	a francisco de la companya de			
4	Bearing 5		YZND	0/C		- 4h - 0 - 4h	Position)
		HTF Deluge S			Locked II	n the Open	Comments
No.		ystem		Viv. Pos.	persona in		Comments
1	MP-201		Y D N 127 Y 27 N D	The second secon	-		
2	MP-200A		YEND				
3	MP-200B MP-200C		YZND				
4	MP-2000		YZND	/ O/C			
-	1411 10000		Fire Pump	House D	eluge Sy	stem	
No.		iystem	PSI	0/C	Locked		Comments
NU.	- All and a second s		170	V	YEND		
1	Fire Pump House Deluge			PIV Cheo		1	
-			De state	Cycled	Date	1.1.1	Comments
No.		iystem	Position	Cycled	Cycled		
1	Warehouse/Maintenance		0/0				
2	Warehouse/Maintenance	Shop Drive Way #8	0/0				
3	West Side Power Block b		V 0/C			-	
4	West Side Power Block b West Side Cooling Towe	y VS-1 # 10 chu VC A # 11	V 0/C	+			
5	West side Cooling Tower West side Cooling Tower	by VS-4 # 11	V 0/C				
7	N.W. Corner Chemical St		✓ O/C				
8	N.E. Corner Chemical Sto		✓ O/C				
9	East Side W.T. by Multim	edia Filters # 3	V 0/C		1		
10	East Side W.T. by Multim		/ O/C				
11	North Side Bldg 10 # 6		✓ O/C	1			
12	Between MP-444's and V	Vater Treat # 4	0/0				
13	Beta Only West Side Pow		O/C Be Cycled Fi	Tabur	Jau of Er	any Month	Page 416 of 1228
				INT DATUR	JOY OT EV	CIV WOULD	
	AJV 104 Automated Fire Systems	system	Debris		1		Comments / Actions FO-O&M-



General Inf	ormation					
Plant: Alpha 🗆 Beta 🖉	Date: 11/2/24					
Operator DIPUN ROUMULE	*To be completed each time unit is operated.					
Reason for running pumps: Weekly test / Maintenan	ce 🛛 Emergency 🗆					
Jockey Elec	tric Pump					
Pre-start Inspection: Electrical Feed 🖉 Mechanical	Valves Z					
Check the jockey pump on pressure drop. Start up pressure: 155ps1						
Discharge Pressure: 17005						
	Discharge pressure: 170pS1					
Comments:	1					
Electric						
Pre-start Inspection: Electrical Feed Mechanical	//					
Start the pump on pressure drop. Start up pressure: MSpS						
Start time: 0020	15-(					
	Discharge pressure: [50 p5]					
Stop time: 0039 Total time running	g 10 mins					
Comments:						
Diesel	Pump					
Pre-start Inspection: Coolant Oil Mechanical	Valves Water Jacket Heater					
	nly Fuel Consumption: N/A					
Battery volt Crank 1: 27 Battery volt Crank 2: 27	Battery Condition: 🗸					
Starting hour meter: 130.0	Start time: 0040					
Oil pressure start: (1405)	Oil Pressure finish: 5/ p\$1					
	o Discharge pressure: 150 ps1					
Coolant temperature after 30 minutes running:	1					
Stop time: NO-15 Stop hour meter: 134	r.le. Total time running: Smins.					
Comments:						
Sulfur Concentrations (less than or equal to 0.0015% on a weight pe	r weight basis).					
his new direct drive fire pump engine shall be limited to use for emergency fire suppression, defined more than 30 minutes in any one hour and no more than 10 hours per year for initial start-up testing a of hours necessary to comply with the testing requirements of the National Fire Protection Associati (current edition). The hours of operation for source testing will not be counted towards either of the al Note: Fuel consumption 27 gal/ h approximately. There is no limit on engine operation for emergency use; [Title 17 CCR 93115.6(a)(4)]	as in response to a fire or due to low fire water pressure. In addition, this engine shall be operated no and compliance demonstrations. Additionally, this engine shall not be operated more than the number ion (NFPA) 25-"Standards for the Inspection, Testing, and Maintenance of Water Based Fire Systems"					



# Automated Fire Systems Inspection Checklist

	Plant: ALPHA 🗆	вета: Д Valve She	Da d #	1 by C		// Oper r	
-		PSI	Viv	Pos. S	Signage	Locked	Comments
	System	160		Ö/C	/	YONZ	
_	5G Unit 1 B1-1	165	1	O/C	/	YUNZ	
	SG Unit 2 81-2	100	1	O/C	/	YZIND	
	Reheaters 81-3	Ins	1	O/C	/	YZND	
	Rack 2 West HTF 81-4	160	1	O/C	~	YZND	
	Rack 2 East HTF 81-5	145.	1	D/C	1	YO NZ	
	North Steel Pro B1-6	160	1	O/C	1	YPND	
	HTF Pumps B1-7	160	1	O/C		YZND	
	HTF Heaters B1-8	160	1	O/C	1	YZND	
	South Steel Pro B1-9	160	~	O/C	1	YZND	
	Labe of	155	1	O/C	1,	YDNØ	
	To only the second se	11213	1	0/C	1	YZND	
	Turbine Bearings B1-12	Valve Sh			Overflov	v	Comments
- 1	System	PSI			Signage	Locked	Comments
_		165	1	O/C	V	YZ NO	
	Experience	165	1	O/C	1	YZ NO	
	Onligentie	165	1	'0/C	V	YZND	
	childre of octors	165		O/C	1	YXND	
_	Rack 1 Middle Area B2-5 Overflow Tanks B2-9	160		'0/C	V	YZND	
_	Rack 1 South Area B2-6	160		-0/C	~	YZND	
-	Rack 1 South Area B2-7	160		O/C	~	YZND	
_	Rack 1 West B2-4	160	V	O/C	V	YZ ND	
	Over flow AFFF B2-8	Loto	1	0/CV	- Y	YOND	
-		Vete		0/0	CE Eland	Pida	
_	Va	live Shed # 3 h	by E	Bidg 35	GE Elect	rical blug	Comments
-	System	PSI	V	iv. Pos.	Signage		
	Transformer Aux	160		/0/C		YIND	
		160	1-	0/C	Taurarl	Nost Side	
-	Va	alve Shed # 4	by (	Cooling	Tower	Vest Side	Comments
	System	PSI		iv. Pos.	Signage	YEND	
-	Cooling Tower West Side	Valve Shec	141	(0)c	atrol Bl	10 10	
-	Least of the second sec		1#	5 Dy Co	Signage	Locked	Comments
	System	PSI	V	Viv. Pos.	Signage	YZND	
	Control Room 84-5	160	14	/0/C	~	YZND	
	Offices B4-3	160		DIC	~	YDND	
	Electrical Room B4-4 Turbine Sprink	160	2050	a are to	be lock	d in the op	pen position)
-	Turbine Sprine	Locked	1624	viv. Pos.	De lo un		Comments
	System	YZ NE	-	0/C			
	Bearing 2	YZNE					
_	Bearing 3	VINC		/0/C			
	Bearing 4		-	1015			
	Bearing 5	e System Valv	les	(To be l	locked in	n the Open	Position)
		Locked	11	Viv. Pos.			Comments
),	System	Y NE			-		
	MP-201	YZNE	1	/O/C			
2	MP-200A	YZNE		1 D/C			
	MP-200B	YOND	1	V DIC			
	MP-200C	VZINI		× 0/C	l		
	MP-200D	Fire Pum	pH	louse D	eluge Sy	stem	
_	1	PSI	T	O/C	Locked		Comments
<b>b</b> .	System	A 1747	-	and the second se	YDN	-	
-	Fire Pump House Deluge	180	1	O PIV Che		-	
-			P		Date	1	Comments
_	System	Positio	n	Cycled	Cycled		
o.		0/01	1				
1	Maintenance Shop Drive Way #7	V 0/C					
2	Maintenance Shop Drive Way #8	20/C	0				
3	West Side Power Block by VS-3 # 9	V 0/C					
4	West Side Power Block by VS-1 # 10						
5	West Side Cooling Tower by VS-4 # 11	- 0/C					
6	West side Cooling Tower by VS-4 # 12	V 0/C					
7	N.W. Corner Chemical Storage #1	V0/C					
	N.E. Corner Chemical Storage # 2	J 0/C					
8	East Side W.T. by Multimedia Filters # 3	V 0/C				-	
8 9		V -1-					
	East Side W.T. by Multimedia Filters # 5						
9	North Side Bldg 10 # 6	√0/C		1	1		
9	North Side Bldg 10 # 6 Between MP-444's and Water Treat # 4		$\vee$				

 Transformer Yard Refuse Check
 Y D
 N D

 1
 Transformer Yard Refuse Check
 Y D
 N D



							la lai	1	Antono
		Plant:	ALPHA	BETA:		Date:	f(f)	<u>~{</u> 0	perator Antone
					ve She PSI	d # 1 by Viv. Pos.	Condense	er Locked	Comments
No.	CC HIGH A	System			60	VO/C	Signage	YDND	
1	SG Unit 1 SG Unit 2	4.31.2				VO/C	N.	YDYND	
3	Reheaters	A 31 3				V D/C	V	YOVNO	
4	Rack 2 West HTF	A. 3 4		1	55	V D/C	V	YEND	
5	Rack 2 East HTF	4/81-5			160	V 0/C	1	YOYND	
6	North Steel Pro	A, B1-6			155	VO/C	V,	YDYND	
7	HTF Pumps	A/81-7		_	60	VO/C	V	YOND	
8	HTF Heaters	A/31-8			60	VO/C	V.	YUND	
9	South Steel Pro	A/B1+9			60	V0/C		YOND	
10	Lube Oil	A/81-10		-		VO/C	1/	YOND	
11	Turbine Hose Stations	A/31 12		1	60	VO/C	V	YOND	
12	Turbine Bearings			Va	lve Sh	ed # 2 by	Overflow	N	
No.		System	Particular In		PSI	Viv. Pos.	Signage	Locked	Comments
1	Expansion Vessels	A/82-1		9	165	VO/C	V	YEND	
2	Ullage Area	A/B2-2			V.V.	VO/C	5	YDND	
3	Ullage Structure	A/B2-11			54	VOIC		YEND	
4	Rack 1 Middle Area	A/B2-5			54	VOIC	V	YOND	
5	Overflow Tanks	A/B2-9		-	155	Vic	V	YPND	
6	Rack 1 South Area	A/82-6 A/82-7		-	160	Vale	V	YOND	
7	Rack 1 West Rack 1 North Area	A/82-4			160	VOIC	V	YOND	
9	Over flow AFFF	A/82-8			U	O/CX	V.	YEND	
10	Expansion Vessel AFFF				Ŏ	0/C X		YOND	
			Valve	Shec				rical Bldg	Comments
No.		System		4	PSI	Viv. Pos.	Signage	YD ND	Comments
1	Transformer Aux				60	0/C	V	YPND	
2	Transformer Main		Value	Chor	160	v Cooline	Tower	Vest Side	
		Fucham	Valve	Jiec	PSI	Viv. Pos.	Signage		Comments
No.	Cooling Tower West S	System		1	612	1/O/C		YOND	
1	Cooling rower wests	ae		Valve	Shed	# 5 by Co	ontrol Blo	lg 10	Mark State
No.	SS4 11	System			PSI	Viv_Pos.	Signage	Locked	Comments
1	Control Room	A/B4-5			16 D	VO/C	V	YND	
2	Offices	A/84-3			60	VO/C		YDND	
3	Electrical Room	A/B4-4	<b>6</b>	Value	60	10/C	balacka		open position)
_			ine sprinkler		ocked	Viv. Pos.	Delocke	u in the c	Comments
No.		System				10/C			
1	Bearing 2 Bearing 3					VOIC			
2	Bearing 4					VOK			
4	Bearing 5			Y	ND	V0/C			No. 4 - Franks
_	10000/0/12	н	TF Deluge Sy				Locked in	the Oper	n Position)
No.		System	a martine and the second	L	ocked	Viv. Pos.			Comments
1	MP-201			Y	ND	<b>√</b> 0/C			
10	MP-200A					0/C		_	
2	MP-200B					VO/C			
3	MP-200C					10/0			
3 4	MD. 3000								
3	MP-200D				Pump		eluge Sys	stem	
3 4 5	MP-200D	Suphare			1.51	House D	eluge Sys	stem	Comments
3 4 5 <b>No.</b>	SEX:	System		Fire	PSI		Locked		Comments
3 4 5	MP-200D Fire Pump House Delt			Fire	1.51	House D			Comments
3 4 5 <b>No.</b> 1	SEX:	ige		Fire	р51 180	House D 0/C PIV Chee	Locked Y ON D KS Date		
3 4 5 <b>No.</b>	Fire Pump House Delt	ige System		Fire	PSI 180 osition	House D O/C PIV Chee Cycled			Comments Comments
3 4 5 <b>No.</b> 1 <b>No.</b>	Fire Pump House Delt	ige System nce Shap Driv	e Way #7	Fire	PSI 180 osition	House D O/C PIV Chee Cycled	Locked Y ON D KS Date		
3 4 5 <b>No.</b> 1 <b>No.</b> 1 2	Fire Pump House Delt Warehouse/Maintena Warehouse/Maintena	System nce Shop Driv nce Shop Driv	e Way #8	Fire P	PSI 180 osition 0/c A	House D O/C PIV Chee Cycled	Locked Y ON D KS Date		
3 4 5 <b>No.</b> 1 <b>No.</b> 1 2 3	Fire Pump House Delt Warehouse/Maintena Warehouse/Maintena West Side Power Bloc	system nce Shop Driv nce Shop Driv k by VS-3 # 9	e Way #8	P P	PSI asition O/C O/C	House D O/C PIV Chee Cycled	Locked Y ON D KS Date		
3 4 5 <b>No.</b> 1 1 2 3 4	Fire Pump House Delt Warehouse/Maintena Warehouse/Maintena West Side Power Bloc West Side Power Bloc	System nce Shop Driv nce Shop Driv k by VS-3 # 9 k by VS-1 # 11	re Way #8	P P	PSI osition O/C O/C O/C	House D O/C PIV Chee Cycled	Locked Y ON D KS Date		
3 4 5 <b>No.</b> 1 1 2 3 4 5	Fire Pump House Dela Warehouse/Maintena Warehouse/Maintena West Side Power Bloc West Side Power Bloc West Side Cooling To	System nce Shop Driv nce Shop Driv k by VS-3 # 9 k by VS-1 # 11 wer by VS-4 #	e Way #8 0 11	P V V	PSI 18 U osition O/C O/C O/C O/C O/C	House D O/C PIV Chee Cycled	Locked Y ON D KS Date		
3 4 5 <b>No.</b> 1 1 2 3 4 5 6	Fire Pump House Dela Warehouse/Maintena Warehouse/Maintena West Side Power Bloc West Side Power Bloc West Side Cooling To West side Cooling To	System nce Shop Driv nce Shop Driv k by VS-3 # 9 k by VS-1 # 11 wer by VS-4 # wer by VS-4 #	e Way #8 0 11	P V V	PSI asition 0/C 0/C 0/C 0/C 0/C 0/C	House D O/C PIV Chee Cycled	Locked Y ON D KS Date		
3 4 5 <b>No.</b> 1 2 3 4 5 6 7	Fire Pump House Dela Warehouse/Maintena Warehouse/Maintena West Side Power Bloc West Side Power Bloc West Side Cooling To West Side Cooling To N.W. Corner Chemica	System nce Shop Driv nce Shop Driv k by VS-3 # 9 k by VS-1 # 11 wer by VS-4 # wer by VS-4 1 Storage #1	e Way #8 0 11	P V V V	PSI osition O/C A/ O/C O/C O/C O/C O/C O/C	House D O/C PIV Chee Cycled	Locked Y ON D KS Date		
3 4 5 <b>No.</b> 1 2 3 4 5 6 7 8	Fire Pump House Delt Warehouse/Maintena Warehouse/Maintena West Side Power Bloc West Side Power Bloc West Side Cooling To West side Cooling To N.W. Corner Chemical N.E. Corner Chemical East Side W.T. by Mul	System nce Shop Driv nce Shop Driv k by VS-3 # 9 k by VS-1 # 11 wer by VS-4 # ver by VS-4 # 1 Storage #1 timedia Filters	e Way #8	P V V V V	PSI osition O/C A/C O/C O/C O/C O/C O/C O/C O/C O/C O/C O	House D O/C PIV Chee Cycled	Locked Y ON D KS Date		
3 4 5 <b>No.</b> 1 1 2 3 4 5 6 7	Fire Pump House Dela Warehouse/Maintena Warehouse/Maintena West Side Power Bloc West Side Power Bloc West Side Cooling To West Side Cooling To N.W. Corner Chemica N.E. Corner Chemical	System nce Shop Driv nce Shop Driv k by VS-3 # 9 k by VS-1 # 11 wer by VS-4 # ver by VS-4 # 1 Storage #1 timedia Filters	e Way #8		PSI asition O/C O/C O/C O/C O/C O/C O/C O/C O/C O/C	House D O/C PIV Chee Cycled	Locked Y ON D KS Date		
3 4 5 <b>No.</b> 1 1 2 3 4 5 6 7 8 9	Fire Pump House Delta Warehouse/Maintena Warehouse/Maintena West Side Power Bloc West Side Power Bloc West Side Cooling To West Side Cooling To N.W. Corner Chemica N.E. Corner Chemica N.E. Corner Chemica East Side W.T. by Mul East Side W.T. by Mul Fast Side Bldg 10 #	System nce Shop Driv nce Shop Driv nce Shop Driv k by VS-3 # 9 k by VS-1 # 11 wer by VS-4 # 1 Storage #1 Storage # 2 timedia Filters 6	e Way #8 0 11 12 # 3 # 5		PSI asition O/C O/C O/C O/C O/C O/C O/C O/C O/C O/C	House D O/C PIV Chee Cycled	Locked Y ON D KS Date		
3 4 5 <b>No.</b> 1 1 2 3 4 5 6 6 7 7 8 9 10 11 12	Fire Pump House Delt Warehouse/Maintena Warehouse/Maintena West Side Power Bloc West Side Power Bloc West Side Cooling To West Side Cooling To N.W. Corner Chemical East Side W.T. by Mul East Side W.T. by Mul East Side W.T. by Mul Batween MP-444's ar	System nce Shop Driv k by VS-3 # 9 k by VS-1 # 11 wer by VS-4 # I Storage #1 Storage #2 timedia Filters 6 d Water Treat	e Way #8		PSI asition O/C O/C O/C O/C O/C O/C O/C O/C	House D O/C PIV Chee Cycled	Locked Y ON D KS Date		
3 4 5 <b>No.</b> 1 2 3 4 5 6 7 7 8 9 9 10 11 11 2 2 3 4 5 6 10 11	Fire Pump House Delta Warehouse/Maintena Warehouse/Maintena West Side Power Bloc West Side Power Bloc West Side Cooling To West Side Cooling To N.W. Corner Chemica N.E. Corner Chemica N.E. Corner Chemica East Side W.T. by Mul East Side W.T. by Mul Fast Side Bldg 10 #	System nce Shop Driv k by VS-3 # 9 k by VS-1 # 11 wer by VS-4 # 1 Storage # 1 Storage # 2 timedia Filters 6 d Water Treat	e Way #8 0 1 1 1 2 # 3 # 5 # 4 alve Shed #1	Fire P V V V V V V V V V V	PSI asition O/C O/C O/C O/C O/C O/C O/C O/C	House D O/C PIV Chee Cycled	Locked Y ON Date Cvcled		Comments



General Information					
Plant: Alpha 🗗 🛛 Beta 🗆	Date: // - 3 - 2 4				
Operator:	To be completed each time unit is operated.				
Juscharcia	The NFPA Form AES 5.1must be completed weekly.				
Reason for running pumps: Weekly test & Mainten					
Jockey Elec					
	cal 🖉 Valves/				
Check the jockey pump on pressure drop. Start up pressure: 155 ps					
Discharge Pressure: 145051					
Pump Suction Pressure: $n A$	Pump Discharge pressure: 145				
Comments:					
Electric					
Pre-start Inspection: Electrical Feed 🗗 Mechani	cal 🛛 Valves 🗹				
Start the pump on pressure drop. Start up pressure: $1^{4/2}$	5 p=1				
Start time: 1859					
Pump Suction Pressure: 15psi Pu	ump Discharge pressure: 75 0 351				
Stop time: 1909 Total time ru	inning / Dmin				
Comments: Small leak on the Suction side	st Electric pump.				
	Pump				
Pre-start Inspection: Coolant 🗹 Oil 🛛 Mechani					
Fuel level > 2/3: Yes I No B M	Nonthly Fuel Consumption: NA				
Battery volt Crank 1: 24 Battery volt Crank 2: 24	Battery Condition: good needs cleaning				
Starting hour meter: 132.7	Start time: 1913				
Oil pressure start: 59 ps !	Oil Pressure finish: 49 ps				
Pump Suction Pressure: $65$	Pump Discharge pressure: 165991				
Coolant temperature after 30 minutes running: 172					
Stop time: 1923 Stop hour meter: 132.7 Total run time: 1	Drink January 1 <sup>st</sup> hour meter: Total YTD hours:				
Comments:					
Sulfur Concentrations (less than or equal to 0.0015% on a weight provide the second se	per weight basis).				
This new direct drive fire pump engine shall be limited to use for emergency fire suppression, defin	ed as in response to a fire or due to low fire water pressure. In addition, this engine shall be operated				
no more than 30 minutes in any one hour and no more than 10 hours per year for initial start-up t	esting and compliance demonstrations. Additionally, this engine shall not be operated more than de n Association (NFPA) 25-"Standards for the Inspection, Testing, and Maintenance of Water Based Fire				



inc i amp to the	
General Info	
Plant: Alpha 🗆 Beta 📈	Date: 12/18/24
Operator Dien. Podniguel	*To be completed each time unit is operated.
Reason for running pumps: Weekly test / Maintenand	
Jockey Elect	
Pre-start Inspection: Electrical Feed 📈 Mechanical	
Check the jockey pump on pressure drop. Start up pressure: $\int_{-\infty}^{\infty}$	SSpsi
Discharge Pressure: 115051	
Pump Suction Pressure: Pump	Discharge pressure: 167/51
Comments	
Electric	Dump
· - At shanical	
Pre-start inspection.	
Start the pump on pressure drop. Start up pressure: 195ps	
Start time: 1919	Discharge pressure: /SOpsi
	g 10 mins.
Comments:	
Diesel	Pump
Pre-start Inspection: Coolant Z Oil Z Mechanical	🖄 Valves 🔏 Water Jacket Heater 🏏
	hly Fuel Consumption: NIA.
Battery volt Crank 1: 29.5 Battery volt Crank 2: 2.6.5	Battery Condition: hood.
Starting hour meter: 136.7 H.	Start time: 1925
Oil pressure start: 67ps1	Oil Pressure finish: 53ps1
Pump Suction Pressure: 20051 Pum	p Discharge pressure: /Sopsi
Coolant temperature after 30 minutes running: 1997.	/
Chan hour motor: 12	4.74 Total time running: Smins.
Stop tille. TISO	· · · · · · · · · · · · · · · · · · ·
Comments:	
Place	er weight basis).
his new direct drive file pump engine shall be limited to use for emergency fire suppression, defined more than 30 minutes in any one nour and no more than 10 hours per year for initial start-up testing more than 30 minutes in any one nour and no more than 10 hours per year for initial start-up testing more than 30 minutes in any one nour and no more than 10 hours per year for initial start-up testing more than 30 minutes in any one nour and no more than 10 hours per year for initial start-up testing.	d as in response to a fire of date of Materially, this engine shall not be operated more than the num g and compliance demonstrations. Additionally, this engine shall not be operated more than the num strong (NEPA) 25-"Standards for the Inspection, Testing, and Maintenance of Water Based Fire Syste
of hours necessary to comply with the testing rotation will not be counted towards either of the (current edition). The hours of operation for source testing will not be counted towards either of the basis field committion 27 call h approximately.	allowable annual limits above
There is no limit on engine operation for emergency use [Title 17 CCR 93115 6(a)(4)]	



				17	2/20/	24	perator BVICK C -
		Plant: ALPHA 🗇 🛛 I	Valve She	Date: 1	Condens		berator Urccc
No.	- [	System	PSI	Viv. Pos.	Signage	Locked	Comments
1	SG Unit 1	A/81-1	160	10/C	$\checkmark$	YDND	
2	SG Unit 2	x(8) 2	160	/0/C		YOND	
3	Reheaters	A 81.3 X 47.4	160	10/C	1	Y D N D	
5	Rack 2 West HTF Rack 2 East HTF	1 3 5	105	Joic			
6	North Steel Pro	A/81-6	100	JO/C	1	YUND	
7	HTF Pumps	4.6147	160	1 DIC	11	YOND	
8	HTF Heaters	4/81.8	155	1,0/C	1	YOND	
9	South Steel Pro	4,81.9	100	2 p/c		YOND	
10	Lube Oil	A/81 10	160	JOIC .	1	YOND	
11	Turbine Hose Stations	A/31-11 A/31-12	100	PIC JOIC			
12	Turbine Bearings	A() (2	Valve Sh		Overflo		
No.		System	PSI	Viv. Pos.	Signage	Locked	Comments
1	Expansion Vessels	A/82-1	1:55	O/C	1	YONZ	
2	Ullage Area	A/B2-2	165	O/C		YOND	
3	Ullage Structure	A/B2-11	160	0/C	5	YNND	
4	Rack 1 Middle Area	A/B2-5	165	0/C	V	YOND	
5	Overflow Tanks	A/B2-9 A/B2-6	160	0/C	Y/		
7	Rack 1 South Area Rack 1 West	A/B2-0 A/B2-7	160	Vo/c	1	YZND	
8	Rack 1 North Area	A/B2-4	160	JO/C	1 V	YZND	
9	Over flow AFFF	A/B2-8	165	JOIC	11	YOND	
10	Expansion Vessel AFFF	A/B2-3	165	./ O/C		YOND	
			shed # 3 b	the second se	and the second se		Commente
<b>No.</b>	Transformer Aux	System	PSI 155	Viv. Pos.	Signage	Y D A D	Comments
2	Transformer Main		155	JO/C		YOND	
	Than a south a strain	Valve S	shed # 4 b		Tower V		
No.		System	PSI	Viv: Pos.	Signage		Comments
1	Cooling Tower West Sid		105	• O/C		YZND	
			alve Shed				C
No.	Control Docum	System	PSI 1.60	Viv. Pas.	Signage		Comments
1	Control Room Offices	A/B4-5 A/B4-3	(60)	VO/C	11	YZND	
3	Electrical Room	A/B4-4	155	JOIC	1	YOND	
		Turbine Sprinkler V	alves (The		be locke	d in thé o	pen position)
No.		System	Locked	Viv. Pos.			Comments
1	Bearing 2		YZND	O/C			
2	Bearing 3		YDND	0/C 0/C			
3	Bearing 4 Bearing 5		YDND	0/0			
	loeaning 5	HTF Deluge Sys			ocked in	the Open	Position)
No.		System	Logked	Viv. Pos.			Comments
1	MP-201		Y D ND	O/C			
	MP-200A		YUND	0/0			
2	MP-200B		YOND	0/C 0/C			
3				0/0			
3 4	MP-200C			0/0			
3	MP-2000 MP-200D		YND	O/C House D	eluge Svs	tem	
3 4 5				House D	eluge Sys	tem	Comments
3 4 5 <b>No.</b>	MP-200D	System	Y SV N D ire Pump PSI	House D			Comments
3 4 5		System	re Pump PSI	House D	Locked YD ND		Comments
3 4 5 <b>No.</b> 1	MP-200D	System	re Pump PSI	House D	Locked Y D N D KS Date		Comments
3 4 5 <b>No.</b> 1 <b>No.</b>	MP-200D Fire Pump House Deluc	System e System	Y Q/N D ire Pump PSI 190 Position	House D o/c O PIV Chec	Locked YD ND		
3 4 5 <b>No.</b> 1	MP-200D	System ge System ce Shop Drive Way #7		House D o/c O PIV Chec	Locked Y D N D KS Date		
3 4 5 <b>No.</b> 1 <b>No.</b> 1	MP-200D Fire Pump House Deluc	System e System ce Shop Drive Way #7 ce Shop Drive Way #8	Position O/C VO/C	House D o/c O PIV Chec	Locked Y D N D KS Date		
3 4 5 <b>No.</b> 1 <b>No.</b> 1 2	MP-200D Fire Pump House Delug Warehouse/Maintenand Warehouse/Maintenand West Side Power Block West Side Power Block	System System Ee Shop Drive Way #7 Ee Shop Drive Way #8 by VS-3 # 9 by VS-1 # 10	Y Q N I           ire Pump           PSI           QO           Position           O/C QO/C           YO/C	House D o/c O PIV Chec	Locked Y D N D KS Date		
3 4 5 <b>No.</b> 1 1 2 3 4 5	MP-200D Fire Pump House Delug Warehouse/Maintenand Warehouse/Maintenand West Side Power Block West Side Power Block West Side Cooling Tow	System           se           System           ce Shop Drive Way #7           ce Shop Drive Way #8           by VS-3 # 9           by VS-1 # 10           er by VS-4 # 11	Y Q N □           irre Pump           PSI           Q/Q           Position           O/C           ✓ O/C           ✓ O/C           ✓ O/C           ✓ O/C	House D o/c O PIV Chec	Locked Y D N D KS Date		
3 4 5 <b>No.</b> 1 1 2 3 4 5 6	MP-200D Fire Pump House Deluc Warehouse/Maintenand Warehouse/Maintenand West Side Power Block West Side Power Block West Side Cooling Tow West side Cooling Tow	System           ie           System           te Shop Drive Way #7           te Shop Drive Way #8           by VS-3 # 9           by VS-1 # 10           er by VS-4 # 11           er by VS-4 # 12	Y Q N I           ire Pump           PSI           Q/Q           Position           O/C           Y O/C	House D o/c O PIV Chec	Locked Y D N D KS Date		
3 4 5 <b>No.</b> 1 <b>No.</b> 1 2 3 4 5 6 7	MP-200D Fire Pump House Deluc Warehouse/Maintenand Warehouse/Maintenand West Side Power Block West Side Power Block West Side Cooling Tow West side Cooling Tow N.W. Corner Chemical S	System           je           System           ce Shop Drive Way #7           ce Shop Drive Way #8           by V5-3 # 9           by V5-3 # 9           by V5-1 # 10           er by V5-4 # 11           er by V5-4 # 12           Storage #1	Y Q N I           ire Pump           PSI           Q/Q           Position           O/C           Y O/C	House D o/c O PIV Chec	Locked Y D N D KS Date		
3 4 5 <b>No.</b> 1 2 3 4 5 6 7 8	MP-200D Fire Pump House Deluc Warehouse/Maintenand Warehouse/Maintenand West Side Power Block West Side Power Block West Side Cooling Tow West side Cooling Tow N.W. Corner Chemical S N.E. Corner Chemical S	System           je           System           ce Shop Drive Way #7           ce Shop Drive Way #8           by VS-3 # 9           by VS-3 # 9           by VS-4 # 10           er by VS-4 # 11           er by VS-4 # 12           Storage #1           torage # 2	Y Q N □           ire Pump           PSI           Q/Q           Position           O/C	House D o/c O PIV Chec	Locked Y D N D KS Date		
3 4 5 1 1 2 3 4 5 6 7 8 9	MP-200D Fire Pump House Deluc Warehouse/Maintenand Warehouse/Maintenand West Side Power Block West Side Power Block West Side Cooling Tow West side Cooling Tow N.W. Corner Chemical S N.E. Corner Chemical S East Side W.T. by Multin	System           ge           System           ce Shop Drive Way #7           ce Shop Drive Way #8           by VS-3 # 9           by VS-1 # 10           er by VS-4 # 11           er by VS-4 # 11           or by VS-4 # 12           Storage # 1           torage # 2           media Filters # 3	Y Q N □         ire Pump         PSI         Q/Q         Position         O/C         O/C         Q/C	House D o/c O PIV Chec	Locked Y D N D KS Date		
3 4 5 1 1 <b>No.</b> 1 2 3 4 5 6 7 8 9 10	MP-200D Fire Pump House Deluc Warehouse/Maintenand Warehouse/Maintenand West Side Power Block West Side Power Block West Side Cooling Tow West side Cooling Tow N.W. Corner Chemical S N.E. Corner Chemical S N.E. Corner Chemical S East Side W.T. by Multin East Side W.T. by Multin	System           je           System           cs Shop Drive Way #7           cs Shop Drive Way #8           by VS-3 # 9           by VS-1 # 10           er by VS-4 # 11           er by VS-4 # 12           Storage #1           torage # 2           media Filters # 3           media Filters # 5	Y Q N □           ire Pump           PSI           Q/Q           Position           O/C	House D o/c O PIV Chec	Locked Y D N D KS Date		
3 4 5 1 1 2 3 4 5 6 7 8 9	MP-200D Fire Pump House Deluc Warehouse/Maintenand Warehouse/Maintenand West Side Power Block West Side Power Block West Side Cooling Tow West Side Cooling Tow West Side Cooling Tow N.W. Corner Chemical S N.E. Side W.T. by Multin East Side W.T. by Multin North Side Bldg 10 # 6 Between MP-444's and	System           je           System           ce Shop Drive Way #7           ce Shop Drive Way #8           by V5-3 # 9           by V5-3 # 9           by V5-1 # 10           er by V5-4 # 11           er by V5-4 # 12           Storage #1           torage # 2           media Filters # 3           media Filters # 5           Water Treat # 4	Y Q N □       ire Pump       PSI       Q/O       O/C	House D o/c O PIV Chec	Locked Y D N D KS Date		
3 4 5 <b>No.</b> 1 1 2 3 4 5 5 6 7 7 8 9 9 10	MP-200D Fire Pump House Deluc Warehouse/Maintenand Warehouse/Maintenand West Side Power Block West Side Power Block West Side Cooling Tow West Side Cooling Tow West Side Cooling Tow N.W. Corner Chemical S N.E. Side W.T. by Multin East Side W.T. by Multin North Side Bldg 10 # 6 Between MP-444's and	System le System System Se Shop Drive Way #7 te Shop Drive Way #8 by VS-3 # 9 by VS-1 # 10 er by VS-4 # 11 er by VS-4 # 11 torage # 1 torage # 2 media Filters # 3 media Filters # 5 Water Treat # 4 wer Block Valve Shed #1	Y     N       ire Pump       PSI       Q/Q       Position       O/C       ✓ O/C       Ø/C	House D	Locked Y C N D KS Date Cvcled		
3 4 5 <b>No.</b> 1 1 2 3 4 5 6 7 7 8 9 10 11 11 12 13	MP-200D Fire Pump House Deluc Warehouse/Maintenand Warehouse/Maintenand West Side Power Block West Side Power Block West Side Cooling Tow West Side Cooling Tow West Side Cooling Tow N.W. Corner Chemical S N.E. Side W.T. by Multin East Side W.T. by Multin North Side Bldg 10 # 6 Between MP-444's and	System Je System System Se Shop Drive Way #7 Se Shop Drive Way #8 by V5-3 # 9 by V5-1 # 10 er by V5-4 # 12 Storage #1 torage #2 media Filters # 3 media Filters # 5 Water Treat # 4 wer Block Valve Shed #1	Y Q N □       ire Pump       PSI       Q/O       O/C	House D	Locked Y C N D KS Date Cvcled		



Fire Pump Weekly T	est	Log
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File Full prec					
General Inf					
Plant: Alpha 🗆 Beta 🗖	Date: 12 21 2 To be completed each time unit is operated				
Operator: Erick					
Reason for running pumps: Weekly test Maintenan					
Jockey Elec	1				
Pre-start Inspection: Electrical Feed Mechanical					
Check the jockey pump on pressure drop. Start up pressure:	155				
Discharge Pressure: 163					
Pump Suction Pressure: A/12 Pump	Discharge pressure: 163.				
Comments:					
Electric	Pump				
Advantanian					
Ple-start inspection.					
Start the pump on pressure drop. Start up pressure: 195	•				
Start time: 23:58	Discharge pressure: 150				
Pump Suction Pressure. 73					
Stop time: 00.00					
Comments:					
Diese	Pump				
Pre-start Inspection: Coolant Oil Mechanica	Valves Water Jacket Heater				
	hly Fuel Consumption:				
Battery volt Crank 1: 17. 2 Battery volt Crank 2:27.2	Battery Condition: Chooch				
Starting hour meter: $00:10$ (36.7.	Start time: 00 10				
Oil pressure start: 62	Oil Pressure finish: 52.				
Pump Suction Pressure: 29 Pump Discharge pressure: 150					
Coolant temperature after 30 minutes running: (74					
find the meters of the second se					
Stop time: *** . t St					
Comments: 1761 R PM					
Sulfur Concentrations (less than or equal to 0.0015% on a weight p	er weight basis).				
the suppression define	d as in response to a fire of the to low fire water presence shall not be operated more than the number				
more than 30 minutes in any one nour and no more than 10 hours per year for initial startup texts of hours necessary to comply with the testing requirements of the National Fire Protection Assoc (current edition) The hours of operation for source testing will not be counted towards either of the	ation (NEPA) 25- Standards for the inspection, resting and				
(current edition) The hours of operation for solice cashing management					
There is no limit on engine operation for emergency use. Title 17 CCR 93115 6(a)(4))					



	Plant: ALP		Data 1	2101104	1	Diego ?.
	Plant: ALP	HA⊔ BETA: العر Nalve Sh	Date: 1	y Condens	Operato	or which it.
No.	System	PSI	Viv. Pos.		Locked	Comments
1	SG Unit 1	158	¢/C	-	YOND	
2	SG Unit 2	140	©/C	~	YOUND	
3	Reheaters A.81-3	140	Ø/C	~	YOND	
4	Rack 2 West HTF	145	Ø/C	1		
5	Rack 2 East HTF	185	0/C	1		
6	North Steel Pro	140	9/C	1		
7	HTF Pumps 4.6 7 HTF Heaters 4.6 3	755	0/C	1		10
9	HTF Heaters A/S 3	155	0/C			
10	Lube Oil	155	O/C	1	YOND	
11	Turbine Hose Stations 4/31-11	185	d/C	1	YONZ	
12	Turbine Bearings	14.0	Ø/C	1	Y III N III	
		Valve Si	ned # 2 }			
No.	System	PSI	Viv. Pos.	Signage	Locked	Comments
1	Expansion Vessels A/B2-1	140	0/C			
2	Ullage Area A/B2-2	Heo	9/C	1		
3	Ullage Structure A/B2-11 Rack 1 Middle Area A/B2-5	155		1		
5	Overflow Tanks A/82-9	140	0/C	-	YOND	
6	Rack 1 South Area A/B2-6	14.0	0/C	1	YUNZ	
7	Rack 1 West A/B2-7	160	0/C	1	Y III N II	
8	Rack 1 North Area A/B2-4	140	Ø/C	/	YD ND	
9	Over flow AFFF A/B2-8	KeO	D/C	~	YUNZ	
10	Expansion Vessel AFFF A/82-3	140	D/C	/	YUNZ	
	IN THE REAL PROPERTY OF THE RO	Valve Shed # 3 b	A	and the second state of th	trical Bldg	
No.	System	PSI	Viv. Pos.	Signage	Locked	Comments
1	Transformer Aux	155	Ø/C			
2	Transformer Main	Valve Shed # 4 E	D/C	Tower		
No.	System	PSI	Viv. Pos.		1 State	Comments
1	Cooling Tower West Side	160	Ø/C	×	YNND	
	Cooling Tower West Side	Valve Shed	# 5 by (	ontrol Blo		
No.	System	PSI		Signage		Comments
1	Control Room A/B4-5	155	D/C	1	YONZ	
2	Offices A/B4-3	155	D/C	1	YZND	
3	Electrical Room A/B4-4	155	D/C	11	YUNZ	
		prinkler Valves (Th			ed in the open	
No.	System	Ligcked	Viv. Pos.			Comments
1	Bearing 2					
3	Bearing 3 Bearing 4					
4	Bearing 5	YUND				
	HTF D	eluge System Valve		Locked in	the Open Pos	ition)
No.	System	Locked	Viv. Pos			Comments
1	MP-201	YO NZ				
2	MP-200A	YIIN				
3	MP-200B	YUND				
4	MP-200C	YO NO		1		
5	MP-200D			Johner Com	ctom	
-		Fire Pump		- 11 L	stem	Comments.
No.	System	PSI	0/C	Locked		Comments
1	Fire Pump House Deluge	170	0	YZNE	]	
			PIV Che			
No.	System	Position	Cycled	Date Cvcled		Comments
1	Warehouse/Maintenance Shop Drive Way	#7 0/2		STATES		
2	Warehouse/Maintenance Shop Drive Way	#8 Ø/C				
3	West Side Power Block by VS-3 # 9	•/C				
4	West Side Power Block by VS-1 # 10	<b>Ф/С</b>				
5	West Side Cooling Tower by VS-4 # 11	@/C	-	_		
6	West side Cooling Tower by VS-4 # 12	@/C				
7	N.W. Corner Chemical Storage #1	9/C	_			
8	N.E. Corner Chemical Storage # 2	0/C				
9	East Side W.T. by Multimedia Filters # 3	0/C	_			
10	East Side W.T. by Multimedia Filters # 5	Q/C		-		
4.4	North Side Bldg 10 # 6			-		
11						
12	Between MP-444's and Water Treat # 4 Beta Only West Side Power Block Valve Sh	0/2				
12 13	Between MP-444's and Water Treat # 4 Beta Only West Side Power Block Valve Sh V 104 Automated Fire Systems Inspection Checklist		rst Satur	day of Ev	ery Month	Comments / Appage 424 of 12283



Fire Pump	Weekly Test Log
Gener	ral Information
Plant: Alpha 🗆 Beta 📈	Date: (2/14/24/
Operator: Erick	To be completed each time unit is operated
	intenance Emergency
	ey Electric Pump
Pre-start Inspection: Electrical Feed Mech	nanical Valves
Check the jockey pump on pressure drop. Start up pres	sure:
Discharge Pressure:	pump not in service
Pump Suction Pressure:	Pump Discharge pressure:
Comments:	
	Electric Pump
	hanical Valves
Pre-start inspection, Electrication	
Start the pump on pressure drop. Start up pressure:	TUMP bet in Service.
Start time:	Pump Discharge pressure:
Pump Suction Pressure: Total time	
op time.	
Comments:	
	Diesel Pump
Pre-start Inspection: Coolant Oil Med	chanical II Valves Water Jacket Heater
Fuel level > 2/3: Yes No	Monthly Fuel Consumption:
Battery volt Crank 1: Battery volt Crank 2:	Battery Condition:
Starting hour meter: 36.7	Start time: N/2
Oil pressure start: N/A	Oil Pressure finish: n/m.
Pump Suction Pressure:	Pump Discharge pressure:
Coolant temperature after 30 minutes running:	
Stop time: Stop hour me	ter: Total time running:
	In Service - valved out
the strengthal to 0.0015% on a w	weight per weight basis)
in the suppression of the superscenario of the supersc	ssion, defined as in response to a fire or due to low fire water pissure in result. art-up testing and compliance demonstrations. Additionally, this engine shall not be operated more than the num funn Association (NEPA) 25-"Standards for the Inspection. Testing, and Maintenance of Water Based. Fire System



