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June 15, 2015

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RWQCB-CVR  
FRESNO, CALIF.

Ronald Holcomb  
Central Valley Region  
Water Quality Control Board  
1685 East E Street  
Fresno, CA 93706

SUBJECT: INFORMATION REQUESTED BY SECTION 13267 ORDER  
COALINGA OIL FIELD

Dear Mr. Holcomb:

In a letter dated April 1, 2015, the Regional Water Quality Control Board (RWQCB) requested laboratory analyses of locations previously identified by RWQCB staff and an inventory of other potential discharge locations not previously identified. The attached report prepared by Amec Foster Wheeler Environment & Infrastructure, Inc. includes the requested information covering Aera Energy LLC's (Aera) operations within the Coalinga Oil Field.

Aera has provided as much information as possible within the short timeframe specified by the RWQCB. Existing equipment databases were queried and experienced personnel were engaged to prepare the inventory. Even taking into account these measures, it is possible that some minor discharge locations were overlooked.

In addition, Aera continues to install new or modify existing equipment that could be classified as a potential discharge point. Pressure relief valves are needed to protect personnel and equipment from catastrophic failures or a new steam injection well, approved by the Division of Oil, Gas and Geothermal Resources, may be drilled to support existing operations. Aera understands that the RWQCB is re-evaluating the regulatory framework that encompasses this type of equipment. When the evaluation is complete, the attached report may need to be supplemented to include added discharge locations or delete locations that have been abandoned.

The sampling of the fluids has been proceeding expeditiously. However, many of the locations do not contain fluids or sufficient fluids to collect the required samples. Where fluids are available, extensive safety planning must be implemented in order to ensure

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the well-being of the personnel performing the work. Further, some of the laboratory methods requested by the RQWCB take several weeks to complete. Accordingly, laboratory analytical results will be submitted as they are received by Aera.

If you have any questions or require additional information, please contact Ron Chambers at (661) 665-5641 or John Haley at (661) 665-5279.

CERTIFICATION:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.



W. J. Dittman  
Vice President

cc: Ron Chambers, Aera  
John Haley, Aera  
William Pipes, Amec  
Alex Olsen, Amec



June 12, 2015

Project FR15160780

Mr. John Haley  
Aera Energy LLC  
10000 Ming Avenue  
Bakersfield, California 93311

**Subject: Technical Report – Potential Discharges to Land, Coalinga Oil Field**  
Aera Energy LLC, Fresno County, California

Dear Mr. Haley:

Amec Foster Wheeler Environment & Infrastructure, Inc. (Amec Foster Wheeler), is pleased to provide this technical report to Aera Energy LLC (Aera), presenting the sampling and analytical results for the recent review of possible discharges to land conducted at the Coalinga Oil Field in Fresno County, California. The sampling was conducted to comply with the Central Valley Regional Water Quality Control Board's (RWQCB) Section 13267 Order (Order) dated April 1, 2015 (Appendix A). The order requested that potential discharges of wastewater to land be identified and where possible analytical results of wastewater samples collected be submitted in a technical report to the RWQCB by June 15, 2015.

#### **REGULATORY BACKGROUND**

Aera operates three sets of impoundments in the Coalinga Oil Field; CMS-Aztec, Penn-Zier, and Section 26 impoundments. The impoundments are currently operated under Waste Discharge Requirements (WDRs) order numbers: 58-460 (CMS-Aztec and Penn-Zier) and 58-469 (Section 26). In their inspection reports dated March 19, 2015, the RWQCB stated that during an inspection of the impoundments on December 18, 2014, that no violations of the WDRs were observed. The RWQCB stated in their reports that the WDRs for the three facilities need to be updated and that they would be issuing the above mentioned order to require the collection of data needed to determine whether the facilities could comply with current regulatory standards.

#### **DISCHARGE LOCATIONS**

In addition to the impoundments listed in the order, Aera has identified an additional 339 possible discharge points within the Coalinga Oil Field. An Inventory List, provided by Aera, of potential discharge locations with their intended use is included in Appendix B. The locations of each discharge point are shown on Figures 1 through 13 provided in Appendix B.

#### **WASTEWATER SAMPLING**

Of the 357 possible discharge point's identified, Aera was able to collect samples from 16, including representative samples from the impoundments listed in the order.

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Two samples (C-150 and C-151) were collected from the Penn-Zier impoundments. Sample C-150 was collected from sump 1 and sample C-151 was collected from the inlet of Pond 1. Produced water from Pond 1 flows into Ponds 2-6.

One sample (C-125) was collected from the CMS-Aztec impoundments. Sample C-125 was collected from sump 1. Produced water flows from sump 1 into sump 2.

One sample (C-1) was collected from the Section 26 impoundments. Produced water from Aera's facilities located approximately 3 miles west of the impoundments is pumped into 4 primary sumps and then gravity flows into the other sumps. Sample C-1 was collected from the inlet of sump 4 and is representative of water discharged into the impoundments.

Samples could not be collected from the majority of the discharge points due to: the locations being dry, the locations are only used during an emergency (e.g. pressure relief valve [PRV]), the discharge location was not in operation, or samples could not be collected safely (e.g. high temperatures associated with steam).

The following paragraphs describe the sampling method and analysis.

### **Sampling Method**

Wastewater samples were collected by Oilfield Environmental and Compliance, Inc. (OEC) of Santa Maria, California, under direct contract with Aera between May 19 and May 21, 2015.

Wastewater samples were collected by lowering a new clean disposable bailer into the wastewater ponds and then decanting the water into the appropriate sampling containers, directly filling the appropriate containers using a designated sampling spigot or port, or by attaching a new clean sampling cup to an extension pole to reach the sampling port and then decanting the water into the appropriate containers.

### **Sample Analysis**

The wastewater samples were delivered to OEC for analysis. Wastewater samples were labeled with pertinent information including sample identification, the date and time the samples were collected, and the name of the individual collecting the sample. The samples collected for laboratory analysis were transported in ice-cooled chests under chain-of-custody procedures.

Samples were analyzed for the analytes listed in Attachment B of the order. The analytes and analytical methods are summarized in Table 1.

### **ANALYTICAL RESULTS**

Analytical results for the samples collected are summarized in Tables 2 through 5. The analytical reports and chain-of-custody documentation are provided in Appendix C.



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### General Chemistry

General chemistry results are summarized in Table 2.

### Total Metals

Total metals results are summarized in Table 3.

### Radionuclides

The wastewater samples are in the process of being analyzed for the radionuclide (total recoverable uranium, gross alpha, radium 226, and radium 228) results by OEC and will be submitted in an addendum to this technical report upon receipt.

### Volatile Organic Compounds, Polynuclear Aromatic Hydrocarbons, and Total Petroleum Hydrocarbons

The volatile organic compounds (VOCs), polynuclear aromatic hydrocarbons (PAH), and total petroleum hydrocarbons results are summarized in Table 4. Only the detected VOCs and PAHs are summarized in this table.

### CERTIFICATION

This letter was prepared by Amec Foster Wheeler staff under the supervision of the Professional Geologist whose seal and signature appear hereon. The findings, recommendations, specifications, or professional opinions presented in this letter were prepared in accordance with generally accepted professional geologic practices and within the scope of this project. No other warranty, express or implied, is provided.

Amec Foster Wheeler is pleased to be of service to Aera. Please call if you have any questions or require additional information.

Sincerely yours,  
Amec Foster Wheeler Environment & Infrastructure, Inc.

A handwritten signature in black ink, appearing to read "Alex O. Olsen Jr.", written over a horizontal line.

Alex O. Olsen Jr., PG  
Senior Geologist



### Attachments:

- Table 1 – Field Parameters And Laboratory Analysis
- Table 2 – Field Parameters And Analytical Results - General Chemistry
- Table 3 – Analytical Results - Total Metals
- Table 4 – Analytical Results - Volatile Organic Compounds, Polynuclear Aromatic Hydrocarbons, Methane, Total Petroleum Hydrocarbons, And Total Carbohydrates



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Appendix A – April 1, 2015, California Water Code Directive Pursuant to Section 13267  
Appendix B – Inventory List and Coalinga Potential Discharge Location Points  
Appendix C – Analytical Reports and Chain-of-Custody Documentation

cc: Ron Chambers, Aera Energy LLC

TABLE 1

**SUMMARY OF CHEMICAL ANALYSIS**

Aera Coalinga Discharge Sampling  
Coalinga Oil Field, Fresno County, California

Constituents	Analytical Method <sup>1</sup>
<b>Field Parameters</b>	
pH	--
Specific Conductivity	--
Temperature	--
<b>Volatile Organic Compounds</b>	
Benzene	EPA-8260B
Ethylbenzene	EPA-8260B
Toluene	EPA-8260B
Total Xylenes	EPA-8260B
<b>Polynuclear Aromatic Hydrocarbons</b>	
Acenaphthene	EPA-8270C-SIM
Acenaphthylene	EPA-8270C-SIM
Anthracene	EPA-8270C-SIM
Benzo[a]anthracene	EPA-8270C-SIM
Benzo[b]fluoranthene	EPA-8270C-SIM
Benzo[k]fluoranthene	EPA-8270C-SIM
Benzo[a]pyrene	EPA-8270C-SIM
Benzo[g,h,i]perylene	EPA-8270C-SIM
Chrysene	EPA-8270C-SIM
Dibenzo[a,h]anthracene	EPA-8270C-SIM
Fluoranthene	EPA-8270C-SIM
Fluorene	EPA-8270C-SIM
Indeno[1,2,3-cd]pyrene	EPA-8270C-SIM
Naphthalene	EPA-8270C-SIM
Phenanthrene	EPA-8270C-SIM
Pyrene	EPA-8270C-SIM
<b>Metals</b>	
Total Antimony	EPA-6010B
Total Arsenic	EPA-6010B
Total Barium	EPA-6010B
Total Beryllium	EPA-6010B
Total Cadmium	EPA-6010B
Total Chromium	EPA-6010B
Total Cobalt	EPA-6010B
Total Copper	EPA-6010B
Total Lead	EPA-6010B
Total Mercury	EPA-7470A

TABLE 1

SUMMARY OF CHEMICAL ANALYSIS

Constituents	Analytical Method <sup>1</sup>
<b>Metals (continued)</b>	
Total Molybdenum	EPA-6010B
Total Nickel	EPA-6010B
Total Selenium	EPA-6010B
Total Silver	EPA-6010B
Total Thallium	EPA-6010B
Total Vanadium	EPA-6010B
Total Zinc	EPA-6010B
Total Boron	EPA-6010B
Total Iron	EPA-6010B
Total Lithium	EPA-6010B
Total Strontium	EPA-6010B
Total Calcium	EPA-6010B
Total Magnesium	EPA-6010B
Total Manganese	EPA-6010B
Total Sodium	EPA-6010B
Total Potassium	EPA-6010B
<b>Radionuclides</b>	
Gross Alpha	EPA-9310/SM 7110B
Radium 226	EPA-9315/SM 7110B
Radium 228	EPA-9320/SM 7110B
Total Recoverable Uranium	EPA-200.8
<b>General Chemistry</b>	
Bromide	EPA-300.0
Chloride	EPA-300.0
Nitrate as NO <sub>3</sub>	EPA-300.0
Sulfate	EPA-300.0
Alkalinity	SM 2320B
Fluoride	EPA-300.0
Total Dissolved Solids	SM 2540C
<b>Other</b>	
Total Petroleum Hydrocarbons, Crude Oil	EPA-8015M

1. "--" = not applicable, EPA = Environmental Protection Agency, and SM = Standard Method.

TABLE 2

**ANALYTICAL RESULTS - GENERAL CHEMISTRY**  
 Aera Coalinga Discharge Sampling  
 Coalinga Oil Field, Fresno County, California

Sample ID <sup>2</sup>	Discharge Location	Sample Date	Analyte and Result <sup>1</sup>										Field Parameters <sup>2</sup>		
			Bicarbonate Alkalinity as CaCO <sub>3</sub> mg/L	Carbonate Alkalinity as CaCO <sub>3</sub> mg/L	Hydroxide Alkalinity as CaCO <sub>3</sub> mg/L	Total Alkalinity as CaCO <sub>3</sub> mg/L	Bromide mg/L	Chloride mg/L	Fluoride mg/L	Nitrate as NO <sub>3</sub> mg/L	Sulfate mg/L	Total Dissolved Solids @ 180 °C mg/L	Electrical Conductivity μmhos/cm	pH	Temperature °C
C-1	Sec 26 Sump #4 West	05/19/15	970	<10	<10	970	<20	6,100	<20	<90	660	12,000	23,000	6.6	32
C-13	Sec 26 DEHY Drain Tank	05/19/15	1400	<10	<10	1400	3.7	790	<2.0	<9.0	540	3,700	6,400	6.4	24
C-21	27 Water Plant overflow basin	05/19/15	1600	<10	<10	1600	3.4	790	1.4	<3.6	540	4,500	6,500	6.3	28
C-26	Little Hoover Emergency Catch Basin on Oil Creek	05/19/15	55	<10	<10	55	<0.4	11	<0.4	6.5	64	210	290	6.2	22
C-31	32 Water Plant T-700 Pit	05/19/15	1,000	<10	<10	1,000	4.2	2,000	<2.0	<9.0	630	5,600	9,500	6.8	51
C-32	32 Water Plant T-810 Drain box	05/19/15	940	<10	<10	940	4.0	980	<2.0	<9.0	620	4,000	6,200	6.4	34
C-35	32 Water Plant Waste Brine Transfer Pumps Skid	05/21/15	890	<10	<10	890	3.9	2,800	<2.0	<9.0	630	6,900	11,400	6.9	32
C-38	32 Water Plant T-940 Pit	05/21/15	780	<10	<10	780	3.6	1,100	<2.0	<9.0	570	4,200	6,200	7.1	36
C-47	32 DEHY T-320 Clean out drain	05/19/15	1000	<10	<10	1000	4.4	940	<2.0	<9.0	630	3,900	6,000	6.4	57
C-58	32 DEHY Drain Tank Pumps	05/19/15	880	<10	<10	880	4.0	930	1.2	<3.6	650	3,900	6,000	6.4	58
C-59	32 DEHY T-317 Drain Box	05/19/15	630	<10	<10	630	1.6	360	2.2	<1.8	140	1,800	2,800	6.3	39
C-61	32 DEHY V-307 Drain well	05/21/15	880	<10	<10	880	4.0	930	<2.0	<9.0	480	3,800	11,200	6.9	76
C-63	32 DEHY T-318 Drain Box	05/19/15	560	<10	<10	560	3.3	750	<0.8	<3.6	770	3,400	5,300	6.8	59
C-125	GMS Drain and overflow Sump 1	05/21/15	810	<10	<10	810	5.2	1,000	<2.0	<9.0	510	3,800	5,600	6.3	46
C-150	Penn Zier Sump #1	05/21/15	790	<10	<10	790	8.3	1,600	<2.0	<9.0	650	4,900	7,600	6.6	45
C-151	Penn Zier Pond #1	05/21/15	780	<10	<10	780	8.0	1,600	<2.0	<9.0	630	4,900	8,000	6.5	52

1. CaCO<sub>3</sub> = calcium carbonate, mg/L = milligrams per liter, NO<sub>3</sub> = Nitrogen, s.u. = standard pH units, °C = degrees Celsius, μmhos/cm = micromhos per centimeter, < = less than reporting limit, J = trace or estimated concentration with a value greater than the method detection limit but less than the practical quantitation limit.  
 2. Sample locations are shown on the figures in Appendix B.



TABLE 3

ANALYTICAL RESULTS  
TOTAL METALS

Aera Coalinga Discharge Sampling  
Coalinga Oil Field, Fresno County, California

Sample ID <sup>2</sup>	Discharge Location	Sample Date	Analyte and Result <sup>1</sup>																											
			Antimony	Arsenic	Barium	Beryllium	Boron	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Lithium	Manganese	Magnesium	Mercury	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Strontium	Thallium	Vanadium	Zinc		
C-1	Sec 26 Sump #4 West	05/19/15	<0.05	0.028	0.45	<0.01	56	<0.005	250	<0.01	<0.01	<0.02	<0.05	0.012	0.93	0.360	180	<0.0002	0.014	<0.005	94	0.1	<0.01	4,300	8.4	<0.02	<0.05	<0.05		
C-13	Sec 26 DEHY Drain Tank	05/19/15	<0.05	<0.02	0.15	<0.01	33	<0.005	68	<0.01	<0.01	<0.02	1.2	<0.01	0.74	0.062	64	<0.0002	<0.005	<0.005	27	<0.05	<0.01	1,300	2.8	<0.02	<0.05	<0.05		
C-21	27 Water Plant overflow basin	05/19/15	<0.05	<0.02	0.13	<0.01	30	<0.005	66	<0.01	<0.01	<0.02	0.065	<0.01	0.70	0.057	64	<0.0002	<0.005	<0.005	26	<0.05	<0.01	1,100	2.8	<0.02	<0.05	<0.05		
C-26	Little Hoover Emergency Catch Basin on Oil Creek	05/19/15	<0.05	<0.02	0.082	<0.01	0.19	<0.005	33	<0.01	<0.01	<0.02	1.5	<0.01	<0.25	0.046	4.7	<0.0002	<0.005	0.012	6.9	<0.05	<0.01	15	0.19	<0.02	<0.05	<0.05		
C-31	32 Water Plant T-700 Pit	05/19/15	<0.05	<0.02	0.028	<0.01	62	<0.005	18	<0.01	<0.01	<0.02	0.082	0.021	0.38	0.056	19	<0.0002	<0.005	<0.005	32	<0.05	<0.01	2,200	0.56	<0.02	<0.05	<0.05		
C-32	32 Water Plant T-810 Drain box	05/19/15	<0.05	<0.02	<0.02	<0.01	59	<0.005	<0.2	<0.01	<0.01	<0.02	<0.05	0.015	0.46	<0.01	<0.05	<0.0002	<0.005	<0.005	35	<0.05	<0.01	1,400	<0.01	<0.02	<0.05	<0.05		
C-35	32 Water Plant Waste Brine Transfer Pumps Skid	05/21/15	<0.05	<0.02	0.13	<0.01	52	<0.005	87	<0.01	<0.01	<0.02	0.20	0.015	0.50	0.130	64	<0.0004	0.017	0.0077	49	<0.05	<0.01	2,200	2.8	<0.02	<0.05	<0.05		
C-38	32 Water Plant T-940 Pit	05/21/15	<0.05	<0.02	0.032	<0.01	47	<0.005	22	<0.01	<0.01	<0.02	0.41	0.012	0.32	0.069	18	<0.0002	0.0057	0.0079	27	<0.05	<0.01	1,300	0.55	<0.02	<0.05	<0.05		
C-47	32 DEHY T-320 Clean out drain	05/19/15	<0.05	<0.02	0.091	<0.01	61	<0.005	55	<0.01	<0.01	<0.02	<0.05	0.015	0.58	0.057	47	<0.0002	<0.005	<0.005	39	<0.05	<0.01	1,400	1.9	<0.02	<0.05	<0.05		
C-58	32 DEHY Drain Tank Pumps	05/19/15	<0.05	<0.02	0.13	<0.01	59	<0.005	65	<0.01	<0.01	<0.02	0.22	0.021	0.59	0.079	49	<0.0002	<0.005	<0.005	41	<0.05	<0.01	1,200	1.9	<0.02	<0.05	<0.05		
C-59	32 DEHY T-317 Drain Box	05/19/15	<0.05	<0.02	0.098	<0.01	21	<0.005	38	<0.01	<0.01	<0.02	<0.05	<0.01	0.21	0.016	40	<0.0002	<0.005	<0.005	21	<0.05	<0.01	440	1.6	<0.02	<0.05	<0.05		
C-61	32 DEHY V-307 Drain well	05/21/15	<0.05	<0.02	0.15	<0.01	55	<0.005	46	<0.01	<0.01	<0.02	0.22	0.023	0.56	0.014	42	<0.0002	<0.005	0.0054	53	<0.05	<0.01	1,000	2.6	<0.02	<0.05	<0.05		
C-63	32 DEHY T-318 Drain Box	05/19/15	<0.05	<0.02	0.13	<0.01	63	<0.005	92	<0.01	<0.01	<0.02	0.052	0.019	0.67	0.022	57	<0.0002	<0.005	<0.005	49	<0.05	<0.01	860	2.4	<0.02	<0.05	<0.05		
C-125	CMS Drain and overflow Sump 1	05/21/15	<0.05	<0.02	0.088	<0.01	58	<0.005	31	<0.01	<0.01	<0.02	0.10	0.015	0.45	0.057	16	<0.0002	<0.005	<0.005	35	<0.05	<0.01	1,100	1.3	<0.02	<0.05	<0.05		
C-150	Penn Zier Sump #1	05/21/15	<0.05	<0.02	0.14	<0.01	60	<0.005	40	<0.01	<0.01	<0.02	0.51	0.014	0.81	0.120	35	<0.0002	<0.005	0.006	45	<0.05	<0.01	1,400	1.6	<0.02	<0.05	<0.05		
C-151	Penn Zier Pond #1	05/21/15	<0.05	<0.02	0.14	<0.01	60	<0.005	39	<0.01	<0.01	<0.02	0.15	0.018	0.81	0.120	34	<0.0002	<0.005	0.005	45	<0.05	<0.01	1,400	1.6	<0.02	<0.05	<0.05		

1. µg/L = micrograms per liter, mg/L = milligrams per liter, < = less than reporting limit, J = trace or estimated concentration with a value greater than the method detection limit but less than the practical quantitation limit.  
2. Sample locations are shown on the figures in Appendix B.

TABLE 4

**ANALYTICAL RESULTS - VOLATILE ORGANIC COMPOUNDS, POLYNUCLEAR AROMATIC HYDROCARBONS,  
AND TOTAL PETROLEUM HYDROCARBONS**  
Aera Coalinga Discharge Sampling  
Coalinga Oil Field, Fresno County, California

Sample ID <sup>2</sup>	Discharge Location	Sample Date	Volatile Organic						Polynuclear Aromatic Hydrocarbons										Total Petroleum Hydrocarbons - Crude Oil
			Benzene	Ethylbenzene	Toluene	Xylenes (total)	Acenaphthene	Acenaphthylene	Chrysene	Fluoranthene	Fluorene	Naphthalene	Phenanthrene	Pyrene					
C-1	Sec 26 Sump #4 West	05/19/15	23	12	15	22	0.55	<0.55	<0.55	4.3	3.1	4.0	<0.55	24					
C-13	Sec 26 DEHY Drain Tank	05/19/15	210	67	180	130	1.2	<0.54	0.54	<0.54	10	13	10	0.60	53				
C-21	27 Water Plant overflow basin	05/19/15	190	79	150	120	1.6	<0.55	0.82	0.82	12	13	16	0.99	78				
C-26	Little Hoover Emergency Catch Basin on Oil Creek	05/19/15	<0.5	<0.5	<0.5	<0.5	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	8.7					
C-31	32 Water Plant T-700 Pit	05/19/15	<0.5	<0.5	<0.5	<0.5	<2.2	5.4	5.8	4.7	16	7.5	8.2	440					
C-32	32 Water Plant T-810 Drain box	05/19/15	<0.5	<0.5	<0.5	<0.5	1.4	0.57	<0.11	0.14	13	7.6	12	0.24	28				
C-35	32 Water Plant Waste Brine Transfer Pumps Skid	05/21/15	<0.5	<0.5	<0.5	<0.5	0.88	<0.52	<0.52	0.52	6.7	5.3	9.7	0.67	49				
C-38	32 Water Plant T-940 Pit	05/21/15	<0.5	<0.5	<0.5	<0.5	1.1	<0.51	0.96	1.1	11	5.1	18	1.5	92				
C-47	32 DEHY T-320 Clean out drain	05/19/15	38	22	22	36	1.0	2.2	<0.11	0.23	7.7	7.6	7.3	0.18	45				
C-58	32 DEHY Drain Tank Pumps	05/19/15	29	17	22	34	1.1	<0.54	0.81	0.54	8.8	6.5	11	0.86	83				
C-59	32 DEHY T-317 Drain Box	05/19/15	<0.5	<0.5	<0.5	<0.5	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	1.9	0.83	93				
C-61	32 DEHY V-307 Drain well	05/21/15	<0.5	<0.5	<0.5	<0.5	0.48	<0.1	0.23	3.0	0.81	4.8	0.42	43					
C-63	32 DEHY T-318 Drain Box	05/19/15	<100	<100	<100	<100	0.41	1.1	<0.11	<0.11	2.7	1.8	2.8	<0.11	28				
C-125	CMS Drain and overflow Sump 1	05/21/15	<10	<10	<10	13	<0.53	<0.53	<0.53	0.90	<0.53	2.0	0.74	82					
C-150	Penn Zier Sump #1	05/21/15	<10	<10	<10	<10	<0.51	<0.51	<0.51	0.72	<0.51	1.6	0.67	65					
C-151	Penn Zier Pond #1	05/21/15	<0.5	<0.5	<0.5	<0.5	0.12	<0.1	<0.1	0.72	0.3	1.1	<0.1	59					

1. µg/L = micrograms per liter, mg/L = milligrams per liter, < = less than reporting limit, J = trace or estimated concentration with a value greater than the MDL but less than the practical quantitation limit.  
2. Sample locations are shown on the figures in Appendix B.



**APPENDIX A**

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April 1, 2015, California Water Code Directive Pursuant to Section 13267



Central Valley Regional Water Quality Control Board

1 April 2015

Megan Graves  
Aera Energy LLC  
10000 Ming Avenue  
Bakersfield, CA 93389

**CERTIFIED MAIL**  
7014 3490 0001 7023 0025

**CALIFORNIA WATER CODE DIRECTIVE PURSUANT TO SECTION 13267. You are legally obligated to respond to this Order. Please read this Order carefully.**

Aera Energy LLC (hereafter Discharger) has been identified as the owner or operator of petroleum production wastewater disposal ponds (ponds). A list of the ponds (and the leases and oil fields where they are located) that the California Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board) identifies as under your control is presented in Attachment A. Ponds for the disposal of wastewater generated during the course of petroleum production have the potential to affect the quality of groundwater (a water of the State). Groundwater underlying the areas where your ponds are located have beneficial uses as identified in the Water Quality Control Plan for the Tulare Lake Basin (Basin Plan).

This order requires the collection and analysis of wastewater samples collected from each of the ponds listed in Attachment A to characterize the discharge. Each sample is to be analyzed for each of the constituents listed in Attachment B. These data are needed to comprehensively characterize wastewater in each pond and provide data needed to evaluate the threat to the quality of waters of the State. If more than one pond is connected in series (i.e., one pond drains directly to the next with no other source of inflow) then only the upstream pond must be sampled. This order is not intended to require the collection of duplicative data. If during the 12 months (one year) prior to the date of this order, samples required by this order have been analyzed from one or more of the ponds for the required constituents, that data can be submitted for the appropriate order requirements.

This order also requires Discharger to identify any discharge(s) of oil field wastewater to land that is not identified in Attachment A. Discharger must also collect and analyze wastewater samples in accordance with Attachment B from any additionally identified discharge to characterize the discharge.

The Central Valley Water Board's authority to require technical reports derives from Section 13267 of the California Water Code, which specifies, in part, that:

*(b) A regional Board ... in connection with any action relating to any plan or requirement authorized by this division, may investigate the quality of any waters of the State within its region.*

*(b)(1) In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge, waste outside of its region that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefit to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.*

The Central Valley Water Board is concerned about the potential impacts to water quality posed by the discharge of oil field produced waters in surface ponds. The technical information and reports required by this order are necessary to assess the potential threat to water quality. The need to understand the potential impacts to water quality justify the need for the information and reports required by this order. Based on the nature and possible consequences of the discharges of waste, the burden of providing the required information, including the reporting costs, bears a reasonable relationship to the need for the report, and the benefits to be obtained. Discharger is required to submit this information and reports because it is the operator of the ponds listed in Attachment A of this order.

The unauthorized discharge of waste containing oil field waste constituents to land, including unlined ponds, may result in the degradation of water quality and creates or threatens to create, a condition of pollution in groundwater. Significant concentrations of salinity (measured as TDS and EC), significant contributors to salinity such as chloride and sulfate, and boron are present in oil field wastewater. Other potential constituents such as, but not limited to, metals, radionuclides, and organic compounds pose a threat to water quality. The concentrations of these waste constituents in wastewater being discharged needs to be known to evaluate the threat. In addition, all locations where these discharges are occurring needs to be known.

Underlying groundwater can be degraded if mixed with oil field wastewater. Elevated concentrations of oil field waste constituents could impair the groundwater for municipal and domestic supply and agricultural supply uses.

**Under the prescribed authority of California Water Code section 13267, the Central Valley Water Board directs Discharger to:**

**1. By 15 June 2015, submit a technical report containing the following information:**

- A. Identification of any discharges of oil field produced waters to land, including but not limited to ponds, since April of 2014 that are not listed in Attachment A;
- B. Collect representative samples of wastewater within each of the ponds. Samples must be analyzed in accordance with the water quality analysis and reporting requirements contained in Attachment B to this Order;<sup>1</sup>

If a representative sample cannot feasibly be collected from one or more of the sources discharging to a surface impoundment(s), then a comment will need to be added to the technical report required by this Order demonstrating that collection of a representative sample from a specific source is not feasible within the required timeframe, and propose an alternative sampling procedure and expeditious time schedule for obtaining a representative sample for each source. Alternative sampling procedures and time schedules are subject to approval by the Assistant Executive Officer of the Central Valley Regional Water Quality Control Board.

- C. All available information for each of the surface impoundment(s), including dimensions (i.e., length, width, and depth), latitude and longitude, Assessor's Parcel Numbers of the lease, duration of the discharge (in months), and the volume of wastewater discharged per year.
- D. A location map that includes the following information:
  - i. All surface impoundment(s) at the Facility,
  - ii. Include the boundary lines for all leases at the Facility, and
  - iii. Legend with the name of the surface impoundment(s).

**2. By 15 April 2015, Discharger needs to contact Dane S. Johnson of this office at (559) 445-5525 if you have received this Order and cannot collect the required samples.**

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<sup>1</sup> All previously obtained analytical data for oil field produced wastewater samples collected at the Facility, if any, with a description of the source and location for each analysis may be submitted in the alternative for re-running tests if the sample(s) was collected and analyzed within 12 months (one year) of the date of this order.

The technical report required by this Order must be submitted to the attention of:

Ronald Holcomb  
Central Valley Water Board  
1685 E Street  
Fresno, CA 93706

Based on the information submitted in the technical report, additional information or action may be required.

With the report required by this Order, Discharger shall provide under penalty of perjury under the laws of California a "Certification" statement to the Central Valley Water Board. The "Certification" shall include the following signed statement:

*I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.*

The Central Valley Water Board reserves the right to issue a Notice of Violation or pursue enforcement for Discharger's activities after reviewing the documentation provided in response to this Order.

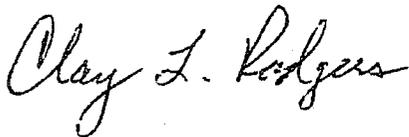
The Technical Report is to be signed and stamped by a California Professional Engineer (Registered as a Civil Engineer) or a registered California Professional Geologist. Any laboratory analyses shall be performed by an analytical laboratory certified by the State of California for the analyses performed. Submissions pursuant to this Order shall include a statement by Discharger, or an authorized representative of Discharger, certifying (as described above) that the information submitted is true, complete, and accurate.

The failure to furnish the required report, or the submission of a substantially incomplete report or false information, is a misdemeanor, and may result in additional enforcement actions being taken against Discharger, including issuance of an Administrative Civil Liability Complaint pursuant to California Water Code section 13268. Liability may be imposed pursuant to California Water Code section 13268 in an amount not to exceed one thousand dollars (\$1,000) for each day in which the violation occurs. All discharges to unpermitted ponds should cease pending review and submission of the technical information sought by this order.

Any person aggrieved by this action of the Central Valley Water Board may petition the State Water Resources Control Board (State Water Board) to review the action in accordance with

California Water Code section 13320 and California Code of Regulations, title 23, sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., within 30 days after the date of this directive, except that if the thirtieth day following the date of this directive falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the Internet at: [www.waterboards.ca.gov/public\\_notices/petitions/water\\_quality](http://www.waterboards.ca.gov/public_notices/petitions/water_quality) or will be provided upon request.

If you have any questions regarding this matter, please contact Doug Patteson of this office at (559) 445-5577 or at [doug.patteson@waterboards.ca.gov](mailto:doug.patteson@waterboards.ca.gov).



Clay L. Rodgers  
Assistant Executive Officer

cc: Julie Macedo, Office of Enforcement, State Water Resources Control Board, Sacramento  
Mike Toland, California Division of Oil, Gas, and Geothermal Resources, Bakersfield

ATTACHMENT A

The following table contains the names of oil fields and lease(s) and the corresponding number of ponds that the Central Valley Water Board has identified as active and under your control:

OPERATOR	OIL FIELD	LEASE	NO. OF PONDS
Aera Energy LLC	Belridge, North		1
	Belridge, North	Belridge A	1
	Belridge, South	Aera Energy	20
		Belridge V	3
	Coalinga	CMS-Aztec	2
		Penn-Zier	7
		Sec26	9
	Lost Hills	Lost Hills One	1
		Lost Hills Two	2
	Midway-Sunset	Fulton	1
		Lockwood	1
		Moco 35	3
		National USL	2
		Section 8	1
		Shale 14	1
		Vedder	1
		W & S	1
		Wier	2

**ATTACHMENT B****Water Quality Analysis**

Wastewater samples collected from the ponds shall be analyzed by a laboratory certified by the Environmental Laboratory Accreditation Program using currently applicable United States Environmental Protection Agency-approved analytical methods for water for the following:

- A. Total dissolved solids;
- B. Metals listed in California Code of Regulations, title 22, section 66261.24. subdivision (a)(2)(A);
- C. Benzene, toluene, ethylbenzene, and xylenes;
- D. Total petroleum hydrocarbons as crude oil;
- E. Polynuclear aromatic hydrocarbons (including acenaphthene, acenaphthylene, anthracene, benzo[a]anthracene, benzo[b]fluoranthene, benzo[a]pyrene, benzo[g,h,i]perylene, chrysene, dibenzo[a,h]anthracene, fluoranthene, fluorine, indeno[1,2,3-cd]pyrene, naphthalene, phenanthrene, and pyrene);
- F. Radionuclides listed under California Code of Regulations, title 22, Table 64442;
- G. Major and minor cations (including sodium, potassium, magnesium, and calcium);
- H. Major and minor anions (including nitrate, chloride, sulfate, carbonate, bicarbonate, and bromide);
- I. Trace elements (including lithium, strontium, boron, iron, and manganese).

**Reporting Requirements**

Water Quality information shall be submitted in a technical report that includes at a minimum:

- A. Site plan(s) with the location(s) of where the samples were collected;
- B. A description of how the samples, representative of the pond contents, were collected;

Table(s) of analytical results organized by pond number with the data also submitted electronically as an Excel spreadsheet.



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**APPENDIX B**

**Inventory List and Coalinga Potential Discharge Location Points**

Aera Energy LLC - Coalinga Oil Field  
Potential Discharge Locations

Short Identifier	Map Page Number	Field	Lease	Team	Description/Name	RWQCB Name	Location	Sec.	T	R	BM	Latitude	Longitude	Assessor Parcel Number	Potential Fluid	L	W	D	Construction	Status	Number of Points	Intended Use	Volume Discharged [bbl/yr]	Category
C-1	7	Coalinga	Sec 26	Plants	Sec 26 Sump #4 West	Sec 26 Sump W-4	Sec 26 Ponds	26	19S	15E	MD	36.241104	-120.307541	058-280-03	Oil & Water	161	70	30	Earthen	Active		Receives waste water from 32 Water Plant and DEHY's for disposal	2641634	Percolation
C-2	7	Coalinga	Sec 26	Plants	Sec 26 Sump #3 West	Sec 26 Sump S-3	Sec 26 Ponds	26	19S	15E	MD	36.241325	-120.307434	058-280-03	Oil & Water	47	48	20	Earthen	Active		Receives waste water from 32 Water Plant and DEHY's for disposal		Percolation
C-3	7	Coalinga	Sec 26	Plants	Sec 26 Sump #1 North	Sec 26 Sump N-1	Sec 26 Ponds	26	19S	15E	MD	36.242313	-120.308090	058-280-03	Oil & Water	240	76	30	Earthen	Active		Receives waste water from 32 Water Plant and DEHY's for disposal		Percolation
C-4	7	Coalinga	Sec 26	Plants	Sec 26 Sump #2 North	Sec 26 Sump N-2	Sec 26 Ponds	26	19S	15E	MD	36.243080	-120.308525	058-280-03	Produced Water	260	70	35	Earthen	Active		Water leg from 1-N for percolation/disposal		Percolation
C-5	7	Coalinga	Sec 26	Plants	Sec 26 Sump #2 South	Sec 26 Sump S-1	Sec 26 Ponds	26	19S	15E	MD	36.241016	-120.306641	058-280-03	Oil & Water	295	82	40	Earthen	Active		Receives waste water from 32 Water Plant and DEHY's for disposal		Percolation
C-6	7	Coalinga	Sec 26	Plants	Sec 26 Sump #5 West	Sec 26 Sump W-5	Sec 26 Ponds	26	19S	15E	MD	36.240608	-120.307526	058-280-03	Produced Water	201	152	40	Earthen	Active		Water leg from 4-W for percolation/disposal		Percolation
C-7	7	Coalinga	Sec 26	Plants	Sec 26 Sump #6 West	Sec 26 Sump W-6	Sec 26 Ponds	26	19S	15E	MD	36.240189	-120.307434	058-280-03	Produced Water	190	221	40	Earthen	Active		Water leg from 5-W for percolation/disposal		Percolation
C-8	7	Coalinga	Sec 26	Plants	Sec 26 Sump #7 East	Sec 26 Sump E-7	Sec 26 Ponds	26	19S	15E	MD	36.239441	-120.306366	058-280-03	Oil & Water	338	316	30	Earthen	Inactive		Emergency sump	Non-Routine/Emerg.	Emer. Basin
C-9	7	Coalinga	Sec 26	Plants	Sec 26 shipping station S drain	n/a	South of 26 DEHY	26	19S	15E	MD	36.239540	-120.310646	058-280-03	Oil & Water	2.5 d		2.5	Metal	Inactive		Drain pit at old shipping station not in service	Non-Routine/Emerg.	Drain Pit
C-10	7	Coalinga	Sec 26	Plants	Sec 26 shipping station N drain	n/a	South of 26 DEHY	26	19S	15E	MD	36.239548	-120.310631	058-280-03	Oil & Water	2.5 d		2.5 d	Metal	Inactive		Drain pit at old shipping station not in service	Non-Routine/Emerg.	Drain Pit
C-11	7	Coalinga	Sec 26	Plants	Sec 26 shipping station W drain	n/a	South of 26 DEHY	26	19S	15E	MD	36.239609	-120.310829	058-280-03	Oil & Water	2 d			Metal	Inactive		Drain pit at old shipping station not in service	Non-Routine/Emerg.	Drain Pit
C-12	7	Coalinga	Sec 26	Plants	Sec 26 fuel oil shipping station drain box	n/a	South of 26 DEHY	26	19S	15E	MD	36.239613	-120.310837	058-280-03	Oil & Water	9	4	2.5	Metal	Inactive		Drain pit at old fuel oil shipping station not in service	Non-Routine/Emerg.	Drain Pit
C-13	7	Coalinga	Sec 26	Plants	Sec 26 DEHY Drain Tank	n/a	SE Corner of DEHY	26	19S	15E	MD	36.240379	-120.311462	058-280-03	Oil & Water	6 d		8	Other	Active		Drain tank for DEHY 26 drains	Non-Routine/Emerg.	Drain Pit
C-14	7	Coalinga	Sec 26	Plants	Sec 26 DEHY Secondary Containment	n/a	26 DEHY	26	19S	15E	MD	36.240528	-120.311562	058-280-03	Oil & Water	180	210	5	Earthen	Inactive		Secondary containment emergency use only	Non-Routine/Emerg.	Secondary Containment
C-15	7	Coalinga	Sec 26	Plants	26 DEHY water transfer pump P-601	n/a	26 DEHY	26	19S	15E	MD	36.240471	-120.311592	058-280-03	Oil & Water	6	3	0.16	Concrete	Active		Seal leak containment	Non-Routine/Emerg.	Drain Pad
C-16	7	Coalinga	Sec 26	Plants	26 DEHY water transfer pump P-602	n/a	26 DEHY	26	19S	15E	MD	36.240662	-120.311798	058-280-03	Oil & Water	6	3	0.16	Concrete	Active		Seal leak containment	Non-Routine/Emerg.	Drain Pad
C-17	7	Coalinga	Sec 26	Plants	26 DEHY T-104 shipping pump	n/a	26 DEHY	26	19S	15E	MD	36.240429	-120.311630	058-280-03	Oil & Water	9	5.5	0.16	Concrete	Active		Seal leak containment	Non-Routine/Emerg.	Drain Pad
C-18	7	Coalinga	Sec 26	Plants	26 DEHY T-103 shipping pump	n/a	26 DEHY	26	19S	15E	MD	36.240253	-120.312202	058-280-03	Oil & Water	9	5.5	0.16	Concrete	Active		Seal leak containment	Non-Routine/Emerg.	Drain Pad
C-19	7	Coalinga	Sec 26	Plants	Sec 26 Emergency Catch Basin East	n/a	HWY 33 Main Entrance	26	19S	15E	MD	36.238834	-120.315292	058-280-03	Oil & Water	150	36	15	Concrete	Inactive		Emergency catch basin in designated waterway	Non-Routine/Emerg.	Catch Basin
C-20	7	Coalinga	Sec 26	Plants	Sec 26 Emergency Catch Basin West	n/a	HWY 33 Main Entrance	26	19S	15E	MD	36.238674	-120.315666	058-280-03	Oil & Water	120	31	15	Concrete	Inactive		Emergency catch basin in designated waterway	Non-Routine/Emerg.	Catch Basin
C-21	6	Coalinga	Sec 27	Plants	27 Water Plant overflow basin	n/a	200 ft East of 27 Water Plant	27	19S	15E	MD	36.244247	-120.325211	058-280-01	Oil & Water	130	50	20	Earthen	Inactive		Emergency catch basin in designated waterway	Non-Routine/Emerg.	Catch Basin
C-22	7	Coalinga	Sec 26	Plants	26 DEHY Treater containment South	n/a	26 DEHY	26	19S	15E	MD	36.241196	-120.308731	058-280-03	Oil & Water	65	25	2	Asphalt	Inactive		Containment for Treater now removed but with piping in place	Non-Routine/Emerg.	Secondary Containment
C-23	7	Coalinga	Sec 26	Plants	26 DEHY Treater containment North	n/a	26 DEHY	26	19S	15E	MD	36.241196	-120.308731	058-280-03	Oil & Water	65	25	2	Asphalt	Inactive		Containment for Treater now removed but with piping in place	Non-Routine/Emerg.	Secondary Containment
C-24	6	Coalinga	Sec 26	Plants	East Primary Multi Phase Pumping station	n/a	Sec 26	26	19S	15E	MD	36.241665	-120.321358	058-280-03	Oil & Water	49	23	0.5	Concrete	Active	3	Containment for pumps seal drains and leaks	Non-Routine/Emerg.	Drain Pad
C-25	6	Coalinga	Sec 26	Plants	East Primary Multi Phase Pumping station secondary containment	n/a	Sec 27	26	19S	15E	MD	36.241688	-120.321388	058-280-04	Oil & Water	99	18	3	Earthen	Active		Containment for pumps seal drains and leaks	Non-Routine/Emerg.	Secondary Containment
C-26	9	Coalinga	Sec 32	Plants	Little Hoover Emergency Catch Basin on Oil Creek	n/a	Oil City Road	32	19S	15E	MD	36.231312	-120.361344	058-270-07	Produced Water	400	45	9	Earthen	Active		Emergency catch basin in designated waterway	Non-Routine/Emerg.	Catch Basin
C-27	9	Coalinga	Sec 32	Plants	32 Water Plant Lower Level Secondary Containment Basin	n/a	32 Water Plant Lower Level	32	19S	15E	MD	36.232305	-120.362719	058-270-07	Produced Water	145	60	6	Earthen	Inactive		Secondary containment	Non-Routine/Emerg.	Secondary Containment
C-28	9	Coalinga	Sec 32	Plants	32 Water Plant Lower Level Secondary Containment Overflow Basin	n/a	32 Water Plant Lower Level	32	19S	15E	MD	36.231875	-120.362661	058-270-07	Produced Water	90	60	6	Earthen	Inactive		Secondary containment	Non-Routine/Emerg.	Secondary Containment
C-29	9	Coalinga	Sec 32	Plants	32 Water Plant Lower Level H2S Chemical pump skid containment OSS	n/a	32 Water Plant Lower Level	32	19S	15E	MD	36.233011	-120.362713	058-270-07	Produced Water	16	11	0.5	Concrete	Inactive		Containment for pumps seal drains and leaks	Non-Routine/Emerg.	Drain Pad
C-30	9	Coalinga	Sec 32	Plants	32 Water Plant T-700 Pit	n/a	32 Water Plant Mid Level	32	19S	15E	MD	36.231678	-120.364292	058-270-07	Produced Water	45	25	8	Concrete	Active		Water Softener Rinse and Backwash	540000	Drain Pit
C-31	9	Coalinga	Sec 32	Plants	32 Water Plant T-810 Drain box	n/a	32 Water Plant Mid Level	32	19S	15E	MD	36.232521	-120.363451	058-270-07	Soft Water	4	2	1	Concrete	Active		T-810 Clean Out Containment	Non-Routine/Emerg.	Drain Pit
C-32	9	Coalinga	Sec 32	Plants	32 Water Plant Hardness Analyzer Drain Pit	n/a	32 Water Plant Mid Level	32	19S	15E	MD	36.232517	-120.363289	058-270-07	Soft Water	3	3	3	Concrete	Active		Hardness Analyzer and Soft water shipping pump skid drain		Drain Pit
C-33	9	Coalinga	Sec 32	Plants	32 Water Plant Soft Water Shipping Pump Skid	n/a	32 Water Plant Mid Level	32	19S	15E	MD	36.232294	-120.363494	058-270-07	Soft Water	43	21	0.5	Concrete	Active		Containment for pumps seal drains and leaks	Non-Routine/Emerg.	Drain Pad