				1		2114	nu	1	perato Dila R.
		Plant: ALPHA 🗆	BETA:	Date	-4	111-11	1-	<u> </u>	operator / / / /
	1	Eveter	Valve Sh	ed # 1 Viv. P		Signage		cked	Comments
No. 1	SG Unit 1	System	60	0/		Signage	YI		Comments
2	SG Unit 2	A(81 2	0	6/			YI		
3	Reheaters	A/81-3	6	6/		1	YL	I N 🗆	
4	Rack 2 West HTF	#187.14	150	0/	C	~	YE		
5	Rack 2 East HTF	A/度/ 多	130	¢/	C	~	Yt	ם א נ	
6	North Steel Pro	A/81 0	0	¢/	<u> </u>	1	ΥĽ		
7	HTF Pumps	A/BT T	145	<b>\$</b> /3	_	~	ΥC	<u> </u>	
8	HTF Heaters	A/31 8	120	0/		1	YC		
9	South Steel Pro	4/81.9	150		C	1	YC	5	
10	Lube Oil	A/31 10 A/31-11	8	\$/					
12	Turbine Hose Stations Turbine Bearings	A, 5 -1 : A 31 12	140	<b>1</b> /	-	-			
12	Turbine bearings		Valve S			Overflo			
No.	1	System	PSI	Viv. P		Signage		cked	Comments
1	Expansion Vessels	A/82-1	135	0/		1	YI	JND	
2	Ullage Area	A/B2-2	135	9/	C	~	Y	J N 🗆	
3	Ullage Structure	A/B2-11	105	\$/		/	ΥD		
4	Rack 1 Middle Area	A/B2-5	0	<b>•</b> /		~	YE		
5	Overflow Tanks	A/B2-9	140	P/		~	YE		
6	Rack 1 South Area	A/B2-6	20	<b>P</b> /			YC		
7	Rack 1 West Rack 1 North Area	A/B2-7 A/B2-4	ns	6/		~	Y		
8	Over flow AFFF	A/B2-8	0	6/	_		YC		
10	Expansion Vessel AFFF		130	5/		~	1000	N	
10	Expansion vesser Arti	Valve	Shed # 3 b						
No.		System	PSI	Viv. F		Signage		cked	Comments
1	Transformer Aux		0	Ø/	C	V	YE		
2	Transformer Main		120	Þ/		1		ND	
_		Valve	Shed # 4 b	-			Nes	t Side	
No.	list, oppstuden	System	PSI	Viv.	· · · · ·	Signage		-	Comments
1	Cooling Tower West Si	de	1 O	2		X			
NI.		27 11 1 2 2 2 2	Valve Shed					ocked	Comments
No.	Castral Dagar	System	PSI 150	Viv. F		Signage	Y	and a state of the second	
1	Control Room Offices	A/B4-5 A/B4-3	150	5/		ž	Y		
3	Electrical Room	A/B4-4	150	6/		1	Y	the second second	
5	Licenteer (contr	Turbine Sprinkler	Valves (The			be locke			open position)
No.		System	Locked	Viy. H					Comments
1	Bearing 2		YU NO	Þ/	/C				
2	Bearing 3		YU NO	_					
3	Bearing 4		YO NO						
4	Bearing 5		YOND					0	- Decition)
	1	HTF Deluge Sy				ocked in	the	e Oper	Comments
No.		System	Y D N Z	Viv. I	Pos.				Comments
1	MP-201		YZNO		ic .		_		
2	MP-200A MP-200B		YZNO			1			
4	MP-2008		YZND			1			
5	MP-2000		YND		ic				
-	1.7. 2000		Fire Pump			eluge Sys	ten	1	
	CITE OF COMPANY	System	PSI	0		Locked	110	<b>B</b> N	Comments
No	E' D U Out	and the second	170	0		YND	-	1	
No.		<b>10</b>	170				1		
<b>No.</b>	Fire Pump House Delu	ye		PIVI					
1	Fire Pump House Delu		Pro-Per	PIV C		Date	1		Commente
1 No.		System	Position	Cyc		Date Cycled		-	Comments
1 <b>No.</b> 1	Warehouse/Maintenar	System nce Shop Drive Way #7	017	-					Comments
1 <b>No.</b> 1 2	Warehouse/Maintenar Warehouse/Maintenar	System ace Shop Drive Way #7 ace Shop Drive Way #8	0/g Ø/C	-				BULLY	Comments
1 <b>No.</b> 1 2 3	Warehouse/Maintenar Warehouse/Maintenar West Side Power Block	System Ince Shop Drive Way #7 Ince Shop Drive Way #8 Ince Shop Drive Way #8	0/2 0/C 0/C	-				30175	Comments
1 <b>No.</b> 1 2 3 4	Warehouse/Maintenar Warehouse/Maintenar West Side Power Block West Side Power Block	System Ince Shop Drive Way #7 Ince Shop Drive Way #8 Ince Shop Drive Way #8 Ince Shop VS-3 # 9 Ince Shop VS-1 # 10	0/ <b>/</b> 0/ <b>/</b> 0/C 0/C	-				(	Comments
1 <b>No.</b> 1 2 3 4 5	Warehouse/Maintenar Warehouse/Maintenar West Side Power Block West Side Power Block West Side Cooling Tov	System           ice Shop Drive Way #7           ice Shop Drive Way #8           ic by VS-3 # 9           ic by VS-1 # 10           ver by VS-4 # 11	0/ <b>/</b> 0/ <b>/</b> 0/C 0/C 0/C	-					Comments
1 <b>No.</b> 1 2 3 4 5 6	Warehouse/Maintenar Warehouse/Maintenar West Side Power Block West Side Power Block West Side Cooling Tow West Side Cooling Tow	System           acce Shop Drive Way #7           acce Shop Drive Way #8           by VS-3 # 9           c by VS-3 # 10           ver by VS-4 # 11           ver by VS-4 # 12	0/2 0/C 0/C 0/C 0/C 0/C 0/C	-					Comments
1 <b>No.</b> 1 2 3 4 5 6 7	Warehouse/Maintenar Warehouse/Maintenar West Side Power Block West Side Power Block West Side Cooling Tov West Side Cooling Tow N.W. Corner Chemical	System           acce Shop Drive Way #7           acce Shop Drive Way #8           by VS-3 # 9           cby VS-1 # 10           ver by VS-4 # 11           ver by VS-4 # 12           Storage #1	0/2 0/2 0/C 0/C 0/C 0/C 0/C	-					Comments
1 <b>No.</b> 1 2 3 4 5 6 7 8	Warehouse/Maintenar Warehouse/Maintenar West Side Power Block West Side Power Block West Side Cooling Tow West side Cooling Tow N.W. Corner Chemical N.E. Corner Chemical S	System           acce Shop Drive Way #7           acce Shop Drive Way #8           is by VS-3 # 9           is by VS-3 # 9           is by VS-1 # 10           ver by VS-4 # 11           ver by VS-4 # 12           Storage #1           Storage # 2	0/2 0/C 0/C 0/C 0/C 0/C 0/C	-				,70	Comments
1 <b>No.</b> 1 2 3 4 5 6 7 8 9	Warehouse/Maintenar Warehouse/Maintenar West Side Power Block West Side Power Block West Side Cooling Tow West side Cooling Tow N.W. Corner Chemical N.E. Corner Chemical East Side W.T. by Mult	System           acce Shop Drive Way #7           acce Shop Drive Way #8           is by VS-3 # 9           is by VS-1 # 10           ver by VS-4 # 11           ver by VS-4 # 12           Storage #1           Storage # 2           imedia Filters # 3	0/2 0/C 0/C 0/C 0/C 0/C 0/C 0/C	-				070 070	Comments
1 <b>No.</b> 1 2 3 4 5 6 7 8	Warehouse/Maintenar Warehouse/Maintenar West Side Power Block West Side Power Block West Side Cooling Tow West side Cooling Tow N.W. Corner Chemical N.E. Corner Chemical S	System           acce Shop Drive Way #7           acce Shop Drive Way #8           is by VS-3 # 9           is by VS-1 # 10           ver by VS-4 # 11           ver by VS-4 # 12           Storage #1           Storage #2           imedia Filters # 3           imedia Filters # 5	0/2 0/C 0/C 0/C 0/C 0/C 0/C 0/C	-					Comments
1 <b>No.</b> 1 2 3 4 5 6 7 8 9 10	Warehouse/Maintenar Warehouse/Maintenar West Side Power Block West Side Power Block West Side Cooling Tow West Side Cooling Tow N.W. Corner Chemical N.E. Corner Chemical N.E. Corner Chemical Seast Side W.T. by Mult East Side W.T. by Mult East Side Bldg 10 # 6 Between MP-444's and	System           acce Shop Drive Way #7           acce Shop Drive Way #8           by VS-3 # 9           c by VS-3 # 10           ver by VS-4 # 11           ver by VS-4 # 12           Storage #1           Storage #2           imedia Filters # 3           imedia Filters # 5           5           d Water Treat # 4	○//           ④/C           ④/C           ④/C           ④/C           ④/C           ④/C           ○/C           ○/C           ○/C           ○/C           ○/E           ○/E           Ø/C           ○/E           ○/E           Ø/C	-					Comments
1 <b>No.</b> 1 2 3 4 5 6 7 8 9 10 11	Warehouse/Maintenar Warehouse/Maintenar West Side Power Block West Side Power Block West Side Cooling Tow West Side Cooling Tow N.W. Corner Chemical N.E. Corner Chemical N.E. Corner Chemical Seast Side W.T. by Mult East Side W.T. by Mult East Side Bldg 10 # 6 Between MP-444's and	System Acce Shop Drive Way #7 Acce Shop Drive Way #8 Stop VS-3 # 9 Stop VS-1 # 10 Ver by VS-4 # 11 Ver by VS-4 # 11 Storage #1 Storage #1 Storage #2 imedia Filters # 3 imedia Filters # 5 5 6 d Water Treat # 4 Ower Block Value Shed #1			led	Cycled		070	



	File	General Info	
	,	General Info	Date: 1214124
Plant: Alpha 🛛	Beta Z		To be completed each time unit is operated
Operator: Dillo	Redriguer		
Reason for running pumps:	* Weekly/test	Maintenance	
		Jockey Electr	
	ectrical Feed	Mechanical E	
Check the jockey pump on p	pressure drop. Start	t up pressure:	
Discharge Pressure		D	Discharge pressure:
Pump Suction Pressure:		Pump	
Comments:	· · · · · ·		
valved	UNI	Electric	Pump
	ectrical Feed 🛛	Mechanical	
Fie sturt hope attend			
Start the pump on pressure	andp. Start up pre	55610.	
Start time:		Pump [	Discharge pressure:
Pump Suction Pressure:	т	otal time running	
Stop time:			
Comments:	d ONT		
URIVE	<u>u uver</u>	Diesel	
Pre-start Inspection: C	Coolant 🗌 🛛 Oil 🗆	] Mechanical	Valves  Water Jacket Heater
Fuel level > 2/3: Yes	No 🗌	Month	hly Fuel Consumption:
Battery volt Crank 1:	Battery volt Crank	< 2:	Battery Condition:
Starting hour meter:			Start time:
Oil pressure start:			Oil Pressure finish:
Pump Suction Pressure:		Pum	p Discharge pressure:
Coolant temperature afte	r 30 minutes runnir		
	Ston	hour meter:	Total time running:
Stop time:			and the second se
Comments: VAIVU	NAT		
		15% on a weight pe	er weight basis).
	all be limited to use for emergen ad no more than 10 hours per ye esting requirements of the Natio for source testing will not be con imately.	ncy fire suppression, defined ear for initial start-up testing onal Fire Protection Associa unted towards either of the	g and compliance demonstrations. Additionally, this engine shall not be operated more than the full and compliance demonstrations. Additionally, this engine shall not be operated more than the full atom (NEPA) 75-"Standards for the Inspection, Testing, and Maintenance of Water Based Fire Systems and the second sec



						ion Chec	
		Plant: ALPHA 🗆 🛛 BET	A: 🔽	Date:	171		or E. Camillo
		<u>v</u>		d # 1 by C	Signage	Locked	Comments
No.		ystem		Viv. Pos.	Signage	YD NP	
1		31 1		/ 0/C	/	YO ND	
2	120 OTHER	3/2		/0/C	V	Y N D	
3	Truitwid turity	E' 3		10/0	1	YZND	
4	HOCK E TTEST THE			10/C	1	YZ ND	
5	Rack 2 East HTF	/2 7		JO/C	1	YO NZ	
6	THORETOTICS	X/81.6		10/0	1	YEND	
7		V8117	-	/ O/C	V.	Y 🗹 N 🗖	
8	In rightere	V27.9		V 0/C		YZND	
9	and a state of the	VB1 10		/ O/C	1	YND	
10		A/31-11		J p/c	1	YOND	
12		CHNG AN		V0/C	/	Y P N D	
12	Turune bearings		Valve Sh	ed # 2 by	Overflo	W	Comments
No.	S	iystem	PSI	Viv. Pos.	Signage	Locked	Commenter
1		A/B2-1	1	/ 0/C	1	YDND	
2		4/B2-2		/ O/C	1		
3	O Harage / H eta	A/B2-11		V 0/C	1	YAND	
4		A/82-5		/ O/C	1	YPND	
5	1.11F. C	A/82-9		V 0/C			
6		A/B2-6		20/C		YZND	
7		A/B2-7		2/0/C	~	YZND	
8		A/B2-4		10/C	- 4	YOND	
9		A/82-3		20/C		YOND	
10	Expansion Vessel AFFF	A/82-3	ad # 2 5	JO/C	GE Fler	trical Bldg	
		Valve S	ned # 3 D	Viv. Pos.	Signage	Locked	Comments
No.	1	System	PSI	Q/C	Jighage	Y N D	
1	Transformer Aux			CONC	1	YZND	
2	Transformer Main	Mahua S	had # A P	w Coolin	Tower	West Side	
			PSI	Viv. Pos.	Signage		Comments
No.	and the second se	System		OIC		YZND	
1	Cooling Tower West Side	e Va	lve Shed	# 5 by C	ontrol B	dg 10	
	1000 C		PSI	Viv. Pos.	Signage	Locked	Comments
No.		System		10/C	V	YZND	
1	Control	A/84-5 A/84-3		V0/C	V	Y N N	
2	Sector Se	The second se		010	~	YZND	10.00
3	Electrical Room	A/B4-4 Turbine Sprinkler V	alves (Th	ese are to	be lock	ed in the op	en position)
No.	1	System	Locked	Viv. Pos.			Comments
1	Bearing 2	Jystein		1 V0/C			
	and the state of t			1 10/C			
	Rearing 3			1 .01			
2	Bearing 3		YDNE	1 / 0/12			
2	Bearing 4		AN ITS ALL T	1 015		the Open	Position)
2	The second s	HTF Deluge Syst	AN ITS ALL T	1 015	Locked	in the Open	Position)
2 3 4	Bearing 4 Bearing 5	HTF Deluge Syst	Y D N C tem Valv Locked	es (To be Viy. Pos	Locked	in the Open	Position) Comments
2	Bearing 4 Bearing 5	HTF Deluge System	Y I N C tem Valv Locked	es (To be Viv. Pos	Locked	in the Open	Position) Comments
2 3 4 <b>No.</b> 1	Bearing 4 Bearing 5			Viv. Pos           0/C           Viv. Pos           0/C           0/C           0/C	Locked	in the Open	Position) Comments
2 3 4 <b>No.</b>	Bearing 4 Bearing 5 MP-201			O/C     Pes (To be     Viy. Pos     O/C     O/C     O/C     O/C     O/C	Locked	in the Open	Position) Comments
2 3 4 <b>No.</b> 1 2	Bearing 4 Bearing 5 MP-201 MP-200A			O/C     O/C     O/C     Viy. Pos     O/C     O/C     O/C     O/C     O/C     O/C     O/C     O/C	Locked	in the Open	Position) Comments
2 3 4 <b>No.</b> 1 2 3	Bearing 4 Bearing 5 MP-201 MP-200A MP-200B	System		O/C     O/C     O/C     Viy. Pos     O/C     O/C     O/C     O/C     O/C     O/C     O/C     O/C     O/C			Position) Comments
2 3 4 <b>No.</b> 1 2 3 4	Bearing 4 Bearing 5 MP-201 MP-200A MP-200B MP-200C	System		■	Deluge S	ystem	
2 3 4 <b>No.</b> 1 2 3 4 5	Bearing 4           Bearing 5           MP-201           MP-200A           MP-200B           MP-200C           MP-200D	System		O/C     O/C     O/C     Viy. Pos     O/C     O/C     O/C     O/C     O/C     O/C     O/C     O/C     O/C		ystem	Position) Comments Comments
2 3 4 No. 1 2 3 4 5 No.	Bearing 4           Bearing 5           MP-201           MP-200A           MP-200B           MP-200C           MP-200D	System		■	Deluge S	System d	
2 3 4 <b>No.</b> 1 2 3 4 5	Bearing 4           Bearing 5           MP-201           MP-200A           MP-200B           MP-200C           MP-200D	System			Deluge S Locke	iystem d	Comments
2 3 4 <u>No.</u> 1 2 3 4 5 <b>No.</b> 1	Bearing 4 Bearing 5 MP-201 MP-200A MP-200B MP-200C MP-200D Fire Pump House Delug	System	Y N C tem Valv Locked Y N N Y N C Y N N Fire Pum PSI	O/C           es (To be           Viy. Pos           O/C	Deluge S Locke	System	
2 3 4 No. 1 2 3 4 5 No.	Bearing 4 Bearing 5 MP-201 MP-200A MP-200B MP-200C MP-200D Fire Pump House Delug	System	V N C tem Valv Locked V N C V N C V N C V N C Fire Pum PSI Position	O/C           es (To be           Viy. Pos           O/C	Deluge S Locke Y N ecks	System	Comments
2 3 4 <b>No.</b> 1 2 3 4 5 <b>No.</b> 1	Bearing 4 Bearing 5 MP-201 MP-200A MP-200B MP-200C MP-200D Fire Pump House Delug	System System Je System System The Shop Drive Way #7	Y N C tem Valv Locked Y N C Y N C	O/C           es (To be           Viy. Pos           O/C	Deluge S Locke	System	Comments
2 3 4 1 2 3 4 5 <b>No.</b> 1 <b>No.</b> 1 2	Bearing 4 Bearing 5 MP-201 MP-200A MP-200B MP-200C MP-200D Fire Pump House Delug Warehouse/Maintenand Warehouse/Maintenand	System System System System System System Shop Drive Way #7 ce Shop Drive Way #8		O/C           es (To be           Viy. Pos           O/C	Deluge S Locke	System	Comments
2 3 4 1 2 3 4 5 <b>No.</b> 1 <b>No.</b> 1 2 3	Bearing 4 Bearing 5 MP-201 MP-200A MP-200B MP-200C MP-200D Fire Pump House Delug Warehouse/Maintenand Warehouse/Maintenand Warehouse/Maintenand Warehouse/Maintenand	System System System System System System System System Solution System Solution Sol	Y D N C tem Valv Locked Y D N C Y D	O/C           es (To be           Viy. Pos           O/C	Deluge S Locke	System	Comments
2 3 4 1 2 3 4 5 <b>No.</b> 1 <b>No.</b> 1 2 3 4	Bearing 4 Bearing 5 MP-201 MP-200A MP-200B MP-200C MP-200C MP-200D Fire Pump House Delug Warehouse/Maintenand Warehouse/Maintenand Warehouse/Maintenand Warehouse/Maintenand Warehouse/Maintenand Warehouse/Maintenand	System System System Pe System	Y         N         E           tem Valv         Locked         Valve           Y         N         N         Valve           Y         N         N         Valve           Y         N         Valve         N           Y         N         Valve         N           Y         N         Valve         N           Y         N         N         Valve           Y         N         N         N           Y         N         N         N           Y         N         N         N           Y         N         N         N           Y         N         N         N           Y         N         N         N           Y         N         N         N           Y         N         N         N           Y         N         N         N           Y         N         N         N           Y         N         N         N           Y         N         N         N           O/C         O/C         O/C         O/C		Deluge S Locke	System	Comments
2 3 4 1 2 3 4 5 <b>No.</b> 1 <b>No.</b> 1 2 3	Bearing 4 Bearing 5 MP-201 MP-200A MP-200B MP-200C MP-200D Fire Pump House Delug Warehouse/Maintenand Warehouse/Maintenand Warehouse/Maintenand Warehouse/Maintenand Warehouse/Maintenand Warehouse/Maintenand Warehouse/Maintenand Warehouse/Maintenand Warehouse/Maintenand Warehouse/Maintenand	System System Pe System Pe System Prive Way #7 te Shop Drive Way #8 by VS-3 # 9 by VS-3 # 9 by VS-1 # 10 er by VS-4 # 11	Y         N         E           tem Valv         Locked           Y         N         E           Y         N         E           Y         N         E           Y         N         E           Y         N         E           Y         N         E           Y         N         E           Y         N         E           Position         O/C         O/C           O/C         O/C         O/C           Y         O/C         O/C		Deluge S Locke	System	Comments
2 3 4 No. 1 2 3 4 5 5 No. 1 1 2 3 4 4 5 6	Bearing 4 Bearing 5 MP-201 MP-200A MP-200B MP-200C MP-200D Fire Pump House Delug Warehouse/Maintenanc Warehouse/Maintenanc Warehouse/Maintenanc Warehouse/Maintenanc Warehouse/Maintenanc Warehouse/Maintenanc Warehouse/Maintenanc Wast Side Power Block West Side Power Block West Side Cooling Towe	System  System System  System  System System System System Sys	Y         N         E           tem Valv         Locked           Y         N         E           Y         N         E           Y         N         E           Y         N         E           Y         N         E           Y         N         E           Fire         Pum         PSI           O/C         O/C         O/C           O/C         O/C         O/C           O/C         O/C         O/C           O/C         O/C         O/C	O/C           es (To be           Viy. Pos           O/C           PHOUSE           O/C           PIV Ch           Cycled	Deluge S Locke	System	Comments
2 3 4 No. 1 2 3 4 5 No. 1 1 2 3 4 5 5 No. 7	Bearing 4 Bearing 5 MP-201 MP-200A MP-200B MP-200D Fire Pump House Delug Warehouse/Maintenand Warehouse/Maintenand Warehouse/Maintenand Warehouse/Maintenand Warehouse/Maintenand Warehouse/Maintenand Warehouse/Maintenand Warehouse/Maintenand Wast Side Power Block West Side Power Block West Side Cooling Towe N.W. Corner Chemical S	System  System System  System  System System System  S	Y         N         E           tem Valv         Locked           Y         N         E           Y         N         E           Y         N         E           Y         N         E           Y         N         E           Y         N         E           Y         N         E           Y         N         E           Fire         Pum         Psi           O/C         O/C         O/C           O/C         O/C         O/C           O/C         O/C         O/C	Image: Control of the sector of the	Deluge S Locke	System	Comments
2 3 4 No. 1 2 3 4 5 No. 1 1 2 3 4 5 6 7 7 8	Bearing 4 Bearing 5 MP-201 MP-200A MP-200B MP-200C MP-200D Fire Pump House Delug Warehouse/Maintenand	System  System Sys		Image: Control of the second	Deluge S Locke	System	Comments
2 3 4 No. 1 2 3 4 5 No. 1 1 2 3 4 5 6 6 7 7 8 9	Bearing 4 Bearing 5 MP-201 MP-200A MP-200B MP-200C MP-200D Fire Pump House Delug Warehouse/Maintenand Warehouse/Maintenand Warehouse/Maintenand Warehouse/Maintenand Warehouse/Maintenand Warehouse/Maintenand Warehouse/Maintenand Warehouse/Maintenand Wast Side Power Block West Side Power Block West Side Power Block West Side Cooling Toww West Side Cooling Toww West Side Cooling Toww West Side Cooling Toww N.W. Corner Chemical St East Side W.T. by Multir	System  System System System  System System System System System System System System System System System System System System System System System System Sy	Y         N         E           tem Valv         Locked         Valve           Y         N         N         Valve           Y         N         Valve         N           Y         N         Valve         N         Valve           Y         N         Valve         N         Valve           Y         Y         N         Valve         N         Valve           Y         Y         N         Valve         N         Valve         N         Valve           Y         Y         Y         N         Valve         N         N         N         N         N         N         N         N <t< td=""><td></td><td>Deluge S Locke</td><td>System</td><td>Comments</td></t<>		Deluge S Locke	System	Comments
2 3 4 No. 1 2 3 4 5 No. 1 1 No. 1 2 3 4 4 5 6 6 7 7 8 9 9 10	Bearing 4 Bearing 5 MP-201 MP-200A MP-200B MP-200C MP-200D Fire Pump House Delug Warehouse/Maintenand Warehouse/Maintenand Warehouse/Maintenand Warehouse/Maintenand Warehouse/Maintenand Warehouse/Maintenand Wast Side Power Block West Side Power Block West Side Power Block West Side Cooling Towe N.W. Corner Chemical St N.E. Corner Chemical St East Side W.T. by Multir East Side W.T. by Multir	System  System  System  E System  E System  E System  E System  E Shop Drive Way #7 E Shop Drive Way #8  by VS-3 # 9  by VS-1 # 10 er by VS-4 # 11 er by VS-4 # 12 Storage #1 torage #1 torage #2 media Filters # 3 media Filters # 5	Y         N         E           tem Valv         Locked         Y         N           Y         N         N         Y         N           Y         N         Y         N         Y         N           Y         N         Y         N         Y         N         Y         Y         N         Y         Y         N         Y         Y         N         Y         <	Control Contro Control Control Control Control Control Control Control Control Co	Deluge S Locke	System	Comments
2 3 4 No. 1 2 3 4 5 No. 1 1 2 3 4 5 6 6 7 7 8 9 9 10	Bearing 4 Bearing 5 MP-201 MP-200A MP-200B MP-200C MP-200D Fire Pump House Delug Warehouse/Maintenanc Maintenanc Warehouse/Maintenanc Warehouse/Maintenanc Warehouse/Maintenanc Notor Maintenanc Warehouse/Maintenanc Notor Maintenanc Maintenanc Maintenanc Maintenanc Maintenanc Maintenanc Maintenanc Maintenanc Maintenanc Maintenanc Maintenanc Maintenanc Maintenanc Maintenanc Maintenanc Maintenanc Maintenanc Maintenanc Maintenanc	System System Pe System Te Shop Drive Way #7 Te Shop Drive Way #8 by VS-3 # 9 by VS-1 # 10 er by VS-4 # 11 er by VS-4 # 12 Storage #1 torage # 2 media Filters # 3 media Filters # 5	Y         N         E           tem Valv         Locked           Y         N         E           Y         N         E           Y         N         E           Y         N         E           Y         N         E           Y         N         E           Y         N         E           Y         N         E           Position         O/C         O/C           O/C         O/C         O/C		Deluge S Locke	System	Comments
2 3 4 No. 1 2 3 4 5 5 No. 1 1 2 3 4 5 5 6 7 7 8 9 9 10 111 12	Bearing 4 Bearing 5 MP-201 MP-200A MP-200B MP-200B MP-200C MP-200D Fire Pump House Delug Warehouse/Maintenanc Net Side Power Block Net Side Cooling Tow Net Side Cooling Tow Net Side W.T. by Multir North Side Bidg 10 # 6 Between MP-444 s and	System Sy	Y         N         E           tem Valv         Locked           Y         N         E           Y         N         E           Y         N         E           Y         N         E           Y         N         E           Y         N         E           Y         N         E           Y         N         E           Position         O/C         O/C           O/C         O/C         O/C	O/C es (To be     Viy. Pos     O/C es (To be     Viy. Pos     O/C     O/C	Deluge S Locke Y N ecKs Date Cycle	System	Comments Comments
2 3 4 No. 1 2 3 4 5 5 No. 1 1 2 3 4 5 6 7 7 8 9 10 11 12 13	Bearing 4 Bearing 5 MP-201 MP-200A MP-200B MP-200C MP-200D Fire Pump House Delug Warehouse/Maintenand Nutritionand Nutritionand Maintenand Nutritionand Maintenand Maintenand Nutritionand Maintenand Maintenand Nutritionand Maintenand Maintenand Nutritionand Maintenand Nutritionand Nutr	System Sy	Y         N         E           tem Valv         Locked           Y         N         E           Y         N         E           Y         N         E           Y         N         E           Y         N         E           Y         N         E           Y         N         E           Y         N         E           Position         O/C         O/C           O/C         O/C         O/C	O/C es (To be     Viy. Pos     O/C es (To be     Viy. Pos     O/C     O/C	Deluge S Locke Y N ecKs Date Cycle	System	Comments Comments
2 3 4 No. 1 2 3 4 5 5 No. 1 1 2 3 4 5 6 7 7 8 9 10 11 12 13	Bearing 4 Bearing 5 MP-201 MP-200A MP-200B MP-200C MP-200D Fire Pump House Delug Warehouse/Maintenand Warehouse/Maintenand Warehouse/Maintenand Warehouse/Maintenand Warehouse/Maintenand Warehouse/Maintenand Warehouse/Maintenand Warehouse/Maintenand Warehouse/Maintenand Wast Side Power Block West Side Power Block West Side Power Block West Side Power Block West Side Cooling Tow West Side Cooling Tow West Side Cooling Tow West Side Cooling Tow N.W. Corner Chemical St East Side W.T. by Multir East Side W.T. by Multir East Side W.T. by Multir North Side Bidg 10 # 6 Between MP-444's and Beta Only West Side Po W 104 Automated Fire Systems 1	System Sy	Y         N         E           tem Valv         Locked           Y         N         E           Y         N         E           Y         N         E           Y         N         E           Y         N         E           Y         N         E           Fire         Pum         Psi           O/C         O/C         O/C           O/C         O/C <td>Contemporation     Contemporation     Contempo</td> <td>Deluge S Locke V N ecks Date Cycle</td> <td>System</td> <td>Comments Comments</td>	Contemporation     Contempo	Deluge S Locke V N ecks Date Cycle	System	Comments Comments



### Fire Pump Weekly Test Log

General Information						
Plant: Alpha 🗹 Beta 🗆	Date: 12-28-24					
	To be completed each time unit is operated.					
Operator: Jose Harcia	The NFPA Form AES 5.1must be completed weekly.					
Reason for running pumps: Weekly test D/ Maintena	ance 🛛 Emergency 🗆					
Jockey Electric Pump						
Pre-start Inspection: Electrical Feed 🛛 Mechanic	al 🖉 Valves 🗹					
Check the jockey pump on pressure drop. Start up pressure:	155 ps1					
Discharge Pressure: 165						
Pump Suction Pressure: H IVA P	ump Discharge pressure: 165					
Comments:						
Electric	Pump					
Pre-start Inspection: Electrical Feed 🗹 Mechanic	al 🖉 Valves 🗹					
Start the pump on pressure drop. Start up pressure: $\mu$ 5						
Start time: 1854						
Pump Suction Pressure: 15151 Pu	mp Discharge pressure: 150					
Stop time: 1904 Total time rur	nning <i>i Oim n</i>					
Comments:						
Diesel	Pump					
Pre-start Inspection: Coolant 🛛 Oil 🗊 Mechanic	cal 🖉 Valves 🛛 Water Jacket Heater 🖯					
Fuel level > 2/3: Yes 🖉 No 🛛 M	onthly Fuel Consumption: $N/N$					
Battery volt Crank 1: 26-5 Battery volt Crank 2: 26-5	Battery Condition: V mied cleaneng					
Starting hour meter: 132 9	Start time: ZGO(e					
Oil pressure start: 56	Oil Pressure finish: 4/2 ( 951					
Pump Suction Pressure:	Pump Discharge pressure: 145					
Coolant temperature after 30 minutes running:						
Stop time: King Stop hour meter: 132.9 Total run time: 10.	and January 1 <sup>st</sup> hour meter: Total YTD hours:					
Comments: Coolant Below minimum						
Sulfur Concentrations (less than or equal to 0.0015% on a weight p	er weight basis).					
This new direct drive fire pump engine shall be limited to use for emergency fire suppression, define no more than 30 minutes in any one hour and no more than 10 hours per year for initial start-up te number of hours necessary to comply with the testing requirements of the National Fire Protection Systems" (current edition). The hours of operation for source testing will not be counted towards of Note: Fuel consumption 27 gal/ h approximately. There is no limit on engine operation for emergency use. [Title 17 CCR 93115.6(a)(4)]	sting and compliance demonstrations. Additionally, this engine shall not be operated more than the Association (NFPA) 25-"Standards for the Inspection, Testing, and Maintenance of Water Based Fire					

1



		Valve She	d # 1 bv	Condens	er	
0.	System	PSI	Viv. Pos.		Locked	Comments
1	SG Unit 1	160	NOR	S	YND	
2	SG Unit 2	160	Solc -	~	Y M N D	
3	Reheaters	160	D/C	Y	YUND	
4	Rack 2 West HTF	160	Vp/c	S	YEND	
5	Rack 2 East HTF	160	Jo/C	-	YEND	
5	North Steel Pro	160	<b>1</b> 0/C	~~		Call les
7	HTF Pumps	(60	10/C	~~	YYND	
8	HTF Heaters		VO/C		YNND	
9	South Steel Pro	(60	2/0	V	YEND	
10	Lube Oil	160	SO/C	~	YEND	
11	Turbine Hose Stations		0/C	V	YEND	
2	Turone bearings	Valve Sh	ed # 2 b)	Overflo	99	
о.	System	PSI	Viv. Pos.	Signage	Locked	Comments
1	Expansion Vessels	165	VO/C		YUND	
2	Ullage Area 4/82-2	125	VO/C	V	YEND	
3	Ullage Structure	155	10/C	V	YUND	
4	Rack 1 Middle Area	155	0/C		YEND	
5	Overflow Tanks A/82-9	160	O/C	V	YEND	
6	Rack 1 South Area A/B2-5	160	2/C	5	YEND	
7	Rack 1 West         A./32-7           Rack 1 North Area         A/32-4	160	5/C		YEND	
8	Rack 1 North Area         \/82-4           Over flow AFFF         \/82-3	160	JO/C	V	YND	
9 10		155	1015	-	YEND	
1.5	Expansion vessel AFFT Aroc 5	ve Shed # 3 b	y Bldg 35	GE Elect	trical Bldg	
lo.	System	PSI	Viv. Pos.	Signage	Locked	Comments
1	Transformer Aux	160	<b>V</b> 0/C		YEND	
2	Transformer Main	160	O/C	~	YEND	
	Va	lve Shed # 4 b	y Cooling		West Side	Comments
lo.	System	PSI	Viv. Pos.	Signage	YEND	Comments
1	Cooling Tower West Side	Valve Shed	10/C			
-		PSI		Signage	Locked	Comments
lo.	System	165	NO/C	- Signage	YEND	
1	Control Room         A/84.5           Offices         A/84.3	145	VOIC		YUND	
2			1 AVC		YNND	
	Turbine Sprinkl	er Valves (The	ese are to	be locks	d in the o	pen position)
10.	System	Locked	Viv. Pos.			Comments
1	Bearing 2	YNND	VO/C			
2	Bearing 3	YND	VOIC			
3	Bearing 4	YUND				
4	Bearing 5	System Valve	r (To be	Incked in	the Onen	Position)
			Viv. Pos.	lockesn	Tine open	Comments
lo.	System	YND	VIV. POS.			
1	MP-201	YNND	D/C			· · · · · · · · · · · · · · · · · · ·
2	MP-200A MP-200B	YUND	NO/C			
3 4	MP-2000	YEND				
5	MP-200D	YEND	DIC			
-		Fire Pump	House D	eluge Sy	stem	
le.	System	PSI	0/C	Locked		Comments
10.		180	V	YOND	1	
1	Fire Pump House Deluge	100	PIV Cher	-		
	C	Position	Cycled	Date		Comments
lo.	System		cycicu	Cycled		
1	Warehouse/Maintenance Shop Drive Way #7	0/0				
2	Warehouse/Maintenance Shop Drive Way #8	2/C				
3	West Side Power Block by VS-3 # 9	U/C				
4	West Side Power Block by VS-1 # 10 West Side Cooling Tower by VS-4 # 11	D/C				
5	West side Cooling Tower by VS-4 # 11 West side Cooling Tower by VS-4 # 12	-0/C				
6 7	N.W. Corner Chemical Storage #1	VO/C				
3	N.E. Corner Chemical Storage # 2	Va		0		
9	East Side W,T by Multimedia Filters # 3	Voic			_	
10	East Side W.T. by Multimedia Filters # 5	Lanc	-			
11	North Side Bldg 10 # 6	VOIC				
12	Between MP-444 s and Water Treat # 4	<b>NOTC</b>			-	
13	Bata Only West Side Power Block Valve Sned #1	o Be Cycled Fi	ret Eatur	Day of Cu	any Month	
	1 21 March Markett					Comments /pages 430 of 1228-04M-
No.	System	Debris	-	age 1 of		1 ayo 400 01 1220

## Automated Fire Systems Inspection Checklist



### Fire Pump Weekly Test Loa

The Full preaky for Log						
General Information						
Plant: Alpha 🗹 🛛 Beta 🗆	Date: 12/21/24					
Operator: Antone	*To be completed each time unit is operated.					
Reason for running pumps: Weekly test 🗹 Maintenance	Emergency					
Jockey Electric	Pump					
Pre-start Inspection: Electrical Feed 🕼 Mechanical 🖪	Valves 🗗					
Check the jockey pump on pressure drop. Start up pressure: 15	5					
Discharge Pressure: NA						
Pump Suction Pressure: <b>NA</b> Pump	Discharge pressure: NA					
Comments:						
Electric Pu	mp					
Pre-start Inspection: Electrical Feed 🗹 Mechanical 🖻	Valves 🗗					
Start the pump on pressure drop. Start up pressure: 145						
Start time: 2019						
	Discharge pressure: 140					
Stop time: 2029 Total time running	10 min					
Comments:						
Diesel Pur	np					
Pre-start Inspection: Coolant 🗌 Oil 🗌 Mechanical 🗌	Valves 🛛 🛛 Water Jacket Heater 🗆					
Fuel level > 2/3: Yes 🗌 No 🗍 Month	ly Fuel Consumption:					
Battery volt Crank 1: Battery volt Crank 2: Ba	ttery Condition:					
Starting hour meter: Sta	art time:					
Oil pressure start: Oi	Pressure finish:					
Pump Suction Pressure: Pump	Discharge pressure:					
Coolant temperature after 30 minutes running:						
Stop time: Stop hour meter:	Total time running:					
Comments:						
Corroded Battery terminal, no test due	to low coolant lul					
Sulfur Concentrations (less than or equal to 0.0015% on a weight per we	eight basis).					
his new direct drive fire pump engine shall be limited to use for emergency fire suppression, defined as in ra- more than 30 minutes in any one hour and no more than 10 hours per year for initial start -up testing and co of hours necessary to comply with the testing requirements of the National Fire Protection Association ( (current edition). The hours of operation for source testing will not be counted towards either of the allow Note: Fuel consumption 27 gal/ h approximately.	esponse to a fire or due to low fire water pressure. In addition, this engine shall be operated no ompliance demonstrations. Additionally, this engine shall not be operated more than the number NFPA) 25 - "Standards for the Inspection, Testing, and Maintenance of Water Based Fire Systems"					

There is no limit on engine operation for e



		Plant: ALPH			2/20/2	11 0	perator Jase Garcia
		Plant: ALPH					erator <u> </u>
			Valve She	Viv. Pos.	Signage	Locked	Comments
1 1	SG Unit 1	em	160	V O/C	Jighage	YDIND	Commonito
2	SG Unit 2 4/31	2	160	V.0/C	V	Y,Z, ND	
3	Reheaters	3	160	V 0/C	V,	YØ,NO	
4	Rack 2 West HTF 4.3	4	160	V O/C	V,	ΥβΙΝΠ	
5	Rack 2 East HTF	5	(0)	/ 0/C	V	YØ,ND	
6	North Steel Pro 🕺 🕺		100	1,0/0	V	YZND	
7	HTF Pumps A/3		160	¥ ,0/C	V V	YZ ND	
8	HTF Heaters		160	V 0/C V 0/C	1	YZIND	
9 10	South Steel Pro A/8 Lube Oil 4/3		60	V 0/C	V	YOND	
10	Lube Oil 4/3 Turbine Hose Stations 4/3		100	V 0/C	V	YD/NU	
12		1-12	100	V O/C	V	YZND	
			Valve Sh	ed # 2 by	Overflo		
ю.	Syst	em	PSI	Viv. Pos.	Signage	Locked	Comments
1	Expansion Vessels A/B		140	V 0/C	V	YZ,ND	
2	Ullage Area A/B		140	/ O/C			
3	Ullage Structure A/B		160	/ 0/C / 0/C	V	YZ NO	
5	Rack 1 Middle Area A/B Overflow Tanks A/B		100	1/0/0	V	YZND	
5	Overflow Tanks A/B Rack 1 South Area A/B		140	V.0/C	i/	YUND	
7	Rack 1 West A/B		160	VOIC	V	YZ NO	
8	Rack 1 North Area A/B		160	1/0/C	- V.	YZ, ND	
9	Over flow AFFF A/B	2-8	100	V,0/C	V/	Y 🗹 / N 🗖	
10	Expansion Vessel AFFF A/E	32-3	160	V O/C	V	YØND	
			Valve Shed # 3 b				Comments
lo.	Syst	em	PSI 140	Viv. Pos.	Signage		Comments
1	Transformer Aux		1(0)	, OIC	V	YEND	
2	Transformer Main		Valve Shed # 4 b	v Coolin	Tower		
lo.	Syst	em	PSI	Viv. Pos.			Comments
1	Cooling Tower West Side		140	1/0/C	V	YEND	
			Valve Shed	# 5 by Co	ontrol Bic	lg 10	
lo.	Syst		PSI		Signage		Comments
1	Control Room A/B		(100	VOIC	V	YØ,NO YØ,NO	
2	Offices A/B		160	√ 0/C	1/	YZND	
3	Electrical Room A/B	Turbine Sr	prinkler Valves (The	se are to	be locke		pen position)
lo.	Syst			Viy. Pos.			Comments
1	Bearing 2		Y DY NO	V,0/C			
2	Bearing 3		YAZ NO				
3	Bearing 4		YØ/NO				
4	Bearing 5		YDIND	W o/c		the Onen	Desition)
_		and the second se	eluge System Valve	Viv.Pos.	Lockeu m	the open	Comments
lo.	Syst	em			M ISSI	100 200	d ZIP the
1	MP-201			0/0	111127	1	
2	MP-200A MP-200B		YOND	0/0			
3 4	MP-2006		YOND	0/0			
5	MP-2000		YO NO	O/C			
_			Fire Pump	House D	eluge Sys	stem	
No.	Syst	tem	PSI	0/C	Locked	18° - 1954.	Comments
1	Fire Pump House Deluge		180	0	YZND		
1	The comprise beinge		1 V V	<b>PIV</b> Chec		,	
to.	Syst	COLT I	Position	Cycled	Date		Comments
1000	Warehouse/Maintenance Sh				Cvcled		
1 2	Warehouse/Maintenance Sh Warehouse/Maintenance Sh						
3	West Side Power Block by V		V 0/C				
4	West Side Power Block by V		V.0/C			MISSI	ng som Sign
5	West Side Cooling Tower by	/VS-4 # 11	V D/C				J =
6	West side Cooling Tower by	VS-4 # 12	VOIC				
7	N.W. Corner Chemical Stora	ge #1	V O/C				
8	N.E. Corner Chemical Storag	e # 2	V O/C				
9	East Side W.T. by Multimedi		V 0/C				
10	East Side W.T. by Multimedi	a Filters # 5	V.0/C				
11	North Side Bldg 10 # 6		V 0/C 0/CV				
	ID above an MAD AAA's and Mak	or Iroot # 4				1	
12 13	Between MP-444's and Wat Beta Only West Side Power					Proto	only



The Full preekly reekly						
General Infor						
Plant: Alpha 🗹 🛛 Beta 🗆	Date: 12/14/24					
Operator: Antone	*To be completed each time unit is operated.					
Reason for running pumps: Weekly test 🖅 Maintenance	Emergency					
Jockey Electric						
Pre-start Inspection: Electrical Feed 🕪 Mechanical 🖬 Valves 📭						
Check the jockey pump on pressure drop. Start up pressure: 155						
Discharge Pressure: NA						
Pump Suction Pressure: NA Pump	Discharge pressure: NA					
Comments:						
Electric Pu						
Pre-start Inspection: Electrical Feed 🕼 Mechanical 🛙	Valves 🖌					
Start the pump on pressure drop. Start up pressure: 145						
Start time: 1453						
	Discharge pressure: 140					
Stop time: 2003 Total time running	IUMINI					
Comments:						
Diesel Pu	mp					
Pre-start Inspection: Coolant 🛛 Oil 🗆 Mechanical [	Valves 🛛 🛛 Water Jacket Heater 🗆					
Fuel level > 2/3: Yes 🛛 No 🖾 Month	nly Fuel Consumption:					
Battery volt Crank 1: Battery volt Crank 2: Ba	attery Condition:					
Starting hour meter: St	Start time:					
Oil pressure start: O	il Pressure finish:					
	o Discharge pressure:					
Coolant temperature after 30 minutes running:						
Stop time: Stop hour meter:	Total time running:					
Comments:						
Sulfur Concentrations (less than or equal to 0.0015% on a weight per w	eight basis).					
Sulfur Concentrations (less than or equal to 0.0015% on a weight per weight basis). his new direct drive fire pump engine shall be limited to use for emergency fire suppression, defined as in response to a fire or due to low fire water pressure. In addition, this engine shall be operated nore than 30 minutes in any one hour and no more than 10 hours per year for initial start-up testing and compliance demonstrations. Additionally, this engine shall not be operated more than the numb of hours necessary to comply with the testing requirements of the National Fire Protection Association (NFPA) 25-"Standards for the Inspection, Testing, and Maintenance of Water Based Fire Systems (current edition). The hours of operation for source testing will not be counted towards either of the allowable annual limits above. Note: Fuel consumption 27 gal/ h approximately. There is no limit on engine operation for emergency use. [Title 17 CCR 93115.6(a)(4)]						



	Automated					
	Plant: ALPHA					rator Sciel
		Valve She		Signage	Locked	Comments
No.	System	PSI	Viv. Pos.	Signage	Y N N	Comments
1	SG Unit 1	60	V.0/C	V	YOND	
2	SG Unit 2	140	V 0/C	1	YOND	
3	Reheaters		V 0/C	V,		
4	Rack 2 West HTF	140	VOIC		YOND	
5	Rack 2 East HTF	140	Varc	1	YOND	
5	North Steel Pro	140	1,512	V	YOND	
7	HTF Pumps		10/0		YOND	
8	HTF Heaters	60	V.0/C	V	YOND	
9	South Steel Pro	140	V. 0/C	1	YOND	
10	Lube Oil	100	V 2/C	V	YUNU	
11	Turbine Hose Stations	160	V O/C	V	YOND	
12	Turbine Bearings	100	ed # 2 by			
		-	Viv. Pos.	Signage	Locked	Comments
No.	System	PSI		Signage	YZ/ND	Comments
1	Expansion Vessels	140	Voic	V	YZND	
2	Ullage Area A/82-2	1.00		V.	YZ/ND	
3	Ullage Structure 4/52-11	100	Vp/c	V.	YZND	
4	Rack 1 Middle Area	140	V,0/C	1		
5	Overflow Tanks 4/82-9	160	V.0/C	1	YZZ, NG	
6	Rack 1 South Area A/B2-5	160	V/O/C	V	YD, NO	
7	Rack 1 West A/82-7	140	V DIC	V	YD/NG	
8	Rack 1 North Area 4/82-4	160	V DIC	- 1/	YZNO	
9	Over flow AFFF A/B2-8	liec	V D/C	VI	YUND	
10	Expansion Vessel AFFF A/82-3	1120	VO/C	CE Election		
					trical Bldg	Comments
No.	System	PSI	Viv. Pos.	Signage	Locked	Comments
1	Transformer Aux	160	V DIC	- 1/	YDYND	
2	Transformer Main	140	1 V O/C	T		
		shed # 4 b			West side	Comments
No.	System	PSI	Viv. Pos.	Signage	V PART	Comments
1	Cooling Tower West Side	140	VO/C	1 Pla	YZINƏ	
	Vi	alve Shed	# 5 by Co	SHTFOI BIC		Comments
No.	System	PSI		Signage	Locked	Comments
1	Control Room A/8415	160	V0/C		YEYND	
2	Offices A/84-3	160	NOR	V	YZND	
3	Electrical Room A, 84-4	160	20/0	1	YDYND	an position)
	Turbine Sprinkler V	alves (The	ese are to	De locke	a in the ope	Comments
No.	System		Viy. Pos.			Comments
1	Bearing 2	YZ NO	VDIC			
2	Bearing 3	YZND				
3	Bearing 4	YDYND			<u> </u>	
4	Bearing 5	YTYND	1VO/C		the Onen P	(activity of the second s
	HTF Deluge Sys			соскеа п	the upen P	Comments
No.	System		Viv. Pos.	Carl Carl		Comments
1	MP-201	YDNØ	V PIC			
2	MP-200A	YZND	V D/C	L		
3	MP-200B	YZND				
4	MP-200C	YPYD				
5	MP-200D	YPND	VOIC			
		ire Pump	House D	eluge Sys	stem	
No	System	PSI	0/C	Locked		Comments
No		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0	YEND		
1	Fire Pump House Deluge	180	PIV Cher			
	1	1	-	Date		6
No.	System	Position	Cycled	Cycled		Comments
1	Warehouse/Maintenance Shop Drive Way #7	DICV				
2	Warehouse/Maintenance Shop Drive Way #8	V O/C				
3	West Side Power Block by VS-3 # 9	V O/C				
4	West Side Power Block by VS-1 # 10	VIOIC		1000	Sign	15 broken at 11 missing
_	West Side Power Bible by VS-1 # 10 West Side Cooling Tower by VS-4 # 11	10/C				
5	West side Cooling Tower by VS-4 # 11 West side Cooling Tower by VS-4 # 12	V 0/C			1.	
6		VOIC				
7	N.W. Corner Chemical Storage #1	VDIC	-			
3	N.E. Corner Chemical Storage # 2			1		
Э	East Side W T. by Multimedia Filters # 3	V D/C				
10	East Side W.T. by Multimedia Filters # 5	V.O/C				
11	North Side Bidg 10 # 6	V O/C	-			
12	Between MP-444's and Water Treat # 4	O/CV				
13	Beta Only West Side Power Block Valve Sned #1	O/C	ma Cabure	au of tu	ery Month	
OM-MAY	THE MAKE AND A PROPERTY OF A P	Debris	ist satur	any of ev	ery mentu	Comments / Pages 434 of 1228-04M-
No.	System					

Automated Fire Systems Inspection Checklist



General Info	mation
Plant: Alpha 🗹 🛛 Beta 🗆	Date: 12/7/24
Operator: June (16/11)	*To be completed each time unit is operated.
Reason for running pumps: Weekly test I/ Maintenance	Emergency
Jockey Electri	c Pump
Pre-start Inspection: Electrical Feed 🛛 Mechanical [	Valves D
Check the jockey pump on pressure drop. Start up pressure:	1415 ps1
Discharge Pressure: 16 m	
Pump Suction Pressure: N/P Pump	o Discharge pressure: $/4 \le \rho^{5/2}$
Comments:	
Electric Pu	
Pre-start Inspection: Electrical Feed 12 Mechanical (	Valves 4
Start the pump on pressure drop. Start up pressure: $145$	
Start time: 1243 1243	· · · · · · · · · · · · · · · · · · ·
Tamp Steach Tressardi TS 191	Discharge pressure: 15-0
Stop time: 1253 Total time runnin	9 /Omin
Comments:	
Diesel Pu	Imp
Pre-start Inspection: Coolant 🗹 Oil 🗗 Mechanical	🗹 🛛 Valves 🖉 Water Jacket Heater 🛛
	hly Fuel Consumption: NA
Battery volt Crank 1: 26 Battery volt Crank 2: 26 Battery volt Crank 2: 26	attery Condition: Noded Cleaning
	tart time: 0/00
	il Pressure finish:
Pump Suction Pressure: 10051 Pum	p Discharge pressure: 165 is i
Coolant temperature after 30 minutes running: 145 F	
	Total time running: Start
Comments:	
Sulfur Concentrations (less than or equal to 0.0015% on a weight per w	reight basis).
his new direct drive fire pump engine shall be limited to use for emergency fire suppression, defined as in more than 30 minutes in any one hour and no more than 10 hours per year for initial start -up testing and of hours necessary to comply with the testing requirements of the National Fire Protection Association (current edition). The hours of operation for source testing will not be counted towards either of the all Note: Fuel consumption 27 gal/ h approximately. There is no limit on engine operation for emergency use, [Title 17 CCR 93115.6(a)(4)]	response to a fire or due to low fire water pressure. In addition, this engine shall be operated no compliance demonstrations. Additionally, this engine shall not be operated more than the number (NFPA) 25-"Standards for the Inspection, Testing, and Maintenance of Water Based Fire Systems"



	Plant:	ALPHA 🗹 BETA: 🕻		Date: 12	16/2	<b>ц</b> "	perator Antonc
	Tunt.				Condense		
lo.	System	PSI		Viv. Pos.	Signage	Locked	Comments
1	SG Unit 1	160	7	VOIC	V	VEND	
2	56 Unit 2 4/81-2	1.bl	0	V 9/C	Vr	YEND	
3	Reheaters	16	0	Q/C	V/	YEND	Charles and the second s
4	Rack 2 West HTF 4(3) 4	15		Jaic	V	YND	
5	Rack 2 East HTF A/81-5		2	VO/C	- V	YEND	
6	North Steel Pro A/81-6			VIC	1	YEND	
7	HTE Pumps		4	VOIC		YUND	
8	HTF Heaters 4/31-3	161		VO/C	V	YEND	
9	South Steel Pro A/31-9			JO/C		YDND	
10 11	Lube Oil A/B1-30 Turbine Hose Stations A/B1-31	15		A/C	V.	YND	
12	Turbine Bearings 4/31-12	16	0	VO/C	~	YZND	
12	Turbine bearings	Valve	She	ed # 2 by	Overflow	V	
lo.	System	PSI		Viv. Pos.	Signage	Locked	Comments
1	Expansion Vessels A/B2-1	16		VO/C	V	YNND	
2	Ullage Area A/82-2	16	5	VAC	1	YOND	
3	Ullage Structure A/B2-11		2	VO/C		YDYND	
4	Rack 1 Middle Area A/B2-5	15	2	Vo/c	1	YDND	
5	Overflow Tanks A/82-9		7	VO/C	1	YDND	
6	Rack 1 South Area         A/B2-6           Rack 1 West         A/B2-7		X I	Varc	1	YEND	
7 8	Rack 1 West A/B2-7 Rack 1 North Area A/B2-4	12	0	Varc		YNND	
9	Over flow AFFF A/32-8	15	T	DE	VI	YEND	
10	Expansion Vessel AFFF A/B2-3	14	50	VO/C		YNND	
10		Valve Shed #	3 by	Bidg 35		rical Bldg	
No.	System	PSI		Viv Pos.	Signage	Locked	Comments
1	Transformer Aux	14		v xc	1	YOND	
2	Transformer Main	Valve Shed #		Vo/c	Towar		
		valve Shed #		Viv. Pos.	Signage	VEST SIGE	Comments
No.	System	161		NO/C	Signage	YNND	
1	Cooling Tower West Side	Valve Sh	ed #	# 5 by Co	ntrol Bld		
	Suctant	PSI		Viv Pos.		Locked	Comments
No.	Control Room A/B4-5	16		VOIC	Ve	YOUND	
1	Offices A/B4-3	16		VOIC		YEAD	
3	Classical Ream A/R4-4	10	.0	VO/C	V	YZND	
	Turb	ine Sprinkler Valves (	The	se are to	be locke	d in the o	pen position)
No.	System	Lock		Viv Pos.			Comments
1	Bearing 2	YWY		arc			
2	Bearing 3	YUN					
3	Bearing 4	Y		VOK			
4	Bearing 5	TF Deluge System Va		/O/C	ocked in	the Oner	Position)
		Locia		Viv. Pos.		une oper	Comments
No.	System	YY		VOXC	8 F.U.		
1	MP-201 MP-200A	YN					
2	MP-2008	YUA	ND	a/c			
4	MP-2000	YZ		JO/C			
5	MP-200D			6/C			
-		Fire Pu	mp	House D	eluge Sys	tem	
No.	System	PSI	1.14	O/C	Locked		Comments
1	Fire Pump House Deluge	19	n	V	YUND		
1 -	The Full p House Deluge		V.	<b>PIV</b> Chec	ks		
	Combran	Positi		Cycled	Date		Comments
No.	System		X	eyence	Cvcled		
1	Warehouse/Maintenance Shop Driv		- A				
2	Warehouse/Maintenance Shop Driv West Side Power Block by VS-3 # 9		c				
3	West Side Power Block by VS-3 # 9 West Side Power Block by VS-1 # 1		C				
4	West Side Cooling Tower by VS-4 #		C				
5	West side Cooling Tower by VS-4 #		С				
7	N.W. Comer Chemical Storage #1		С				
	N.E. Corner Chemical Storage # 2	101	С				
_	East Side W.T. by Multimedia Filters	#3 10/	C				
8	East Side W.T. by Multimedia Filters		C				
8	East Side w. 1. by wultimedia i mera				4		
8 9	North Side Bldg 10 # 6						
8 9 10	North Side Bldg 10 # 6 Between MP-444's and Water Treat	<b>≠</b> 4 <b>√</b> 0/	C				
8 9 10 11 12 13	North Side Bldg 10 # 6	# 4 0/ alve Sned #1 0/	rc rc	ak Cashirin	by of E	ny Month	Dege 436 of 1228 Comments / Actions FO-O&M



# Fire Pump Weekly Test Log

The Full precky feet Log					
General Infor	General Information				
Plant: Alpha 🗹 🛛 Beta 🗆	Date: 12/1/24				
Operator: Antone	*To be completed each time unit is operated.				
Reason for running pumps: Weekly test 🕼 Maintenance	✔ Emergency □				
Jockey Electric	Pump				
Pre-start Inspection: Electrical Feed 🛛 Mechanical 🗉	Valves 🔽				
Check the jockey pump on pressure drop. Start up pressure: 15	4				
Discharge Pressure: 110					
Pump Suction Pressure: Pump	Discharge pressure:				
Comments:					
Electric Pu					
Pre-start Inspection: Electrical Feed 🗹 Mechanical 🖬	Valves 🖬				
Start the pump on pressure drop. Start up pressure: ነዛ ና					
Start time: 0107					
	Discharge pressure: 140				
Stop time: 0117 Total time running 10 min J					
Comments:					
Diesel Pu					
Pre-start Inspection: Coolant 🛛 Oil 🗆 Mechanical 🛙					
	ly Fuel Consumption:				
Battery volt Crank 1: Battery volt Crank 2: Ba	ttery Condition:				
	art time:				
	Pressure finish:				
	Discharge pressure:				
Coolant temperature after 30 minutes running:					
Stop time: Stop hour meter:	Total time running:				
Comments:					
Sulfur Concentrations (less than or equal to 0.0015% on a weight per weight basis).					
his new direct drive fire pump engine shall be limited to use for emergency fire suppression, defined as in more than 30 minutes in any one hour and no more than 10 hours per year for initial start-up testing and c of hours necessary to comply with the testing requirements of the National Fire Protection Association ( (current edition). The hours of operation for source testing will not be counted towards either of the allow Note: Fuel consumption 27 gal/ h approximately. There is no limit on engine operation for emergency use. [Title 17 CCR 93115.6(a)(4)]	sponse to a fire or due to low fire water pressure. In addition, this engine shall be operated no ompliance demonstrations. Additionally, this engine shall not be operated more than the number NFPA) 25 - "Standards for the Inspection, Testing, and Maintenance of Water Based Fire Systems"				

42134 Harper Lake Road Hinkley, California 92347 Phone: 760 308 0400

# **Appendix I**

# Air Quality 54

# **Gasoline Tank Annual Test**

#### MOJAVE DESERT AIR QUALITY MANAGEMENT DISTRICT Brad Poiriez, Executive Director

**BRAD POIRIEZ**, *EXECUTIVE DIRECTOR* 14306 Park Avenue, Victorville, CA 92392-2310 760.245.1661 • Fax 760.245.2022 www.MDAQMD.ca.gov • @MDAQMD

# **Rule 461 Pass/Fail Test Results**

**REQUIRED** 30 days after testing

#### Submit form to VaporRecoveryTesting@mdaqmd.ca.gov

PLEASE TYPE OR PRINT

Test date: 04/23/2024



# **Section 1: MDAQMD information**

Company No.: Mojave Solar, LLC.	Facility No.: 3130	Permit No.: N0011039
---------------------------------	--------------------	----------------------

## Section 2: Test results

Aboveground Storage Tank Standing Loss EVR	Aboveground Storage Tank Phase I & II Pre-EVR		
Pass       Fail         TP-201.1E       Leak rate & cracking pressure of P/V vent valves         Aboveground Storage Tank Phase I & II EVR         Pass       Fail         TP-206.3       Static pressure performance	Pass       Fail         TP-201.6       Liquid removal test         TP-201.3       2-inch pressure decay         TP-201.4       Dynamic back pressure         Ex. 4       Vapor return integrity Healy G-70-187         Ex. 5       Fillneck vapor pressure Healy G-70-187		
TP-201.4 Dynamic back pressure	Underground Storage Tank Phase I EVR		
Image: TP-201.6C       Liquid removal test procedure         Image: TP-201.1E       Leak rate & cracking pressure of P/V vent valves         Image: TP-201.3B       AST static pressure performance         Image: TP-201.3B       AST static pressure performance         Image: TP-201.3B       Ex. 7	Pass       Fail         TP-201.3       2-inch WC static pressure         TP-201.1B       Static torque of rotable Phase I adaptors         TP-201.1C/D       Pressure integrity drop tube/drain valve         Leak rate & cracking pressure of P/V vent valves		
Underground Storage Tank Phase II EVR - ASSIST			
Pass       Fail         Pass       Fail         Ex. 4       Determination of static pressure performance of the Healy Clean Air Separator       Pass       Fail         Ex. 5       Vapor to liquid volume ratio       Ex. 10       FFS INCON ISD operability test         Ex. 7       Nozzle bag test procedure (start up and after drive off)       Ex. 11       Liquid condensate trap compliance procedure         Ex. 9       Liquid condensate trap compliance test       Ex. 12       Veeder-Root maintenance tracker (optional)			
Underground Storage Tank Phase II EVR - BALANCE			
Pass       Fail         Image: Problem in the performance of VR systems       Determination of 2-inch WC static pressure performance of VR systems         Image: Problem in the performance of VR systems       Dynamic back pressure         Image: Problem in the performance of VR systems       Problem interval to the performance of VR systems         Image: Problem interval       Ex. 4       Required items in conducting TP-201.3         Image: Problem interval       Ex. 5       Liquid removal test procedure (TP-201.6C)         Image: Problem interval       Ex. 6       Required items in conducting TP-201.4         Image: Problem interval       Ex. 7       Nozzle bag test procedure (annually per IOM)         Image: Problem interval       Ex. 8       VST ECS; hydrocarbon sensor verification test procedure         Image: Problem interval       Ex. 9       VST ECS; determination of processor activation pressure         Image: Problem interval       Ex. 10       Vapor pressure sensor verification test procedure	Pass       Fail         Veeder-Root vapor polisher; operability test procedure         Ex. 11       Veeder-Root vapor polisher; hydrocarbon emissions verification test procedure         Ex. 12       Veeder-Root vapor polisher; hydrocarbon emissions verification test procedure         Ex. 13       Hirt VCS 100 processor; operability test procedure         Franklin fueling systems CAS; static pressure performance test procedure         Ex. 14       Franklin fueling systems CAS; static pressure performance test procedure         Ex. 15       VST Green Machine compliance test procedure         Ex. 16       Liquid condensate trap compliance test procedure         Ex. 17       Veeder-Root, ISD operability test (flow meter test)         Ex. 18       Veeder-Root maintenance tracker security feature         Ex. 19       INCON flow meter operability test procedure		

# Section 3: Additional information

Comments/notes:

# **Rule 461 Vapor Recovery System Test Results Summary**

Your Gasoline Dispensing Facility (GDF) has <u>Passed</u> on or more of the following California Air Resources Board (CARB) Performance Tests on your Gasoline Vapor Recovery System:

□ <b>TP-201.3</b>	Static Pressure Performance Test (Leak Decay)	□ <b>TP-201.1B</b>	Static Torque of Rotatable Phase I Adaptors
TP-201.3B	Static Pressure Performance Test - Dispensing Facilities with AST's	□ <b>TP-201.1</b> C	Leak Rate of Drop Tube/Drain Valve Assembly
TP-201.4	Dynamic Back Pressure Test		Leak Rate and Cracking Pressure of Pressure/Vacuum Vent Valves
□ TP-201.5	Air to Liquid Ratio Test	□ TP-206.3	Static Pressure Performance Test - Dispensing Facilities with AST's
<b>TP-201.6</b> C	Liquid Removal Rate Test	<b>Other:</b>	

Your Gasoline Dispensing Facility (GDF) has **Failed** on or more of the following California Air Resources Board (CARB) Performance Tests on your Gasoline Vapor Recovery System:

□ TP-201.3	Static Pressure Performance Test (Leak Decay)	□ TP-201.1B	Static Torque of Rotatable Phase I Adaptors
□ TP-201.3B	Static Pressure Performance Test - Dispensing Facilities with AST's	□ TP-201.1C	Leak Rate of Drop Tube/Drain Valve Assembly
□ TP-201.4	Dynamic Back Pressure Test	$\square$ $P_{2011R}$	Leak Rate and Cracking Pressure of Pressure/Vacuum Vent Valves
□ TP-201.5	Air to Liquid Ratio Test	□ TP-206.3	Static Pressure Performance Test - Dispensing Facilities with AST's
□ <b>TP-201.6</b> C	Liquid Removal Rate Test	D Other:	

Rule 461 (e)(5) states that the Owner/Operator shall not operate or resume operation of a Gasoline Transfer and Dispensing Facility, unless the facility has successfully passed the applicable Performance and Reverification Tests.

Continued operation of your Gasoline Dispensing Facility (GDF) without passing tests is a violation of AQMD and APCD Regulations and California Health and Safety Code. You may be subject to substantial financial and other legal penalties.

Notwithstanding the above, when a dispenser associated with any equipment that fails a reverification test, it must be isolated and shut down. The Owner/Operator may continue operation of the remaining equipment if the test results demonstrate that the remaining equipment is functioning in good operating comdition. All test results and the method of isolating the defective equipment shall be documented in the test reports to be submitted to the Executive Officer pursuant to subparagraph (e)(7)(C), and also maintained/logged in the O & M Manual on site.

In South Coast AQMD; You may seek administrative relief from the regulations by filing a petition with the Hearing Board. **Be aware that filing a petition for relief does not authorize you to dispense gasoline**; you must wait until the Hearing Board reviews your case. Information concerning the Hearing Board can be obtained by calling the Clerk of the Board at 909 396-2500 from 7:30 AM to 5:30 PM, Tuesday through Friday.

GDF Contact: M	ahnaz Ghamatí / 760 498-0549	Signature:	my d		
Testing Person:	Marco Camargo	Signature:	(MAN)	~ ~	
Testing Company:	Orange Coast Petroleum Equípment		Testing	Person ID No.:	175734
Facility Name:	Mojave Solar, LLC		AQMD	Facility ID No.:	3130
Facility Address:	42134 Harper Lake Rd Hinkley, CA	92347	Date:	4/23/2	024

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# 2 Inch Static Pressure Performance Test TP-201.3B

Ref. No.:	Notified	lesting	Company		
AQMD Id:	3130				
Site Name:	Mojave Solar, LLC	Name:	Orange Coast	Orange Coast Petroleum Equipment	
Address:	42134 Harper Lake Rd	Address:	1015 N Parke	r St	
	Hinkley, CA 92347		Orange, CA 9	2867	
Phone:	760 498-0549	Phone:	714 744-4049		
Phase I Syste	m? 402-D	Tanks	Manifolded?	No	
Phase II Syste	em? G-70-52-AM	Vapor	Pot Present?	No	
Total # of Nozzl	es 1	Total # of Tanks	1		
Products per No	ozzle 1				
			1		_

Tank Information			<u>2</u>	<u>3</u>	<u>4</u>	All
1.	Product Grade	87/UNLD				87/UNLD
2.	Actual Tank Capacity, gallons	2044				2044
3.	Gasoline Volume, gallons	1283				1283
4.	Ullage, <b>(V)</b> gallons (line #2 minus line#3)	761				761
	Test Information	1	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
5.	Start time	8:30am	8:55am			
6.	Initial Test Pressure, inches H2O	2.00	2.00			
7.	Pressure after 1 minute, inches H <sub>2</sub> O	0.00	2.03			
8.	Pressure after 2 minutes, inches H <sub>2</sub> O	0.00	2.02			
9.	Pressure after 3 minutes, inches H2O	0.00	1.99			
10.	Pressure after 4 minutes, inches H <sub>2</sub> O	0.00	1.96			
11.	Pressure after 5 minutes, inches H2O	0.00	1.92			
12.	Allowable Final Pressure	0.74	0.74			
13.	Pass / Fail (Enter "GF" for Gross failure)	GF	Pass			

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[1522]F
on.

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ojave

Liquid Removal TP 201.6 C

	Testing Company         *Note: If using short version, disregard adhesion/evaporation column.         Name:       Orange Coast Petroleum Equipment         Address:       1015 N Parker St         Orange, CA 92867       Phone:         Phone:       714 744-4049	Comments (Liquid Drained - No Test required if less than 25mL) 0 Liquid Drained, No Test. 175734 175734 4/23/2024	
	mpany n, disregard adhesio Orange Coast Petr 1015 N Parker St Orange, CA 92867 714 744-4049	Removal C Rate ml/gal (L 	
	Testing Company ng short version, disreg Name: Orange Address: 1015 N Orange Phone: 714 744	Adhesion/ Evaporation (////), ml. 	
	*Note: If usi	Gasoline Remaining (VF), ml.	
		Dispensing Rate (GPM) 60(G) / (T)	
		Dispense Time (T), sec.	
		Gasoline Dispensed Ti (G), gal. (T) 0 0 Marco Camargo	
	Notified 3130 Mojave Solar, LLC 42134 Harper Lake Rd Hinkley, CA 92347 760 498-0549	Gasoline Added (VI), ml. 0 0	
	Notified 3130 Mojave Solar, LLC 42134 Harper Lak Hinkley, CA 92347 760 498-0549	Product Grade 87/UNLD Be:	
a resurgered in U.B.	Ref. No.: AQMD Id.: Site Name: Address: Phone:	Dispenser Dispenser Number Number O Signature: Signature: Bage 442 of 1228	



# Dynamic Pressure TP 201.4

Ref. No.:				Testing Con	<u>ipany</u>
AQMD Id:	3130				
Site Name:	Mojave S	Solar, LLC		Name: Ora	nge Coast Petroleum Equipment
Address:	42134 H	arper Lake Rd		Address: 101	5 N Parker St
		CA 92347		Ora	nge, CA 92867
Phone:	760 498-			Phone: 714	744-4049
Dispenser	Product	Nozzle Mfg.	60	80	Comments
Number	Grade	& Model Num.	CFH	CFH	
1	87	VST-EVR-NBBK-2	.30	.56	Passed, SN: GS 47214

11/6/2023	Rotameter calibration date (Annual)
11/6/2023	Pressure measuring device calibration date (Annual)
8:15am	Time of back pressure unit leak check (Prior to each sites' tests)
+.50	Final pressure decay of back pressure unit in 5 minute.

Tester:	Marco Camargo
Signature	
	V.

Tester Id:

175734

Test Date:

4/23/2024

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# Leak Rate and Cracking Pressure of P/V Vent Valves

Ref. No.:	Notified	
AQMD Id:	3130	
Site Name:	Mojave Solar, LLC	
Address:	42134 Harper Lake Rd	
	Hinkley, CA 92347	
Phone:	760 498-0549	

## **Testing Company**

Name:	Orange Coast Petroleum Equipment
Address:	1015 N Parker St
	Orange, CA 92867
Phone:	714 744-4049

Calibration Date of Flow Meter:

Calibration Date of Pressure Gauge:

2/16/2024

P/V Valve Manufacturer:	Husky	Model Number:	5885	Pass/Fail:	Pass
Manufacturer Specified Positive Leak Rate (CFH):	.05	Manufacturer Specified Negative Leak Rate (CFH):		.21	
Measured Positive Leak Rate(CFH)	.03	Measured Negative Leak Rate (CFH)		.04	
Positive Cracking Pressure (in. H2O)	3.12"	Negative Cracking Pr	essure (in. H2O)	-8.06"	
Serial No.: 0080647461	Remove After Date:	2-2027	Next Test Due:	4-2025	

11/6/2023

P/V Valve Manufacturer:		Model Number:	Pass/Fail:
Manufacturer Specified Positive Leak Rate (CFH):		Manufacturer Specified Negative Leak Rate (CFH):	
Measured Positive Leak Rate(CFH)		Measured Negative Leak Rate (CFH)	
Positive Cracking Pressure (in. H2O)		Negative Cracking Pressure (in. H2O)	
Serial No.:	Remove After Date:	Next Test Due:	

P/V Valve Manufacturer:		Model Number:	Pass/Fail:
Manufacturer Specified		Manufacturer Specified	
Positive Leak Rate (CFH):		Negative Leak Rate (CFH):	
Measured Positive Leak Rate(CFH)		Measured Negative Leak Rate (CFH)	
Positive Cracking Pressure (in. H2O)		Negative Cracking Pressure (in. H2O)	
Serial No.:	Remove After Date:	Next Test Due:	

P/V Valve Manufacturer:		Model Number:	Pass/Fail:
Manufacturer Specified		Manufacturer Specified	
Positive Leak Rate (CFH):		Negative Leak Rate (CFH):	
Measured Positive Leak Rate(CFH)		Measured Negative Leak Rate (CFH)	
Positive Cracking Pressure (in. H2O)		Negative Cracking Pressure (in. H2O)	
Serial No.:	Remove After Date:	Next Test Due:	

P/V Valve Manufacturer:		Model Number:	Pass/Fail:
Manufacturer Specified		Manufacturer Specified	
Positive Leak Rate (CFH):		Negative Leak Rate (CFH):	
Measured Positive Leak Rate(CFH)		Measured Negative Leak Rate (CFH)	
Positive Cracking Pressure (in. H2O)		Negative Cracking Pressure (in. H2O)	
Serial No.:	Remove After Date:	Next Test Due:	

Tester:	
Signature:	

Marco Camargo

Tester Id: 175734

Test Date:

4/23/2024

Page 444 of 1228



Ref. Number:

Notified

# **Repair Log:**

Leaky 4" Street 90 Elbow (Mor Bros 4" Vapor Adaptor) - Leaking Fuel Vapors

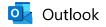
Removed, Redoped & Re-installed 4" Street 90 & Mor Bros 4" Vapor Adaptor

# **Comments:**

TP-201.3B: Initital Test Failed = Gross Fail

Repaired Leaky 4" Street 90 Elbow

Re-test after Repair: Passed



### Air Quality Testing Notification- Mojave Solar, LLC.- Hinkley

From VaporRecoveryTesting@mdaqmd.ca.gov <VaporRecoveryTesting@mdaqmd.ca.gov>

Date Wed 3/20/2024 2:06 PM

To mdiaz@ocpetroleum.com <mdiaz@ocpetroleum.com>

Thank you for your submission. Your email has been received and will be reviewed by MDAQMD staff. We will be in contact with you should we have questions or require additional information.

For Test Notifications: 24 hours' notice is required for test cancellations.

Please see our test policy at: <a href="https://www.mdaqmd.ca.gov/home/showpublisheddocument/9020/637684345665770000">https://www.mdaqmd.ca.gov/home/showpublisheddocument/9020/637684345665770000</a>

Phase II EVR Console Replacements/Upgrades: https://www.mdaqmd.ca.gov/home/showpublisheddocument/9905

From: mdiaz@ocpetroleum.com
Sent: 3/20/2024 2:06:21 PM -07:00
To: VaporRecoveryTesting@mdaqmd.ca.gov
Subject: Air Quality Testing Notification- Mojave Solar, LLC.- Hinkley Good afternoon,

Please see attachment for Mojave Solar, LLC in Hinkley.

Feel free to contact us with any questions.

Thank you,

Mary Diaz Orange Coast Petroleum Equipment, Inc. 1015 N. Parker St. Orange, CA 92867 Phone: (714) 744-4049 Fax: (714) 744-0638 www.ocpetroleum.com

42134 Harper Lake Road Hinkley, California 92347 Phone: 760 308 0400

# **Appendix J**

# Air Quality 58

# **Gasoline Tank Usage**

42134 Harper Lake Road Phone: 760 308 0400 Hinkley, California 92347

## **Submitted Electronically**

Subject:	09-AFC-5C
<b>Condition Number:</b>	AQ-58
Description:	Annual Fuel Throughput 2024
Submittal Number:	AQ58-08-00

January 13, 2025

Ashley Gutierrez, CPM California Energy Commission 1516 Ninth Street Sacramento, CA 95814 <u>Ashley.Gutierrez@energy.ca.gov</u>

May Mamari, Air Quality Engineer MDAQMD Mojave Desert Air Quality Management District 14306 Park Avenue Victorville, CA 92392 <u>mmamari@mdaqmd.ca.gov</u>

Ms. Gutierrez and Ms. Mamari,

The attached documentation is submitted for your records as stated on the Permit to Operate for the gasoline dispensing facility.

For your convenience, the compliance language is included below. Please note that the current permitted gasoline throughput is 450,000 gallons per year.

**AQ-58**. The annual throughput of gasoline shall not exceed 600,000 gallons per year. Throughput Records shall be kept on site and available to District personnel upon request. Before this annual throughput can be increased the facility may be required to submit to the District a site-specific Health Risk Assessment in accord with a District approved plan. In addition, public notice and/or comment period may be required. [Regulation XIII; Rule 204]

**Verification:** The project owner shall submit to the CPM gasoline throughput records demonstrating compliance with this condition as part of the Annual Compliance Report. The project owner shall maintain on site the annual gasoline throughput records and shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

42134 Harper Lake Road Hinkley, California 92347 Phone: 760 308 0400

Should you have any questions or comments, please do not t hesitate to contact me.

Sincerely,

Mahnaz Ghamati Quality, Environmental & Compliance Manager **Mojave Solar Project** 42134 Harper Lake Rd Hinkley, CA 92347 Cell: (760) 498-0549 <u>mahnaz.ghamati@atlantica.com</u>

Attachments: MDAQMD Throughput Fuel Dispensing Equipment form 2024 annual report.

MOJAVE DESERT AIR QUALITY MANAGEMENT DISTRICT BRAD POIRIEZ, EXECUTIVE DIRECTOR 14306 Park Avenue, Victorville, CA 92392-2310 760.245.1661 • www.MDAQMD.ca.gov • @MDAQMD

# Throughput Fuel Dispensing Equipment



Failure to respond no later than Feb. 28 will result in enforcement action.

# Emission year: 2024

### Fill out sections in gray and return to Mojave Desert Air Quality Management District at the address listed at the top of this document, or email completed form to VaporRecoveryTesting@mdaqmd.ca.gov.

STATION NAME: Mojave Solar LLC		COMPA	NY NUMBER:	FACILITY 3130	NUMBER:	DISTRICT PERMIT NUMBER: N011039
STATION ADDRESS: 42134 Harper Lake Rd				STATE:	ZIP: 92347	
TELEPHONE NUMBER: <b>760-308-0418</b>			EMAIL ADDRE mahnaz.gl		atlantica	a.com
TYPE OF FUEL DISPENSED: TOTAL GALLONS DISPENSED IN EMISSION YEAR:   Gasoline 19,743   Diesel fuel 29,365   Propane			YEAR:			
		CERTI	FICATION			
	I, Mahnaz Ghamati NAME OF OFFICIAL , a responsible official of			l of		
Mojave Solar	Mojave Solar LLC NAME OF FACILITY , hereby certify, based upon information and					
belief formed after reasonable inquiry, that the above information is true, accurate and						
complete. Executed this <u>13</u> day of <u>January</u> , <u>2025</u> at						
San Bernardino County, California						

# For questions or assistance, call 760.245.1661.



# **GDF Throughput Record** Calendar Year 2024

Month	Gallons of Diesel
January	16,761
February	0
March	1,800
April	800
May	700
June	1,001
July	1,486
August	2,631
September	1,048
October	1,017
November	1,002
December	1,118
Total for the Year	29,365



# **GDF Throughput Record** Calendar Year 2024

Month	Gallons of Gasoline
January	2,469
February	1,764
March	1,445
April	1,409
May	1,400
June	1,252
July	2,062
August	2,196
September	1,458
October	1,487
November	1,457
December	1,344
Total for the Year	19,743

42134 Harper Lake Road Hinkley, California 92347 Phone: 760 308 0400

**Appendix K** 

# Air Quality 63,65,66,72

# Carbon Adsorption System – Annual Test, Control Efficiency

42134 Harper Lake Road Phone: 760 308 0400 Hinkley, California 92347

### **Submitted Electronically**

Subject:	09-AFC-5C
<b>Condition Number:</b>	AQ-72
Description:	Annual Compliance Test for VOC & Benzene Emissions,
	Carbon System (09-AFC-5C) 2024
Submittal Number:	AQ72-16-00

July 24, 2024

Ashley Gutierrez, CPM California Energy Commission 1516 Ninth Street Sacramento, CA 95814 <u>Ashley.Gutierrez@energy.ca.gov</u>

Mrs. Gutierrez,

Pursuant to Condition of Certification AQ-72, we are submitting the Protocol for VOC & Benzene Emissions Testing on Carbon Adsorption systems of the Mojave Solar Project for your review and records.

Please accept this letter as a formal invitation to witness the test. The confirmed schedule for the test is August 14<sup>th</sup>, 2024. The test protocol and the tentative test date were submited to the Mojave Desert Air Quality Management District (MDAQMD) on June 10<sup>th</sup>, 2024.

For your convenience, we are including the Compliance verification language below:

The project owner shall provide a compliance test protocol to the District for approval and CPM for review at least thirty (30) days prior to the compliance tests. The project owner shall notify the District and the CPM within ten (10) working days before the execution of the compliance tests required in AQ-73 and AQ-74, and the test results shall be submitted to the District and to the CPM within forty-five (45) days after the tests are conducted.

Should you have any questions or comments, please don't hesitate to contact me.

Sincerely,

42134 Harper Lake Road Hinkley, California 92347 Phone: 760 308 0400

Mahnaz Ghamati

Quality, Environmental & Compliance Manager **ASI Operations LLC** 42134 Harper Lake Rd Hinkley, CA 92347 Cell: (760) 498-0549 mahnaz.ghamati@atlantica.com

Attachments: Test protocol and MDAQMD's submittal communication.



June 10, 2024

Chris Anderson Mojave Desert Air Quality Management District 14306 Park Avenue Victorville, California 92392

#### Subject: Test Protocol for Emissions Testing of Two Carbon Adsorption Units Document Number: W002AS-042458-PP-1051

Dear Chris:

Enclosed you will find two copies of the source test protocol for the proposed compliance testing on two (2) carbon adsorption units at the Mojave Solar facility in Hinkley, California. The test is tentatively scheduled to be conducted on August 14, 2024, pending protocol approval. We are submitting it on behalf of Mahnaz Ghamati of Mojave Solar, LLC.

Please call me at (714) 332-8486 if you have any questions.

Sincerely,

Joe Rubio Project Manager **Montrose Air Quality Services, LLC** 

cc: Mahnaz Ghamati - Mojave Solar, LLC

# SOURCE TEST PROTOCOL FOR 2024 COMPLIANCE TESTING OF TWO CARBON ADSORPTION UNITS AT MOJAVE SOLAR, LLC HINKLEY, CALIFORNIA

Prepared For:

## Mojave Solar, LLC 42134 Harper Lake Road

Hinkley, California 92347

For Submittal to:

# **Mojave Desert Air Quality Management District** 14306 Park Ave Victorville, California 92392

Prepared By:

# Montrose Air Quality Services, LLC

1631 E. St. Andrew Pl. Santa Ana, California 92705 (714) 279-6777

Joe Rubio

Production Date: June 10, 2024 Document Number: W002AS-042458-PP-1051





## **CONFIDENTIALITY STATEMENT**

Except as otherwise required by law or regulation, this information contained in this communication is intended exclusively for the individual or entity to which it is addressed. This communication may contain information that is proprietary, privileged or confidential or otherwise legally exempt from disclosure. If you are not the named addressee, you are not authorized to read, print, retain, copy, or disseminate this message or any part of it.



## **REVIEW AND CERTIFICATION**

I certify that, to the best of my knowledge, the information contained in this document is complete and accurate and conforms to the requirements of the Montrose Quality Management System and ASTM D7036-04.

Signature:	Joe Rulu	Date:	6/10/2024
Name:	Joe Rubio	Title:	Client Project Manager

I have reviewed, technically and editorially, details and other appropriate written materials contained herein. I hereby certify that to the best of my knowledge the presented material is authentic and accurate and conforms to the requirements of the Montrose Quality Management System and ASTM D7036-04.

Signature:	5.	Hugh Brown	Date:	6/10/2024

Name:	S. Hugh Brown	Title:	Client Project Manager



## **GENERAL INFORMATION**

Source:	Carbon Adsorption System (CAS) – Alpha Carbon Adsorption System (CAS) – Beta
Source Location:	Mojave Solar, LLC 42134 Harper Lake Road Hinkley, California 92347
Contact:	Mahnaz Ghamati Telephone: (760) 308-0418 Email: <u>Mahnaz.ghamati@atlantica.com</u>
Permit Number:	C012015 – CAS Alpha C012016 – CAS Beta
Agency:	Mojave Desert Air Quality Management District 14306 Park Avenue Victorville, California 92392-4178
Contact:	Chris Anderson Telephone: (760) 245-1661 Email: <u>canderson@mdaqmd.ca.gov</u>
Source Test Contractor:	Montrose Air Quality Services, LLC 1631 E. St. Andrew PI. Santa Ana, California 92705
Project Manager:	Joe Rubio Telephone: (714) 332-8486 Email: j <u>rubio@montrose-env.com</u>
Proposed Test Date:	August 14, 2024



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## 1.0 INTRODUCTION

Montrose Air Quality Services, LLC (MAQS) was hired by Mojave Solar, LLC to conduct source emissions tests on two (2) Carbon Adsorption Systems (CAS) located in Hinkley, California. The purpose of the test will be to satisfy the compliance test requirements of the Mojave Desert Air Quality Management District (MDAQMD) Authority to Construct No. C012015 for the Alpha System and Authority to Construct No. C012016 for the Beta System.

Testing will be performed to meet the requirements of Mojave Solar, the MDAQMD, and the United States Environmental Protection Agency (U.S. EPA), as applicable. Appendix A contains MAQS' SCAQMD, CARB, and STAC certifications, and a Statement of No Conflict of Interest. MAQS qualifies as an independent testing laboratory under SCAQMD Rule 304 (no conflicts of interest). MAQS will have a qualified individual on-site as required by ASTM-D7036-04.



## 2.0 EQUIPMENT AND PROCESS DESCRIPTION

### 2.1 UNIT DESCRIPTION

This is a carbon adsorption HTF Ullage/Expansion System (Alpha and Beta) consisting of Authority to Construct Modification dated March 2020 to update the carbon adsorption system having two (2) multi-bed carbon filter sets capturing ullage/expansion system emissions and having a high and low-pressure side. The expansion vessel vents on the high-pressure side and the overflow tank vents on the low-pressure side. The high-pressure and low-pressure sides of each vent to three vertical carbon cylindrical vessels (carbon beds) are described below. Flow through each vessel is vertical and each side (three vessels), will be interconnected using a pipe rack system that allows the vessels to operate in series (lead/lag), parallel, or single vessel. Sample ports are located at the inlet and outlet of each carbon bed. Optimally the system will operate in lead/lag flow, with a third canister on standby, with other operating configurations for maintenance and high flow events. Both high-pressure and low-pressure vent to the atmosphere through one common stack.