Aera Energy LLC - Coalinga Oil Field  
Potential Discharge Locations

Short Identifier	Map Page Number	Field	Lease	Team	Description/Name	RWQCB Name	Location	Sec.	T	R	BM	Latitude	Longitude	Assessor Parcel Number	Potential Fluid	L	W	D	Construction	Status	Number of Points	Intended Use	Volume Discharged [bbl/yr]	Category
C-35	9	Coalinga	Sec 32	Plants	32 Water Plant Waste Brine Transfer Pumps Skid	n/a	32 Water Plant Mid Level	32	195	15E	MD	36.231861	-120.363455	058-270-07	Produced Water	23	15	0.5	Concrete	Active		Containment for pumps seal drains and leaks		Drain Pad
C-36	9	Coalinga	Sec 32	Plants	32 Water Plant Waste Brine Transfer Pumps Skid Drain Pit	n/a	32 Water Plant Mid Level	32	195	15E	MD	36.231888	-120.363440	058-270-07	Produced Water	3	3	3	Concrete	Active		Waste Brine Pump Skid Drain		Drain Pit
C-37	9	Coalinga	Sec 32	Plants	32 Water Plant T-930 outlet Strainer Drain	n/a	32 Water Plant Mid Level	32	195	15E	MD	36.231812	-120.363460	058-270-07	Produced Water				Earthen	Inactive		Strainer Drain for cleaning	Non-Routine/Emerg.	Other
C-38	9	Coalinga	Sec 32	Plants	32 Water Plant T-940 Pit	n/a	32 Water Plant Mid Level	32	195	15E	MD	36.231760	-120.363317	058-270-07	Oil & Water	25	24	8	Concrete	Active		Water from T-700, T-930 overflow, T-100, T-150	550000	Drain Pit
C-41	6	Coalinga	Sec 27	Plants	Sec 27 Water Plant out of service drains	n/a	27 Water Plant	27	195	15E	MD	36.241707	-120.321289	058-280-04	Oil & Water	1.5 dia		3	Metal	Inactive		Tank drains for tank no longer on location	Non-Routine/Emerg.	Drain Pit
C-42	6	Coalinga	Sec 27	Plants	Sec 27 Water Plant transfer pump	n/a	27 Water Plant	27	195	15E	MD	36.243882	-120.324249	058-280-04	Oil & Water	15	10	0.5	Concrete	Active	2	transfer pump skid drain	Non-Routine/Emerg.	Drain Pad
C-44	6	Coalinga	Sec 27	Plants	Sec 27 Water Plant Inlet header drain	n/a	27 Water Plant	27	195	15E	MD	36.241695	-120.321426	058-280-04	Oil & Water				Concrete	Active		inlet piping header drain to concrete pad	Non-Routine/Emerg.	Other
C-45	9	Coalinga	Sec 32	Plants	32 Water Plant water injection and kill water pumps	n/a	32 Water Plant Lower Level	32	195	15E	MD	36.232639	-120.362788	058-270-07	Produced Water	300	80	0.5	Other	Active		water flood and kill water pumps	Non-Routine/Emerg.	Secondary Containment
C-46	9	Coalinga	Sec 32	Plants	32 DEHY Lower level pumps and tanks containment	n/a	32 DEHY Lower Level	32	195	15E	MD	36.234076	-120.362602	058-270-07	Oil & Water	134	95	1.5	Other	Active		produced water clarification and transfer pumps	Non-Routine/Emerg.	Secondary Containment
C-47	9	Coalinga	Sec 32	Plants	32 DEHY T-320 Clean out drain	n/a	32 DEHY Lower Level	32	195	15E	MD	36.234449	-120.362609	058-270-07	Oil & Water	5	2	2	Concrete	Active		T-320 clean out drain	Non-Routine/Emerg.	Drain Pit
C-48	9	Coalinga	Sec 32	Plants	32 DEHY T-321 Clean out drain	n/a	32 DEHY Lower Level	32	195	15E	MD	36.234367	-120.362596	058-270-07	Oil & Water	4	2	1.5	Concrete	Active		T-321 clean out drain	Non-Routine/Emerg.	Drain Pit
C-49	9	Coalinga	Sec 32	Plants	32 DEHY P334 A	n/a	32 DEHY Lower Level	32	195	15E	MD	36.234275	-120.362500	058-270-07	Produced Water	5	1.5	1	Concrete	Active		jet water pumps		Other
C-50	9	Coalinga	Sec 32	Plants	32 DEHY P334B	n/a	32 DEHY Lower Level	32	195	15E	MD	36.234258	-120.362501	058-270-07	Produced Water	5	1.5	1	Concrete	Active		jet water pumps		Other
C-51	9	Coalinga	Sec 32	Plants	32 DEHY P-331A & P-331B	n/a	32 DEHY Lower Level	32	195	15E	MD	36.234211	-120.362502	058-270-07	Produced Water	9	4	0.5	Concrete	Active	2	produced water transfer pumps		Other
C-52	9	Coalinga	Sec 32	Plants	32 DEHY P-336A & P-336B	n/a	32 DEHY Lower Level	32	195	15E	MD	36.234147	-120.362584	058-270-07	Produced Water	14	5	1	Metal	Active	2	Containment for pumps seal drains and leaks	Non-Routine/Emerg.	Drain Pad
C-53	9	Coalinga	Sec 32	Plants	32 DEHY T-322 Clean out drain	n/a	32 DEHY Lower Level	32	195	15E	MD	36.234154	-120.362481	058-270-07	Produced Water	2	3	1	Concrete	Active		T-322 clean out drain	Non-Routine/Emerg.	Drain Pit
C-54	9	Coalinga	Sec 32	Plants	32 DEHY T-322 drain	n/a	32 DEHY Lower Level	32	195	15E	MD	36.234154	-120.362484	058-270-07	Oil & Water	2	3	1	Concrete	Active		T-322 drain		Drain Pit
C-55	9	Coalinga	Sec 32	Plants	32 DEHY P-332A & P-332B	n/a	32 DEHY Lower Level	32	195	15E	MD	36.234107	-120.362462	058-270-07	Produced Water	5	2	1	Concrete	Active	2	Divert pumps to 26 ponds		Other
C-56	9	Coalinga	Sec 32	Plants	32 DEHY P-332C?	n/a	32 DEHY Lower Level	32	195	15E	MD	36.234095	-120.362461	058-270-07	Produced Water	8	3	2	Concrete	Active		Divert pumps to 26 ponds		Other
C-57	9	Coalinga	Sec 32	Plants	32 DEHY Drain Tank Pit	n/a	32 DEHY Lower Level	32	195	15E	MD	36.234447	-120.362289	058-270-07	Oil & Water	94	28	11	Concrete	Active		Drain tank overflow containment	Non-Routine/Emerg.	Secondary Containment
C-58	9	Coalinga	Sec 32	Plants	32 DEHY Drain Tank Pumps	n/a	32 DEHY Lower Level	32	195	15E	MD	36.234363	-120.362341	058-270-07	Oil & Water				Metal	Active		Drain tank transfer pumps drain to C-57		Drain Pad
C-59	9	Coalinga	Sec 32	Plants	32 DEHY T-317 Drain Box	n/a	32 DEHY Mid Level	32	195	15E	MD	36.234052	-120.363980	058-270-08	Oil & Water	4	2	1	Concrete	Active		T-317 clean out and drain pit	10000	Drain Pit
C-61	9	Coalinga	Sec 32	Plants	32 DEHY V-307 Drain well	n/a	32 DEHY Treater Level	32	195	15E	MD	36.234238	-120.364914	058-270-16	Oil & Water	2.5 dia		5	Metal	Active		V-307 drains		Drain Pit
C-62	9	Coalinga	Sec 32	Plants	32 DEHY V-307 Containment Pad	n/a	32 DEHY Treater Level	32	195	15E	MD	36.234154	-120.364594	058-270-16	Oil & Water	66	14	0.5	Concrete	Active		V-307containment/drain	Non-Routine/Emerg.	Drain Pad
C-63	9	Coalinga	Sec 32	Plants	32 DEHY T-318 Drain Box	n/a	32 DEHY Mid Level	32	195	15E	MD	36.233948	-120.364006	058-270-08	Oil & Water	4	2	1	Concrete	Active		T-318 clean out and drain pit	10000	Drain Pit
C-65	9	Coalinga	Sec 32	Plants	32 DEHY V-308 Drain well	n/a	32 DEHY Treater Level	32	195	15E	MD	36.233913	-120.365135	058-270-16	Oil & Water	2.5 dia		5	Metal	Active		V-308 drains		Drain Pit
C-66	9	Coalinga	Sec 32	Plants	32 DEHY V-308 Containment Pad	n/a	32 DEHY Treater Level	32	195	15E	MD	36.234142	-120.364601	058-270-16	Oil & Water	66	14	0.5	Concrete	Active		V-308 containment/drain	Non-Routine/Emerg.	Drain Pad
C-68	9	Coalinga	Sec 32	Plants	32 DEHY V-309 Drain well	n/a	32 DEHY Treater Level	32	195	15E	MD	36.233986	-120.364983	058-270-16	Oil & Water	2.5 dia		5	Metal	Active		V-309 drains		Drain Pit
C-69	9	Coalinga	Sec 32	Plants	32 DEHY V-309 Containment Pad	n/a	32 DEHY Treater Level	32	195	15E	MD	36.233925	-120.364723	058-270-16	Oil & Water	66	14	0.5	Concrete	Active		V-309 containment/drain	Non-Routine/Emerg.	Drain Pad
C-71	9	Coalinga	Sec 32	Plants	32 DEHY V-304 Drain well	n/a	32 DEHY Treater Level	32	195	15E	MD	36.234379	-120.365013	058-270-16	Oil & Water	2.5 dia		5	Metal	Active		V-304 drains		Drain Pit
C-72	9	Coalinga	Sec 32	Plants	32 DEHY V-304 Containment Pad	n/a	32 DEHY Treater Level	32	195	15E	MD	36.234303	-120.364655	058-270-16	Oil & Water	50	13	0.5	Concrete	Active		V-304 containment/drain	Non-Routine/Emerg.	Drain Pad
C-74	9	Coalinga	Sec 32	Plants	32 DEHY V-303 Drain well	n/a	32 DEHY Treater Level	32	195	15E	MD	36.234699	-120.365120	058-270-16	Oil & Water	2.5 dia		5	Metal	Active		V-303 drains		Drain Pit
C-75	9	Coalinga	Sec 32	Plants	32 DEHY V-303 Containment Pad	n/a	32 DEHY Treater Level	32	195	15E	MD	36.234299	-120.364655	058-270-16	Oil & Water	50	13	0.5	Concrete	Active		V-303 containment/drain	Non-Routine/Emerg.	Drain Pad
C-77	9	Coalinga	Sec 32	Plants	32 DEHY V-301 Drain well	n/a	32 DEHY Treater Level	32	195	15E	MD	36.234600	-120.364700	058-270-16	Oil & Water	2.5 dia		5	Metal	Active		V-301 drains		Drain Pit
C-78	9	Coalinga	Sec 32	Plants	32 DEHY V-301 Containment Pad	n/a	32 DEHY Treater Level	32	195	15E	MD	36.234398	-120.364723	058-270-16	Oil & Water	55	15	0.5	Earthen	Active		V-301 containment/drain	Non-Routine/Emerg.	Drain Pad
C-80	9	Coalinga	Sec 32	Plants	32 DEHY V-302 Containment Pad	n/a	32 DEHY Treater Level	32	195	15E	MD	36.234402	-120.364525	058-270-16	Oil & Water	55	10	0.5	Earthen	Active		V-302 containment/drain	Non-Routine/Emerg.	Drain Pad
C-82	9	Coalinga	Sec 32	Plants	32 DEHY Stock Tank Containment	n/a	32 DEHY	32	195	15E	MD	36.233604	-120.364136	058-270-16	Oil & Water	250	100	5	Earthen	Active		Stock tank secondary containment	Non-Routine/Emerg.	Secondary Containment
C-83	9	Coalinga	Sec 32	Plants	32 DEHY T-316 Drain box	n/a	32 DEHY	32	195	15E	MD	36.234272	-120.363892	058-270-16	Oil & Water	3	2	1	Metal	Inactive		T-316 tank drain box	Non-Routine/Emerg.	Drain Pit

Aera Energy LLC - Coalinga Oil Field  
Potential Discharge Locations

Short Identifier	Map Page Number	Field	Lease	Team	Description/Name	RWQCB Name	Location	Sec.	T	R	BM	Latitude	Longitude	Assessor Parcel Number	Potential Fluid	L	W	D	Construction	Status	Number of Points	Intended Use	Volume Discharged [bbi/yr]	Category
C-84	9	Coalinga	Sec 32	Plants	32 DEHY Treater Level containment	n/a	33 DEHY	32	19S	15E	MD	36.233704	-120.364517	058-270-16	Oil & Water	320	160	0.5	Other	Active				
C-125	8	Coalinga	CMS	Plants	CMS Drain and overflow Sump 1	CMS Sump 1	SW CMS DEHY	31	19S	15E	MD	36.223946	-120.380684	058-270-13	Oil & Water	75	36	20	Earthen	Active		secondary containment	Non-Routine/Emerg.	Secondary Containment
C-126	8	Coalinga	CMS	Plants	CMS Drain and overflow Sump 2	CMS Sump 2	SW CMS DEHY	31	19S	15E	MD	36.223904	-120.380669	058-270-13	Oil & Water	75	37	20	Earthen	Active		Collects drains and overflows from CMS DEHY tanks and vessels	40000	Percolation
C-127	8	Coalinga	CMS	CLAM	CMS CVR Pot #4	n/a	SW CMS DEHY	31	19S	15E	MD	36.224117	-120.380981	058-270-13	Oil & Water	35	30	2	Earthen	Active		Collects drains and overflows from CMS DEHY tanks and vessels		Percolation
C-128	8	Coalinga	CMS	Plants	CMS T75 drain box	n/a	CMS DEHY	31	19S	15E	MD	36.224152	-120.379051	058-270-13	Oil & Water	3.5	3	2	Concrete	Active		Secondary Containment	Non-Routine/Emerg.	Secondary Containment
C-130	8	Coalinga	CMS	Plants	CMS T2 drain box	n/a	CMS DEHY	31	19S	15E	MD	36.224056	-120.379059	058-270-13	Produced Water	3.5	3	2	Concrete	Active		tank drain box	8000	Drain Pit
C-132	8	Coalinga	CMS	Plants	CMS T2 secondary containment	n/a	CMS DEHY	31	19S	15E	MD	36.223843	-120.379028	058-270-13	Oil & Water	132	120	2	Earthen	Active		tank drain box		Drain Pit
C-133	8	Coalinga	CMS	Plants	CMS Kill water pump containment	n/a	CMS DEHY	31	19S	15E	MD	36.223946	-120.379204	058-270-13	Oil & Water	19	12	0.5	Concrete	Active		T2 secondary containment	Non-Routine/Emerg.	Secondary Containment
C-137	8	Coalinga	CMS	Plants	CMS V10, 11, 12 containment	n/a	CMS DEHY	31	19S	15E	MD	36.224625	-120.378815	058-270-13	Oil & Water	100	85	2	Earthen	Active		secondary containment	Non-Routine/Emerg.	Drain Pad
C-138	8	Coalinga	CMS	Plants	CMS Lower Containment East	n/a	CMS DEHY	31	19S	15E	MD	36.223713	-120.379623	058-270-13	Oil & Water	110	35	4.5	Earthen	Active		secondary containment	Non-Routine/Emerg.	Secondary Containment
C-139	8	Coalinga	CMS	Plants	CMS Lower Containment West	n/a	CMS DEHY	31	19S	15E	MD	36.223732	-120.379669	058-270-13	Oil & Water	80	70	15	Earthen	Active		secondary containment	Non-Routine/Emerg.	Secondary Containment
C-140	8	Coalinga	CMS	Plants	CMS North Sump Pump Skid	n/a	CMS DEHY	31	19S	15E	MD	36.223877	-120.380692	058-270-13	Oil & Water	4	3	0.5	Metal	Active		secondary containment	Non-Routine/Emerg.	Secondary Containment
C-141	8	Coalinga	CMS	Plants	CMS North Sump pump drain	n/a	CMS DEHY	31	19S	15E	MD	36.223953	-120.380661	058-270-13	Oil & Water	3.5 dia.		10	Metal	Active		secondary containment	Non-Routine/Emerg.	Drain Pad
C-150	11	Coalinga	Penn-Zier	Plants	Penn Zier Sump #1	Penn Zier Sump 7	South of Penn-Zier DEHY	1	20S	14E	MD	36.209000	-120.392891	063-150-50	Oil & Water	73	52	20	Earthen	Active		secondary containment	Non-Routine/Emerg.	Drain Pit
C-151	11	Coalinga	Penn-Zier	Plants	Penn Zier Pond #1	Penn Zier Sump 1	NW PZ DEHY	1	20S	14E	MD	36.211906	-120.394531	063-150-50	Oil & Water	107	68	15	Earthen	Active		Collects drains and overflows from PZ DEHY tanks, wemco, and vessels	30000	Percolation
C-152	11	Coalinga	Penn-Zier	Plants	Penn Zier Pond #2	Penn Zier Sump 2	NW PZ DEHY	1	20S	14E	MD	36.212410	-120.395012	063-150-50	Oil & Water	166	114	20	Earthen	Active		Receives waste water from PZ or CMS DEHY's for disposal overflows to Pond 2	4854384	Percolation
C-153	11	Coalinga	Penn-Zier	Plants	Penn Zier Pond #3	Penn Zier Sump 3	NW PZ DEHY	1	20S	14E	MD	36.212288	-120.395264	063-150-50	Oil & Water	161	70	20	Earthen	Active		Receives waste water from PZ Pond 1 and overflows to Pond 3		Percolation
C-154	11	Coalinga	Penn-Zier	Plants	Penn Zier Pond #4	Penn Zier Sump 4	NW PZ DEHY	1	20S	14E	MD	36.212025	-120.394905	063-150-50	Oil & Water	180	134	20	Earthen	Active		Receives waste water from PZ Pond 2 and overflows to Pond 4		Percolation
C-155	11	Coalinga	Penn-Zier	Plants	Penn Zier Pond #5	Penn Zier Sump 5	NW PZ DEHY	1	20S	14E	MD	36.211487	-120.395828	063-150-50	Oil & Water	132	59	20	Earthen	Active		Receives waste water from PZ or CMS DEHY's for disposal and overflow from Pond 3 overflows to Pond 5		Percolation
C-156	11	Coalinga	Penn-Zier	Plants	Penn Zier Pond #6	Penn Zier Sump 6	NW PZ DEHY	1	20S	14E	MD	36.211853	-120.395935	063-150-50	Oil & Water	245	85	20	Earthen	Active		Receives waste water from PZ Pond 4 and overflows to Pond 6		Percolation
C-157	11	Coalinga	Penn-Zier	Plants	PZ T-35 10,000 Emergency Tank Drain Box	n/a	PZ DEHY	1	20S	14E	MD	36.210300	-120.392586	063-150-50	Oil & Water	2.5	2	1	Metal	Active		Receives waste water from PZ Pond 5		Percolation
C-158	11	Coalinga	Penn-Zier	Plants	PZ T-38 Drain Box	n/a	PZ DEHY	1	20S	14E	MD	36.209911	-120.393135	063-150-50	Produced Water	2.5	2	1	Metal	Active		Tank wash out drain box		Drain Pit
C-161	11	Coalinga	Penn-Zier	Plants	PZ Shipping pump skid	n/a	PZ DEHY	1	20S	14E	MD	36.209980	-120.392937	063-150-50	Oil & Water	4	3	2	Concrete	Active		Tank wash out and drain	2000	Drain Pit
C-165	11	Coalinga	Penn-Zier	Plants	PZ T1 Drain Box	n/a	PZ DEHY	1	20S	14E	MD	36.210629	-120.392868	063-150-50	Oil & Water	16	5	0.5	Concrete	Active		shipping pump pad	Non-Routine/Emerg.	Drain Pad
C-167	11	Coalinga	Penn-Zier	Plants	PZ Secondary Containment North	n/a	PZ DEHY	1	20S	14E	MD	36.209480	-120.393303	063-150-50	Produced Water	5	3	1.5	Concrete	Active		Tank wash out and drain		Drain Pit
C-168	11	Coalinga	Penn-Zier	Plants	PZ Secondary Containment South	n/a	PZ DEHY	1	20S	14E	MD	36.209381	-120.393013	063-150-50	Oil & Water	80	38	5	Earthen	Active		Secondary containment	Non-Routine/Emerg.	Secondary Containment
C-170	11	Coalinga	Penn-Zier	Plants	PZ Tank and vessel containment	n/a	PZ DEHY	1	20S	14E	MD	36.210567	-120.392937	063-150-50	Oil & Water	120	60	9	Earthen	Active		Secondary containment	Non-Routine/Emerg.	Secondary Containment
C-171	11	Coalinga	Penn-Zier	Plants	PZ T-35 10,000 Emergency Tank Containment	n/a	PZ DEHY	1	20S	14E	MD	36.210087	-120.392487	063-150-50	Oil & Water	235	138	2	Earthen	Active		Secondary containment	Non-Routine/Emerg.	Secondary Containment
C-172	11	Coalinga	Penn-Zier	Plants	PZ DE Filter Pit OOS	n/a	PZ DEHY	1	20S	14E	MD	36.210823	-120.392067	063-150-50	Oil & Water	140	60	3	Earthen	Active		Secondary containment	Non-Routine/Emerg.	Secondary Containment
C-200	5	Coalinga	Sec 29	Plants	SG C-1 Feed water pump	n/a	Central Generator Cluster	29	19S	15E	MD	36.243156	-120.364792	058-270-04	Soft Water	38	16	10	Concrete	Inactive		Secondary containment	Non-Routine/Emerg.	Secondary Containment
C-201	5	Coalinga	Sec 29	Plants	SG C-2 Feed water pump	n/a	Central Generator Cluster	29	19S	15E	MD	36.243187	-120.364677	058-270-04	Soft Water	9	4.5	1	Earthen	Active		Feed water pump leaks		Drain Pit
C-203	5	Coalinga	Sec 29	Plants	Central Generator Cluster concrete idle containment	n/a	Central Generator Cluster	29	19S	15E	MD	36.243450	-120.364639	058-270-04	Soft Water	9	4.5	1	Earthen	Active		Feed water pump leaks		Other
C-206	5	Coalinga	Sec 29	Plants	SG C-2 Relief Valves	n/a	Central Generator Cluster	29	19S	15E	MD	36.242989	-120.364510	058-270-04	Other	30	5	0.5	Concrete	Inactive		old oil storage facility spill containment	Non-Routine/Emerg.	Drain Pad
C-207	5	Coalinga	Sec 29	Plants	SG C-2 Relief Valves	n/a	Central Generator Cluster	29	19S	15E	MD	36.242950	-120.364616	058-270-04	Steam				Earthen	Active		generator pressure relief valves	Non-Routine/Emerg.	PRV
C-208	5	Coalinga	Sec 29	Energy	Steam Inj Manifold 22	n/a	SIM 22	29	19S	15E	MD	36.251591	-120.366959	058-270-04	Steam				Earthen	Active		generator pressure relief valves	Non-Routine/Emerg.	PRV
																						steam injection manifold multiple bleeders		Blowdown

Aera Energy LLC - Coalinga Oil Field  
Potential Discharge Locations

Short Identifier	Map Page Number	Field	Lease	Team	Description/Name	RWQCB Name	Location	Sec.	T	R	BM	Latitude	Longitude	Assessor Parcel Number	Potential Fluid	L	W	D	Construction	Status	Number of Points	Intended Use	Volume Discharged [bbi/yr]	Category
C-209	5	Coalinga	Sec 29	Energy	Steam Inj Manifold 6	n/a	SIM 6	29	19S	15E	MD	36.247528	-120.366837	058-270-04	Steam				Earthen	Active		steam injection manifold multiple bleeders		Blowdown
C-210	5	Coalinga	Sec 29	Energy	Steam Inj Manifold 18	n/a	SIM 18	29	19S	15E	MD	36.245396	-120.368820	058-270-04	Steam				Earthen	Active		steam injection manifold multiple bleeders		Blowdown
C-211	5	Coalinga	Sec 29	Energy	Steam Inj Manifold 25	n/a	SIM 25	29	19S	15E	MD	36.245468	-120.370186	058-270-04	Steam				Earthen	Active		steam injection manifold multiple bleeders		Blowdown
C-212	4	Coalinga	Sec 29	Energy	Steam Inj Manifold 24	n/a	SIM 24	29	19S	15E	MD	36.243320	-120.374420	058-270-04	Steam				Earthen	Active		steam injection manifold multiple bleeders		Blowdown
C-213	5	Coalinga	Sec 29	Energy	Steam Inj Manifold 8	n/a	SIM 8	29	19S	15E	MD	36.245304	-120.370613	058-270-04	Steam				Earthen	Active		steam injection manifold multiple bleeders		Blowdown
C-214	5	Coalinga	Sec 29	Energy	Steam Inj Manifold 21	n/a	SIM 21	29	19S	15E	MD	36.248898	-120.368477	058-270-04	Steam				Earthen	Active		steam injection manifold multiple bleeders		Blowdown
C-215	5	Coalinga	Sec 29	Energy	Steam Inj Manifold 19	n/a	SIM 19	29	19S	15E	MD	36.246941	-120.363998	058-270-04	Steam				Earthen	Active		steam injection manifold multiple bleeders		Blowdown
C-216	8	Coalinga	CMS	Energy	Manifold 6A	n/a	Manifold 6A	31	19S	15E	MD	36.225430	-120.379539	858-270-13	Steam				Earthen	Active		steam injection manifold multiple bleeders		Blowdown
C-217	8	Coalinga	CMS	Energy	Manifold 6	n/a	Manifold 6	31	19S	15E	MD	36.226631	-120.379929	858-270-13	Steam				Earthen	Active		Steam system blowdown		Blowdown
C-218	8	Coalinga	CMS	Energy	Manifold 5	n/a	Manifold 5	31	19S	15E	MD	36.228775	-120.379631	858-270-13	Steam				Earthen	Active		Steam system blowdown		Blowdown
C-219	8	Coalinga	CMS	Energy	Manifold 3A	n/a	Manifold 3A	31	19S	15E	MD	36.235199	-120.376709	858-270-13	Steam				Earthen	Active		Steam system blowdown		Blowdown
C-220	8	Coalinga	CMS	Energy	Manifold 2A	n/a	Manifold 2A	31	19S	15E	MD	36.234112	-120.374367	858-270-13	Steam				Earthen	Active		Steam system blowdown		Blowdown
C-221	8	Coalinga	Aztec	Energy	Manifold 3	n/a	Manifold 3	31	19S	15E	MD	36.231541	-120.374321	858-270-14	Steam				Earthen	Active		Steam system blowdown		Blowdown
C-222	8	Coalinga	Aztec	Energy	Manifold 3-5	n/a	Manifold 3-5	31	19S	15E	MD	36.231518	-120.374283	858-270-14	Steam				Earthen	Active		Steam system blowdown		Blowdown
C-223	8	Coalinga	CMS	Energy	Manifold 3	n/a	Manifold 3	31	19S	15E	MD	36.233986	-120.376648	858-270-13	Steam				Earthen	Active		Steam system blowdown		Blowdown
C-224	8	Coalinga	CMS	Energy	Manifold 1	n/a	Manifold 1	31	19S	15E	MD	36.236889	-120.374931	858-270-13	Steam				Earthen	Active		Steam system blowdown		Blowdown
C-225	4	Coalinga	S30	Energy	30 SAT 9	n/a	SAT 9	30	19S	15E	MD	36.239559	-120.375443	058-270-03	Steam				Earthen	Active		Steam system blowdown		Blowdown
C-226	11	Coalinga	PZ	Energy	Manifold 7	n/a	Manifold 7	1	20S	14E	MD	36.213783	-120.393120	063-150-50	Steam				Earthen	Active		Steam system blowdown		Blowdown
C-227	11	Coalinga	PZ	Energy	Manifold 6	n/a	Manifold 6	1	20S	14E	MD	36.212486	-120.399178	063-150-50	Steam				Earthen	Active		Steam system blowdown		Blowdown
C-228	12	Coalinga	S-7	Energy	South/West Line	n/a	S7	7	20S	15E	MD	36.206188	-120.389870	070-020-37	Steam				Earthen	Active		Steam system blowdown		Blowdown
C-229	11	Coalinga	S-7	Energy	Meter Line Blowdown	n/a	S7	7	20S	15E	MD	36.209446	-120.392593	070-020-37	Steam				Earthen	Active		Steam system blowdown		Blowdown
C-230	11	Coalinga	PZ	Energy	4" PZ Bleeder	n/a	PZ	1	20S	14E	MD	36.211514	-120.394745	063-150-50	Steam				Earthen	Active		Steam system blowdown		Blowdown
C-231	11	Coalinga	PZ	Energy	CMS Steam to PZ	n/a	PZ	1	20S	14E	MD	36.213776	-120.391853	063-150-50	Steam				Earthen	Active		Steam system blowdown		Blowdown
C-232	8	Coalinga	Aztec	Energy	Manifold 4	n/a	Aztec	31	19S	15E	MD	36.226109	-120.377884	858-270-14	Steam				Earthen	Active		Steam system blowdown		Blowdown
C-233	8	Coalinga	CMS	Energy	Sec 31 5541 Steam Injector	n/a	CMS	31	19S	15E	MD	36.235069	-120.373802	858-270-13	Steam				Earthen	Active		Steam Injector Blowdown		Blowdown
C-234	8	Coalinga	CMS	Energy	Sec 31 5441 Steam Injector	n/a	CMS	31	19S	15E	MD	36.235538	-120.373573	858-270-13	Steam				Earthen	Active		Steam Injector Blowdown		Blowdown
C-235	5	Coalinga	Sec 29	Energy	Sec 29 to CMS Steam Blowdown	n/a	Sec 29	29	19S	15E	MD	36.238628	-120.372856	058-270-04	Steam				Earthen	Active		Steam system blowdown		Blowdown
C-236	5	Coalinga	Sec 29	Energy	CHW6-15 Steam Injector	n/a	Sec 29	29	19S	15E	MD	36.239391	-120.369476	058-270-04	Steam				Earthen	Active		Steam Injector Blowdown		Blowdown
C-237	5	Coalinga	Sec 29	Energy	CHW6-14 Steam Injector	n/a	Sec 29	29	19S	15E	MD	36.240486	-120.368637	058-270-04	Steam				Earthen	Active		Steam Injector Blowdown		Blowdown
C-238	5	Coalinga	Sec 29	Energy	Manifold 20	n/a	Sec 29	29	19S	15E	MD	36.248432	-120.362389	058-270-04	Steam				Earthen	Active		Steam system blowdown		Blowdown
C-239	5	Coalinga	Sec 29	Energy	CHW10 Blow Down	n/a	Sec 29	29	19S	15E	MD	36.249222	-120.361656	058-270-04	Steam				Earthen	Active		Steam Injector Blowdown		Blowdown
C-240	4	Coalinga	Sec 30	Energy	Sat 9 Blowdown	n/a	Sec 30	30	19S	15E	MD	36.239670	-120.375183	058-270-03	Steam				Earthen	Active		Steam system blowdown		Blowdown
C-241	11	Coalinga	Sec 1 PZ	CLAM	CVR Pot 3	n/a	Sec 1 PZ	1	20S	14E	MD	36.212456	-120.396179	063-150-50	Oil & Water	30	26	2	Earthen	Active		CVR Drain Pot containment	Non-Routine/Emerg.	Secondary Containment
C-242	11	Coalinga	Sec 1 PZ	CLAM	CVR Pot 2	n/a	Sec 1 PZ	1	20S	14E	MD	36.214985	-120.396896	063-150-50	Oil & Water	42	26	3	Earthen	Active		CVR Drain Pot containment	Non-Routine/Emerg.	Secondary Containment
C-243	11	Coalinga	Sec 1 PZ	CLAM	CVR Pot 1	n/a	Sec 1 PZ	1	20S	14E	MD	36.211048	-120.399635	063-150-50	Oil & Water	40	21	4	Earthen	Active		CVR Drain Pot containment	Non-Routine/Emerg.	Secondary Containment
C-244	11	Coalinga	Sec 1 PZ	CLAM	CVR Pot 4	n/a	Sec 1 PZ	1	20S	14E	MD	36.209179	-120.395065	063-150-50	Oil & Water	28	20	2.5	Earthen	Active		CVR Drain Pot containment	Non-Routine/Emerg.	Secondary Containment
C-245	11	Coalinga	Sec 1 PZ	CLAM	CVR Skid with Drain	n/a	Sec 1 PZ	1	20S	14E	MD	36.211376	-120.393112	063-150-50	Oil & Water	1	1	1	Concrete	Active		CVR Skid Drain	Non-Routine/Emerg.	Drain Pad
C-246	11	Coalinga	Sec 1 PZ	CLAM	CVR Skid Containment OOS	n/a	Sec 1 PZ	1	20S	14E	MD	36.211384	-120.392929	063-150-50	Oil & Water	20	12	1.5	Earthen	Active		CVR Skid Containment OOS	Non-Routine/Emerg.	Drain Pad

Aera Energy LLC - Coalinga Oil Field  
Potential Discharge Locations

Short Identifier	Map Page Number	Field	Lease	Team	Description/Name	RWQCB Name	Location	Sec.	T	R	BM	Latitude	Longitude	Assessor Parcel Number	Potential Fluid	L	W	D	Construction	Status	Number of Points	Intended Use	Volume Discharged [bbl/yr]	Category		
C-248	8	Coalinga	CMS	CLAM	CVR Pot 4	n/a	CMS	31	19S	1SE	MD	36.224117	-120.380981	858-270-13	Oil & Water	35	30	2	Earthen	Active						
C-249	12	Coalinga	Sec 7	CLAM	CVR Pot 1	n/a	Sec 7	7	20S	1SE	MD	36.205349	-120.388931	070-020-37	Oil & Water	45	30	2	Earthen	Active		CVR Drain Pot containment	Non-Routine/Emerg.	Secondary Containment		
C-250	8	Coalinga	CMS	CLAM	CVR Pot 2	n/a	CMS	31	19S	1SE	MD	36.232971	-120.373688	858-270-13	Oil & Water	40	40	2	Earthen	Active			CVR Drain Pot containment	Non-Routine/Emerg.	Secondary Containment	
C-251	8	Coalinga	CMS	CLAM	CVR Pot 3	n/a	CMS	31	19S	1SE	MD	36.231583	-120.377594	858-270-13	Oil & Water	35	20	2	Earthen	Active			CVR Drain Pot containment	Non-Routine/Emerg.	Secondary Containment	
C-252	8	Coalinga	Aztec	CLAM	CVR Pot 1	n/a	Aztec	31	19S	1SE	MD	36.230652	-120.376839	858-270-14	Oil & Water	20	20	2	Earthen	Active			CVR Drain Pot containment	Non-Routine/Emerg.	Secondary Containment	
C-253	8	Coalinga	CMS	CLAM	CVR Pot 1	n/a	CMS	31	19S	1SE	MD	36.238102	-120.373489	858-270-13	Oil & Water	50	45	4	Earthen	Active			CVR Drain Pot containment	Non-Routine/Emerg.	Secondary Containment	
C-258	9	Coalinga	Sec 32	Energy	CVR #2 Surge Vessel	n/a	CVR 2	32	19S	1SE	MD	36.234753	-120.370529	058-270-09	Oil & Water	70	65	4	Earthen	Active			CVR Drain Pot containment	Non-Routine/Emerg.	Secondary Containment	
C-262	5	Coalinga	Sec 29	Energy	CVR #1 Surge Vessel	n/a	CVR 1	29	19S	1SE	MD	36.243996	-120.363701	058-270-04	Oil & Water	70	65	6	Earthen	Active			CVR #2 Surge Vessel Containment	Non-Routine/Emerg.	Secondary Containment	
C-265	5	Coalinga	Sec 29	Energy	SG N-5 Pressure Relief Valves	n/a	North Gen Cluster	29	19S	1SE	MD	36.249947	-120.365051	058-270-04	Steam				Earthen	Active			CVR #1 Surge Vessel Containment	Non-Routine/Emerg.	Other	
C-267	5	Coalinga	Sec 29	Energy	SG N-6 Pressure Relief Valves	n/a	North Gen Cluster	29	19S	1SE	MD	36.249626	-120.365059	058-270-04	Steam				Earthen	Active			generator pressure relief valves	Non-Routine/Emerg.	PRV	
C-269	5	Coalinga	Sec 29	Energy	SG N-7 Pressure Relief Valves	n/a	North Gen Cluster	29	19S	1SE	MD	36.249729	-120.364822	058-270-04	Steam				Earthen	Active			generator pressure relief valves	Non-Routine/Emerg.	PRV	
C-271	5	Coalinga	Sec 29	Energy	SG N-8 Pressure Relief Valves	n/a	North Gen Cluster	29	19S	1SE	MD	36.249893	-120.364876	058-270-04	Steam				Earthen	Active			generator pressure relief valves	Non-Routine/Emerg.	PRV	
C-272	5	Coalinga	Sec 29	Energy	SG N-8 Feed water pump	n/a	North Gen Cluster	29	19S	1SE	MD	36.249851	-120.364601	058-270-04	Soft Water	8	4	1	Earthen	Active			generator pressure relief valves	Non-Routine/Emerg.	PRV	
C-273	5	Coalinga	Sec 29	Energy	SG N-7 Feed water pump	n/a	North Gen Cluster	29	19S	1SE	MD	36.249950	-120.364670	058-270-04	Soft Water	8	4	1	Earthen	Active				feed water pump skid	Non-Routine/Emerg.	Drain Pad
C-274	5	Coalinga	Sec 29	Energy	SG N-6 Feed water pump	n/a	North Gen Cluster	29	19S	1SE	MD	36.249939	-120.364815	058-270-04	Soft Water	8	4	1	Earthen	Active				feed water pump skid	Non-Routine/Emerg.	Drain Pad
C-275	5	Coalinga	Sec 29	Energy	SG N-5 Feed water pump	n/a	North Gen Cluster	29	19S	1SE	MD	36.249969	-120.364883	058-270-04	Soft Water	8	4	1	Earthen	Active				feed water pump skid	Non-Routine/Emerg.	Drain Pad
C-279	5	Coalinga	Sec 29	Energy	SG S-9 Pressure Relief Valves	n/a	South Gen. Cluster	29	19S	1SE	MD	36.238892	-120.369049	058-270-04	Steam				Earthen	Active			generator pressure relief valves	Non-Routine/Emerg.	PRV	
C-280	5	Coalinga	Sec 29	Energy	SG S-9 Feed water pump	n/a	South Gen. Cluster	29	19S	1SE	MD	36.239201	-120.369141	058-270-04	Soft Water	8	4	1	Earthen	Active				generator pressure relief valves	Non-Routine/Emerg.	PRV
C-282	5	Coalinga	Sec 29	Energy	SG S-10 Pressure Relief Valves	n/a	South Gen. Cluster	29	19S	1SE	MD	36.239014	-120.368965	058-270-04	Soft Water	8	4	1	Earthen	Active				generator pressure relief valves	Non-Routine/Emerg.	PRV
C-283	5	Coalinga	Sec 29	Energy	SG S-10 Feed water pump	n/a	South Gen. Cluster	29	19S	1SE	MD	36.239105	-120.369331	058-270-04	Soft Water	8	4	1	Earthen	Active				generator pressure relief valves	Non-Routine/Emerg.	PRV
C-285	5	Coalinga	Sec 29	Energy	SG S-11 Pressure Relief Valves	n/a	South Gen. Cluster	29	19S	1SE	MD	36.239044	-120.368874	058-270-04	Soft Water	8	4	1	Earthen	Active				generator pressure relief valves	Non-Routine/Emerg.	PRV
C-286	5	Coalinga	Sec 29	Energy	SG S-11 Feed water pump	n/a	South Gen. Cluster	29	19S	1SE	MD	36.239273	-120.368973	058-270-04	Soft Water	8	4	1	Earthen	Active				generator pressure relief valves	Non-Routine/Emerg.	PRV
C-288	5	Coalinga	Sec 29	Energy	SG S-12 Pressure Relief Valves	n/a	South Gen. Cluster	29	19S	1SE	MD	36.23911	-120.36881	058-270-04	Soft Water	8	4	1	Earthen	Active				generator pressure relief valves	Non-Routine/Emerg.	PRV
C-289	5	Coalinga	Sec 29	Energy	SG S-12 Feed water pump	n/a	South Gen. Cluster	29	19S	1SE	MD	36.23921	-120.36895	058-270-04	Soft Water	8	4	1	Earthen	Active				generator pressure relief valves	Non-Routine/Emerg.	PRV
C-293	9	Coalinga	Sec 29	Energy	Pipe corridor	n/a	Co-gen	32	19S	1SE	MD	36.23734	-120.36901	058-270-04	Soft Water	5	5	4	Concrete	Active			feed water pump skid	Non-Routine/Emerg.	Drain Pad	
C-294	9	Coalinga	Sec 29	Energy	Feedwater oiler containment	n/a	Co-gen	32	19S	1SE	MD	36.23733	-120.36902	058-270-04	Oil & Water	6	4	1	Concrete	Active			containment on buried pipe corridor	Non-Routine/Emerg.	Drain Pit	
C-296	9	Coalinga	Sec 32	Energy	Co-gen secondary containment pit	n/a	Co-gen	32	19S	1SE	MD	36.23684	-120.36914	058-270-09	Soft Water	105	75	15	Earthen	Active			secondary containment	Non-Routine/Emerg.	Drain Pit	
C-297	9	Coalinga	Sec 32	Energy	Cogen Unit A	n/a	Co-gen	32	19S	1SE	MD	36.23764	-120.36897	058-270-09	Soft Water	35	10	1	Concrete	Active						Secondary Containment
C-298	9	Coalinga	Sec 32	Energy	Cogen Unit B	n/a	Co-gen	32	19S	1SE	MD	36.23776	-120.36884	058-270-09	Soft Water	35	10	1	Concrete	Active				HRSg pad		Secondary Containment
C-334	5	Coalinga	S29	Energy	Steam Injector CHW6-IS	n/a	Sec 29	29	19S	1SE	MD	36.23944	-120.36961	058-270-04	Steam				Earthen	Active	4		HRSg pad		Other	
C-335	5	Coalinga	S29	Energy	Steam Injector 5-20I	n/a	Sec 29	29	19S	1SE	MD	36.24059	-120.36955	058-270-05	Steam				Earthen	Active	4		Steam Injector Blowdown		Blowdown	
C-336	5	Coalinga	S29	Energy	Steam Injector 3-20A	n/a	Sec 29	29	19S	1SE	MD	36.24075	-120.37090	058-270-05	Steam				Earthen	Active	4		Steam Injector Blowdown		Blowdown	
C-337	5	Coalinga	S29	Energy	Steam Injector 3-22A	n/a	Sec 29	29	19S	1SE	MD	36.23943	-120.37094	058-270-05	Steam				Earthen	Active	1		Steam Injector Blowdown		Blowdown	
C-338	5	Coalinga	S29	Energy	Steam Injector 5-18	n/a	Sec 29	29	19S	1SE	MD	36.24210	-120.36960	058-270-05	Steam				Earthen	Active	6		Steam Injector Blowdown		Blowdown	
C-339	5	Coalinga	S29	Energy	Steam Injector 7-12	n/a	Sec 29	29	19S	1SE	MD	36.24584	-120.36800	058-270-05	Steam				Earthen	Active	1		Steam Injector Blowdown		Blowdown	
C-340	5	Coalinga	S29	Energy	Steam Injector 56GI	n/a	Sec 29	29	19S	1SE	MD	36.24602	-120.36694	058-270-05	Steam				Earthen	Active	2		Steam Injector Blowdown		Blowdown	
C-341	5	Coalinga	S29	Energy	Steam Injector 7-10	n/a	Sec 29	29	19S	1SE	MD	36.24706	-120.36813	058-270-05	Steam				Earthen	Active	4		Steam Injector Blowdown		Blowdown	
C-342	5	Coalinga	S29	Energy	Steam Injector 9-12I	n/a	Sec 29	29	19S	1SE	MD	36.24629	-120.36650	058-270-05	Steam				Earthen	Active	3		Steam Injector Blowdown		Blowdown	

Short Identifier	Map Page Number	Field	Lease	Team	Description/Name	RWQCB Name	Location	Sec.	T	R	BM	Latitude	Longitude	Assessor Parcel Number	Potential Fluid	L	W	D	Construction	Status	Number of Points	Intended Use	Volume Discharged [bbl/yr]	Category
C-343	5	Coalinga	S29	Energy	Steam Injector 9-10I	n/a	Sec 29	29	19S	15E	MD	36.24775	-120.36736	058-270-05	Steam				Earthen	Active	5	Steam Injector Blowdown		Blowdown
C-344	5	Coalinga	S29	Energy	Steam Injector 56EI	n/a	Sec 29	29	19S	15E	MD	36.24778	-120.36719	058-270-05	Steam				Earthen	Active	1	Steam Injector Blowdown		Blowdown
C-345	5	Coalinga	S29	Energy	Steam Injector 9-14I	n/a	Sec 29	29	19S	15E	MD	36.24460	-120.36649	058-270-05	Steam				Earthen	Active	6	Steam Injector Blowdown		Blowdown
C-346	5	Coalinga	S29	Energy	Steam Injector CHW1-11	n/a	Sec 29	29	19S	15E	MD	36.24393	-120.36698	058-270-05	Steam				Earthen	Active	2	Steam Injector Blowdown		Blowdown
C-347	5	Coalinga	S29	Energy	Steam Injector CHW6-12	n/a	Sec 29	29	19S	15E	MD	36.24284	-120.36704	058-270-05	Steam				Earthen	Active	2	Steam Injector Blowdown		Blowdown
C-348	5	Coalinga	S29	Energy	Steam Injector CHW6-11	n/a	Sec 29	29	19S	15E	MD	36.24431	-120.36548	058-270-05	Steam				Earthen	Active	2	Steam Injector Blowdown		Blowdown
C-349	5	Coalinga	S29	Energy	Steam Injector CHW6-14	n/a	Sec 29	29	19S	15E	MD	36.24043	-120.36865	058-270-05	Steam				Earthen	Active	5	Steam Injector Blowdown		Blowdown
C-350	5	Coalinga	S29	Energy	Steam Injector 3-16ERI	n/a	Sec 29	29	19S	15E	MD	36.24308	-120.37160	058-270-05	Steam				Earthen	Active	5	Steam Injector Blowdown		Blowdown
C-351	5	Coalinga	S29	Energy	Steam Injector 2-17	n/a	Sec 29	29	19S	15E	MD	36.24274	-120.37180	058-270-05	Steam				Earthen	Active	6	Steam Injector Blowdown		Blowdown
C-352	5	Coalinga	S29	Energy	Steam Injector 3-18	n/a	Sec 29	29	19S	15E	MD	36.24182	-120.37104	058-270-05	Steam				Earthen	Active	1	Steam Injector Blowdown		Blowdown
C-353	5	Coalinga	S29	Energy	Steam Injector 7-16I	n/a	Sec 29	29	19S	15E	MD	36.24340	-120.36836	058-270-05	Steam				Earthen	Active	2	Steam Injector Blowdown		Blowdown
C-354	5	Coalinga	S29	Energy	Steam Injector 54HIR	n/a	Sec 29	29	19S	15E	MD	36.24492	-120.36994	058-270-05	Steam				Earthen	Active	5	Steam Injector Blowdown		Blowdown
C-355	5	Coalinga	S29	Energy	Steam Injector 50KI	n/a	Sec 29	29	19S	15E	MD	36.24331	-120.37281	058-270-05	Steam				Earthen	Active	5	Steam Injector Blowdown		Blowdown
C-356	5	Coalinga	S29	Energy	Steam Injector 50LI	n/a	Sec 29	29	19S	15E	MD	36.24241	-120.37289	058-270-05	Steam				Earthen	Active	5	Steam Injector Blowdown		Blowdown
C-357	5	Coalinga	S29	Energy	Steam Injector S11HI	n/a	Sec 29	29	19S	15E	MD	36.24520	-120.36166	058-270-05	Steam				Earthen	Active	6	Steam Injector Blowdown		Blowdown
C-358	5	Coalinga	S29	Energy	Steam Injector S9HI	n/a	Sec 29	29	19S	15E	MD	36.24544	-120.36365	058-270-05	Steam				Earthen	Active	2	Steam Injector Blowdown		Blowdown
C-359	5	Coalinga	S29	Energy	Steam Injector S10GI	n/a	Sec 29	29	19S	15E	MD	36.24666	-120.36266	058-270-05	Steam				Earthen	Active	5	Steam Injector Blowdown		Blowdown
C-360	5	Coalinga	S29	Energy	Steam Injector S8EI	n/a	Sec 29	29	19S	15E	MD	36.24812	-120.36476	058-270-05	Steam				Earthen	Active	4	Steam Injector Blowdown		Blowdown
C-361	5	Coalinga	S29	Energy	Steam Injector S10EI	n/a	Sec 29	29	19S	15E	MD	36.24827	-120.36266	058-270-05	Steam				Earthen	Active	5	Steam Injector Blowdown		Blowdown
C-362	5	Coalinga	S29	Energy	Steam Injector S8CI	n/a	Sec 29	29	19S	15E	MD	36.24973	-120.36518	058-270-05	Steam				Earthen	Active	6	Steam Injector Blowdown		Blowdown
C-363	5	Coalinga	S29	Energy	Steam Injector S7CIR	n/a	Sec 29	29	19S	15E	MD	36.25048	-120.36650	058-270-05	Steam				Earthen	Active	5	Steam Injector Blowdown		Blowdown
C-364	5	Coalinga	S29	Energy	Steam Injector S7DI	n/a	Sec 29	29	19S	15E	MD	36.24897	-120.36658	058-270-05	Steam				Earthen	Active	6	Steam Injector Blowdown		Blowdown
C-365	5	Coalinga	S29	Energy	Steam Injector S5EI	n/a	Sec 29	29	19S	15E	MD	36.24851	-120.36768	058-270-05	Steam				Earthen	Active	3	Steam Injector Blowdown		Blowdown
C-366	4	Coalinga	S30	Energy	Steam Injector CHW3-11	n/a	Sec 30	30	19S	15E	MD	36.24107	-120.37435	058-270-05	Steam				Earthen	Active	3	Steam Injector Blowdown		Blowdown
C-367	9	Coalinga	S32CL	Energy	Steam Injector 1-1A	n/a	Sec 32	32	19S	15E	MD	36.23778	-120.37265	858-270-14	Steam				Earthen	Active	1	Steam Injector Blowdown		Blowdown
C-368	9	Coalinga	S32CL	Energy	Steam Injector 2-2B	n/a	Sec 32	32	19S	15E	MD	36.23727	-120.37189	858-270-14	Steam				Earthen	Active	1	Steam Injector Blowdown		Blowdown
C-369	9	Coalinga	S32CL	Energy	Steam Injector 3-3AI	n/a	Sec 32	32	19S	15E	MD	36.23655	-120.37194	858-270-14	Steam				Earthen	Active	4	Steam Injector Blowdown		Blowdown
C-370	9	Coalinga	S32CL	Energy	Steam Injector 1-2B	n/a	Sec 32	32	19S	15E	MD	36.23665	-120.37269	858-270-14	Steam				Earthen	Active	2	Steam Injector Blowdown		Blowdown
C-371	9	Coalinga	S32CL	Energy	Steam Injector 1-3BI	n/a	Sec 32	32	19S	15E	MD	36.23585	-120.37269	858-270-14	Steam				Earthen	Active	3	Steam Injector Blowdown		Blowdown
C-372	9	Coalinga	S32CL	Energy	Steam Injector 1-4BI	n/a	Sec 32	32	19S	15E	MD	36.23522	-120.37274	858-270-14	Steam				Earthen	Active	6	Steam Injector Blowdown		Blowdown
C-373	8	Coalinga	Aztec	Energy	Steam Injector 807I	n/a	Sec 31	31	19S	15E	MD	36.23031	-120.37523	858-270-14	Steam				Earthen	Active	2	Steam Injector Blowdown		Blowdown
C-374	8	Coalinga	Aztec	Energy	Steam Injector 804I	n/a	Sec 31	31	19S	15E	MD	36.23127	-120.37544	858-270-14	Steam				Earthen	Active	2	Steam Injector Blowdown		Blowdown
C-375	8	Coalinga	Aztec	Energy	Steam Injector 801I	n/a	Sec 31	31	19S	15E	MD	36.23265	-120.37550	858-270-14	Steam				Earthen	Active	2	Steam Injector Blowdown		Blowdown
C-376	8	Coalinga	S31CS	Energy	Steam Injector S78I	n/a	Sec 31	31	19S	15E	MD	36.23405	-120.37394	858-270-14	Steam				Earthen	Active	6	Steam Injector Blowdown		Blowdown
C-377	8	Coalinga	S31CS	Energy	Steam Injector S57I	n/a	Sec 31	31	19S	15E	MD	36.23425	-120.37441	858-270-14	Steam				Earthen	Active	5	Steam Injector Blowdown		Blowdown
C-378	8	Coalinga	S31CS	Energy	Steam Injector S54I	n/a	Sec 31	31	19S	15E	MD	36.23506	-120.37376	858-270-14	Steam				Earthen	Active	5	Steam Injector Blowdown		Blowdown
C-379	8	Coalinga	S31CS	Energy	Steam Injector 236A	n/a	Sec 31	31	19S	15E	MD	36.22647	-120.37965	858-270-14	Steam				Earthen	Active	4	Steam Injector Blowdown		Blowdown
C-380	8	Coalinga	S31CS	Energy	Steam Injector 235	n/a	Sec 31	31	19S	15E	MD	36.22651	-120.38077	858-270-14	Steam				Earthen	Active	5	Steam Injector Blowdown		Blowdown