<u>High-Pressure Side</u> Dimensions: 54" OD bed x 114" side shell Bed Area: (53.25" ID) = 15.466 square feet Nominal Flow Rate (cfm): 1,546.60 CFM Carbon Capacity: 3,000 pounds Fittings: 8"

Low-Pressure Side Dimensions: 36" OD bed x 108" side shell

### 2.2 PROCESS DESCRIPTION

The HTF expansion tank adsorbs any thermal dilation (both increase and reduction in volume) occurring in the HTF as a result of temperature variations. The expansion tank must be free of atmospheric air to avoid degrading the HTF by oxygen and it must be pressurized to prevent the HTF from reaching its evaporation temperature. In order to achieve this, nitrogen is fed in when in the pressure in the tank drops, while nitrogen is expelled when the pressure in the tank increases as a result of an expansion in the HTF's volume. Nitrogen is expelled through the Ullage system to avoid releasing pollutant oil vapor into the atmosphere. This system is composed of an HTF Overflow Tank Vent Scrubber (MV-208), HTF Expansion Tank Vent Scrubber (MV-209); Carbon Filters (MF-206), and HTF Condensate Receiver Vessel (MV-207).

The Ullage system operates when the pressure in the HTF expansion header connected with the ullage system reach the remote set point in the vent control. This control (PIC-20626B) has a remote set point according with the pressure and the time, and the maximum value is 165 psi. Above this pressure, the vent valves will be fully open to avoid overpressure in the system.

HTF vapors from the HTF Condensate Receiver Vessel (MV-207) or the HTF Overflow Tanks (MT-204A/B) are scrubbed in one of two scrubbers with cool HTF to condense as much HTF and low boilers (LB) as possible. The HTF used in these scrubbers comes from the HTF Tank Cooler (MX-205), normally at  $\pm$ 70°F. After the scrubbers, these remaining HTF vapor streams are combined and routed through a series of three carbon filters to remove as many organics (VOCDs/HAPS) as possible before the vapors are release into the atmosphere. There is a



nitrogen blanket system set at 8 bara providing nitrogen to the HTF vapor system (all the way back to the Expansion Vessels). The vent line to the carbon filters is designed to vent at 12 bara from the pressurized system but, the overflow system (that works at atmosphere pressure) starts to vent at 14.40 psi, pressure set according to the pressure safety valve (PSV) in the overflow system.

There are two types of venting from the HTF system:

- 1. The venting of nitrogen due to HTF overflow tank breathing;
- 2. The daily venting of vapor space due to HTF expansion into the expansion vessels.

### 2.2.1 Overflow Tank Venting

As indicated above, during normal operation, there will be no exchange of HTF or nitrogen between the expansion vessels and the overflow tanks. However, during the winter months when the HTF temperature drops below the normal daily range, some of the HTF in the overflow tanks may need to be transferred into the expansion vessels to maintain the minimum expansion tank's level. During these conditions, the overflow tank levels may fall and rise, thus requiring nitrogen space venting. The worst case would be if the HTF system became very cold (limited to 120°F) after a few days of sun, in which case all the HTF from the overflow tanks would be pumped back into the system. The next time the system is brought back to normal operation, all of the HTF that was pumped out of the overflow tanks would return to the overflow tanks. Under that condition, the total amount of nitrogen vented is calculated to be 24,731 ft<sup>3</sup> total for both plants. The overflow tanks have vent scrubbers on their stacks before feeding into the carbon filters. Nitrogen and HTF mixture to be released passes through these scrubbers where it is cooled to 117°F by the cooled liquid HTF stream flowing countercurrent. This overflow tank vent scrubber will condense most of the HTF vapor vented from the overflow tanks before reaching the carbon filters. The overflow tanks have a design temperature of 350°F, but the worst-case vapor space temperature has been calculated to be around 250°F. The overflow tanks are designed to be maintained at 150°F to minimize HTF venting but at the same time be sufficiently higher than the high heat tracing (electric heating) initiation temperature of 120°F. The overflow tank has a liquid HTF cooler to maintain this tank's temperature at 150°F.

### 2.2.2 Expansion Vessel Venting

As the HTF expands and contracts daily into and out of the expansion vessels, the low boilers LB's along with some vaporous HTF will be released into the vapor space. To help this separation of LB's into the vapor space, a side stream of HTF will be also be sprayed to the top of the expansion vessels continuously. As the expansion vessels fill up with HTF, the nitrogen space is compressed until the pressure reaches 12 bara, upon which the vent valve opens and allows any further expansion to force the vapor space through the ullage system. The nitrogen and vapors will be pushed through the nitrogen ullage condenser, where most of the HTF and low boiler degradation products will be condensed and collected in the low boiler condensate receiver vessel. The nitrogen and other non-condensable constituents will pass through the expansion vessel vent scrubber where the 117°F, countercurrent liquid HTF flow will bring even more HTF and low boilers into the liquid phase. The nitrogen, degradation products, and vaporous HTF remaining in the vapor phase at the exit of the scrubber will enter the carbon filters for further cleaning before venting into the atmosphere.



## 3.0 TEST DESCRIPTION

### 3.1 OPERATING CONDITIONS DURING THE TEST

Both CAS units will be tested early in the morning during the peak venting time at their normal operating load condition. If the temperature does not allow the system to vent then the CAS will be operated manually to simulate the normal operating condition.

During the testing time, the scrubber's quench line (spray system) will be closed to allow most of the gases to be detected at the inlet of the carbon beds, allowing the carbon beds to prove the minimum required 95% efficiency. Opening the quench line will result in a high percentage reduction of VOC going through the ullage system downstream, which will result in a less amount of VOC detection at the carbon beds inlet. Since the calculations are based on the amount of VOCs reduction between the inlet and the outlet of the canisters, this action will allow to better prove the beds' efficiency. Also, to be able to vent for the duration of the test, some HTF will be transferred from the expansion vessel to the overflow tanks in order to build enough pressure to carry out the test.

### 3.2 DIMENSIONS OF DUCT, STACKS, AND SAMPLING PORT LOCATIONS

Table 3-1 presents the dimensions of the sampling port locations. All the dimensions will be verified on the day of the test.

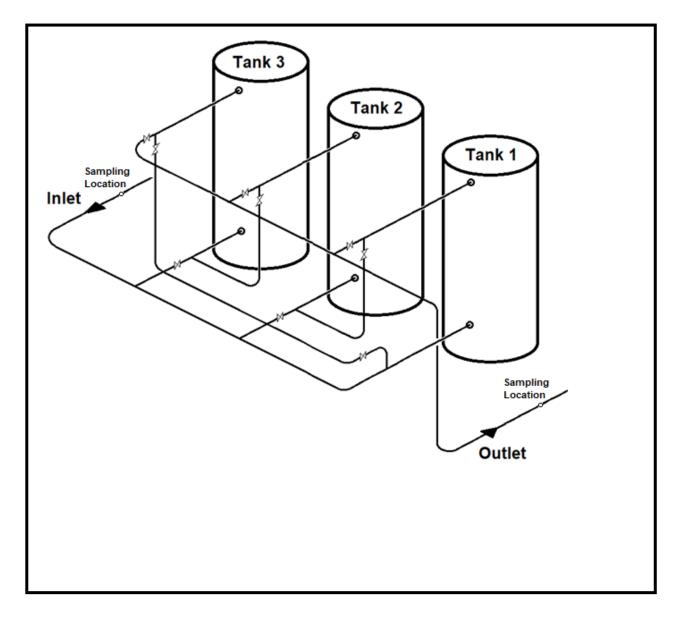
From Scrubber	High Pressure	Low Pressure
Inlet Sample Port Diameter	8 Inches	4 Inches
Outlet Sample Port Diameter	8 Inches	4 Inches
From Expansion Tank		
Inlet Sample Port Diameter	8 Inches	4 Inches
Outlet Sample Port Diameter	8 Inches	4 Inches

### TABLE 3-1 SAMPLING PORT LOCATIONS MOJAVE SOLAR, LLC

Figure 3-1 presents a line diagram of the CAS.



FIGURE 3-1 CAS DIAGRAM MOJAVE SOLAR, LLC





### 3.3 SAMPLING AND ANALYTICAL PROCEDURES

The procedures that will be used to collect the data are summarized in Table 3-2.

TABLE 3-2	
TEST PROCEDURES	
MOJAVE SOLAR, LLC	

Parameters	Location	Method	Number of Tests	Duration
Hexane	Inlet and Outlet	EPA 18	2*	5 Minutes
Benzene	Inlet and Outlet	CARB 410A	2*	5 Minutes
Flow Rate	Inlet and Outlet	Anemometer	1	5 Minutes
Moisture Content	Inlet and Outlet	Dry Wet Bulb	1	5 Minutes

### 3.3.1 Velocity and Volumetric Flow Rate

A calibrated anemometer will be used to determine the exhaust gas velocity and volumetric flow rate in feet per minute.

#### 3.3.2 Moisture Content

The moisture content at the exhaust will be determined by using dry and wet bulb temperature measurements.

### 3.3.3 Hexane and Benzene Emissions Testing

To minimize any chance of air intrusion into the sample, a 1-inch sample port was recently installed to collect all sampling. Before collecting each sample, MAQS will measure the oxygen level tin the inlet location using a Testo portable analyzer, Model 350XL. If no oxygen is measured with the Testo, then MAQS will proceed with the sampling for benzene and hexane concentrations.

The concentrations of benzene and hexane will be sampled into SUMMA (specially prepared stainless steel) canisters. The sampling system includes a stainless-steel probe and components that regulate the rate and duration of sampling into the pre-evacuated and passivated canisters. Each of the three samples will be collected for approximately five minutes. The samples will then be delivered within 24 hours to a state-certified lab, Quantum Laboratories in Carson California. The samples will be analyzed by packed column gas chromatography-mass spectrophotometry (GC/MS).



### 4.0 RESULTS

A table similar to Table 4-1 will show the analytical results of the Hexane and Benzene sampling and the field measurements taken during the source test. Additional information such as field data, calibrations, and permits will be located in the Appendices of the final report.

#### TABLE 4-1 ALPHA/BETA PLANT EMISSIONS SUMMARY LOW PRESSURE/HIGH PRESSURE DATE TESTED: TBD

Parameter/Units	Inlet Stack	Exhaust Stack	Compliance Limit
Hexane Data			
ppm (v/v)	Х	Х	
lb/hr	Х	Х	
lb/year	Х	Х	792.1
Destruction Efficiency (%)		Х	95
Benzene Data			
ppm (v/v)	Х	Х	
lb/hr	Х	Х	
lb/year	Х	Х	507.4
Destruction Efficiency (%)		Х	95
<b>O</b> <sub>2</sub> , %	Х	х	
CO <sub>2</sub> , %	Х	Х	
Exhaust Gas Flow, dscfm	х	х	



Mojave Solar, LLC 2024 Two Carbon Adsorption Systems Compliance Test Plan

# APPENDIX A QUALITY ASSURANCE



# Appendix A.1 Quality Assurance Program Summary



### QUALITY ASSURANCE PROGRAM SUMMARY

As part of Montrose Air Quality Services, LLC (Montrose) ASTM D7036-04 certification, Montrose is committed to providing emission related data which is complete, precise, accurate, representative, and comparable. Montrose quality assurance program and procedures are designed to ensure that the data meet or exceed the requirements of each test method for each of these items. The quality assurance program consists of the following items:

- Assignment of an Internal QA Officer
- Development and use of an internal QA Manual
- Personnel training
- Equipment maintenance and calibration
- Knowledge of current test methods
- Chain-of-custody
- QA reviews of test programs

<u>Assignment of an Internal QA Officer</u>: Montrose has assigned an internal QA Officer who is responsible for administering all aspects of the QA program.

Internal Quality Assurance Manual: Montrose has prepared a QA Manual according to the requirements of ASTM D7036-04 and guidelines issued by EPA. The manual documents and formalizes all of Montrose's QA efforts. The manual is revised upon periodic review and as Montrose adds capabilities. The QA manual provides details on the items provided in this summary.

<u>Personnel Testing and Training</u>: Personnel testing and training is essential to the production of high quality test results. Montrose training programs include:

- A requirement for all technical personnel to read and understand the test methods performed
- A requirement for all technical personnel to read and understand the Montrose QA manual
- In-house testing and training
- Quality Assurance meetings
- Third party testing where available
- Maintenance of training records.

<u>Equipment Maintenance and Calibration</u>: All laboratory and field equipment used as a part of Montrose's emission measurement programs is maintained according to manufacturer's recommendations. A summary of the major equipment maintenance schedules is summarized in Table 1. In addition to routine maintenance, calibrations are performed on all sampling equipment according to the procedures outlined in the applicable test method. The calibration intervals and techniques for major equipment components is summarized in Table 2. The calibration technique may vary to meet regulatory agency requirements.

Knowledge of Current Test Methods: Montrose maintains current copies of EPA, ARB, and SCAQMD Source Test Manuals and Rules and Regulations.



<u>Chain-of-Custody</u>: Montrose maintains chain-of-custody documentation on all data sheets and samples. Samples are stored in a locked area accessible only to Montrose source test personnel. Data sheets are kept in the custody of the originator, program manager, or in locked storage until return to Montrose office. Electronic field data is duplicated for backup on secure storage media. The original data sheets are used for report preparation and any additions are initialed and dated.

<u>QA Reviews:</u> Periodic field, laboratory, and report reviews are performed by the in-house QA coordinator. Periodically, test plans are reviewed to ensure proper test methods are selected and reports are reviewed to ensure that the methods were followed and any deviations from the methods are justified and documented.

### ASTM D7036-04 Required Information

### Uncertainty Statement

Montrose is qualified to conduct this test program and has established a quality management system that led to accreditation with ASTM Standard D7036-04 (Standard Practice for Competence of Air Emission Testing Bodies). Montrose participates in annual functional assessments for conformance with D7036-04 which are conducted by the American Association for Laboratory Accreditation (A2LA). All testing performed by Montrose is supervised on site by at least one Qualified Individual (QI) as defined in D7036-04 Section 8.3.2. Data quality objectives for estimating measurement uncertainty within the documented limits in the test methods are met by using approved test protocols for each project as defined in D7036-04 Sections 7.2.1 and 12.10. Additional quality assurance information is presented in the report appendices.

### Performance Data

Performance data are available for review.

### Qualified Personnel

A qualified individual (QI), defined by performance on a third party or internal test on the test methods, is present on each test event.

#### Plant Entry and Safety Requirements

### Plant Entry

All test personnel are required to check in with the guard at the entrance gate or other designated area. Specific details are provided by the facility and project manager.



## Safety Requirements

All personnel shall have the following personal protective equipment (PPE) and wear them where designated:

- Hard Hat
- Safety Glasses
- Steel Toe Boots
- Hearing Protection
- Gloves
- High Temperature Gloves (if required)
- Flame Resistant Clothing (if required)

The following safety measures are followed:

- Good housekeeping
- SDS for all on-site hazardous materials
- Confine selves to necessary areas (stack platform, mobile laboratory, CEMS data acquisition system, control room, administrative areas)
- Knowledge of evacuation procedures

Each facility will provide plant specific safety training.



Equipment	Acceptance Limits	Frequency of Service	Methods of Service
Pumps	<ol> <li>Absence of leaks</li> <li>Ability to draw manufacturers required vacuum and flow</li> </ol>	As recommended by manufacturer	<ol> <li>1. Visual inspection</li> <li>2. Clean</li> <li>3. Replace parts</li> <li>4. Leak check</li> </ol>
Flow Meters	1. Free mechanical movement	As recommended by manufacturer	<ol> <li>Visual inspection</li> <li>Clean</li> <li>Calibrate</li> </ol>
Sampling Instruments	<ol> <li>Absence of malfunction</li> <li>Proper response to zero span gas</li> </ol>	As recommended by manufacturer	As recommended by manufacturer
Integrated Sampling Tanks	1. Absence of leaks	Depends on nature of use	1. Steam clean 2. Leak check
Mobile Van Sampling System	1. Absence of leaks	Depends on nature of use	<ol> <li>Change filters</li> <li>Change gas dryer</li> <li>Leak check</li> <li>Check for system contamination</li> </ol>
Sampling Lines	1. Sample degradation less than 2%	After each test series	1. Blow dry, inert gas through line until dry

 TABLE 1

 EQUIPMENT MAINTENANCE SCHEDULE



Sampling Equipment	Calibration Frequency	Calibration Procedure	Acceptable Calibration Criteria
Continuous Analyzers	Before and After Each Test Day	3-point calibration error test	< 2% of analyzer range
Continuous Analyzers	Before and After Each Test Run	2-point sample system bias check	< 5% of analyzer range
Continuous Analyzers	After Each Test Run	2-point analyzer drift determination	< 3% of analyzer range
CEMS System	Beginning of Each Day	leak check	< 1 in. Hg decrease in 5 min. at > 20 in. Hg
Continuous Analyzers	Semi-Annually	3-point linearity	< 1% of analyzer range
NO <sub>x</sub> Analyzer	Daily	NO <sub>2</sub> -> NO converter efficiency	> 90%
Differential Pressure Gauges (except for manometers)	Semi-Annually	Correction factor based on 5-point comparison to standard	± 5%
Differential Pressure Gauges (except for manometers)	<b>Bi-Monthly</b>	3-point comparison to standard, no correction factor	± 5%
Barometer	Semi-Annually	Adjusted to mercury-in- glass or National Weather Service Station	± 0.1 inches Hg
Dry Gas Meter	Semi-Annually	Calibration check at 4 flow rates using a NIST traceable standard	± 2%
Dry Gas Meter	<b>Bi-Monthly</b>	Calibration check at 2 flow rates using a NIST traceable standard	± 2% of semi-annual factor
Dry Gas Meter Orifice	Annually	4-point calibration for $\Delta H@$	
Temperature Sensors	Semi-Annually	3-point calibration vs. NIST traceable standard	± 1.5%

# TABLE 2 MAJOR SAMPLING EQUIPMENT CALIBRATION REQUIREMENTS

Note: Calibration requirements that meet applicable regulatory agency requirements are used.



Mojave Solar, LLC 2024 Two Carbon Adsorption Systems Compliance Test Plan

# Appendix A.2 SCAQMD, CARB, and STAC Certifications





September 14, 2023

Mr. John Peterson Montrose Air Quality Services, LLC 1631 E. Saint Andrew Place Santa Ana, CA 92705

Subject: LAP Approval Notice Reference # 96LA1220

Dear Mr. Peterson:

We have completed our review of Montrose Air Quality Services' revised renewal application, which was submitted as notification of Montrose's recent acquisition of AirKinetics, Inc. under the South Coast AQMD Laboratory Approval Program (LAP). We are pleased to inform you that your firm is approved for the period beginning September 30, 2023, and ending September 30, 2024, for the following methods, subject to the requirements in the LAP Conditions For Approval Agreement and conditions listed in the attachment to this letter:

South Coast AQMD Methods 1-4 South Coast AQMD Methods 10.1 and 100.1 South Coast AQMD Methods 5.1, 5.2, 5.3, 6.1 (Sampling and Analysis) South Coast AQMD Methods 25.1 and 25.3 (Sampling) Rule 1121/1146.2 Protocol Rule 1420/1420.1/1420.2 – (Lead) Source and Ambient Sampling USEPA CTM-030 and ASTM D6522-00

Your LAP approval to perform nitrogen oxide emissions compliance testing for Rule 1121/1146.2 Protocols includes satellite facilities located at:

McKenna Boiler	Noritz America Corp.		Ajax Boiler, Inc.
1510 North Spring Street	11160 Grace Avenue		2701 S. Harbor Blvd.
Los Angeles, CA 90012	Fountain Valley, CA 92708		Santa Ana, CA 92704
VA Laundry Bldg., Greater LA Healthcare Sys. 508 Constitution Avenue Los Angeles, CA 90049		So Cal Gas – Engr A 8101 Rosemead Blv Pico Rivera, CA 90	d

Thank you for participating in the LAP. Your cooperation helps us to achieve the goal of the LAP: to maintain high standards of quality in the sampling and analysis of source emissions. You may direct any questions or information to LAP Coordinator, Colin Eckerle. He may be reached by telephone at (909) 396-2476, or via e-mail at ceckerle@aqmd.gov.

Sincerely,

D. Sarkar

Dipankar Sarkar Program Supervisor Source Test Engineering

DS:CE Attachment

230914 LapRenewal.doc





Gavin Newsom, Governor Jared Blumenfeld, CalEPA Secretary Liane M. Randolph, Chair

June 30, 2022

Mr. Matt McCune Montrose Air Quality Services , LLC 1631 East Saint Andrew Place Santa Ana, California 92705 mmccune@montrose-env.com

Dear Mr. McCune:

I am pleased to inform you that the California Air Resources Board (CARB) has renewed Montrose Air Quality Services , LLC as an Independent Contractor, by means of the enclosed Executive Order I-22-003. This approval will allow Montrose Air Quality Services , LLC to perform CARB Test Methods 1, 2, 3, 4, 5, 6, 8, 17, 20, and 100 (CO, CO<sub>2</sub>, NO<sub>x</sub>, O<sub>2</sub>, SO<sub>2</sub>, THC), Visible Emission Evaluation (VEE), and U.S. Environmental Protection Agency (U.S. EPA) Test Methods 201A, 202, and 205. The approval is valid through June 30, 2024, during which time additional audits of Montrose Air Quality Services , LLC's testing ability may be performed.

If you have questions or need further assistance, please contact Kathryn Gugeler at *kathryn.gugeler@arb.ca.gov* or Daniel Moore at *Daniel.Moore@arb.ca.gov*.

Sincerely, Catherine Durwoody Durwoody Date: 2022.06.30 14:05:25-0707

Catherine Dunwoody, Chief, Monitoring and Laboratory Division

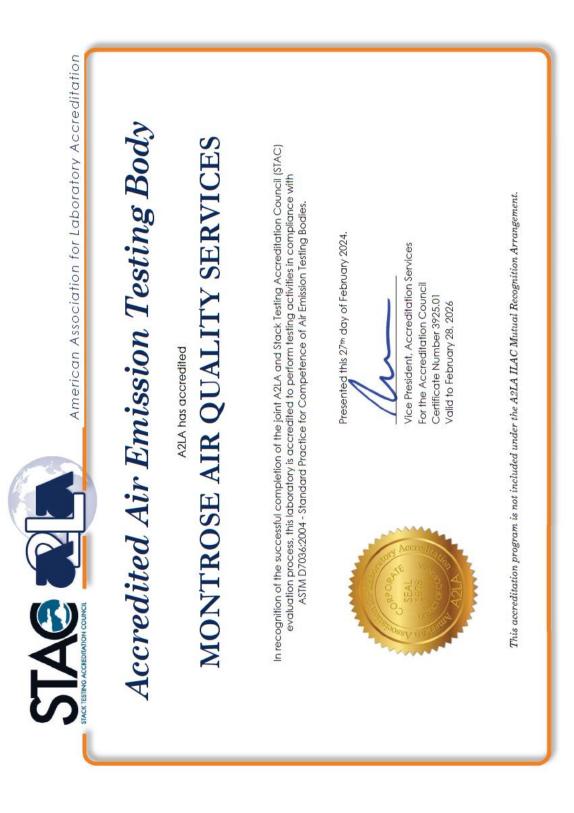
Enclosure

cc: (via email)

Kathryn M. Gugeler, Monitoring and Laboratory Division

Daniel Moore, Monitoring and Laboratory Division







Mojave Solar, LLC 2024 Two Carbon Adsorption Systems Compliance Test Plan

# Appendix A.3 Statement of No Conflict of Interest



#### STATEMENT OF NO CONFLICT OF INTEREST AS AN INDEPENDENT TESTING LABORATORY

(To be completed by authorized source testing firm representative and included in source test report)

The following facility and equipment were tested by my source testing firm and are the subjects of this statement:

Date(s) Tested:	Test Plan
Facility Name:	Mojave Solar, LLC
Equipment Address:	42134 Harper Lake Road
	Hinkley, California 92347
Equipment Tested:	Two Carbon Adsorption Units
Device ID, A/N, P/N:	C012015, C012016

I state, as its legally authorized representative, that the source testing firm of:

Source Test Firm:	Montrose Air Quality Services, LLC
<b>Business Address:</b>	1631 E. St. Andrew Pl.
	Santa Ana, California 92705

is an "Independent Testing Laboratory" as defined in *District Rule 304(k):* 

For the purposes of this Rule, when an independent testing laboratory is used for the purposes of establishing compliance with District rules or to obtain a District permit to operate, it must meet all of the following criteria:

- (1) The testing laboratory shall have no financial interest in the company or facility being tested, or in the parent company, or any subsidiary thereof -
- (2) The company or facility being tested, or parent company or any subsidiary thereof, shall have no financial interest in the testing laboratory;
- (3) Any company or facility responsible for the emission of significant quantities of pollutants to the atmosphere, or parent company or any subsidiary thereof shall have no financial interest in the testing laboratory; and
- (4) The testing laboratory shall not be in partnership with, own or be owned by, in part or in full, the contractor who has provided or installed equipment (basic or control), or monitoring systems, or is providing maintenance for installed equipment or monitoring systems, for the company being tested.

Furthermore, I state that any contracts or agreements entered into by my source testing firm and the facility referenced above, or its designated contractor(s), either verbal or written, are not contingent upon the outcome of the source testing, or the source testing information provided to the SCAQMD.

Signature:	1	de Rulu	Date:	6/10/2024	
Joe Rubio	0	Client Project Manager	(714) 279-6777	6/10/2024	
(Name)		(Title)	(Phone)	(Date)	

FORM ST-110 :stevforl.doc (Revised 11/18/98



Mojave Solar, LLC 2024 Two Carbon Adsorption Systems Compliance Test Plan

## APPENDIX B GENERAL EMISSIONS CALCULATIONS



### **GENERAL EMISSIONS CALCULATIONS**

- I. <u>Stack Gas Velocity</u>
  - A. Stack gas molecular weight, lb/lb-mole

 $MW_{dry} = 0.44 * \% CO_2 + 0.32 * \% O_2 + 0.28 * \% N_2$ 

 $MW_{wet} = MW_{dry} * (1 - B_{wo}) + 18 * B_{wo}$ 

B. Absolute stack pressure, iwg

$$P_{s} = P_{bar} + \frac{P_{sg}}{13.6}$$

C. Stack gas velocity, ft/sec

$$V_{s} = 2.9 * C_{p} * \sqrt{\Delta P} * \sqrt{T_{s}} * \sqrt{\frac{29.92 * 28.95}{P_{s} * MW_{wet}}}$$

- II. <u>Moisture</u>
  - A. Sample gas volume, dscf

$$V_{mstd} = 0.03342 * V_m * \left(P_{bar} + \frac{\Delta H}{13.6}\right) * \frac{T_{ref}}{T_m} * Y_d$$

B. Water vapor volume, scf

$$V_{wstd} = 0.0472 * V_{ic} * \frac{T_{ref}}{528^{\circ}R}$$

C. Moisture content, dimensionless

$$\mathsf{B}_{\mathsf{wo}} = \frac{\mathsf{V}_{\mathsf{wstd}}}{(\mathsf{V}_{\mathsf{mstd}} + \mathsf{V}_{\mathsf{wstd}})}$$

#### III. Stack Gas Volumetric Flow Rate

- A. Actual stack gas volumetric flow rate, wacfm
- $Q = V_s * A_s * 60$
- B. Standard stack gas flow rate, dscfm

$$Q_{sd} = Q * (1 - B_{wo}) * \frac{T_{ref}}{T_s} * \frac{P_s}{29.92}$$



Mojave Solar, LLC 2024 Two Carbon Adsorption Systems Compliance Test Plan

IV. Gaseous Mass Emission Rates, lb/hr

$$M = \frac{ppm * MW_i * Q_{sd} * 60}{SV * 10^6}$$

V. Emission Rates, Ib/MMBtu

$$\frac{1b}{MMBtu} = \frac{ppm * MW_i * F}{SV * 10^6} * \frac{20.9}{20.9 - \% O_2}$$

VI. Percent Isokinetic

$$I = \frac{17.32 * T_{s} (V_{mstd})}{(1 - B_{wo}) 0 * V_{s} * P_{s} * Dn^{2}} * \frac{520^{\circ}R}{T_{ref}}$$

### VII. Particulate Emissions

- (a) Grain loading, gr/dscf  $C = 0.01543 (M_n/V_m \text{ std})$
- (b) Grain loading at 12% CO<sub>2</sub>, gr/dscf  $C_{12\%}$  CO<sub>2</sub> = C (12/% CO<sub>2</sub>)
- (c) Mass emissions, lb/hr M = C \*  $Q_{sd}$  \* (60 min/hr) / (7000 gr/lb)
- (d) Particulate emission factor

 $Ib/10^{6} Btu = Cx \frac{1 Ib}{7000 gr} * F * \frac{20.9}{20.9 - \% O_{2}}$ 



Mojave Solar, LLC 2024 Two Carbon Adsorption Systems Compliance Test Plan

## Nomenclature:

As	=	stack area, ft <sup>2</sup>
B <sub>wo</sub>	=	flue gas moisture content, dimensionless
C <sub>12%CO2</sub>	=	particulate grain loading, gr/dscf corrected to 12% CO <sub>2</sub>
C	=	particulate grain loading, gr/dscf
Cp	=	pitot calibration factor, dimensionless
Dn	=	nozzle diameter, inches
F	=	fuel F-Factor, dscf/MMBtu @ 0% O <sub>2</sub>
Н	=	orifice differential pressure, iwg
I	=	% isokinetics
Mn	=	mass of collected particulate, mg
Mi	=	mass emission rate of specie i, lb/hr
MW	=	molecular weight of flue gas, lb/lb-mole
M <sub>wi</sub>	=	molecular weight of specie i:
	SO <sub>2</sub> :	64
	NO <sub>x</sub> :	46
	CO:	28
	HC:	16
0	=	sample time, minutes
ΔP	=	average velocity head, iwg = $(\sqrt{\Delta P})^2$
P <sub>bar</sub>		barometric pressure, inches Hg
Ps		stack absolute pressure, inches Hg
$P_{sg}$	=	stack static pressure, iwb
Q	=	wet stack flow rate at actual conditions, wacfm
$Q_{sd}$	=	dry standard stack flow rate, dscfm
SV	=	specific molar volume of an ideal gas at standard conditions, ft <sup>3</sup> /lb-mole
T <sub>m</sub>	=	meter temperature, °R
T <sub>ref</sub>		reference temperature, °R
Ts		stack temperature, °R
Vs		stack gas velocity, ft/sec
V <sub>Ic</sub>		volume of liquid collected in impingers, ml
Vm		uncorrected dry meter volume, dcf
V <sub>mstd</sub>		dry meter volume at standard conditions, dscf
V <sub>wstd</sub>		volume of water vapor at standard conditions, scf
Y <sub>d</sub>	=	meter calibration coefficient



Mojave Solar, LLC 2024 Two Carbon Adsorption Systems Compliance Test Plan

## APPENDIX C COPY OF PERMIT TO OPERATE





## MOJAVE DESERT AIR QUALITY MANAGEMENT DISTRICT

14306 Park Avenue, Victorville, CA 92392-2310 760.245.1661 -- 800.635.4617 -- FAX 760.245.2022

## **AUTHORITY TO CONSTRUCT**

<u>C012015</u>

If construction is not completed by the expiration date of this permit, it may be renewed for one additional year upon payment of applicable fees. Any additional extension will require the written approval of the Air Pollution Control Officer. This Authority to Construct may serve as a temporary Permit to Operate provided the APCO is given prior notice of intent to operate and the Permit to Operate is not specifically denied.

## **EXPIRES LAST DAY OF: SEPTEMBER 2021**

## OWNER OR OPERATOR (Co.#1876)

Mojave Solar LLC 42134 Harper Lake Road Hinkley, CA 92347

## EQUIPMENT LOCATION (Fac.#3130)

Mojave Solar - Harper Lake Harper Lake Road, adjacent to SEGS VIII & IX Hinkley, CA 92347

#### **Description:**

CARBON ADSORPTION SYSTEM, HTF ULLAGE/EXPANSION SYSTEM (ALPHA) consisting of: ATC modification March 2020 to update carbon adsorption system as follows:

Carbon adsorption system having two (2) multi-bed carbon filter sets capturing ullage/expansion system emissions and having a high and low pressure side. The expansion vessel vents on the high pressure side and the overflow tank vents on the low pressure side. The high pressure and low pressure side each vent to three vertical carbon cylindrical vessels (carbon beds) described below. Flow through each vessel is vertical and each side (three vessels), will be interconnected using a pipe rack system that allows the vessels to operate in series (lead/lag), parallel, or single vessel. Sample ports are located at inlet and outlet of each carbon bed. Optimally the system will operate in lead/lag flow, with a third canister in standby, with other operating configurations for maintenance and high flow events. Both high pressure and low pressure vent to atmosphere through one common stack.

High Pressure Side Dimensions: 54" OD bed x 114" side shell Bed Area: (53.25" ID) = 15.466 square feet Nominal Flow Rate (cfm): 1,546.60 CFM Carbon Capacity: 3,000 pounds Fittings: 8"

Low Pressure Side Dimensions: 36" OD bed x 108" side shell

Fee Schedule: 7 (h)

Rating: 1 device

SCC: 30688801

Location/Coordinates: +35.00390, -117.30370

This permit does not authorize the emission of air contaminants in excess of those allowed by law, including Division 26 of the Health and Safety Code of the State of California and the Rules and Regulations of the District. This permit cannot be construed as permission to violate existing laws, ordinances, statutes or regulations of this or other governmental agencies. This permit must be renewed by the expiration date above. If billing for renewal fee required by Rule 301(c) is not received by expiration date above, please contact the District.

SIC: 4911

Mojave Solar LLC 42134 Harper Lake Road Hinkley, CA 92347

Brad Poiriez

Air Pollution Control Officer

Bed Area: (35.25" ID) = 6.73 square feet Nominal Flow Rate (cfm): 673 CFM Carbon Capacity: 1,500 pounds Fittings: 4"

## **CONDITIONS:**

1. Operation of this equipment shall be conducted in compliance with all data and specifications submitted with the application under which this permit is issued unless otherwise noted below.

2. This equipment must be in use and operating properly at all times the HTF ullage/expansion system with valid District Permit B011046 is venting.

3. This carbon adsorption system shall provide at a minimum 95% control efficiency of VOC emissions vented from the HTF ullage/expansion system under valid District Permit B011046. Control efficiency shall be demonstrated by sampling VOC emissions per US EPA Method 25 at the inlet and outlet of the carbon beds during initial and annual compliance tests.

4. The owner/operator shall prepare and submit a monitoring and change-out plan for the carbon adsorption system which ensures that the system is operating at optimal control efficiency at all times for District approval 60 days prior to commercial operation date (COD). Once approved, any subsequent changes to the monitoring and change-out plan must be submitted in writing to the District for approval prior to implementation.

5. Total emissions of VOC to the atmosphere shall not exceed 792.1 lbs/year, calculated based on the most recent test results.

6. Total emissions of benzene to the atmosphere shall not exceed 507.4 lbs/year, calculated based on the most recent test results.

7. During operation, o/o shall monitor VOC (as hexane) measured at outlet from the carbon beds. Sampling is to be performed at a minimum on a weekly basis. Samples shall be analyzed using a District approved photo ionization detector (PID).

8. PID shall be considered invalid if not calibrated in accordance with the manufactures recommended calibration procedures.

9. The o/o shall maintain an operations log (in electronic or hardcopy format) current and on-site for a period of five (5) years. The log shall contain at a minimum the following information and shall be provided to District personnel upon request.

- a. Date and time of VOC monitoring;
- b. Results of VOC monitoring; and
- c. Date and description of all maintenance, malfunctions, repairs, and carbon change out(s).

10. The o/o shall provide stack sampling ports and platforms necessary to perform source tests required to verify compliance with District rules, regulations and permit conditions. The location of these ports and platforms shall be subject to District approval.

11. Prior to January 31 of each new year, the o/o of this unit shall submit to the District a summary report of all VOC emissions (based on annual source test results).

12. The o/o shall conduct all required compliance/certification tests in accordance with a District-approved test plan. Thirty (30) days prior to the compliance/certification tests the operator shall provide a written test plan for District review and approval. Written notice of the compliance/certification test shall be provided to the District ten (10) days prior to the tests so that an observer may be present. A written report with the results of such compliance/certification tests shall be submitted to the District

within forty-five (45) days after testing is completed.All compliance/certification test notifications, protocols, and results may be submitted electronically to reporting@mdaqmd.ca.gov

13. The o/o shall perform the following initial compliance tests on this equipment in accordance with the MDAQMD Compliance Test Procedural Manual. The test report shall be submitted to the District within 180 days of COD. The following compliance tests are required:

a. VOC as hexane in ppmvd and lb/hr (measured per USEPA Reference Methods 25 and 18 or equivalent).

b. Benzene in ppmvd and lb/hr (measured per CARB method 410 or equivalent).

14. The o/o shall perform the following compliance tests on this equipment at least once every twelve (12) months in accordance with the MDAQMD Compliance Test Procedural Manual. The following compliance tests are required: a. VOC as hexane in ppmvd and lb/hr (measured per USEPA Reference Methods 25A and 18 or equivalent).

b. Benzene in ppmvd and lb/hr (measured per CARB method 410 or equivalent).

Additionally, records of all compliance tests shall be maintained on site for a period of five (5) years and presented to District personnel upon request.



## MOJAVE DESERT AIR QUALITY MANAGEMENT DISTRICT

14306 Park Avenue, Victorville, CA 92392-2310 760.245.1661 -- 800.635.4617 -- FAX 760.245.2022

## **AUTHORITY TO CONSTRUCT**

<u>C012016</u>

If construction is not completed by the expiration date of this permit, it may be renewed for one additional year upon payment of applicable fees. Any additional extension will require the written approval of the Air Pollution Control Officer. This Authority to Construct may serve as a temporary Permit to Operate provided the APCO is given prior notice of intent to operate and the Permit to Operate is not specifically denied.

## **EXPIRES LAST DAY OF: SEPTEMBER 2021**

## OWNER OR OPERATOR (Co.#1876)

Mojave Solar LLC 42134 Harper Lake Road Hinkley, CA 92347

## EQUIPMENT LOCATION (Fac.#3130)

Mojave Solar - Harper Lake Harper Lake Road, adjacent to SEGS VIII & IX Hinkley, CA 92347

#### **Description:**

CARBON ADSORPTION SYSTEM, HTF ULLAGE/EXPANSION SYSTEM (BETA) consisting of: ATC modification March 2020 to update carbon adsorption system as follows:

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High Pressure Side Dimensions: 54" OD bed x 114" side shell Bed Area: (53.25" ID) = 15.466 square feet Nominal Flow Rate (cfm): 1,546.60 CFM Carbon Capacity: 3,000 pounds Fittings: 8"

Low Pressure Side Dimensions: 36" OD bed x 108" side shell

Fee Schedule: 7 (h)

Rating: 1 device

SCC: 30688801

Location/Coordinates: +35.01460, -117.32880

This permit does not authorize the emission of air contaminants in excess of those allowed by law, including Division 26 of the Health and Safety Code of the State of California and the Rules and Regulations of the District. This permit cannot be construed as permission to violate existing laws, ordinances, statutes or regulations of this or other governmental agencies. This permit must be renewed by the expiration date above. If billing for renewal fee required by Rule 301(c) is not received by expiration date above, please contact the District.

SIC: 4911

Mojave Solar LLC 42134 Harper Lake Road Hinkley, CA 92347

Brad Poiriez

Air Pollution Control Officer

Bed Area: (35.25" ID) = 6.73 square feet Nominal Flow Rate (cfm): 673 CFM Carbon Capacity: 1,500 pounds Fittings: 4"

## **CONDITIONS:**

1. Operation of this equipment shall be conducted in compliance with all data and specifications submitted with the application under which this permit is issued unless otherwise noted below.

2. This equipment must be in use and operating properly at all times the HTF ullage/expansion system with valid District Permit B011047 is venting.

3. This carbon adsorption system shall provide at a minimum 95% control efficiency of VOC emissions vented from the HTF ullage/expansion system under valid District Permit B011047. Control efficiency shall be demonstrated by sampling VOC emissions per US EPA Method 25 at the inlet and outlet of the carbon beds during initial and annual compliance tests.

4. The owner/operator shall prepare and submit a monitoring and change-out plan for the carbon adsorption system which ensures that the system is operating at optimal control efficiency at all times for District approval 60 days prior to commercial operation date (COD). Once approved, any subsequent changes to the monitoring and change-out plan must be submitted in writing to the District for approval prior to implementation.

5. Total emissions of VOC to the atmosphere shall not exceed 792.1 lbs/year, calculated based on the most recent test results.

6. Total emissions of benzene to the atmosphere shall not exceed 507.4 lbs/year, calculated based on the most recent test results.

7. During operation, o/o shall monitor VOC (as hexane) measured at outlet from the carbon beds. Sampling is to be performed at a minimum on a weekly basis. Samples shall be analyzed using a District approved photo ionization detector (PID).

8. PID shall be considered invalid if not calibrated in accordance with the manufactures recommended calibration procedures.

9. The o/o shall maintain an operations log (in electronic or hardcopy format) current and on-site for a period of five (5) years. The log shall contain at a minimum the following information and shall be provided to District personnel upon request.

- a. Date and time of VOC monitoring;
- b. Results of VOC monitoring; and
- c. Date and description of all maintenance, malfunctions, repairs, and carbon change out(s).

10. The o/o shall provide stack sampling ports and platforms necessary to perform source tests required to verify compliance with District rules, regulations and permit conditions. The location of these ports and platforms shall be subject to District approval.

11. Prior to January 31 of each new year, the o/o of this unit shall submit to the District a summary report of all VOC emissions (based on annual source test results).

12. The o/o shall conduct all required compliance/certification tests in accordance with a District-approved test plan. Thirty (30) days prior to the compliance/certification tests the operator shall provide a written test plan for District review and approval. Written notice of the compliance/certification test shall be provided to the District ten (10) days prior to the tests so that an observer may be present. A written report with the results of such compliance/certification tests shall be submitted to the District

within forty-five (45) days after testing is completed.

13. The o/o shall perform the following initial compliance tests on this equipment in accordance with the MDAQMD Compliance Test Procedural Manual. The test report shall be submitted to the District within 180 days of COD. The following compliance tests are required:

- a. VOC as hexane in ppmvd and lb/hr (measured per USEPA Reference Methods 25 and 18 or equivalent).
- b. Benzene in ppmvd and lb/hr (measured per CARB method 410 or equivalent).

All compliance/certification test notifications, protocols, and results may be submitted electronically to reporting@mdaqmd.ca.gov

14. The o/o shall perform the following compliance tests on this equipment at least once every twelve (12) months in accordance with the MDAQMD Compliance Test Procedural Manual. The following compliance tests are required:

a. VOC as hexane in ppmvd and lb/hr (measured per USEPA Reference Methods 25A and 18 or equivalent).

b. Benzene in ppmvd and lb/hr (measured per CARB method 410 or equivalent).

Additionally, records of all compliance tests shall be maintained on site for a period of five (5) years and presented to District personnel upon request.

Mojave Solar, LLC 2024 Two Carbon Adsorption Systems Compliance Test Plan

## APPENDIX D SITE SAFETY PLAN





# SITE SAFETY PLAN BOOKLET

Project: PROJ-042458

Customer: Mojave Solar

Location: <u>Hinkley, CA</u>

Units: CAS Units

Client Project Manager: Joe Rubio

Revision Date: December 2, 2019



## Site Safety Plan and JHA Purpose and Instructions

## Purpose

Employee safety is the top priority of Montrose Environmental Group. All employees must be trained to assess and mitigate hazards. The District Manager and Project Manager are responsible to ensure all hazards have been properly identified and managed. All employees have Stop Work Authority in all situations where an employee feels they or their co-worker cannot perform a job safely or if there is a task for which they have not been adequately trained.