Aera Energy LLC - Coalinga Oil Field  
Potential Discharge Locations

Short Identifier	Map Page Number	Field	Lease	Team	Description/Name	RWQCB Name	Location	Sec.	T	R	BM	Latitude	Longitude	Assessor Parcel Number	Potential Fluid	L	W	D	Construction	Status	Number of Points	Intended Use	Volume Discharged [bbl/yr]	Category
C-381	8	Coalinga	S31CS	Energy	Steam Injector 651I	n/a	Sec 31	31	19S	15E	MD	36.22556	-120.38053	858-270-14	Steam				Earthen	Active	6	Steam Injector Blowdown		Blowdown
C-382	8	Coalinga	S31CS	Energy	Steam Injector 671I	n/a	Sec 31	31	19S	15E	MD	36.22443	-120.38041	858-270-14	Steam				Earthen	Active	6	Steam Injector Blowdown		Blowdown
C-383	8	Coalinga	S31CS	Energy	Steam Injector 673I	n/a	Sec 31	31	19S	15E	MD	36.22441	-120.37871	858-270-14	Steam				Earthen	Active	6	Steam Injector Blowdown		Blowdown
C-384	8	Coalinga	S31CS	Energy	Steam Injector 653I	n/a	Sec 31	31	19S	15E	MD	36.22554	-120.37838	858-270-14	Steam				Earthen	Active	5	Steam Injector Blowdown		Blowdown
C-385	8	Coalinga	S31CS	Energy	Steam Injector 237A	n/a	Sec 31	31	19S	15E	MD	36.22659	-120.37853	858-270-14	Steam				Earthen	Active	5	Steam Injector Blowdown		Blowdown
C-386	8	Coalinga	S31CS	Energy	Steam Injector 623A	n/a	Sec 31	31	19S	15E	MD	36.22985	-120.37882	858-270-14	Steam				Earthen	Active	1	Steam Injector Blowdown		Blowdown
C-387	8	Coalinga	S31CS	Energy	Steam Injector 777I	n/a	Sec 31	31	19S	15E	MD	36.23015	-120.37858	858-270-14	Steam				Earthen	Active	1	Steam Injector Blowdown		Blowdown
C-388	8	Coalinga	S31CS	Energy	Steam Injector 643A	n/a	Sec 31	31	19S	15E	MD	36.22853	-120.37872	858-270-14	Steam				Earthen	Active	3	Steam Injector Blowdown		Blowdown
C-389	8	Coalinga	S31CS	Energy	Steam Injector 593AI	n/a	Sec 31	31	19S	15E	MD	36.23154	-120.37857	858-270-14	Steam				Earthen	Active	6	Steam Injector Blowdown		Blowdown
C-390	8	Coalinga	Aztec	Energy	Steam Injector 809I	n/a	Sec 31	31	19S	15E	MD	36.22891	-120.37684	858-270-14	Steam				Earthen	Active	1	Steam Injector Blowdown		Blowdown
C-391	8	Coalinga	Aztec	Energy	Steam Injector 806I	n/a	Sec 31	31	19S	15E	MD	36.23039	-120.37727	858-270-14	Steam				Earthen	Active	4	Steam Injector Blowdown		Blowdown
C-392	8	Coalinga	Aztec	Energy	Steam Injector 810I	n/a	Sec 31	31	19S	15E	MD	36.22669	-120.37676	858-270-14	Steam				Earthen	Active	4	Steam Injector Blowdown		Blowdown
C-393	8	Coalinga	Aztec	Energy	Steam Injector 802I	n/a	Sec 31	31	19S	15E	MD	36.23222	-120.37376	858-270-14	Steam				Earthen	Active	2	Steam Injector Blowdown		Blowdown
C-394	5	Coalinga	S29	Energy	Steam Injector 5-14	n/a	Sec 29	29	19S	15E	MD	36.24464	-120.36959	058-270-04	Steam				Earthen	Active	3	Steam Injector Blowdown		Blowdown
C-395	5	Coalinga	S29	Energy	Steam Injector 54H	n/a	Sec 29	29	19S	15E	MD	36.24531	-120.36898	058-270-04	Steam				Earthen	Active	3	Steam Injector Blowdown		Blowdown
C-396	5	Coalinga	S29	Energy	Steam Injector 7-14I	n/a	Sec 29	29	19S	15E	MD	36.24468	-120.36806	058-270-04	Steam				Earthen	Active	3	Steam Injector Blowdown		Blowdown
C-397	5	Coalinga	S29	Energy	Steam Injector 55FIR	n/a	Sec 29	29	19S	15E	MD	36.24682	-120.36817	058-270-04	Steam				Earthen	Active	5	Steam Injector Blowdown		Blowdown
C-398	5	Coalinga	S29	Energy	Steam Injector 54GI	n/a	Sec 29	29	19S	15E	MD	36.24599	-120.36901	058-270-04	Steam	4 dia		3	Earthen	Active	6	Steam Injector Blowdown		Blowdown
C-399	5	Coalinga	S29	Energy	Steam Injector CHW6-13	n/a	Sec 29	29	19S	15E	MD	36.24156	-120.36799	058-270-04	Steam				Earthen	Active	1	Steam Injector Blowdown		Blowdown
C-400	5	Coalinga	S29	Energy	Steam Injector 7-18I	n/a	Sec 29	29	19S	15E	MD	36.24207	-120.36801	058-270-04	Steam				Earthen	Active	4	Steam Injector Blowdown		Blowdown
C-401	5	Coalinga	S29	Energy	Steam Injector 5-16	n/a	Sec 29	29	19S	15E	MD	36.24330	-120.36948	058-270-04	Steam				Earthen	Active	6	Steam Injector Blowdown		Blowdown
C-402	5	Coalinga	S29	Energy	Steam Injector 52LI	n/a	Sec 29	29	19S	15E	MD	36.24898	-120.37118	058-270-04	Steam	4 dia		3	Earthen	Active	5	Steam Injector Blowdown		Blowdown
C-403	5	Coalinga	S29	Energy	Steam Injector 52JI	n/a	Sec 29	29	19S	15E	MD	36.24411	-120.37169	058-270-04	Steam	4 dia		4	Earthen	Active	5	Steam Injector Blowdown		Blowdown
C-406	8	Coalinga	S31CS	Energy	Steam Injector 578I Blow Down	n/a	Sec 31	31	19S	15E	MD	36.23361	-120.37366	858-270-13	Steam				Earthen	Active				Blowdown
C-407	8	Coalinga	S31CS	Energy	Steam Injector 544I	n/a	Sec 31	31	19S	15E	MD	36.23559	-120.37351	858-270-13	Steam				Earthen	Active	5	Steam Injector Blowdown		Blowdown
C-408	8	Coalinga	S31CS	Energy	Steam Injector 528RI	n/a	Sec 31	31	19S	15E	MD	36.23670	-120.37381	858-270-13	Steam				Earthen	Active	1	Steam Injector Blowdown		Blowdown
C-409	8	Coalinga	S31CS	Energy	Steam Injector 341I	n/a	Sec 31	31	19S	15E	MD	36.23543	-120.37626	858-270-13	Steam				Earthen	Active	6	Steam Injector Blowdown		Blowdown
C-410	8	Coalinga	S31CS	Energy	Steam Injector 527I	n/a	Sec 31	31	19S	15E	MD	36.23641	-120.37519	858-270-13	Steam				Earthen	Active	1	Steam Injector Blowdown		Blowdown
C-411	8	Coalinga	S31CS	Energy	Steam Injector 517I	n/a	Sec 31	31	19S	15E	MD	36.23780	-120.37514	858-270-13	Steam				Earthen	Active	1	Steam Injector Blowdown		Blowdown
C-412	8	Coalinga	S31CS	Energy	Steam Injector 518RI	n/a	Sec 31	31	19S	15E	MD	36.23766	-120.37379	858-270-13	Steam				Earthen	Active	2	Steam Injector Blowdown		Blowdown
C-413	8	Coalinga	S31CS	Energy	Steam Injector 526RI	n/a	Sec 31	31	19S	15E	MD	36.23672	-120.37600	858-270-13	Steam				Earthen	Active	2	Steam Injector Blowdown		Blowdown
C-414	8	Coalinga	S31CS	Energy	Steam Injector 351I	n/a	Sec 31	31	19S	15E	MD	36.23500	-120.37612	858-270-13	Steam				Earthen	Active	6	Steam Injector Blowdown		Blowdown
C-415	8	Coalinga	S31CS	Energy	Steam Injector 576I	n/a	Sec 31	31	19S	15E	MD	36.23391	-120.37623	858-270-13	Steam				Earthen	Active	6	Steam Injector Blowdown		Blowdown
C-417	8	Coalinga	S31CS	Energy	Steam Injector S66AR	n/a	Sec 31	31	19S	15E	MD	36.23395	-120.37623	858-270-13	Steam				Earthen	Active	2	Steam Injector Blowdown		Blowdown
C-418	8	Coalinga	Aztec	Energy	Steam Injector 800I	n/a	Sec 31	31	19S	15E	MD	36.23253	-120.37681	858-270-14	Steam				Earthen	Active	2	Steam Injector Blowdown		Blowdown
C-419	8	Coalinga	Aztec	Energy	Steam Injector 803I	n/a	Sec 31	31	19S	15E	MD	36.23097	-120.37693	858-270-14	Steam				Earthen	Active	2	Steam Injector Blowdown		Blowdown
C-420	8	Coalinga	S31CS	Energy	Steam Injector 573	n/a	Sec 31	31	19S	15E	MD	36.23291	-120.37831	858-270-13	Steam	5 dia		3	Earthen	Active	5	Steam Injector Blowdown		Blowdown
C-421	8	Coalinga	S31CS	Energy	Steam Injector 572I	n/a	Sec 31	31	19S	15E	MD	36.23325	-120.37967	858-270-13	Steam				Earthen	Active	1	Steam Injector Blowdown		Blowdown

Aera Energy LLC - Coalinga Oil Field  
Potential Discharge Locations

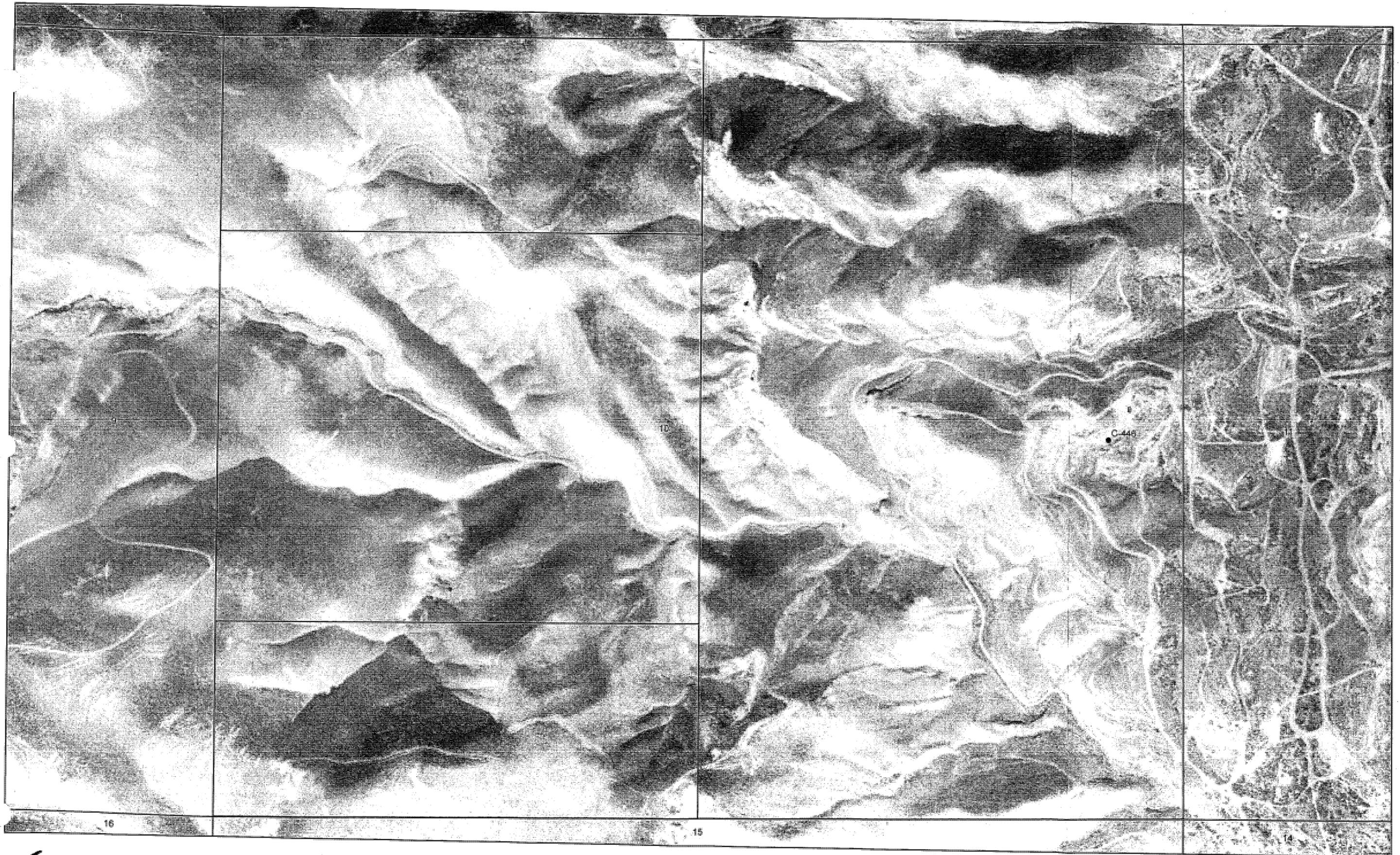
Short Identifier	Map Page Number	Field	Lease	Team	Description/Name	RWQCB Name	Location	Sec.	T	R	BM	Latitude	Longitude	Assessor Parcel Number	Potential Fluid	L	W	D	Construction	Status	Number of Points	Intended Use	Volume Discharged [bb/yr]	Category
C-422	8	Coalinga	531CS	Energy	Steam Injector 572AI	n/a	Sec 31	31	19S	15E	MD	36.23319	-120.37983	858-270-13	Steam				Earthen	Active	3	Steam Injector Blowdown		Blowdown
C-423	8	Coalinga	531CS	Energy	Steam Injector 571AI	n/a	Sec 31	31	19S	15E	MD	36.23325	-120.38110	858-270-13	Steam				Earthen	Active	5	Steam Injector Blowdown		Blowdown
C-424	8	Coalinga	531CS	Energy	Steam Injector 774I	n/a	Sec 31	31	19S	15E	MD	36.23189	-120.38070	858-270-13	Steam				Earthen	Active	1	Steam Injector Blowdown		Blowdown
C-425	8	Coalinga	531CS	Energy	Steam Injector 775I	n/a	Sec 31	31	19S	15E	MD	36.23199	-120.37965	858-270-13	Steam				Earthen	Active	1	Steam Injector Blowdown		Blowdown
C-426	8	Coalinga	531CS	Energy	Steam Injector 776I	n/a	Sec 31	31	19S	15E	MD	36.23074	-120.37981	858-270-13	Steam				Earthen	Active	1	Steam Injector Blowdown		Blowdown
C-427	8	Coalinga	531CS	Energy	Steam Injector 601	n/a	Sec 31	31	19S	15E	MD	36.23066	-120.38107	858-270-13	Steam				Earthen	Active	1	Steam Injector Blowdown		Blowdown
C-428	8	Coalinga	531CS	Energy	Steam Injector 621A	n/a	Sec 31	31	19S	15E	MD	36.22959	-120.38046	858-270-13	Steam				Earthen	Active	5	Steam Injector Blowdown		Blowdown
C-429	8	Coalinga	531CS	Energy	Steam Injector 641A	n/a	Sec 31	31	19S	15E	MD	36.22831	-120.38042	858-270-13	Steam	5 dia		4	Earthen	Active	2	Steam Injector Blowdown		Blowdown
C-430	8	Coalinga	531CS	Energy	Steam Injector 231A	n/a	Sec 31	31	19S	15E	MD	36.22716	-120.37953	858-270-13	Steam	5 dia		4	Earthen	Active	4	Steam Injector Blowdown		Blowdown
C-431	2	Coalinga	515	CLAM	Water Injector 17-19	n/a	Sec 15	15	19S	15E	MD	36.27169	-120.32536	058-230-01	Produced Water				Earthen	Active	2	Water Injector		Water Injector
C-432	2	Coalinga	515	CLAM	Water Injection Manifold 17-20	n/a	Sec 15	15	19S	15E	MD	36.27142	-120.32476	058-230-01	Produced Water				Earthen	Active	6	Manifold drain		Other
C-433	2	Coalinga	515	CLAM	Water Injector 9-10	n/a	Sec 15	15	19S	15E	MD	36.27234	-120.32756	058-230-01	Produced Water				Earthen	Active	3	Water Injector		Water Injector
C-434	2	Coalinga	515	CLAM	Water Injector 19-15	n/a	Sec 15	15	19S	15E	MD	36.27394	-120.32495	058-230-01	Produced Water				Earthen	Active	4	Water Injector		Water Injector
C-435	2	Coalinga	515	CLAM	Water Injector 174	n/a	Sec 15	15	19S	15E	MD	36.27387	-120.32500	058-230-01	Produced Water				Earthen	Active	4	Water Injector		Water Injector
C-436	2	Coalinga	515	CLAM	Water Injector 21-11	n/a	Sec 15	15	19S	15E	MD	36.27560	-120.32272	058-230-01	Produced Water				Earthen	Active	2	Water Injector		Water Injector
C-437	2	Coalinga	515	CLAM	Well Cellar 20-10	n/a	Sec 15	15	19S	15E	MD	36.27629	-120.32324	058-230-01	Oil & Water	4	4	3	Concrete	Inactive		Well Cellar		Well Cellar
C-438	2	Coalinga	515	CLAM	Water Injection Manifold 18-5	n/a	Sec 15	15	19S	15E	MD	36.27564	-120.32476	058-230-01	Produced Water				Earthen	Active	6	Manifold drain		Other
C-439	2	Coalinga	515	CLAM	Water Injector 19-9	n/a	Sec 15	15	19S	15E	MD	36.27709	-120.32356	058-230-01	Produced Water				Earthen	Active	2	Water Injector		Water Injector
C-440	2	Coalinga	515	CLAM	Water Injector 19-6	n/a	Sec 15	15	19S	15E	MD	36.27826	-120.32330	058-230-01	Produced Water				Earthen	Active	2	Water Injector		Water Injector
C-441	2	Coalinga	515	CLAM	Water Injector 21-8	n/a	Sec 15	15	19S	15E	MD	36.27789	-120.32185	058-230-01	Produced Water				Earthen	Active	2	Water Injector		Water Injector
C-442	2	Coalinga	515	CLAM	Water Injector 19-5I	n/a	Sec 15	15	19S	15E	MD	36.27945	-120.32394	058-230-01	Produced Water				Earthen	Active	2	Water Injector		Water Injector
C-443	3	Coalinga	514	CLAM	Well Cellar 2-2	n/a	Sec 14	14	19S	15E	MD	36.28111	-120.31743	058-230-02	Oil & Water	3	3	1	Earthen	Active		Well Cellar		Well Cellar
C-444	3	Coalinga	514	CLAM	Well Cellar 5-4	n/a	Sec 14	14	19S	15E	MD	36.27991	-120.31586	058-230-02	Oil & Water	3	3	1	Earthen	Active		Well Cellar		Well Cellar
C-445	3	Coalinga	514	CLAM	Well Cellar 37	n/a	Sec 14	14	19S	15E	MD	36.27771	-120.31009	058-230-02	Oil & Water	0.5	0.5	0.5	Earthen	Active		Well Cellar		Well Cellar
C-446	1	Coalinga	510	CLAM	Well Cellar 286	n/a	Sec 10	10	19S	15E	MD	36.28898	-120.32076	058-180-18	Oil & Water	3	2	2	Earthen	Active		Well Cellar		Well Cellar
C-447	2	Coalinga	515	CLAM	Water Injector 17-21	n/a	Sec 15	15	19S	15E	MD	36.26979	-120.32504	058-230-01	Produced Water	3	3	2	Earthen	Active	5	Water Injector		Water Injector
C-448	2	Coalinga	515	CLAM	Water Injector 15-20I	n/a	Sec 15	15	19S	15E	MD	36.27006	-120.32697	058-230-01	Produced Water				Earthen	Active	2	Water Injector		Water Injector
C-449	6	Coalinga	527	CLAM	Well Cellar 662	n/a	Sec 27	27	19S	15E	MD	36.24834	-120.32571	058-280-01	Oil & Water	3	3	8	Earthen	Active		Well Cellar		Well Cellar
C-450	6	Coalinga	527	CLAM	Well Cellar 154X	n/a	Sec 27	27	19S	15E	MD	36.24645	-120.32820	058-280-01	Oil & Water	3	1	1	Earthen	Active		Well Cellar		Well Cellar
C-451	6	Coalinga	527	CLAM	Well Cellar 636	n/a	Sec 27	27	19S	15E	MD	36.24480	-120.33220	058-280-01	Oil & Water	3	3	1	Earthen	Active		Well Cellar		Well Cellar
C-452	12	Coalinga	57	Energy	Steam Injector 253	n/a	Sec 7	7	20S	15E	MD	36.20689	-120.38876	070-020-37	Steam				Earthen	Active	7	Steam Injector Blowdown		Blowdown
C-453	12	Coalinga	57	Energy	Steam Injector 215	n/a	Sec 7	7	20S	15E	MD	36.20826	-120.38723	070-020-37	Steam				Earthen	Active	7	Steam Injector Blowdown		Blowdown
C-454	11	Coalinga	51-PZ	Energy	Steam Injector 439AI	n/a	51-PZ	1	20S	14E	MD	36.21179	-120.39342	063-150-50	Steam				Earthen	Active	7	Steam Injector Blowdown		Blowdown
C-455	11	Coalinga	51-PZ	Energy	Steam Injector 6JAI	n/a	51-PZ	1	20S	14E	MD	36.21406	-120.39311	063-150-50	Steam				Earthen	Active	5	Steam Injector Blowdown		Blowdown
C-456	11	Coalinga	51-PZ	Energy	Steam Injector 5KI	n/a	51-PZ	1	20S	14E	MD	36.21507	-120.39257	063-150-50	Steam				Earthen	Active	5	Steam Injector Blowdown		Blowdown
C-457	11	Coalinga	51-PZ	Energy	Steam Injector 4KI	n/a	51-PZ	1	20S	14E	MD	36.21592	-120.39365	063-150-50	Steam				Earthen	Active	6	Steam Injector Blowdown		Blowdown
C-458	11	Coalinga	51-PZ	Energy	Steam Injector 5II	n/a	51-PZ	1	20S	14E	MD	36.21484	-120.39448	063-150-50	Steam				Earthen	Active	5	Steam Injector Blowdown		Blowdown
C-459	11	Coalinga	51-PZ	Energy	Steam Injector 4JI	n/a	51-PZ	1	20S	14E	MD	36.21650	-120.39439	063-150-50	Steam				Earthen	Active	5	Steam Injector Blowdown		Blowdown

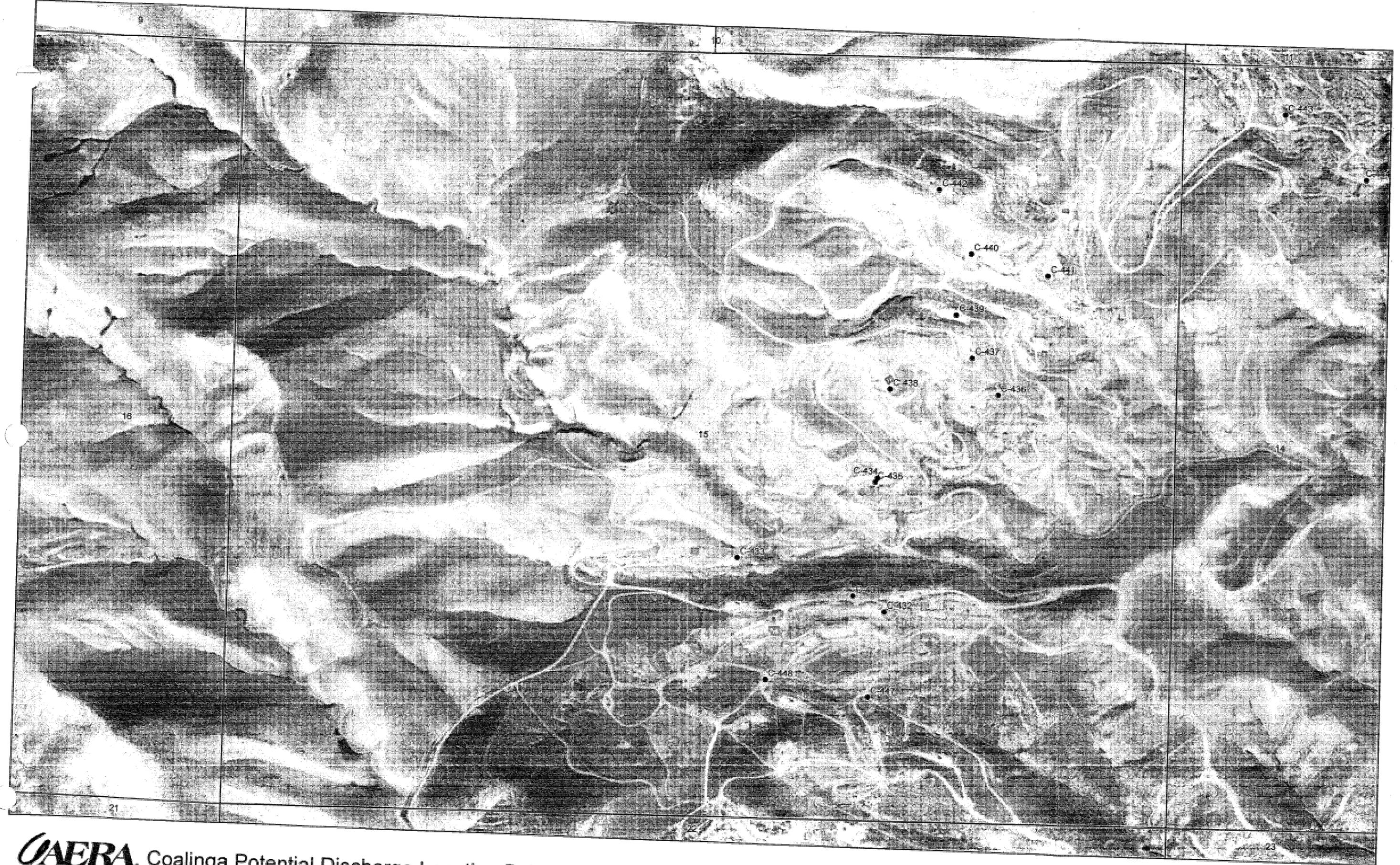
Aera Energy LLC - Coalinga Oil Field  
Potential Discharge Locations

Short Identifier	Map Page Number	Field	Lease	Team	Description/Name	RWQCB Name	Location	Sec.	T	R	BM	Latitude	Longitude	Assessor Parcel Number	Potential Fluid	L	W	D	Construction	Status	Number of Points	Intended Use	Volume Discharged [bb/yr]	Category
C-460	11	Coalinga	S1-PZ	Energy	Steam Injector 3JI	n/a	S1-PZ	1	20S	14E	MD	36.21753	-120.39338	063-150-50	Steam				Earthen	Active	4	Steam Injector Blowdown		Blowdown
C-461	11	Coalinga	S1-PZ	Energy	Steam Injector 2HI	n/a	S1-PZ	1	20S	14E	MD	36.21871	-120.39625	063-150-50	Steam				Earthen	Active	5	Steam Injector Blowdown		Blowdown
C-462	11	Coalinga	S1-PZ	Energy	Steam Injector 3GR	n/a	S1-PZ	1	20S	14E	MD	36.21767	-120.39734	063-150-50	Steam				Earthen	Active	5	Steam Injector Blowdown		Blowdown
C-463	11	Coalinga	S1-PZ	Energy	Steam Injector 4F	n/a	S1-PZ	1	20S	14E	MD	36.21661	-120.39861	063-150-50	Steam	5 dia		4	Metal	Active	5	Steam Injector Blowdown		Blowdown
C-464	11	Coalinga	S1-PZ	Energy	Steam Injector 4HR	n/a	S1-PZ	1	20S	14E	MD	36.21590	-120.39878	063-150-50	Steam				Earthen	Active	5	Steam Injector Blowdown		Blowdown
C-465	11	Coalinga	S1-PZ	Energy	Steam Injector 5FI	n/a	S1-PZ	1	20S	14E	MD	36.21500	-120.39851	063-150-50	Steam				Earthen	Active	5	Steam Injector Blowdown		Blowdown
C-466	11	Coalinga	S1-PZ	Energy	Steam Injector 6HI	n/a	S1-PZ	1	20S	14E	MD	36.21465	-120.39643	063-150-50	Steam				Earthen	Active	4	Steam Injector Blowdown		Blowdown
C-467	11	Coalinga	S1-PZ	Energy	Steam Injector 7GI	n/a	S1-PZ	1	20S	14E	MD	36.21407	-120.39740	063-150-50	Steam				Earthen	Active	5	Steam Injector Blowdown		Blowdown
C-468	11	Coalinga	S1-PZ	Energy	Steam Injector 8GI	n/a	S1-PZ	1	20S	14E	MD	36.21227	-120.39772	063-150-50	Steam				Earthen	Active	4	Steam Injector Blowdown		Blowdown
C-469	11	Coalinga	S1-PZ	Energy	Steam Injector 7FI	n/a	S1-PZ	1	20S	14E	MD	36.21317	-120.39850	063-150-50	Steam				Earthen	Active	6	Steam Injector Blowdown		Blowdown
C-470	11	Coalinga	S1-PZ	Energy	Steam Injector 6DI	n/a	S1-PZ	1	20S	14E	MD	36.21434	-120.39946	063-150-50	Steam				Earthen	Active	4	Steam Injector Blowdown		Blowdown
C-471	11	Coalinga	S1-PZ	Energy	Steam Injector 8HI	n/a	S1-PZ	1	20S	14E	MD	36.21302	-120.39651	063-150-50	Steam				Earthen	Active	6	Steam Injector Blowdown		Blowdown
C-472	11	Coalinga	S1-PZ	Energy	Steam Injector 7II	n/a	S1-PZ	1	20S	14E	MD	36.21408	-120.39533	063-150-50	Steam				Earthen	Active	6	Steam Injector Blowdown		Blowdown
C-473	11	Coalinga	S1-PZ	Energy	Steam Injector 8JI	n/a	S1-PZ	1	20S	14E	MD	36.21313	-120.39466	063-150-50	Steam				Earthen	Active	6	Steam Injector Blowdown		Blowdown
C-474	11	Coalinga	S1-PZ	Energy	Steam Injector 433R	n/a	S1-PZ	1	20S	14E	MD	36.21079	-120.39449	063-150-50	Steam				Earthen	Active	6	Steam Injector Blowdown		Blowdown
C-475	11	Coalinga	S1-PZ	Energy	Steam Injector 458R	n/a	S1-PZ	1	20S	14E	MD	36.20982	-120.39468	063-150-50	Steam				Earthen	Active	6	Steam Injector Blowdown		Blowdown
C-476	11	Coalinga	S1-PZ	Energy	Well Cellar 248	n/a	S1-PZ	1	20S	14E	MD	36.21060	-120.39413	063-150-50	Oil & Water	4 dia		2	Metal	Active		Well Cellar		Well Cellar
C-477	12	Coalinga	S7	Energy	Steam Meter Line Blow Down	n/a	S7	7			MD	36.20826	-120.39090	070-020-37	Steam				Earthen	Active		Blowdown		Blowdown
C-478	13	Coalinga	AOQ	Plant	AOQ DEHY Containment	n/a	AOQ	S14	20S	14E	MD	36.18324	-120.41259	063-210-05	Oil & Water	140	65	3	Earthen	Active		Secondary Containment	Non-Routine/Emerg.	Secondary Containment
C-479	9	Coalinga	Sec 32	Plant	Cogen A PR Valve	n/a	Co-gen	32	19S	15E	MD	36.23756	-120.36871	058-270-16	Steam				Metal	Active		CoGen Pressure Relief Valve	Non-Routine/Emerg.	PRV
C-480	9	Coalinga	Sec 32	Plant	Cogen B PR Valve	n/a	Co-gen	32	19S	15E	MD	36.23778	-120.36853	058-270-16	Steam				Metal	Active		CoGen Pressure Relief Valve	Non-Routine/Emerg.	PRV
C-481	9	Coalinga	Sec 32	CLAM	Well Cellar 3-1	n/a	S32	32	19S	15E	MD	36.23800	-120.37095	058-270-15	Oil & Water	4	4	1	Concrete	Active		Well Cellar		Well Cellar
C-482	4	Coalinga	Sec 30	CLAM	Well Cellar 22-22	n/a	S30	30	19S	15E	MD	36.23945	-120.37346	058-270-03	Oil & Water	4	4	1	Concrete	Active		Well Cellar		Well Cellar
C-483	10	Coalinga	Sec 34	CLAM	Well Cellar 253A	n/a	S34	34	19S	15E	MD	36.23489	-120.32752	058-280-09	Oil & Water	3	2	1	Concrete	Active		Well Cellar		Well Cellar
C-484	5	Coalinga	Sec 29	CLAM	Well Cellar 818	n/a	Sec 29	29	19S	15E	MD	36.24069	-120.37034	058-270-04	Oil & Water	4	4	1	Metal	Active		Well Cellar		Well Cellar
C-485	5	Coalinga	Sec 29	CLAM	Well Cellar 717	n/a	Sec 29	29	19S	15E	MD	36.24202	-120.37145	058-270-04	Oil & Water	4	4	1	Concrete	Active		Well Cellar		Well Cellar
C-486	5	Coalinga	Sec 29	CLAM	Water Injector 718A	n/a	Sec 29	29	19S	15E	MD	36.24124	-120.37067	058-270-04	Produced Water				Earthen	Active	1	Water Injector		Water Injector
C-487	5	Coalinga	Sec 29	CLAM	Well Cellar 818A	n/a	Sec 29	29	19S	15E	MD	36.24138	-120.36937	058-270-04	Oil & Water	3	3	2	Concrete	Active		Well Cellar		Well Cellar
C-488	5	Coalinga	Sec 29	CLAM	Well Cellar 829	n/a	Sec 29	29	19S	15E	MD	36.23851	-120.36920	058-270-04	Oil & Water	4	4	1	Concrete	Active		Well Cellar		Well Cellar
C-489	9	Coalinga	S32PN	CLAM	Water Injector 722A	n/a	Sec 29	29	19S	15E	MD	36.23679	-120.36803	058-270-04	Oil & Water				Earthen	Active	3	Water Injector		Water Injector
C-490	5	Coalinga	Sec 29	CLAM	Water Injector 828	n/a	Sec 29	29	19S	15E	MD	36.24093	-120.36803	058-270-04	Produced Water				Earthen	Active	3	Water Injector		Water Injector
C-491	5	Coalinga	Sec 29	CLAM	Water Injector 727A	n/a	Sec 29	29	19S	15E	MD	36.24196	-120.36865	058-270-04	Produced Water				Earthen	Active	1	Water Injector		Water Injector
C-492	5	Coalinga	Sec 29	CLAM	Well Cellar 808	n/a	Sec 29	29	19S	15E	MD	36.24000	-120.37159	058-270-04	Oil & Water				Earthen	Active	2	Well Cellar		Well Cellar
C-493	4	Coalinga	Sec 30	CLAM	Water Injector 889A	n/a	Sec 30	30	19S	15E	MD	36.24012	-120.37386	058-270-04	Produced Water	4	4	1	Concrete	Active	3	Water Injector		Water Injector
C-494	4	Coalinga	Sec 30	CLAM	Water Injector 879A	n/a	Sec 30	30	19S	15E	MD	36.23947	-120.37499	058-270-04	Produced Water	4	4	1	Concrete	Active	2	Water Injector		Water Injector
C-495	5	Coalinga	Sec 29	CLAM	Water Injector 815	n/a	Sec 29	29	19S	15E	MD	36.24576	-120.37152	058-270-04	Produced Water	4	4	1	Concrete	Active	3	Water Injector		Water Injector
C-496	5	Coalinga	Sec 29	CLAM	Water Injector 814	n/a	Sec 29	29	19S	15E	MD	36.24733	-120.37193	058-270-04	Produced Water	4	4	2	Concrete	Active	1	Water Injector		Water Injector
C-497	5	Coalinga	Sec 29	CLAM	Water Injector 725A	n/a	Sec 29	29	19S	15E	MD	36.24559	-120.36871	058-270-04	Produced Water				Earthen	Active	1	Water Injector		Water Injector

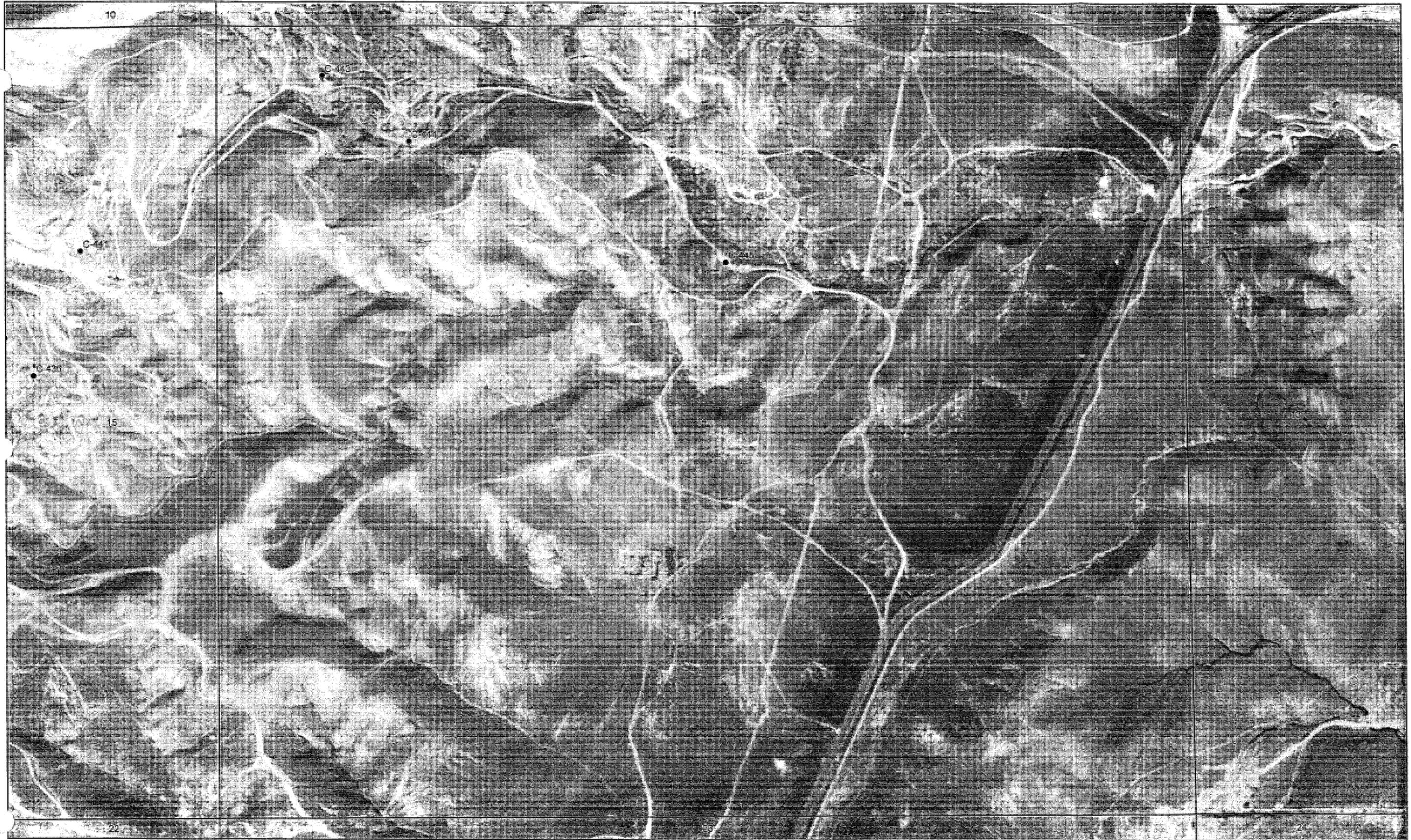
Aera Energy LLC - Coalinga Oil Field  
Potential Discharge Locations

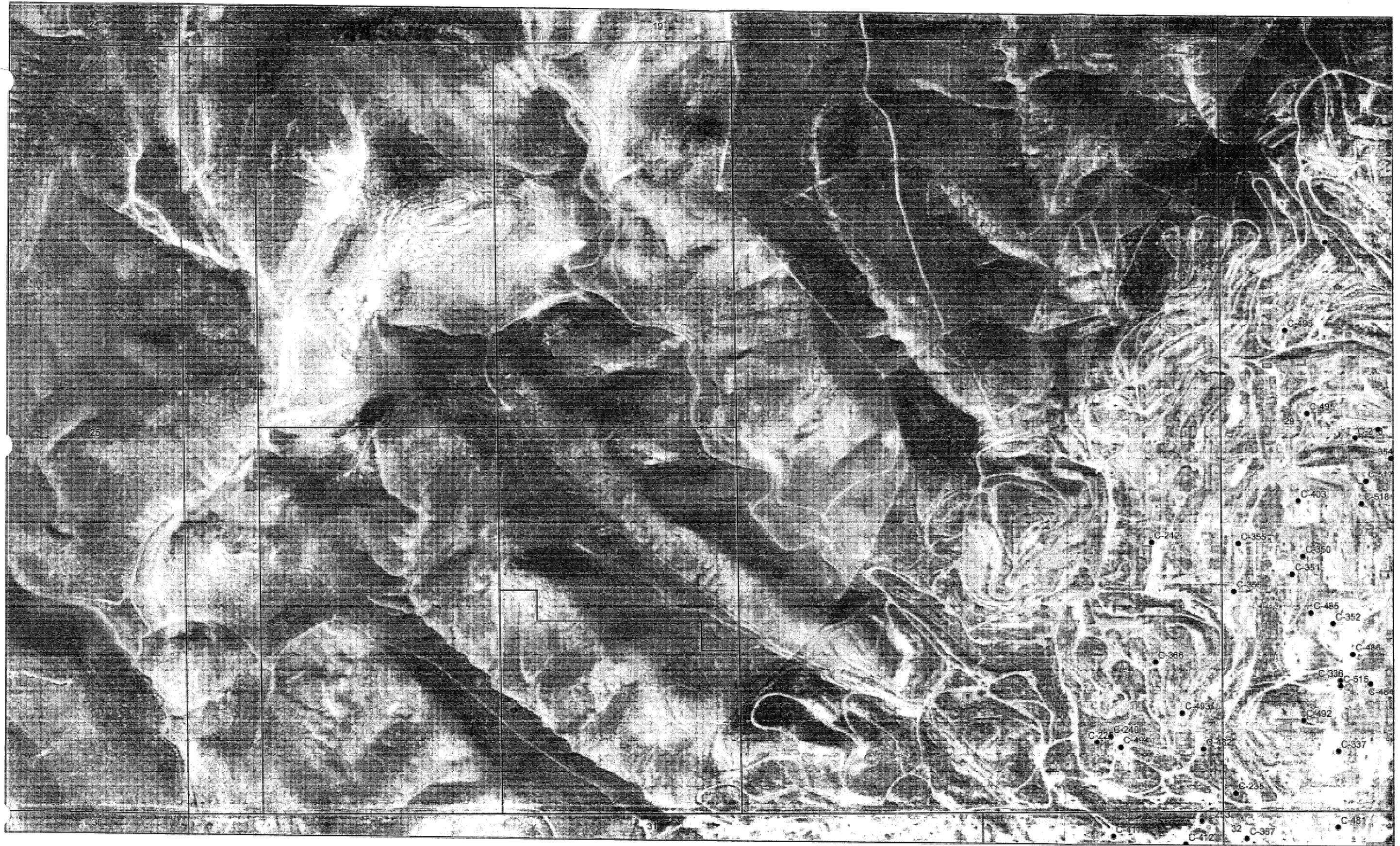
Short Identifier	Map Page Number	Field	Lease	Team	Description/Name	RWQCB Name	Location	Sec.	T	R	BM	Latitude	Longitude	Assessor Parcel Number	Potential Fluid	L	W	D	Construction	Status	Number of Points	Intended Use	Volume Discharged [bbl/yr]	Category
C-498	5	Coalinga	Sec 29	CLAM	Water Injector 724A	n/a	Sec 29	29	19S	15E	MD	36.24754	-120.36875	058-270-04	Produced Water				Earthen	Active	3	Water Injector		Water Injector
C-499	5	Coalinga	Sec 29	CLAM	Water Injector 723A	n/a	Sec 29	29	19S	15E	MD	36.24915	-120.36897	058-270-04	Produced Water				Earthen	Active	1	Water Injector		Water Injector
C-500	5	Coalinga	Sec 29	CLAM	Well cellar 8-6	n/a	Sec 29	29	19S	15E	MD	36.24994	-120.36732	058-270-04	Oil & Water	3	3	1	Concrete	Inactive		Well Cellar		Well Cellar
C-501	5	Coalinga	Sec 29	CLAM	Water Injector 856A	n/a	Sec 29	29	19S	15E	MD	36.24320	-120.36292	058-270-04	Produced Water				Earthen	Active	3	Water Injector		Water Injector
C-502	5	Coalinga	Sec 29	CLAM	Water Injector 766	n/a	Sec 29	29	19S	15E	MD	36.24325	-120.36083	058-270-04	Produced Water	2	2	1	Concrete	Active	3	Water Injector		Water Injector
C-503	5	Coalinga	Sec 29	CLAM	Water Injector 764 Manifold	n/a	Sec 29	29	19S	15E	MD	36.24674	-120.36083	058-270-04	Produced Water				Earthen	Active	4	Water Injector manifold pad	Non-Routine/Emerg.	Drain Pad
C-504	5	Coalinga	Sec 29	CLAM	Water Injector 764	n/a	Sec 29	29	19S	15E	MD	36.24677	-120.36086	058-270-04	Produced Water				Earthen	Active	3	Water Injector		Water Injector
C-505	5	Coalinga	Sec 29	CLAM	Water Injector 754A	n/a	Sec 29	29	19S	15E	MD	36.24849	-120.36063	058-270-04	Produced Water	2	2	1	Concrete	Active	3	Water Injector		Water Injector
C-506	5	Coalinga	Sec 29	CLAM	Water Injector 763A	n/a	Sec 29	29	19S	15E	MD	36.24900	-120.35959	058-270-04	Produced Water	3	3	1	Concrete	Active	3	Water Injector		Water Injector
C-507	5	Coalinga	Sec 29	CLAM	Well Cellar 844	n/a	Sec 29	29	19S	15E	MD	36.24781	-120.36513	058-270-04	Oil & Water	3	3	1	Concrete	Active		Well Cellar		Well Cellar
C-508	5	Coalinga	Sec 29	CLAM	Water Injector 884	n/a	Sec 29	29	19S	15E	MD	36.24670	-120.35690	058-270-04	Produced Water	3	2	1	Concrete	Active	3	Water Injector		Water Injector
C-509	5	Coalinga	Sec 29	CLAM	Water Injector 775	n/a	Sec 29	29	19S	15E	MD	36.24483	-120.35804	058-270-04	Produced Water	3	2	1	Concrete	Active	3	Water Injector		Water Injector
C-510	5	Coalinga	Sec 29	CLAM	Well Cellar 866A	n/a	Sec 29	29	19S	15E	MD	36.24331	-120.35937	058-270-04	Oil & Water	4	4	2	Concrete	Active		Well Cellar		Well Cellar
C-511	5	Coalinga	Sec 29	CLAM	Water Injector 857 Manifold	n/a	Sec 29	29	19S	15E	MD	36.24169	-120.3609S	058-270-04	Produced Water				Earthen	Active	5	Water Injector manifold pad	Non-Routine/Emerg.	Drain Pad
C-512	5	Coalinga	Sec 29	CLAM	Well Cellar 857	n/a	Sec 29	29	19S	15E	MD	36.24242	-120.36062	058-270-04	Oil & Water	4	4	1	Concrete	Active		Well Cellar		Well Cellar
C-513	5	Coalinga	Sec 29	CLAM	Water Injector 748	n/a	Sec 29	29	19S	15E	MD	36.23929	-120.36475	058-270-04	Produced Water				Earthen	Active	2	Water Injector		Water Injector
C-514	9	Coalinga	Sec 29	CLAM	Water Injector 751	n/a	Sec 29	29	19S	15E	MD	36.23747	-120.36396	058-270-04	Produced Water				Earthen	Active	1	Water Injector		Water Injector
C-515	5	Coalinga	Sec 29	CLAM	Water Injector 818 Manifold	n/a	Sec 29	29	19S	15E	MD	36.2406S	-120.37090	058-270-04	Produced Water				Earthen	Active	6	Water Injector manifold pad	Non-Routine/Emerg.	Drain Pad
C-516	5	Coalinga	Sec 29	CLAM	Water Injector 726A	n/a	Sec 29	29	19S	15E	MD	36.24380	-120.36867	058-270-04	Produced Water				Earthen	Active	2	Water Injector		Water Injector
C-517	5	Coalinga	Sec 29	CLAM	Well Cellar 3-14B	n/a	Sec 29	29	19S	15E	MD	36.24449	-120.37042	058-270-04	Oil & Water	3	3	1	Concrete	Active		Well Cellar		Well Cellar
C-518	5	Coalinga	Sec 29	CLAM	Well Cellar 826B	n/a	Sec 29	29	19S	15E	MD	36.24407	-120.37050	058-270-04	Oil & Water	3	3	1	Concrete	Inactive		Well Cellar		Well Cellar
C-519	5	Coalinga	Sec 29	CLAM	Water Injection 833 Manifold	n/a	Sec 29	29	19S	15E	MD	36.24764	-120.36688	058-270-04	Produced Water				Earthen	Active	6	Water Injector manifold pad	Non-Routine/Emerg.	Drain Pad
C-520	5	Coalinga	Sec 29	CLAM	Water Injector 759A	n/a	Sec 29	29	19S	15E	MD	36.23886	-120.36082	058-270-04	Produced Water				Earthen	Active	2	Water Injector		Water Injector