The Site Safety Plan (SSP) has been developed to help assist Montrose test crews with identifying physical and health hazards and determining how the hazards will be managed. Additionally, the SSP will help each crew manage the safety of the employees by providing emergency procedures and information. The booklet contains a several safety forms that may be required in the field.

#### Instructions

The SSP consists of the following:

1. A Pre-Mobilization Test Plan – To be completed in it's entirety by the client project Manager prior to the test.

2. A Job Hazard Analysis is a standardized, two-page, fillable form that is used to evaluated the task/site's particular hazards and controls. The form also includes a daily toolbox topic and daily hazard review with sign off by the team. The client Project Manager is responsible to complete the JHA form through section 8. Upon arrival at the test site, the team will review the form for accuracy, making any corrections required and complete the remainder of the JHA. Section 9 will require at least three tasks, hazards and controls be identified for the project. Each team member has the option to discuss making changes or adding to the JHA and must sign on the Job Hazard Analysis form in agreement and sign in Section 10. The JHA is to be modified when conditions change. A toolbox meeting with a daily topic in addition to a review of the hazard analysis is required daily for the duration of the test. An additional sheet of paper with the toolbox topic and signatures can be added to the SSP packet.

3. Hazard Control Matrix - contains useful information on both engineering and administrative controls that a crew can use to reduce or eliminate the hazards they have observed plus applicable PPE that may be required.

#### 4. Additional Forms, as applicable

- a. Aerial Lift Inspection Form
- b. Heat Stress Prevention Form Based on Heat Index
- c. Extended Hours Form

The SSP is a living document. The Project Manager should continually update their SSPs as new information and conditions change or if new hazards are presented.

Each completed SSP should be maintained with the Test Plan in the office for a period of 3 years. There will be an audit process developed for the Site Safety Plans.



## **PRE-MOBILIZATION TEST INFORMATION**

PROJECT NA	ME/LOCATION:	Mojave Solar	PR	OJECT #: PROJ-042	458
TEST DATE: 8/14/2024 PROJECT MANAGER: Joe Rubio					
TEST SCOPE: Compliance Test					
SITE CONTA	CT: Name: Mah	naz Ghamati	Contact P	hone: 760-308-0418	
Source Type:	New Source: _	Revisit	: X Prj#/Date	/Tech:	
Coal Fired Elec	ctric Utility:	Ethanol Plant:	Chemica	II Mfg. of	
Cement/Lime k	Kiln Plant:	Specialty Mfg.	of:	_ Other: RTO	
Anticipated Ef	ffluent Composi	<b>tion –</b> check all th	nat apply and fill in e	expected concentration	in ppm/%
				<b>v</b>	
	СО	NOx	SO <sub>2</sub>	VOC	other
lf other, explair	ı:				-
		X			
			Corrosive:	Dust:	
Engineering Co None	ontrols to be Impl				
					· · · · · · · · · · · · · · · · · · ·
Additional Saf	fety Equipment	Required:			
Personal gas n	nonitors:				
Respiratory Pro	otection:				
Half Face	Full Face	HEPA Filters_	Supplied Air:	(Safety Dept.	Approval)
Approximate I	Flue Gas Tempe	ratures, (F)			
	<b>~</b>				
	below 210 1:	210 to 450	450 to 950	above 950	other
Approximate Duct Pressure, (iwg):					
			-		_
lf other, explair	below -3 1:	-3 to +3	+3 to +7	above +7	other -



## **PRE-MOBILIZATION TEST INFORMATION**

Sampling Location: Stack Port Duct Port ×							
Approximate Sampling Platform Height, (ft)							
<b>~</b>							
below 6	6 to 50	50 to 100	above 100	other			
If other, explain: _							
Access and Prote	ection:						
Elevators:	Ladders:	Aerial Lift:	Scaffold:	Equipment Hoist:			
Guardrails:	Toe plate:	Engineered Tie Of	f Points:	Heat Shield:			
Other:							

#### Describe how equipment will be mobilized to the sampling location:

Ladder

#### **Additional Information:**

Effluent Chemical Regulatory Limits							
Gas Name         Chemical Formula         Cal OSHA PEL <sup>1</sup> (ppm)         Cal OSHA STEL <sup>2</sup> (ppm)         NIOSH REL TWA <sup>3</sup> (ppm)         Cal OSHA Ceiling (ppm)         IDLH <sup>4</sup>							
Carbon Monoxide	CO	25	200	35	200	1,200	
Nitric Oxide	NOx	25	ND <sup>5</sup>	25	ND	100	
Sulfur Dioxide	SO <sub>2</sub>	2	5	2	ND	100	
Hydrogen Chloride	HCI	0.3	2	ND	2	50	
Hydrogen Sulfide	H <sub>2</sub> S	10	15	10 (10 min.) <sup>c</sup>	50	100	

California Occupational Safety and Health Administration (OSHA) Permissible Exposure Limit (PEL) based on an 8-hour shift;

2: Cal OSHA Short-term Exposure Limit (STEL) based on a 15-minute period; 3: National Institute for Occupational Safety and Health (NIOSH) Recommended Exposure Limit (REL) Time-weighted Average (TWA) based on an 8-hour shift;

4: Immediately Dangerous to Life or Health (IDLH);

5: Not Defined (ND);

C: Ceiling Limit - Maximum allowable human exposure limit for an airborne or gaseous substance, which is not to be exceeded, even momentarily.

Prepared by: Joe Rubio

Date:

Reviewed by:

Date:



1.	Client	Mojave Solar	Contact Name			Date	
	Facility	Hinkley	SSP Writer	Joe Rubio		PM	Joe Rubio
	Client Rep	Mahnaz Ghamati		1			
	Job Prepara	tion	4		All hazards and mitigation		
	Job Site	Walk Through Completed	Specific Training Co	mplete	If this JHA does not cove use Section 9 to docu		
		ork Permit Received from Client				intent th	
		If the heat index is expect	ed to be above 91°,	fill out the Hea	t Stress Prevention Forn	n.	
			·				
2.	-	rmation/Emergency Preparedness					
		ergency medical attention is needed, c					
	Plant Eme	rgency#C	Certified First Aid Pers	son:			
	EMS Location Evacuation Routes Rally Point						
	EMO EOOC				Trany Form		
	Severe W	eather Shelter Location	Fv	e Wash & Safe	ty Shower Location		
			_,		.,		
			Op	erational: 🖸	∕es □No		
	Source Info	mation: (list type): Anodizing Tank				·	
		Temp. (°F) AMB Stack Gas Press	s. ("H <sub>2</sub> O) -2	Stack Gas C	omponents:		
			o If yes, see List of H	azard Chemicals	·	·	
. 1			<b>,</b>	-			
3.	Error Risk						
	Time P				Working > 8 cons		lays
	_	procedures Extreme temps, wind	·	onal illness/fatig	• •	nce	
	L Monoto	nous Activity 🛛 First day back after ti	me off 🛛 🗌 Multip	le job locations	G Other:		
4.	Physical Ha	zards Hazard Controls					
	Dust Haza		oggles 🛛	Other:			
	Thermal E	urn 🔲 Hot Gloves 🔲 H	eat Shields	Other Protective	e Clothing:		
	Electrical	Hazards 🛛 🗌 Connections Protecte	d from Elements	🗹 External G	GFCI Other:		
		☐ XP Rating Requireme	ent 🗌 Intrin	sically Safe Red	quirement		
	Inadequat		hting 🛛 🗌 Headlam	ps			
	Slip and T			Other:			
	Hand Prot		Pinch Pts.	🔲 General	Electrical	Impact	Resistant
		Other:					
	Defendent lite						
		zards for Consideration			_		
	Secondar		onfined Space	Excavation			1 0
	-	om Heights Falling objects	Fall protection	•	· ·	attorm id	oad ratings
	See also Sect. 7 Scaffold inspection Ladder inspection Barricades for equipment						
	Electrical Exposed wire/connector Verify equipment grounding Arc Flash						
	Lifting		Rigging inspectio	•			
	Respirato				ombustible) DEL pro	ovided	
	See also S	ect. 8 🕴 🗖 Cartridges or supp	lied air available	∐ Gas	detection equipment		
5.	Required Pl	PE 🗹 Hard Hats 🗹 Safety G	asses 🗹 Safety To	e Shoe/Boot	Hearing Protection	Safe	ty Spotter
	Hi-Vis		_ ·		Personal Monitor Type:		
		rsal Guards 🛛 Hot Gloves	Face Shi	eld 🗌	Respirator Type:		
	□ Nome>						



#### Additional Work Place Hazards

6.	Critical Procedures - check	all that apply – *indicates additional fo	rm must be completed or collected from	client						
	Heat Stress Prevention		· · · · · · · · · · · · · · · · · · ·	oof Work 🔲 Scaffold						
	Cold Weather Work	☐ Hazardous Energy Control*	Exposure Monitoring							
_										
7.	<b>U U</b>									
	Fall Protection			arning Line System						
	Falling Objects Protection		· · ·	ols Catch Blanket or Tarp						
	Fall Hazard Communica	ation I Adjacent/Overhead Worke	ers Contractor Contact	Client Contact						
8.	Other Considerations									
	Environmental Hazards - W	leather Forecast								
		ightning 🛛 Rain 🗌 Sr	now 🔲 Ice 🔲 Tornado	Wind Speed						
	Steps for Mitigation:									
	oteps for miligation.									
	Electrical Safety Planning									
	Plant Hook up:									
	Electrical Classified Area:	Yes INO Trailer Grounde	ed: 🛛 Yes 🗌 No 🛛 Plug	Туре						
	Electrical Hook Up Respon	nsibility:								
	List of Hazardous Chemica	ls		Other Chemicals:						
	Acetone Nitric A	cid 🛛 🗌 Hydrogen Pero:	xide 🔲 Compressed Gases							
	Hexane Sulfuric	Acid Isopropyl Alcoh	ol 🛛 🗌 Flammable Gas							
	Toluene Hydrock									
	H2S Carbon									
	Steps for Mitigation:									
	Gloves during sample re	ecovery								
	Wildlife/Fauna in Area									
		_								
	Poison Ivy Poison	Oak Insects:	Wildlife:							
	Personnel w/ known alle	ergies to bees stings or other allergens	? 🗌 Yes	🗌 No						
		5 5 5								
9.	Observed Hazards and Mit		Otomo for Miliantian							
	Task	Potential Hazard(s)	Steps for Mitigation							
	<ul> <li>Testing</li> </ul>	1 Falling metal objects	1 Communication							
		2	2							
		3	3							
	•	1	1							
		2	2							
		3	3							
	•	1	1							
		2	2							
		3	3							
	•	1	1							
		2								
		2	2							
		3	3							



Printed Name	Signature	Date	Printed Name	Signature	Date
T finted Name	Olghatare	Dutt		olghature	Dute

#### 11. Daily JHA Meeting & Review

Items to review:

- Change in conditions
- New workers or contractors
- Extended work hours
  Daily Safety Topic
  Occurrence of near misses or injuries
- Initialing demonstrates that site conditions and hazards have not changed from the original SSP. If changes did occur, make the necessary updates to this JHA and add notes as applicable in Section 9.

Day	Discussion Topic	Initials
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		



### **Daily Aerial Lift Inspection Form**

All checks must be completed prior to each work shift, before operation of the aerial lift. This checklist must be used at the beginning of each shift or following 6 to 8 hours of use.

Aerial Lift Model #:	Serial Number:
Make:	Rented or Owned:

- Check "Yes" if an item is adequate, operational, and safe.
- Check "No" to indicate that a repair or other corrective action is required prior to use.
- Check "N/A" to indicate "Not Applicable."

Items to be Inspected	Yes	No	N/A
1. All aerial lift components are in working condition (i.e. no loose or missing parts, torn or loose hoses, etc.) – if something can be easily loosened by hand then it is not sufficient.			
2. Hydraulic fluid level is sufficient, with the platform fully lowered			
<ol> <li>Hydraulic system pressure (see manufacturer specs) is acceptable. If the pressure is low, determine cause and repair in accordance with accepted procedures as outlined in service manual.</li> </ol>			
4. Tires and wheel lug nuts (for tightness)			
5. Hoses and cables (i.e. worn areas or chafing)			
6. Platform rails and safety gate (no damage present)			
7. Pivot pins secure			
8. Welds are not cracked and structural members are not bent or broken			
9. Warning and instructional labels are legible and secure, and load capacity is clearly marked.			
10. Manufacturer's Instruction Manual is present inside the bucket			
11. Base controls (switches and push buttons) can be properly operated			
12. Platform conditions are safe (i.e. not slippery)			
13. Fire extinguisher is present, mounted and fully charged, located inside the bucket			
14. Headlights, safety strobe light and back-up alarm are functional			
15. Workplace is free of hazards (overhead powerlines, obstructions, level surface, high winds, etc.) *Do not operate if winds are 20 mph, unless otherwise specified by manufacturer recommendations.			
Operator Name & Signature Location	Date		

Ground Control Name & Signature Location Date
Harness Inspections:

Printed Name	Signature	Date
Printed Name	Signature	Date



## **Extended Hours Safety Audit**

Project Number: \_\_\_\_\_ Date: \_\_\_\_ Time: \_\_\_\_\_

When a project is expected to extend past a 14-hour work day, this form must be completed to evaluate the condition of the crew, and the safety of the work environment.

Permission to proceed into extended work hours must come from a District Manager (DM) or Regional Vice President (RVP). Technical RVPs can authorize moving forward, if they are in the field or if they are managing the project.

#### 1. <u>Hold test crew meeting</u> Test crew initials:

The test leader should look for signs of the following in their crews:

<ul> <li>Irritability</li> <li>Lack of motivation</li> <li>Headaches</li> <li>Giddiness</li> </ul>	<ul> <li>Fatigue</li> <li>Depression</li> <li>Reduced alertness, lack of concentration and memory</li> </ul>

The test leader should assess the environmental and hazardous concerns:

Temperature and weather	٠	Hoisting
Lighting	٠	PPE (i.e. respirators, etc.)
Working from Heights	٠	Pollutant concentration in ambient air (SO <sub>2</sub> , $(SO_2, SO_2)$ )
		H <sub>2</sub> S, ect.)

#### 2. Notify DM or RVP

The PM must contact either the DM or RVP to discuss the safety issues that may arise due to the extended work period. During this time, they can come to an agreement on how to proceed. Items to discuss include:

- Reason for extended hours
- Reason for delay
- Production limitations
- Impending Weather

#### 3. Contact the client

The PM, DM or RVP must discuss with client any identified safety concerns, the client's needs and mutually agree on how to proceed. Discussion should also include the appropriate rest period needed before the next day's work shift can begin. The DM and/or a RVP must be informed on the final decision.

Final Outcome:	
Approver:	

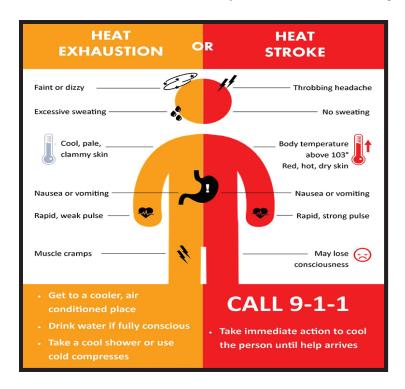


## **Heat Stress Prevention Form**

This form is to be used when the Expected Heat Index is above 91° F, and is to be kept with project documentation.

Project Manager (PM):	Expected High Temp:
Date(s):	Expected Heat Index:

- 1. Review the signs of Heat Exhaustion and Heat Stroke
- 2. If Heat Index is above 91° F:
  - Provide cold water and/or sports drinks to all field staff (avoid caffeinated drinks and energy drinks which can increase core temperature).
    - Bring no less than one gallon of water per employee
  - If employee(s) are dehydrated, on blood pressure medication or not acclimated to heat, ensure they are aware of the heightened risk for heat illness
  - Provide cool head bands/vests/etc.
  - Have ice available to employees
  - Implement work shift rotations and breaks, particularly for employees working in direct sunlight.
  - Provide as much shade at the jobsite as possible, including tarps, tents or other acceptable temporary structures.
  - PM should interview each field staff periodically to evaluate for signs of heat illness
- 3. If Heat Index is above 103° F:
  - Employees must stop for drinks and breaks every hour (about 4 cups/hour)
  - Employees are not permitted to work alone for more than one hour at a time without a break offering shade and drinks
  - Employees should wear cool bands and vests if working outside more than one hour at a time
  - PM should interview each field staff every 2 hours to evaluate for signs of heat illness



# THIS IS THE LAST PAGE OF THIS DOCUMENT

If you have any questions, please contact one of the following individuals by email or phone.

Name:	Mr. Joe Rubio
Title:	Client Project Manager
Region:	West
Email:	JRubio@montrose-env.com
Phone:	(714) 279-6777

Name:	Mr. Matt McCune
Title:	Regional Vice President
Region:	West
Email:	MMccune@montrose-env.com
Phone:	(714) 279-6777



## Mahnaz Ghamati

From:	Mahnaz Ghamati
Sent:	Monday, June 10, 2024 7:31 AM
То:	Roddy Rauls; May Mamari
Cc:	Joseph Rubio; canderson@mdaqmd.ca.gov; Mojave Desert Air Quality Management District
Subject:	RE: Mojave Solar 2024 Two Carbon Adsorption Units Compliance Test Plan
Attachments:	W002AS-042458-PP-1051_CL.pdf; W002AS-042458-PP-1051.pdf

Hello May,

Please find attached the Source Test Protocol for 2024 Annual Compliance Test of Mojave Solar Carbon Adsorption Units.

@Roddy Rauls Chris Anderson no longer oversees Mojave Solar Project.

Kind regards,

Mahnaz Ghamati Quality, Environmental & Compliance Manager

Mahnaz.ghamati@atlantica.com Mojave Solar LLC 42134 Harper Lake Road Hinkley, CA 92347 Office: 760-308-0418 Cell: 760-498-0549

#### www.atlantica.com

From: Roddy Rauls <rrauls@montrose-env.com>
Sent: Monday, June 10, 2024 6:32 AM
To: canderson@mdaqmd.ca.gov
Cc: Mahnaz Ghamati <mahnaz.ghamati@atlantica.com>; Joseph Rubio <jrubio@montrose-env.com>
Subject: Mojave Solar 2024 Two Carbon Adsorption Units Compliance Test Plan

WARNING: EXTERNAL EMAIL. Exercise caution when opening links or attachments.

Chris, Attached are the subject test plan and Cover Letter. We have sent you two hard copies.

Roddy Rauls Administrative Manager Montrose Air Quality Services, LLC 5120 Northshore Dr. North Little Rock, Arkansas 72118 | US Central Time M: 714.936.3839 | Direct 714.332.8622 rrauls@montrose-env.com | www.montrose-env.com

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# Mojave Solar LLC

42134 Harper Lake Road Phone: 760 308 0400 Hinkley, California 92347

## **Submitted Electronically**

Subject:	09-AFC-5C
<b>Condition Number:</b>	AQ-72
Description:	Annual Compliance Test for VOC & Benzene Emissions,
	Carbon System (09-AFC-5C) 2024
Submittal Number:	AQ72-16-01

September 13, 2024

Ashley Gutierrez, CPM California Energy Commission 1516 Ninth Street Sacramento, CA 95814 <u>Ashley.Gutierrez@energy.ca.gov</u>

Mrs. Gutierrez,

In accordance with Condition of Certification AQ-72, we are submitting the source test report for compliance testing on the two carbon adsorption units at the Mojave Solar Project for your review and records. The test was conducted on August 14, 2024, and the Carbon Adsorption Systems at both facilities achieved a passing efficiency rate of 99.9%.

For your convenience, we are including the Compliance verification language below:

The project owner shall provide a compliance test protocol to the District for approval and CPM for review at least thirty (30) days prior to the compliance tests. The project owner shall notify the District and the CPM within ten (10) working days before the execution of the compliance tests required in AQ-73 and AQ-74, and the test results shall be submitted to the District and to the CPM within forty-five (45) days after the tests are conducted.

Should you have any questions or comments, please don't hesitate to contact me.

Sincerely,

Mahnaz Ghamati

Quality, Environmental & Compliance Manager

# Mojave Solar LLC

42134 Harper Lake Road Hinkley, California 92347 Phone: 760 308 0400

#### **Mojave Solar LLC** 42134 Harper Lake Rd Hinkley, CA 92347 Cell: (760) 498-0549 mahnaz.ghamati@atlantica.com

Attachments: Mojave Solar Project Annual VOC & Benzene Emissions, Carbon System Test report.



September 12, 2024

May Mamari Mojave Desert Air Quality Management District 14306 Park Avenue Victorville, California 92392

#### Subject: Compliance Report of Two Carbon Adsorption Systems Report Number: W002AS-042458-RT-6501

Dear May:

Enclosed you will find a PDF copy of the source test report for the compliance testing on the two carbon adsorption units at the Mojave Solar facility in Hinkley, California. The test program was conducted on August 14, 2024. We are submitting it on behalf of Ms. Mahnaz Ghamati of Mojave Solar, LLC. We have sent you two hard copies.

Please call me at (714) 332-8486 if you have any questions.

Sincerely,

ilu

Joe Rubio Project Manager **Montrose Air Quality Services, LLC** 

cc Ms. Mahnaz Ghamati - Mojave Solar, LLC

# SOURCE TEST REPORT FOR 2024 CARBON ADSORPTION SYSTEMS COMPLIANCE MOJAVE SOLAR, LLC HINKLEY, CALIFORNIA

**Prepared For:** 

## Mojave Solar, LLC 42134 Harper Lake Road

Hinkley, California 92347

For Submittal to:

Mojave Desert Air Quality Management District 14306 Park Avenue

Victorville, California 92392

Prepared By:

# Montrose Air Quality Services, LLC

1631 E. St. Andrew Pl. Santa Ana, California 92705 (714) 279-6777

Joe Rubio

Test Date:August 14, 2024Production Date:September 12, 2024Report Number:W002AS-042458-RT-6501





### **CONFIDENTIALITY STATEMENT**

Except as otherwise required by law or regulation, this information contained in this communication is intended exclusively for the individual or entity to which it is addressed. This communication may contain information that is proprietary, privileged or confidential or otherwise legally exempt from disclosure. If you are not the named addressee, you are not authorized to read, print, retain, copy, or disseminate this message or any part of it.



### **REVIEW AND CERTIFICATION**

All work, calculations, and other activities and tasks performed and presented in this document were carried out by me or under my direction and supervision. I hereby certify that, to the best of my knowledge, Montrose operated in conformance with the requirements of the Montrose Quality Management System and ASTM D7036-04 during this test project.

Signature:	Joe Rulu	Date:	9/12/2024	
Name:	Joe Rubio	Title:	Client Project Manager	

I have reviewed, technically and editorially, details, calculations, results, conclusions, and other appropriate written materials contained herein. I hereby certify that, to the best of my knowledge, the presented material is authentic, accurate, and conforms to the requirements of the Montrose Quality Management System and ASTM D7036-04.

Signature:	5. Hugh Brown	Date:	9/12/2024
Name:	S. Hugh Brown	Title:	Client Project Manager



## **GENERAL INFORMATION**

Source:	Carbon Adsorption System (CAS) – Alpha Carbon Adsorption System (CAS) – Beta
Source Location:	Mojave Solar, LLC 42134 Harper Lake Road Hinkley, California 92347
Contact:	Ms. Mahnaz Ghamati Telephone: (626) 233-1943 Email: <u>Mahnaz.ghamati@atlantica.com</u>
Permit Number:	C012015 – CAS Alpha C012016 – CAS Beta
Agency:	Mojave Desert Air Quality Management District 14306 Park Avenue Victorville, California 92392-4178
Contact:	May Mamari Telephone: (760) 245-1661, ext. 5020 Email: <u>mmamari@mdaqmd.ca.gov</u>
Source Test Contractor:	Montrose Air Quality Services, LLC 1631 E. St. Andrew PI. Santa Ana, California 92705
Project Manager:	Joe Rubio Telephone: (714) 332-8486 Email: <u>jrubio@montrose-env.com</u>
Test Date:	August 14, 2024



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### 1.0 INTRODUCTION

Montrose Air Quality Services, LLC (MAQS) was hired by Mojave Solar, LLC to conduct source emissions tests on two (2) Carbon Adsorption Systems (CAS) located in Hinkley, California. The purpose of the test was to satisfy the compliance test requirements of the Mojave Desert Air Quality Management District (MDAQMD) Authority to Construct No. C012015 for the Alpha System and Authority to Construct No. C012016 for the Beta System.

A test plan (document W002AS-042458-PP-1051 dated June 10, 2024) was submitted before the testing. Joe Rubio, Project Manager, and Dominic Heredero, Field Technician, performed the testing. Dominic Heredero was the on-site Qualified Individual for MAQS. Mahnaz Ghamati of Mojave Solar coordinated the test. The District was notified but was not present during the test.



## 2.0 EQUIPMENT AND PROCESS DESCRIPTION

#### 2.1 UNIT DESCRIPTION

Carbon adsorption system, HTF (Heat Transfer Fluid) Ullage/Expansion System Alpha and Beta consisting of Authority to Construct Modification March 2020 to update carbon adsorption system having two (2) multi-bed carbon filter sets capturing ullage/expansion system emissions and having a high and low-pressure side. The expansion vessel vents on the high-pressure side and the overflow tank vents on the low-pressure side. The high-pressure and low-pressure sides each vent to three vertical carbon cylindrical vessels (carbon beds) are described below. Flow through each vessel is vertical and each side (three vessels), will be interconnected using a pipe rack system that allows the vessels to operate in series (lead/lag), parallel, or single vessel. Sample ports are located at the inlet and outlet of each carbon bed. Optimally the system will operate in lead/lag flow, with a third canister on standby, with other operating configurations for maintenance and high flow events. Both high-pressure and low-pressure vent to the atmosphere through one common stack.

#### High-Pressure Side

Dimensions: 54" OD bed x 114" side shell Bed Area: (53.25" ID) = 15.466 square feet Nominal Flow Rate (cfm): 1,546.60 CFM Carbon Capacity: 3,000 pounds Fittings: 8"

Low-Pressure Side Dimensions: 36" OD bed x 108" side shell

#### 2.2 PROCESS DESCRIPTION

The HTF expansion tank adsorbs any thermal dilation (both increase and reduction in volume) occurring in the HTF as a result of temperature variations. The expansion tank must be free of atmospheric air to avoid degrading the HTF by oxygen and it must be pressurized to prevent the HTF from reaching its evaporation temperature. To achieve this, nitrogen is fed in when in the pressure in the tank drops, while nitrogen is expelled when the pressure in the tank increases as a result of an expansion in the HTF's volume. Nitrogen is expelled through the Ullage system to avoid releasing pollutant oil vapor into the atmosphere. This system is composed of an HTF Overflow Tank Vent Scrubber (MV-208), HTF Expansion Tank Vent Scrubber (MV-209); Carbon Filters (MF-206), and HTF Condensate Receiver Vessel (MV-207).

The Ullage system operates when the pressure in the HTF expansion header connected with the ullage system reach the remote set point in the vent control. This control (PIC-20626B) has a remote set point according to the pressure and the time, and the maximum value is 165 psia (pounds per square inch absolute). Above this pressure, the vent valves will open fully to avoid overpressure in the system.

HTF vapors from the HTF Condensate Receiver Vessel (MV-207) or the HTF Overflow Tanks (MT-204A/B) are scrubbed in one of two scrubbers with cool HTF to condense as much HTF and low boilers (LB) as possible. The HTF used in these scrubbers comes from the HTF Tank Cooler (MX-205), normally at  $\pm$ 70°F. After the scrubbers, these remaining HTF vapor streams are combined and routed through a series of three carbon filters to remove as many organics



(VOCDs/HAPS) as possible before the vapors are release into the atmosphere. There is a nitrogen blanket system set at 8 bara providing nitrogen to the HTF vapor system (all the way back to the Expansion Vessels). The vent line to the carbon filters is designed to vent at 12 bara from the pressurized system but, the overflow system (that works at atmosphere pressure) start to vent at 14.40 psia, pressure set according to the pressure safety valve (PSV) in the overflow system.

There are two types of venting from the HTF system:

- 1. The venting of nitrogen due to HTF overflow tank breathing;
- 2. The daily venting of vapor space due to HTF expansion into the expansion vessels.

#### 2.2.1 Overflow Tank Venting

As indicated above, during normal operation, there is no exchange of HTF or nitrogen between the expansion vessels and the overflow tanks. However, during the winter months when the HTF temperature drops below the normal daily range, some HTF in the overflow tanks may need to be transferred into the expansion vessels to maintain the minimum expansion tank level. During these conditions, the overflow tank levels may fall and rise, thus requiring nitrogen space venting. The worst case would be if the HTF system became very cold (limited to 120°F) after a few days of sun, in which case all the HTF from the overflow tanks would be pumped back into the system. The next time the system is brought back to normal operation, all of the HTF that was pumped out of the overflow tanks would return to the overflow tanks. Under that condition, the total amount of nitrogen vented is calculated to be 24,731 ft<sup>3</sup> total for both plants. The overflow tanks have vent scrubbers on their stacks before feeding into the carbon filters. Nitrogen and HTF mixture to be released passes through these scrubbers where it is cooled to 117°F by the cooled liquid HTF stream flowing countercurrent. This overflow tank vent scrubber will condense most of the HTF vapor vented from the overflow tanks before reaching the carbon filters. The overflow tanks have a design temperature of 350°F, but the worst-case vapor space temperature has been calculated to be around 250°F. The overflow tanks are designed to be maintained at 150°F to minimize HTF venting but at the same time be sufficiently higher than the high heat tracing (electric heating) initiation temperature of 120°F. The overflow tank has a liquid HTF cooler to maintain this tank's temperature at 150°F.

#### 2.2.2 Expansion Vessel Venting

As the HTF expands and contracts daily into and out of the expansion vessels, the low boilers LB's along with some vaporous HTF is released into the vapor space. To help this separation of LB's into the vapor space, a side stream of HTF is also be sprayed to the top of the expansion vessels continuously. As the expansion vessels fill up with HTF, the nitrogen space is compressed until the pressure reaches 12 bara, upon which the vent valve opens and allows any further expansion to force the vapor space through the ullage system. The nitrogen and vapors are pushed through the nitrogen ullage condenser, where most of the HTF and low boiler degradation products are condensed and collected in the low boiler condensate receiver vessel. The nitrogen and other non-condensable constituents will pass through the expansion vessel vent scrubber where the 117°F, countercurrent liquid HTF flow will bring even more HTF and low boilers into the liquid phase. The nitrogen, degradation products, and vaporous HTF remaining in the vapor phase at the exit of the scrubber will enter the carbon filters for further cleaning before venting into the atmosphere.



### 3.0 TEST DESCRIPTION

#### 3.1 OPERATING CONDITIONS DURING THE TEST

Both CAS units were tested early in the morning during the peak venting time. The CAS was operated manually to simulate the normal operating condition since the low temperature did not allow the system to vent.

During the testing time, the scrubber's quench line (spray system) was closed to allow most of the gases to be detected at the inlet of the carbon beds, allowing the carbon beds to prove the minimum required 95% efficiency. Opening the quench line resulted on a high percentage reduction of VOC going through the ullage system downstream, which also resulted on a less amount of VOC detection at the carbon beds inlet. Since the calculations are based on the amount of VOC reduction between the inlet and the outlet of the canisters, this action allowed to better prove the beds' efficiency. Also, to be able to vent for the duration of the test, some HTF was transferred from the expansion vessel to the overflow tanks in order to build enough pressure to carry out the test.

#### 3.2 DIMENSIONS OF DUCT, STACKS, AND SAMPLING PORT LOCATIONS

Table 3-1 presents the dimensions of the sampling port locations.

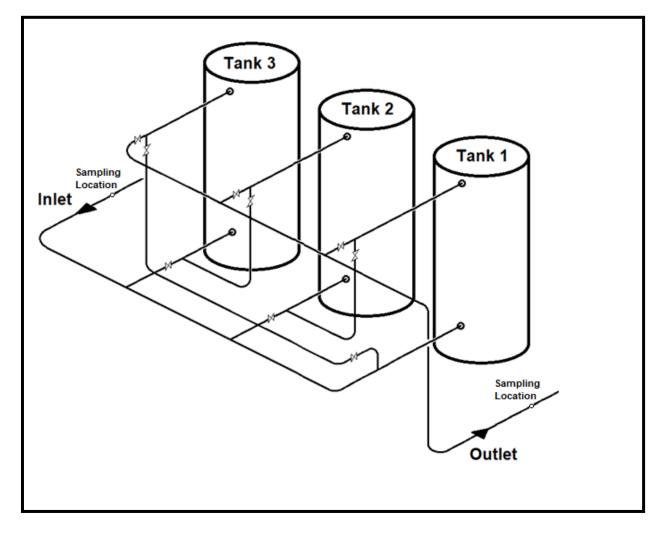
MOJAVE SOLAR, LLC						
High Pressure	Low Pressure					
8 Inches	4 Inches					
8 Inches	4 Inches					
8 Inches	4 Inches					
8 Inches	4 Inches					
	8 Inches 8 Inches 8 Inches					

#### TABLE 3-1 SAMPLING PORT LOCATIONS MOJAVE SOLAR, LLC

A line diagram of the CAS is presented as Figure 3-1.



#### FIGURE 3-1 CAS DIAGRAM MOJAVE SOLAR, LLC CARBON ADSORPTION SYSTEM





#### 3.3 SAMPLING AND ANALYTICAL PROCEDURES

The procedures used to collect the data are summarized in Table 3-2.

TABLE 3-2
TEST PROCEDURES
<b>MOJAVE SOLAR, LLC</b>

Location	Method	Number of Tests	Duration
Inlet and Outlet	CARB Method 2	2	5 Minutes
Inlet and Outlet	EPA Method 18	2	5 Minutes
Inlet and Outlet	CARB Method 410A	2	5 Minutes
Inlet and Outlet	Dry Wet Bulb	2	5 Minutes
	Inlet and Outlet Inlet and Outlet Inlet and Outlet	Inlet and OutletCARB Method 2Inlet and OutletEPA Method 18Inlet and OutletCARB Method 410A	Inlet and OutletCARB Method 22Inlet and OutletEPA Method 182Inlet and OutletCARB Method 410A2

#### 3.3.1 Velocity and Volumetric Flow Rate

The exhaust gas velocity and volumetric flow rate were determined according to the guidelines specified in CARB Methods 1 and 2.

#### 3.3.2 Moisture Content

The moisture content at the exhaust was determined by using dry and wet bulb temperature measurements.

#### 3.3.3 Hexane and Benzene Emissions Testing

To minimize any chance of air intrusion into the sample, a 1" sample port was installed to collect all sampling. Before collecting each sample, MAQS measured the oxygen level in the inlet location using a Testo portable analyzer, Model 350XL. When no or little oxygen was measured with the Testo, MAQS proceeded with the sampling for benzene and hexane concentrations.

The concentrations of benzene and hexane were collected into SUMMA (specially prepared stainless steel) canisters. The sampling system includes a stainless-steel probe and components that regulate the rate and duration of sampling into the pre-evacuated and passivated canisters. Each of the three samples were collected over a period of approximately five minutes. The samples were then delivered within 24 hours to a state-certified lab, Quantum Laboratories in Carson, California. The samples were analyzed by packed column gas chromatography-mass spectrophotometry (GC/MS).



## 4.0 TEST RESULTS

Test results indicate that both the Alpha and Beta CAS serving the HTF ullage/expansion system were found to be operating in compliance with the required 95% control efficiency of VOC emissions. Table 4-1 shows the analytical results of VOC as Hexane and Benzene sampling at the Alpha Plant along with the field measurements taken during the source test. Table 4-2 shows the results at the Beta Plant.

Additional information such as field data, calibrations, and permits are located in the Appendices of this report.



#### TABLE 4-1 HEXANE AND BENZENE RESULTS ALPHA PLANT MOJAVE SOLAR, LLC CARBON ADSORPTION SYSTEM AUGUST 14, 2024

	Run No.	Location	Flow Rate DSCFM	Hexane ppm	Hexane Ib/hr	Destruction Efficiency, %	Benzene ppm	Benzene Ib/hr	Destruction Efficiency, %
Low Pressure (Lead = NB16) (Lag = NB15)	1	Inlet Exhaust	166 166	16,077 1.8	35.86 0.0039	>99.9	9,522 1.42	19.3 0.0029	>99.9
(Spare = NB17)	2	Inlet Exhaust	169 169	14,318 1.63	32.5 0.0037	>99.9	10,123 1.08	20.8 0.0022	>99.9
High Pressure (Lead = NB7) (Spare = NB5)	1	Inlet Exhaust	340 340	343 0.34	1.57 0.00	99.9	208 0.15	0.86 0.0006	99.9
(Spare = NB6)	2	Inlet Exhaust	376 376	860 0.18	4.34 0.00	>99.9	656 0.15	3.00 0.0007	>99.9
				Average		>99.9%			>99.9%



#### TABLE 4-2 HEXANE AND BENZENE RESULTS BETA PLANT MOJAVE SOLAR, LLC CARBON ADSORPTION SYSTEM AUGUST 14, 2024

	Run No.	Location	Flow Rate DSCFM	Hexane ppm	Hexane Ib/hr	Destruction Efficiency, %	Benzene ppm	Benzene Ib/hr	Destruction Efficiency, %
Low Pressure (Lead = NB19) (Lag = NB18)	1	Inlet Exhaust	129 129	24,517 0.72	42.47 0.001	>99.9	21,640 0.25	34.0 0.00039	>99.9
(Spare = NB20)	2	Inlet Exhaust	120 120	17,086 1.45	27.60 0.002	>99.9	15,133 0.22	22.2 0.00032	>99.9
High Pressure (Lead = NB10)	1	Inlet Exhaust	364 364	4,583 0.18	22.41 0.001	>99.9	935 0.006	4.15 0.000	>99.9
(Spare = NB8) (Spare = NB9)	2	Inlet Exhaust	358 358	3,750 0.15	18.02 0.001	>99.9	1,131 0.005	4.93 0.000	>99.9
				Average		>99.9%			>99.9%



# APPENDIX A TEST DATA



# Appendix A.1 Field Data



ALPHA PLANT	Run No.	Run No. Location	Flow Rate DSCFM	VOC as Hexane ppm	Hexane Ib/hr	Control Efficiency	Benzene ppm	Benzene Ib/hr	Control Efficiency
Alpha Low Pressure	~	Inlet Exhaust	166 166	16,077 1.8	35.86 0.0039	100.0	9,522 1.42	19.3 0.0029	100.0
Alpha Low Pressure	5	Inlet Exhaust	169 169	14,318 1.63	32.5 0.0037	100.0	10,123 1.08	20.8 0.0022	100.0
Alpha High Pressure	-	Inlet Exhaust	340 340	343 0.34	1.57 0.00	6.66	208 0.15	0.86 0.0006	6.66
Alpha High Pressure	2	Inlet Exhaust	376 376	860 0.18	4.34 0.00	100.0	656 0.15	3.00 0.0007	100.0
						100.0			100.0
BETA PLANT	Run No.	Location	Run No. Location Flow Rate DSCFM	VOC as Hexane ppm	Hexane Ib/hr	Control Efficiency	Benzene ppm	Benzene Ib/hr	Control Efficiency
Beta Low Pressure	~	Inlet Exhaust	129 129	24,517 0.72	42.47 0.001	100.0	21,640 0.25	34.0 0.00039	100.0
Beta Low Pressure	7	Inlet Exhaust	120 120	17,086 1.45	27.60 0.002	100.0	15,133 0.22	22.2 0.00032	100.0
Beta High Pressure	-	Inlet Exhaust	364 364	4,583 0.18	22.41 0.001	100.0	935 0.006	4.15 0.000	100.0
Beta High Pressure	2	Inlet Exhaust	358 358	3,750 0.15	18.02 0.001	100.0	1,131 0.005	4.93 0.000	100.0
						100.0			100.0

FACILITY: SOURCE: DATE: STANDARD TEMP	Mojave Solar Alpha - Low Pressure 8/14/2024 9 (EPA = 68 DEG.)	68		
Lead Canister: Lag Canister: 15 Standby Canister:	No. 15			
RUN NUMBER			1	2
FIELD DATA INPU	ITS:			
BAROMETRIC PR	ESSURE (Pb)		27.91	27.91
STACK DIAMETER			4.00	4.00
RELATIVE HUMID			31.0	31.0
STACK TEMP (DE	G. F)		73	74
VAPOR PRESSUR	( <b>C</b> )		0.7912	0.8183
STACK VELOCITY	′ (FT/MIN)		2,080	2,120
FLOW RESULTS:				
MOISTURE (%)			0.88	0.91
ACTUAL CFM			182	185
STANDARD CFM			168	171
DRY STANDARD (	CFM		166	169

FACILITY: SOURCE: DATE: STANDARD TEMP	Mojave Solar Alpha - High Pressure 8/14/2024 9 (EPA = 68 DEG.)	68		
Lead Canister: Standby Canister: Standby Canister:	No. 5			
RUN NUMBER			1	2
FIELD DATA INPU	ITS:			
BAROMETRIC PR	ESSURE (Pb)		27.91	27.91
STACK DIAMETER	. ,		8.00	8.00
RELATIVE HUMID	( )		31.0	31.0
STACK TEMP (DE	,		67	67
VAPOR PRESSUR	( .		0.6903	0.6903
STACK VELOCITY	′ (FT/MIN)		1,050	1,162
FLOW RESULTS:				
MOISTURE (%)			0.77	0.77
ACTUAL CFM			367	406
STANDARD CFM			343	379
DRY STANDARD (	CFM		340	376

FACILITY: SOURCE: DATE: STANDARD TEMP	Mojave Solar Beta - Low Pressure 8/14/2024 (EPA = 68 DEG.)	68		
Lead Canister: Lag Canister: Standby Canister:	NB18			
RUN NUMBER			1	2
FIELD DATA INPU	ITS:			
BAROMETRIC PR	ESSURE (Pb)		27.91	27.91
STACK DIAMETER			4.00	4.00
RELATIVE HUMID			27.0	42.0
STACK TEMP (DE			78	78
VAPOR PRESSUR	( <b>e</b> )		0.9989	0.9989
STACK VELOCITY	(FT/MIN)		1,632	1,530
FLOW RESULTS:				
MOISTURE (%)			0.97	1.50
ACTUAL CFM			142	134
STANDARD CFM			130	122
DRY STANDARD (	CFM		129	120

FACILITY: SOURCE: DATE: STANDARD TEMP	Mojave Solar Beta - High Pressure 8/14/2024 9 (EPA = 68 DEG.)	68	
Lead Canister: Standby Canister: Standby Canister:	NB8		
RUN NUMBER			1 2
FIELD DATA INPU BAROMETRIC PR STACK DIAMETER RELATIVE HUMID STACK TEMP (DE VAPOR PRESSUR STACK VELOCITY	ESSURE (Pb) R (inches) ITY (%) G. F) RE of H2O (" Hg)	42	00         8.00           .0         42.0           79         79           89         0.9989
FLOW RESULTS: MOISTURE (%) ACTUAL CFM STANDARD CFM DRY STANDARD (	CFM	1.5 40 37 36	05 398 70 364

# Appendix A.2 Laboratory Data



CLIENT:	Montrose
<b>CLIENT PROJ NO:</b>	<b>Mojave Solar</b>
LABORATORY NO:	24-865
SAMPLING DATE:	08/14/24
<b>RECEIVING DATE:</b>	08/15/24
ANALYSIS DATE:	08/15/24
<b>REPORT DATE:</b>	08/23/24

# Laboratory Analysis Report (1 of 4)

Analysis Method	EPA 18					
Detection Limits	0.1 PPMV					
	Sample ID	Alpha Inlet High R1 Tk #35	Alpha Inlet High R2 Tk #25	Alpha Exh High R1 Tk #23	Alpha Exh High R2 Tk #24	
	Sample Date	8/14/2024	8/14/2024	8/14/2024	8/14/2024	
	Sample Time	0720	0730	0720	0730	
	Lab ID	22824-9	22824-10	22824-1	22824-2	
	Units	PPMV	PPMV	PPMV	PPMV	
C1 - Methane		12.97	86.46	15.54	6.00	
C2 - Ethane, Ethylene		3.74	58.52	< 0.1	< 0.1	
C3 - Propane, Propyle	ene	2.87	31.53	< 0.1	< 0.1	
C4 - Butanes		<0.1	4.77	< 0.1	< 0.1	
C5 - Pentanes		<0.1	1.59	<0.1	<0.1	
C6 - Hexanes		<0.1	1.08	<0.1	<0.1	
C6+ (including Benzer	ne)	340.5	817.4	0.34	0.18	
Total VOC as Hexane in	cluding Ethane	343.3	859.6	0.34	0.18	

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Dr. Andrew Kitto President

CLIENT:	Montrose
<b>CLIENT PROJ NO:</b>	<b>Mojave Solar</b>
LABORATORY NO:	24-865
SAMPLING DATE:	08/14/24
<b>RECEIVING DATE:</b>	08/15/24
ANALYSIS DATE:	08/15/24
<b>REPORT DATE:</b>	08/23/24

# Laboratory Analysis Report (2 of 4)

Analysis Method	EPA 18				
Detection Limits	0.1 PPMV				
	Sample ID	Alpha Inlet Low R1 Tk #27	Alpha Inlet Low R2 Tk #28	Alpha Exh Low R1 Tk #29	Alpha Exh Low R2 Tk #30
	Sample Date	08/14/24	08/14/24	08/14/24	08/14/24
	Sample Time	0740	0750	0740	0740
	Lab ID	22824-13	22824-14	22824-5	22824-6
	Units	PPMV	PPMV	PPMV	PPMV
C1 - Methane		127.7	171.4	90.14	93.32
C2 - Ethane, Ethylene		132.6	135.3	<0.1	<0.1
C3 - Propane, Propyle	ene	124.1	126.6	<0.1	<0.1
C4 - Butanes		60.79	63.71	<0.1	<0.1
C5 - Pentanes		22.19	37.75	<0.1	<0.1
C6 - Hexanes		17.33	18.49	<0.1	<0.1
C6+ (including Benzer	ne)	15,890	14,113	1.77	1.63
Total VOC as Hexane in	cluding Ethane	16,077	14,318	1.77	1.63

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Dr. Andrew Kitto President

CLIENT:	Montrose
<b>CLIENT PROJ NO:</b>	<b>Mojave Solar</b>
LABORATORY NO:	24-865
SAMPLING DATE:	08/14/24
<b>RECEIVING DATE:</b>	08/15/24
ANALYSIS DATE:	08/15/24
<b>REPORT DATE:</b>	08/23/24

# Laboratory Analysis Report (3 of 4)

Analysis Method	EPA 18				
Detection Limits	0.1 PPMV				
	Sample ID	Beta Inlet Low R1 Tk #19	Beta Inlet Low R2 Tk #20	Beta Exh Low R1 Tk #21	Beta Exh Low R2 Tk #22
	Sample Date	08/14/24	08/14/24	08/14/24	08/14/24
	Sample Time	0803	0813	0803	0813
	Lab ID	22824-15	22824-16	22824-7	22824-8
	Units	PPMV	PPMV	PPMV	PPMV
C1 - Methane		160.6	107.0	74.86	73.82
C2 - Ethane, Ethylene		146.9	106.5	<0.1	<0.1
C3 - Propane, Propyle	ne	121.3	81.53	<0.1	< 0.1
C4 - Butanes		53.56	36.00	< 0.1	< 0.1
C5 - Pentanes		13.00	21.50	<0.1	< 0.1
C6 - Hexanes		23.63	15.62	<0.1	<0.1
C6+ (including Benzen	ie)	24,334	16,949	0.72	1.45
Total VOC as Hexane in	cluding Ethane	24,517	17,086	0.72	1.45

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Dr. Andrew Kitto President

CLIENT:	Montrose
<b>CLIENT PROJ NO:</b>	<b>Mojave Solar</b>
LABORATORY NO:	24-865
SAMPLING DATE:	08/14/24
<b>RECEIVING DATE:</b>	08/15/24
ANALYSIS DATE:	08/15/24
<b>REPORT DATE:</b>	08/23/24

# Laboratory Analysis Report (4 of 4)

Analysis Method	EPA 18				
Detection Limits	0.1 PPMV				
	Sample ID	Beta Inlet High R1 Tk #31	Beta Inlet High R2 Tk #28	Beta Exh High R1 Tk #32	Beta Exh High R2 Tk #34
	Sample Date	08/14/24	08/14/24	08/14/24	08/14/24
	Sample Time	0823	0833	0823	0833
	Lab ID	22824-11	22824-12	22824-3	22824-4
	Units	PPMV	PPMV	PPMV	PPMV
C1 - Methane		66.58	68.29	25.74	43.81
C2 - Ethane, Ethylene		50.63	49.42	<0.1	<0.1
C3 - Propane, Propyle	ene	24.22	22.30	<0.1	<0.1
C4 - Butanes		3.79	3.87	<0.1	<0.1
C5 - Pentanes		<0.1	<0.1	<0.1	<0.1
C6 - Hexanes		<0.1	<0.1	<0.1	<0.1
C6+ (including Benzer	ne)	4,550	3,719	0.18	0.15
Total VOC as Hexane ir	cluding Ethane	4,583	3,750	0.18	0.15

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Dr. Andrew Kitto President

CLIENT:	Montrose
<b>CLIENT PROJ NO:</b>	<b>Mojave Solar</b>
LABORATORY NO:	24-865
SAMPLING DATE:	08/14/24
<b>RECEIVING DATE:</b>	08/15/24
ANALYSIS DATE:	08/15/24
<b>REPORT DATE:</b>	08/23/24

# Laboratory Analysis Report (QA/QC)

#### Sample ID: Beta Exh Low R2 Tk #22

#### Lab ID: 22824-8

Analyte	Analysis #1 PPMV	Analysis #2 PPMV	Mean PPMV	% Difference from the Mean*
C1 - Methane	73.82	73.03	73.43	0.5
C2 - Ethane, Ethylene	< 0.1	<0.1	< 0.1	N/A
C3 - Propane, Propylene	< 0.1	< 0.1	< 0.1	N/A
C4 - Butanes	< 0.1	< 0.1	< 0.1	N/A
C5 - Pentanes	< 0.1	<0.1	< 0.1	N/A
C6 - Hexanes	< 0.1	<0.1	< 0.1	N/A
C6+ (including Benzene)	1.45	1.30	1.37	5.5

N/A: Not Applicable

\*Must be ≤10%

Lab ID: 22824-16

#### Sample ID: Beta Inlet Low R2 Tk #20

Analyte	Analysis #1 PPMV	Analysis #2 PPMV	Mean PPMV	% Difference from the Mean*
C1 - Methane	107.0	110.0	108.5	1.4
C2 - Ethane, Ethylene	106.5	105.5	106.0	0.5
C3 - Propane, Propylene	81.53	85.15	83.34	2.2
C4 - Butanes	36.00	38.63	37.32	3.5
C5 - Pentanes	21.50	22.24	21.87	1.7
C6 - Hexanes	15.62	15.88	15.75	0.8
C6+ (including Benzene)	16,949	16,500	16,725	1.3

N/A: Not Applicable

\*Must be ≤10%

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Dr. Andrew Kitto President

CLIENT:	Montrose
<b>CLIENT PROJ NO:</b>	<b>Mojave Solar</b>
LABORATORY NO:	24-865
SAMPLING DATE:	08/14/24
<b>RECEIVING DATE:</b>	08/15/24
ANALYSIS DATE:	08/15/24
<b>REPORT DATE:</b>	08/23/24

### **Quality Control/Quality Assurance Report**

I - Blank				
	Results			
Lab ID	PPMV			
C1 - Methane	<0.1			
C2 - Ethane	<0.1			
C3 - Propane	<0.1			
C4 - Butane	<0.1			
C5 - Pentane	<0.1			
C6 - Hexane	<0.1			

II - Initial Calibration Verification Standard - C1-C6

	Theoretical Value	<b>Tested Value</b>	%
Lab ID	PPMV	PPMV	<b>Recovery</b> *
C1 - Methane	100.0	97.85	98%
C2 - Ethane	100.0	98.29	98%
C3 - Propane	100.0	98.22	98%
C4 - Butane	100.0	98.10	98%
C5 - Pentane	100.0	97.28	97%
C6 - Hexane	100.0	99.31	99%

\*Must be ±10%

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Dr. Andrew Kitto President

CLIENT:	Montrose
<b>CLIENT PROJ NO:</b>	<b>Mojave Solar</b>
LABORATORY NO:	24-865
SAMPLING DATE:	08/14/24
<b>RECEIVING DATE:</b>	08/15/24
ANALYSIS DATE:	08/15/24
<b>REPORT DATE:</b>	08/23/24

# Laboratory Analysis Report (1 of 2)

Analysis Method	CARB 410A	
Detection Limits	5.0 PPBV	
		Benzene
Sample ID	Lab ID	PPBV
Alpha Inlet High R1 Tk #35	22824-9	207,987
Alpha Inlet High R2 Tk #25	22824-10	655,757
Alpha Exh High R1 Tk #23	22824-1	150
Alpha Exh High R2 Tk #24	22824-2	145
Alpha Inlet Low R1 Tk #27	22824-13	9,522,283
Alpha Inlet Low R2 Tk #28	22824-14	10,123,469
Alpha Exh Low R1 Tk #29	22824-5	1,418
Alpha Exh Low R2 Tk #30	22824-6	1,079
Beta Inlet Low R1 Tk #19	22824-15	21,639,524
Beta Inlet Low R2 Tk #20	22824-16	15,133,443
Beta Exh Low R1 Tk #21	22824-7	251
Beta Exh Low R2 Tk #22	22824-8	218
Beta Inlet High R1 Tk #31	22824-11	934,821
Beta Inlet High R2 Tk #28	22824-12	1,130,722
Beta Exh High R1 Tk #32	22824-3	6.1
Beta Exh High R2 Tk #34	22824-4	5.3

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Dr. Andrew Kitto President

CLIENT:	Montrose
<b>CLIENT PROJ NO:</b>	<b>Mojave Solar</b>
LABORATORY NO:	24-865
SAMPLING DATE:	08/14/24
<b>RECEIVING DATE:</b>	08/15/24
ANALYSIS DATE:	08/15/24
<b>REPORT DATE:</b>	08/23/24

# Laboratory Analysis Report (2 of 2)

Analysis Method	CARB 410A		
Detection Limits	0.05 PPMV		
		Benzene	
Sample ID	Lab ID	PPMV	
Alpha Inlet High R1 Tk #35	22824-9	208.0	
Alpha Inlet High R2 Tk #25	22824-10	655.8	
Alpha Exh High R1 Tk #23	22824-1	0.15	
Alpha Exh High R2 Tk #24	22824-2	0.15	
Alpha Inlet Low R1 Tk #27	22824-13	9,522	
Alpha Inlet Low R2 Tk #28	22824-14	10,123	
Alpha Exh Low R1 Tk #29	22824-5	1.42	
Alpha Exh Low R2 Tk #30	22824-6	1.08	
Beta Inlet Low R1 Tk #19	22824-15	21,640	
Beta Inlet Low R2 Tk #20	22824-16	15,133	
Beta Exh Low R1 Tk #21	22824-7	0.25	
Beta Exh Low R2 Tk #22	22824-8	0.22	
Beta Inlet High R1 Tk #31	22824-11	934.8	
Beta Inlet High R2 Tk #28	22824-12	1,131	
Beta Exh High R1 Tk #32	22824-3	< 0.05	
Beta Exh High R2 Tk #34	22824-4	<0.05	

\*Samples were diluted for analysis

WW

Dr. Andrew Kitto President

CLIENT:	Montrose
<b>CLIENT PROJ NO:</b>	<b>Mojave Solar</b>
LABORATORY NO:	24-865
SAMPLING DATE:	08/14/24
<b>RECEIVING DATE:</b>	08/15/24
ANALYSIS DATE:	08/15/24
<b>REPORT DATE:</b>	08/23/24

Laboratory Analysis Report (QA/QC)

# Sample ID: Beta Exh Low R2 Tk #22

### Lab ID: 22824-8

Analyte	Analysis #1	Analysis #2	Mean	% Difference
	PPBV	PPBV	PPBV	from the Mean*
Benzene	218.4	231.1	224.7	2.8

N/A: Not Applicable

\*Must be ≤10%

Sample ID: Beta Inlet Low R2 Tk #20				Lab ID: 22824-16
Analyte	Analysis #1 PPMV	Analysis #2 PPMV	Mean PPMV	% Difference from the Mean*
Benzene	15,133	15,156	15,145	0.1

N/A: Not Applicable

\*Must be ≤10%

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Dr. Andrew Kitto President

CLIENT:	Montrose
<b>CLIENT PROJ NO:</b>	<b>Mojave Solar</b>
LABORATORY NO:	24-865
SAMPLING DATE:	08/14/24
<b>RECEIVING DATE:</b>	08/15/24
ANALYSIS DATE:	08/15/24
<b>REPORT DATE:</b>	08/23/24

### **Quality Control/Quality Assurance Report**

I- Blank

Results			
Lab ID	PPMV		
Benzene	<0.1		

#### **II - Initial Calibration Verification Standard - Benzene (PPBV)**

Lab ID	Theoretical Value	Tested Value	%
	PPBV	PPBV	Recovery*
Benzene	1000	1067	107%

\*Must be ±10%

W MIN

Dr. Andrew Kitto President

CLIENT:	Montrose
<b>CLIENT PROJ NO:</b>	Mojave Solar
LABORATORY NO:	24-865
SAMPLING DATE:	08/14/24
<b>RECEIVING DATE:</b>	08/15/24
ANALYSIS DATE:	08/15/24
<b>REPORT DATE:</b>	08/23/24

# Laboratory Analysis Report

Analysis Method		EPA 3C		
Detection Limits		0.01%		
		CH4	CO2	02
Sample ID	Lab ID	%	%	%
Alpha Inlet High R1 Tk #35	22824-9	< 0.01	< 0.01	< 0.01
Alpha Inlet High R2 Tk #25	22824-10	< 0.01	0.02	< 0.01
Alpha Exh High R1 Tk #23	22824-1	< 0.01	0.20	< 0.01
Alpha Exh High R2 Tk #24	22824-2	< 0.01	0.13	< 0.01
Alpha Inlet Low R1 Tk #27	22824-13	< 0.01	0.04	0.80
Alpha Inlet Low R2 Tk #28	22824-14	< 0.01	0.04	0.87
Alpha Exh Low R1 Tk #29	22824-5	< 0.01	0.04	0.98
Alpha Exh Low R2 Tk #30	22824-6	< 0.01	0.04	0.85
Beta Inlet Low R1 Tk #19	22824-15	< 0.01	0.04	0.09
Beta Inlet Low R2 Tk #20	22824-16	< 0.01	0.03	0.07
Beta Exh Low R1 Tk #21	22824-7	< 0.01	0.03	0.16
Beta Exh Low R2 Tk #22	22824-8	< 0.01	0.03	0.11
Beta Inlet High R1 Tk #31	22824-11	< 0.01	0.02	<0.01
Beta Inlet High R2 Tk #28	22824-12	< 0.01	0.03	<0.01
Beta Exh High R1 Tk #32	22824-3	< 0.01	0.06	<0.01
Beta Exh High R2 Tk #34	22824-4	< 0.01	0.05	<0.01

\*Oxygen + Argon are not separated by GC

Argon constitutes 0.93% of the atmosphere (Handbook of Chemistry and Physics)

0.9% was substracted from O2 concentrations

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Dr. Andrew Kitto President

CLIENT:	Montrose
<b>CLIENT PROJ NO:</b>	Mojave Solar
LABORATORY NO:	24-865
SAMPLING DATE:	08/14/24
<b>RECEIVING DATE:</b>	08/15/24
ANALYSIS DATE:	08/15/24
<b>REPORT DATE:</b>	08/23/24

# **Standard Verification**

EPA 3C - Fixed Gases

		Theoretical Value	Tested Value	%
Lab ID	Analyte	Mole %	Mole %	<b>Recovery</b> *
SCOTT STD	CO2	15.00	15.23	102%
SCOTT STD	O2	4.00	4.33	108%
SCOTT STD	N2	69.50	71.27	103%
SCOTT STD	CH4	4.50	4.68	104%
SCOTT STD	СО	7.00	6.92	99%

\*Must be ±10%

Dr. Andrew Kitto President

# Summa Canister Pressure Log

Client:	Montrose	
Laboratory Project No:	24-865	
Sampling Date:	8/14/2024	
Receiving Date:	8/15/2024	

ltem#	Sample ID	Lab ID	<b>P</b> <sub>r</sub> (mmHg)	<b>P</b> <sub>f</sub> (mmHg)	<b>Dilution Factor</b>
1	Alpha Inlet High R1 Tk #35	22824-9	708.9	827.5	1.1673
2	Alpha Inlet High R2 Tk #25	22824-10	733.5	826.2	1.1264
3	Alpha Exh High R1 Tk #23	22824-1	688.7	821.0	1.1921
4	Alpha Exh High R2 Tk #24	22824-2	719.4	826.8	1.1493
5	Alpha Inlet Low R1 Tk #27	22824-13	724.3	829.8	1.1457
6	Alpha Inlet Low R2 Tk #28	22824-14	726.3	828.9	1.1413
7	Alpha Exh Low R1 Tk #29	22824-5	696.3	825.0	1.1848
8	Alpha Exh Low R2 Tk #30	22824-6	673.6	822.3	1.2208
9	Beta Inlet Low R1 Tk #19	22824-15	726.3	823.8	1.1342
10	Beta Inlet Low R2 Tk #20	22824-16	719.9	826.1	1.1475
11	Beta Exh Low R1 Tk #21	22824-7	641.8	826.3	1.2875
12	Beta Exh Low R2 Tk #22	22824-8	711.7	826.2	1.1609
13	Beta Inlet High R1 Tk #31	22824-11	713.6	826.5	1.1582
14	Beta Inlet High R2 Tk #28	22824-12	720.4	823.1	1.1426
15	Beta Exh High R1 Tk #32	22824-3	710.3	822.6	1.1581
16	Beta Exh High R2 Tk #34	22824-4	711.4	828.3	1.1643

Analytical Services Inc.

24-865

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# CHAIN OF CUSTODY

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## APPENDIX B GENERAL EMISSIONS CALCULATIONS



#### **GENERAL EMISSIONS CALCULATIONS**

- I. <u>Stack Gas Velocity</u>
  - A. Stack gas molecular weight, lb/lb-mole

 $MW_{dry} = 0.44 * \% CO_2 + 0.32 * \% O_2 + 0.28 * \% N_2$ 

 $MW_{wet} = MW_{dry} * (1 - B_{wo}) + 18 * B_{wo}$ 

B. Absolute stack pressure, iwg

$$P_{s} = P_{bar} + \frac{P_{sg}}{13.6}$$

C. Stack gas velocity, ft/sec

$$V_{s} = 2.9 * C_{p} * \sqrt{\Delta P} * \sqrt{T_{s}} * \sqrt{\frac{29.92 * 28.95}{P_{s} * MW_{wet}}}$$

- II. <u>Moisture</u>
  - A. Sample gas volume, dscf

$$V_{mstd} = 0.03342 * V_m * \left(P_{bar} + \frac{\Delta H}{13.6}\right) * \frac{T_{ref}}{T_m} * Y_d$$

B. Water vapor volume, scf

$$V_{wstd} = 0.0472 * V_{ic} * \frac{T_{ref}}{528^{\circ}R}$$

C. Moisture content, dimensionless

$$\mathsf{B}_{\mathsf{wo}} = \frac{\mathsf{V}_{\mathsf{wstd}}}{(\mathsf{V}_{\mathsf{mstd}} + \mathsf{V}_{\mathsf{wstd}})}$$

#### III. Stack Gas Volumetric Flow Rate

- A. Actual stack gas volumetric flow rate, wacfm
- $Q = V_s * A_s * 60$
- B. Standard stack gas flow rate, dscfm

$$Q_{sd} = Q * (1 - B_{wo}) * \frac{T_{ref}}{T_s} * \frac{P_s}{29.92}$$



IV. Gaseous Mass Emission Rates, lb/hr

$$M = \frac{ppm * MW_i * Q_{sd} * 60}{SV * 10^6}$$

V. Emission Rates, Ib/MMBtu

$$\frac{1b}{MMBtu} = \frac{ppm * MW_i * F}{SV * 10^6} * \frac{20.9}{20.9 - \% O_2}$$

VI. Percent Isokinetic

$$I = \frac{17.32 * T_{s} (V_{mstd})}{(1 - B_{wo}) 0 * V_{s} * P_{s} * Dn^{2}} * \frac{520^{\circ}R}{T_{ref}}$$

#### VII. Particulate Emissions

- (a) Grain loading, gr/dscf  $C = 0.01543 (M_n/V_m \text{ std})$
- (b) Grain loading at 12% CO<sub>2</sub>, gr/dscf  $C_{12\%}$  CO<sub>2</sub> = C (12/% CO<sub>2</sub>)
- (c) Mass emissions, lb/hr M = C \*  $Q_{sd}$  \* (60 min/hr) / (7000 gr/lb)
- (d) Particulate emission factor

 $Ib/10^{6} Btu = Cx \frac{1 Ib}{7000 gr} * F * \frac{20.9}{20.9 - \% O_{2}}$ 



#### Nomenclature:

As	stack area, ft <sup>2</sup>	
B <sub>wo</sub>	<ul> <li>flue gas moisture con</li> </ul>	tent dimensionless
C <sub>12%CO2</sub>		ng, gr/dscf corrected to $12\%$ CO <sub>2</sub>
C 12%CO2		
C <sub>p</sub>	<ul> <li>pitot calibration factor</li> </ul>	
Dn	nozzle diameter, inch	
F	fuel F-Factor, dscf/MI	
Н	<ul> <li>orifice differential pres</li> </ul>	ssure, iwg
	= % isokinetics	
Mn	= mass of collected par	•
Mi	= mass emission rate o	f specie i, lb/hr
MW	= molecular weight of fl	ue gas, lb/lb-mole
M <sub>wi</sub>	molecular weight of s	pecie i:
	SO <sub>2</sub> : 64	
	NO <sub>x</sub> : 46	
	CO: 28	
	HC: 16	
0	= sample time, minutes	
ΔP	= average velocity head,	$iwg = (\sqrt{\Delta P})^2$
P <sub>bar</sub>	<ul> <li>barometric pressure, in</li> </ul>	
P bar Ps		0
	•	
P <sub>sg</sub>	stack static pressure, iv stack static pressure, iv	
Q	<ul> <li>wet stack flow rate at a</li> </ul>	
Q <sub>sd</sub>	<ul> <li>dry standard stack flow</li> </ul>	•
SV		of an ideal gas at standard conditions, ft3/lb-mole
T <sub>m</sub>	= meter temperature, °R	
T <sub>ref</sub>	<ul> <li>reference temperature,</li> </ul>	°R
Ts	<ul> <li>stack temperature, °R</li> </ul>	
Vs	<ul> <li>stack gas velocity, ft/se</li> </ul>	С
V <sub>Ic</sub>	<ul> <li>volume of liquid collected</li> </ul>	ed in impingers, ml
Vm	<ul> <li>uncorrected dry meter</li> </ul>	volume, dcf
V <sub>mstd</sub>	<ul> <li>dry meter volume at sta</li> </ul>	indard conditions, dscf
V <sub>wstd</sub>		at standard conditions, scf
Y <sub>d</sub>	= meter calibration coefficient	•



## APPENDIX C QUALITY ASSURANCE



## Appendix C.1 Quality Assurance Program Summary



#### QUALITY ASSURANCE PROGRAM SUMMARY

As part of Montrose Air Quality Services, LLC (Montrose) ASTM D7036-04 certification, Montrose is committed to providing emission related data which is complete, precise, accurate, representative, and comparable. Montrose quality assurance program and procedures are designed to ensure that the data meet or exceed the requirements of each test method for each of these items. The quality assurance program consists of the following items:

- Assignment of an Internal QA Officer
- Development and use of an internal QA Manual
- Personnel training
- Equipment maintenance and calibration
- Knowledge of current test methods
- Chain-of-custody
- QA reviews of test programs

<u>Assignment of an Internal QA Officer</u>: Montrose has assigned an internal QA Officer who is responsible for administering all aspects of the QA program.

Internal Quality Assurance Manual: Montrose has prepared a QA Manual according to the requirements of ASTM D7036-04 and guidelines issued by EPA. The manual documents and formalizes all of Montrose's QA efforts. The manual is revised upon periodic review and as Montrose adds capabilities. The QA manual provides details on the items provided in this summary.

<u>Personnel Testing and Training</u>: Personnel testing and training is essential to the production of high quality test results. Montrose training programs include:

- A requirement for all technical personnel to read and understand the test methods performed
- A requirement for all technical personnel to read and understand the Montrose QA manual
- In-house testing and training
- Quality Assurance meetings
- Third party testing where available
- Maintenance of training records.

<u>Equipment Maintenance and Calibration</u>: All laboratory and field equipment used as a part of Montrose's emission measurement programs is maintained according to manufacturer's recommendations. A summary of the major equipment maintenance schedules is summarized in Table 1. In addition to routine maintenance, calibrations are performed on all sampling equipment according to the procedures outlined in the applicable test method. The calibration intervals and techniques for major equipment components is summarized in Table 2. The calibration technique may vary to meet regulatory agency requirements.

<u>Knowledge of Current Test Methods</u>: Montrose maintains current copies of EPA, ARB, and SCAQMD Source Test Manuals and Rules and Regulations.



<u>Chain-of-Custody</u>: Montrose maintains chain-of-custody documentation on all data sheets and samples. Samples are stored in a locked area accessible only to Montrose source test personnel. Data sheets are kept in the custody of the originator, program manager, or in locked storage until return to Montrose office. Electronic field data is duplicated for backup on secure storage media. The original data sheets are used for report preparation and any additions are initialed and dated.

<u>QA Reviews:</u> Periodic field, laboratory, and report reviews are performed by the in-house QA coordinator. Periodically, test plans are reviewed to ensure proper test methods are selected and reports are reviewed to ensure that the methods were followed and any deviations from the methods are justified and documented.

#### ASTM D7036-04 Required Information

#### Uncertainty Statement

Montrose is qualified to conduct this test program and has established a quality management system that led to accreditation with ASTM Standard D7036-04 (Standard Practice for Competence of Air Emission Testing Bodies). Montrose participates in annual functional assessments for conformance with D7036-04 which are conducted by the American Association for Laboratory Accreditation (A2LA). All testing performed by Montrose is supervised on site by at least one Qualified Individual (QI) as defined in D7036-04 Section 8.3.2. Data quality objectives for estimating measurement uncertainty within the documented limits in the test methods are met by using approved test protocols for each project as defined in D7036-04 Sections 7.2.1 and 12.10. Additional quality assurance information is presented in the report appendices.

#### Performance Data

Performance data are available for review.

#### Qualified Personnel

A qualified individual (QI), defined by performance on a third party or internal test on the test methods, is present on each test event.

#### Plant Entry and Safety Requirements

#### Plant Entry

All test personnel are required to check in with the guard at the entrance gate or other designated area. Specific details are provided by the facility and project manager.



#### Safety Requirements

All personnel shall have the following personal protective equipment (PPE) and wear them where designated:

- Hard Hat
- Safety Glasses
- Steel Toe Boots
- Hearing Protection
- Gloves
- High Temperature Gloves (if required)
- Flame Resistant Clothing (if required)

The following safety measures are followed:

- Good housekeeping
- SDS for all on-site hazardous materials
- Confine selves to necessary areas (stack platform, mobile laboratory, CEMS data acquisition system, control room, administrative areas)
- Knowledge of evacuation procedures

Each facility will provide plant specific safety training.



Equipment	Acceptance Limits	Frequency of Service	Methods of Service
Pumps	<ol> <li>Absence of leaks</li> <li>Ability to draw manufacturers required vacuum and flow</li> </ol>	As recommended by manufacturer	<ol> <li>Visual inspection</li> <li>Clean</li> <li>Replace parts</li> <li>Leak check</li> </ol>
Flow Meters	1. Free mechanical movement	As recommended by manufacturer	<ol> <li>Visual inspection</li> <li>Clean</li> <li>Calibrate</li> </ol>
Sampling Instruments	<ol> <li>Absence of malfunction</li> <li>Proper response to zero span gas</li> </ol>	As recommended by manufacturer	As recommended by manufacturer
Integrated Sampling Tanks	1. Absence of leaks	Depends on nature of use	1. Steam clean 2. Leak check
Mobile Van Sampling System	1. Absence of leaks	Depends on nature of use	<ol> <li>Change filters</li> <li>Change gas dryer</li> <li>Leak check</li> <li>Check for system contamination</li> </ol>
Sampling Lines	1. Sample degradation less than 2%	After each test series	1. Blow dry, inert gas through line until dry

# TABLE 1 EQUIPMENT MAINTENANCE SCHEDULE



Sampling Equipment	Calibration Frequency	Calibration Procedure	Acceptable Calibration Criteria
Continuous Analyzers	Before and After Each Test Day	3-point calibration error test	< 2% of analyzer range
Continuous Analyzers	Before and After Each Test Run	2-point sample system bias check	< 5% of analyzer range
Continuous Analyzers	After Each Test Run	2-point analyzer drift determination	< 3% of analyzer range
CEMS System	Beginning of Each Day	leak check	< 1 in. Hg decrease in 5 min. at > 20 in. Hg
Continuous Analyzers	Semi-Annually	3-point linearity	< 1% of analyzer range
NO <sub>x</sub> Analyzer	Daily	NO <sub>2</sub> -> NO converter efficiency	> 90%
Differential Pressure Gauges (except for manometers)	Semi-Annually	Correction factor based on 5-point comparison to standard	± 5%
Differential Pressure Gauges (except for manometers)	Bi-Monthly	3-point comparison to standard, no correction factor	± 5%
Barometer	Semi-Annually	Adjusted to mercury-in- glass or National Weather Service Station	± 0.1 inches Hg
Dry Gas Meter	Semi-Annually	Calibration check at 4 flow rates using a NIST traceable standard	± 2%
Dry Gas Meter	Bi-Monthly	Calibration check at 2 flow rates using a NIST traceable standard	± 2% of semi-annual factor
Dry Gas Meter Orifice	Annually	4-point calibration for $\Delta H@$	
Temperature Sensors	Semi-Annually	3-point calibration vs. NIST traceable standard	± 1.5%

 TABLE 2

 MAJOR SAMPLING EQUIPMENT CALIBRATION REQUIREMENTS

Note: Calibration requirements that meet applicable regulatory agency requirements are used.



## Appendix C.2 SCAQMD, CARB, and STAC Certificates





September 14, 2023

Mr. John Peterson Montrose Air Quality Services, LLC 1631 E. Saint Andrew Place Santa Ana, CA 92705

Subject: LAP Approval Notice Reference # 96LA1220

Dear Mr. Peterson:

We have completed our review of Montrose Air Quality Services' revised renewal application, which was submitted as notification of Montrose's recent acquisition of AirKinetics, Inc. under the South Coast AQMD Laboratory Approval Program (LAP). We are pleased to inform you that your firm is approved for the period beginning September 30, 2023, and ending September 30, 2024, for the following methods, subject to the requirements in the LAP Conditions For Approval Agreement and conditions listed in the attachment to this letter:

South Coast AQMD Methods 1-4 South Coast AQMD Methods 10.1 and 100.1 South Coast AQMD Methods 5.1, 5.2, 5.3, 6.1 (Sampling and Analysis) South Coast AQMD Methods 25.1 and 25.3 (Sampling) Rule 1121/1146.2 Protocol Rule 1420/1420.1/1420.2 – (Lead) Source and Ambient Sampling USEPA CTM-030 and ASTM D6522-00

Your LAP approval to perform nitrogen oxide emissions compliance testing for Rule 1121/1146.2 Protocols includes satellite facilities located at:

McKenna Boiler	Noritz America	venue	Ajax Boiler, Inc.
1510 North Spring Street	11160 Grace A		2701 S. Harbor Blvd.
Los Angeles, CA 90012	Fountain Valle		Santa Ana, CA 92704
VA Laundry Bldg., Greater LA He 508 Constitution Avenue Los Angeles, CA 90049	ealthcare Sys.	So Cal Gas – Engr 8101 Rosemead B Pico Rivera, CA 9	

Thank you for participating in the LAP. Your cooperation helps us to achieve the goal of the LAP: to maintain high standards of quality in the sampling and analysis of source emissions. You may direct any questions or information to LAP Coordinator, Colin Eckerle. He may be reached by telephone at (909) 396-2476, or via e-mail at ceckerle@aqmd.gov.

Sincerely,

D. Sarkar

Dipankar Sarkar Program Supervisor Source Test Engineering

DS:CE Attachment

230914 LapRenewal.doc





Gavin Newsom, Governor Yana Garcia, CalEPA Secretary Liane M. Randolph, Chair

June 13, 2024

Matt McCune Regional Vice President - West Montrose Air Quality Services, LLC 1631 East Saint Andrew Place Santa Ana, California 92705 mmccune@montrose-env.com

Dear Matt McCune:

I am pleased to inform you that the California Air Resources Board (CARB) has renewed Montrose Air Quality Services, LLC as an Independent Contractor, by means of the enclosed Executive Order I-24-008. This approval will allow Montrose Air Quality Services, LLC. to perform CARB Methods 1, 2, 3, 4, 5, 6, 8, 17, 20, and 100 (CO, CO<sub>2</sub>, NO<sub>X</sub>, O<sub>2</sub>, SO<sub>2</sub>, THC), Visible Emission Evaluation, and U.S. Environmental Protection Agency Test Methods 201A, 202, and 205. The approval is valid through June 30, 2026, during which time additional audits of Montrose Air Quality Services, LLC's testing ability may be performed.

If you have questions or need further assistance, please contact the *Independent Contractor Program*<sup>1</sup>.

Sincerely,

Walter Ham Digitally signed by Walter Har Dete: 2024.08.14 00:08:28

Walter Ham, Ph.D., Chief, Monitoring and Laboratory Division

Enclosure

arb.ca.gov

1001 | Street • P.O. Box 2815 • Sacramento, California 95812

helpline@arb.ca.gov







## Appendix C.3 Individual QI Certificates



Certificate of Completion         Dominic J Heredero         This document certifies that this individual has passed a comprehensive examination and is now a Qualified Individual (QI) as defined in Section 8.3 of ASTM D7036-04 for the following method(s):         This document certifies that this individual (QI) as defined in Section 8.3 of ASTM D7036-04 for the following method(s):         This document certifies that this individual (QI) as defined in Section 8.3 of ASTM D7036-04 for the following method(s):         This document certifies that this individual (QI) as defined in Section 8.3 of ASTM D7036-04 for the following method(s):         This document certifies that this individual (QI) as defined in Section 8.3 of ASTM D7036-04 for the following method(s):         This document (CI) as defined in Section 8.3 of ASTM D7036-04 for the following method(s):         The Mathod TA         The Stricter, VP - Quality Stricter         The Stricter, VP - Quality Stricter         Tate Stricter, VP - Quality Stricter         Tate Stricter, VP - Quality Stricter         The Stricter         Tate Stricter         The Stricter
--



	ve examination and is now a	or the following method(s):		03/07/2022	03/06/2027	TAL
CERTIFICATE OF COMPLETION	Dominic Heredero	Qualified Individual (QI) as defined in Section 8.3 of ASTM D7036-04 for the following method(s): CARB Methods 1, 2, 3 & 4	022-56	Lall Date of Issue: VP - Quality Systems	DATE OF EXPIRATION: 03/06	ENVIRONMENTAI
	This document certifies t	Qualified Individual (QI)	Certificate Number: 002-2022-56	Tate Strickler, VP - Quality		



CERTIFICATE OF COMPLETION         JOSEPI RUBIO         This document certifies that this individual has passed a comprehensive examination and is now a Qualified Individual (QI) as defined in Section 8.3 of ASTM D7036-04 for the following method(s):         CARB Methods 410A, 428, 429 & 430         Certificate Number: 002-2024-71	Image: Market for the large stand for the strickler, VP - Quality Systems     BIT Strickler     9/1/2024       Image: Table Strickler, VP - Quality Systems     BIT Strickler     BIT Strickler       Image: Table Strickler, VP - Quality Systems     BIT Strickler     BIT Strickler       Image: Table Strickler, VP - Quality Systems     BIT Strickler     BIT Strickler       Image: Table Strickler, VP - Quality Systems     BIT Strickler     BIT Strickler       Image: Table Strickler, VP - Quality Systems     BIT Strickler     BIT Strickler       Image: Table Strickler, VP - Quality Systems     BIT Strickler     BIT Strickler       Image: Table Strickler, VP - Quality Systems     BIT Strickler     BIT Strickler       Image: Table Strickler, VP - Quality Systems     BIT Strickler     BIT Strickler
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## Appendix C.4 Statement of No Conflict of Interest



#### STATEMENT OF NO CONFLICT OF INTEREST AS AN INDEPENDENT TESTING LABORATORY

(To be completed by authorized source testing firm representative and included in source test report)

The following facility and equipment were tested by my source testing firm and are the subjects of this statement:

Date(s) Tested:	August 14, 2024
Facility Name:	Mojave Solar, LLC
Equipment Address:	42134 Harper Lake Road
	Hinkley, California 92347
Equipment Tested:	Alpha and Beta Carbon Adsorption Unit
Device ID, A/N, P/N:	C012015, C012016

I state, as its legally authorized representative, that the source testing firm of:

Source Test Firm:	Montrose Air Quality Services, LLC
Business Address:	1631 E. St. Andrew Pl.
	Santa Ana, California 92705

is an "Independent Testing Laboratory" as defined in *District Rule 304(k)*:

For the purposes of this Rule, when an independent testing laboratory is used for the purposes of establishing compliance with District rules or to obtain a District permit to operate, it must meet all of the following criteria:

- (1) The testing laboratory shall have no financial interest in the company or facility being tested, or in the parent company, or any subsidiary thereof -
- (2) The company or facility being tested, or parent company or any subsidiary thereof, shall have no financial interest in the testing laboratory;
- (3) Any company or facility responsible for the emission of significant quantities of pollutants to the atmosphere, or parent company or any subsidiary thereof shall have no financial interest in the testing laboratory; and
- (4) The testing laboratory shall not be in partnership with, own or be owned by, in part or in full, the contractor who has provided or installed equipment (basic or control), or monitoring systems, or is providing maintenance for installed equipment or monitoring systems, for the company being tested.

Furthermore, I state that any contracts or agreements entered into by my source testing firm and the facility referenced above, or its designated contractor(s), either verbal or written, are not contingent upon the outcome of the source testing, or the source testing information provided to the SCAQMD.

Signature:	10	e Kulin	Date:	9/12/2024
Joe Rubio	0	Client Project Manager	(714) 279-6777	9/12/2024
(Name)		(Title)	(Phone)	(Date)

FORM ST-110 :stevforl.doc (Revised 11/18/98



### APPENDIX D FACILITY PERMITS





#### MOJAVE DESERT AIR QUALITY MANAGEMENT DISTRICT

14306 Park Avenue, Victorville, CA 92392-2310 760.245.1661 -- 800.635.4617 -- FAX 760.245.2022

#### **AUTHORITY TO CONSTRUCT**

<u>C012015</u>

If construction is not completed by the expiration date of this permit, it may be renewed for one additional year upon payment of applicable fees. Any additional extension will require the written approval of the Air Pollution Control Officer. This Authority to Construct may serve as a temporary Permit to Operate provided the APCO is given prior notice of intent to operate and the Permit to Operate is not specifically denied.

#### **EXPIRES LAST DAY OF: SEPTEMBER 2021**

#### OWNER OR OPERATOR (Co.#1876)

Mojave Solar LLC 42134 Harper Lake Road Hinkley, CA 92347

#### EQUIPMENT LOCATION (Fac.#3130)

Mojave Solar - Harper Lake Harper Lake Road, adjacent to SEGS VIII & IX Hinkley, CA 92347

#### **Description:**

CARBON ADSORPTION SYSTEM, HTF ULLAGE/EXPANSION SYSTEM (ALPHA) consisting of: ATC modification March 2020 to update carbon adsorption system as follows:

Carbon adsorption system having two (2) multi-bed carbon filter sets capturing ullage/expansion system emissions and having a high and low pressure side. The expansion vessel vents on the high pressure side and the overflow tank vents on the low pressure side. The high pressure and low pressure side each vent to three vertical carbon cylindrical vessels (carbon beds) described below. Flow through each vessel is vertical and each side (three vessels), will be interconnected using a pipe rack system that allows the vessels to operate in series (lead/lag), parallel, or single vessel. Sample ports are located at inlet and outlet of each carbon bed. Optimally the system will operate in lead/lag flow, with a third canister in standby, with other operating configurations for maintenance and high flow events. Both high pressure and low pressure vent to atmosphere through one common stack.

High Pressure Side Dimensions: 54" OD bed x 114" side shell Bed Area: (53.25" ID) = 15.466 square feet Nominal Flow Rate (cfm): 1,546.60 CFM Carbon Capacity: 3,000 pounds Fittings: 8"

Low Pressure Side Dimensions: 36" OD bed x 108" side shell

Fee Schedule: 7 (h)

Rating: 1 device

SCC: 30688801

Location/Coordinates: +35.00390, -117.30370

This permit does not authorize the emission of air contaminants in excess of those allowed by law, including Division 26 of the Health and Safety Code of the State of California and the Rules and Regulations of the District. This permit cannot be construed as permission to violate existing laws, ordinances, statutes or regulations of this or other governmental agencies. This permit must be renewed by the expiration date above. If billing for renewal fee required by Rule 301(c) is not received by expiration date above, please contact the District.

SIC: 4911

Mojave Solar LLC 42134 Harper Lake Road Hinkley, CA 92347

Brad Poiriez

Air Pollution Control Officer

Page 1 of 3

Bed Area: (35.25" ID) = 6.73 square feet Nominal Flow Rate (cfm): 673 CFM Carbon Capacity: 1,500 pounds Fittings: 4"

#### **CONDITIONS:**

1. Operation of this equipment shall be conducted in compliance with all data and specifications submitted with the application under which this permit is issued unless otherwise noted below.

2. This equipment must be in use and operating properly at all times the HTF ullage/expansion system with valid District Permit B011046 is venting.

3. This carbon adsorption system shall provide at a minimum 95% control efficiency of VOC emissions vented from the HTF ullage/expansion system under valid District Permit B011046. Control efficiency shall be demonstrated by sampling VOC emissions per US EPA Method 25 at the inlet and outlet of the carbon beds during initial and annual compliance tests.

4. The owner/operator shall prepare and submit a monitoring and change-out plan for the carbon adsorption system which ensures that the system is operating at optimal control efficiency at all times for District approval 60 days prior to commercial operation date (COD). Once approved, any subsequent changes to the monitoring and change-out plan must be submitted in writing to the District for approval prior to implementation.

5. Total emissions of VOC to the atmosphere shall not exceed 792.1 lbs/year, calculated based on the most recent test results.

6. Total emissions of benzene to the atmosphere shall not exceed 507.4 lbs/year, calculated based on the most recent test results.

7. During operation, o/o shall monitor VOC (as hexane) measured at outlet from the carbon beds. Sampling is to be performed at a minimum on a weekly basis. Samples shall be analyzed using a District approved photo ionization detector (PID).

8. PID shall be considered invalid if not calibrated in accordance with the manufactures recommended calibration procedures.