**CAERA** Coalinga Potential Discharge Location Points 15, T19S, R15E

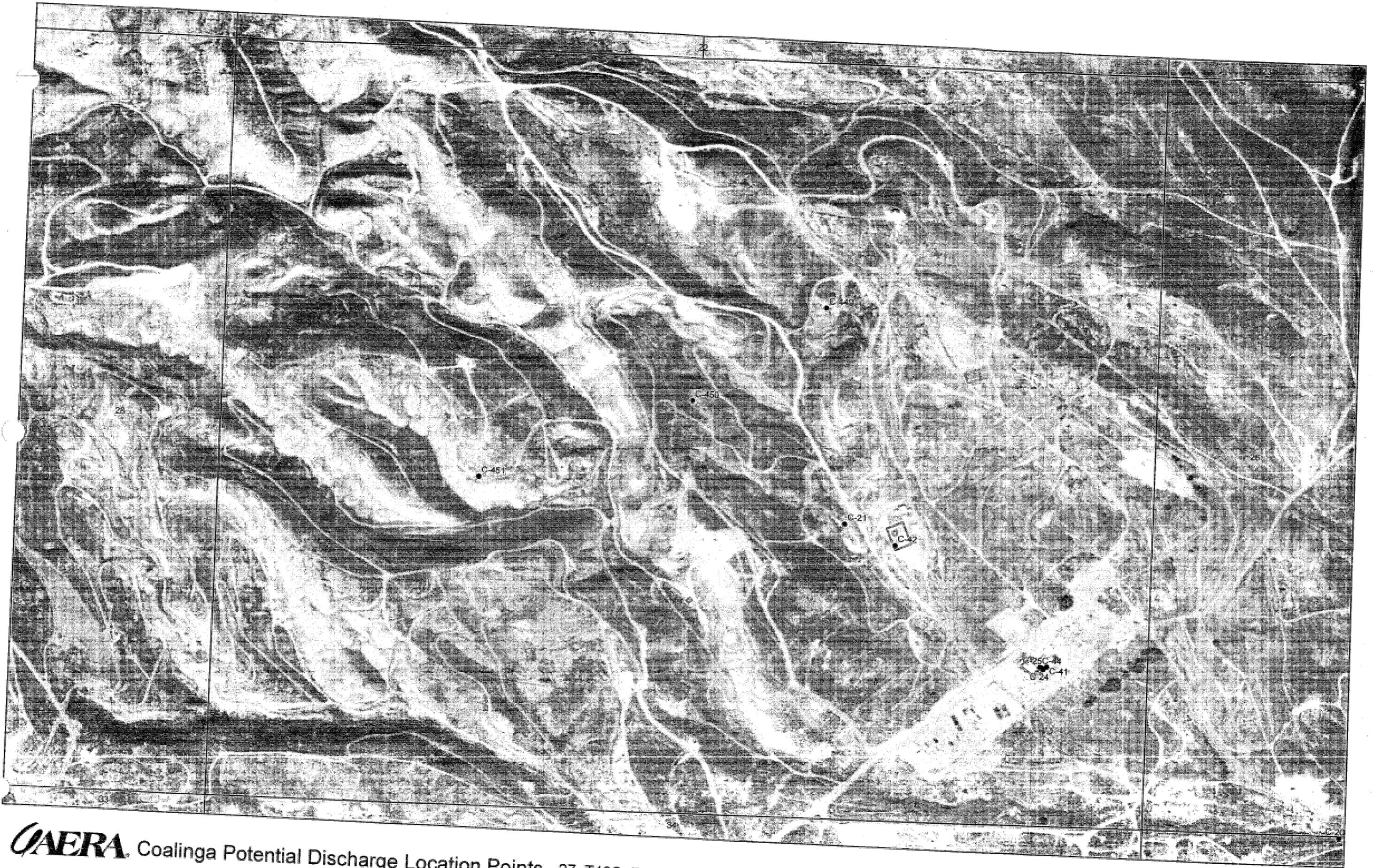




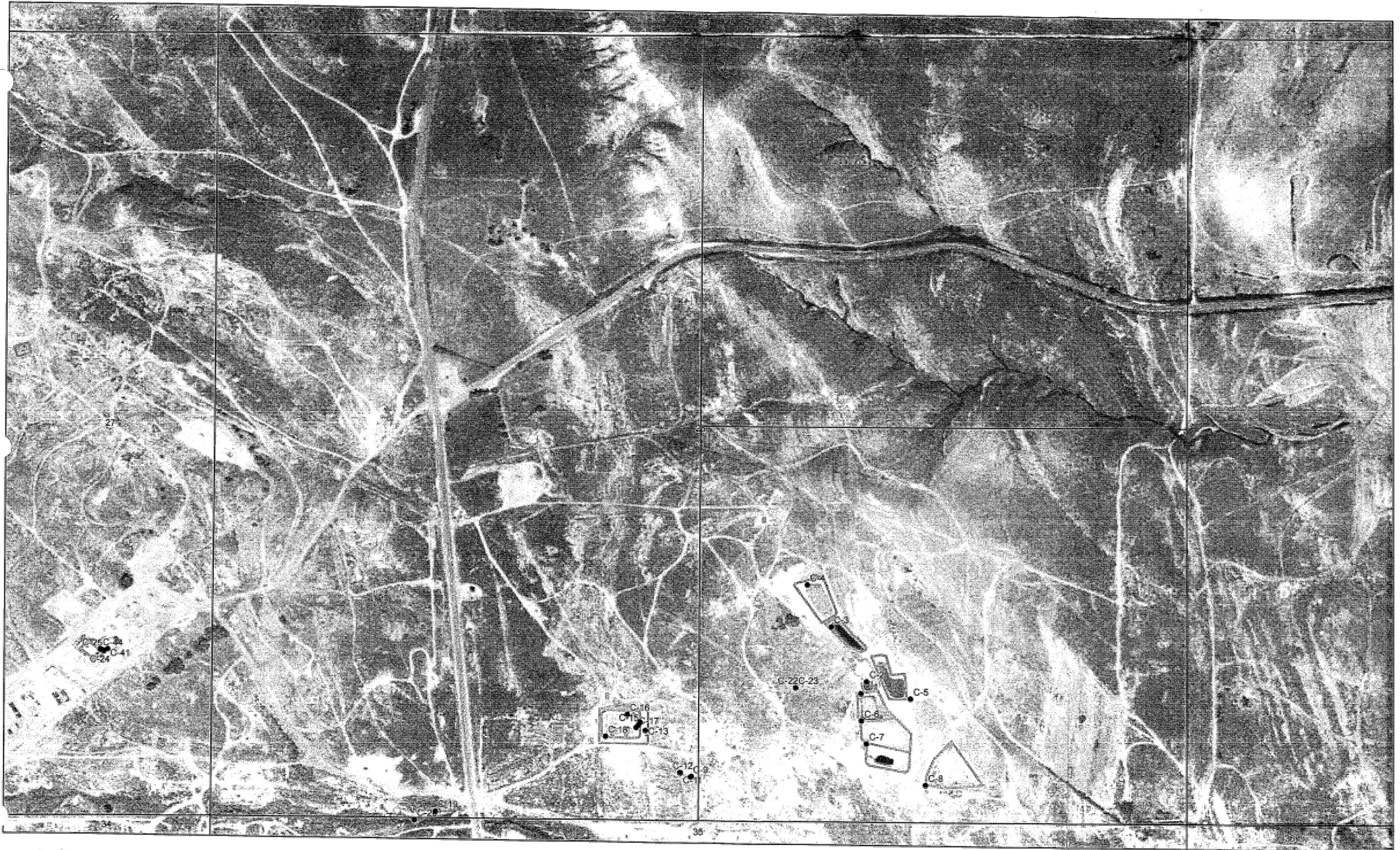
**CAERA** Coalginga Potential Discharge Location Points 30, T19S, R15E



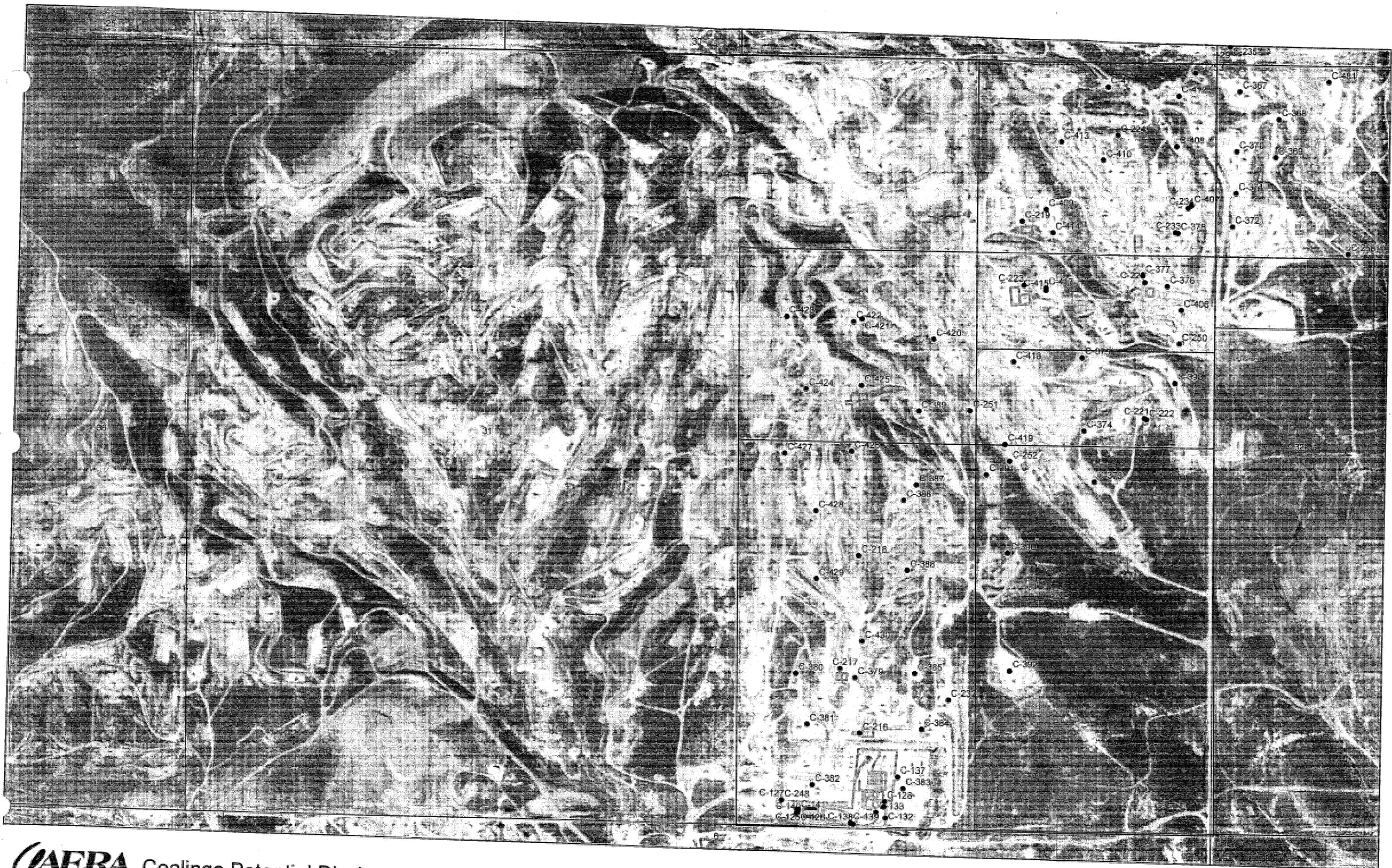
**OABRA** Coalinga Potential Discharge Location Points 29, T19S, R15E



**CAERA** Coalinga Potential Discharge Location Points 27, T19S, R15E

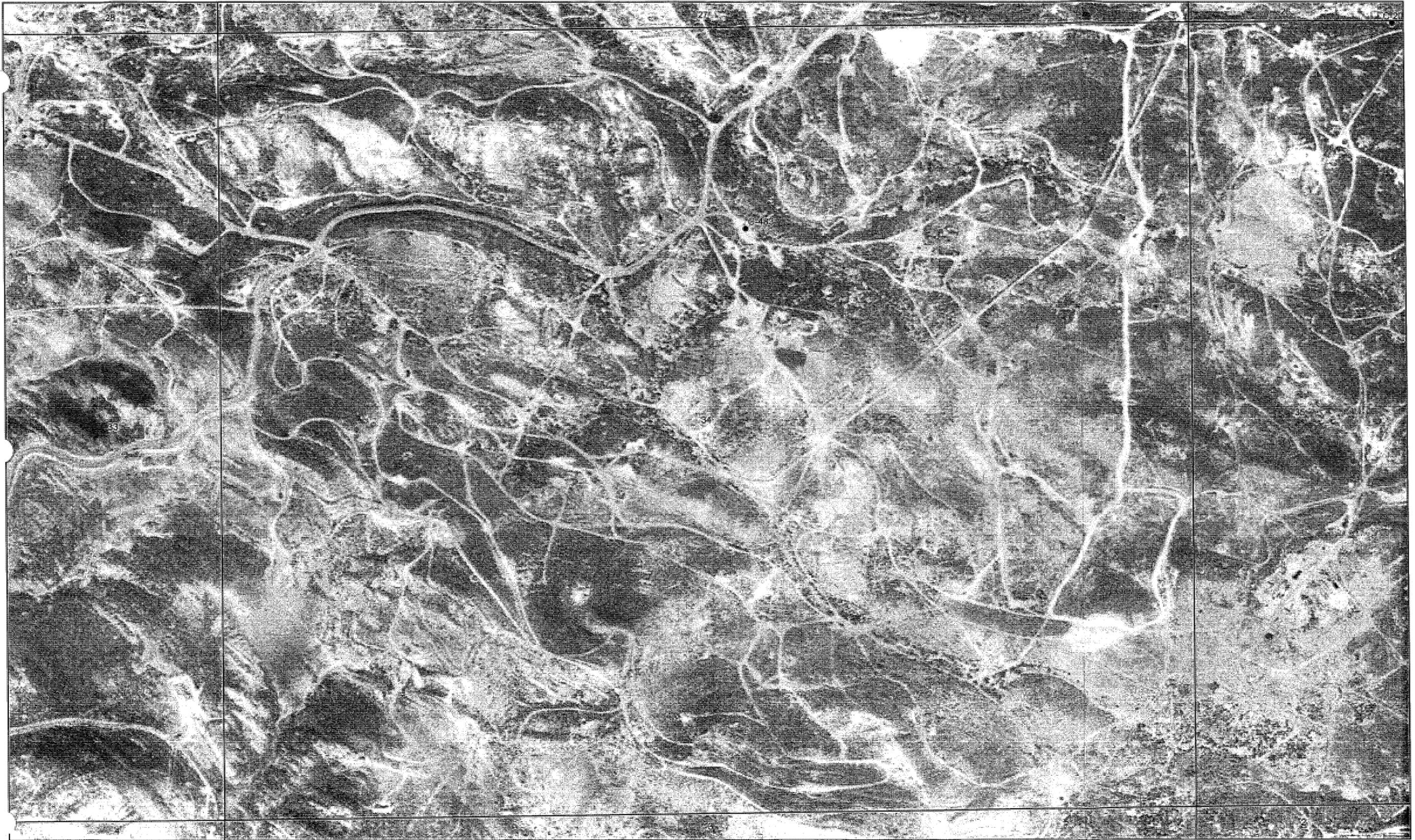


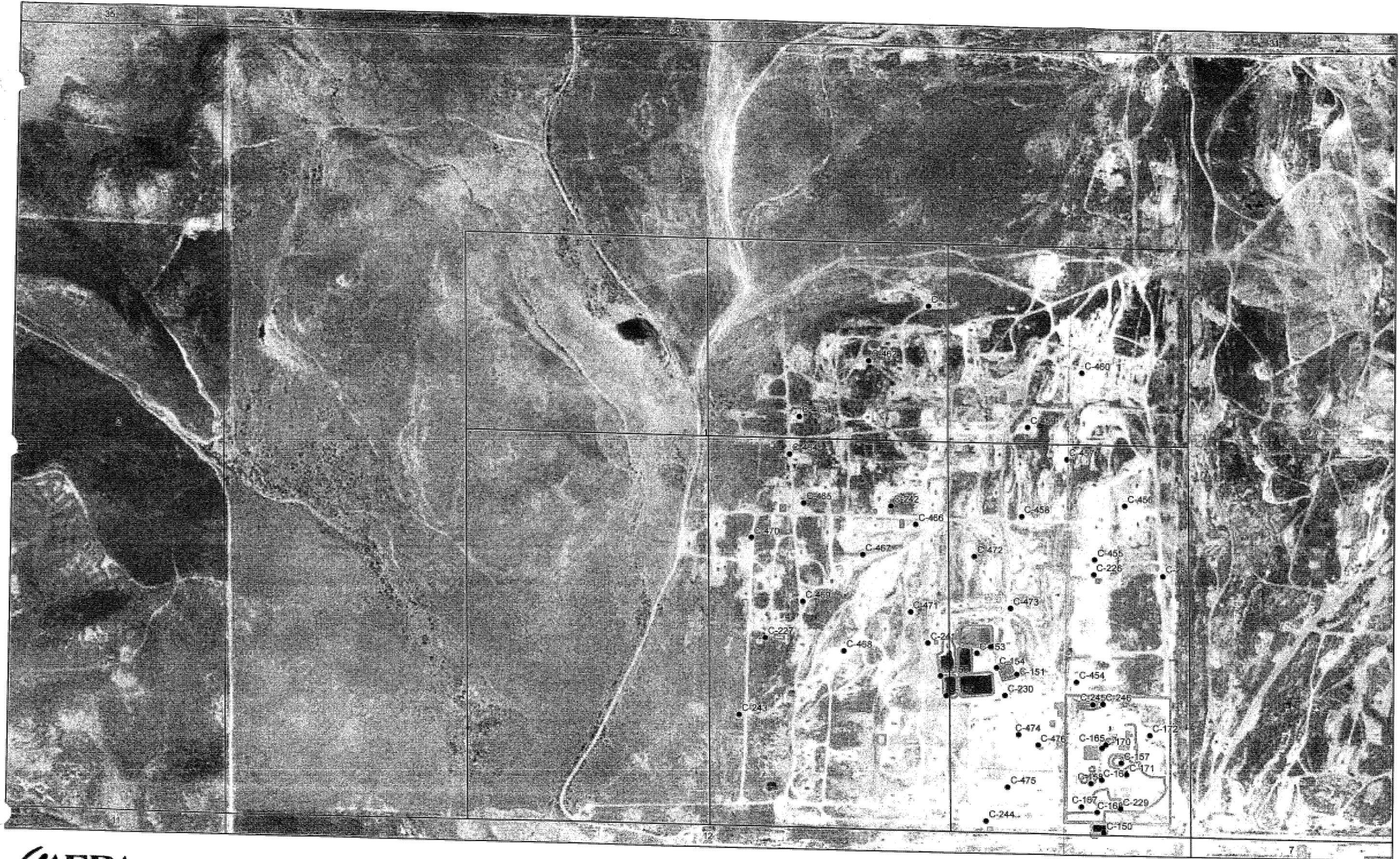
**CAERA** Coalinga Potential Discharge Location Points 26, T19S, R15E



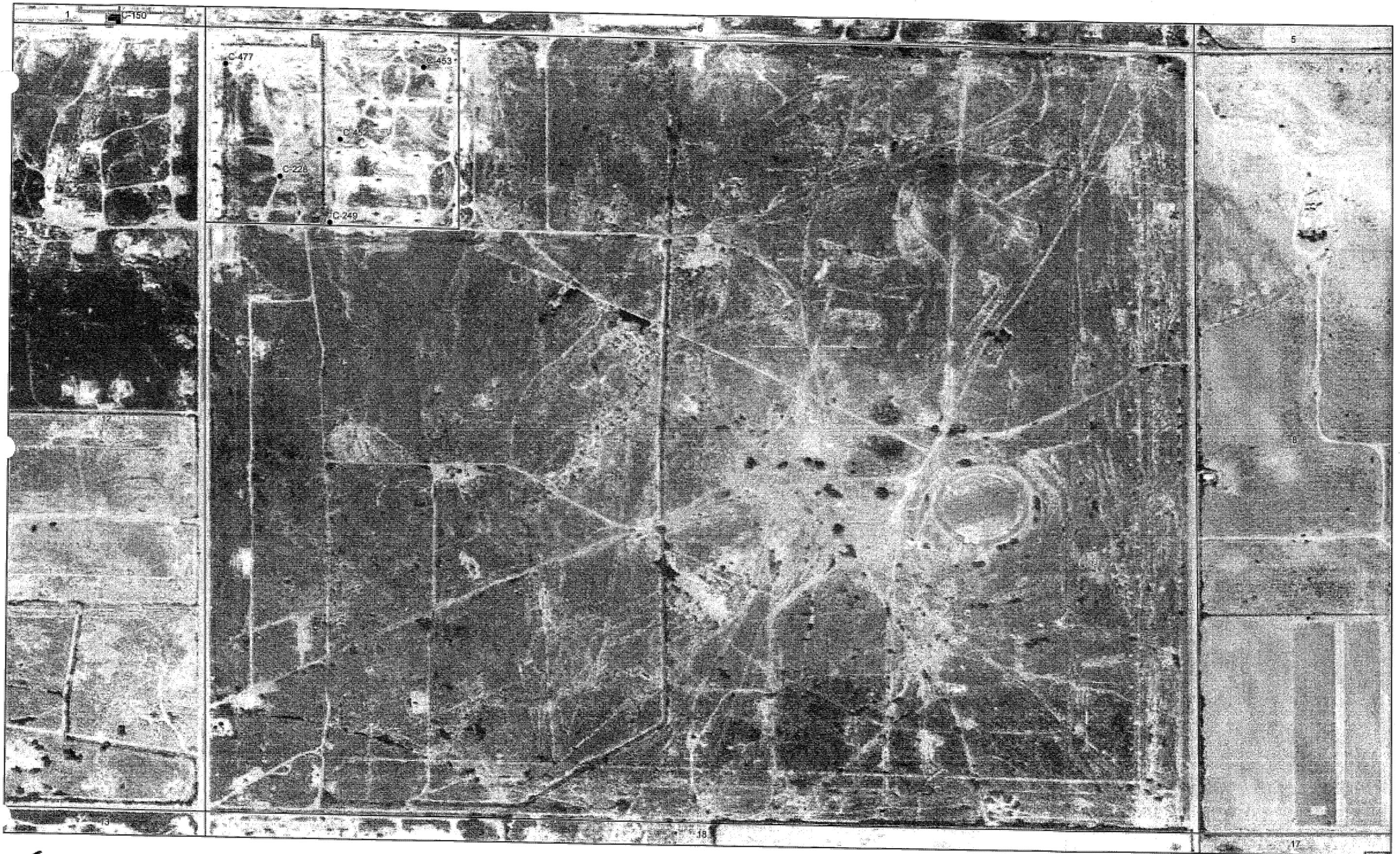
**CAERA** Coalinga Potential Discharge Location Points 31, T19S, R15E

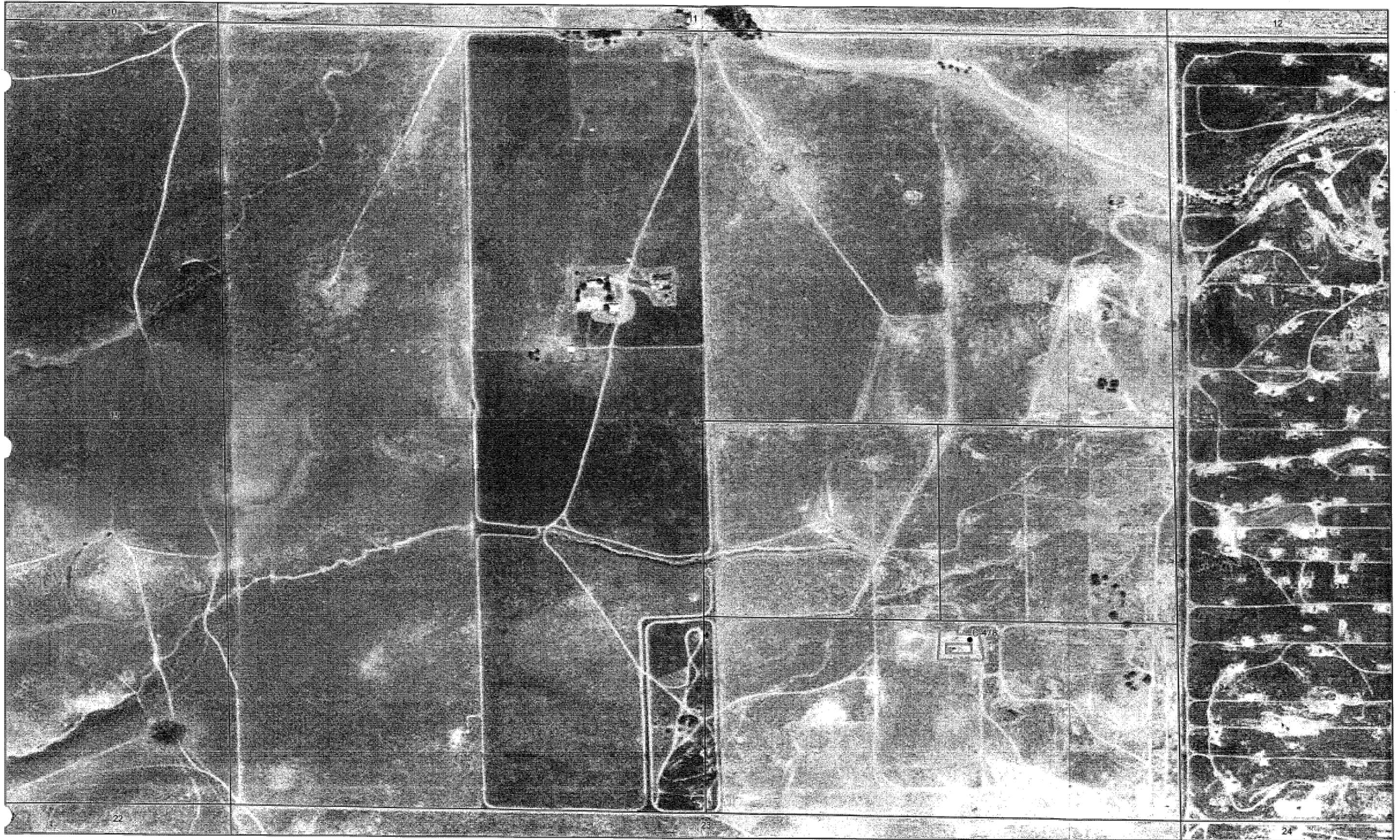






**QAERA** Coalinga Potential Discharge Location Points 1, T20S, R14E







**APPENDIX C**

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Analytical Reports and Chain-of-Custody Documentation

Oilfield Environmental and Compliance, INC.



Tim Parcel  
Aera Energy-Coalinga  
P.O. Box 11184  
Bakersfield, CA 93389-1184

05 June 2015

RE: Pond Testing

Work Order: 1502171

Dear Client:

Enclosed is an analytical report for the above referenced project. The samples included in this report were received on 20-May-15 15:35 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Assurance Manual, applicable standard operating procedures, and other related documentation. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

A handwritten signature in cursive script that reads "Meredith Sprister".

Meredith Sprister

Project Manager

307 Roemer Way, Suite 300, Santa Maria, CA 93454

[www.oecusa.com](http://www.oecusa.com)

TEL: (805) 922-4772

FAX: (805) 925-3376



Oilfield Environmental and Compliance, INC.

Aera Energy-Coalinga  
 P.O. Box 11184  
 Bakersfield CA, 93389-1184

Project: Pond Testing  
 Project Number: Coalinga  
 Project Manager: Tim Parcel

Reported:  
 05-Jun-15 16:57

**26 Pond Inlet C-1**  
**1502171-01 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Wet Chemistry by EPA or APHA Standard Methods**

Total Alkalinity, CaCO3	970	10	mg/L	1	B5E0638	22-May-15	22-May-15	SM 2320B	
Bicarbonate, CaCO3	970	10	"	"	"	"	"	"	
Carbonate, CaCO3	ND	10	"	"	"	"	"	"	
Hydroxide, CaCO3	ND	10	"	"	"	"	"	"	
Total Dissolved Solids	12000	10	"	"	B5E0675	26-May-15	26-May-15	2540C	

**Anions by EPA Method 300.0**

Bromide	ND	20	mg/L	50	B5E0606	21-May-15	22-May-15	EPA 300.0	R-06
Chloride	6100	200	"	500	"	"	22-May-15	"	
Fluoride	ND	20	"	50	"	"	22-May-15	"	R-06
Nitrate as NO3	ND	90	"	"	"	"	"	"	HT-01, R-06
Sulfate	660	20	"	"	"	"	"	"	

**Total Metals by EPA 6000/7000 Series Methods**

Antimony	ND	0.050	mg/L	1	B5E0603	21-May-15	22-May-15	EPA 6010B	
Arsenic	0.028	0.020	"	"	"	"	"	"	
Barium	0.45	0.020	"	"	"	"	"	"	
Beryllium	ND	0.010	"	"	"	"	"	"	
Boron	55	2.5	"	25	"	"	22-May-15	"	
Cadmium	ND	0.0050	"	1	"	"	22-May-15	"	
Calcium	250	0.20	"	"	"	"	"	"	
Chromium	ND	0.010	"	"	"	"	"	"	
Cobalt	ND	0.010	"	"	"	"	"	"	
Copper	ND	0.020	"	"	"	"	"	"	
Iron	ND	0.050	"	"	"	"	"	"	
Lead	0.012	0.010	"	"	"	"	"	"	
Lithium	0.93	0.025	"	"	"	"	"	"	
Magnesium	180	0.050	"	"	"	"	"	"	
Manganese	0.36	0.010	"	"	"	"	"	"	
Mercury	ND	0.00020	"	"	B5E0670	26-May-15	26-May-15	EPA 7470A	
Molybdenum	0.014	0.0050	"	"	B5E0603	21-May-15	22-May-15	EPA 6010B	
Nickel	ND	0.0050	"	"	"	"	"	"	
Potassium	94	1.0	"	"	"	"	"	"	

Oilfield Environmental and Compliance

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

307 Roemer Way, Suite 300, Santa Maria, CA 93454

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TEL: (805) 922-4772  
 FAX: (805) 925-3376



Oilfield Environmental and Compliance, INC.

Aera Energy-Coalinga  
P.O. Box 11184  
Bakersfield CA, 93389-1184

Project: Pond Testing  
Project Number: Coalinga  
Project Manager: Tim Parcel

Reported:  
05-Jun-15 16:57

**26 Pond Inlet C-1  
1502171-01 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring**

**R-05**

Naphthalene	3.1	0.55	ug/L	5	B5E0663	26-May-15	27-May-15	EPA 8270M SIM	
Phenanthrene	4.0	0.55	"	"	"	"	"	"	
Pyrene	ND	0.55	"	"	"	"	"	"	
Surrogate: p-Terphenyl-d14		112 %	39-177		"	"	"	"	

**Miscellaneous Physical/Conventional Chemistry Parameters**

Specific Conductance (EC) @ 25 C	23000	0.01	uS/cm	1	B5E0690	19-May-15	19-May-15	Martini Instruments Mi306	
pH	6.6	0.01	pH Units	"	B5E0651	"	19-May-15	LaMotte pH PockeTester	
Sample Temperature	32	1.0	°C	"	B5E0652	19-May-15	19-May-15	"	

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Oilfield Environmental and Compliance, INC.

Aera Energy-Coalinga  
 P.O. Box 11184  
 Bakersfield CA, 93389-1184

Project: Pond Testing  
 Project Number: Coalinga  
 Project Manager: Tim Parcel

Reported:  
 05-Jun-15 16:57

**26 Dehy Water Sample C-13  
 1502171-02 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Total Metals by EPA 6000/7000 Series Methods**

Thallium	ND	0.020	mg/L	1	B5E0603	21-May-15	22-May-15	EPA 6010B	
Vanadium	ND	0.050	"	"	"	"	"	"	
Zinc	ND	0.050	"	"	"	"	"	"	

**TEPH by GC FID**

TPH Oil Crude (C8-C40)	53	1.1	mg/L	10	B5E0617	26-May-15	28-May-15	EPA 8015M	QB-01
Surrogate: o-Terphenyl		106 %	50-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

**R-05**

Benzene	210	10	ug/L	20	B5E0694	26-May-15	27-May-15	EPA 8260B	
Ethylbenzene	67	10	"	"	"	"	"	"	
Toluene	180	10	"	"	"	"	"	"	
Aromatics (total)	130	10	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		102 %	70-130		"	"	"	"	
Surrogate: Toluene-d8		100 %	70-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.6 %	70-130		"	"	"	"	

**Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring**

**R-05**

Acenaphthene	1.2	0.54	ug/L	5	B5E0663	26-May-15	27-May-15	EPA 8270M SIM	
Acenaphthylene	ND	0.54	"	"	"	"	"	"	
Anthracene	ND	0.54	"	"	"	"	"	"	
Benz(a)anthracene	ND	0.54	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.54	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.54	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.54	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	0.54	"	"	"	"	"	"	
Chrysene	0.54	0.54	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.54	"	"	"	"	"	"	
Fluoranthene	ND	0.54	"	"	"	"	"	"	
Fluorene	10	0.54	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.54	"	"	"	"	"	"	
Naphthalene	13	0.54	"	"	"	"	"	"	
Phenanthrene	10	0.54	"	"	"	"	"	"	
Pyrene	0.60	0.54	"	"	"	"	"	"	
Surrogate: p-Terphenyl-d14		93.8 %	39-177		"	"	"	"	

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Aera Energy-Coalinga  
 P.O. Box 11184  
 Bakersfield CA, 93389-1184

Project: Pond Testing  
 Project Number: Coalinga  
 Project Manager: Tim Parcel

Reported:  
 05-Jun-15 16:57

**27 Water Plant Pump Discharge C-21  
 1502171-03 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Wet Chemistry by EPA or APHA Standard Methods**

Total Alkalinity, CaCO <sub>3</sub>	1600	10	mg/L	1	B5E0638	22-May-15	22-May-15	SM 2320B	
Bicarbonate, CaCO <sub>3</sub>	1600	10	"	"	"	"	"	"	
Carbonate, CaCO <sub>3</sub>	ND	10	"	"	"	"	"	"	
Hydroxide, CaCO <sub>3</sub>	ND	10	"	"	"	"	"	"	
Total Dissolved Solids	4500	10	"	"	B5E0675	26-May-15	26-May-15	2540C	

**Anions by EPA Method 300.0**

Bromide	3.4	0.80	mg/L	2	B5E0606	21-May-15	22-May-15	EPA 300.0	
Chloride	790	20	"	50	"	"	22-May-15	"	
Fluoride	1.4	0.80	"	2	"	"	22-May-15	"	
Nitrate as NO <sub>3</sub>	ND	3.6	"	"	"	"	"	"	HT-01, R-06
Sulfate	540	20	"	50	"	"	22-May-15	"	

**Total Metals by EPA 6000/7000 Series Methods**

Antimony	ND	0.050	mg/L	1	B5E0603	21-May-15	22-May-15	EPA 6010B	
Arsenic	ND	0.020	"	"	"	"	"	"	
Barium	0.13	0.020	"	"	"	"	"	"	
Beryllium	ND	0.010	"	"	"	"	"	"	
Boron	30	0.10	"	"	"	"	"	"	
Cadmium	ND	0.0050	"	"	"	"	"	"	
Calcium	66	0.20	"	"	"	"	"	"	
Chromium	ND	0.010	"	"	"	"	"	"	
Cobalt	ND	0.010	"	"	"	"	"	"	
Copper	ND	0.020	"	"	"	"	"	"	
Iron	0.065	0.050	"	"	"	"	"	"	
Lead	ND	0.010	"	"	"	"	"	"	
Lithium	0.70	0.025	"	"	"	"	"	"	
Magnesium	64	0.050	"	"	"	"	"	"	
Manganese	0.057	0.010	"	"	"	"	"	"	
Mercury	ND	0.00020	"	"	B5E0670	26-May-15	26-May-15	EPA 7470A	
Molybdenum	ND	0.0050	"	"	B5E0603	21-May-15	22-May-15	EPA 6010B	
Nickel	ND	0.0050	"	"	"	"	"	"	
Potassium	26	1.0	"	"	"	"	"	"	
Selenium	ND	0.050	"	"	"	"	"	"	
Silver	ND	0.010	"	"	"	"	"	"	
Sodium	1100	10	"	10	"	"	22-May-15	"	
Strontium	2.8	0.010	"	1	"	"	22-May-15	"	

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Aera Energy-Coalinga  
P.O. Box 11184  
Bakersfield CA, 93389-1184

Project: Pond Testing  
Project Number: Coalinga  
Project Manager: Tim Parcel

Reported:  
05-Jun-15 16:57

**27 Water Plant Pump Discharge C-21  
1502171-03 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Miscellaneous Physical/Conventional Chemistry Parameters**

Specific Conductance (EC) @ 25 C	6500	0.01	uS/cm	1	B5E0690	19-May-15	19-May-15	Martini Instruments Mi306	
pH	6.3	0.01	pH Units	"	B5E0651	"	19-May-15	LaMotte pH PockeTester	
Sample Temperature	28	1.0	°C	"	B5E0652	19-May-15	19-May-15	"	

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Bakersfield CA, 93389-1184

Project: Pond Testing  
Project Number: Coalinga  
Project Manager: Tim Parcel

Reported:  
05-Jun-15 16:57

**32 Little Hoover C-26  
1502171-04 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Total Metals by EPA 6000/7000 Series Methods**

Thallium	ND	0.020	mg/L	1	B5E0603	21-May-15	22-May-15	EPA 6010B	
Vanadium	ND	0.050	"	"	"	"	"	"	
Zinc	ND	0.050	"	"	"	"	"	"	

**TEPH by GC FID**

<b>TPH Oil Crude (C8-C40)</b>	<b>8.7</b>	<b>0.11</b>	<b>mg/L</b>	<b>1</b>	<b>B5E0617</b>	<b>26-May-15</b>	<b>27-May-15</b>	<b>EPA 8015M</b>	<b>QB-01</b>
<i>Surrogate: o-Terphenyl</i>		98.5 %	50-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Benzene	ND	0.50	ug/L	1	B5E0694	26-May-15	26-May-15	EPA 8260B	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
<i>aromatics (total)</i>	ND	0.50	"	"	"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>		99.0 %	70-130		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		97.5 %	70-130		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		92.6 %	70-130		"	"	"	"	

**Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring**

Acenaphthene	ND	0.11	ug/L	1	B5E0663	26-May-15	27-May-15	EPA 8270M SIM	
Acenaphthylene	ND	0.11	"	"	"	"	"	"	
Anthracene	ND	0.11	"	"	"	"	"	"	
Benz(a)anthracene	ND	0.11	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.11	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.11	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.11	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	0.11	"	"	"	"	"	"	
Chrysene	ND	0.11	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.11	"	"	"	"	"	"	
Fluoranthene	ND	0.11	"	"	"	"	"	"	
Fluorene	ND	0.11	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.11	"	"	"	"	"	"	
Naphthalene	ND	0.11	"	"	"	"	"	"	
Phenanthrene	ND	0.11	"	"	"	"	"	"	
Pyrene	ND	0.11	"	"	"	"	"	"	

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Aera Energy-Coalinga  
 P.O. Box 11184  
 Bakersfield CA, 93389-1184

Project: Pond Testing  
 Project Number: Coalinga  
 Project Manager: Tim Parcel

Reported:  
 05-Jun-15 16:57

**32 Water Plant Pit 700 C-31  
 1502171-05 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Wet Chemistry by EPA or APHA Standard Methods**

Total Alkalinity, CaCO3	1000	10	mg/L	1	B5E0638	22-May-15	22-May-15	SM 2320B	
Bicarbonate, CaCO3	1000	10	"	"	"	"	"	"	
Carbonate, CaCO3	ND	10	"	"	"	"	"	"	
Hydroxide, CaCO3	ND	10	"	"	"	"	"	"	
Total Dissolved Solids	5600	10	"	"	B5E0675	26-May-15	26-May-15	2540C	

**Anions by EPA Method 300.0**

Bromide	4.2	2.0	mg/L	5	B5E0606	21-May-15	22-May-15	EPA 300.0	
Chloride	2000	40	"	100	"	"	03-Jun-15	"	
Fluoride	ND	2.0	"	5	"	"	22-May-15	"	R-06
Nitrate as NO3	ND	9.0	"	"	"	"	"	"	HT-01, R-06
Sulfate	630	20	"	50	"	"	22-May-15	"	

**Total Metals by EPA 6000/7000 Series Methods**

Antimony	ND	0.050	mg/L	1	B5E0603	21-May-15	22-May-15	EPA 6010B	
Arsenic	ND	0.020	"	"	"	"	"	"	
Barium	0.028	0.020	"	"	"	"	"	"	
Beryllium	ND	0.010	"	"	"	"	"	"	
Boron	62	1.0	"	10	"	"	22-May-15	"	
Cadmium	ND	0.0050	"	1	"	"	22-May-15	"	
Calcium	18	0.20	"	"	"	"	"	"	
Chromium	ND	0.010	"	"	"	"	"	"	
Cobalt	ND	0.010	"	"	"	"	"	"	
Copper	ND	0.020	"	"	"	"	"	"	
Iron	0.082	0.050	"	"	"	"	"	"	
Lead	0.021	0.010	"	"	"	"	"	"	
Lithium	0.38	0.025	"	"	"	"	"	"	
Magnesium	19	0.050	"	"	"	"	"	"	
Manganese	0.056	0.010	"	"	"	"	"	"	
Mercury	ND	0.00020	"	"	B5E0670	26-May-15	26-May-15	EPA 7470A	
Molybdenum	ND	0.0050	"	"	B5E0603	21-May-15	22-May-15	EPA 6010B	
Nickel	ND	0.0050	"	"	"	"	"	"	
Potassium	32	1.0	"	"	"	"	"	"	
Selenium	ND	0.050	"	"	"	"	"	"	
Silver	ND	0.010	"	"	"	"	"	"	
Sodium	2200	10	"	10	"	"	22-May-15	"	
Strontium	0.56	0.010	"	1	"	"	22-May-15	"	

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Oilfield Environmental and Compliance, INC.

Aera Energy-Coalinga  
P.O. Box 11184  
Bakersfield CA, 93389-1184

Project: Pond Testing  
Project Number: Coalinga  
Project Manager: Tim Parcel

Reported:  
05-Jun-15 16:57

**32 Water Plant Pit 700 C-31  
1502171-05 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Miscellaneous Physical/Conventional Chemistry Parameters**

Specific Conductance (EC) @ 25 C	9500	0.01	uS/cm	1	B5E0690	19-May-15	19-May-15	Martini Instruments Mi306	
pH	6.8	0.01	pH Units	"	B5E0651	"	19-May-15	LaMotte pH PockeTester	
Sample Temperature	51	1.0	°C	"	B5E0652	19-May-15	19-May-15	"	

Oilfield Environmental and Compliance

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Aera Energy-Coalinga  
 P.O. Box 11184  
 Bakersfield CA, 93389-1184

Project: Pond Testing  
 Project Number: Coalinga  
 Project Manager: Tim Parcel

Reported:  
 05-Jun-15 16:57

**32 Water Plant T-810 C-32**  
**1502171-06 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Total Metals by EPA 6000/7000 Series Methods**

Thallium	ND	0.020	mg/L	1	B5E0603	21-May-15	22-May-15	EPA 6010B	
Vanadium	ND	0.050	"	"	"	"	"	"	
Zinc	ND	0.050	"	"	"	"	"	"	

**TEPH by GC FID**

<b>TPH Oil Crude (C8-C40)</b>	<b>28</b>	<b>1.1</b>	<b>mg/L</b>	<b>10</b>	<b>B5E0617</b>	<b>26-May-15</b>	<b>28-May-15</b>	<b>EPA 8015M</b>	<b>QB-01</b>
Surrogate: o-Terphenyl		103 %	50-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

**R-05**

Benzene	ND	50	ug/L	100	B5E0694	26-May-15	27-May-15	EPA 8260B	
Ethylbenzene	ND	50	"	"	"	"	"	"	
Toluene	ND	50	"	"	"	"	"	"	
Aromatics (total)	ND	50	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		99.4 %	70-130		"	"	"	"	
Surrogate: Toluene-d8		96.6 %	70-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.5 %	70-130		"	"	"	"	

**Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring**

<b>Acenaphthene</b>	<b>1.4</b>	<b>0.11</b>	<b>ug/L</b>	<b>1</b>	<b>B5E0663</b>	<b>26-May-15</b>	<b>27-May-15</b>	<b>EPA 8270M</b>	
								<b>SIM</b>	
<b>Acenaphthylene</b>	<b>0.57</b>	<b>0.11</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
Anthracene	ND	0.11	"	"	"	"	"	"	
Benz(a)anthracene	ND	0.11	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.11	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.11	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.11	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	0.11	"	"	"	"	"	"	
Chrysene	ND	0.11	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.11	"	"	"	"	"	"	
<b>Fluoranthene</b>	<b>0.14</b>	<b>0.11</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
<b>Fluorene</b>	<b>13</b>	<b>1.1</b>	<b>"</b>	<b>10</b>	<b>"</b>	<b>"</b>	<b>27-May-15</b>	<b>"</b>	
Indeno (1,2,3-cd) pyrene	ND	0.11	"	1	"	"	27-May-15	"	
<b>Naphthalene</b>	<b>7.6</b>	<b>1.1</b>	<b>"</b>	<b>10</b>	<b>"</b>	<b>"</b>	<b>27-May-15</b>	<b>"</b>	
<b>Phenanthrene</b>	<b>12</b>	<b>1.1</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
<b>Pyrene</b>	<b>0.24</b>	<b>0.11</b>	<b>"</b>	<b>1</b>	<b>"</b>	<b>"</b>	<b>27-May-15</b>	<b>"</b>	
Surrogate: p-Terphenyl-d14		124 %	39-177		"	"	"	"	

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Oilfield Environmental and Compliance, INC.

Aera Energy-Coalinga  
 P.O. Box 11184  
 Bakersfield CA, 93389-1184

Project: Pond Testing  
 Project Number: Coalinga  
 Project Manager: Tim Parcel

Reported:  
 05-Jun-15 16:57

**32 Dehy T-320 Lower Level Inlet C-47  
 1502171-07 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Wet Chemistry by EPA or APHA Standard Methods**

Total Alkalinity, CaCO <sub>3</sub>	1000	10	mg/L	1	B5E0638	22-May-15	22-May-15	SM 2320B	
Bicarbonate, CaCO <sub>3</sub>	1000	10	"	"	"	"	"	"	
Carbonate, CaCO <sub>3</sub>	ND	10	"	"	"	"	"	"	
Hydroxide, CaCO <sub>3</sub>	ND	10	"	"	"	"	"	"	
Total Dissolved Solids	3900	10	"	"	B5E0675	26-May-15	26-May-15	2540C	

**Anions by EPA Method 300.0**

Bromide	4.4	2.0	mg/L	5	B5E0606	21-May-15	22-May-15	EPA 300.0	
Chloride	940	20	"	50	"	"	22-May-15	"	
Fluoride	ND	2.0	"	5	"	"	22-May-15	"	R-06
Nitrate as NO <sub>3</sub>	ND	9.0	"	"	"	"	"	"	HT-01, R-06
Sulfate	630	20	"	50	"	"	22-May-15	"	

**Total Metals by EPA 6000/7000 Series Methods**

Antimony	ND	0.050	mg/L	1	B5E0603	21-May-15	22-May-15	EPA 6010B	
Arsenic	ND	0.020	"	"	"	"	"	"	
Barium	0.091	0.020	"	"	"	"	"	"	
Beryllium	ND	0.010	"	"	"	"	"	"	
Boron	61	1.0	"	10	"	"	22-May-15	"	
Cadmium	ND	0.0050	"	1	"	"	22-May-15	"	
Calcium	55	0.20	"	"	"	"	"	"	
Chromium	ND	0.010	"	"	"	"	"	"	
Cobalt	ND	0.010	"	"	"	"	"	"	
Copper	ND	0.020	"	"	"	"	"	"	
Iron	ND	0.050	"	"	"	"	"	"	
Lead	0.015	0.010	"	"	"	"	"	"	
Lithium	0.58	0.025	"	"	"	"	"	"	
Magnesium	47	0.050	"	"	"	"	"	"	
Manganese	0.057	0.010	"	"	"	"	"	"	
Mercury	ND	0.00020	"	"	B5E0670	26-May-15	26-May-15	EPA 7470A	
Molybdenum	ND	0.0050	"	"	B5E0603	21-May-15	22-May-15	EPA 6010B	
Nickel	ND	0.0050	"	"	"	"	"	"	
Potassium	39	1.0	"	"	"	"	"	"	
Selenium	ND	0.050	"	"	"	"	"	"	
Silver	ND	0.010	"	"	"	"	"	"	
Sodium	1400	10	"	10	"	"	22-May-15	"	
Strontium	1.9	0.010	"	1	"	"	22-May-15	"	

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Aera Energy-Coalinga  
P.O. Box 11184  
Bakersfield CA, 93389-1184

Project: Pond Testing  
Project Number: Coalinga  
Project Manager: Tim Parcel

Reported:  
05-Jun-15 16:57

**32 Dehy T-320 Lower Level Inlet C-47  
1502171-07 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Miscellaneous Physical/Conventional Chemistry Parameters**

Specific Conductance (EC) @ 25 C	6000	0.01	uS/cm	1	B5E0690	19-May-15	19-May-15	Martini Instruments Mi306	
pH	6.4	0.01	pH Units	"	B5E0651	"	19-May-15	LaMotte pH PockeTester	
Sample Temperature	57	1.0	°C	"	B5E0652	19-May-15	19-May-15	"	

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 P.O. Box 11184  
 Bakersfield CA, 93389-1184

Project: Pond Testing  
 Project Number: Coalinga  
 Project Manager: Tim Parcel

Reported:  
 05-Jun-15 16:57

**32 Dehy T-323/T-324 Discharge C-58  
 1502171-08 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Total Metals by EPA 6000/7000 Series Methods**

Thallium	ND	0.020	mg/L	1	B5E0603	21-May-15	22-May-15	EPA 6010B	
Vanadium	ND	0.050	"	"	"	"	"	"	
Zinc	ND	0.050	"	"	"	"	"	"	

**TEPH by GC FID**

<b>TPH Oil Crude (C8-C40)</b>	<b>83</b>	<b>2.2</b>	<b>mg/L</b>	<b>20</b>	<b>B5E0617</b>	<b>26-May-15</b>	<b>28-May-15</b>	<b>EPA 8015M</b>	<b>QB-01</b>
Surrogate: <i>o</i> -Terphenyl		114 %	50-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

**R-05**

<b>Benzene</b>	<b>29</b>	<b>10</b>	<b>ug/L</b>	<b>20</b>	<b>B5E0767</b>	<b>28-May-15</b>	<b>30-May-15</b>	<b>EPA 8260B</b>	
<b>Ethylbenzene</b>	<b>17</b>	<b>10</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
<b>Toluene</b>	<b>22</b>	<b>10</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
<b>xylenes (total)</b>	<b>34</b>	<b>10</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
Surrogate: <i>Dibromofluoromethane</i>		100 %	70-130		"	"	"	"	
Surrogate: <i>Toluene-d8</i>		98.4 %	70-130		"	"	"	"	
Surrogate: <i>4-Bromofluorobenzene</i>		95.4 %	70-130		"	"	"	"	

**Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring**

**R-05**

<b>Acenaphthene</b>	<b>1.1</b>	<b>0.54</b>	<b>ug/L</b>	<b>5</b>	<b>B5E0663</b>	<b>26-May-15</b>	<b>27-May-15</b>	<b>EPA 8270M SIM</b>	
Acenaphthylene	ND	0.54	"	"	"	"	"	"	
Anthracene	ND	0.54	"	"	"	"	"	"	
Benz(a)anthracene	ND	0.54	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.54	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.54	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.54	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	0.54	"	"	"	"	"	"	
<b>Chrysene</b>	<b>0.81</b>	<b>0.54</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
Dibenz (a,h) anthracene	ND	0.54	"	"	"	"	"	"	
<b>Fluoranthene</b>	<b>0.54</b>	<b>0.54</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
<b>Fluorene</b>	<b>8.8</b>	<b>0.54</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
Indeno (1,2,3-cd) pyrene	ND	0.54	"	"	"	"	"	"	
<b>Naphthalene</b>	<b>6.5</b>	<b>0.54</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
<b>Phenanthrene</b>	<b>11</b>	<b>0.54</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
<b>Pyrene</b>	<b>0.86</b>	<b>0.54</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
Surrogate: <i>p</i> -Terphenyl-d14		112 %	39-177		"	"	"	"	

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Aera Energy-Coalinga P.O. Box 11184 Bakersfield CA, 93389-1184	Project: Pond Testing Project Number: Coalinga Project Manager: Tim Parcel	Reported: 05-Jun-15 16:57
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**32 Dehy T-317 Drain C-59  
1502171-09 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Wet Chemistry by EPA or APHA Standard Methods**

Total Alkalinity, CaCO <sub>3</sub>	630	10	mg/L	1	B5E0638	22-May-15	22-May-15	SM 2320B	
Bicarbonate, CaCO <sub>3</sub>	630	10	"	"	"	"	"	"	
Carbonate, CaCO <sub>3</sub>	ND	10	"	"	"	"	"	"	
Hydroxide, CaCO <sub>3</sub>	ND	10	"	"	"	"	"	"	
Total Dissolved Solids	1800	10	"	"	B5E0675	26-May-15	26-May-15	2540C	

**Anions by EPA Method 300.0**

Bromide	1.6	0.40	mg/L	1	B5E0606	21-May-15	22-May-15	EPA 300.0	
Chloride	360	20	"	50	"	"	22-May-15	"	
Fluoride	2.2	0.40	"	1	"	"	22-May-15	"	
Nitrate as NO <sub>3</sub>	ND	1.8	"	"	"	"	"	"	HT-01
Sulfate	140	20	"	50	"	"	22-May-15	"	

**Total Metals by EPA 6000/7000 Series Methods**

Antimony	ND	0.050	mg/L	1	B5E0603	21-May-15	22-May-15	EPA 6010B	
Arsenic	ND	0.020	"	"	"	"	"	"	
Barium	0.098	0.020	"	"	"	"	"	"	
Beryllium	ND	0.010	"	"	"	"	"	"	
Boron	21	0.10	"	"	"	"	"	"	
Cadmium	ND	0.0050	"	"	"	"	"	"	
Calcium	38	0.20	"	"	"	"	"	"	
Chromium	ND	0.010	"	"	"	"	"	"	
Cobalt	ND	0.010	"	"	"	"	"	"	
Copper	ND	0.020	"	"	"	"	"	"	
Iron	ND	0.050	"	"	"	"	"	"	
Lead	ND	0.010	"	"	"	"	"	"	
Lithium	0.21	0.025	"	"	"	"	"	"	
Magnesium	40	0.050	"	"	"	"	"	"	
Manganese	0.016	0.010	"	"	"	"	"	"	
Mercury	ND	0.00020	"	"	B5E0670	26-May-15	26-May-15	EPA 7470A	
Molybdenum	ND	0.0050	"	"	B5E0603	21-May-15	22-May-15	EPA 6010B	
Nickel	ND	0.0050	"	"	"	"	"	"	
Potassium	21	1.0	"	"	"	"	"	"	
Selenium	ND	0.050	"	"	"	"	"	"	
Silver	ND	0.010	"	"	"	"	"	"	
Sodium	440	5.0	"	5	"	"	22-May-15	"	
Strontium	1.6	0.010	"	1	"	"	22-May-15	"	

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Bakersfield CA, 93389-1184

Project: Pond Testing  
Project Number: Coalinga  
Project Manager: Tim Parcel

Reported:  
05-Jun-15 16:57

**32 Dehy T-317 Drain C-59  
1502171-09 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring**

**R-05**

Surrogate: <i>p</i> -Terphenyl-d14	106 %	39-177	B5E0663	26-May-15	27-May-15	EPA 8270M SIM
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**Miscellaneous Physical/Conventional Chemistry Parameters**

Specific Conductance (EC) @ 25 C	2800	0.01	uS/cm	1	B5E0690	19-May-15	19-May-15	Martini Instruments Mi306
pH	6.3	0.01	pH Units	"	B5E0651	"	19-May-15	LaMotte pH PockeTester
Sample Temperature	39	1.0	°C	"	B5E0652	19-May-15	19-May-15	"

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Project: Pond Testing  
Project Number: Coalinga  
Project Manager: Tim Parcel

Reported:  
05-Jun-15 16:57

**32 Dehy T-318 Drain  
1502171-10 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Total Metals by EPA 6000/7000 Series Methods**

Thallium	ND	0.020	mg/L	1	B5E0603	21-May-15	22-May-15	EPA 6010B	
Vanadium	ND	0.050	"	"	"	"	"	"	
Zinc	ND	0.050	"	"	"	"	"	"	

**TEPH by GC FID**

<b>TPH Oil Crude (C8-C40)</b>	<b>28</b>	<b>1.1</b>	<b>mg/L</b>	<b>10</b>	<b>B5E0617</b>	<b>26-May-15</b>	<b>28-May-15</b>	<b>EPA 8015M</b>	<b>QB-01</b>
<i>Surrogate: o-Terphenyl</i>		<i>120 %</i>	<i>50-150</i>		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

**R-05**

Benzene	ND	100	ug/L	200	B5E0767	28-May-15	30-May-15	EPA 8260B	
Ethylbenzene	ND	100	"	"	"	"	"	"	
Toluene	ND	100	"	"	"	"	"	"	
Xylenes (total)	ND	100	"	"	"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>		<i>111 %</i>	<i>70-130</i>		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		<i>97.8 %</i>	<i>70-130</i>		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		<i>98.2 %</i>	<i>70-130</i>		"	"	"	"	

**Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring**

<b>Acenaphthene</b>	<b>0.41</b>	<b>0.11</b>	<b>ug/L</b>	<b>1</b>	<b>B5E0663</b>	<b>26-May-15</b>	<b>27-May-15</b>	<b>EPA 8270M SIM</b>	
<b>Acenaphthylene</b>	<b>1.1</b>	<b>0.11</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
Anthracene	ND	0.11	"	"	"	"	"	"	
Benz(a)anthracene	ND	0.11	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.11	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.11	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.11	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	0.11	"	"	"	"	"	"	
Chrysene	ND	0.11	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.11	"	"	"	"	"	"	
Fluoranthene	ND	0.11	"	"	"	"	"	"	
<b>Fluorene</b>	<b>2.7</b>	<b>0.11</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
Indeno (1,2,3-cd) pyrene	ND	0.11	"	"	"	"	"	"	
<b>Naphthalene</b>	<b>1.8</b>	<b>0.11</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
<b>Phenanthrene</b>	<b>2.8</b>	<b>0.11</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
Pyrene	ND	0.11	"	"	"	"	"	"	
<i>Surrogate: p-Terphenyl-d14</i>		<i>141 %</i>	<i>39-177</i>		"	"	"	"	

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 P.O. Box 11184  
 Bakersfield CA, 93389-1184

Project: Pond Testing  
 Project Number: Coalinga  
 Project Manager: Tim Parcel

Reported:  
 05-Jun-15 16:57

**Wet Chemistry by EPA or APHA Standard Methods - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B5E0638 - Wetchem default method**

<b>Blank (B5E0638-BLK1)</b>										
										Prepared & Analyzed: 22-May-15
Total Alkalinity, CaCO3	ND	10	mg/L							
Bicarbonate, CaCO3	ND	10	"							
Carbonate, CaCO3	ND	10	"							
Hydroxide, CaCO3	ND	10	"							

<b>LCS (B5E0638-BS1)</b>										
										Prepared & Analyzed: 22-May-15
Total Alkalinity, CaCO3	2170	10	mg/L	2500		86.9	80-120			
Bicarbonate, CaCO3	ND	10	"	0.00			80-120			
Carbonate, CaCO3	2090	10	"	2500		83.8	80-120			
Hydroxide, CaCO3	ND	10	"	0.00			80-120			

<b>Duplicate (B5E0638-DUP1)</b>										
										Source: 1502195-01
										Prepared & Analyzed: 22-May-15
Total Alkalinity, CaCO3	618	10	mg/L		621			0.484	20	
Bicarbonate, CaCO3	618	10	"		621			0.484	20	
Carbonate, CaCO3	ND	10	"		ND				20	
Hydroxide, CaCO3	ND	10	"		ND				20	

**Batch B5E0675 - 2540 C TDS Prep**

<b>Blank (B5E0675-BLK1)</b>										
										Prepared & Analyzed: 26-May-15
Total Dissolved Solids	ND	10	mg/L							

<b>LCS (B5E0675-BS1)</b>										
										Prepared & Analyzed: 26-May-15
Total Dissolved Solids	1200	10	mg/L	1000		121	75-125			

<b>LCS Dup (B5E0675-BSD1)</b>										
										Prepared & Analyzed: 26-May-15
Total Dissolved Solids	1200	10	mg/L	1000		125	75-125	3.09	10	

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**Anions by EPA Method 300.0 - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit	Notes
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**Batch B5E0606 - EPA 300.0/300.1 Anions Prep**

**Blank (B5E0606-BLK1)** Prepared: 21-May-15 Analyzed: 22-May-15

Bromide	ND	0.40	mg/L							
Nitrate as NO3	ND	1.8	"							
Chloride	ND	0.40	"							
Fluoride	ND	0.40	"							
Sulfate	ND	0.40	"							

**LCS (B5E0606-BS1)** Prepared: 21-May-15 Analyzed: 22-May-15

Bromide	5.00	0.40	mg/L	5.00	100	90-110				
Nitrate as NO3	21.1	1.8	"	22.2	95.2	90-110				
Chloride	4.77	0.40	"	5.00	95.4	90-110				
Fluoride	4.84	0.40	"	5.00	96.9	90-110				
Sulfate	5.16	0.40	"	5.00	103	90-110				

**LCS Dup (B5E0606-BSD1)** Prepared: 21-May-15 Analyzed: 22-May-15

Bromide	4.85	0.40	mg/L	5.00	96.9	90-110	3.15	20		
Nitrate as NO3	20.7	1.8	"	22.2	93.4	90-110	1.93	20		
Chloride	4.71	0.40	"	5.00	94.2	90-110	1.33	20		
Fluoride	4.76	0.40	"	5.00	95.3	90-110	1.64	20		
Sulfate	5.02	0.40	"	5.00	100	90-110	2.57	20		

**Duplicate (B5E0606-DUP1)** Source: 1502171-01 Prepared: 21-May-15 Analyzed: 22-May-15

Nitrate as NO3	ND	90	mg/L	ND				20		
Bromide	5.35	20	"	6.05			12.3	20		
Fluoride	ND	20	"	ND				20		
Sulfate	636	20	"	657			3.25	20		

**Duplicate (B5E0606-DUP2)** Source: 1502171-01RE1 Prepared: 21-May-15 Analyzed: 22-May-15

Chloride	6180	200	mg/L	6110			1.16	20		
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Oilfield Environmental and Compliance

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FAX: (805) 925-3376



Oilfield Environmental and Compliance, INC.

Aera Energy-Coalinga P.O. Box 11184 Bakersfield CA, 93389-1184	Project: Pond Testing Project Number: Coalinga Project Manager: Tim Parcel	Reported: 05-Jun-15 16:57
--	--	------------------------------

**Total Metals by EPA 6000/7000 Series Methods - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B5E0603 - EPA 3010A**

**Blank (B5E0603-BLK1)** Prepared: 21-May-15 Analyzed: 22-May-15

Antimony	ND	0.050	mg/L							
Arsenic	ND	0.020	"							
Barium	ND	0.020	"							
Beryllium	ND	0.010	"							
Boron	ND	0.10	"							
Cadmium	ND	0.0050	"							
Calcium	ND	0.20	"							
Chromium	ND	0.010	"							
Cobalt	ND	0.010	"							
Copper	ND	0.020	"							
Iron	ND	0.050	"							
Lead	ND	0.010	"							
Lithium	ND	0.025	"							
Magnesium	ND	0.050	"							
Manganese	ND	0.010	"							
Molybdenum	ND	0.0050	"							
Nickel	ND	0.0050	"							
Potassium	ND	1.0	"							
Selenium	ND	0.050	"							
Silver	ND	0.010	"							
Sodium	ND	1.0	"							
Strontium	ND	0.010	"							
Thallium	ND	0.020	"							
Vanadium	ND	0.050	"							
Zinc	ND	0.050	"							

**LCS (B5E0603-BS1)** Prepared: 21-May-15 Analyzed: 22-May-15

Antimony	2.03	0.050	mg/L	2.00		102	80-120			
Arsenic	2.00	0.020	"	2.00		100	80-120			
Barium	2.03	0.020	"	2.00		102	80-120			
Beryllium	1.95	0.010	"	2.00		97.3	80-120			
Boron	1.88	0.10	"	2.00		93.9	80-120			
Cadmium	2.08	0.0050	"	2.00		104	80-120			
Calcium	10.2	0.20	"	10.0		102	80-120			
Chromium	2.00	0.010	"	2.00		99.8	80-120			
Cobalt	2.08	0.010	"	2.00		104	80-120			
Copper	2.02	0.020	"	2.00		101	80-120			
Iron	10.0	0.050	"	10.0		100	80-120			
Lead	2.13	0.010	"	2.00		106	80-120			
Lithium	2.09	0.025	"	2.00		104	80-120			
Magnesium	9.90	0.050	"	10.0		99.0	80-120			

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Oilfield Environmental and Compliance, INC.

Aera Energy-Coalinga  
 P.O. Box 11184  
 Bakersfield CA, 93389-1184

Project: Pond Testing  
 Project Number: Coalinga  
 Project Manager: Tim Parcel

Reported:  
 05-Jun-15 16:57

**Total Metals by EPA 6000/7000 Series Methods - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B5E0603 - EPA 3010A**

<b>Duplicate (B5E0603-DUP1)</b>		<b>Source: 1502185-01</b>			<b>Prepared: 21-May-15</b>		<b>Analyzed: 22-May-15</b>	
Antimony	ND	0.050	mg/L		ND			20
Arsenic	ND	0.020	"		ND			20
Barium	0.845	0.020	"		0.866		2.51	20
Beryllium	ND	0.010	"		ND			20
Boron	22.5	0.10	"		21.6		4.04	20
Cadmium	ND	0.0050	"		ND			20
Calcium	19.2	0.20	"		19.7		2.78	20
Chromium	ND	0.010	"		ND			20
Cobalt	ND	0.010	"		ND			20
Copper	ND	0.020	"		ND			20
Iron	0.182	0.050	"		0.234		24.7	20 QR-04
Lead	0.0129	0.010	"		0.0168		26.3	20 QR-04
Lithium	1.32	0.025	"		1.36		3.05	20
Magnesium	10.3	0.050	"		10.5		2.40	20
Manganese	0.0265	0.010	"		0.0294		10.4	20
Molybdenum	ND	0.0050	"		ND			20
Nickel	ND	0.0050	"		ND			20
Potassium	82.1	1.0	"		83.8		2.06	20
Selenium	0.0628	0.050	"		0.0617		1.77	20
Silver	ND	0.010	"		ND			20
Strontium	1.08	0.010	"		1.11		2.56	20
Thallium	ND	0.020	"		ND			20
Vanadium	ND	0.050	"		ND			20
Zinc	ND	0.050	"		ND			20

<b>Duplicate (B5E0603-DUP2)</b>		<b>Source: 1502185-01RE1</b>			<b>Prepared: 21-May-15</b>		<b>Analyzed: 22-May-15</b>	
Sodium	3040	10	mg/L		3260		6.82	20

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Oilfield Environmental and Compliance, INC.

Aera Energy-Coalinga  
 P.O. Box 11184  
 Bakersfield CA, 93389-1184

Project: Pond Testing  
 Project Number: Coalinga  
 Project Manager: Tim Parcel

Reported:  
 05-Jun-15 16:57

**Total Metals by EPA 6000/7000 Series Methods - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B5E0670 - EPA 7470A Prep</b>										
<b>Blank (B5E0670-BLK1)</b>				Prepared & Analyzed: 26-May-15						
Mercury	ND	0.00020	mg/L							
<b>LCS (B5E0670-BS1)</b>				Prepared & Analyzed: 26-May-15						
Mercury	0.0107	0.00020	mg/L	0.0100		107	85-115			
<b>LCS Dup (B5E0670-BSD1)</b>				Prepared & Analyzed: 26-May-15						
Mercury	0.0105	0.00020	mg/L	0.0100		105	85-115	2.13	20	
<b>Duplicate (B5E0670-DUP2)</b>				Source: 1502219-01RE1 Prepared & Analyzed: 26-May-15						
Mercury	ND	0.00040	mg/L		ND				20	
<b>Matrix Spike (B5E0670-MS2)</b>				Source: 1502219-01RE1 Prepared & Analyzed: 26-May-15						
Mercury	0.00802	0.00040	mg/L	0.0100	ND	80.2	75-125			
<b>Matrix Spike Dup (B5E0670-MSD2)</b>				Source: 1502219-01RE1 Prepared & Analyzed: 26-May-15						
Mercury	0.00824	0.00040	mg/L	0.0100	ND	82.4	75-125	2.66	20	
<b>Post Spike (B5E0670-PS2)</b>				Source: 1502219-01RE1 Prepared & Analyzed: 26-May-15						
Mercury	4.51		ug/L	5.00	0.0126	89.9	85-115			

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P.O. Box 11184  
Bakersfield CA, 93389-1184

Project: Pond Testing  
Project Number: Coalinga  
Project Manager: Tim Parcel

Reported:  
05-Jun-15 16:57

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B5E0694 - EPA 5030B VOCGCMS**

<b>Blank (B5E0694-BLK1)</b>			Prepared & Analyzed: 26-May-15							
Benzene	ND	0.50	ug/L							
Ethylbenzene	ND	0.50	"							
Toluene	ND	0.50	"							
Xylenes (total)	ND	0.50	"							
Surrogate: Dibromofluoromethane	12.1		"	12.5		97.1	70-130			
Surrogate: Toluene-d8	12.1		"	12.5		96.6	70-130			
Surrogate: 4-Bromofluorobenzene	11.7		"	12.5		93.9	70-130			

<b>LCS (B5E0694-BS1)</b>			Prepared & Analyzed: 26-May-15							
Benzene	28.2	0.50	ug/L	25.0		113	70-130			
Toluene	26.9	0.50	"	25.0		107	70-130			
Surrogate: Dibromofluoromethane	12.2		"	12.5		97.4	70-130			
Surrogate: Toluene-d8	12.2		"	12.5		97.8	70-130			
Surrogate: 4-Bromofluorobenzene	11.9		"	12.5		95.1	70-130			

<b>LCS Dup (B5E0694-BSD1)</b>			Prepared & Analyzed: 26-May-15							
Benzene	25.4	0.50	ug/L	25.0		102	70-130	10.4	20	
Toluene	23.5	0.50	"	25.0		93.9	70-130	13.5	20	
Surrogate: Dibromofluoromethane	12.1		"	12.5		97.1	70-130			
Surrogate: Toluene-d8	12.1		"	12.5		96.6	70-130			
Surrogate: 4-Bromofluorobenzene	11.6		"	12.5		92.7	70-130			

<b>Duplicate (B5E0694-DUP1)</b>			Source: 1502180-01	Prepared & Analyzed: 26-May-15						
Benzene	ND	0.50	ug/L							20
Ethylbenzene	ND	0.50	"							20
Toluene	ND	0.50	"							20
Xylenes (total)	ND	0.50	"							20
Surrogate: Dibromofluoromethane	12.4		"	12.5		98.9	70-130			
Surrogate: Toluene-d8	12.1		"	12.5		97.0	70-130			
Surrogate: 4-Bromofluorobenzene	11.8		"	12.5		94.0	70-130			

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P.O. Box 11184  
Bakersfield CA, 93389-1184

Project: Pond Testing  
Project Number: Coalinga  
Project Manager: Tim Parcel

Reported:  
05-Jun-15 16:57

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B5E0767 - EPA 5030B VOCGCMS**

Matrix Spike (B5E0767-MS1)	Source: 1502190-11			Prepared: 28-May-15 Analyzed: 29-May-15						
Benzene	28.0	0.50	ug/L	25.0	ND	112	70-130			
Toluene	26.2	0.50	"	25.0	ND	105	70-130			
Surrogate: Dibromofluoromethane	12.3		"	12.5		98.2	70-130			
Surrogate: Toluene-d8	12.2		"	12.5		97.7	70-130			
Surrogate: 4-Bromofluorobenzene	12.4		"	12.5		99.4	70-130			

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P.O. Box 11184  
Bakersfield CA, 93389-1184

Project: Pond Testing  
Project Number: Coalinga  
Project Manager: Tim Parcel

Reported:  
05-Jun-15 16:57

**Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B5E0663 - EPA 3510C MS</b>										
<b>LCS Dup (B5E0663-BSD1)</b>										
					Prepared: 26-May-15 Analyzed: 27-May-15					
Acenaphthene	0.710	0.10	ug/L	0.800		88.8	53-105	4.32	30	
Acenaphthylene	0.710	0.10	"	0.800		88.8	48-110	0.00	30	
Anthracene	0.890	0.10	"	0.800		111	54-120	1.13	30	
Benz(a)anthracene	0.600	0.10	"	0.800		75.0	46-131	1.68	30	
Benzo (b) fluoranthene	0.660	0.10	"	0.800		82.5	45-153	3.08	30	
Benzo (k) fluoranthene	0.920	0.10	"	0.800		115	63-154	5.59	30	
Benzo (a) pyrene	0.710	0.10	"	0.800		88.8	56-134	8.82	30	
Benzo (g,h,i) perylene	0.770	0.10	"	0.800		96.2	36-164	1.31	30	
Chrysene	0.910	0.10	"	0.800		114	72-125	3.35	30	
Dibenz (a,h) anthracene	0.650	0.10	"	0.800		81.2	44-154	3.03	30	
Fluoranthene	0.810	0.10	"	0.800		101	71-118	2.50	30	
Fluorene	0.660	0.10	"	0.800		82.5	45-122	2.99	30	
Indeno (1,2,3-cd) pyrene	0.950	0.10	"	0.800		119	40-155	2.08	30	
1-methyl-2-naphthalene	0.650	0.10	"	0.800		81.2	49-99	1.55	30	
1-methyl-3-methylanthrene	0.570	0.10	"	0.800		71.2	49-117	5.13	30	
Pyrene	0.830	0.10	"	0.800		104	71-119	2.44	30	
Surrogate: p-Terphenyl-d14	0.780		"	0.800		97.5	39-177			

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 307 Roemer Way, Suite 300, Santa Maria, Ca 93454  
 101 Adkisson Way, Taft, Ca 93268  
 Phone: 805-922-4772 / 661-762-9143  
 AR@oecusa.com

Date: 05/19/15

Employee Name: Brandon Ganster

Client Name: Aera

Project / Site Name: Pond Testing / Coalinga

Roundtrip Drive Time: 3.6 Hrs	Roundtrip Drive Mileage: 222 miles
-------------------------------	------------------------------------

Start Field Time: 0705	Stop Field Time: 1505
------------------------	-----------------------

Start Field Mileage: 107521	Stop Field Mileage: 107534
-----------------------------	----------------------------

Consumables:

3.6 Hours Overtime  
 (4) Bailer Tubes

Description / Comment:

10 samples for RWQCB analyses

Admin Use:

Name:	Initials:	Date:
Total Drive Time:	Total Field Time:	
Total Drive Mileage:	Total Field Mileage:	

TICKET NO. 3621

**TABLE 1**

**FIELD PARAMETERS AND LABORATORY ANALYSIS**

**Aera Pond Sampling**

<b>Constituents<sup>1</sup></b>	<b>Analytical Method<sup>2</sup></b>
<b>Field Parameters</b>	
pH	---
Specific Conductivity	---
Temperature	---
<b>Volatile Organic Compounds</b>	
Benzene	EPA-8260B
Ethylbenzene	EPA-8260B
Toluene	EPA-8260B
Total Xylenes	EPA-8260B
<b>Polynuclear Aromatic Hydrocarbons</b>	
Acenaphthene	EPA-8270C-SIM
Acenaphthylene	EPA-8270C-SIM
Anthracene	EPA-8270C-SIM
Benzo[a]anthracene	EPA-8270C-SIM
Benzo[b]fluoranthene	EPA-8270C-SIM
Benzo[a]pyrene	EPA-8270C-SIM
Benzo[g,h,i]perylene	EPA-8270C-SIM
Chrysene	EPA-8270C-SIM
Dibenzo[a,h]anthracene	EPA-8270C-SIM
Fluoranthene	EPA-8270C-SIM
Fluorene	EPA-8270C-SIM
Indeno[1,2,3-cd]pyrene	EPA-8270C-SIM
Naphthalene	EPA-8270C-SIM
Phenanthrene	EPA-8270C-SIM
Pyrene	EPA-8270C-SIM
<b>Metals</b>	
Total Antimony	EPA-6010B
Total Arsenic	EPA-6010B
Total Barium	EPA-6010B
Total Beryllium	EPA-6010B
Total Cadmium	EPA-6010B
Total Chromium	EPA-6010B
Total Cobalt	EPA-6010B
Total Copper	EPA-6010B
Total Lead	EPA-6010B
Total Mercury	EPA-7470A
Total Molybdenum	EPA-6010B

Oilfield Environmental and Compliance, INC.



Tim Parcel  
Aera Energy-Coalinga  
P.O. Box 11184  
Bakersfield, CA 93389-1184

05 June 2015

RE: Pond Testing

Work Order: 1502219

Dear Client:

Enclosed is an analytical report for the above referenced project. The samples included in this report were received on 22-May-15 15:25 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Assurance Manual, applicable standard operating procedures, and other related documentation. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

A handwritten signature in cursive script, appearing to read "Meredith Sprister".

Meredith Sprister

Project Manager

307 Roemer Way, Suite 300, Santa Maria, CA 93454

[www.oecusa.com](http://www.oecusa.com)

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Oilfield Environmental and Compliance, INC.

Aera Energy-Coalinga  
 P.O. Box 11184  
 Bakersfield CA, 93389-1184

Project: Pond Testing  
 Project Number: Coalinga  
 Project Manager: Tim Parcel

Reported:  
 05-Jun-15 17:28

**32 Water Plant Waste Brine Shipping Pumps C-35  
 1502219-01 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Wet Chemistry by EPA or APHA Standard Methods**

Total Alkalinity, CaCO <sub>3</sub>	890	10	mg/L	1	B5E0706	27-May-15	27-May-15	SM 2320B	
Bicarbonate, CaCO <sub>3</sub>	890	10	"	"	"	"	"	"	
Carbonate, CaCO <sub>3</sub>	ND	10	"	"	"	"	"	"	
Hydroxide, CaCO <sub>3</sub>	ND	10	"	"	"	"	"	"	
Total Dissolved Solids	6900	10	"	"	B5E0739	28-May-15	28-May-15	2540C	

**Anions by EPA Method 300.0**

Bromide	3.9	2.0	mg/L	5	B5E0625	22-May-15	22-May-15	EPA 300.0	
Chloride	2800	400	"	1000	"	"	26-May-15	"	
Fluoride	ND	2.0	"	5	"	"	22-May-15	"	
Nitrate as NO <sub>3</sub>	ND	9.0	"	"	"	"	"	"	
Sulfate	630	40	"	100	"	"	23-May-15	"	

**Total Metals by EPA 6000/7000 Series Methods**

Antimony	ND	0.050	mg/L	1	B5E0668	27-May-15	27-May-15	EPA 6010B	
Arsenic	ND	0.020	"	"	"	"	"	"	
Barium	0.13	0.020	"	"	"	"	"	"	
Beryllium	ND	0.010	"	"	"	"	"	"	
Boron	52	2.5	"	25	"	"	29-May-15	"	
Cadmium	ND	0.0050	"	1	"	"	27-May-15	"	
Calcium	87	0.20	"	"	"	"	"	"	
Chromium	ND	0.010	"	"	"	"	"	"	
Cobalt	ND	0.010	"	"	"	"	"	"	
Copper	ND	0.020	"	"	"	"	"	"	
Iron	0.20	0.050	"	"	"	"	"	"	
Lead	0.015	0.010	"	"	"	"	"	"	
Lithium	0.50	0.025	"	"	"	"	"	"	
Magnesium	64	0.050	"	"	"	"	"	"	
Manganese	0.13	0.010	"	"	"	"	"	"	
Mercury	ND	0.00040	"	2	B5E0670	26-May-15	26-May-15	EPA 7470A	R-01
Molybdenum	0.017	0.0050	"	1	B5E0668	27-May-15	29-May-15	EPA 6010B	
Nickel	0.0077	0.0050	"	"	"	"	27-May-15	"	
Potassium	49	1.0	"	"	"	"	"	"	

Oilfield Environmental and Compliance

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Oilfield Environmental and Compliance, INC.

Aera Energy-Coalinga  
P.O. Box 11184  
Bakersfield CA, 93389-1184

Project: Pond Testing  
Project Number: Coalinga  
Project Manager: Tim Parcel

Reported:  
05-Jun-15 17:28

**32 Water Plant Waste Brine Shipping Pumps C-35  
1502219-01 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	--------	-------

**Oilfield Environmental and Compliance**

**Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring**

**R-05**

Naphthalene	5.3	0.52	ug/L	5	B5E0663	26-May-15	29-May-15	EPA 8270M SIM	
Phenanthrene	9.7	0.52	"	"	"	"	"	"	
Pyrene	0.67	0.52	"	"	"	"	"	"	
Surrogate: p-Terphenyl-d14		125 %	39-177		"	"	"	"	

**Miscellaneous Physical/Conventional Chemistry Parameters**

Specific Conductance (EC) @ 25 C	11400	0.01	uS/cm	1	B5E0690	21-May-15	21-May-15	Martini Instruments Mi306	
pH	6.9	0.01	pH Units	"	B5E0693	"	"	LaMotte pH PockeTester	
Sample Temperature	32	1.0	°C	"	B5E0692	"	"	"	

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Oilfield Environmental and Compliance, INC.

Aera Energy-Coalinga  
P.O. Box 11184  
Bakersfield CA, 93389-1184

Project: Pond Testing  
Project Number: Coalinga  
Project Manager: Tim Parcel

Reported:  
05-Jun-15 17:28

**32 Water Plant T-940 C-38  
1502219-02 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Total Metals by EPA 6000/7000 Series Methods**

Thallium	ND	0.020	mg/L	1	B5E0668	27-May-15	27-May-15	EPA 6010B	
Vanadium	ND	0.050	"	"	"	"	"	"	
Zinc	ND	0.050	"	"	"	"	"	"	

**TEPH by GC FID**

<b>TPH Oil Crude (C8-C40)</b>	<b>92</b>	<b>5.2</b>	<b>mg/L</b>	<b>50</b>	<b>B5E0617</b>	<b>26-May-15</b>	<b>28-May-15</b>	<b>EPA 8015M</b>	<b>QB-01</b>
<i>Surrogate: o-Terphenyl</i>		97.8 %	50-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

**R-05**

Benzene	ND	50	ug/L	100	B5F0007	01-Jun-15	02-Jun-15	EPA 8260B	
Ethylbenzene	ND	50	"	"	"	"	"	"	
Toluene	ND	50	"	"	"	"	"	"	
Xylenes (total)	ND	50	"	"	"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>		101 %	70-130		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		87.1 %	70-130		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		97.0 %	70-130		"	"	"	"	

**Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring**

**R-05**

<b>Acenaphthene</b>	<b>1.1</b>	<b>0.51</b>	<b>ug/L</b>	<b>5</b>	<b>B5E0663</b>	<b>26-May-15</b>	<b>29-May-15</b>	<b>EPA 8270M SIM</b>	
Acenaphthylene	ND	0.51	"	"	"	"	"	"	
Anthracene	ND	0.51	"	"	"	"	"	"	
Benzo(a)anthracene	ND	0.51	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.51	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.51	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.51	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	0.51	"	"	"	"	"	"	
<b>Chrysene</b>	<b>0.96</b>	<b>0.51</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
Dibenz (a,h) anthracene	ND	0.51	"	"	"	"	"	"	
<b>Fluoranthene</b>	<b>1.1</b>	<b>0.51</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
<b>Fluorene</b>	<b>11</b>	<b>0.51</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
Indeno (1,2,3-cd) pyrene	ND	0.51	"	"	"	"	"	"	
<b>Naphthalene</b>	<b>5.1</b>	<b>0.51</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
<b>Phenanthrene</b>	<b>18</b>	<b>2.0</b>	<b>"</b>	<b>20</b>	<b>"</b>	<b>"</b>	<b>01-Jun-15</b>	<b>"</b>	
<b>Pyrene</b>	<b>1.5</b>	<b>0.51</b>	<b>"</b>	<b>5</b>	<b>"</b>	<b>"</b>	<b>29-May-15</b>	<b>"</b>	
<i>Surrogate: p-Terphenyl-d14</i>		150 %	39-177		"	"	"	"	

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Oilfield Environmental and Compliance, INC.

Aera Energy-Coalinga  
P.O. Box 11184  
Bakersfield CA, 93389-1184

Project: Pond Testing  
Project Number: Coalinga  
Project Manager: Tim Parcel

Reported:  
05-Jun-15 17:28

**CMS Sump C-125**  
**1502219-03 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Wet Chemistry by EPA or APHA Standard Methods**

Total Alkalinity, CaCO <sub>3</sub>	810	10	mg/L	1	B5E0706	27-May-15	27-May-15	SM 2320B	
Bicarbonate, CaCO <sub>3</sub>	810	10	"	"	"	"	"	"	
Carbonate, CaCO <sub>3</sub>	ND	10	"	"	"	"	"	"	
Hydroxide, CaCO <sub>3</sub>	ND	10	"	"	"	"	"	"	
Total Dissolved Solids	3800	10	"	"	B5E0739	28-May-15	28-May-15	2540C	

**Anions by EPA Method 300.0**

Bromide	5.2	2.0	mg/L	5	B5E0625	22-May-15	22-May-15	EPA 300.0	
Chloride	1000	40	"	100	"	"	23-May-15	"	
Fluoride	ND	2.0	"	5	"	"	22-May-15	"	R-06
Nitrate as NO <sub>3</sub>	ND	9.0	"	"	"	"	"	"	R-06
Sulfate	510	40	"	100	"	"	23-May-15	"	

**Total Metals by EPA 6000/7000 Series Methods**

Antimony	ND	0.050	mg/L	1	B5E0668	27-May-15	27-May-15	EPA 6010B	
Arsenic	ND	0.020	"	"	"	"	"	"	
Barium	0.088	0.020	"	"	"	"	"	"	
Beryllium	ND	0.010	"	"	"	"	"	"	
Boron	58	2.5	"	25	"	"	29-May-15	"	
Cadmium	ND	0.0050	"	1	"	"	27-May-15	"	
Calcium	31	0.20	"	"	"	"	"	"	
Chromium	ND	0.010	"	"	"	"	"	"	
Cobalt	ND	0.010	"	"	"	"	"	"	
Copper	ND	0.020	"	"	"	"	"	"	
Iron	0.10	0.050	"	"	"	"	"	"	
Lead	0.015	0.010	"	"	"	"	"	"	
Lithium	0.45	0.025	"	"	"	"	"	"	
Magnesium	16	0.050	"	"	"	"	"	"	
Manganese	0.057	0.010	"	"	"	"	"	"	
Mercury	ND	0.00020	"	"	B5E0670	26-May-15	26-May-15	EPA 7470A	
Molybdenum	ND	0.0050	"	"	B5E0668	27-May-15	29-May-15	EPA 6010B	
Nickel	ND	0.0050	"	"	"	"	27-May-15	"	
Potassium	35	1.0	"	"	"	"	"	"	
Selenium	ND	0.050	"	"	"	"	"	"	
Silver	ND	0.010	"	"	"	"	"	"	
Sodium	1100	25	"	25	"	"	29-May-15	"	
Strontium	1.3	0.010	"	1	"	"	27-May-15	"	

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P.O. Box 11184  
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Project: Pond Testing  
Project Number: Coalinga  
Project Manager: Tim Parcel

Reported:  
05-Jun-15 17:28

**CMS Sump C-125**  
**1502219-03 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Miscellaneous Physical/Conventional Chemistry Parameters**

Specific Conductance (EC) @ 25 C	5600	0.01	uS/cm	1	B5E0690	21-May-15	21-May-15	Martini Instruments Mi306	
pH	6.3	0.01	pH Units	"	B5E0693	"	"	LaMotte pH PockeTester	
Sample Temperature	46	1.0	°C	"	B5E0692	"	"	"	

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 Bakersfield CA, 93389-1184

Project: Pond Testing  
 Project Number: Coalinga  
 Project Manager: Tim Parcel

Reported:  
 05-Jun-15 17:28

**Pz Sump #1 C-150**  
**1502219-04 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Total Metals by EPA 6000/7000 Series Methods**

Thallium	ND	0.020	mg/L	1	B5E0668	27-May-15	27-May-15	EPA 6010B	
Vanadium	ND	0.050	"	"	"	"	"	"	
Zinc	ND	0.050	"	"	"	"	"	"	

**TEPH by GC FID**

<b>TPH Oil Crude (C8-C40)</b>	<b>65</b>	<b>5.1</b>	<b>mg/L</b>	<b>50</b>	<b>B5E0617</b>	<b>26-May-15</b>	<b>28-May-15</b>	<b>EPA 8015M</b>	<b>QB-01</b>
<i>Surrogate: o-Terphenyl</i>		<i>112 %</i>	<i>50-150</i>		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

**R-05**

Benzene	ND	10	ug/L	20	B5F0007	01-Jun-15	01-Jun-15	EPA 8260B	
Ethylbenzene	ND	10	"	"	"	"	"	"	
Toluene	ND	10	"	"	"	"	"	"	
Aromatics (total)	ND	10	"	"	"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>		<i>113 %</i>	<i>70-130</i>		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		<i>96.6 %</i>	<i>70-130</i>		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		<i>99.8 %</i>	<i>70-130</i>		"	"	"	"	

**Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring**

**R-05**

Acenaphthene	ND	0.51	ug/L	5	B5E0663	26-May-15	29-May-15	EPA 8270M SIM	
Acenaphthylene	ND	0.51	"	"	"	"	"	"	
Anthracene	ND	0.51	"	"	"	"	"	"	
Benz(a)anthracene	ND	0.51	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.51	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.51	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.51	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	0.51	"	"	"	"	"	"	
Chrysene	ND	0.51	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.51	"	"	"	"	"	"	
Fluoranthene	ND	0.51	"	"	"	"	"	"	
<b>Fluorene</b>	<b>0.72</b>	0.51	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.51	"	"	"	"	"	"	
Naphthalene	ND	0.51	"	"	"	"	"	"	
<b>Phenanthrene</b>	<b>1.6</b>	0.51	"	"	"	"	"	"	
<b>Pyrene</b>	<b>0.67</b>	0.51	"	"	"	"	"	"	
<i>Surrogate: p-Terphenyl-d14</i>		<i>131 %</i>	<i>39-177</i>		"	"	"	"	

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Oilfield Environmental and Compliance, INC.

Aera Energy-Coalinga  
 P.O. Box 11184  
 Bakersfield CA, 93389-1184

Project: Pond Testing  
 Project Number: Coalinga  
 Project Manager: Tim Parcel

Reported:  
 05-Jun-15 17:28

**Pz Inlet #1 C-151**  
**1502219-05 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Wet Chemistry by EPA or APHA Standard Methods**

Total Alkalinity, CaCO <sub>3</sub>	780	10	mg/L	1	B5E0706	27-May-15	27-May-15	SM 2320B	
Bicarbonate, CaCO <sub>3</sub>	780	10	"	"	"	"	"	"	
Carbonate, CaCO <sub>3</sub>	ND	10	"	"	"	"	"	"	
Hydroxide, CaCO <sub>3</sub>	ND	10	"	"	"	"	"	"	
Total Dissolved Solids	4900	10	"	"	B5E0739	28-May-15	28-May-15	2540C	

**Anions by EPA Method 300.0**

Bromide	8.0	2.0	mg/L	5	B5E0625	22-May-15	23-May-15	EPA 300.0	
Chloride	1600	40	"	100	"	"	23-May-15	"	
Fluoride	ND	2.0	"	5	"	"	23-May-15	"	R-06
Nitrate as NO <sub>3</sub>	ND	9.0	"	"	"	"	"	"	R-06
Sulfate	630	40	"	100	"	"	23-May-15	"	

**Total Metals by EPA 6000/7000 Series Methods**

Antimony	ND	0.050	mg/L	1	B5E0668	27-May-15	27-May-15	EPA 6010B	
Arsenic	ND	0.020	"	"	"	"	"	"	
Barium	0.14	0.020	"	"	"	"	"	"	
Beryllium	ND	0.010	"	"	"	"	"	"	
Boron	60	2.5	"	25	"	"	29-May-15	"	
Cadmium	ND	0.0050	"	1	"	"	27-May-15	"	
Calcium	39	0.20	"	"	"	"	"	"	
Chromium	ND	0.010	"	"	"	"	"	"	
Cobalt	ND	0.010	"	"	"	"	"	"	
Copper	ND	0.020	"	"	"	"	"	"	
Iron	0.15	0.050	"	"	"	"	"	"	
Lead	0.018	0.010	"	"	"	"	"	"	
Lithium	0.81	0.025	"	"	"	"	"	"	
Magnesium	34	0.050	"	"	"	"	"	"	
Manganese	0.12	0.010	"	"	"	"	"	"	
Mercury	ND	0.00020	"	"	B5E0670	26-May-15	26-May-15	EPA 7470A	
Molybdenum	ND	0.0050	"	"	B5E0668	27-May-15	29-May-15	EPA 6010B	
Nickel	0.0050	0.0050	"	"	"	"	27-May-15	"	
Potassium	45	1.0	"	"	"	"	"	"	
Selenium	ND	0.050	"	"	"	"	"	"	
Silver	ND	0.010	"	"	"	"	"	"	
Sodium	1400	25	"	25	"	"	29-May-15	"	
Strontium	1.6	0.010	"	1	"	"	27-May-15	"	

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Project: Pond Testing  
Project Number: Coalinga  
Project Manager: Tim Parcel

Reported:  
05-Jun-15 17:28

**Pz Inlet #1 C-151**  
**1502219-05 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Miscellaneous Physical/Conventional Chemistry Parameters**

Specific Conductance (EC) @ 25 C	8000	0.01	uS/cm	1	B5E0690	21-May-15	21-May-15	Martini Instruments Mi306	
pH	6.5	0.01	pH Units	"	B5E0693	"	"	LaMotte pH PockeTester	
Sample Temperature	52	1.0	°C	"	B5E0692	"	"	"	

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Oilfield Environmental and Compliance, INC.