9. The o/o shall maintain an operations log (in electronic or hardcopy format) current and on-site for a period of five (5) years. The log shall contain at a minimum the following information and shall be provided to District personnel upon request.

- a. Date and time of VOC monitoring;
- b. Results of VOC monitoring; and
- c. Date and description of all maintenance, malfunctions, repairs, and carbon change out(s).

10. The o/o shall provide stack sampling ports and platforms necessary to perform source tests required to verify compliance with District rules, regulations and permit conditions. The location of these ports and platforms shall be subject to District approval.

11. Prior to January 31 of each new year, the o/o of this unit shall submit to the District a summary report of all VOC emissions (based on annual source test results).

12. The o/o shall conduct all required compliance/certification tests in accordance with a District-approved test plan. Thirty (30) days prior to the compliance/certification tests the operator shall provide a written test plan for District review and approval. Written notice of the compliance/certification test shall be provided to the District ten (10) days prior to the tests so that an observer may be present. A written report with the results of such compliance/certification tests shall be submitted to the District

within forty-five (45) days after testing is completed.All compliance/certification test notifications, protocols, and results may be submitted electronically to reporting@mdaqmd.ca.gov

13. The o/o shall perform the following initial compliance tests on this equipment in accordance with the MDAQMD Compliance Test Procedural Manual. The test report shall be submitted to the District within 180 days of COD. The following compliance tests are required:

a. VOC as hexane in ppmvd and lb/hr (measured per USEPA Reference Methods 25 and 18 or equivalent).

b. Benzene in ppmvd and lb/hr (measured per CARB method 410 or equivalent).

14. The o/o shall perform the following compliance tests on this equipment at least once every twelve (12) months in accordance with the MDAQMD Compliance Test Procedural Manual. The following compliance tests are required: a. VOC as hexane in ppmvd and lb/hr (measured per USEPA Reference Methods 25A and 18 or equivalent).

b. Benzene in ppmvd and lb/hr (measured per CARB method 410 or equivalent).

Additionally, records of all compliance tests shall be maintained on site for a period of five (5) years and presented to District personnel upon request.



#### **MOJAVE DESERT AIR QUALITY MANAGEMENT DISTRICT**

14306 Park Avenue, Victorville, CA 92392-2310 760.245.1661 -- 800.635.4617 -- FAX 760.245.2022

#### **AUTHORITY TO CONSTRUCT**

<u>C012016</u>

If construction is not completed by the expiration date of this permit, it may be renewed for one additional year upon payment of applicable fees. Any additional extension will require the written approval of the Air Pollution Control Officer. This Authority to Construct may serve as a temporary Permit to Operate provided the APCO is given prior notice of intent to operate and the Permit to Operate is not specifically denied.

#### **EXPIRES LAST DAY OF: SEPTEMBER 2021**

#### OWNER OR OPERATOR (Co.#1876)

Mojave Solar LLC 42134 Harper Lake Road Hinkley, CA 92347

#### EQUIPMENT LOCATION (Fac.#3130)

Mojave Solar - Harper Lake Harper Lake Road, adjacent to SEGS VIII & IX Hinkley, CA 92347

#### **Description:**

CARBON ADSORPTION SYSTEM, HTF ULLAGE/EXPANSION SYSTEM (BETA) consisting of: ATC modification March 2020 to update carbon adsorption system as follows:

Carbon adsorption system having two (2) multi-bed carbon filter sets capturing ullage/expansion system emissions and having a high and low pressure side. The expansion vessel vents on the high pressure side and the overflow tank vents on the low pressure side. The high pressure and low pressure side each vent to three vertical carbon cylindrical vessels (carbon beds) described below. Flow through each vessel is vertical and each side (three vessels), will be interconnected using a pipe rack system that allows the vessels to operate in series (lead/lag), parallel, or single vessel. Sample ports are located at inlet and outlet of each carbon bed. Optimally the system will operate in lead/lag flow, with a third canister in standby, with other operating configurations for maintenance and high flow events. Both high pressure and low pressure vent to atmosphere through one common stack.

High Pressure Side Dimensions: 54" OD bed x 114" side shell Bed Area: (53.25" ID) = 15.466 square feet Nominal Flow Rate (cfm): 1,546.60 CFM Carbon Capacity: 3,000 pounds Fittings: 8"

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Fee Schedule: 7 (h)

Rating: 1 device

SCC: 30688801

Location/Coordinates: +35.01460, -117.32880

This permit does not authorize the emission of air contaminants in excess of those allowed by law, including Division 26 of the Health and Safety Code of the State of California and the Rules and Regulations of the District. This permit cannot be construed as permission to violate existing laws, ordinances, statutes or regulations of this or other governmental agencies. This permit must be renewed by the expiration date above. If billing for renewal fee required by Rule 301(c) is not received by expiration date above, please contact the District.

SIC: 4911

Mojave Solar LLC 42134 Harper Lake Road Hinkley, CA 92347

Brad Poiriez

Air Pollution Control Officer

Bed Area: (35.25" ID) = 6.73 square feet Nominal Flow Rate (cfm): 673 CFM Carbon Capacity: 1,500 pounds Fittings: 4"

#### **CONDITIONS:**

1. Operation of this equipment shall be conducted in compliance with all data and specifications submitted with the application under which this permit is issued unless otherwise noted below.

2. This equipment must be in use and operating properly at all times the HTF ullage/expansion system with valid District Permit B011047 is venting.

3. This carbon adsorption system shall provide at a minimum 95% control efficiency of VOC emissions vented from the HTF ullage/expansion system under valid District Permit B011047. Control efficiency shall be demonstrated by sampling VOC emissions per US EPA Method 25 at the inlet and outlet of the carbon beds during initial and annual compliance tests.

4. The owner/operator shall prepare and submit a monitoring and change-out plan for the carbon adsorption system which ensures that the system is operating at optimal control efficiency at all times for District approval 60 days prior to commercial operation date (COD). Once approved, any subsequent changes to the monitoring and change-out plan must be submitted in writing to the District for approval prior to implementation.

5. Total emissions of VOC to the atmosphere shall not exceed 792.1 lbs/year, calculated based on the most recent test results.

6. Total emissions of benzene to the atmosphere shall not exceed 507.4 lbs/year, calculated based on the most recent test results.

7. During operation, o/o shall monitor VOC (as hexane) measured at outlet from the carbon beds. Sampling is to be performed at a minimum on a weekly basis. Samples shall be analyzed using a District approved photo ionization detector (PID).

8. PID shall be considered invalid if not calibrated in accordance with the manufactures recommended calibration procedures.

9. The o/o shall maintain an operations log (in electronic or hardcopy format) current and on-site for a period of five (5) years. The log shall contain at a minimum the following information and shall be provided to District personnel upon request.

- a. Date and time of VOC monitoring;
- b. Results of VOC monitoring; and
- c. Date and description of all maintenance, malfunctions, repairs, and carbon change out(s).

10. The o/o shall provide stack sampling ports and platforms necessary to perform source tests required to verify compliance with District rules, regulations and permit conditions. The location of these ports and platforms shall be subject to District approval.

11. Prior to January 31 of each new year, the o/o of this unit shall submit to the District a summary report of all VOC emissions (based on annual source test results).

12. The o/o shall conduct all required compliance/certification tests in accordance with a District-approved test plan. Thirty (30) days prior to the compliance/certification tests the operator shall provide a written test plan for District review and approval. Written notice of the compliance/certification test shall be provided to the District ten (10) days prior to the tests so that an observer may be present. A written report with the results of such compliance/certification tests shall be submitted to the District

within forty-five (45) days after testing is completed.

13. The o/o shall perform the following initial compliance tests on this equipment in accordance with the MDAQMD Compliance Test Procedural Manual. The test report shall be submitted to the District within 180 days of COD. The following compliance tests are required:

- a. VOC as hexane in ppmvd and lb/hr (measured per USEPA Reference Methods 25 and 18 or equivalent).
- b. Benzene in ppmvd and lb/hr (measured per CARB method 410 or equivalent).

All compliance/certification test notifications, protocols, and results may be submitted electronically to reporting@mdaqmd.ca.gov

14. The o/o shall perform the following compliance tests on this equipment at least once every twelve (12) months in accordance with the MDAQMD Compliance Test Procedural Manual. The following compliance tests are required:

a. VOC as hexane in ppmvd and lb/hr (measured per USEPA Reference Methods 25A and 18 or equivalent).

b. Benzene in ppmvd and lb/hr (measured per CARB method 410 or equivalent).

Additionally, records of all compliance tests shall be maintained on site for a period of five (5) years and presented to District personnel upon request.

## THIS IS THE LAST PAGE OF THIS DOCUMENT

If you have any questions, please contact one of the following individuals by email or phone.

Name:	Mr. Joe Rubio
Title:	Client Project Manager
Region:	West
Email:	JRubio@montrose-env.com
Phone:	(714) 279-6777

Name:	Mr. Matt McCune
Title:	Regional Vice President
Region:	West
Email:	MMccune@montrose-env.com
Phone:	(714) 279-6777



#### Mahnaz Ghamati

From:	Roddy Rauls <rrauls@montrose-env.com></rrauls@montrose-env.com>
Sent:	Thursday, September 12, 2024 11:46 AM
То:	May Mamari
Cc:	Mahnaz Ghamati; Joseph Rubio
Subject:	Mojave Solar 2024 Carbon Adsorption Systems Annual Compliance Report
Attachments:	W002AS-042458-RT-6501_CL.pdf; W002AS-042458-RT-6501.pdf
Follow Up Flag:	Follow up
Flag Status:	Flagged

#### WARNING: EXTERNAL EMAIL. Exercise caution when opening links or attachments.

May, Please find attached the subject report and Cover Letter. We have sent you two hard copies.

#### **Roddy Rauls**

Administrative Manager Montrose Air Quality Services, LLC 5120 Northshore Dr. North Little Rock, Arkansas 72118 | US Central Time M: 714.936.3839 | Direct 714.332.8622 rrauls@montrose-env.com | www.montrose-env.com

CONFIDENTIALITY NOTICE: The contents of this email message and any attachments are intended solely for the addressee(s) and may contain confidential, proprietary and/or privileged information and may be legally protected from disclosure. If you are not the intended recipient of this message or their agent, or if this message has been addressed to you in error, please immediately alert the sender by reply email and then delete this message and any attachments and the reply from your system. If you are not the intended recipient, you are hereby notified that any disclosure, use, dissemination, copying, or storage of this message or its attachments is strictly prohibited.

Mojave Solar LLC

42134 Harper Lake Road Hinkley, California 92347 Phone: 760 308 0400

## **Appendix L**

# AQ-66, 70

# Benzene Emission Limit Carbon Adsorption System – Annual VOC Emissions Summary

## Mojave Solar LLC

42134 Harper Lake Road Phone: 760 308 0400 Hinkley, California 92347

#### **Submitted Electronically**

January 14, 2025

May Mamari, Air Quality Engineer 14306 Park Avenue Victorville, California 92392 <u>mmamari@mdaqmd.ca.gov</u>

Dear Ms. Mamari,

Attached to this letter, please find the Mojave Solar Project's Comprehensive Emission Inventory Report for the emission year 2024. The digital format of the emission calculation is also attached to this email.

Should you have any questions, please do not hesitate to contact me.

Sincerely,

Mahnaz Ghamati

Quality, Environmental & Compliance Manager Mojave Solar Project 42134 Harper Lake Rd Hinkley, CA 92347 Cell: (760) 498 0549

Mahnaz.ghamati@atlantica.com

EMISSION       CEIDARS 2.5       FOR         YEAR       CERTIFICATION       FOR <b>2024.</b> COMPANY NO. 1876       FACILITY NO. 3130       CE         COMPANY NAME       FACILITY NAME       Mojave Solar Project       FACILITY NAME         MAILING ADDRESS       ADDRESS - PHYSICAL LOCATION       ADDRESS - PHYSICAL LOCATION							
COMPANY NO.       P       PACILITY NO.         COMPANY NAME       FACILITY NAME         Mojave Solar Project       Mojave Solar Project         MAILING ADDRESS       ADDRESS - PHYSICAL LOCATION							
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Mojave Solar Project     Mojave Solar Project       MAILING ADDRESS     ADDRESS - PHYSICAL LOCATION							
MAILING ADDRESS							
CITYSTZIP CODECITYSIZIP CODEHinkleyCA92347HinkleyCA92347							
NAME OF COMPANY CONTACT NAME OF FACILITY CONTACT							
Mahnaz Ghamati Mahnaz Ghamati							
TELEPHONE FAX TELEPHONE FAX							
760-498-0549							
EMAIL ADDRESS       EMAIL ADDRESS         mahnaz.ghamati@atlantica.com       mahnaz.ghamati@atlantica.com							
SMALL BUSINESS EXEMPTION for STATE AIR TOXIC FEES (AB2588							
This section must be completed to claim small business status.							
Small Business Criteria This State of Nation							
A small business is a facility with 10 or les Number of Employees 92							
employees and gross receipts of \$1,000,000 or less and companies							
California total gross receipts of							
\$5,000,000 or less.         \$1,000,000 to \$3,000,000           More than \$5,000,000							
CERTIFICATION							
(Please print or type)							
I, Mahnaz Ghamati , a responsible official , a responsible official							
of Mojave Solar Project , hereby certify t							
(Name of Facility based upon information and belief formed after reasonable inquiry, the attached information, consisting of							
based upon information and belief formed after reasonable inquiry, the attached information, consisting of the emission inventory data is true, accurate and complete. Executed this $14$ day of							
(Day)							
January , 2025 at San Bernardino, California							
rl-A-							
(Signature) Church							
Mahnaz Ghamati Quality, Environmental & Compliance Mar							
(Name - print or type) (Title - print or type)							
DATE RECEIVED BY DIS							
INITIALS DATE:							

CER	-	201	0-05

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	Facility Nam							
	Mojave Solar LLC							
	Address of Location							
	42134 Harpe	r Lake Road						
	City			Zip Co	ode			
	Hinkley			9 2 3	4 7 - 9 3 0	5		
	Facility SIC:	Number of	f Employees		Web Site Addre	ss		
	4 9 1 1	92			W	WW.atlantica.com	1	
B.	CONTACT I	PERSON						
	Name of Cor	tact Person						
	Mahnaz Gha	mati (Mrs.)						
	Title							
	Quality Envi	ronmental & Complia	nce Manager					
	Telephone N	umber	FAX Number		E-Mail Address			
	7 6 0 - 4	98-0549			<u>mahnaz.</u>	ghamati@atlantic	a.com	
C.		ADDRESS DATA						
	Company Na	me						
	Mojave Solar	r LLC						
	Mailing Add	ress						
	42134 Harpe	r Lake Road						
	City			State	ZIP Code			
	Hinkley			C A	9 2 3 4 7 -	9 3 0 5		
	Attention			-				
	Mahnaz Gha	mati						

THIS FORM MAY BE DUPLICATED OR REPRODUCED AS NEEDED.

CEIDARS II UDS 2013

	EMISSION	(	CEIDARS II	F	ORM						
	YEAR		IR UPDATE SURVEY								
		1 1	FACILITY 3 1 3 0	T	<b>DDS</b>						
	2024	<b>COMPANY</b> 1 8 7 6	FACILITY 3 1 3 0	_	. –						
					SIDE 2						
D.	-		is facility does not want to complete and submit								
	a new Comp	prehensive Emission Inventory Pla	· · · · · · · · · · · · · · · · · · ·								
	1 What is the	QUE: last emission year this facility submitted	a CEIP?	ANSV 2017	VERS						
		e last emission year this facility submitted		2023							
		5		YES	NO						
		cility operate during the past emission (cal		Х							
		n the SIC for this facility, is this facility re		Х							
	5 Did the facility add or modify any processe(s) or equipment in the past emission (calendar) year?										
	6 If yes to 5, above, did the new or modified processe(s)/equipment begin operating during the past emission (calendar) year?										
	7 Have the facility's total emissions increased and/or decreased so as to cause a 10 percent or greater change										
	(increase and/or decrease) in any emissions? (This may result due to change in process feed rates, equipment										
	shutdowns, addition of equipment/processe(s)/control devices, changes in material or fuel, temperature, pressure, rentention time, etc.)										
			previous update/submittal or are there any new receptors		X						
	since the pr	revious update/submittal?			X						
	TE 41 E:11										
			d 8 AND would like to rollover previously submitted dicate which emission year data should be used.								
			-								
	YES,	rollover data* Emiss	ion year of data to rollover:								
E.	This section	n must be completed to claim sma	all business status for the purpose of the								
		"Hot Spots" Fees:									
	A small bu	siness is defined as:	This	State	e of						
	1) a facility	who has 10 or fewer full-time	Facility	Califo	ornia						
	-	ent employees;	Number of employees								
		y whose total annual gross	Annual Gross Receipts **								
	_	are less than \$1,000,000; and	Less than \$ 1,000,000								
	1 / <b>^</b>	ny whose total annual California									
	gross re	ceipts are less than \$5,000,000	More than \$ 5,000,000 ** Check the appropriate box for total annual g								
F.			ERTIFICATION	1055 100	Jeipts.						
			(Please print or type)								
	I, Mahna	z Ghamati (Name of Official)	, a responsible off	icial of							
	Maiawa S	· · · · · · · · · · · · · · · · · · ·	, ,	4 1	1						
	Mojave S	(Name of Facility)	, hereby certify tha	n, oaseo	1						
	upon info	rmation and belief formed after re	easonable inquiry, the above and attached inform	nation							
	is true, ac	curate and complete. Executed the	$\frac{14}{(Day)}$ day of <u>January</u> of <u>2025</u> (Year)								
	at San Bo	ernardino County, California									
		(County and State)									
			Mahnaz Ghamati								
			(Signature)								
		Mah	naz Ghamati/ Environmental & Compliance Ma (Name and Title) Page		f 1228						

I



#### MOJAVE DESERT AIR QUALITY MANAGEMENT DISTRICT

#### MDAQMD CALENDAR YEAR 2024 COMPREHENSIVE EMISSIONS INVENTORY (CEI): INTERNAL COMBUSTION ENGINE REPORTING FORM

#### Instructions:

- **1** This form is ONLY for Internal Combustion Engines. If you have other types of permitted equipment, you will need to use other equipment specific forms for those.
- 2 This report is for the period starting January 1st, 2024 and ending December 31st, 2024.
- **3** Please fill in your Company's Name as written on your permits.
- 4 For EACH Engine, please fill in the information requested below. The Company Number, Facility Number, and Permit Number can be found on each permit as shown on the Sample Permit (Click on the "Sample Permit" Tab below).
- 5 If your engine is used for emergencies only (the permit number will start with an 'E'), the Prime Use Hours will be zero.
- 6 If your engine is used for Primary Power (the permit number will start with a 'B' or an 'M'), the Emergency Use Hours will be zero
- 7 If you know the approximate load on the engine during emergencies (for 'E' permits) or during normal operations (for 'B' and 'M' permits), please include that data. Otherwise, leave that column blank.
- 8 When you have finished filling out the engine data, please read the Certification Statement and then enter the Certifying Responsible Official's name in the shaded box.
- 9 Please download and read the District's revised CEI Guidelines document to determine what you need to report, when reports are due, who needs to sign the Certification Forms, etc. It can be found at: <u>https://www.mdaqmd.ca.gov/home/showpublisheddocument?id=8575</u>
- 10
   If you have any questions, please call the District at (760) 245-1661 and ask to speak with your assigned Permit Engineer or contact us via email at
   engineering@mdaqmd.ca.gov

SUBMIT THIS COMPLETED FORM TO: <a href="mailto:engineering@mdaqmd.ca.gov">engineering@mdaqmd.ca.gov</a>

Company Name: Mojave Solar LLC Date Submitted:

Company	Facility	Permit	Maintenance and	Emergency Use		
Number	Number	Number	Testing Hours	Hours	Prime Use Hours	Fuel Used (gallons)
					Maintenance:	
					50Hrs	
					Emergency: No	
1876	3130	E011042	9.9	96.2	limit	720
					Maintenance:	
					50Hrs	
					Emergency: No	
1876	3130	E011043	6.9	68.2	limit	700
1876	3130	E011044	2.5	0	10	300
1876	3130	E011045	2.7	0	10	300

Electronic Submittal Certification:

By submitting this form electronically to the Mojave Desert Air Quality Management District (the District), the information contained above is certified to be true, accurate, and complete by a designated Responsible Official of the Company identified above.

Responsible Official's Name:

Mahnaz Ghamati

1/14/2024

emission year **20 24** 

# HARP / CEIDARS DISTANCE TO RECEPTORS COMPANY NO. | 1 | 8 | 7 | 6 | FACILITY NO. | 3 | 1 | 3 | 0

FORM

DIS

Prioritization Score and Health Risk Assessment calculations require the distance from the emission source to each type of receptor.

The distance for each type of receptor is the shortest distance from the emission source to the receptor.

For facilities with more than one emission source report the shortest distance to each type of receptor.

Types of receptors are residential, off-site work place (commercial or industrial), schools (K - 12), medical facility (hospital, doctors office, lab), and residential care facility (nursing home, eldercare).

Only report distance for receptors within 6,500 feet of the emission source. When the closest receptor is more than 6,500 feet from the emission source enter "+++++".

Use the following table to convert compass bearing to degrees:

Bearing	Degrees	Bearing	Degrees		Bearing	Degrees		Bear	ing	Degrees
N	0	ESE	112.5		SSW	202.5		WN		292.5
NNE	22.5	SE	135		SW	225		NV	V	315
NE	45	SSE	157.5		WSW	247.5		NN	W	337.5
ENE	67.5	S	180		W	270		N	-	360
E 90										
Receptor Type Emission release point to Distance Direction										
Recepto	or Type	Emis	Emission release point to				and	ce	L	Direction
						(fe	eet)	)	(bearing or	
									(	legrees)
Residential		Propert	Property line of residence				460		225	
Off-site Wor	rk Place	Buildin	g or outs	ide	work	No	one		-	
School (K-1	2)	Propert	y line of	sch	ool	No	one			-
Medical Fac	ility	Buildin	g			No	one			-
Residential (	Care	Buildin	Building				None		-	
Other		Contact	Contact District				None		-	

THIS FORM MAY BE DUPLICATED OR REPRODUCED AS NEEDED.

Page 583 of 1228

EMISSION	HA	RP /	CEID	ARS		FORM					
YEAR	LOCATION				URCES						
20 <u>24</u>	COMPANY NO. 1 8 7			ILITY NO		LOC-ES					
The grid coordinates can be expressed in either the Universal Transverse Mercator (UTM) Coordinates (see reverse											
side) to within at least 25 meters or Longitude and Latitude to within at least 0.00025 degrees (1 second). Grid											
	coordinates can obtained from a topographic map or by using one of methods shown in Appendix "G".										
FACILITY NAME: Mojave Solar LLC											
PERMIT NO											
				I *ZONE		NORTH					
N011039	Gasoline Dispensing Facility	L/L	PER	11	-117.30420	35°00'44.7"N					
B011046	HTF Ullage/Expansion System (Alpha)	L/L	PER	11	-117.30420	+35.00240					
B011047	011047 HTF Ullage/Expansion System (BETA)			11	-117.32950	+35.01360					
E011042	Diesel IC Engine, Emergency Generator (Alpha)	UTM	PER	11	470E	3877N					
E011043	Diesel IC Engine, Emergency Generator (Beta)	UTM	PER	11	470E	3877N					
E011044	Diesel IC Engine, Fire Pump (Alpha)	UTM	PER	ER 11 470E		3877N					
E011045	Diesel IC Engine, Fire Pump (Beta)	UTM	PEr	11	470E	3877N					
B011037	Cooling Tower (Alpha)	UTM	PER	11	470E	3877N					
B011038	Cooling Tower (Beta)	UTM	PER	11	470E	3877N					
* SVS - Swatar	n used to non-out accordinates			<u> </u>	- Mathad yaad ta a	latamaina agandinatag					
-	n used to report coordinates	2				letermine coordinates					
	Iniversal Transverse Metcator NAD 83				Global Positioning	•					
	Iniversal Transverse Metcator NAD 27	,			= Interpolation from						
	Albers NAD 83				Interpolation from	aeriai photograph					
•	tude and Latitude				District Permits	1					
OIH = Othe	er, specify system			OTH =	• Other, specify metl	100					

THIS FORM MAY BE DUPLICATED OR REPRODUCED AS NEEDED

Mojave	Aojave Solar Project												
	Comprehensive Emission Inventory Report for Emission Year 2023-Mojave Solar												
Permit Number	Emission Source	Total Run Time	CO2	NOx	со	SOx	PM 10	VOC as C6	VOC as Benzene				
		Hrs.	Ton	Ton	Ton	Ton	Ton	Ton	Ton				
N011039	Gasoline Dispensing Facility	NA	176	0.5331	0.3554	0.3554	N/A	N/A	N/A				
B011046	HTF Ullage/Expansion System (Alpha)	205	N/A	N/A	N/A	N/A	N/A	0.0003	0.0000				
B011047	HTF Ullage/Expansion System (BETA)	447	N/A	N/A	N/A	N/A	N/A	0.0003	0.0001				
E011042	Diesel IC Engine, Emergency Generator (Alpha)	106	N/A	0.0727	0.0419	0.0004	0.0024	0.0024	0.0038				
E011043	Diesel IC Engine, Emergency Generator (Beta)	75	N/A	0.0707	0.0408	0.0004	0.0023	0.0023	0.0037				
E011044	Diesel IC Engine, Fire Pump (Alpha)	2.5	N/A	0.0184	0.0042	0.0000	0.0006	0.0006	0.0010				
E011045	Diesel IC Engine, Fire Pump (Beta)	2.7	N/A	0.0184	0.0042	0.0000	0.0006	0.0006	0.0010				
B011037	Cooling Tower (Alpha)	3,171	N/A	N/A	N/A	N/A	1.1314	N/A	N/A				
B011038	Cooling Tower (Beta)	3,120	N/A	N/A	N/A	N/A	1.1918	N/A	N/A				

	Jan	Feb	Mar	Apr	Мау	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2024
Gasoline Consumption (Gallon)	2,469	1,764	1,445	1,409	1,400	1,252	2,062	2,196	1,458	1,487	1,457	1,344	19,743
CO2 Emission (Ton)	21.94	15.68	12.84	12.53	12.45	11.13	18.33	19.52	12.96	13.22	12.95	11.95	175.51
CO Emission (Ton)	0.0444	0.0318	0.0260	0.0254	0.0252	0.0225	0.0371	0.0395	0.0262	0.0268	0.0262	0.0242	0.3554
NOx Emission (Ton)	0.0666	0.0476	0.0390	0.0380	0.0378	0.0338	0.0557	0.0593	0.0394	0.0401	0.0393	0.0363	0.5331
SOx Emission (Ton)	0.0444	0.0318	0.0260	0.0254	0.0252	0.0225	0.0371	0.0395	0.0262	0.0268	0.0262	0.0242	0.3554

#### Calculation with using the Emission Factor

Fuel	Emission	Emission	Emission	Emission
	Factor	Factor	Factor	Factor
	CO2,	CO,	NOx,	SOx,
	Kg/gallon	Kg/gallon	Kg/gallon	Kg/gallon
Gasoline	8.89	0.02	0.03	0.02

# Atlantica Sustainable Infrastructure

#### Mojave Solar LLC

Venting Hours									
Alpha		Beta							
Expansion	Overflow	Expansion	Overflow						
4.2	3.1	2.5	44.8						
5.7	1.0	4.7	16.4						
8.1	0.9	7.3	26.6						
8.0	4.9	5.6	40.9						
7.8	13.2	3.5	46.9						
5.8	15.8	2.8	37.2						
5.4	18.4	5.6	48.8						
4.6	14.1	4.2	38.1						
2.6	11.0	2.6	45.6						
2.7	11.8	4.0	27.9						
3.1	25.4	4.3	14.3						
1.1	26.9	4.1	8.8						
59.1	146.3	51.2	396.2						
	Expansion 4.2 5.7 8.1 8.0 7.8 5.8 5.4 4.6 2.6 2.7 3.1 1.1	Alpha         Overflow           4.2         3.1           5.7         1.0           8.1         0.9           8.0         4.9           7.8         13.2           5.8         15.8           5.4         18.4           4.6         14.1           2.6         11.0           2.7         11.8           3.1         25.4           1.1         26.9	Alpha         Beta           Expansion         Overflow         Expansion           4.2         3.1         2.5           5.7         1.0         4.7           8.1         0.9         7.3           8.0         4.9         5.6           7.8         13.2         3.5           5.8         15.8         2.8           5.4         18.4         5.6           4.6         14.1         4.2           2.6         11.0         2.6           2.7         11.8         4.0           3.1         25.4         4.3           1.1         26.9         4.1						

#### 2024 Ullage Emission

		VOCs as C6,	lb	
2024	Alpha		Beta	
2024	Expansion	Overflow	Expansion	Overflow
Jan	0	0.01159	0.00248	0.06717
Feb	0	0.003724869	0.004693749	0.024528497
Mar	0	0.003287	0.00729	0.039825
Apr	0	0.018481777	0.005604626	0.06141681
May	0	0.05016	0.0035	0.07035
Jun	0	0.06004	0.0028	0.0558
Jul	0	0.06992	0.0056	0.0732
Aug	0	0.053694	0.004206	0.057075
Sep	0	0.041838	0.002602	0.068445
Oct	0	0.044688	0.00403	0.041775
Nov	0	0.096368	0.00429	0.021495
Dec	0	0.102068	0.0041	0.01326
Total	0	0.555859646	0.051196376	0.594340308

		benzene, lb									
2024	Alpha		Beta								
2024	Expansion	Overflow	Expansion	Overflow							
Jan	0.00273	0.0077775	0	0.0158969							
Feb	0.001758869	5.39126E-05	0	0.005805078							
Mar	0.0025234	0.000047575	0	0.00942525							
Apr	0.002467419	0.000267499	0	0.014535312							
May	0.002418	0.000726	0	0.0166495							
Jun	0.001798	0.000869	0	0.013206							
Jul	0.001674	0.001012	0	0.017324							
Aug	0.0014167	0.00077715	0	0.01350775							
Sep	0.0007905	0.00060555	0	0.01619865							
Oct	0.000837	0.0006468	0	0.00988675							
Nov	0.0009734	0.0013948	0	0.00508715							
Dec	0.0003472	0.0014773	0	0.0031382							
Total	0.019734488	0.015655087	0	0.140660539							

Calculation Notes:

2024 Ullage emission - based on 08/14/2024 test data

Vent valves are considered close if it is <2% open.

15 min average valve positions are used to determine whether each vent valve is open or close. In case of bad PI data, the valve position In the previous period is automatically used.

Alpha expansion vessel vent VOCs emission rate is deteremined by performance test as Alpha overflow vent VOCs emission rate is deteremined by performance test as Beta expansion vessel vent VOCs emission rate is deteremined by performance test as Beta overflow vessel vent VOCs emission rate is deteremined by performance test as

Alpha expansion vessel vent benzene emission rate is deteremined by performance test as Alpha overflow vent benzene emission rate is deteremined by performance test as Beta expansion vessel vent benzene emission rate is deteremined by performance test as Beta overflow vessel vent benzene emission rate is deteremined by performance test as

0 lb/yr 0.0038 lb/yr 0.001 lb/yr 0.0015 lb/yr 0.00065 lb/yr 0.00255 lb/yr 0 lb/yr 0.000355 lb/yr

8/14/2024	lb/y	/r	Ton/yr
C	0.5	6	0.00028
	0.6	5	0.00032
nzene	0.0	4	0.00002
zene	0.1	4	0.00007
	792.1	lb/yr	
lant	507.4	lb/yr	
	8/14/2024 C Trazene zene Jant	DC 0.5 0.6 nzene 0.0 zene 0.1 5 792.1	DC 0.56 0.65 1.2ene 0.04 1.2ene 0.14 1.2ene 0.14 1.2ene 0.14

0.18

2024 Source Tes	st results	W002AS-042	2458-RT-6501.pdf					
		Run 1	Run 2 Av	erage		Run 1	Run 2	Average
Alpha	Exp Ves VOC as C6, lb/hr	0	0	0	Exp Ves Benzene, lb/hr	0.0006	0.0007	0.00065
Alpha	Overflow VOC as C6, lb/hr	0.0039	0.0037	0.0038	Overflow Benzene, Ib/hr	0.0029	0.0022	0.00255
Beta	Exp Ves VOC as C6, lb/hr	0.001	0.001	0.001	Exp Ves Benzene, lb/hr	0	0	0
Beta	Overflow VOC as C6, lb/hr	0.001	0.002	0.0015	Overflow Benzene, Ib/hr	0.00039	0.00032	0.000355

#### Emission Factor Conversion From gram/bhp-hr. to lb./1000 gal

Diesel IC Engine, Emergency Generator

#### Calculation with using the equipment data

bhp Density of CARB diese	3058 6.92 lb./gal	
Pollutant NOx CO SOx PM10	g/bhp-hr. 4.56 2.63 0.024 0.15	
VOC	0.24	

2024 Fuel Consumption	gal	mgal		NOx (Ton)	CO (Ton)	SOx (Ton)	PM10 (Ton)	VOC (Ton)
Emergency Generator Alpha	720		0.72	0.0727	0.0419	0.0004	0.0024	0.0038
Emergency Generator Beta	700		0.7	0.0707	0.0408	0.0004	0.0023	0.0037

#### Diesel Fuel Rate (@ peak hp) 1053.224 lb./hr.

fuel conversion, gal >>>lb. per hour 152.2 gal/hr. 1053.224 lb./hr.

	Calculation												
NOx	4.56 <u>gram</u> bhp-hr.	Х	<u>    1    </u> lb. 453.6   gram	Х	1 1053.224	hr. Ib.	<u>6.92</u> 1	lb. gal	х –	1000 1	gal mgal	<u>3058</u> bhp	201.9829 <sup>Ib.</sup> mgal
CO	2.63 <u>g</u> ram bhp-hr.	х	1 lb. 453.6 gram	х	1 1053.224	hr. Ib.	<u>6.92</u> 1	lb. gal	x –	1000 1	gal mgal	<u>3058</u> bhp	116.4945 lb. mgal
SOx	0.024 <u>g</u> ram bhp-hr.	х	<u>1</u> lb. 453.6 gram	х	1 1053.224	hr. Ib.	<u>6.92</u> 1	lb. gal	х –	1000 1	gal mgal	<u>3058</u> bhp	1.063068 lb. mgal
PM10	0.15 <u>gram</u> bhp-hr.	х	<u>1</u> lb. 453.6 gram	х	1 1053.224	hr. Ib.	<u>6.92</u> 1	lb. gal	х –	1000 1	gal mgal	<u>3058</u> bhp	6.644175 lb. mgal
VOC	0.24 <u>gram</u> bhp-hr.	х	<u>1</u> lb. 453.6 gram	х	<u>1</u> 1053.224	hr. Ib.	<u>6.92</u>	lb. gal	x –	1000 1	gal mgal	_3058_bhp	10.63068 lb. mgal

#### Emission Factor Conversion From gram/bhp-hr. to Ib./1000 gal Diesel IC Engine, Fire Pump

#### Calculation with using the equipment data

bhp Density of CARB diese	617 6.92	lb./gal
Pollutant NOx	g/bhp-hr. 2.64	1
CO	0.6	
SOx	0.005	
PM10	0.09	
VOC	0.15	

2023 Fuel Consumption- Estin	gal	mgal	Nox (Ton)	CO (Ton)	Sox (Ton)	PM10 (Ton)	VOC (Ton)
Fire Pump Alpha	300	0.30	0.0184	0.0042	0.0000	0.0006	0.0010
Fire Pump Beta	300	0.3	0.0184	0.0042	0.0000	0.0006	0.0010

Diesel Fuel Rate (@ peak hp 202.064 lb./hr.

fuel conversion, gal >>>lb. per hour 29.2 gal/hr. 202.064 lb./hr.

NOx	<b>Calculation</b> 2.64 <u>gram</u> bhp-hr.	х	1lb. 453.6 gram	х	1 202.064	hr. Ib.	<u>6.92</u> lb. 1 gal	х	<u>1000</u> ga 1 m	ıl gal	<u>617</u> bhp	122.9796 lb. mgal
со	0.6 <u>gram</u> bhp-hr.	Х	<u>1</u> lb. 453.6 gram	х	1 202.064	hr. Ib.	<u>6.92</u> lb. 1 gal	х	<u>1000</u> ga 1 m	ıl gal	<u>617</u> bhp	27.94992 lb. mgal
SOx	0.005 <u>gram</u> bhp-hr.	х	<u>1</u> lb. 453.6 gram	х	1 202.064	hr. Ib.	<u>6.92</u> lb. 1 gal	х	<u>1000</u> ga 1 m	ıl gal	<u>617</u> bhp	0.232916 lb. mgal
PM10	0.09 <u>gram</u> bhp-hr.	Х	<u>1</u> lb. 453.6 gram	х	<u>     1</u> 202.064	hr. Ib.	<u>6.92</u> lb. 1 gal	х	<u>1000</u> ga 1 m	ıl gal	<u>617</u> bhp	4.192487 lb. mgal
VOC	0.15 <u>gram</u> bhp-hr.	х	<u>1</u> lb. 453.6 gram	х	1 202.064	hr. Ib.	<u>6.92</u> lb. 1 gal	х	<u>    1000    g</u> a 1    m	ıl gal	<u>617</u> bhp	6.987479 lb. mgal

Table C.1-6 Calculation of Hazard	dous and To	xic Pollutar	nt Emissions f	rom Coolin <sub>t</sub>	g Towers				Makeup Wa		ppm 150
					11 /1	Op Hrs/Day:			Blowdown		3,585.84
Cells per Tower:	6	Max Tow	ver Drift Rate:	224.9	lbs/hr	Op Hrs/Yr:	6,290.66		Avg Tower	Flow TDS:	1868
# of Identical Towers	2								C of C:		23.91
			Tota	al Single To	wer		Single Cell		То	tal All Tow	ers
	Concent	ration in	Emissions,	Emissions,		Emissions,	Emissions,	Emissions,	Emissions,		Emissions,
Constituent	Cooling To	wer Water	lb/hr	lb/day	ton/yr	lb/hr	lb/day	ton/yr	lb/hr	lb/day	ton/yr
	0										
Manganese	2.5	ppm	1.34E-02	2.15E-01	4.23E-02	2.24E-03	3.58E-02	7.05E-03	2.69E-02	4.30E-01	8.46E-02
Magnesium	59	ppm	3.17E-01	5.08E+00	9.98E-01	5.29E-02	8.46E-01	1.66E-01	6.34E-01	1.02E+01	2.00E+00
Lead	0.0034	ppm	1.83E-05	2.92E-04	5.75E-05	3.05E-06	4.87E-05	9.58E-06	3.66E-05	5.85E-04	1.15E-04
Arsenic	0.0097	ppm	5.22E-05	8.34E-04	1.64E-04	8.69E-06	1.39E-04	2.73E-05	1.04E-04	1.67E-03	3.28E-04
Aluminum	0.02	ppm	1.08E-04	1.72E-03	3.38E-04	1.79E-05	2.87E-04	5.64E-05	2.15E-04	3.44E-03	6.76E-04
Chromium	0.0048	ppm	2.58E-05	4.13E-04	8.12E-05	4.30E-06	6.88E-05	1.35E-05	5.16E-05	8.26E-04	1.62E-04
Cadmium	0.002	ppm	1.08E-05	1.72E-04	3.38E-05	1.79E-06	2.87E-05	5.64E-06	2.15E-05	3.44E-04	6.76E-05
Selenium	0.013	ppm	6.99E-05	1.12E-03	2.20E-04	1.16E-05	1.86E-04	3.66E-05	1.40E-04	2.24E-03	4.40E-04
Zinc	0.04	ppm	2.15E-04	3.44E-03	6.76E-04	3.58E-05	5.73E-04	1.13E-04	4.30E-04	6.88E-03	1.35E-03
Mercury	0.0000002	ppm	1.08E-09	1.72E-08	3.38E-09	1.79E-10	2.87E-09	5.64E-10	2.15E-09	3.44E-08	6.76E-09
Copper	0.0071	ppm	3.82E-05	6.11E-04	1.20E-04	6.36E-06	1.02E-04	2.00E-05	7.63E-05	1.22E-03	2.40E-04
Silver	0.002	ppm	1.08E-05	1.72E-04	3.38E-05	1.79E-06	2.87E-05	5.64E-06	2.15E-05	3.44E-04	6.76E-05
Nickel	0.004	ppm	2.15E-05	3.44E-04	6.76E-05	3.58E-06	5.73E-05	1.13E-05	4.30E-05	6.88E-04	1.35E-04
*	0	ppm	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
*	0	ppm	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
*	0	ppm	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
*	0	ppm	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
*	0	ppm	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
*	0	ppm	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
*	0	ppm	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Notes:

(1) Water analysis data water balance data.

	CT Running ti	me (hr.)	Average PM1	0 (lb./Hr.)	Total PM10 L	b.
	Alpha	Beta	Alpha I	Beta	Alpha	Beta
Jan	117.83	133.65	0.48	0.87	56.83	116.52
Feb	175.33	120.70	0.52	1.03	91.36	123.89
Mar	208.72	206.73	0.57	1.04	119.55	214.72
Apr	312.53	314.67	0.73	0.94	227.64	295.08
Мау	340.31	339.35	0.80	0.71	271.22	241.35
Jun	352.23	350.22	0.79	0.76	277.45	264.75
Jul	347.54	349.82	0.75	0.94	259.24	327.11
Aug	346.72	337.77	0.99	0.95	344.80	321.75
Sep	321.82	315.30	0.96	0.89	309.44	281.82
Oct	286.30	281.60	0.93	0.75	265.63	210.10
Nov	209.78	212.83	0.79	0.65	165.05	137.46
Dec	151.98	156.95	0.68	0.58	103.93	90.52
Total (Lb.)					2492.14	2625.08
Total (Ton)					1.13	1.19
Total Hr.	3,171.08	3,119.58				
Ave TDS (pp	3,405.95	3,765.73				

Total hour Permit limit (Total PM10 Lb. per year 13081.60 **Permit Limits** 5840 2.24

Calculation based on the TDS measurement and using the approved calculation method.

$$PM_{10} = Circ \times Drift \times \rho \times TDS \times \frac{60}{10^6}$$

Where: PM10

ρ

· · · ·	and a second second	-	Conception and the second of the	AND INCOME.	
Calcu	iated	PM <sub>10</sub>	emissions	(ID/hr).	

Circ	=	Circulation Rate (gallons per minute [gpm]). The default value is the permitted	
		maximum of 90,000 gpm.	

Drift rate (%). The default value is the permitted maximum of 0.0005%. Density of water (lbs/gal). The default value is 8.3 pounds per gallon. Drift =

=

- Total Dissolved Solids (ppm). This value is derived from the quarterly testing TDS = results.
- 60 Conversion factor for minutes per hour. =
- 10<sup>6</sup> Conversion factor for ppm. =

Using already known parameters, the equation above reduces to:

$$PM_{10} (lb/hr) = \frac{90.000 gpm \times 0.0005\% \times 8.3 \frac{lb}{gal} \times 60 \frac{min}{hr} \times TDS}{10^6 ppm}$$

**Mojave Solar LLC** 

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# **Appendix M**

# **BIO-1 to BIO-21**

# **Designated Biologist Summaries**

Mojave Solar Project California Energy Commission (09-AFC-5C) Biological Resources Conditions of Certification Biological Resources Section of the Annual Compliance Report

> January 1 – December 31, 2024 Reporting Period

> > Submitted February 2025

Prepared for: Mojave Solar LLC 42134 Harper Lake Road Hinkley, California 92347

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## 1. Introduction

This Biological Resources Section of the Annual Compliance Report (ACR) is provided to the California Energy Commission (CEC) pursuant to the Biological Resources Conditions of Certification (COCs) and Compliance-7 as required by the Mojave Solar Project (MSP) Commission Decision (09-AFC-5; CEC, 2010).