Aera Energy-Coalinga P.O. Box 11184 Bakersfield CA, 93389-1184	Project: Pond Testing Project Number: Coalinga Project Manager: Tim Parcel	Reported: 05-Jun-15 17:28
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**32 Water Plant V-200 In C-60  
1502219-06 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Total Metals by EPA 6000/7000 Series Methods**

Thallium	ND	0.020	mg/L	1	B5E0668	27-May-15	27-May-15	EPA 6010B	
Vanadium	ND	0.050	"	"	"	"	"	"	
Zinc	ND	0.050	"	"	"	"	"	"	

**TEPH by GC FID**

<b>TPH Oil Crude (C8-C40)</b>	<b>80</b>	<b>5.1</b>	<b>mg/L</b>	<b>50</b>	<b>B5E0617</b>	<b>26-May-15</b>	<b>28-May-15</b>	<b>EPA 8015M</b>	<b>QB-01</b>
<i>Surrogate: o-Terphenyl</i>		<i>111 %</i>	<i>50-150</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	

**Volatile Organic Compounds by EPA Method 8260B**

**HDSP, R-05**

Benzene	ND	50	ug/L	100	B5F0092	03-Jun-15	03-Jun-15	EPA 8260B	
Ethylbenzene	ND	50	"	"	"	"	"	"	
Toluene	ND	50	"	"	"	"	"	"	
Xylenes (total)	ND	50	"	"	"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>		<i>100 %</i>	<i>70-130</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: Toluene-d8</i>		<i>96.2 %</i>	<i>70-130</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>		<i>89.0 %</i>	<i>70-130</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	

**Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring**

**R-05**

<b>Acenaphthene</b>	<b>1.1</b>	<b>0.52</b>	<b>ug/L</b>	<b>5</b>	<b>B5E0663</b>	<b>26-May-15</b>	<b>29-May-15</b>	<b>EPA 8270M SIM</b>	
Acenaphthylene	ND	0.52	"	"	"	"	"	"	
Anthracene	ND	0.52	"	"	"	"	"	"	
Benz(a)anthracene	ND	0.52	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.52	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.52	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.52	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	0.52	"	"	"	"	"	"	
<b>Chrysene</b>	<b>0.68</b>	<b>0.52</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
Dibenz (a,h) anthracene	ND	0.52	"	"	"	"	"	"	
<b>Fluoranthene</b>	<b>0.62</b>	<b>0.52</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
<b>Fluorene</b>	<b>11</b>	<b>0.52</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
Indeno (1,2,3-cd) pyrene	ND	0.52	"	"	"	"	"	"	
<b>Naphthalene</b>	<b>6.1</b>	<b>0.52</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
<b>Phenanthrene</b>	<b>13</b>	<b>0.52</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
<b>Pyrene</b>	<b>0.94</b>	<b>0.52</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
<i>Surrogate: p-Terphenyl-d14</i>		<i>144 %</i>	<i>39-177</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	

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Oilfield Environmental and Compliance, INC.

Aera Energy-Coalinga P.O. Box 11184 Bakersfield CA, 93389-1184	Project: Pond Testing Project Number: Coalinga Project Manager: Tim Parcel	Reported: 05-Jun-15 17:28
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**32 Water Plant Treater Drains V-307 C-61  
1502219-07 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Wet Chemistry by EPA or APHA Standard Methods**

Total Alkalinity, CaCO3	880	10	mg/L	1	B5E0706	27-May-15	27-May-15	SM 2320B	
Bicarbonate, CaCO3	880	10	"	"	"	"	"	"	
Carbonate, CaCO3	ND	10	"	"	"	"	"	"	
Hydroxide, CaCO3	ND	10	"	"	"	"	"	"	
Total Dissolved Solids	3800	10	"	"	B5E0739	28-May-15	28-May-15	2540C	

**Anions by EPA Method 300.0**

Bromide	4.0	2.0	mg/L	5	B5E0625	22-May-15	23-May-15	EPA 300.0	
Chloride	930	40	"	100	"	"	23-May-15	"	
Fluoride	ND	2.0	"	5	"	"	23-May-15	"	
Nitrate as NO3	ND	9.0	"	"	"	"	"	"	
Sulfate	480	40	"	100	"	"	23-May-15	"	

**Total Metals by EPA 6000/7000 Series Methods**

Antimony	ND	0.050	mg/L	1	B5E0668	27-May-15	27-May-15	EPA 6010B	
Arsenic	ND	0.020	"	"	"	"	"	"	
Barium	0.15	0.020	"	"	"	"	"	"	
Beryllium	ND	0.010	"	"	"	"	"	"	
Boron	55	2.5	"	25	"	"	29-May-15	"	
Cadmium	ND	0.0050	"	1	"	"	27-May-15	"	
Calcium	46	0.20	"	"	"	"	"	"	
Chromium	ND	0.010	"	"	"	"	"	"	
Cobalt	ND	0.010	"	"	"	"	"	"	
Copper	ND	0.020	"	"	"	"	"	"	
Iron	0.22	0.050	"	"	"	"	"	"	
Lead	0.023	0.010	"	"	"	"	"	"	
Lithium	0.56	0.025	"	"	"	"	"	"	
Magnesium	42	0.050	"	"	"	"	"	"	
Manganese	0.014	0.010	"	"	"	"	"	"	
Mercury	ND	0.00020	"	"	B5E0670	26-May-15	26-May-15	EPA 7470A	
Molybdenum	ND	0.0050	"	"	B5E0668	27-May-15	29-May-15	EPA 6010B	
Nickel	0.0054	0.0050	"	"	"	"	27-May-15	"	
Potassium	53	1.0	"	"	"	"	"	"	
Selenium	ND	0.050	"	"	"	"	"	"	
Silver	ND	0.010	"	"	"	"	"	"	
Sodium	1000	25	"	25	"	"	29-May-15	"	
Strontium	2.6	0.010	"	1	"	"	27-May-15	"	

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P.O. Box 11184  
Bakersfield CA, 93389-1184

Project: Pond Testing  
Project Number: Coalinga  
Project Manager: Tim Parcel

Reported:  
05-Jun-15 17:28

**32 Water Plant Treater Drains V-307 C-61  
1502219-07 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Miscellaneous Physical/Conventional Chemistry Parameters**

Specific Conductance (EC) @ 25 C	11200	0.01	uS/cm	1	B5E0690	21-May-15	21-May-15	Martini Instruments Mi306	
pH	6.9	0.01	pH Units	"	B5E0693	"	"	LaMotte pH PockeTester	
Sample Temperature	76	1.0	°C	"	B5E0692	"	"	"	

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**Wet Chemistry by EPA or APHA Standard Methods - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B5E0739 - 2540 C TDS Prep</b>										
<b>LCS (B5E0739-BS1)</b>				Prepared & Analyzed: 28-May-15						
Total Dissolved Solids	1200	10	mg/L	1000		122	75-125			
<b>LCS Dup (B5E0739-BSD1)</b>				Prepared & Analyzed: 28-May-15						
Total Dissolved Solids	1200	10	mg/L	1000		119	75-125	1.99	10	
<b>Duplicate (B5E0739-DUP1)</b>		<b>Source: 1502219-01</b>		Prepared & Analyzed: 28-May-15						
Total Dissolved Solids	7000	10	mg/L		6900			2.59	10	

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 Project Manager: Tim Parcel

Reported:  
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**Anions by EPA Method 300.0 - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B5E0625 - EPA 300.0/300.1 Anions Prep</b>										
<b>LCS Dup (B5E0625-BSD2)</b>				Prepared & Analyzed: 26-May-15						
Nitrate as NO3	20.3	1.8	mg/L	22.2		91.4	90-110	2.93	20	
Bromide	4.64	0.40	"	5.00		92.7	90-110	2.84	20	
Chloride	4.62	0.40	"	5.00		92.4	90-110	2.45	20	
Fluoride	4.51	0.40	"	5.00		90.2	90-110	6.12	20	
Sulfate	4.66	0.40	"	5.00		93.1	90-110	3.96	20	
<b>Duplicate (B5E0625-DUP1)</b>		<b>Source: 1502211-01</b>			Prepared & Analyzed: 22-May-15					
Nitrate as NO3	ND	3.6	mg/L		ND				20	
Bromide	ND	0.80	"		ND				20	
Fluoride	ND	0.80	"		ND				20	
Sulfate	ND	0.80	"		ND				20	
<b>Duplicate (B5E0625-DUP2)</b>		<b>Source: 1502211-01RE1</b>			Prepared & Analyzed: 22-May-15					
Chloride	1470	20	mg/L		1450			0.812	20	
<b>Duplicate (B5E0625-DUP3)</b>		<b>Source: 1502211-01RE2</b>			Prepared & Analyzed: 26-May-15					
Nitrate as NO3	ND	3.6	mg/L		ND				20	
Bromide	8.05	0.80	"		7.77			3.56	20	
Fluoride	0.306	0.80	"		0.356			15.1	20	
Sulfate	4.33	0.80	"		4.36			0.782	20	
<b>Matrix Spike (B5E0625-MS1)</b>		<b>Source: 1502211-01</b>			Prepared & Analyzed: 22-May-15					
Nitrate as NO3	46.4	3.8	mg/L	46.6	ND	99.5	80-120			
Bromide	10.9	0.84	"	10.5	ND	104	80-120			
Fluoride	10.1	0.84	"	10.5	ND	96.3	80-120			
Sulfate	11.2	0.84	"	10.5	ND	107	80-120			
<b>Matrix Spike (B5E0625-MS2)</b>		<b>Source: 1502211-01RE1</b>			Prepared & Analyzed: 22-May-15					
Chloride	1780	21	mg/L	263	1450	124	80-120			E, QM-4X



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Project Manager: Tim Parcel

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**Total Metals by EPA 6000/7000 Series Methods - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B5E0668 - EPA 3010A**

**Blank (B5E0668-BLK1)**

Prepared & Analyzed: 27-May-15

Antimony	ND	0.050	mg/L
Arsenic	ND	0.020	"
Barium	ND	0.020	"
Beryllium	ND	0.010	"
Boron	ND	0.10	"
Cadmium	ND	0.0050	"
Calcium	ND	0.20	"
Chromium	ND	0.010	"
Cobalt	ND	0.010	"
Copper	ND	0.020	"
Iron	ND	0.050	"
Lead	ND	0.010	"
Lithium	ND	0.025	"
Magnesium	ND	0.050	"
Manganese	ND	0.010	"
Nickel	ND	0.0050	"
Potassium	ND	1.0	"
Selenium	ND	0.050	"
Silver	ND	0.010	"
Strontium	ND	0.010	"
Thallium	ND	0.020	"
Vanadium	ND	0.050	"
Zinc	ND	0.050	"

**Blank (B5E0668-BLK2)**

Prepared: 27-May-15 Analyzed: 29-May-15

Molybdenum	ND	0.0050	mg/L
Sodium	ND	1.0	"

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 Project Manager: Tim Parcel

Reported:  
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**Total Metals by EPA 6000/7000 Series Methods - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B5E0668 - EPA 3010A</b>										
<b>LCS Dup (B5E0668-BSD1)</b>				Prepared & Analyzed: 27-May-15						
Antimony	2.20	0.050	mg/L	2.00		110	80-120	0.949	20	
Arsenic	2.21	0.020	"	2.00		110	80-120	0.773	20	
Barium	2.28	0.020	"	2.00		114	80-120	0.961	20	
Beryllium	2.30	0.010	"	2.00		115	80-120	1.72	20	
Boron	2.18	0.10	"	2.00		109	80-120	3.84	20	
Cadmium	2.15	0.0050	"	2.00		107	80-120	0.186	20	
Calcium	11.1	0.20	"	10.0		111	80-120	0.718	20	
Chromium	2.22	0.010	"	2.00		111	80-120	5.28	20	
Cobalt	2.18	0.010	"	2.00		109	80-120	0.457	20	
Copper	2.25	0.020	"	2.00		113	80-120	4.73	20	
Iron	11.1	0.050	"	10.0		111	80-120	1.16	20	
Lead	2.12	0.010	"	2.00		106	80-120	0.141	20	
Lithium	2.30	0.025	"	2.00		115	80-120	0.651	20	
Magnesium	11.1	0.050	"	10.0		111	80-120	2.05	20	
Manganese	11.0	0.010	"	10.0		110	80-120	1.09	20	
Nickel	2.17	0.0050	"	2.00		109	80-120	0.322	20	
Potassium	11.1	1.0	"	10.0		111	80-120	1.88	20	
Selenium	2.17	0.050	"	2.00		108	80-120	1.07	20	
Silver	0.106	0.010	"	0.100		106	80-120	3.84	20	
Strontium	2.26	0.010	"	2.00		113	80-120	1.36	20	
Thallium	2.22	0.020	"	2.00		111	80-120	0.0902	20	
Vanadium	2.32	0.050	"	2.00		116	80-120	4.68	20	
Zinc	2.08	0.050	"	2.00		104	80-120	0.0480	20	
<b>LCS Dup (B5E0668-BSD2)</b>				Prepared: 27-May-15 Analyzed: 29-May-15						
Molybdenum	2.17	0.0050	mg/L	2.00		108	80-120	2.90	20	
Sodium	10.7	1.0	"	10.0		107	80-120	0.562	20	

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**Total Metals by EPA 6000/7000 Series Methods - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B5E0668 - EPA 3010A**

Matrix Spike (B5E0668-MS1)	Source: 1502205-01			Prepared & Analyzed: 27-May-15						
Antimony	2.16	0.050	mg/L	2.00	ND	108	82-127			
Arsenic	2.43	0.020	"	2.00	ND	122	83-130			
Barium	2.66	0.020	"	2.00	0.440	111	76-136			
Beryllium	2.30	0.010	"	2.00	ND	115	78-123			
Boron	33.8	0.10	"	2.00	34.4	NR	71-134			QM-4X
Cadmium	2.09	0.0050	"	2.00	ND	104	86-120			
Calcium	45.8	0.20	"	10.0	35.9	99.1	82-128			
Chromium	2.00	0.010	"	2.00	ND	100	80-123			
Cobalt	2.00	0.010	"	2.00	ND	100	80-123			
Copper	1.98	0.020	"	2.00	ND	98.8	81-128			
Iron	11.1	0.050	"	10.0	0.374	107	88-120			
Lead	1.86	0.010	"	2.00	ND	92.8	71-128			
Lithium	7.75	0.025	"	2.00	4.74	150	57-156			
Magnesium	42.7	0.050	"	10.0	32.4	102	83-123			
Manganese	10.5	0.010	"	10.0	0.0635	105	74-131			
Nickel	2.04	0.0050	"	2.00	ND	102	85-121			
Potassium	103	1.0	"	10.0	90.4	126	73-141			
Selenium	2.34	0.050	"	2.00	0.0616	114	50-151			
Silver	0.108	0.010	"	0.100	ND	108	71-136			
Strontium	3.74	0.010	"	2.00	1.52	111	67-142			
Thallium	1.67	0.020	"	2.00	ND	83.5	61-134			
Vanadium	2.14	0.050	"	2.00	ND	107	82-126			
Zinc	2.14	0.050	"	2.00	ND	107	88-123			

Matrix Spike (B5E0668-MS2)	Source: 1502205-01			Prepared: 27-May-15 Analyzed: 29-May-15						
Molybdenum	1.87	0.0050	mg/L	2.00	ND	93.6	85-122			

Matrix Spike (B5E0668-MS3)	Source: 1502205-01RE1			Prepared: 27-May-15 Analyzed: 29-May-15						
Sodium	2960	25	mg/L	10.0	3120	NR	75-125			QM-4X

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**TEPH by GC FID - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B5E0617 - EPA 3510C</b>										
<b>Blank (B5E0617-BLK1)</b>										
					Prepared: 26-May-15 Analyzed: 27-May-15					
TPH Oil Crude (C8-C40)	0.181	0.10	mg/L							QB-01
Surrogate: o-Terphenyl	0.100		"	0.100		100	50-150			
<b>LCS (B5E0617-BS1)</b>										
					Prepared: 26-May-15 Analyzed: 27-May-15					
TPH Oil Crude (C8-C40)	1.54	0.10	mg/L	2.00		76.9	70-130			
Surrogate: o-Terphenyl	0.107		"	0.100		107	50-150			
<b>LCS Dup (B5E0617-BSD1)</b>										
					Prepared: 26-May-15 Analyzed: 27-May-15					
TPH Oil Crude (C8-C40)	1.55	0.10	mg/L	2.00		77.4	70-130	0.653	20	
Surrogate: o-Terphenyl	0.111		"	0.100		111	50-150			

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**Volatile Organic Compounds by EPA Method 8260B - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B5F0007 - EPA 5030B VOCCGMS**

Matrix Spike (B5F0007-MS1)	Source: 1502190-24RE1 Prepared: 01-Jun-15 Analyzed: 02-Jun-15									
Benzene	25.7	0.50	ug/L	25.0	ND	103	70-130			
Toluene	19.6	0.50	"	25.0	ND	78.5	70-130			
Surrogate: Dibromofluoromethane	12.4		"	12.5		99.3	70-130			
Surrogate: Toluene-d8	10.9		"	12.5		87.0	70-130			
Surrogate: 4-Bromofluorobenzene	12.0		"	12.5		96.2	70-130			

**Batch B5F0092 - EPA 5030B VOCCGMS**

**Blank (B5F0092-BLK1)** Prepared & Analyzed: 03-Jun-15

Benzene	ND	0.50	ug/L							
Ethylbenzene	ND	0.50	"							
Toluene	ND	0.50	"							
Xylenes (total)	ND	0.50	"							
Surrogate: Dibromofluoromethane	12.7		"	12.5		101	70-130			
Surrogate: Toluene-d8	12.0		"	12.5		96.2	70-130			
Surrogate: 4-Bromofluorobenzene	10.9		"	12.5		87.2	70-130			

**LCS (B5F0092-BS1)** Prepared & Analyzed: 03-Jun-15

Benzene	27.4	0.50	ug/L	25.0		110	70-130			
Toluene	25.3	0.50	"	25.0		101	70-130			
Surrogate: Dibromofluoromethane	12.3		"	12.5		98.6	70-130			
Surrogate: Toluene-d8	12.0		"	12.5		95.9	70-130			
Surrogate: 4-Bromofluorobenzene	11.0		"	12.5		87.7	70-130			

**LCS Dup (B5F0092-BSD1)** Prepared & Analyzed: 03-Jun-15

Benzene	27.6	0.50	ug/L	25.0		110	70-130	0.691	20	
Toluene	24.4	0.50	"	25.0		97.8	70-130	3.62	20	
Surrogate: Dibromofluoromethane	12.4		"	12.5		99.0	70-130			
Surrogate: Toluene-d8	11.8		"	12.5		94.5	70-130			
Surrogate: 4-Bromofluorobenzene	11.1		"	12.5		88.5	70-130			

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Project: Pond Testing  
Project Number: Coalinga  
Project Manager: Tim Parcel

Reported:  
05-Jun-15 17:28

**Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit	Notes
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**Batch B5E0663 - EPA 3510C MS**

**Blank (B5E0663-BLK1)**

Prepared: 26-May-15 Analyzed: 27-May-15

Acenaphthene	ND	0.10	ug/L							
Acenaphthylene	ND	0.10	"							
Anthracene	ND	0.10	"							
Benz(a)anthracene	ND	0.10	"							
Benzo (b) fluoranthene	ND	0.10	"							
Benzo (k) fluoranthene	ND	0.10	"							
Benzo (a) pyrene	ND	0.10	"							
Benzo (g,h,i) perylene	ND	0.10	"							
Chrysene	ND	0.10	"							
Dibenz (a,h) anthracene	ND	0.10	"							
Fluoranthene	ND	0.10	"							
Fluorene	ND	0.10	"							
Indeno (1,2,3-cd) pyrene	ND	0.10	"							
Naphthalene	ND	0.10	"							
Phenanthrene	ND	0.10	"							
Pyrene	ND	0.10	"							

Surrogate: p-Terphenyl-d14 0.950 " 0.800 119 39-177

**LCS (B5E0663-BS1)**

Prepared: 26-May-15 Analyzed: 27-May-15

Acenaphthene	0.680	0.10	ug/L	0.800		85.0	53-105
Acenaphthylene	0.710	0.10	"	0.800		88.8	48-110
Anthracene	0.880	0.10	"	0.800		110	54-120
Benz(a)anthracene	0.590	0.10	"	0.800		73.8	46-131
Benzo (b) fluoranthene	0.640	0.10	"	0.800		80.0	45-153
Benzo (k) fluoranthene	0.870	0.10	"	0.800		109	63-154
Benzo (a) pyrene	0.650	0.10	"	0.800		81.2	56-134
Benzo (g,h,i) perylene	0.760	0.10	"	0.800		95.0	36-164
Chrysene	0.880	0.10	"	0.800		110	72-125
Dibenz (a,h) anthracene	0.670	0.10	"	0.800		83.8	44-154
Fluoranthene	0.790	0.10	"	0.800		98.8	71-118
Fluorene	0.680	0.10	"	0.800		85.0	45-122
Indeno (1,2,3-cd) pyrene	0.970	0.10	"	0.800		121	40-155
Naphthalene	0.640	0.10	"	0.800		80.0	49-99
Phenanthrene	0.600	0.10	"	0.800		75.0	49-117
Pyrene	0.810	0.10	"	0.800		101	71-119

Surrogate: p-Terphenyl-d14 0.800 " 0.800 100 39-177

Dilfield Environmental and Compliance

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Dilfield Environmental and Compliance, INC.

Aera Energy-Coalinga  
P.O. Box 11184  
Bakersfield CA, 93389-1184

Project: Pond Testing  
Project Number: Coalinga  
Project Manager: Tim Parcel

Reported:  
05-Jun-15 17:28

### Notes and Definitions

- R-06 The Reporting Limit has been raised to account for the presence of high levels of analytes.
- R-05 The sample was diluted due to the presence of high levels of non-target analytes resulting in elevated reporting limits.
- R-01 The Reporting Limit has been raised to account for matrix interference.
- QR-04 The RPD exceeded the QC control limits.
- QM-4X The spike recovery was outside of QC acceptance limits for the MS and/or MSD due to analyte concentration at 4 times or greater the spike concentration. The QC batch was accepted based on LCS and/or LCSD recoveries within the acceptance limits.
- QM-08 The spike recovery was outside acceptance limits for the LCS. The batch was accepted based on acceptable LCSD recovery.
- QB-01 The method blank contains analyte at a concentration above the RL/PQL; however, concentration is less than 10% of the sample result, which is negligible according to method criteria.
- HDSP Sample aliquot taken from VOA vial with headspace (air bubble greater than 6 mm diameter).
- E The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate (CLP E-flag).
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

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Oilfield Environmental & Compliance, Inc.  
307 Roemer Way, Suite 300, Santa Maria, Ca 93454  
101 Adkisson Way, Taft, Ca 93268  
Phone: 805-922-4772 / 661-762-9143  
AR@oecusa.com

Date: 05/21/15

Employee Name: Brandon Gunster

Client Name: Aera

Project / Site Name: Pond Testing / Coalinga

Roundtrip Drive Time: 3.6 Hrs

Roundtrip Drive Mileage: 222 miles

Start Field Time: 0700

Stop Field Time: 1500

Start Field Mileage: 107881

Stop Field Mileage: 107899

Consumables:

45 minute Lunch Break

⇒ 8.0 Hours Regular Time & 3.0 Hrs Over-time

(4) Bailer Tubes

Description / Comment:

Admin Use:

Name: Initials: Date:

Total Drive Time: Total Field Time:

Total Drive Mileage: Total Field Mileage:

TICKET NO. 3622

TABLE 1

FIELD PARAMETERS AND LABORATORY ANALYSIS

Constituents <sup>1</sup>	Analytical Method <sup>2</sup>
Total Nickel	EPA-6010B
<b>Metals (continued)</b>	
Total Selenium	EPA-6010B
Total Silver	EPA-6010B
Total Thallium	EPA-6010B
Total Vanadium	EPA-6010B
Total Zinc	EPA-6010B
Total Boron	EPA-200.7 color
Total Lithium	EPA-200.7
Total Strontium	EPA-200.7
Total Iron	EPA-200.7
Total Manganese	EPA-200.7
Total Calcium	EPA-200.7
Total Magnesium	EPA-200.7
Total Sodium	EPA-200.7
Total Potassium	EPA-200.7 ✓
<b>Radionuclides</b>	
Gross Alpha	EPA-9310/SM 7110B
Radium 226	EPA-9315/SM 7110B
Radium 228	EPA-9320/SM 7110B
Total Recoverable Uranium	EnviroRad, EPA-200.8
<b>Total Petroleum Hydrocarbons</b>	
Total Petroleum Hydrocarbons-Diesel	EPA-8015B
<b>General Chemistry</b>	
Bromide	EPA-300.0
Chloride	EPA-300.0
Nitrate as NO3	EPA-300.0
Sulfate	EPA-300.0
Total Alkalinity as CaCO3	SM 2320B
Fluoride	EPA-300.0
Total Dissolved Solids	SM 2540C

Covered under previous page

2x 1L poly - Davi  
250 mL poly HNO<sub>3</sub> - Davi

1L amber

1L poly

1. Constituents listed in Attachment B of RWQCB Order 13267 dated April 1, 2015.
2. "-" = not applicable, EPA = Environmental Protection Agency, and SM = Standard Method.

14 @1250 cms sump @125 114°F 6.9pH  
~~inlet~~ Baile 5.6ms

15 @1250 P2 <sup>125</sup> Sump Inlet 113°F 6.6pH 7.6ms  
#2 baile

16 @1015 P2 Pond Inlet #1 C-151  
OFF 2" 126°F 6.5pH 8.0ms

17 @1400 32 water plant C-60 sample box  
V-700 IN 135°F 6.5pH 6.0ms

~~18 32 water plant  
V-700 out~~

~~19 32 water plant  
softener inlet~~

~~20 32 water plant  
softener outlet~~

@1430 21 32 Water Plant Treater Drains  
168°F 6.9pH V-307 C-61  
11.2ms  
35" sample cock



**APPENDIX C**

---

Analytical Reports and Chain-of-Custody Documentation



Oilfield Environmental and Compliance, INC.



Tim Parcel  
Aera Energy-Coalinga  
P.O. Box 11184  
Bakersfield, CA 93389-1184

05 June 2015

RE: Pond Testing

Work Order: 1502171

Dear Client:

Enclosed is an analytical report for the above referenced project. The samples included in this report were received on 20-May-15 15:35 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Assurance Manual, applicable standard operating procedures, and other related documentation. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

A handwritten signature in cursive script that reads "Meredith Sprister".

Meredith Sprister

Project Manager

307 Roemer Way, Suite 300, Santa Maria, CA 93454

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FAX: (805) 925-3376



Oilfield Environmental and Compliance, INC.

Aera Energy-Coalinga  
P.O. Box 11184  
Bakersfield CA, 93389-1184

Project: Pond Testing  
Project Number: Coalinga  
Project Manager: Tim Parcel

Reported:  
05-Jun-15 16:57

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
26 Pond Inlet C-1	1502171-01	Produced Water	19-May-15 10:00	20-May-15 15:35
26 Dehy Water Sample C-13	1502171-02	Produced Water	19-May-15 08:30	20-May-15 15:35
27 Water Plant Pump Discharge C-21	1502171-03	Produced Water	19-May-15 10:30	20-May-15 15:35
32 Little Hoover C-26	1502171-04	Produced Water	19-May-15 11:15	20-May-15 15:35
32 Water Plant Pit 700 C-31	1502171-05	Produced Water	19-May-15 13:50	20-May-15 15:35
32 Water Plant T-810 C-32	1502171-06	Produced Water	19-May-15 14:30	20-May-15 15:35
32 Dehy T-320 Lower Level Inlet C-47	1502171-07	Produced Water	19-May-15 12:30	20-May-15 15:35
32 Dehy T-323/T-324 Discharge C-58	1502171-08	Produced Water	19-May-15 12:05	20-May-15 15:35
32 Dehy T-317 Drain C-59	1502171-09	Produced Water	19-May-15 13:00	20-May-15 15:35
32 Dehy T-318 Drain	1502171-10	Produced Water	19-May-15 13:10	20-May-15 15:35

Oilfield Environmental and Compliance

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Oilfield Environmental and Compliance, INC.

Aera Energy-Coalinga P.O. Box 11184 Bakersfield CA, 93389-1184	Project: Pond Testing Project Number: Coalinga Project Manager: Tim Parcel	Reported: 05-Jun-15 16:57
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**26 Pond Inlet C-1  
1502171-01 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Wet Chemistry by EPA or APHA Standard Methods**

Total Alkalinity, CaCO3	970	10	mg/L	1	B5E0638	22-May-15	22-May-15	SM 2320B	
Bicarbonate, CaCO3	970	10	"	"	"	"	"	"	
Carbonate, CaCO3	ND	10	"	"	"	"	"	"	
Hydroxide, CaCO3	ND	10	"	"	"	"	"	"	
Total Dissolved Solids	12000	10	"	"	B5E0675	26-May-15	26-May-15	2540C	

**Anions by EPA Method 300.0**

Bromide	ND	20	mg/L	50	B5E0606	21-May-15	22-May-15	EPA 300.0	R-06
Chloride	6100	200	"	500	"	"	22-May-15	"	
Fluoride	ND	20	"	50	"	"	22-May-15	"	R-06
Nitrate as NO3	ND	90	"	"	"	"	"	"	HT-01, R-06
Sulfate	660	20	"	"	"	"	"	"	

**Total Metals by EPA 6000/7000 Series Methods**

Antimony	ND	0.050	mg/L	1	B5E0603	21-May-15	22-May-15	EPA 6010B	
Arsenic	0.028	0.020	"	"	"	"	"	"	
Barium	0.45	0.020	"	"	"	"	"	"	
Beryllium	ND	0.010	"	"	"	"	"	"	
Boron	55	2.5	"	25	"	"	22-May-15	"	
Cadmium	ND	0.0050	"	1	"	"	22-May-15	"	
Calcium	250	0.20	"	"	"	"	"	"	
Chromium	ND	0.010	"	"	"	"	"	"	
Cobalt	ND	0.010	"	"	"	"	"	"	
Copper	ND	0.020	"	"	"	"	"	"	
Iron	ND	0.050	"	"	"	"	"	"	
Lead	0.012	0.010	"	"	"	"	"	"	
Lithium	0.93	0.025	"	"	"	"	"	"	
Magnesium	180	0.050	"	"	"	"	"	"	
Manganese	0.36	0.010	"	"	"	"	"	"	
Mercury	ND	0.00020	"	"	B5E0670	26-May-15	26-May-15	EPA 7470A	
Molybdenum	0.014	0.0050	"	"	B5E0603	21-May-15	22-May-15	EPA 6010B	
Nickel	ND	0.0050	"	"	"	"	"	"	
Potassium	94	1.0	"	"	"	"	"	"	

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**26 Pond Inlet C-1  
1502171-01 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Total Metals by EPA 6000/7000 Series Methods**

Selenium	0.10	0.050	mg/L	1	B5E0603	21-May-15	22-May-15	EPA 6010B	
Silver	ND	0.010	"	"	"	"	"	"	
Sodium	4300	25	"	25	"	"	22-May-15	"	
Strontium	8.4	0.010	"	1	"	"	22-May-15	"	
Thallium	ND	0.020	"	"	"	"	"	"	
Vanadium	ND	0.050	"	"	"	"	"	"	
Zinc	ND	0.050	"	"	"	"	"	"	

**TEPH by GC FID**

TPH Oil Crude (C8-C40)	24	1.1	mg/L	10	B5E0617	26-May-15	28-May-15	EPA 8015M	QB-01
Surrogate: o-Terphenyl		94.7 %	50-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

**R-05**

Benzene	23	5.0	ug/L	10	B5E0694	26-May-15	27-May-15	EPA 8260B	
Ethylbenzene	12	5.0	"	"	"	"	"	"	
Toluene	15	5.0	"	"	"	"	"	"	
Xylenes (total)	22	5.0	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		102 %	70-130		"	"	"	"	
Surrogate: Toluene-d8		97.4 %	70-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.0 %	70-130		"	"	"	"	

**Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring**

**R-05**

Acenaphthene	0.55	0.55	ug/L	5	B5E0663	26-May-15	27-May-15	EPA 8270M SIM	
Acenaphthylene	ND	0.55	"	"	"	"	"	"	
Anthracene	ND	0.55	"	"	"	"	"	"	
Benz(a)anthracene	ND	0.55	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.55	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.55	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.55	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	0.55	"	"	"	"	"	"	
Chrysene	ND	0.55	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.55	"	"	"	"	"	"	
Fluoranthene	ND	0.55	"	"	"	"	"	"	
Fluorene	4.3	0.55	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.55	"	"	"	"	"	"	

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Oilfield Environmental and Compliance, INC.

Aera Energy-Coalinga  
P.O. Box 11184  
Bakersfield CA, 93389-1184

Project: Pond Testing  
Project Number: Coalinga  
Project Manager: Tim Parcel

Reported:  
05-Jun-15 16:57

**26 Pond Inlet C-1**  
**1502171-01 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring**

**R-05**

Naphthalene	3.1	0.55	ug/L	5	B5E0663	26-May-15	27-May-15	EPA 8270M SIM	
Phenanthrene	4.0	0.55	"	"	"	"	"	"	
Pyrene	ND	0.55	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl-d14		112 %	39-177		"	"	"	"	

**Miscellaneous Physical/Conventional Chemistry Parameters**

Specific Conductance (EC) @ 25 C	23000	0.01	uS/cm	1	B5E0690	19-May-15	19-May-15	Martini Instruments Mi306	
pH	6.6	0.01	pH Units	"	B5E0651	"	19-May-15	LaMotte pH PockeTester	
Sample Temperature	32	1.0	°C	"	B5E0652	19-May-15	19-May-15	"	

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Oilfield Environmental and Compliance, INC.

Aera Energy-Coalinga P.O. Box 11184 Bakersfield CA, 93389-1184	Project: Pond Testing Project Number: Coalinga Project Manager: Tim Parcel	Reported: 05-Jun-15 16:57
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**26 Dehy Water Sample C-13  
1502171-02 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Wet Chemistry by EPA or APHA Standard Methods**

Total Alkalinity, CaCO3	1400	10	mg/L	1	B5E0638	22-May-15	22-May-15	SM 2320B	
Bicarbonate, CaCO3	1400	10	"	"	"	"	"	"	
Carbonate, CaCO3	ND	10	"	"	"	"	"	"	
Hydroxide, CaCO3	ND	10	"	"	"	"	"	"	
Total Dissolved Solids	3700	10	"	"	B5E0675	26-May-15	26-May-15	2540C	

**Anions by EPA Method 300.0**

Bromide	3.7	2.0	mg/L	5	B5E0606	21-May-15	22-May-15	EPA 300.0	
Chloride	790	20	"	50	"	"	22-May-15	"	
Fluoride	ND	2.0	"	5	"	"	22-May-15	"	R-06
Nitrate as NO3	ND	9.0	"	"	"	"	"	"	HT-01, R-06
Sulfate	540	20	"	50	"	"	22-May-15	"	

**Total Metals by EPA 6000/7000 Series Methods**

Antimony	ND	0.050	mg/L	1	B5E0603	21-May-15	22-May-15	EPA 6010B	
Arsenic	ND	0.020	"	"	"	"	"	"	
Barium	0.15	0.020	"	"	"	"	"	"	
Beryllium	ND	0.010	"	"	"	"	"	"	
Boron	33	0.10	"	"	"	"	"	"	
Cadmium	ND	0.0050	"	"	"	"	"	"	
Calcium	69	0.20	"	"	"	"	"	"	
Chromium	ND	0.010	"	"	"	"	"	"	
Cobalt	ND	0.010	"	"	"	"	"	"	
Copper	ND	0.020	"	"	"	"	"	"	
Iron	1.2	0.050	"	"	"	"	"	"	
Lead	ND	0.010	"	"	"	"	"	"	
Lithium	0.74	0.025	"	"	"	"	"	"	
Magnesium	64	0.050	"	"	"	"	"	"	
Manganese	0.062	0.010	"	"	"	"	"	"	
Mercury	ND	0.00020	"	"	B5E0670	26-May-15	26-May-15	EPA 7470A	
Molybdenum	ND	0.0050	"	"	B5E0603	21-May-15	22-May-15	EPA 6010B	
Nickel	ND	0.0050	"	"	"	"	"	"	
Potassium	27	1.0	"	"	"	"	"	"	
Selenium	ND	0.050	"	"	"	"	"	"	
Silver	ND	0.010	"	"	"	"	"	"	
Sodium	1300	10	"	10	"	"	22-May-15	"	
Strontium	2.8	0.010	"	1	"	"	22-May-15	"	

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Oilfield Environmental and Compliance, INC.

Aera Energy-Coalinga  
P.O. Box 11184  
Bakersfield CA, 93389-1184

Project: Pond Testing  
Project Number: Coalinga  
Project Manager: Tim Parcel

Reported:  
05-Jun-15 16:57

**26 Dehy Water Sample C-13  
1502171-02 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	--------	-------

**Oilfield Environmental and Compliance**

**Total Metals by EPA 6000/7000 Series Methods**

Thallium	ND	0.020	mg/L	1	B5E0603	21-May-15	22-May-15	EPA 6010B	
Vanadium	ND	0.050	"	"	"	"	"	"	
Zinc	ND	0.050	"	"	"	"	"	"	

**TEPH by GC FID**

<b>TPH Oil Crude (C8-C40)</b>	<b>53</b>	<b>1.1</b>	<b>mg/L</b>	<b>10</b>	<b>B5E0617</b>	<b>26-May-15</b>	<b>28-May-15</b>	<b>EPA 8015M</b>	<b>QB-01</b>
Surrogate: <i>o</i> -Terphenyl		106 %	50-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

**R-05**

<b>Benzene</b>	<b>210</b>	<b>10</b>	<b>ug/L</b>	<b>20</b>	<b>B5E0694</b>	<b>26-May-15</b>	<b>27-May-15</b>	<b>EPA 8260B</b>	
<b>Ethylbenzene</b>	<b>67</b>	<b>10</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
<b>Toluene</b>	<b>180</b>	<b>10</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
<b>xylenes (total)</b>	<b>130</b>	<b>10</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
Surrogate: <i>Dibromofluoromethane</i>		102 %	70-130		"	"	"	"	
Surrogate: <i>Toluene-d8</i>		100 %	70-130		"	"	"	"	
Surrogate: <i>4-Bromofluorobenzene</i>		98.6 %	70-130		"	"	"	"	

**Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring**

**R-05**

<b>Acenaphthene</b>	<b>1.2</b>	<b>0.54</b>	<b>ug/L</b>	<b>5</b>	<b>B5E0663</b>	<b>26-May-15</b>	<b>27-May-15</b>	<b>EPA 8270M</b>	
								<b>SIM</b>	
Acenaphthylene	ND	0.54	"	"	"	"	"	"	
Anthracene	ND	0.54	"	"	"	"	"	"	
Benz(a)anthracene	ND	0.54	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.54	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.54	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.54	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	0.54	"	"	"	"	"	"	
<b>Chrysene</b>	<b>0.54</b>	<b>0.54</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
Dibenz (a,h) anthracene	ND	0.54	"	"	"	"	"	"	
Fluoranthene	ND	0.54	"	"	"	"	"	"	
<b>Fluorene</b>	<b>10</b>	<b>0.54</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
Indeno (1,2,3-cd) pyrene	ND	0.54	"	"	"	"	"	"	
<b>Naphthalene</b>	<b>13</b>	<b>0.54</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
<b>Phenanthrene</b>	<b>10</b>	<b>0.54</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
<b>Pyrene</b>	<b>0.60</b>	<b>0.54</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
Surrogate: <i>p</i> -Terphenyl-d14		93.8 %	39-177		"	"	"	"	

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**26 Dehy Water Sample C-13  
1502171-02 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Miscellaneous Physical/Conventional Chemistry Parameters**

Specific Conductance (EC) @ 25 C	6400	0.01	uS/cm	1	B5E0690	19-May-15	19-May-15	Martini Instruments Mi306	
pH	6.4	0.01	pH Units	"	B5E0651	"	19-May-15	LaMotte pH PockeTester	
Sample Temperature	24	1.0	°C	"	B5E0652	19-May-15	19-May-15	"	

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**27 Water Plant Pump Discharge C-21  
1502171-03 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Wet Chemistry by EPA or APHA Standard Methods**

Total Alkalinity, CaCO3	1600	10	mg/L	1	B5E0638	22-May-15	22-May-15	SM 2320B	
Bicarbonate, CaCO3	1600	10	"	"	"	"	"	"	
Carbonate, CaCO3	ND	10	"	"	"	"	"	"	
Hydroxide, CaCO3	ND	10	"	"	"	"	"	"	
Total Dissolved Solids	4500	10	"	"	B5E0675	26-May-15	26-May-15	2540C	

**Anions by EPA Method 300.0**

Bromide	3.4	0.80	mg/L	2	B5E0606	21-May-15	22-May-15	EPA 300.0	
Chloride	790	20	"	50	"	"	22-May-15	"	
Fluoride	1.4	0.80	"	2	"	"	22-May-15	"	
Nitrate as NO3	ND	3.6	"	"	"	"	"	"	HT-01, R-06
Sulfate	540	20	"	50	"	"	22-May-15	"	

**Total Metals by EPA 6000/7000 Series Methods**

Antimony	ND	0.050	mg/L	1	B5E0603	21-May-15	22-May-15	EPA 6010B	
Arsenic	ND	0.020	"	"	"	"	"	"	
Barium	0.13	0.020	"	"	"	"	"	"	
Beryllium	ND	0.010	"	"	"	"	"	"	
Boron	30	0.10	"	"	"	"	"	"	
Cadmium	ND	0.0050	"	"	"	"	"	"	
Calcium	66	0.20	"	"	"	"	"	"	
Chromium	ND	0.010	"	"	"	"	"	"	
Cobalt	ND	0.010	"	"	"	"	"	"	
Copper	ND	0.020	"	"	"	"	"	"	
Iron	0.065	0.050	"	"	"	"	"	"	
Lead	ND	0.010	"	"	"	"	"	"	
Lithium	0.70	0.025	"	"	"	"	"	"	
Magnesium	64	0.050	"	"	"	"	"	"	
Manganese	0.057	0.010	"	"	"	"	"	"	
Mercury	ND	0.00020	"	"	B5E0670	26-May-15	26-May-15	EPA 7470A	
Molybdenum	ND	0.0050	"	"	B5E0603	21-May-15	22-May-15	EPA 6010B	
Nickel	ND	0.0050	"	"	"	"	"	"	
Potassium	26	1.0	"	"	"	"	"	"	
Selenium	ND	0.050	"	"	"	"	"	"	
Silver	ND	0.010	"	"	"	"	"	"	
Sodium	1100	10	"	10	"	"	22-May-15	"	
Strontium	2.8	0.010	"	1	"	"	22-May-15	"	

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Aera Energy-Coalinga  
 P.O. Box 11184  
 Bakersfield CA, 93389-1184

Project: Pond Testing  
 Project Number: Coalinga  
 Project Manager: Tim Parcel

Reported:  
 05-Jun-15 16:57

**27 Water Plant Pump Discharge C-21  
 1502171-03 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Total Metals by EPA 6000/7000 Series Methods**

Thallium	ND	0.020	mg/L	1	B5E0603	21-May-15	22-May-15	EPA 6010B	
Vanadium	ND	0.050	"	"	"	"	"	"	
Zinc	ND	0.050	"	"	"	"	"	"	

**TEPH by GC FID**

TPH Oil Crude (C8-C40)	78	2.2	mg/L	20	B5E0617	26-May-15	28-May-15	EPA 8015M	QB-01
Surrogate: <i>o</i> -Terphenyl		104 %	50-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

**R-05**

Benzene	190	10	ug/L	20	B5E0694	26-May-15	27-May-15	EPA 8260B	
Ethylbenzene	79	10	"	"	"	"	"	"	
Toluene	150	10	"	"	"	"	"	"	
Xylenes (total)	120	10	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		100 %	70-130		"	"	"	"	
Surrogate: Toluene-d8		101 %	70-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.9 %	70-130		"	"	"	"	

**Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring**

**R-05**

Acenaphthene	1.6	0.55	ug/L	5	B5E0663	26-May-15	27-May-15	EPA 8270M SIM	
Acenaphthylene	ND	0.55	"	"	"	"	"	"	
Anthracene	ND	0.55	"	"	"	"	"	"	
Benz(a)anthracene	ND	0.55	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.55	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.55	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.55	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	0.55	"	"	"	"	"	"	
Chrysene	0.82	0.55	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.55	"	"	"	"	"	"	
Fluoranthene	0.82	0.55	"	"	"	"	"	"	
Fluorene	12	0.55	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.55	"	"	"	"	"	"	
Naphthalene	13	0.55	"	"	"	"	"	"	
Phenanthrene	16	0.55	"	"	"	"	"	"	
Pyrene	0.99	0.55	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl-d14		106 %	39-177		"	"	"	"	

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Bakersfield CA, 93389-1184

Project: Pond Testing  
Project Number: Coalinga  
Project Manager: Tim Parcel

Reported:  
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**27 Water Plant Pump Discharge C-21  
1502171-03 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Miscellaneous Physical/Conventional Chemistry Parameters**

Specific Conductance (EC) @ 25 C	6500	0.01	uS/cm	1	B5E0690	19-May-15	19-May-15	Martini Instruments Mi306	
pH	6.3	0.01	pH Units	"	B5E0651	"	19-May-15	LaMotte pH PockeTester	
Sample Temperature	28	1.0	°C	"	B5E0652	19-May-15	19-May-15	"	

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**32 Little Hoover C-26  
1502171-04 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Wet Chemistry by EPA or APHA Standard Methods**

Total Alkalinity, CaCO <sub>3</sub>	55	10	mg/L	1	B5E0720	27-May-15	27-May-15	SM 2320B	
Bicarbonate, CaCO <sub>3</sub>	55	10	"	"	"	"	"	"	
Carbonate, CaCO <sub>3</sub>	ND	10	"	"	"	"	"	"	
Hydroxide, CaCO <sub>3</sub>	ND	10	"	"	"	"	"	"	
Total Dissolved Solids	210	10	"	"	B5E0675	26-May-15	26-May-15	2540C	

**Anions by EPA Method 300.0**

Bromide	ND	0.40	mg/L	1	B5E0606	21-May-15	22-May-15	EPA 300.0	
Chloride	11	0.40	"	"	"	"	"	"	
Fluoride	ND	0.40	"	"	"	"	"	"	
Nitrate as NO <sub>3</sub>	6.5	1.8	"	"	"	"	"	"	HT-01
Sulfate	64	20	"	50	"	"	22-May-15	"	

**Total Metals by EPA 6000/7000 Series Methods**

Antimony	ND	0.050	mg/L	1	B5E0603	21-May-15	22-May-15	EPA 6010B	
Arsenic	ND	0.020	"	"	"	"	"	"	
Barium	0.082	0.020	"	"	"	"	"	"	
Beryllium	ND	0.010	"	"	"	"	"	"	
Boron	0.19	0.10	"	"	"	"	"	"	
Cadmium	ND	0.0050	"	"	"	"	"	"	
Calcium	33	0.20	"	"	"	"	"	"	
Chromium	ND	0.010	"	"	"	"	"	"	
Cobalt	ND	0.010	"	"	"	"	"	"	
Copper	ND	0.020	"	"	"	"	"	"	
Iron	1.5	0.050	"	"	"	"	"	"	
Lead	ND	0.010	"	"	"	"	"	"	
Lithium	ND	0.025	"	"	"	"	"	"	
Magnesium	4.7	0.050	"	"	"	"	"	"	
Manganese	0.046	0.010	"	"	"	"	"	"	
Mercury	ND	0.00020	"	"	B5E0670	26-May-15	26-May-15	EPA 7470A	
Molybdenum	ND	0.0050	"	"	B5E0603	21-May-15	22-May-15	EPA 6010B	
Nickel	0.012	0.0050	"	"	"	"	"	"	
Potassium	6.9	1.0	"	"	"	"	"	"	
Selenium	ND	0.050	"	"	"	"	"	"	
Silver	ND	0.010	"	"	"	"	"	"	
Sodium	15	1.0	"	"	"	"	"	"	
Strontium	0.19	0.010	"	"	"	"	"	"	

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**32 Little Hoover C-26**  
**1502171-04 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Total Metals by EPA 6000/7000 Series Methods**

Thallium	ND	0.020	mg/L	1	B5E0603	21-May-15	22-May-15	EPA 6010B	
Vanadium	ND	0.050	"	"	"	"	"	"	
Zinc	ND	0.050	"	"	"	"	"	"	

**TEPH by GC FID**

<b>TPH Oil Crude (C8-C40)</b>	<b>8.7</b>	<b>0.11</b>	<b>mg/L</b>	<b>1</b>	<b>B5E0617</b>	<b>26-May-15</b>	<b>27-May-15</b>	<b>EPA 8015M</b>	<b>QB-01</b>
<i>Surrogate: o-Terphenyl</i>	<i>98.5 %</i>	<i>50-150</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>

**Volatile Organic Compounds by EPA Method 8260B**

Benzene	ND	0.50	ug/L	1	B5E0694	26-May-15	26-May-15	EPA 8260B	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Aromatics (total)	ND	0.50	"	"	"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>	<i>99.0 %</i>	<i>70-130</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>
<i>Surrogate: Toluene-d8</i>	<i>97.5 %</i>	<i>70-130</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>92.6 %</i>	<i>70-130</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>

**Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring**

Acenaphthene	ND	0.11	ug/L	1	B5E0663	26-May-15	27-May-15	EPA 8270M	
Acenaphthylene	ND	0.11	"	"	"	"	"	SIM	
Anthracene	ND	0.11	"	"	"	"	"	"	
Benz(a)anthracene	ND	0.11	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.11	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.11	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.11	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	0.11	"	"	"	"	"	"	
Chrysene	ND	0.11	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.11	"	"	"	"	"	"	
Fluoranthene	ND	0.11	"	"	"	"	"	"	
Fluorene	ND	0.11	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.11	"	"	"	"	"	"	
Naphthalene	ND	0.11	"	"	"	"	"	"	
Phenanthrene	ND	0.11	"	"	"	"	"	"	
Pyrene	ND	0.11	"	"	"	"	"	"	

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**32 Little Hoover C-26  
1502171-04 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring**

<i>Surrogate: p-Terphenyl-d14</i>	125 %	39-177	B5E0663	26-May-15	27-May-15	EPA 8270M SIM
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**Miscellaneous Physical/Conventional Chemistry Parameters**

Specific Conductance (EC) @ 25 C	290	0.01	uS/cm	1	B5E0690	19-May-15	19-May-15	Martini Instruments Mi306
pH	6.2	0.01	pH Units	"	B5E0651	"	19-May-15	LaMotte pH PockeTester
Sample Temperature	22	1.0	°C	"	B5E0652	19-May-15	19-May-15	"

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**32 Water Plant Pit 700 C-31  
1502171-05 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Wet Chemistry by EPA or APHA Standard Methods**

Total Alkalinity, CaCO3	1000	10	mg/L	1	B5E0638	22-May-15	22-May-15	SM 2320B	
Bicarbonate, CaCO3	1000	10	"	"	"	"	"	"	
Carbonate, CaCO3	ND	10	"	"	"	"	"	"	
Hydroxide, CaCO3	ND	10	"	"	"	"	"	"	
Total Dissolved Solids	5600	10	"	"	B5E0675	26-May-15	26-May-15	2540C	

**Anions by EPA Method 300.0**

Bromide	4.2	2.0	mg/L	5	B5E0606	21-May-15	22-May-15	EPA 300.0	
Chloride	2000	40	"	100	"	"	03-Jun-15	"	
Fluoride	ND	2.0	"	5	"	"	22-May-15	"	R-06
Nitrate as NO3	ND	9.0	"	"	"	"	"	"	HT-01, R-06
Sulfate	630	20	"	50	"	"	22-May-15	"	

**Total Metals by EPA 6000/7000 Series Methods**

Antimony	ND	0.050	mg/L	1	B5E0603	21-May-15	22-May-15	EPA 6010B	
Arsenic	ND	0.020	"	"	"	"	"	"	
Barium	0.028	0.020	"	"	"	"	"	"	
Beryllium	ND	0.010	"	"	"	"	"	"	
Boron	62	1.0	"	10	"	"	22-May-15	"	
Cadmium	ND	0.0050	"	1	"	"	22-May-15	"	
Calcium	18	0.20	"	"	"	"	"	"	
Chromium	ND	0.010	"	"	"	"	"	"	
Cobalt	ND	0.010	"	"	"	"	"	"	
Copper	ND	0.020	"	"	"	"	"	"	
Iron	0.082	0.050	"	"	"	"	"	"	
Lead	0.021	0.010	"	"	"	"	"	"	
Lithium	0.38	0.025	"	"	"	"	"	"	
Magnesium	19	0.050	"	"	"	"	"	"	
Manganese	0.056	0.010	"	"	"	"	"	"	
Mercury	ND	0.00020	"	"	B5E0670	26-May-15	26-May-15	EPA 7470A	
Molybdenum	ND	0.0050	"	"	B5E0603	21-May-15	22-May-15	EPA 6010B	
Nickel	ND	0.0050	"	"	"	"	"	"	
Potassium	32	1.0	"	"	"	"	"	"	
Selenium	ND	0.050	"	"	"	"	"	"	
Silver	ND	0.010	"	"	"	"	"	"	
Sodium	2200	10	"	10	"	"	22-May-15	"	
Strontium	0.56	0.010	"	1	"	"	22-May-15	"	

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Oilfield Environmental and Compliance, INC.

Aera Energy-Coalinga  
 P.O. Box 11184  
 Bakersfield CA, 93389-1184

Project: Pond Testing  
 Project Number: Coalinga  
 Project Manager: Tim Parcel

Reported:  
 05-Jun-15 16:57

**32 Water Plant Pit 700 C-31  
 1502171-05 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Total Metals by EPA 6000/7000 Series Methods**

Thallium	ND	0.020	mg/L	1	B5E0603	21-May-15	22-May-15	EPA 6010B	
Vanadium	ND	0.050	"	"	"	"	"	"	
Zinc	ND	0.050	"	"	"	"	"	"	

**TEPH by GC FID**

TPH Oil Crude (C8-C40)	440	11	mg/L	100	B5E0617	26-May-15	28-May-15	EPA 8015M	QB-01
Surrogate: <i>o</i> -Terphenyl		141 %	50-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

**R-05**

Benzene	ND	50	ug/L	100	B5E0694	26-May-15	27-May-15	EPA 8260B	
Ethylbenzene	ND	50	"	"	"	"	"	"	
Toluene	ND	50	"	"	"	"	"	"	
Xylenes (total)	ND	50	"	"	"	"	"	"	
Surrogate: <i>Dibromofluoromethane</i>		103 %	70-130		"	"	"	"	
Surrogate: <i>Toluene-d8</i>		97.7 %	70-130		"	"	"	"	
Surrogate: <i>4-Bromofluorobenzene</i>		96.7 %	70-130		"	"	"	"	

**Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring**

**R-05**

Acenaphthene	6.9	2.2	ug/L	20	B5E0663	26-May-15	27-May-15	EPA 8270M SIM	
Acenaphthylene	ND	2.2	"	"	"	"	"	"	
Anthracene	ND	2.2	"	"	"	"	"	"	
Benz(a)anthracene	ND	2.2	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	2.2	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	2.2	"	"	"	"	"	"	
Benzo (a) pyrene	ND	2.2	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	2.2	"	"	"	"	"	"	
Chrysene	5.4	2.2	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	2.2	"	"	"	"	"	"	
Fluoranthene	5.8	2.2	"	"	"	"	"	"	
Fluorene	47	2.2	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	2.2	"	"	"	"	"	"	
Naphthalene	16	2.2	"	"	"	"	"	"	
Phenanthrene	75	11	"	100	"	"	28-May-15	"	
Pyrene	8.2	2.2	"	20	"	"	27-May-15	"	
Surrogate: <i>p</i> -Terphenyl-d14		150 %	39-177		"	"	"	"	

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Oilfield Environmental and Compliance, INC.

Aera Energy-Coalinga  
P.O. Box 11184  
Bakersfield CA, 93389-1184

Project: Pond Testing  
Project Number: Coalinga  
Project Manager: Tim Parcel

Reported:  
05-Jun-15 16:57

**32 Water Plant Pit 700 C-31  
1502171-05 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Miscellaneous Physical/Conventional Chemistry Parameters**

Specific Conductance (EC) @ 25 C	9500	0.01	uS/cm	1	B5E0690	19-May-15	19-May-15	Martini Instruments Mi306	
pH	6.8	0.01	pH Units	"	B5E0651	"	19-May-15	LaMotte pH PockeTester	
Sample Temperature	51	1.0	°C	"	B5E0652	19-May-15	19-May-15	"	

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Aera Energy-Coalinga P.O. Box 11184 Bakersfield CA, 93389-1184	Project: Pond Testing Project Number: Coalinga Project Manager: Tim Parcel	Reported: 05-Jun-15 16:57
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**32 Water Plant T-810 C-32  
1502171-06 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Wet Chemistry by EPA or APHA Standard Methods**

Total Alkalinity, CaCO3	940	10	mg/L	1	B5E0638	22-May-15	22-May-15	SM 2320B	
Bicarbonate, CaCO3	940	10	"	"	"	"	"	"	
Carbonate, CaCO3	ND	10	"	"	"	"	"	"	
Hydroxide, CaCO3	ND	10	"	"	"	"	"	"	
Total Dissolved Solids	4000	10	"	"	B5E0675	26-May-15	26-May-15	2540C	

**Anions by EPA Method 300.0**

Bromide	4.0	2.0	mg/L	5	B5E0606	21-May-15	22-May-15	EPA 300.0	
Chloride	980	20	"	50	"	"	22-May-15	"	
Fluoride	ND	2.0	"	5	"	"	22-May-15	"	R-06
Nitrate as NO3	ND	9.0	"	"	"	"	"	"	HT-01, R-06
Sulfate	620	20	"	50	"	"	22-May-15	"	

**Total Metals by EPA 6000/7000 Series Methods**

Antimony	ND	0.050	mg/L	1	B5E0603	21-May-15	22-May-15	EPA 6010B	
Arsenic	ND	0.020	"	"	"	"	"	"	
Barium	ND	0.020	"	"	"	"	"	"	
Beryllium	ND	0.010	"	"	"	"	"	"	
Boron	59	1.0	"	10	"	"	22-May-15	"	
Cadmium	ND	0.0050	"	1	"	"	22-May-15	"	
Calcium	ND	0.20	"	"	"	"	"	"	
Chromium	ND	0.010	"	"	"	"	"	"	
Cobalt	ND	0.010	"	"	"	"	"	"	
Copper	ND	0.020	"	"	"	"	"	"	
Iron	ND	0.050	"	"	"	"	"	"	
Lead	0.015	0.010	"	"	"	"	"	"	
Lithium	0.46	0.025	"	"	"	"	"	"	
Magnesium	ND	0.050	"	"	"	"	"	"	
Manganese	ND	0.010	"	"	"	"	"	"	
Mercury	ND	0.00020	"	"	B5E0670	26-May-15	26-May-15	EPA 7470A	
Molybdenum	ND	0.0050	"	"	B5E0603	21-May-15	22-May-15	EPA 6010B	
Nickel	ND	0.0050	"	"	"	"	"	"	
Potassium	35	1.0	"	"	"	"	"	"	
Selenium	ND	0.050	"	"	"	"	"	"	
Silver	ND	0.010	"	"	"	"	"	"	
Sodium	1400	10	"	10	"	"	22-May-15	"	
Strontium	ND	0.010	"	1	"	"	22-May-15	"	

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Aera Energy-Coalinga  
P.O. Box 11184  
Bakersfield CA, 93389-1184

Project: Pond Testing  
Project Number: Coalinga  
Project Manager: Tim Parcel

Reported:  
05-Jun-15 16:57

**32 Water Plant T-810 C-32  
1502171-06 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Total Metals by EPA 6000/7000 Series Methods**

Thallium	ND	0.020	mg/L	1	B5E0603	21-May-15	22-May-15	EPA 6010B	
Vanadium	ND	0.050	"	"	"	"	"	"	
Zinc	ND	0.050	"	"	"	"	"	"	

**TEPH by GC FID**

<b>TPH Oil Crude (C8-C40)</b>	<b>28</b>	<b>1.1</b>	<b>mg/L</b>	<b>10</b>	<b>B5E0617</b>	<b>26-May-15</b>	<b>28-May-15</b>	<b>EPA 8015M</b>	<b>QB-01</b>
Surrogate: <i>o</i> -Terphenyl		103 %	50-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

**R-05**

Benzene	ND	50	ug/L	100	B5E0694	26-May-15	27-May-15	EPA 8260B	
Ethylbenzene	ND	50	"	"	"	"	"	"	
Toluene	ND	50	"	"	"	"	"	"	
Aromatics (total)	ND	50	"	"	"	"	"	"	
Surrogate: <i>Dibromofluoromethane</i>		99.4 %	70-130		"	"	"	"	
Surrogate: <i>Toluene-d8</i>		96.6 %	70-130		"	"	"	"	
Surrogate: <i>4-Bromofluorobenzene</i>		95.5 %	70-130		"	"	"	"	

**Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring**

<b>Acenaphthene</b>	<b>1.4</b>	<b>0.11</b>	<b>ug/L</b>	<b>1</b>	<b>B5E0663</b>	<b>26-May-15</b>	<b>27-May-15</b>	<b>EPA 8270M</b>	
<b>Acenaphthylene</b>	<b>0.57</b>	<b>0.11</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>SIM</b>	
Anthracene	ND	0.11	"	"	"	"	"	"	
Benz(a)anthracene	ND	0.11	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.11	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.11	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.11	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	0.11	"	"	"	"	"	"	
Chrysene	ND	0.11	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.11	"	"	"	"	"	"	
<b>Fluoranthene</b>	<b>0.14</b>	<b>0.11</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
<b>Fluorene</b>	<b>13</b>	<b>1.1</b>	<b>"</b>	<b>10</b>	<b>"</b>	<b>"</b>	<b>27-May-15</b>	<b>"</b>	
Indeno (1,2,3-cd) pyrene	ND	0.11	"	1	"	"	27-May-15	"	
<b>Naphthalene</b>	<b>7.6</b>	<b>1.1</b>	<b>"</b>	<b>10</b>	<b>"</b>	<b>"</b>	<b>27-May-15</b>	<b>"</b>	
<b>Phenanthrene</b>	<b>12</b>	<b>1.1</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
<b>Pyrene</b>	<b>0.24</b>	<b>0.11</b>	<b>"</b>	<b>1</b>	<b>"</b>	<b>"</b>	<b>27-May-15</b>	<b>"</b>	
Surrogate: <i>p</i> -Terphenyl-d14		124 %	39-177		"	"	"	"	

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Oilfield Environmental and Compliance, INC.

Aera Energy-Coalinga P.O. Box 11184 Bakersfield CA, 93389-1184	Project: Pond Testing Project Number: Coalinga Project Manager: Tim Parcel	Reported: 05-Jun-15 16:57
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**32 Water Plant T-810 C-32**  
**1502171-06 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Miscellaneous Physical/Conventional Chemistry Parameters**

Specific Conductance (EC) @ 25 C	6200	0.01	uS/cm	1	B5E0690	19-May-15	19-May-15	Martini Instruments Mi306	
pH	6.4	0.01	pH Units	"	B5E0651	"	19-May-15	LaMotte pH PockeTester	
Sample Temperature	34	1.0	°C	"	B5E0652	19-May-15	19-May-15	"	

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Aera Energy-Coalinga P.O. Box 11184 Bakersfield CA, 93389-1184	Project: Pond Testing Project Number: Coalinga Project Manager: Tim Parcel	Reported: 05-Jun-15 16:57
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**32 Dehy T-320 Lower Level Inlet C-47  
1502171-07 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Wet Chemistry by EPA or APHA Standard Methods**

Total Alkalinity, CaCO3	1000	10	mg/L	1	B5E0638	22-May-15	22-May-15	SM 2320B	
Bicarbonate, CaCO3	1000	10	"	"	"	"	"	"	
Carbonate, CaCO3	ND	10	"	"	"	"	"	"	
Hydroxide, CaCO3	ND	10	"	"	"	"	"	"	
Total Dissolved Solids	3900	10	"	"	B5E0675	26-May-15	26-May-15	2540C	

**Anions by EPA Method 300.0**

Bromide	4.4	2.0	mg/L	5	B5E0606	21-May-15	22-May-15	EPA 300.0	
Chloride	940	20	"	50	"	"	22-May-15	"	
Fluoride	ND	2.0	"	5	"	"	22-May-15	"	R-06
Nitrate as NO3	ND	9.0	"	"	"	"	"	"	HT-01, R-06
Sulfate	630	20	"	50	"	"	22-May-15	"	

**Total Metals by EPA 6000/7000 Series Methods**

Antimony	ND	0.050	mg/L	1	B5E0603	21-May-15	22-May-15	EPA 6010B	
Arsenic	ND	0.020	"	"	"	"	"	"	
Barium	0.091	0.020	"	"	"	"	"	"	
Beryllium	ND	0.010	"	"	"	"	"	"	
Boron	61	1.0	"	10	"	"	22-May-15	"	
Cadmium	ND	0.0050	"	1	"	"	22-May-15	"	
Calcium	55	0.20	"	"	"	"	"	"	
Chromium	ND	0.010	"	"	"	"	"	"	
Cobalt	ND	0.010	"	"	"	"	"	"	
Copper	ND	0.020	"	"	"	"	"	"	
Iron	ND	0.050	"	"	"	"	"	"	
Lead	0.015	0.010	"	"	"	"	"	"	
Lithium	0.58	0.025	"	"	"	"	"	"	
Magnesium	47	0.050	"	"	"	"	"	"	
Manganese	0.057	0.010	"	"	"	"	"	"	
Mercury	ND	0.00020	"	"	B5E0670	26-May-15	26-May-15	EPA 7470A	
Molybdenum	ND	0.0050	"	"	B5E0603	21-May-15	22-May-15	EPA 6010B	
Nickel	ND	0.0050	"	"	"	"	"	"	
Potassium	39	1.0	"	"	"	"	"	"	
Selenium	ND	0.050	"	"	"	"	"	"	
Silver	ND	0.010	"	"	"	"	"	"	
Sodium	1400	10	"	10	"	"	22-May-15	"	
Strontium	1.9	0.010	"	1	"	"	22-May-15	"	

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Aera Energy-Coalinga P.O. Box 11184 Bakersfield CA, 93389-1184	Project: Pond Testing Project Number: Coalinga Project Manager: Tim Parcel	Reported: 05-Jun-15 16:57
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**32 Dehy T-320 Lower Level Inlet C-47  
1502171-07 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Total Metals by EPA 6000/7000 Series Methods**

Thallium	ND	0.020	mg/L	1	B5E0603	21-May-15	22-May-15	EPA 6010B	
Vanadium	ND	0.050	"	"	"	"	"	"	
Zinc	ND	0.050	"	"	"	"	"	"	

**TEPH by GC FID**

<b>TPH Oil Crude (C8-C40)</b>	<b>45</b>	<b>1.1</b>	<b>mg/L</b>	<b>10</b>	<b>B5E0617</b>	<b>26-May-15</b>	<b>28-May-15</b>	<b>EPA 8015M</b>	<b>QB-01</b>
<i>Surrogate: o-Terphenyl</i>		<i>121 %</i>	<i>50-150</i>		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

**R-05**

<b>Benzene</b>	<b>38</b>	<b>10</b>	<b>ug/L</b>	<b>20</b>	<b>B5E0694</b>	<b>26-May-15</b>	<b>27-May-15</b>	<b>EPA 8260B</b>	
<b>Ethylbenzene</b>	<b>22</b>	<b>10</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
<b>Toluene</b>	<b>22</b>	<b>10</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
<b>Xylenes (total)</b>	<b>36</b>	<b>10</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
<i>Surrogate: Dibromofluoromethane</i>		<i>100 %</i>	<i>70-130</i>		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		<i>97.5 %</i>	<i>70-130</i>		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		<i>97.0 %</i>	<i>70-130</i>		"	"	"	"	

**Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring**

<b>Acenaphthene</b>	<b>1.0</b>	<b>0.11</b>	<b>ug/L</b>	<b>1</b>	<b>B5E0663</b>	<b>26-May-15</b>	<b>27-May-15</b>	<b>EPA 8270M</b>	
<b>Acenaphthylene</b>	<b>2.2</b>	<b>0.11</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>SIM</b>	
<b>Anthracene</b>	<b>ND</b>	<b>0.11</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
<b>Benz(a)anthracene</b>	<b>ND</b>	<b>0.11</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
<b>Benzo (b) fluoranthene</b>	<b>ND</b>	<b>0.11</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
<b>Benzo (k) fluoranthene</b>	<b>ND</b>	<b>0.11</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
<b>Benzo (a) pyrene</b>	<b>ND</b>	<b>0.11</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
<b>Benzo (g,h,i) perylene</b>	<b>ND</b>	<b>0.11</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
<b>Chrysene</b>	<b>ND</b>	<b>0.11</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
<b>Dibenz (a,h) anthracene</b>	<b>ND</b>	<b>0.11</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
<b>Fluoranthene</b>	<b>0.22</b>	<b>0.11</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
<b>Fluorene</b>	<b>7.7</b>	<b>0.55</b>	<b>"</b>	<b>5</b>	<b>"</b>	<b>"</b>	<b>28-May-15</b>	<b>"</b>	
<b>Indeno (1,2,3-cd) pyrene</b>	<b>ND</b>	<b>0.11</b>	<b>"</b>	<b>1</b>	<b>"</b>	<b>"</b>	<b>27-May-15</b>	<b>"</b>	
<b>Naphthalene</b>	<b>7.6</b>	<b>0.55</b>	<b>"</b>	<b>5</b>	<b>"</b>	<b>"</b>	<b>28-May-15</b>	<b>"</b>	
<b>Phenanthrene</b>	<b>7.3</b>	<b>0.55</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
<b>Pyrene</b>	<b>0.18</b>	<b>0.11</b>	<b>"</b>	<b>1</b>	<b>"</b>	<b>"</b>	<b>27-May-15</b>	<b>"</b>	
<i>Surrogate: p-Terphenyl-d14</i>		<i>140 %</i>	<i>39-177</i>		"	"	"	"	

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Oilfield Environmental and Compliance, INC.

Aera Energy-Coalinga  
P.O. Box 11184  
Bakersfield CA, 93389-1184

Project: Pond Testing  
Project Number: Coalinga  
Project Manager: Tim Parcel

Reported:  
05-Jun-15 16:57

**32 Dehy T-320 Lower Level Inlet C-47**  
**1502171-07 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Miscellaneous Physical/Conventional Chemistry Parameters**

Specific Conductance (EC) @ 25 C	6000	0.01	uS/cm	1	B5E0690	19-May-15	19-May-15	Martini Instruments Mi306	
pH	6.4	0.01	pH Units	"	B5E0651	"	19-May-15	LaMotte pH PockeTester	
Sample Temperature	57	1.0	°C	"	B5E0652	19-May-15	19-May-15	"	

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Aera Energy-Coalinga P.O. Box 11184 Bakersfield CA, 93389-1184	Project: Pond Testing Project Number: Coalinga Project Manager: Tim Parcel	Reported: 05-Jun-15 16:57
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**32 Dehy T-323/T-324 Discharge C-58  
1502171-08 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Wet Chemistry by EPA or APHA Standard Methods**

Total Alkalinity, CaCO3	880	10	mg/L	1	B5E0638	22-May-15	22-May-15	SM 2320B	
Bicarbonate, CaCO3	880	10	"	"	"	"	"	"	
Carbonate, CaCO3	ND	10	"	"	"	"	"	"	
Hydroxide, CaCO3	ND	10	"	"	"	"	"	"	
Total Dissolved Solids	3900	10	"	"	B5E0675	26-May-15	26-May-15	2540C	

**Anions by EPA Method 300.0**

Bromide	4.0	0.80	mg/L	2	B5E0606	21-May-15	22-May-15	EPA 300.0	
Chloride	930	20	"	50	"	"	22-May-15	"	
Fluoride	1.2	0.80	"	2	"	"	22-May-15	"	
Nitrate as NO3	ND	3.6	"	"	"	"	"	"	HT-01, R-06
Sulfate	650	20	"	50	"	"	22-May-15	"	

**Total Metals by EPA 6000/7000 Series Methods**

Antimony	ND	0.050	mg/L	1	B5E0603	21-May-15	22-May-15	EPA 6010B	
Arsenic	ND	0.020	"	"	"	"	"	"	
Barium	0.13	0.020	"	"	"	"	"	"	
Beryllium	ND	0.010	"	"	"	"	"	"	
Boron	59	2.5	"	25	"	"	22-May-15	"	
Cadmium	ND	0.0050	"	1	"	"	22-May-15	"	
Calcium	65	0.20	"	"	"	"	"	"	
Chromium	ND	0.010	"	"	"	"	"	"	
Cobalt	ND	0.010	"	"	"	"	"	"	
Copper	ND	0.020	"	"	"	"	"	"	
Iron	0.22	0.050	"	"	"	"	"	"	
Lead	0.021	0.010	"	"	"	"	"	"	
Lithium	0.59	0.025	"	"	"	"	"	"	
Magnesium	49	0.050	"	"	"	"	"	"	
Manganese	0.079	0.010	"	"	"	"	"	"	
Mercury	ND	0.00020	"	"	B5E0670	26-May-15	26-May-15	EPA 7470A	
Molybdenum	ND	0.0050	"	"	B5E0603	21-May-15	22-May-15	EPA 6010B	
Nickel	ND	0.0050	"	"	"	"	"	"	
Potassium	41	1.0	"	"	"	"	"	"	
Selenium	ND	0.050	"	"	"	"	"	"	
Silver	ND	0.010	"	"	"	"	"	"	
Sodium	1200	25	"	25	"	"	22-May-15	"	
Strontium	1.9	0.010	"	1	"	"	22-May-15	"	

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**32 Dehy T-323/T-324 Discharge C-58  
1502171-08 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Total Metals by EPA 6000/7000 Series Methods**

Thallium	ND	0.020	mg/L	1	B5E0603	21-May-15	22-May-15	EPA 6010B	
Vanadium	ND	0.050	"	"	"	"	"	"	
Zinc	ND	0.050	"	"	"	"	"	"	

**TEPH by GC FID**

<b>TPH Oil Crude (C8-C40)</b>	<b>83</b>	<b>2.2</b>	<b>mg/L</b>	<b>20</b>	<b>B5E0617</b>	<b>26-May-15</b>	<b>28-May-15</b>	<b>EPA 8015M</b>	<b>QB-01</b>
Surrogate: <i>o</i> -Terphenyl		114 %	50-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

**R-05**

<b>Benzene</b>	<b>29</b>	<b>10</b>	<b>ug/L</b>	<b>20</b>	<b>B5E0767</b>	<b>28-May-15</b>	<b>30-May-15</b>	<b>EPA 8260B</b>	
<b>Ethylbenzene</b>	<b>17</b>	<b>10</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
<b>Toluene</b>	<b>22</b>	<b>.10</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
<b>Aromatics (total)</b>	<b>34</b>	<b>10</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
Surrogate: <i>Dibromofluoromethane</i>		100 %	70-130		"	"	"	"	
Surrogate: <i>Toluene-d8</i>		98.4 %	70-130		"	"	"	"	
Surrogate: <i>4-Bromofluorobenzene</i>		95.4 %	70-130		"	"	"	"	

**Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring**

**R-05**

<b>Acenaphthene</b>	<b>1.1</b>	<b>0.54</b>	<b>ug/L</b>	<b>5</b>	<b>B5E0663</b>	<b>26-May-15</b>	<b>27-May-15</b>	<b>EPA 8270M</b>	
Acenaphthylene	ND	0.54	"	"	"	"	"	SIM	
Anthracene	ND	0.54	"	"	"	"	"	"	
Benz(a)anthracene	ND	0.54	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.54	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.54	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.54	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	0.54	"	"	"	"	"	"	
<b>Chrysene</b>	<b>0.81</b>	<b>0.54</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
Dibenz (a,h) anthracene	ND	0.54	"	"	"	"	"	"	
<b>Fluoranthene</b>	<b>0.54</b>	<b>0.54</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
<b>Fluorene</b>	<b>8.8</b>	<b>0.54</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
Indeno (1,2,3-cd) pyrene	ND	0.54	"	"	"	"	"	"	
<b>Naphthalene</b>	<b>6.5</b>	<b>0.54</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
<b>Phenanthrene</b>	<b>11</b>	<b>0.54</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
<b>Pyrene</b>	<b>0.86</b>	<b>0.54</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
Surrogate: <i>p</i> -Terphenyl-d14		112 %	39-177		"	"	"	"	

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**32 Dehy T-323/T-324 Discharge C-58  
1502171-08 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Miscellaneous Physical/Conventional Chemistry Parameters**

Specific Conductance (EC) @ 25 C	6000	0.01	uS/cm	1	B5E0690	19-May-15	19-May-15	Martini Instruments Mi306	
pH	6.4	0.01	pH Units	"	B5E0651	"	19-May-15	LaMotte pH PockeTester	
Sample Temperature	58	1.0	°C	"	B5E0652	19-May-15	19-May-15	"	

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Aera Energy-Coalinga  
 P.O. Box 11184  
 Bakersfield CA, 93389-1184

Project: Pond Testing  
 Project Number: Coalinga  
 Project Manager: Tim Parcel

Reported:  
 05-Jun-15 16:57

**32 Dehy T-317 Drain C-59  
 1502171-09 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Wet Chemistry by EPA or APHA Standard Methods**

Total Alkalinity, CaCO <sub>3</sub>	630	10	mg/L	1	B5E0638	22-May-15	22-May-15	SM 2320B	
Bicarbonate, CaCO <sub>3</sub>	630	10	"	"	"	"	"	"	
Carbonate, CaCO <sub>3</sub>	ND	10	"	"	"	"	"	"	
Hydroxide, CaCO <sub>3</sub>	ND	10	"	"	"	"	"	"	
Total Dissolved Solids	1800	10	"	"	B5E0675	26-May-15	26-May-15	2540C	

**Anions by EPA Method 300.0**

Bromide	1.6	0.40	mg/L	1	B5E0606	21-May-15	22-May-15	EPA 300.0	
Chloride	360	20	"	50	"	"	22-May-15	"	
Fluoride	2.2	0.40	"	1	"	"	22-May-15	"	
Nitrate as NO <sub>3</sub>	ND	1.8	"	"	"	"	"	"	HT-01
Sulfate	140	20	"	50	"	"	22-May-15	"	

**Total Metals by EPA 6000/7000 Series Methods**

Antimony	ND	0.050	mg/L	1	B5E0603	21-May-15	22-May-15	EPA 6010B	
Arsenic	ND	0.020	"	"	"	"	"	"	
Barium	0.098	0.020	"	"	"	"	"	"	
Beryllium	ND	0.010	"	"	"	"	"	"	
Boron	21	0.10	"	"	"	"	"	"	
Cadmium	ND	0.0050	"	"	"	"	"	"	
Calcium	38	0.20	"	"	"	"	"	"	
Chromium	ND	0.010	"	"	"	"	"	"	
Cobalt	ND	0.010	"	"	"	"	"	"	
Copper	ND	0.020	"	"	"	"	"	"	
Iron	ND	0.050	"	"	"	"	"	"	
Lead	ND	0.010	"	"	"	"	"	"	
Lithium	0.21	0.025	"	"	"	"	"	"	
Magnesium	40	0.050	"	"	"	"	"	"	
Manganese	0.016	0.010	"	"	"	"	"	"	
Mercury	ND	0.00020	"	"	B5E0670	26-May-15	26-May-15	EPA 7470A	
Molybdenum	ND	0.0050	"	"	B5E0603	21-May-15	22-May-15	EPA 6010B	
Nickel	ND	0.0050	"	"	"	"	"	"	
Potassium	21	1.0	"	"	"	"	"	"	
Selenium	ND	0.050	"	"	"	"	"	"	
Silver	ND	0.010	"	"	"	"	"	"	
Sodium	440	5.0	"	5	"	"	22-May-15	"	
Strontium	1.6	0.010	"	1	"	"	22-May-15	"	

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**32 Dehy T-317 Drain C-59  
1502171-09 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Total Metals by EPA 6000/7000 Series Methods**

Thallium	ND	0.020	mg/L	1	B5E0603	21-May-15	22-May-15	EPA 6010B	
Vanadium	ND	0.050	"	"	"	"	"	"	
Zinc	ND	0.050	"	"	"	"	"	"	

**TEPH by GC FID**

<b>TPH Oil Crude (C8-C40)</b>	<b>93</b>	<b>2.4</b>	<b>mg/L</b>	<b>20</b>	<b>B5E0617</b>	<b>26-May-15</b>	<b>28-May-15</b>	<b>EPA 8015M</b>	<b>QB-01</b>
<i>Surrogate: o-Terphenyl</i>		<i>88.2 %</i>	<i>50-150</i>		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

**R-05**

Benzene	ND	50	ug/L	100	B5E0767	28-May-15	30-May-15	EPA 8260B	
Ethylbenzene	ND	50	"	"	"	"	"	"	
Toluene	ND	50	"	"	"	"	"	"	
Xylenes (total)	ND	50	"	"	"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>		<i>101 %</i>	<i>70-130</i>		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		<i>97.1 %</i>	<i>70-130</i>		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		<i>98.5 %</i>	<i>70-130</i>		"	"	"	"	

**Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring**

**R-05**

Acenaphthene	ND	0.60	ug/L	5	B5E0663	26-May-15	27-May-15	EPA 8270M SIM	
Acenaphthylene	ND	0.60	"	"	"	"	"	"	
Anthracene	ND	0.60	"	"	"	"	"	"	
Benz(a)anthracene	ND	0.60	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.60	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.60	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.60	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	0.60	"	"	"	"	"	"	
Chrysene	ND	0.60	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.60	"	"	"	"	"	"	
Fluoranthene	ND	0.60	"	"	"	"	"	"	
Fluorene	ND	0.60	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.60	"	"	"	"	"	"	
Naphthalene	ND	0.60	"	"	"	"	"	"	
Phenanthrene	1.9	0.60	"	"	"	"	"	"	
Pyrene	0.83	0.60	"	"	"	"	"	"	

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Project Number: Coalinga  
Project Manager: Tim Parcel

Reported:  
05-Jun-15 16:57

**32 Dehy T-317 Drain C-59  
1502171-09 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring**

**R-05**

<i>Surrogate: p-Terphenyl-d14</i>	106 %	39-177			B5E0663	26-May-15	27-May-15	EPA 8270M SIM	
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**Miscellaneous Physical/Conventional Chemistry Parameters**

Specific Conductance (EC) @ 25 C	2800	0.01	uS/cm	1	B5E0690	19-May-15	19-May-15	Martini Instruments Mi306	
pH	6.3	0.01	pH Units	"	B5E0651	"	19-May-15	LaMotte pH PockeTester	
Sample Temperature	39	1.0	°C	"	B5E0652	19-May-15	19-May-15	"	

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Oilfield Environmental and Compliance, INC.

Aera Energy-Coalinga P.O. Box 11184 Bakersfield CA, 93389-1184	Project: Pond Testing Project Number: Coalinga Project Manager: Tim Parcel	Reported: 05-Jun-15 16:57
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**32 Dehy T-318 Drain  
1502171-10 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Wet Chemistry by EPA or APHA Standard Methods**

Total Alkalinity, CaCO3	560	10	mg/L	1	B5E0638	22-May-15	22-May-15	SM 2320B	
Bicarbonate, CaCO3	560	10	"	"	"	"	"	"	
Carbonate, CaCO3	ND	10	"	"	"	"	"	"	
Hydroxide, CaCO3	ND	10	"	"	"	"	"	"	
Total Dissolved Solids	3400	10	"	"	B5E0675	26-May-15	26-May-15	2540C	

**Anions by EPA Method 300.0**

Bromide	3.3	0.80	mg/L	2	B5E0606	21-May-15	22-May-15	EPA 300.0	
Chloride	750	20	"	50	"	"	22-May-15	"	
Fluoride	ND	0.80	"	2	"	"	22-May-15	"	R-06
Nitrate as NO3	ND	3.6	"	"	"	"	"	"	HT-01, R-06
Sulfate	770	20	"	50	"	"	22-May-15	"	

**Total Metals by EPA 6000/7000 Series Methods**

Antimony	ND	0.050	mg/L	1	B5E0603	21-May-15	22-May-15	EPA 6010B	
Arsenic	ND	0.020	"	"	"	"	"	"	
Barium	0.13	0.020	"	"	"	"	"	"	
Beryllium	ND	0.010	"	"	"	"	"	"	
Boron	63	0.50	"	5	"	"	22-May-15	"	
Cadmium	ND	0.0050	"	1	"	"	22-May-15	"	
Calcium	92	0.20	"	"	"	"	"	"	
Chromium	ND	0.010	"	"	"	"	"	"	
Cobalt	ND	0.010	"	"	"	"	"	"	
Copper	ND	0.020	"	"	"	"	"	"	
Iron	0.052	0.050	"	"	"	"	"	"	
Lead	0.019	0.010	"	"	"	"	"	"	
Lithium	0.67	0.025	"	"	"	"	"	"	
Magnesium	57	0.050	"	"	"	"	"	"	
Manganese	0.022	0.010	"	"	"	"	"	"	
Mercury	ND	0.00020	"	"	B5E0670	26-May-15	26-May-15	EPA 7470A	
Molybdenum	ND	0.0050	"	"	B5E0603	21-May-15	22-May-15	EPA 6010B	
Nickel	ND	0.0050	"	"	"	"	"	"	
Potassium	49	1.0	"	"	"	"	"	"	
Selenium	ND	0.050	"	"	"	"	"	"	
Silver	ND	0.010	"	"	"	"	"	"	
Sodium	860	5.0	"	5	"	"	22-May-15	"	
Strontium	2.4	0.010	"	1	"	"	22-May-15	"	

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Oilfield Environmental and Compliance, INC.

Aera Energy-Coalinga  
 P.O. Box 11184  
 Bakersfield CA, 93389-1184

Project: Pond Testing  
 Project Number: Coalinga  
 Project Manager: Tim Parcel

Reported:  
 05-Jun-15 16:57

**32 Dehy T-318 Drain  
 1502171-10 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Total Metals by EPA 6000/7000 Series Methods**

Thallium	ND	0.020	mg/L	1	B5E0603	21-May-15	22-May-15	EPA 6010B	
Vanadium	ND	0.050	"	"	"	"	"	"	
Zinc	ND	0.050	"	"	"	"	"	"	

**TEPH by GC FID**

<b>TPH Oil Crude (C8-C40)</b>	<b>28</b>	<b>1.1</b>	<b>mg/L</b>	<b>10</b>	<b>B5E0617</b>	<b>26-May-15</b>	<b>28-May-15</b>	<b>EPA 8015M</b>	<b>QB-01</b>
Surrogate: o-Terphenyl		120 %	50-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

**R-05**

Benzene	ND	100	ug/L	200	B5E0767	28-May-15	30-May-15	EPA 8260B	
Ethylbenzene	ND	100	"	"	"	"	"	"	
Toluene	ND	100	"	"	"	"	"	"	
Xylenes (total)	ND	100	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		111 %	70-130		"	"	"	"	
Surrogate: Toluene-d8		97.8 %	70-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.2 %	70-130		"	"	"	"	

**Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring**

<b>Acenaphthene</b>	<b>0.41</b>	<b>0.11</b>	<b>ug/L</b>	<b>1</b>	<b>B5E0663</b>	<b>26-May-15</b>	<b>27-May-15</b>	<b>EPA 8270M</b>	
<b>Acenaphthylene</b>	<b>1.1</b>	<b>0.11</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>SIM</b>	
Anthracene	ND	0.11	"	"	"	"	"	"	
Benz(a)anthracene	ND	0.11	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.11	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.11	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.11	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	0.11	"	"	"	"	"	"	
Chrysene	ND	0.11	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.11	"	"	"	"	"	"	
Fluoranthene	ND	0.11	"	"	"	"	"	"	
<b>Fluorene</b>	<b>2.7</b>	<b>0.11</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
Indeno (1,2,3-cd) pyrene	ND	0.11	"	"	"	"	"	"	
<b>Naphthalene</b>	<b>1.8</b>	<b>0.11</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
<b>Phenanthrene</b>	<b>2.8</b>	<b>0.11</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
Pyrene	ND	0.11	"	"	"	"	"	"	
Surrogate: p-Terphenyl-d14		141 %	39-177		"	"	"	"	

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**32 Dehy T-318 Drain  
1502171-10 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Miscellaneous Physical/Conventional Chemistry Parameters**

Specific Conductance (EC) @ 25 C	5300	0.01	uS/cm	1	B5E0690	19-May-15	19-May-15	Martini Instruments Mi306	
pH	6.8	0.01	pH Units	"	B5E0651	"	19-May-15	LaMotte pH PockeTester	
Sample Temperature	59	1.0	°C	"	B5E0652	19-May-15	19-May-15	"	

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**Wet Chemistry by EPA or APHA Standard Methods - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B5E0638 - Wetchem default method**

**Blank (B5E0638-BLK1)** Prepared & Analyzed: 22-May-15

Total Alkalinity, CaCO3	ND	10	mg/L							
Bicarbonate, CaCO3	ND	10	"							
Carbonate, CaCO3	ND	10	"							
Hydroxide, CaCO3	ND	10	"							

**LCS (B5E0638-BS1)** Prepared & Analyzed: 22-May-15

Total Alkalinity, CaCO3	2170	10	mg/L	2500		86.9	80-120			
Bicarbonate, CaCO3	ND	10	"	0.00			80-120			
Carbonate, CaCO3	2090	10	"	2500		83.8	80-120			
Hydroxide, CaCO3	ND	10	"	0.00			80-120			

**Duplicate (B5E0638-DUP1)** Source: 1502195-01 Prepared & Analyzed: 22-May-15

Total Alkalinity, CaCO3	618	10	mg/L		621			0.484	20	
Bicarbonate, CaCO3	618	10	"		621			0.484	20	
Carbonate, CaCO3	ND	10	"		ND				20	
Hydroxide, CaCO3	ND	10	"		ND				20	

**Batch B5E0675 - 2540 C TDS Prep**

**Blank (B5E0675-BLK1)** Prepared & Analyzed: 26-May-15

Total Dissolved Solids	ND	10	mg/L							
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**LCS (B5E0675-BS1)** Prepared & Analyzed: 26-May-15

Total Dissolved Solids	1200	10	mg/L	1000		121	75-125			
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**LCS Dup (B5E0675-BSD1)** Prepared & Analyzed: 26-May-15

Total Dissolved Solids	1200	10	mg/L	1000		125	75-125	3.09	10	
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**Wet Chemistry by EPA or APHA Standard Methods - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B5E0675 - 2540 C TDS Prep</b>										
<b>Duplicate (B5E0675-DUP1)</b> Source: 1502171-01 Prepared & Analyzed: 26-May-15										
Total Dissolved Solids	12000	10	mg/L		12000			0.830	10	
<b>Duplicate (B5E0675-DUP2)</b> Source: 1502171-02 Prepared & Analyzed: 26-May-15										
Total Dissolved Solids	3900	10	mg/L		3700			5.77	10	
<b>Batch B5E0720 - Wetchem default method</b>										
<b>Blank (B5E0720-BLK1)</b> Prepared & Analyzed: 27-May-15										
Total Alkalinity, CaCO3	ND	10	mg/L							
Bicarbonate, CaCO3	ND	10	"							
Carbonate, CaCO3	ND	10	"							
Hydroxide, CaCO3	ND	10	"							
<b>LCS (B5E0720-BS1)</b> Prepared & Analyzed: 27-May-15										
Total Alkalinity, CaCO3	421	10	mg/L	500		84.2	80-120			
Bicarbonate, CaCO3	ND	10	"				80-120			
Carbonate, CaCO3	408	10	"	500		81.6	80-120			
Hydroxide, CaCO3	ND	10	"				80-120			
<b>Duplicate (B5E0720-DUP1)</b> Source: 1502171-04 Prepared & Analyzed: 27-May-15										
Total Alkalinity, CaCO3	54.4	10	mg/L		55.4			1.82	20	
Bicarbonate, CaCO3	54.4	10	"		55.4			1.82	20	
Carbonate, CaCO3	ND	10	"		ND				20	
Hydroxide, CaCO3	ND	10	"		ND				20	

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Aera Energy-Coalinga  
 P.O. Box 11184  
 Bakersfield CA, 93389-1184

Project: Pond Testing  
 Project Number: Coalinga  
 Project Manager: Tim Parcel

Reported:  
 05-Jun-15 16:57

**Anions by EPA Method 300.0 - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B5E0606 - EPA 300.0/300.1 Anions Prep**

**Blank (B5E0606-BLK1)**

Prepared: 21-May-15 Analyzed: 22-May-15

Bromide	ND	0.40	mg/L							
Nitrate as NO3	ND	1.8	"							
Chloride	ND	0.40	"							
Fluoride	ND	0.40	"							
Sulfate	ND	0.40	"							

**LCS (B5E0606-BS1)**

Prepared: 21-May-15 Analyzed: 22-May-15

Bromide	5.00	0.40	mg/L	5.00		100	90-110			
Nitrate as NO3	21.1	1.8	"	22.2		95.2	90-110			
Chloride	4.77	0.40	"	5.00		95.4	90-110			
Fluoride	4.84	0.40	"	5.00		96.9	90-110			
Sulfate	5.16	0.40	"	5.00		103	90-110			

**LCS Dup (B5E0606-BSD1)**

Prepared: 21-May-15 Analyzed: 22-May-15

Bromide	4.85	0.40	mg/L	5.00		96.9	90-110	3.15	20	
Nitrate as NO3	20.7	1.8	"	22.2		93.4	90-110	1.93	20	
Chloride	4.71	0.40	"	5.00		94.2	90-110	1.33	20	
Fluoride	4.76	0.40	"	5.00		95.3	90-110	1.64	20	
Sulfate	5.02	0.40	"	5.00		100	90-110	2.57	20	

**Duplicate (B5E0606-DUP1)**

Source: 1502171-01

Prepared: 21-May-15 Analyzed: 22-May-15

Nitrate as NO3	ND	90	mg/L		ND				20	
Bromide	5.35	20	"		6.05			12.3	20	
Fluoride	ND	20	"		ND				20	
Sulfate	636	20	"		657			3.25	20	

**Duplicate (B5E0606-DUP2)**

Source: 1502171-01RE1

Prepared: 21-May-15 Analyzed: 22-May-15

Chloride	6180	200	mg/L		6110			1.16	20	
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**Anions by EPA Method 300.0 - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B5E0606 - EPA 300.0/300.1 Anions Prep**

<b>Matrix Spike (B5E0606-MS1)</b>	<b>Source: 1502171-01</b>			<b>Prepared: 21-May-15 Analyzed: 22-May-15</b>						
Bromide	256	21	mg/L	263	6.05	95.1	80-120			
Nitrate as NO3	1070	95	"	1170	ND	91.7	80-120			
Fluoride	240	21	"	263	ND	91.2	80-120			
Sulfate	898	21	"	263	657	91.6	80-120			
<b>Matrix Spike (B5E0606-MS2)</b>	<b>Source: 1502171-01RE1</b>			<b>Prepared: 21-May-15 Analyzed: 22-May-15</b>						
Chloride	9050	210	mg/L	2630	6110	111	80-120			

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**Total Metals by EPA 6000/7000 Series Methods - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B5E0603 - EPA 3010A**

**Blank (B5E0603-BLK1)**

Prepared: 21-May-15 Analyzed: 22-May-15

Antimony	ND	0.050	mg/L							
Arsenic	ND	0.020	"							
Barium	ND	0.020	"							
Beryllium	ND	0.010	"							
Boron	ND	0.10	"							
Cadmium	ND	0.0050	"							
Calcium	ND	0.20	"							
Chromium	ND	0.010	"							
Cobalt	ND	0.010	"							
Copper	ND	0.020	"							
Iron	ND	0.050	"							
Lead	ND	0.010	"							
Lithium	ND	0.025	"							
Magnesium	ND	0.050	"							
Manganese	ND	0.010	"							
Molybdenum	ND	0.0050	"							
Nickel	ND	0.0050	"							
Potassium	ND	1.0	"							
Selenium	ND	0.050	"							
Silver	ND	0.010	"							
Sodium	ND	1.0	"							
Strontium	ND	0.010	"							
Thallium	ND	0.020	"							
Vanadium	ND	0.050	"							
Zinc	ND	0.050	"							

**LCS (B5E0603-BS1)**

Prepared: 21-May-15 Analyzed: 22-May-15

Antimony	2.03	0.050	mg/L	2.00	102	80-120
Arsenic	2.00	0.020	"	2.00	100	80-120
Barium	2.03	0.020	"	2.00	102	80-120
Beryllium	1.95	0.010	"	2.00	97.3	80-120
Boron	1.88	0.10	"	2.00	93.9	80-120
Cadmium	2.08	0.0050	"	2.00	104	80-120
Calcium	10.2	0.20	"	10.0	102	80-120
Chromium	2.00	0.010	"	2.00	99.8	80-120
Cobalt	2.08	0.010	"	2.00	104	80-120
Copper	2.02	0.020	"	2.00	101	80-120
Iron	10.0	0.050	"	10.0	100	80-120
Lead	2.13	0.010	"	2.00	106	80-120
Lithium	2.09	0.025	"	2.00	104	80-120
Magnesium	9.90	0.050	"	10.0	99.0	80-120

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**Total Metals by EPA 6000/7000 Series Methods - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B5E0603 - EPA 3010A**

LCS (B5E0603-BS1)		Prepared: 21-May-15 Analyzed: 22-May-15								
Manganese	10.1	0.010	mg/L	10.0		101	80-120			
Molybdenum	2.03	0.0050	"	2.00		101	80-120			
Nickel	2.11	0.0050	"	2.00		106	80-120			
Potassium	10.4	1.0	"	10.0		104	80-120			
Selenium	1.99	0.050	"	2.00		99.3	80-120			
Silver	0.0941	0.010	"	0.100		94.1	80-120			
Sodium	10.4	1.0	"	10.0		104	80-120			
Strontium	2.02	0.010	"	2.00		101	80-120			
Thallium	2.17	0.020	"	2.00		108	80-120			
Vanadium	2.00	0.050	"	2.00		100	80-120			
Zinc	2.09	0.050	"	2.00		104	80-120			

LCS Dup (B5E0603-BSD1)		Prepared: 21-May-15 Analyzed: 22-May-15								
Antimony	1.98	0.050	mg/L	2.00		99.0	80-120	2.59	20	
Arsenic	1.98	0.020	"	2.00		99.1	80-120	1.00	20	
Barium	2.06	0.020	"	2.00		103	80-120	1.56	20	
Beryllium	1.98	0.010	"	2.00		99.2	80-120	1.98	20	
Boron	1.92	0.10	"	2.00		96.0	80-120	2.21	20	
Cadmium	2.04	0.0050	"	2.00		102	80-120	2.28	20	
Calcium	10.3	0.20	"	10.0		103	80-120	1.76	20	
Chromium	2.02	0.010	"	2.00		101	80-120	1.29	20	
Cobalt	2.03	0.010	"	2.00		102	80-120	2.29	20	
Copper	2.05	0.020	"	2.00		102	80-120	1.53	20	
Iron	10.2	0.050	"	10.0		102	80-120	1.29	20	
Lead	2.08	0.010	"	2.00		104	80-120	2.62	20	
Lithium	2.11	0.025	"	2.00		106	80-120	1.14	20	
Magnesium	10.1	0.050	"	10.0		101	80-120	2.19	20	
Manganese	10.2	0.010	"	10.0		102	80-120	1.38	20	
Molybdenum	2.02	0.0050	"	2.00		101	80-120	0.346	20	
Nickel	2.06	0.0050	"	2.00		103	80-120	2.64	20	
Potassium	10.5	1.0	"	10.0		105	80-120	1.24	20	
Selenium	1.96	0.050	"	2.00		98.0	80-120	1.37	20	
Silver	0.0960	0.010	"	0.100		96.0	80-120	2.00	20	
Sodium	10.5	1.0	"	10.0		105	80-120	1.15	20	
Strontium	2.05	0.010	"	2.00		103	80-120	1.72	20	
Thallium	2.11	0.020	"	2.00		106	80-120	2.52	20	
Vanadium	2.04	0.050	"	2.00		102	80-120	2.17	20	
Zinc	2.04	0.050	"	2.00		102	80-120	2.28	20	

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Oilfield Environmental and Compliance, INC.