On December 23, 2014, the facility commenced commercial operations. Also on this date, Abeinsa (AEPC) turned the site over to the owner, Mojave Solar LLC, to manage facility operations. From January 2015 through May 29, 2016, monthly compliance reports were submitted to comply with the CEC COCs, while the Chief Building Official's punch list activities were completed. The CEC issued the Final Certificate of Occupancy on May 29, 2016, when installation of all permanent equipment and structures was completed. MSP has been in the Operations and Maintenance (O&M) phase of the project as of May 30, 2016. This report covers O&M from January 1 to December 31, 2024.

## 2. Annual Report Requirements

Annual reporting requirements during O&M are only referenced in BIO-2, BIO-6, BIO-16, and BIO-17; however, this ACR addresses all Biological Resource COCs (BIO-1 to BIO-21) because BIO-6, the Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP), covers all Biological Resource COCs.

#### 3. Mitigation Measures

	Table 1: BRMIMP Mitigation Measures							
COC	Brief Description of Condition							
BIO-1	Designated Biologist Selection							
BIO-2	Designated Biologist Duties							
BIO-3	Biological Monitor Selection, Qualifications, and Duties							
BIO-4	Designated Biologist and Biological Monitor Authority							
BIO-5	Worker Environmental Awareness Program							

Table 1 provides a list of the Biological Resource COCs covered in the BRMIMP.

Table 1: BRMIMP Mitigation Measures				
COC	Brief Description of Condition			
BIO-6	Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) Development and Compliance			
BIO-7	Impact Avoidance and Minimization Measures			
BIO-8	Pre-Construction Nest Surveys and Impact Avoidance and Minimization Measures for Migratory Birds			
BIO-9	Golden Eagle Territory-Specific Management Plan			
BIO-10	Documentation of Bald and Golden Eagle Act Compliance			
BIO-11	Desert Tortoise Exclusion Fencing, Clearance Surveys, and Translocation Plan			
BIO-12	Mohave Ground Squirrel Clearance Surveys			
BIO-13	Burrowing Owl Impact Avoidance, Minimization and Mitigation Measures			
BIO-14	American Badger and Desert Kit Fox Impact Avoidance and Minimization Measures			
BIO-15	Compensatory Mitigation			
BIO-16	Tamarisk Eradication, Monitoring, and Reporting Program			
BIO-17	Monitoring Impacts of Solar Collection Technology on Birds			
BIO-18	Common Raven Monitoring, Management, and Control			
BIO-19	Evaporation Pond Monitoring and Adaptive Management Plan			
BIO-20	Harper Dry Lake Marsh Water Delivery			
BIO-21	USFWS Biological Opinion			

## 3.1. BIO-1: Designated Biologist Selection

BIO-1 requires the project to select a Designated Biologist (DB) to effectively implement the duties in BIO-2 and other relevant COCs. Approved DB, Sean Rowe performed the duties of DB on the project site during the reporting period. The qualifications for Sean Rowe and request for DB approval was submitted (under BIO1-19-00 submittal) (CEC, USFWS and CDFW) to the permitting agencies on March 14, 2018, and Mr. Rowe was subsequently approved March 21 (USFWS and CDFW) and March 27 (CEC), 2018 as a BM, Authorized Avian Specialist, and desert tortoise Authorized Biologist under the project specific Biological Opinion 8-8-11-F-3 (USFWS, 2011B). Mr. Rowe was subsequently approved as DB on October 12, 2018.

#### 3.2. BIO-2: Designated Biologist Duties

An approved DB was onsite or otherwise available during all O&M activities. The DB advised on compliance with Biological Resource COCs, supervised and conducted biological resource compliance inspections, surveyed sensitive biological resource areas, notified the project owner and the CPM of noncompliance events, responded to CPM inquiries, and maintained compliance records.

#### 3.3. BIO-3: Biological Monitor Selection, Qualifications, and Duties

BIO-3 allows the project to utilize approved Biological Monitors to assist the DB. No biological monitors were employed during the reporting period.

#### 3.4. BIO-4: Designated Biologist and Biological Monitor Authority

BIO-4 provides the DB and BM authority to halt construction activity in areas specified by the DB if that activity were to potentially harm biological resources or is in violation of any state or federal laws, conditions, permits, or other such agreements made to applicable agencies.

No construction activities took place during the reporting period.

#### 3.5. BIO-5: Worker Environmental Awareness Program

BIO-5 requires that the project owner develop and implement a Worker Environmental Awareness Program (WEAP). On October 22, 2015, the project owner submitted a revised BIO-5 WEAP training for use during operations (MSP, 2015a). The CPM approved the training program for operations on November 17, 2015. On December 9, 2015, the CPM approved immediate use of the operations WEAP for annual refresher training for operations personnel, while still in the construction period. On June 15, 2018, MSP submitted a new version of the BIO5 WEAP training for review and approval. The CEC CPM approved it on June 15, 2018. In 2021, additional slides were added to the training to address roadkill handling and disposal, and the spills. The plan (BIO5-04-03) was approved by CPM on August 18, 2022. The WEAP was provided to all new employees, contractors, and subcontractors within a week of hiring new workers and annually for ongoing workers.

#### 3.6. BIO-6: Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) Development and Compliance

BIO-6 requires the project owner to develop and implement a BRMIMP, which covers all Biological Resource COCs as reported herein. BIO-17 (Bird Monitoring Study) was subsequently approved by the CPM on January 27, 2017. BIO-19 (Evaporation Pond Monitoring and Adaptive Management Plan) was resubmitted to the CPM and USFWS in December 2016. Final BIO19 Evaporation Pond Plan, BIO19-00-08 Evaporation Pond Monitoring and Adaptive Management Plan, Rev. 6. (Mojave Solar Project 09-AFC-5C) submittal approved on March 8, 2017, in consultation with the USFWS, CDFW, and Regional Water Quality Control Board (RWQCB), it will be incorporated into the BRMIMP as Appendix I. See Sections 3.17 and 3.19 for more details.

#### 3.7. BIO-7: Impact Avoidance and Minimization Measures

BIO-7 requires the project owner to implement seventeen measures to avoid or minimize impacts to local biological resources, several of which overlap with other COCs and are thus addressed separately. Most measures addressed in BIO-7 are construction related and were largely not relevant during this reporting period. No construction activities took place during the reporting period.

Item 11 of BIO-7 requires the project owner to report all inadvertent deaths of sensitive species. There were no deaths of sensitive species during the reporting period.

# **3.8.** BIO-8: Nest Surveys and Impact Avoidance and Minimization Measures for Migratory Birds

BIO-8 requires impact avoidance and minimization measures for birds protected under the Migratory Bird Treaty Act (MBTA). Nest surveys were conducted by the DB onsite for any activities with the potential to effect MBTA-protected bird nests. Nesting surveys were performed in accordance with the procedures set forth in BIO-8. Netting of the evaporation ponds was completed in 2024 effectively removing nesting and nesting habitat for shorebirds that previously nested at the ponds. No bird nesting was observed at the ponds during this reporting period.

Six active Common Raven nests were discovered and monitored during 2024. No entry buffers were established around active nests and the nests were monitored until nestlings fledged or the nests were otherwise determined inactive. Of the six raven nests only one successfully

fledged young. Details of the nest monitoring results are found in the BIO-18 Annual Report for 2024. Table 2 summarizes the outcomes of all nesting attempts monitored during 2024.

Table 2. Avian Nesting Summary 2024								
Species	Nest ID	Discovery Date	Location	Outcome				
Common Raven	01-B-CORA	3/5/24	Beta Power Block	Fledged Young				
Common Raven	02-A-CORA	3/15/24	Alpha Power Block	Failed – Abandoned				
Common Raven	03-A-CORA	4/10/24	Alpha West SCA	Failed - Abandoned				
Common Raven	04-A-CORA	4/3/24	Alpha West SCA	Failed - Unknown				
Common Raven	05-B-CORA	4/17/24	Beta West SCA	Failed – Abandoned				
Common Raven	06-A-CORA	5/6/24	Alpha Power Block	Failed – Abandoned				

#### 3.9. **BIO-9: Golden Eagle Territory-Specific Management Plan**

BIO-9 requires that the project owner conduct Golden Eagle surveys and prepare a plan if an occupied territory is found within 10 miles of the project site.

On January 28, 2011, USFWS approved the project owner's findings that no Golden Eagles were located within 10 miles of the project site, and therefore, the project owner did not need to prepare a BIO-9 Golden Eagle Plan. On March 14, 2011, the project owner submitted USFWS's findings to CEC (MSP, 2011a). On March 17, 2011, CEC approved USFWS' letter satisfying the BIO-9 requirement.

#### 3.10. BIO-10: Documentation of Bald and Golden Eagle Act Compliance

BIO-10 requires the project owner document compliance with the Bald and Golden Eagle Protection Act, if required by the BIO-9 survey results.

On March 17, 2011, the CEC via email stated that since a BIO-9 Golden Eagle Plan was not required that the project owner had also met BIO-10 compliance requirements.

# 3.11. BIO-11: Desert Tortoise Exclusion Fencing, Clearance Surveys, and Translocation Plan

All permanent desert tortoise exclusion fencing was inspected monthly and immediately after major rainfall events. Tortoise exclusion fencing received periodic maintenance as conditions warranted to remove sand buildup.

No desert tortoises were located onsite, and no tortoises were translocated or transmittered during this reporting period.

#### 3.12. BIO-12: Mohave ground Squirrel Clearance Surveys

BIO-12 requires the project to avoid or minimize impacts to Mojave ground squirrel by conducting a clearance survey once the desert tortoise exclusion fence is completed (BIO12-02-0, November 18, 2011).

No Mohave ground squirrels were observed on the site, therefore no handling, capturing, or relocation was necessary for the duration of this reporting period.

#### 3.13. BIO-13: Burrowing Owl Impact Avoidance, Minimization and Mitigation Measures

BIO-13 requires preparation of Burrowing Owl (*Athene cunicularia*) Monitoring and Mitigation Plan to avoid and minimize impacts to burrowing owls in and near construction areas (if identified during the surveys). Last survey performed and approved on January 26, 2011, BIO13-02-01. No Burrowing Owl specific surveys were conducted during the reporting period.

In July 2021, the DB discovered a family of Burrowing Owls using a burrow near the southwest corner of Beta west along the perimeter fence. In October 2021, the DB observed a single Burrowing Owl flush from a Kit Fox burrow in the kit fox den site #9 east of the Alpha east solar collector field. This area is within an existing no-entry buffer established for kit fox. At least one owl and evidence of active burrow use was seen in both locations periodically throughout the remainder of the 2021 and 2022. The DB monitored the sites during routine compliance visits. No owls were observed using the beta site during 2023 or 2024. A pair of owls were observed using the alpha east site throughout 2023 and in 2024 through July after which the burrows appeared abandoned and no further owl activity was observed. Shortly thereafter fresh kit fox activity was observed at the burrows.

On April 30, 2024, the DB observed an owl using a burrow just inside the western fence line of Alpha west SCA. A pair was observed using the site until September 21 when two adults and two recently fledged young were seen at the burrow entrance.

Mojave Solar staff were notified of owls and burrow sites and instructed to avoid the areas and notify the DB if it was necessary to conduct work in the vicinity.

# 3.14. BIO-14: American Badger and Desert Kit Fox Impact Avoidance and Minimization Measures

BIO-14 requires pre-construction surveys and provides guidance on pre-construction encounters with American badgers and desert kit fox. The MSP site is currently monitored for the presence of desert kit fox and American badger by the DB via observation of tracks, scat, and examination of burrows on or around the site. No signs of American badger were observed during the reporting period. Kit foxes are ubiquitous in the area and often traverse or reside on site in undisturbed areas.

Desert kit fox den site #9, located in east of the solar collector field in Alpha East, was inactive during 2023 and through 2024 until fresh Kit Fox activity was observed in September. A single kit fox was observed using the burrows periodically through the end of the year.

An exclusion buffer was established and continues to be maintained around the den site to prevent disturbance. This den site will continue to be monitored by the DB. No other den sites have been observed on the premises.

#### 3.15. BIO-15 Compensatory Mitigation

To fully mitigate for habitat loss and incidental take of desert tortoise and Mohave ground squirrel as well as burrowing owl, BIO-15 requires the project owner, in fee or in easement, to acquire 118.2 acres of land suitable for desert tortoise, Mohave ground squirrel, and burrowing owl and fund the enhancement and long-term management of these compensation lands.

Compensatory mitigation was satisfied and approved by CEC between 2011 and 2014. On July 19, 2016, to address the final requirement of COC BIO-15, the project owner submitted BIO15-06-00, confirming that project construction was limited to the area described in the Commission Decision, therefore, disturbance to desert tortoise and MGS habitat did not exceed 430 acres, and construction activities did not impact desert tortoise, MGS, and burrowing owl habitat adjacent to work areas. The CPM approved the submittal for Verification of Habitat Disturbance Area on September 15, 2016, which was the final requirement related to this COC.

The Transition Habitat Conservancy (THC) acquired 234 acres of land near MSP in 2014 to satisfy the compensatory mitigation requirements of BIO-15. THC manages and monitors these lands in perpetuity to ensure habitat for desert tortoise, burrowing owl and Mojave ground squirrel is not degraded. THC also works in partnership with the Bureau of Land Management to manage BLM lands that impact THC mitigation properties.

Refer to the Transition Habitat Conservancy's annual reports for further status of the mitigation properties.

#### 3.16. BIO-16: Tamarisk Eradication, Monitoring, and Reporting Program

Condition of Certification (COC) BIO-16, Tamarisk Eradication, Monitoring, and Reporting Program, issued by the California Energy Commission (CEC) as a condition of licensing of the Abengoa Mojave Solar Project (MSP) requires the project owner to prepare and implement a Tamarisk Eradication, Monitoring, and Reporting Plan with the objective of preventing the reinvasion of undesirable weeds and/or invasive wildlife for a minimum of five years. The revised Mojave Solar Project Tamarisk Eradication, Monitoring, and Reporting Plan (Tamarisk Plan) was submitted on August 03, 2016.

The BIO-16 Tamarisk Plan Annual Report for 2020 was submitted to the CEC on February 2, 2021. The revised report was submitted on May 27, 2021, with revisions that addressed CEC comments. The CEC via email (dated 7/14/21), stated: "CEC staff and CDFW have determined that MSP has met the success criteria for BIO-16 and satisfied the requirement for annual reporting as part of BIO-16...MSP will continue to control weeds on site but will not prepare the full stand-alone report. Please continue to report on the status of weed control in the ACR."

MSP has contracted with a California-licensed herbicide applicator and has been applying herbicide to exotic and invasive species within the project. Herbicide application has shown to be effective in controlling weeds onsite.

The DB surveyed for weed species throughout the year as conditions warranted and seasonal germination developed and coordinated with MSP for treatment. No weed species meeting the definition of invasive were observed onsite in 2024. Three species of exotic weeds, Mediterranean grass (*Schismus arabicus*), Russian thistle (*Salsola tragus*), and redstem filaree (*Erodium cicutarium*) were documented onsite during the reporting period. Russian Thistle was removed sitewide periodically as it germinated. MSP contracted with a licensed herbicide applicator to treat provide sitewide treatment with a pre-emergent herbicide in January 2024 and will continue to treat the site with herbicide annually as conditions warrant.

#### 3.17. BIO-17: Monitoring Impacts of Solar Collection Technology on Birds

BIO-17 requires the project owner to develop and implement a Bird Monitoring Study. Revision 2 of the Bird Monitoring Study was submitted to the CPM on April 15, 2016, to address comments on Revision 1 provided by the CEC staff during a January 27, 2016, meeting. A meeting was held on December 14, 2016, between MSP and CEC to discuss, in part, consistency between the BIO-17 Bird Monitoring Study and BIO-19 Evaporation Pond Monitoring and Adaptive Management Plan. The Bird Monitoring Study was subsequently approved by the CEC on January 27, 2017. The issuance of the permanent Special Purpose Utility Permit by the USFWS was received on March 3, 2017, and the Scientific Collection Permit from the CDFW was received on August 10, 2017.

The BIO-17 Bird Monitoring Study was initiated on September 1, 2017, and fieldwork was completed on August 30, 2019. The combined second annual and final project summary report was submitted on December 06, 2019. In response to comments received from the agencies, revisions were submitted on December 14, 2020 (2<sup>nd</sup> revision) and September 13, 2021 (3<sup>rd</sup> revision). The final BIO17-11-04 Bird Monitoring Study Annual Report Second Year 2018-2109 (09-AFC-5C) – Final Revision was submitted for review and approval on October 29, 2021. The CEC stated via email (dated 10/13/21) "once the report is finalized the requirements of BIO-17 will be satisfied." The CEC granted final approval via email dated November 1, 2021.

### 3.18. BIO-18: Common Raven Monitoring, Management, and Control Plan

BIO-18 requires the project owner to implement measures to manage its construction site in a manner to control Common Raven (Corvus corax) populations. In addition, the project owner must develop and implement a Common Raven Monitoring, Management, and Control Plan. BIO18-01-03 reviewed and approved by the CEC on March 26, 2012.

The Common Raven Monitoring, Management, and Control Plan specifies that the project owner will report annually to the California Energy Commission (CEC), United States Fish and Wildlife Service (USFWS) and the California Department of Fish and Wildlife (CDFW) during the operation phase of the project. The raven plan requires the Designated Biologist (DB) and/or Biological Monitor (BM) to perform monthly reconnaissance-level surveys for the first five years of the project, unless it is determined that fewer surveys are necessary. In addition, annual breeding season monitoring will be conducted for the life of the project.

In an email dated July 14, 2021, CEC stated "...CEC staff, CDFW and USFWS have determined that the project owner has satisfied the requirement for monthly surveys as part of the BIO-18 Raven Plan." Hence, no point counts were conducted in 2022.

The DB conducted breeding season nesting surveys during 2024. Details of the nest monitoring results are found in the Sec. 3.9 as well as the BIO-18 Annual Report for 2024.

#### 3.19. BIO-19: Evaporation Pond Monitoring and Adaptive Management Plan

BIO-19 requires the project owner to develop and implement an Evaporation Pond Monitoring and Adaptive Management Plan to define the monitoring and reporting procedures as well as triggers for adaptive management strategies that will be implemented to prevent wildlife fatalities at the evaporation ponds. The final BIO-19 Evaporation Pond Plan Monitoring and Adaptive Management Plan was approved in March 2017. The Evaporation Pond Plan defines the monitoring and reporting procedures as well as triggers for adaptive management strategies that shall be implemented to prevent wildlife mortality at the evaporation ponds.

Prior to and after the approval of the Evaporation Pond Plan, various hazing techniques were employed to try to deter birds from using the evaporation ponds, however, avian fatalities in September 2017 resulted in adaptive management triggers being met. Additional avian fatalities on October 16 and 17 2017 resulted in the final adaptive management trigger being met. On, January 23, 2018, the CEC issued a formal letter notifying the MSP that the ponds must be netted. USFWS concluded that the installation of the netting should be delayed for a period of one year to do a comparative study with the netting system at the Genesis solar site. In an email dated January 24, 2020, the CEC directed MSP to begin netting installation, stating "Staff has discussed this with the USFWS and they are in agreement that the ponds should be netted. MSP is advised that to remain in compliance with BIO-19 the project owner shall begin installation of netting at the evaporation ponds, per the requirements of BIO-19." CEC also advised that avian monitoring at the ponds may be reduced from bi-weekly to monthly until netting is installed.

In March 2020, MSP requested, and CEC granted permission to postpone netting installation due to the COVID-19 pandemic. The postponement was again approved on December 17, 2020. On May 21, 2021, CEC notified MSP that the San Bernardino "Stay at Home" order had been lifted and requested that MSP initiate installation of the pond netting as well as provide additional information on the scope of work, schedule, and status of nesting birds.

The CEC, via email dated August 5, 2021, requested that MSP modify the BIO-19 Evaporation Pond Plan to address monitoring of netted ponds and rescue of live and injured birds from the netting. MSP submitted BIO19-98-00 Evaporation Pond and Adaptive Management Plan Rev. 8 on October 19, which was subsequently approved by the CEC on October 27, 2021.

Installation of netting at the Beta west pond on began on September 30 and was completed at the end of October 2021. Due to issues with the initial netting contractor, MSP contracted with a new contractor in 2023 and installation of the remaining ponds began in October 2023. Netting over the Beta East Pond was completed in December 2023. Installation at the Alpha ponds was completed in April 2024.

Refer to BIO-19 monthly & quarterly Evaporation Pond Plan reports for additional details.

#### 3.20. BIO-20: Harper Dry Lake Marsh Water Delivery

BIO-20 requires the project owner to provide a well with the ability to convey a minimum of 75 acre-feet of water to Harper Dry Lake marsh, prior to decommissioning the on-site well that was serving the marsh.

On August 16, 2012, the project owner completed construction of a new well that meets BIO-20 criteria of providing 75 acre-feet of water to the Harper Dry Lake marsh. In letter to the project owner, the Bureau of Land Management took responsibility for well ownership, including maintenance and electricity. In compliance with the BIO-20 Verification, the project owner submitted all applicable information regarding decommissioning the original well and specifications of the new well to the CPM on September 24, 2012 (MSLLC, 2012).

As noted in the BIO-6 Construction Closure Report, this item was completed in 2012 and no further compliance activities are required related to this COC.

#### 3.21. BIO-21: USFWS Biological Opinion

BIO-21 requires the project owner to incorporate the USFWS's Biological Opinion terms and conditions into the BRMIMP. The USFWS issued the Biological Opinion (8-8-11-F-3) on March 17, 2011 (USFWS, 2011b).

No desert tortoises were encountered onsite in 2024. BIO21-12-00 Biological Opinion Annual Compliance Report 2024 (09-AFC-5C) submitted on December 3, 2024.

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Abengoa Mojave Solar Project California Energy Commission (09-AFC-5C) Condition of Certification BIO-18

Common Raven Monitoring, Management, and Control Plan for Mojave Solar Project San Bernardino County, California

> Annual Compliance Report 2024

## ASI Operations Mojave Solar LLC

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January 2025

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Appendix A: Raven Nest Monitoring Data Sheets

## 1. Introduction

The California Energy Commission (CEC), in Condition of Certification BIO-18, requires the project owner to implement measures to manage its construction site in a manner to control Common Raven (*Corvus corax*) populations. In addition, the project owner must develop and implement a Common Raven Monitoring, Management, and Control Plan. The CEC approved the Common Raven Monitoring, Management, and Control Plan (Raven Plan) on March 26, 2012. The raven plan specifies that the project owner will report annually to the CEC, United States Fish and Wildlife Service (USFWS) and the California Department of Fish and Wildlife (CDFW) during the operations phase of the project.

The final BIO-18 raven plan specifies that the Designated Biologist (DB) and/or Biological Monitor (BM) will perform monthly reconnaissance-level surveys for the first five years of the project, unless it is determined that fewer surveys are necessary. In addition, annual breeding season monitoring will be conducted for the life of the project.

This report summarizes BIO-18 raven monitoring and control efforts conducted during 2024

## 2. Monitoring Activities

The raven plan specifies that MSP will incorporate project design features (PDFs), project-specific control measures and management practices to ensure that project activities do not create new subsidies that increase the presence or attraction of ravens to the project area. The raven plan specifically calls out the following PDFs and management practices that will be monitored to assess impacts on raven use of the site.

- Evaporation Ponds
- Raven Perching, Roosting, and Nesting Sites
- Ponding Water
- Raven Food Sources from Soil Disturbance and Roadkill
- Human Food and Waste Management

Mojave Solar Project personnel, the DB, and the BM are responsible for monitoring. The DB/BM routinely monitor MSP site conditions to ensure that the PDFs and management practices specified in the raven plan are implemented and carried out and to determine their effectiveness. In addition, MSP personnel are educated on raven control efforts

and are requested to notify the DB/BM if they encounter raven nesting activity, roadkill, and human food or waste management issues.

### 3. Methods

## 3.1 Point Counts

The raven plan specifies that up to 12 permanent sampling points will be surveyed monthly. Point count locations (7) for the operation phase were submitted to the CEC, USFWS, and CDFW on June 17, 2016, and approved on June 24, 2016. Point counts were conducted monthly by the DB. Data collected include date, time, and weather conditions of survey, as well as time, location, number, age, sex, behavior, distance from the point location and any other pertinent details for each observation.

In an email dated July 14, 2021, CEC indicated that MSP had satisfied the monthly survey conditions of BIO-18.

"As part of the approval of the 2020 ACR, CEC staff, CDFW and USFWS have determined that the project owner has satisfied the requirement for monthly surveys as part of the BIO-18 Raven Plan. Annual breeding season monitoring will be conducted at the MSP for the life of the project and a stand-alone report should still be provided in the ACR. In addition, control measures including any adaptive management measures determined to be necessary by the agencies shall be implemented per the approved plan, as needed."

Point count surveys were discontinued after July 2021 per CEC's communication.

## 3.2 Breeding Season Monitoring

The raven plan specifies that nest search surveys will be conducted twice a month during the raven breeding season (March through June) for the life of the project. The plan also specifies that if nest building is observed, the DB/BM will actively remove inactive nests. Any existing inactive raven nests will be removed prior to the breeding season.

During March through June the DB systematically surveyed all project structures suitable for raven nesting at least twice monthly. Incidental observations of raven nesting behavior by the DB and BM were also used to focus nest search efforts. MSP personnel were requested to notify the DB if they observed any evidence of raven nesting.

## 4. Results

## 4.1 Point Counts

Point counts were discontinued in 2021.

## 4.2 Nest Monitoring

Nest surveys were conducted by the DB during the breeding season (March-June). Six nesting attempts representing four or five nesting pairs of ravens were located in 2024 (Table 1). The alpha & beta power block nests were in the same locations as active nests in prior years. The alpha west solar field nest was in a new location on the solar collector framework and the alpha east and beta west nests were on HTF pipe supports. The DB set up a non-disturbance buffer, flagged off access to the locations, and advised MSP staff to notify the DB if any work needed be done in the area. The DB monitored the nests periodically through July. Scanned nest monitoring datasheets are included as Appendix A.

In 2019, MSP and the DB began coordinating with Mr. Tim Shields of Hardshell Labs, the CEC and USFWS to obtain permission to apply an oiling technique to raven nests on MSP. Mr. Shields has been working throughout the region using oiling techniques to prevent raven eggs from hatching in an effort to reduce raven predation on desert tortoises in tortoise critical habitat units. This technique involves applying a thin layer of vegetable or silicone-based oil to the surfaces of the eggs to prevent gas exchange across the eggshell and starving the embryo of oxygen. MSP has requested and been granted permission from the CEC to conduct oiling on nests located at MSP under Mr. Shields Scientific Collecting Permit.

On 3/5/24, a nest was discovered in Beta power block located near the top of an expansion vessel in the same location as prior years. Due to the inaccessibility of the nest site, it is not possible to determine the contents from the ground until nestlings are large enough to be seen however adult behavior can be used to surmise the nesting stage. Adults were observed regularly at the nest until 5/5 when at least three fledglings were seen in and near the nest.

On 3/15/24, the DB located a nest on a cable tray in the Alpha power block in the same location as nests in 2020 and 2021 and 2023. On 3/21, the DB and Mr. Shields oiled a complete clutch of seven eggs. The adults continued to incubate until at least April 17 when the nest only contained four eggs. On May 6, the nest was found empty and appeared abandoned. The nest showed no evidence of nestlings nor were any fledglings observed.

On 5/6 the DB discovered a new incomplete nest in the Alpha power block near the earlier nest. On 6/6 an adult was seen brining food to the nest, however, due to the location of the nest its contents were not visible. On July 3 a dead nestling was found below the nest too young to have fledged. No additional activity was seen near the nest and no sign of successful fledging was observed.

On April 10, the DB located a nest with an adult raven present and incubating located on an out of service solar array in the Alpha West solar field. A clutch of five eggs was oiled on April 16. The adults continued incubating until at least May 6 and on May 30 the nest was found empty with no sign of successful fledging.

On April 3 the DB discovered an incomplete nest located on an HTF overpass in the Alpha East solar field. The nest appeared incomplete until 5/5 when an adult was observed sitting. On 5/30 the nest contained at least one small nestling. On 6/6 no activity was observed at the nest and no further activity was observed through the remainder of the season.

On 4/17 the DB discovered a nest in the beginning of construction on an HTF overpass in the Beta West solar field. On 4/30 there appeared to be no additional progress on the nest, and it was never completed.

Of the six raven nests located in 2024, only one was determined to have successfully fledge young. The DB continued to observe the nest areas and nesting pairs during routine site visits both prior to and after the expected fledging dates. No additional evidence of successful nesting by Common Ravens was observed in 2024.

Table 1. Summary of Common Raven Nesting 2024						
Nest ID	Date Discovered	Location	Outcome			
01-B-CORA	3/5/24	Beta Power Block	Fledged young			
02-A-CORA	3/15/24	Alpha Power Block	Failed - Abandoned			
03-A-CORA	4/10/24	Alpha West SCA	Failed - Abandoned			
04-A-CORA	4/3/24	Alpha West SCA	Failed - Unknown			
05-B-CORA	4/17/24	Beta West SCA	Failed - Abandoned			
06-A-CORA	5/6/24	Alpha Power Block	Failed - Abandoned			

## 5. Conclusions & Recommendations

BIO-19 point counts, BIO-18 raven point counts and anecdotal observations suggest that the evaporation ponds are not an attractant for ravens. Ravens are rarely noted at the ponds during point counts and when they are observed, they are typically flying through the area or offsite. Additionally, the ponds were completely netted in early 2024 which effectively removed them as a water source for ravens. The Harper Lake wetlands to the east of MSP offer a nearly permanent fresh water source for ravens and ravens are often seen flying in the direction of or away from the wetlands. On-site application of water is minimal as is ponding of water, which is typically associated with winter rain events.

Project associated food sources for ravens include roadkill, primarily along Lockhart Road. MSP personnel routinely contact the DB when roadkill is observed in the vicinity of the project. Roadkill is either disposed of or buried so that it is not available to ravens. BIO-17 avian mortality study carcasses previously provided ample food supply for ravens. Placement of study carcasses ceased in August 2019 and is no longer a food source.

The power block structures offer a nearly unlimited number of perching and nesting sites for ravens and ravens routinely use these structures for perching and nesting. Efforts to dissuade ravens from nesting in previously used nest sites by covering the nest substructure with wire mesh have proven ineffective as the ravens simply nest elsewhere on the structure. Ravens are persistent in their nesting efforts and can rebuild a nest and lay eggs within a few days if necessary. Continued diligent efforts to ensure prior season's nest are removed and to locate nesting attempts and remove nesting material before commencement of egg laying each season are recommended. Additionally, MSP is coordinating with researchers to apply egg-oiling techniques on nests that are accessible. In 2020, this technique resulted in only one raven pair successfully fledging young however, in 2021, nesting timing and inaccessibility precluded using this technique. In 2022 and 2023 the oiling technique resulted in no successful nesting on Mojave Solar Project and in 2024 only one nest was successful. The technique is being used on MSP as part of a larger regional effort to reduce raven nesting success and predation on desert tortoise and appears to be effective in reducing but not entirely eliminating successful nesting on Mojave Solar Project.

Appendix A Raven Nest Monitoring Data Sheets

Species: <u>Common Raven</u> Project Location\*: <u>BETR POWER BL</u>

Discovery Date (mo/day/yr): 35.29

				Nes	t Loca	tion		Act	ive		Ina	ctive/	Outco	me
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5.6.29	"		S		×		?	3					×	
Nest ID: "Unique	Sequential Number - A or B	Species	Code" eg	3. 01-A-Al	MAV							1.1		

\* Project Location: Alpha Ponds, Beta Ponds, Alpha Power Block, Beta Power Block, Alpha West SCA, Alpha East SCA, Beta West SCA, Beta East SCA

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Species: Common RAVEN Nest ID\*: 2024-02-19-02

Project Location\*: ALPNA POWER BUOK Coordinates (UTM): \_\_\_\_\_

Discovery Date (mo/day/yr): 3.15.24

		Nest	Loca	tion			Active		Ina	Inactive/Outcome				
Date	Observer	Ground	Structure	Vegetation	# Eggs	# Nestlings	# Fledglings	# Adults	Adult Incubating	Abandoned	Depredated	Fledged	Unknown	
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Common RAVEN

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Nest ID*:	2024-03-CORA

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Project Location\*: <u>Alpha</u> *WEST* Coordinates (UTM): <u>35</u>, 014264 -117, 347837

Discovery Date (mo/day/yr): <u>4.19.29</u>

		Nest	Locat	tion			Active		άû	Inactive/Outcome			
Date	Observer	Ground	Structure	Vegetation	# Eggs	# Nestlings	# Fledglings	# Adults	Adult Incubating	Abandoned	Depredated	Fledged	Unknown
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Species: Commond RAVEN

Nest ID\*: 2024-04-A-CORA

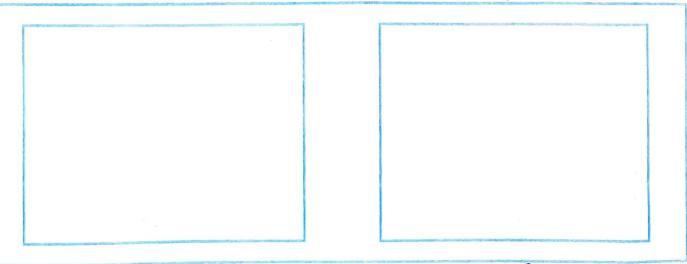
Project Location\*: <u>Alpha East SCA</u> 184EF Coordinates (UTM): <u>35:013952</u> 17:312669

Discovery Date mo/day/yr): 4.3.29

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Date	Observer	Initial Discovery	Follow-up	Ground	Structure	Vegetation	# Eggs	# Fledglings	# Adults	Adult Incubating	Abandoned	Depredated	Fledged	Unknown	
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Nest ID: "Unique Se	equential Number - A or B -	Species (	Code" eg	. 01-A-AN	VAN	Contractions and the second							the second se		1

Comments ON OVERPRSS PIPE 4.3 INITIAL NEST GUILONZ, JUST A FEW STICKS, POULT BUILDING OBJERVED

Use First 2 Numbers From Nest ID to Denote Location in Relation to Evaporation Pond Pair



4.10.24 - NO ROULTS IN ARER NO PROGRESS ON NEST.

Page 621 of 1228

Species:	Common RAV.	Ên				r	lest I	D*:	2024.	-5-6	B- CO/	A	
Project Locati	on*: 20 Bu	NSF 1	HT F PACS		Coord	inates	; (UTI		2.75	and the second second	- 16.		
Discovery Dat	e (mo/day/yr):				_				17. 3	0/0 [8	6		
		Nest	Loca	tion			Active		<u>w</u>		ctive/	Outcor	me
Date	Observer	Ground	Structure	Vegetation	# Eggs	# Nestlings	# Fledglings	# Adults	Adult Incubating	Abandoned	Depredated	Fledged	Jnknown
4.17.24	5. ROWE		X		Ø	Ø	ø	6	Ø				
4.30.	5r		<b>X</b>					/			NEST STKK NO ST	NEVE ON G.	n compe- nove o. Navens
		_											
	equential Number - A or B - S pha Ponds, Beta Ponds, Alph												

# Comments FEL STICKS ON HTF SUPPORT ON 4.17.

### Use First 2 Numbers From Nest ID to Denote Location in Relation to Evaporation Pond Pair

		1



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Species: Comman RANEN

Nest ID\*: 2024-06-A-CORA

Project Location\*: ALPINA POWER BLOCK Coordinates (UTM): 35.014052 117-329407

Discovery Date (mo/day/yr): \_\_\_\_\_

		Nest	Loca	tion			Active		Inactive/Outcome			me	
Date	Observer	Ground	Structure	Vegetation	# Eggs	# Nestlings	# Fledglings	# Adults	Adult Incubating	Abandoned	Depredated	Fledged	Unknown
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54.00 miles			i					· · · · · · · · · · · · · · · · · · ·			1		

Comments FINST DISCALEDED 53 BY BUDGE OPENATION - 56 REPEARS INCOMPLETE NOT LINED. EMPTY ON 7.3, DEAD NESTLIJG BELOW NO SIGN OF FLEGGINL

Use First 2 Numbers From Nest ID to Denote Location in Relation to Evaporation Pond Pair

	1	
-		
		a second

# **CNDDB Online Field Survey Form Report**



California Natural Diversity Database Department of Fish and Wildlife 1416 9th Street, Suite 1266 Sacramento, CA 95814 Fax: 916.324.0475 cnddb@wildlife.ca.gov

www.dfg.ca.gov/biogeodata/cnddb/

T OF FISH

Source code_	ROW24F0001
Quad code	3511713
Occ. no	
EO index no	
Map index no.	

This data has been reported to the CNDDB, but may not have been evaluated by the CNDDB staff

Scientific name: Athene cunicularia

Common name: burrowing owl

Date of field work (mm-dd-yyyy): 01-12-2024

Comment about field work date(s): First observed on 1/12/24 the periodically through 4/3/24 during routine site visits.

#### **OBSERVER INFORMATION**

**Observer: Sean Rowe** 

Affiliation: Rowe Ecological Consulting, LLC

Address: PO Box 1018, Weldon, CA 93283

Email: roweecological@gmail.com

**Phone:** (321) 863-5709

Other observers:

DETERMINATION

Keyed in:

Compared w/ specimen at:

Compared w/ image in:

By another person:

**Other:** Expert opinion

Identification explanation: Pair of small owls using former kit fox den complex.

Identification confidence: Very confident

Species found: Yes If not found, why not?

Level of survey effort: Checked for presence of owls monthly through the year.

Total number of individuals: 2

Collection? No

Collection number:

Museum/Herbarium:

#### ANIMAL INFORMATION

How was the detection made? Seen	
Number detected in each age class:	

2	0	0	0	0
adults	juveniles	larvae	egg mass	other

Age class comment:

Bird site use:
Nesting       Rookery       Nesting colony       Burrow site       Lek         Non-breeding (over-wintering)       Communal roost       Other (foraging, fly-over, etc.)
Site use description: Pair seen at active burrows though April 2024.
What was the observed behavior? Pair using burrows.
Describe any evidence of reproduction:
SITE INFORMATION
Habitat description: Site is within solar site. Habitat immediately adjacent to site is saltbush scrub.
Slope: Flat Landowner/manager: Mojave Solar Project
Aspect:

Site condition + population viability: Fair

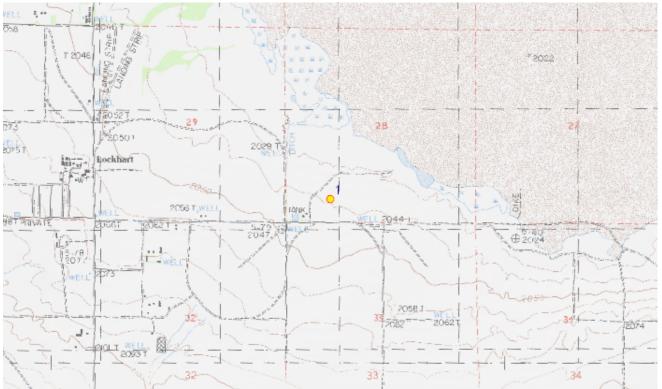
Immediate & surrounding land use: Mix of BLM & private undeveloped with a few residential parcels.

Visible disturbances: Dirt roads, trash, dogs.

Threats: Site is currently protected within the fenced boundaries of Mojave Solar Project. No immediate threats.

General comments:





ID	County	24K Quadrangle	Elev. (ft)	Latitude NAD83	Longitude NAD83	UTM E NAD83	UTM N NAD83	UTM Zone
	San Bernardino	Lockhart	2039	35.01233	-117.30862	471842	3874454	11
	Public Land Survey	Feature Comment						
1	S T11N R04W 28	Pair of owls using forme	er kit fox bi	urrows.				

The mapped feature is accurate within: 20 m

Source of mapped feature: GPS

Mapping notes: Internet map application.

Location/directions comments: Located inside Mojave Solar Project east of the alpha east solar field. North of Lockhart Road near the SE corner of the project.

Attachment(s):

# **CNDDB Online Field Survey Form Report**



California Natural Diversity Database Department of Fish and Wildlife 1416 9th Street, Suite 1266 Sacramento, CA 95814 Fax: 916.324.0475 cnddb@wildlife.ca.gov

<u>cnddb@wildlife.ca.gov</u> www.dfg.ca.gov/biogeodata/cnddb/



Source code_	ROW24F0002
Quad code	3511713
Occ. no	
EO index no	
Map index no.	

This data has been reported to the CNDDB, but may not have been evaluated by the CNDDB staff

Scientific name: Athene cunicularia

Common name: burrowing owl

Date of field work (mm-dd-yyyy): 04-30-2024

Comment about field work date(s): First observed owls at this site on 4/30/24 then periodically through the year.

#### **OBSERVER INFORMATION**

**Observer: Sean Rowe** 

Affiliation: Rowe Ecological Consulting, LLC

Address: PO Box 1018, Weldon, CA 93283

Email: roweecological@gmail.com

**Phone:** (321) 863-5709

Other observers:

DETERMINATION

Keyed in:

Compared w/ specimen at:

Compared w/ image in:

By another person:

**Other:** Expert opinion

Identification explanation: Pair of owls with fledged young using burrows.

Identification confidence: Very confident

Species found: Yes If not found, why not?

Level of survey effort: Checked for presence of owls monthly throughout the year.

Total number of individuals: 4

Collection? No

Collection number:

2

juveniles

Museum/Herbarium:

ANIMAL INFORMATION

How was the detection made? Seen

Number detected in each age class:

2
---

adults

larvae

egg mass

other

Age class comment:

Bird site use:
Nesting Rookery Nesting colony Surrow site Lek
Non-breeding (over-wintering) Communal roost Other (foraging, fly-over, etc.)
Site use description: Pair seen at burrow through the year with 2 fledged young seen in on 9/21/24.
What was the observed behavior? Pair & young using burrows.
Describe any evidence of reproduction: 2 fledged young seen.
SITE INFORMATION
Habitat description: Burrow site is within solar site. Habitat immediately adjacent to the site is saltbush scrub.
Slope: Flat Landowner/manager: Mojave Solar Project

Aspect:

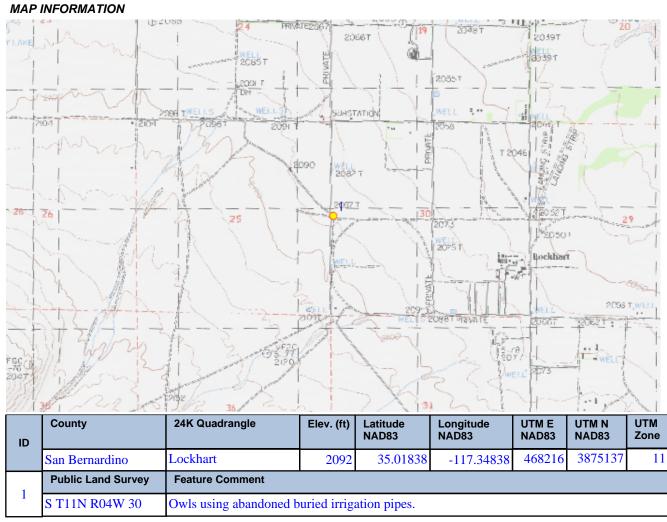
Site condition + population viability: Fair

**Immediate & surrounding land use:** Mix of BLM, industrial solar, and private undeveloped with scattered residential parcels.

Visible disturbances: Dirt roads, trash, dogs.

Threats: Currently protected within the fenced boundary of the Mojave Solar Project. No immediate threats.

#### General comments:



#### The mapped feature is accurate within: 5 m

Source of mapped feature: GPS

#### Mapping notes:

**Location/directions comments:** Located inside the Mojave Solar Project just inside the western boundary fence on the alpha west solar field. East of Lockhart Ranch Road and south of Hoffman Road.

#### Attachment(s):