Aera Energy-Coalinga  
 P.O. Box 11184  
 Bakersfield CA, 93389-1184

Project: Pond Testing  
 Project Number: Coalinga  
 Project Manager: Tim Parcel

Reported:  
 05-Jun-15 16:57

**Total Metals by EPA 6000/7000 Series Methods - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B5E0603 - EPA 3010A**

Duplicate (B5E0603-DUP1)	Source: 1502185-01			Prepared: 21-May-15 Analyzed: 22-May-15						
Antimony	ND	0.050	mg/L		ND				20	
Arsenic	ND	0.020	"		ND				20	
Barium	0.845	0.020	"		0.866			2.51	20	
Beryllium	ND	0.010	"		ND				20	
Boron	22.5	0.10	"		21.6			4.04	20	
Cadmium	ND	0.0050	"		ND				20	
Calcium	19.2	0.20	"		19.7			2.78	20	
Chromium	ND	0.010	"		ND				20	
Cobalt	ND	0.010	"		ND				20	
Copper	ND	0.020	"		ND				20	
Iron	0.182	0.050	"		0.234			24.7	20	QR-04
Lead	0.0129	0.010	"		0.0168			26.3	20	QR-04
Lithium	1.32	0.025	"		1.36			3.05	20	
Magnesium	10.3	0.050	"		10.5			2.40	20	
Manganese	0.0265	0.010	"		0.0294			10.4	20	
Molybdenum	ND	0.0050	"		ND				20	
Nickel	ND	0.0050	"		ND				20	
Potassium	82.1	1.0	"		83.8			2.06	20	
Selenium	0.0628	0.050	"		0.0617			1.77	20	
Silver	ND	0.010	"		ND				20	
Strontium	1.08	0.010	"		1.11			2.56	20	
Thallium	ND	0.020	"		ND				20	
Vanadium	ND	0.050	"		ND				20	
Zinc	ND	0.050	"		ND				20	

Duplicate (B5E0603-DUP2)	Source: 1502185-01RE1			Prepared: 21-May-15 Analyzed: 22-May-15						
Sodium	3040	10	mg/L		3260			6.82	20	

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Aera Energy-Coalinga P.O. Box 11184 Bakersfield CA, 93389-1184	Project: Pond Testing Project Number: Coalinga Project Manager: Tim Parcel	Reported: 05-Jun-15 16:57
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**Total Metals by EPA 6000/7000 Series Methods - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B5E0603 - EPA 3010A**

Matrix Spike (B5E0603-MS1)	Source: 1502185-01			Prepared: 21-May-15 Analyzed: 22-May-15						
Antimony	1.85	0.050	mg/L	2.00	ND	92.4	82-127			
Arsenic	2.06	0.020	"	2.00	ND	103	83-130			
Barium	2.76	0.020	"	2.00	0.866	94.9	76-136			
Beryllium	1.94	0.010	"	2.00	ND	97.0	78-123			
Boron	22.6	0.10	"	2.00	21.6	49.0	71-134			QM-4X
Cadmium	2.00	0.0050	"	2.00	ND	100	86-120			
Calcium	28.2	0.20	"	10.0	19.7	84.7	82-128			
Chromium	1.94	0.010	"	2.00	ND	97.2	80-123			
Cobalt	1.88	0.010	"	2.00	ND	94.0	80-123			
Copper	1.94	0.020	"	2.00	ND	96.8	81-128			
Iron	9.91	0.050	"	10.0	0.234	96.8	88-120			
Lead	1.88	0.010	"	2.00	0.0168	93.0	71-128			
Lithium	3.46	0.025	"	2.00	1.36	105	57-156			
Magnesium	19.4	0.050	"	10.0	10.5	88.6	83-123			
Manganese	9.79	0.010	"	10.0	0.0294	97.6	74-131			
Molybdenum	1.78	0.0050	"	2.00	ND	89.2	85-122			
Nickel	1.98	0.0050	"	2.00	ND	98.8	85-121			
Potassium	88.9	1.0	"	10.0	83.8	51.0	73-141			QM-4X
Selenium	1.25	0.050	"	2.00	0.0617	59.4	50-151			
Silver	0.0984	0.010	"	0.100	ND	98.4	71-136			
Strontium	2.97	0.010	"	2.00	1.11	93.2	67-142			
Thallium	1.63	0.020	"	2.00	ND	81.6	61-134			
Vanadium	1.97	0.050	"	2.00	ND	98.6	82-126			
Zinc	2.12	0.050	"	2.00	ND	106	88-123			

Matrix Spike (B5E0603-MS2)	Source: 1502185-01RE1			Prepared: 21-May-15 Analyzed: 22-May-15						
Sodium	2910	10	mg/L	10.0	3260	NR	75-125			QM-4X

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**Total Metals by EPA 6000/7000 Series Methods - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B5E0670 - EPA 7470A Prep</b>										
<b>Blank (B5E0670-BLK1)</b> Prepared & Analyzed: 26-May-15										
Mercury	ND	0.00020	mg/L							
<b>LCS (B5E0670-BS1)</b> Prepared & Analyzed: 26-May-15										
Mercury	0.0107	0.00020	mg/L	0.0100		107	85-115			
<b>LCS Dup (B5E0670-BSD1)</b> Prepared & Analyzed: 26-May-15										
Mercury	0.0105	0.00020	mg/L	0.0100		105	85-115	2.13	20	
<b>Duplicate (B5E0670-DUP2)</b> Source: 1502219-01RE1 Prepared & Analyzed: 26-May-15										
Mercury	ND	0.00040	mg/L		ND				20	
<b>Matrix Spike (B5E0670-MS2)</b> Source: 1502219-01RE1 Prepared & Analyzed: 26-May-15										
Mercury	0.00802	0.00040	mg/L	0.0100	ND	80.2	75-125			
<b>Matrix Spike Dup (B5E0670-MSD2)</b> Source: 1502219-01RE1 Prepared & Analyzed: 26-May-15										
Mercury	0.00824	0.00040	mg/L	0.0100	ND	82.4	75-125	2.66	20	
<b>Post Spike (B5E0670-PS2)</b> Source: 1502219-01RE1 Prepared & Analyzed: 26-May-15										
Mercury	4.51		ug/L	5.00	0.0126	89.9	85-115			

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TEPH by GC FID - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B5E0617 - EPA 3510C</b>										
<b>Blank (B5E0617-BLK1)</b> Prepared: 26-May-15 Analyzed: 27-May-15										
TPH Oil Crude (C8-C40)	0.181	0.10	mg/L							QB-01
Surrogate: o-Terphenyl	0.100		"	0.100		100	50-150			
<b>LCS (B5E0617-BS1)</b> Prepared: 26-May-15 Analyzed: 27-May-15										
TPH Oil Crude (C8-C40)	1.54	0.10	mg/L	2.00		76.9	70-130			
Surrogate: o-Terphenyl	0.107		"	0.100		107	50-150			
<b>LCS Dup (B5E0617-BSD1)</b> Prepared: 26-May-15 Analyzed: 27-May-15										
TPH Oil Crude (C8-C40)	1.55	0.10	mg/L	2.00		77.4	70-130	0.653	20	
Surrogate: o-Terphenyl	0.111		"	0.100		111	50-150			



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Project: Pond Testing  
Project Number: Coalinga  
Project Manager: Tim Parcel

Reported:  
05-Jun-15 16:57

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B5E0694 - EPA 5030B VOCGCMS</b>										
<b>Blank (B5E0694-BLK1)</b> Prepared & Analyzed: 26-May-15										
Benzene	ND	0.50	ug/L							
Ethylbenzene	ND	0.50	"							
Toluene	ND	0.50	"							
Xylenes (total)	ND	0.50	"							
Surrogate: Dibromofluoromethane	12.1		"	12.5		97.1	70-130			
Surrogate: Toluene-d8	12.1		"	12.5		96.6	70-130			
Surrogate: 4-Bromofluorobenzene	11.7		"	12.5		93.9	70-130			
<b>LCS (B5E0694-BS1)</b> Prepared & Analyzed: 26-May-15										
Benzene	28.2	0.50	ug/L	25.0		113	70-130			
Toluene	26.9	0.50	"	25.0		107	70-130			
Surrogate: Dibromofluoromethane	12.2		"	12.5		97.4	70-130			
Surrogate: Toluene-d8	12.2		"	12.5		97.8	70-130			
Surrogate: 4-Bromofluorobenzene	11.9		"	12.5		95.1	70-130			
<b>LCS Dup (B5E0694-BSD1)</b> Prepared & Analyzed: 26-May-15										
Benzene	25.4	0.50	ug/L	25.0		102	70-130	10.4	20	
Toluene	23.5	0.50	"	25.0		93.9	70-130	13.5	20	
Surrogate: Dibromofluoromethane	12.1		"	12.5		97.1	70-130			
Surrogate: Toluene-d8	12.1		"	12.5		96.6	70-130			
Surrogate: 4-Bromofluorobenzene	11.6		"	12.5		92.7	70-130			
<b>Duplicate (B5E0694-DUP1)</b> Source: 1502180-01 Prepared & Analyzed: 26-May-15										
Benzene	ND	0.50	ug/L		ND				20	
Ethylbenzene	ND	0.50	"		ND				20	
Toluene	ND	0.50	"		ND				20	
Xylenes (total)	ND	0.50	"		ND				20	
Surrogate: Dibromofluoromethane	12.4		"	12.5		98.9	70-130			
Surrogate: Toluene-d8	12.1		"	12.5		97.0	70-130			
Surrogate: 4-Bromofluorobenzene	11.8		"	12.5		94.0	70-130			

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**Volatile Organic Compounds by EPA Method 8260B - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B5E0767 - EPA 5030B VOCGCMS</b>										
<b>Blank (B5E0767-BLK1)</b> Prepared: 28-May-15 Analyzed: 29-May-15										
Benzene	ND	0.50	ug/L							
Ethylbenzene	ND	0.50	"							
Toluene	ND	0.50	"							
Xylenes (total)	ND	0.50	"							
Surrogate: Dibromofluoromethane	12.1		"	12.5		97.1	70-130			
Surrogate: Toluene-d8	12.2		"	12.5		97.4	70-130			
Surrogate: 4-Bromofluorobenzene	12.6		"	12.5		101	70-130			
<b>LCS (B5E0767-BS1)</b> Prepared: 28-May-15 Analyzed: 29-May-15										
Benzene	27.6	0.50	ug/L	25.0		111	70-130			
Toluene	25.8	0.50	"	25.0		103	70-130			
Surrogate: Dibromofluoromethane	12.0		"	12.5		96.2	70-130			
Surrogate: Toluene-d8	12.1		"	12.5		96.7	70-130			
Surrogate: 4-Bromofluorobenzene	12.6		"	12.5		101	70-130			
<b>LCS Dup (B5E0767-BSD1)</b> Prepared: 28-May-15 Analyzed: 29-May-15										
Benzene	27.2	0.50	ug/L	25.0		109	70-130	1.64	20	
Toluene	25.9	0.50	"	25.0		103	70-130	0.0387	20	
Surrogate: Dibromofluoromethane	12.2		"	12.5		97.2	70-130			
Surrogate: Toluene-d8	12.2		"	12.5		97.8	70-130			
Surrogate: 4-Bromofluorobenzene	12.4		"	12.5		98.8	70-130			
<b>Duplicate (B5E0767-DUP1)</b> Source: 1502190-09 Prepared: 28-May-15 Analyzed: 29-May-15										
Benzene	ND	0.50	ug/L		ND				20	
Ethylbenzene	ND	0.50	"		ND				20	
Toluene	ND	0.50	"		ND				20	
Xylenes (total)	ND	0.50	"		ND				20	
Surrogate: Dibromofluoromethane	11.9		"	12.5		95.0	70-130			
Surrogate: Toluene-d8	12.2		"	12.5		97.4	70-130			
Surrogate: 4-Bromofluorobenzene	12.1		"	12.5		97.1	70-130			

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Project: Pond Testing  
Project Number: Coalinga  
Project Manager: Tim Parcel

Reported:  
05-Jun-15 16:57

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B5E0767 - EPA 5030B VOCGCMS**

**Matrix Spike (B5E0767-MS1)**

Source: 1502190-11

Prepared: 28-May-15 Analyzed: 29-May-15

Benzene	28.0	0.50	ug/L	25.0	ND	112	70-130			
Toluene	26.2	0.50	"	25.0	ND	105	70-130			
Surrogate: Dibromofluoromethane	12.3		"	12.5		98.2	70-130			
Surrogate: Toluene-d8	12.2		"	12.5		97.7	70-130			
Surrogate: 4-Bromofluorobenzene	12.4		"	12.5		99.4	70-130			

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**Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B5E0663 - EPA 3510C MS**

Blank (B5E0663-BLK1)				Prepared: 26-May-15 Analyzed: 27-May-15						
Acenaphthene	ND	0.10	ug/L							
Acenaphthylene	ND	0.10	"							
Anthracene	ND	0.10	"							
Benz(a)anthracene	ND	0.10	"							
Benzo (b) fluoranthene	ND	0.10	"							
Benzo (k) fluoranthene	ND	0.10	"							
Benzo (a) pyrene	ND	0.10	"							
Benzo (g,h,i) perylene	ND	0.10	"							
Chrysene	ND	0.10	"							
Dibenz (a,h) anthracene	ND	0.10	"							
Fluoranthene	ND	0.10	"							
Fluorene	ND	0.10	"							
Indeno (1,2,3-cd) pyrene	ND	0.10	"							
Naphthalene	ND	0.10	"							
Phenanthrene	ND	0.10	"							
Pyrene	ND	0.10	"							

*Surrogate: p-Terphenyl-d14*      0.950      "      0.800      119      39-177

LCS (B5E0663-BS1)				Prepared: 26-May-15 Analyzed: 27-May-15						
Acenaphthene	0.680	0.10	ug/L	0.800		85.0	53-105			
Acenaphthylene	0.710	0.10	"	0.800		88.8	48-110			
Anthracene	0.880	0.10	"	0.800		110	54-120			
Benz(a)anthracene	0.590	0.10	"	0.800		73.8	46-131			
Benzo (b) fluoranthene	0.640	0.10	"	0.800		80.0	45-153			
Benzo (k) fluoranthene	0.870	0.10	"	0.800		109	63-154			
Benzo (a) pyrene	0.650	0.10	"	0.800		81.2	56-134			
Benzo (g,h,i) perylene	0.760	0.10	"	0.800		95.0	36-164			
Chrysene	0.880	0.10	"	0.800		110	72-125			
Dibenz (a,h) anthracene	0.670	0.10	"	0.800		83.8	44-154			
Fluoranthene	0.790	0.10	"	0.800		98.8	71-118			
Fluorene	0.680	0.10	"	0.800		85.0	45-122			
Indeno (1,2,3-cd) pyrene	0.970	0.10	"	0.800		121	40-155			
Naphthalene	0.640	0.10	"	0.800		80.0	49-99			
Phenanthrene	0.600	0.10	"	0.800		75.0	49-117			
Pyrene	0.810	0.10	"	0.800		101	71-119			

*Surrogate: p-Terphenyl-d14*      0.800      "      0.800      100      39-177

Oilfield Environmental and Compliance

307 Roemer Way, Suite 300, Santa Maria, CA 93454

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FAX: (805) 925-3376



Oilfield Environmental and Compliance, INC.

Aera Energy-Coalinga  
P.O. Box 11184  
Bakersfield CA, 93389-1184

Project: Pond Testing  
Project Number: Coalinga  
Project Manager: Tim Parcel

Reported:  
05-Jun-15 16:57

**Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B5E0663 - EPA 3510C MS</b>										
<b>LCS Dup (B5E0663-BSD1)</b>										
					Prepared: 26-May-15 Analyzed: 27-May-15					
Acenaphthene	0.710	0.10	ug/L	0.800		88.8	53-105	4.32	30	
Acenaphthylene	0.710	0.10	"	0.800		88.8	48-110	0.00	30	
Anthracene	0.890	0.10	"	0.800		111	54-120	1.13	30	
Benz(a)anthracene	0.600	0.10	"	0.800		75.0	46-131	1.68	30	
Benzo (b) fluoranthene	0.660	0.10	"	0.800		82.5	45-153	3.08	30	
Benzo (k) fluoranthene	0.920	0.10	"	0.800		115	63-154	5.59	30	
Benzo (a) pyrene	0.710	0.10	"	0.800		88.8	56-134	8.82	30	
Benzo (g,h,i) perylene	0.770	0.10	"	0.800		96.2	36-164	1.31	30	
Chrysene	0.910	0.10	"	0.800		114	72-125	3.35	30	
Dibenz (a,h) anthracene	0.650	0.10	"	0.800		81.2	44-154	3.03	30	
Fluoranthene	0.810	0.10	"	0.800		101	71-118	2.50	30	
Fluorene	0.660	0.10	"	0.800		82.5	45-122	2.99	30	
Indeno (1,2,3-cd) pyrene	0.950	0.10	"	0.800		119	40-155	2.08	30	
1-methyl-2-naphthalene	0.650	0.10	"	0.800		81.2	49-99	1.55	30	
1-methyl-3-methylanthrene	0.570	0.10	"	0.800		71.2	49-117	5.13	30	
Pyrene	0.830	0.10	"	0.800		104	71-119	2.44	30	
Surrogate: p-Terphenyl-d14	0.780		"	0.800		97.5	39-177			

Oilfield Environmental and Compliance

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FAX: (805) 925-3376



Oilfield Environmental and Compliance, INC.

Aera Energy-Coalinga P.O. Box 11184 Bakersfield CA, 93389-1184	Project: Pond Testing Project Number: Coalinga Project Manager: Tim Parcel	Reported: 05-Jun-15 16:57
--	--	------------------------------

### Notes and Definitions

- R-06 The Reporting Limit has been raised to account for the presence of high levels of analytes.
- R-05 The sample was diluted due to the presence of high levels of non-target analytes resulting in elevated reporting limits.
- QR-04 The RPD exceeded the QC control limits.
- QM-4X The spike recovery was outside of QC acceptance limits for the MS and/or MSD due to analyte concentration at 4 times or greater the spike concentration. The QC batch was accepted based on LCS and/or LCSD recoveries within the acceptance limits.
- QB-01 The method blank contains analyte at a concentration above the RL/PQL; however, concentration is less than 10% of the sample result, which is negligible according to method criteria.
- HT-01 This sample was analyzed outside of the EPA recommended holding time.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference



# Oilfield Environmental and Compliance

307 Roemer Way, Santa Maria CA 93454

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101 Adkisson Way, Taft, CA 93268

phone: (661) 762-9143

CHAIN OF CUSTODY

Rev 06/2012

Page 1 of 1

Company: <b>Aera Energy</b>		Project Name/#: <b>Pond Testing</b>												
Address: <b>29010 Shell Rd.</b>		Site: <b>Coalinga</b>												
City/State/ZIP: <b>Coalinga CA 93210</b>		Analysis Requested												
Phone: (569) 935-7418		Special Instructions: <b>** See attached Table 1 for complete analytical list</b>												
E-mail: <a href="mailto:tiparcel@aeraenergy.com">tiparcel@aeraenergy.com</a>		Temperature / pH / EC / (Sampling method or location)												
Report To: <b>Tim Parcel</b>		89°F; 6.9pH; 22.7mS (Bailer Tube)												
Sampler: <b>Brandon Ganster</b>		76°F; 6.4pH; 6.4mS (4' Level of Tank)												
Report Format(s): Fax <input type="checkbox"/> PDF(Std) <input checked="" type="checkbox"/> 3 Day <input type="checkbox"/> 2 Day <input type="checkbox"/> 1 Day <input type="checkbox"/> ASAP <input type="checkbox"/>		82°F; 6.3pH; 6.5mS (Discharge of Pump)												
Turnaround Time: 10 Days <input type="checkbox"/> 5 Days(Std) <input checked="" type="checkbox"/> 3 Day <input type="checkbox"/> 2 Day <input type="checkbox"/> 1 Day <input type="checkbox"/> ASAP <input type="checkbox"/>		72°F; 6.2pH; 291uS (Bailer Tube)												
NOTE: Samples received after 4:00pm will be considered received as the next business day		123°F; 6.8pH; 9.5mS (Bailer Tube)												
OEC Sample ID	Date/Time Sampled	Matrix** (see key)	# of Cont.	Client Sample ID	EPA 8260 B	EPA 8270C-SM	EPA 6010B	EPA 8015 B	EPA 300.0	TDS	Total Alkalinity as CaCO3	Gross Alpha, Radium 226, Radium 228	Total Recoverable Uranium	Field pH, Spec. Conductance, Temp.
150211-1A-K	05/19/15 @ 1000	PW	11	26 Pond Inlet C-1	X	X	X	X	X	X	X	X	X	X
2A-K	05/19/15 @ 0830	PW	11	26 Dehy Water Sample C-13	X	X	X	X	X	X	X	X	X	X
3A-K	05/19/15 @ 1030	PW	11	27 Water Plant Pump Discharge C-21	X	X	X	X	X	X	X	X	X	X
4A-K	05/19/15 @ 1115	PW	11	32 Little Hoover C-26	X	X	X	X	X	X	X	X	X	X
5A-K	05/19/15 @ 1350	PW	11	32 Water Plant Pit 700 C-31	X	X	X	X	X	X	X	X	X	X
6A-K	05/19/15 @ 1430	PW	11	32 Water Plant T-810 C-32	X	X	X	X	X	X	X	X	X	X
7A-K	05/19/15 @ 1230	PW	11	32 Dehy T-320 Lower Level Inlet C-47	X	X	X	X	X	X	X	X	X	X
8A-K	05/19/15 @ 1205	PW	11	32 Dehy T-323/T-324 Discharge C-58	X	X	X	X	X	X	X	X	X	X
9A-K	05/19/15 @ 1300	PW	11	32 Dehy T-317 Drain C-59	X	X	X	X	X	X	X	X	X	X
10A-K	05/19/15 @ 1310	PW	11	32 Dehy T-318 Drain	X	X	X	X	X	X	X	X	X	X
Relinquished By: <i>[Signature]</i> Date: <u>5/20/15</u> Time: <u>1330</u>		** Matrix Key		Comments/PO#: <u>Ticket # 3621</u>										
Received By: <i>[Signature]</i> Date: <u>5/20/15</u> Time: <u>1330</u>		AQ = aqueous		Calibrated pH meter in field with 3 points: 4.0, 7.0 and 10.0 std.										
Relinquished By: <i>[Signature]</i> Date: <u>5/20/15</u> Time: <u>1535</u>		DW = drinking water		pH LCS 7.0 Std. = 6.9										
Received By: <i>[Signature]</i> Date: <u>6/5/20/15</u> Time: <u>1535</u>		F = Filter		Electrical Conductance Std. 12880 uS/cm = 12.80mS/cm										
Relinquished By: <i>[Signature]</i> Date: _____ Time: _____		GW = Ground Water												
Received By: <i>[Signature]</i> Date: _____ Time: _____		PW = product / oil												
		S = solid / sediment												
		SW = surface water												
		WP = wipe												
		WW = waste water												





**Oilfield Environmental & Compliance, Inc.**

307 Roemer Way, Suite 300, Santa Maria, Ca 93454  
101 Adkisson Way, Taft, Ca 93268  
Phone: 805-922-4772 / 661-762-9143  
AR@oecusa.com

Date: 05/19/15

Employee Name: Brandon Ganster

Client Name: Aera

Project / Site Name: Pond Testing / Coalinga

Roundtrip Drive Time: 3.6 Hrs

Roundtrip Drive Mileage: 222 miles

Start Field Time: 0705

Stop Field Time: 1505

Start Field Mileage: 107521

Stop Field Mileage: 107534

Consumables:

3.6 Hours Overtime  
(4) Bailers Tubes

Description / Comment:

10 samples for RWQCB analyses

Admin Use:

Name: Initials: Date:

Total Drive Time: Total Field Time:

Total Drive Mileage: Total Field Mileage:

TICKET NO. 3621



# PROBLEM CHAIN

CLIENT: AERA

OEC ID #: 1502171

ISSUES RECORDED BY (DATE/TIME/INITIALS): 05/20/15 @ 1:19:16 ECH

ISSUE(S): PLEASE PROVIDE DETAILS OF ISSUE(S) BELOW - Samples/Containers Affected, as necessary.

- Samples Received Outside Temp. Range (see below)
- NO COC document(s) received with samples
- Incorrect containers for analysis requested
- Container label(s) NOT consistent with COC
- OTHER: (if multiple, identify with numbers)

- Container(s) NOT intact or in good condition
- Custody Seals Broken

CONTAINERS 3J, 5I-K, 7I-K, 8I, 8K, 9J, 10J-K HAVE HEADSPACE (VOAS)

RESOLUTIONS: MINIMUM INFO: Issue#[if necessary] - Description - Contact Type (Verbal, email, etc.) - Client Authorization Contact - Date/Time/Initials-

MANAGED VOAS WITH "X" TO NOTIFY ANALYST. 05/20/15 @ 1920.

**TABLE 1**

**FIELD PARAMETERS AND LABORATORY ANALYSIS**

**Aera Pond Sampling**

<b>Constituents<sup>1</sup></b>	<b>Analytical Method<sup>2</sup></b>
<b>Field Parameters</b>	
pH	---
Specific Conductivity	---
Temperature	---
<b>Volatile Organic Compounds</b>	
Benzene	EPA-8260B
Ethylbenzene	EPA-8260B
Toluene	EPA-8260B
Total Xylenes	EPA-8260B
<b>Polynuclear Aromatic Hydrocarbons</b>	
Acenaphthene	EPA-8270C-SIM
Acenaphthylene	EPA-8270C-SIM
Anthracene	EPA-8270C-SIM
Benzo[a]anthracene	EPA-8270C-SIM
Benzo[b]fluoranthene	EPA-8270C-SIM
Benzo[a]pyrene	EPA-8270C-SIM
Benzo[g,h,i]perylene	EPA-8270C-SIM
Chrysene	EPA-8270C-SIM
Dibenzo[a,h]anthracene	EPA-8270C-SIM
Fluoranthene	EPA-8270C-SIM
Fluorene	EPA-8270C-SIM
Indeno[1,2,3-cd]pyrene	EPA-8270C-SIM
Naphthalene	EPA-8270C-SIM
Phenanthrene	EPA-8270C-SIM
Pyrene	EPA-8270C-SIM
<b>Metals</b>	
Total Antimony	EPA-6010B
Total Arsenic	EPA-6010B
Total Barium	EPA-6010B
Total Beryllium	EPA-6010B
Total Cadmium	EPA-6010B
Total Chromium	EPA-6010B
Total Cobalt	EPA-6010B
Total Copper	EPA-6010B
Total Lead	EPA-6010B
Total Mercury	EPA-7470A
Total Molybdenum	EPA-6010B

**TABLE 1**

**FIELD PARAMETERS AND LABORATORY ANALYSIS**

<b>Constituents<sup>1</sup></b>	<b>Analytical Method<sup>2</sup></b>
Total Nickel	EPA-6010B
<b>Metals (continued)</b>	
Total Selenium	EPA-6010B
Total Silver	EPA-6010B
Total Thallium	EPA-6010B
Total Vanadium	EPA-6010B
Total Zinc	EPA-6010B
Total Boron	EPA-200.7
Total Lithium	EPA-200.7
Total Strontium	EPA-200.7
Total Iron	EPA-200.7
Total Manganese	EPA-200.7
Total Calcium	EPA-200.7
Total Magnesium	EPA-200.7
Total Sodium	EPA-200.7
Total Potassium	EPA-200.7
<b>Radionuclides</b>	
Gross Alpha	EPA-9310/SM 7110B
Radium 226	EPA-9315/SM 7110B
Radium 228	EPA-9320/SM 7110B
Total Recoverable Uranium	EPA-200.8
<b>Total Petroleum Hydrocarbons</b>	
Total Petroleum Hydrocarbons-Diesel	EPA-8015B
<b>General Chemistry</b>	
Bromide	EPA-300.0
Chloride	EPA-300.0
Nitrate as NO <sub>3</sub>	EPA-300.0
Sulfate	EPA-300.0
Total Alkalinity as CaCO <sub>3</sub>	SM 2320B
Fluoride	EPA-300.0
Total Dissolved Solids	SM 2540C

1. Constituents listed in Attachment B of RWQCB Order 13267 dated April 1, 2015.

2. "-" = not applicable, EPA = Environmental Protection Agency, and SM = Standard Method.

Oilfield Environmental and Compliance, INC.



Tim Parcel  
Aera Energy-Coalinga  
P.O. Box 11184  
Bakersfield, CA 93389-1184

05 June 2015

RE: Pond Testing

Work Order: 1502219

Dear Client:

Enclosed is an analytical report for the above referenced project. The samples included in this report were received on 22-May-15 15:25 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Assurance Manual, applicable standard operating procedures, and other related documentation. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

A handwritten signature in cursive script, appearing to read "Meredith Sprister".

Meredith Sprister

Project Manager



Oilfield Environmental and Compliance, INC.

Aera Energy-Coalinga  
P.O. Box 11184  
Bakersfield CA, 93389-1184

Project: Pond Testing  
Project Number: Coalinga  
Project Manager: Tim Parcel

Reported:  
05-Jun-15 17:28

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
32 Water Plant Waste Brine Shipping Pumps C-5	1502219-01	Produced Water	21-May-15 09:10	22-May-15 15:25
32 Water Plant T-940 C-38	1502219-02	Produced Water	21-May-15 08:50	22-May-15 15:25
CMS Sump C-125	1502219-03	Produced Water	21-May-15 12:50	22-May-15 15:25
Pz Sump #1 C-150	1502219-04	Produced Water	21-May-15 12:15	22-May-15 15:25
Pz Inlet #1 C-151	1502219-05	Produced Water	21-May-15 10:15	22-May-15 15:25
32 Water Plant V-200 In C-60	1502219-06	Produced Water	21-May-15 14:00	22-May-15 15:25
32 Water Plant Treater Drains V-307 C-61	1502219-07	Produced Water	21-May-15 14:30	22-May-15 15:25

Oilfield Environmental and Compliance

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Oilfield Environmental and Compliance, INC.

Aera Energy-Coalinga P.O. Box 11184 Bakersfield CA, 93389-1184	Project: Pond Testing Project Number: Coalinga Project Manager: Tim Parcel	Reported: 05-Jun-15 17:28
--	--	------------------------------

**32 Water Plant Waste Brine Shipping Pumps C-35  
1502219-01 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Wet Chemistry by EPA or APHA Standard Methods**

Total Alkalinity, CaCO3	890	10	mg/L	1	B5E0706	27-May-15	27-May-15	SM 2320B	
Bicarbonate, CaCO3	890	10	"	"	"	"	"	"	
Carbonate, CaCO3	ND	10	"	"	"	"	"	"	
Hydroxide, CaCO3	ND	10	"	"	"	"	"	"	
Total Dissolved Solids	6900	10	"	"	B5E0739	28-May-15	28-May-15	2540C	

**Anions by EPA Method 300.0**

Bromide	3.9	2.0	mg/L	5	B5E0625	22-May-15	22-May-15	EPA 300.0	
Chloride	2800	400	"	1000	"	"	26-May-15	"	
Fluoride	ND	2.0	"	5	"	"	22-May-15	"	
Nitrate as NO3	ND	9.0	"	"	"	"	"	"	
Sulfate	630	40	"	100	"	"	23-May-15	"	

**Total Metals by EPA 6000/7000 Series Methods**

Antimony	ND	0.050	mg/L	1	B5E0668	27-May-15	27-May-15	EPA 6010B	
Arsenic	ND	0.020	"	"	"	"	"	"	
Barium	0.13	0.020	"	"	"	"	"	"	
Beryllium	ND	0.010	"	"	"	"	"	"	
Boron	52	2.5	"	25	"	"	29-May-15	"	
Cadmium	ND	0.0050	"	1	"	"	27-May-15	"	
Calcium	87	0.20	"	"	"	"	"	"	
Chromium	ND	0.010	"	"	"	"	"	"	
Cobalt	ND	0.010	"	"	"	"	"	"	
Copper	ND	0.020	"	"	"	"	"	"	
Iron	0.20	0.050	"	"	"	"	"	"	
Lead	0.015	0.010	"	"	"	"	"	"	
Lithium	0.50	0.025	"	"	"	"	"	"	
Magnesium	64	0.050	"	"	"	"	"	"	
Manganese	0.13	0.010	"	"	"	"	"	"	
Mercury	ND	0.00040	"	2	B5E0670	26-May-15	26-May-15	EPA 7470A	R-01
Molybdenum	0.017	0.0050	"	1	B5E0668	27-May-15	29-May-15	EPA 6010B	
Nickel	0.0077	0.0050	"	"	"	"	27-May-15	"	
Potassium	49	1.0	"	"	"	"	"	"	

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Oilfield Environmental and Compliance, INC.

Aera Energy-Coalinga P.O. Box 11184 Bakersfield CA, 93389-1184	Project: Pond Testing Project Number: Coalinga Project Manager: Tim Parcel	Reported: 05-Jun-15 17:28
--	--	------------------------------

**32 Water Plant Waste Brine Shipping Pumps C-35  
1502219-01 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Total Metals by EPA 6000/7000 Series Methods**

Selenium	ND	0.050	mg/L	1	B5E0668	27-May-15	27-May-15	EPA 6010B	
Silver	ND	0.010	"	"	"	"	"	"	
Sodium	2200	25	"	25	"	"	29-May-15	"	
Strontium	2.8	0.010	"	1	"	"	27-May-15	"	
Thallium	ND	0.020	"	"	"	"	"	"	
Vanadium	ND	0.050	"	"	"	"	"	"	
Zinc	ND	0.050	"	"	"	"	"	"	

**TEPH by GC FID**

TPH Oil Crude (C8-C40)	49	2.1	mg/L	20	B5E0617	26-May-15	28-May-15	EPA 8015M	QB-01
Surrogate: o-Terphenyl		105 %	50-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

**R-05**

Benzene	ND	50	ug/L	100	B5F0007	01-Jun-15	02-Jun-15	EPA 8260B	
Ethylbenzene	ND	50	"	"	"	"	"	"	
Toluene	ND	50	"	"	"	"	"	"	
Xylenes (total)	ND	50	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		102 %	70-130		"	"	"	"	
Surrogate: Toluene-d8		95.7 %	70-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		90.2 %	70-130		"	"	"	"	

**Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring**

**R-05**

Acenaphthene	0.88	0.52	ug/L	5	B5E0663	26-May-15	29-May-15	EPA 8270M SIM	
Acenaphthylene	ND	0.52	"	"	"	"	"	"	
Anthracene	ND	0.52	"	"	"	"	"	"	
Benz(a)anthracene	ND	0.52	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.52	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.52	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.52	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	0.52	"	"	"	"	"	"	
Chrysene	ND	0.52	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.52	"	"	"	"	"	"	
Fluoranthene	0.52	0.52	"	"	"	"	"	"	
Fluorene	6.7	0.52	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.52	"	"	"	"	"	"	

Oilfield Environmental and Compliance

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Oilfield Environmental and Compliance, INC.

Aera Energy-Coalinga  
 P.O. Box 11184  
 Bakersfield CA, 93389-1184

Project: Pond Testing  
 Project Number: Coalinga  
 Project Manager: Tim Parcel

Reported:  
 05-Jun-15 17:28

**32 Water Plant Waste Brine Shipping Pumps C-35  
 1502219-01 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring**

**R-05**

Naphthalene	5.3	0.52	ug/L	5	B5E0663	26-May-15	29-May-15	EPA 8270M SIM	
Phenanthrene	9.7	0.52	"	"	"	"	"	"	
Pyrene	0.67	0.52	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl-d14		125 %	39-177		"	"	"	"	

**Miscellaneous Physical/Conventional Chemistry Parameters**

Specific Conductance (EC) @ 25 C	11400	0.01	uS/cm	1	B5E0690	21-May-15	21-May-15	Martini Instruments Mi306	
pH	6.9	0.01	pH Units	"	B5E0693	"	"	LaMotte pH PockeTester	
Sample Temperature	32	1.0	°C	"	B5E0692	"	"	"	

Oilfield Environmental and Compliance

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Aera Energy-Coalinga P.O. Box 11184 Bakersfield CA, 93389-1184	Project: Pond Testing Project Number: Coalinga Project Manager: Tim Parcel	Reported: 05-Jun-15 17:28
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**32 Water Plant T-940 C-38  
1502219-02 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Wet Chemistry by EPA or APHA Standard Methods**

Total Alkalinity, CaCO3	780	10	mg/L	1	B5E0706	27-May-15	27-May-15	SM 2320B	
Bicarbonate, CaCO3	780	10	"	"	"	"	"	"	
Carbonate, CaCO3	ND	10	"	"	"	"	"	"	
Hydroxide, CaCO3	ND	10	"	"	"	"	"	"	
Total Dissolved Solids	4200	10	"	"	B5E0739	28-May-15	28-May-15	2540C	

**Anions by EPA Method 300.0**

Bromide	3.6	2.0	mg/L	5	B5E0625	22-May-15	22-May-15	EPA-300.0	
Chloride	1100	40	"	100	"	"	23-May-15	"	
Fluoride	ND	2.0	"	5	"	"	22-May-15	"	R-06
Nitrate as NO3	ND	9.0	"	"	"	"	"	"	R-06
Sulfate	570	40	"	100	"	"	23-May-15	"	

**Total Metals by EPA 6000/7000 Series Methods**

Antimony	ND	0.050	mg/L	1	B5E0668	27-May-15	27-May-15	EPA 6010B	
Arsenic	ND	0.020	"	"	"	"	"	"	
Barium	0.032	0.020	"	"	"	"	"	"	
Beryllium	ND	0.010	"	"	"	"	"	"	
Boron	47	2.5	"	25	"	"	29-May-15	"	
Cadmium	ND	0.0050	"	1	"	"	27-May-15	"	
Calcium	22	0.20	"	"	"	"	"	"	
Chromium	ND	0.010	"	"	"	"	"	"	
Cobalt	ND	0.010	"	"	"	"	"	"	
Copper	ND	0.020	"	"	"	"	"	"	
Iron	0.41	0.050	"	"	"	"	"	"	
Lead	0.012	0.010	"	"	"	"	"	"	
Lithium	0.32	0.025	"	"	"	"	"	"	
Magnesium	18	0.050	"	"	"	"	"	"	
Manganese	0.069	0.010	"	"	"	"	"	"	
Mercury	ND	0.00020	"	"	B5E0670	26-May-15	26-May-15	EPA 7470A	
Molybdenum	0.0057	0.0050	"	"	B5E0668	27-May-15	29-May-15	EPA 6010B	
Nickel	0.0079	0.0050	"	"	"	"	27-May-15	"	
Potassium	27	1.0	"	"	"	"	"	"	
Selenium	ND	0.050	"	"	"	"	"	"	
Silver	ND	0.010	"	"	"	"	"	"	
Sodium	1300	25	"	25	"	"	29-May-15	"	
Strontium	0.55	0.010	"	1	"	"	27-May-15	"	

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**32 Water Plant T-940 C-38  
1502219-02 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Total Metals by EPA 6000/7000 Series Methods**

Thallium	ND	0.020	mg/L	1	B5E0668	27-May-15	27-May-15	EPA 6010B	
Vanadium	ND	0.050	"	"	"	"	"	"	
Zinc	ND	0.050	"	"	"	"	"	"	

**TEPH by GC FID**

<b>TPH Oil Crude (C8-C40)</b>	<b>92</b>	<b>5.2</b>	<b>mg/L</b>	<b>50</b>	<b>B5E0617</b>	<b>26-May-15</b>	<b>28-May-15</b>	<b>EPA 8015M</b>	<b>QB-01</b>
<i>Surrogate: o-Terphenyl</i>		<i>97.8 %</i>	<i>50-150</i>		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

**R-05**

Benzene	ND	50	ug/L	100	B5F0007	01-Jun-15	02-Jun-15	EPA 8260B	
Ethylbenzene	ND	50	"	"	"	"	"	"	
Toluene	ND	50	"	"	"	"	"	"	
Aromatics (total)	ND	50	"	"	"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>		<i>101 %</i>	<i>70-130</i>		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		<i>87.1 %</i>	<i>70-130</i>		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		<i>97.0 %</i>	<i>70-130</i>		"	"	"	"	

**Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring**

**R-05**

<b>Acenaphthene</b>	<b>1.1</b>	<b>0.51</b>	<b>ug/L</b>	<b>5</b>	<b>B5E0663</b>	<b>26-May-15</b>	<b>29-May-15</b>	<b>EPA 8270M</b>	
								<b>SIM</b>	
Acenaphthylene	ND	0.51	"	"	"	"	"	"	
Anthracene	ND	0.51	"	"	"	"	"	"	
Benz(a)anthracene	ND	0.51	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.51	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.51	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.51	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	0.51	"	"	"	"	"	"	
<b>Chrysene</b>	<b>0.96</b>	<b>0.51</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
Dibenz (a,h) anthracene	ND	0.51	"	"	"	"	"	"	
<b>Fluoranthene</b>	<b>1.1</b>	<b>0.51</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
<b>Fluorene</b>	<b>11</b>	<b>0.51</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
Indeno (1,2,3-cd) pyrene	ND	0.51	"	"	"	"	"	"	
<b>Naphthalene</b>	<b>5.1</b>	<b>0.51</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
<b>Phenanthrene</b>	<b>18</b>	<b>2.0</b>	<b>"</b>	<b>20</b>	<b>"</b>	<b>"</b>	<b>01-Jun-15</b>	<b>"</b>	
<b>Pyrene</b>	<b>1.5</b>	<b>0.51</b>	<b>"</b>	<b>5</b>	<b>"</b>	<b>"</b>	<b>29-May-15</b>	<b>"</b>	
<i>Surrogate: p-Terphenyl-d14</i>		<i>150 %</i>	<i>39-177</i>		"	"	"	"	

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**32 Water Plant T-940 C-38  
1502219-02 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Miscellaneous Physical/Conventional Chemistry Parameters**

Specific Conductance (EC) @ 25 C	6200	0.01	uS/cm	1	B5E0690	21-May-15	21-May-15	Martini Instruments Mi306	
pH	7.1	0.01	pH Units	"	B5E0693	"	"	LaMotte pH PocketTester	
Sample Temperature	36	1.0	°C	"	B5E0692	"	"	"	

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**CMS Sump C-125  
1502219-03 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Wet Chemistry by EPA or APHA Standard Methods**

<b>Total Alkalinity, CaCO3</b>	<b>810</b>	10	mg/L	1	B5E0706	27-May-15	27-May-15	SM 2320B	
<b>Bicarbonate, CaCO3</b>	<b>810</b>	10	"	"	"	"	"	"	
Carbonate, CaCO3	ND	10	"	"	"	"	"	"	
Hydroxide, CaCO3	ND	10	"	"	"	"	"	"	
<b>Total Dissolved Solids</b>	<b>3800</b>	10	"	"	B5E0739	28-May-15	28-May-15	2540C	

**Anions by EPA Method 300.0**

<b>Bromide</b>	<b>5.2</b>	2.0	mg/L	5	B5E0625	22-May-15	22-May-15	EPA 300.0	
<b>Chloride</b>	<b>1000</b>	40	"	100	"	"	23-May-15	"	
Fluoride	ND	2.0	"	5	"	"	22-May-15	"	R-06
Nitrate as NO3	ND	9.0	"	"	"	"	"	"	R-06
<b>Sulfate</b>	<b>510</b>	40	"	100	"	"	23-May-15	"	

**Total Metals by EPA 6000/7000 Series Methods**

Antimony	ND	0.050	mg/L	1	B5E0668	27-May-15	27-May-15	EPA 6010B	
Arsenic	ND	0.020	"	"	"	"	"	"	
<b>Barium</b>	<b>0.088</b>	0.020	"	"	"	"	"	"	
Beryllium	ND	0.010	"	"	"	"	"	"	
<b>Boron</b>	<b>58</b>	2.5	"	25	"	"	29-May-15	"	
Cadmium	ND	0.0050	"	1	"	"	27-May-15	"	
<b>Calcium</b>	<b>31</b>	0.20	"	"	"	"	"	"	
Chromium	ND	0.010	"	"	"	"	"	"	
Cobalt	ND	0.010	"	"	"	"	"	"	
Copper	ND	0.020	"	"	"	"	"	"	
<b>Iron</b>	<b>0.10</b>	0.050	"	"	"	"	"	"	
<b>Lead</b>	<b>0.015</b>	0.010	"	"	"	"	"	"	
<b>Lithium</b>	<b>0.45</b>	0.025	"	"	"	"	"	"	
<b>Magnesium</b>	<b>16</b>	0.050	"	"	"	"	"	"	
<b>Manganese</b>	<b>0.057</b>	0.010	"	"	"	"	"	"	
Mercury	ND	0.00020	"	"	B5E0670	26-May-15	26-May-15	EPA 7470A	
Molybdenum	ND	0.0050	"	"	B5E0668	27-May-15	29-May-15	EPA 6010B	
Nickel	ND	0.0050	"	"	"	"	27-May-15	"	
<b>Potassium</b>	<b>35</b>	1.0	"	"	"	"	"	"	
Selenium	ND	0.050	"	"	"	"	"	"	
Silver	ND	0.010	"	"	"	"	"	"	
<b>Sodium</b>	<b>1100</b>	25	"	25	"	"	29-May-15	"	
<b>Strontium</b>	<b>1.3</b>	0.010	"	1	"	"	27-May-15	"	

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**CMS Sump C-125  
1502219-03 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Total Metals by EPA 6000/7000 Series Methods**

Thallium	ND	0.020	mg/L	1	B5E0668	27-May-15	27-May-15	EPA 6010B	
Vanadium	ND	0.050	"	"	"	"	"	"	
Zinc	ND	0.050	"	"	"	"	"	"	

**TEPH by GC FID**

<b>TPH Oil Crude (C8-C40)</b>	<b>82</b>	<b>5.2</b>	<b>mg/L</b>	<b>50</b>	<b>B5E0617</b>	<b>26-May-15</b>	<b>28-May-15</b>	<b>EPA 8015M</b>	<b>QB-01</b>
<i>Surrogate: o-Terphenyl</i>		<i>118 %</i>	<i>50-150</i>		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

**R-05**

Benzene	ND	10	ug/L	20	B5F0007	01-Jun-15	01-Jun-15	EPA 8260B	
Ethylbenzene	ND	10	"	"	"	"	"	"	
Toluene	ND	10	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>13</b>	<b>10</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
<i>Surrogate: Dibromofluoromethane</i>		<i>105 %</i>	<i>70-130</i>		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		<i>97.8 %</i>	<i>70-130</i>		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		<i>99.1 %</i>	<i>70-130</i>		"	"	"	"	

**Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring**

**R-05**

Acenaphthene	ND	0.53	ug/L	5	B5E0663	26-May-15	29-May-15	EPA 8270M SIM	
Acenaphthylene	ND	0.53	"	"	"	"	"	"	
Anthracene	ND	0.53	"	"	"	"	"	"	
Benz(a)anthracene	ND	0.53	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.53	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.53	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.53	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	0.53	"	"	"	"	"	"	
Chrysene	ND	0.53	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.53	"	"	"	"	"	"	
Fluoranthene	ND	0.53	"	"	"	"	"	"	
<b>Fluorene</b>	<b>0.90</b>	<b>0.53</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
Indeno (1,2,3-cd) pyrene	ND	0.53	"	"	"	"	"	"	
Naphthalene	ND	0.53	"	"	"	"	"	"	
<b>Phenanthrene</b>	<b>2.0</b>	<b>0.53</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
<b>Pyrene</b>	<b>0.74</b>	<b>0.53</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
<i>Surrogate: p-Terphenyl-d14</i>		<i>138 %</i>	<i>39-177</i>		"	"	"	"	

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P.O. Box 11184  
Bakersfield CA, 93389-1184

Project: Pond Testing  
Project Number: Coalinga  
Project Manager: Tim Parcel

Reported:  
05-Jun-15 17:28

**CMS Sump C-125**  
**1502219-03 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Miscellaneous Physical/Conventional Chemistry Parameters**

Specific Conductance (EC) @ 25 C	5600	0.01	uS/cm	1	B5E0690	21-May-15	21-May-15	Martini Instruments Mi306	
pH	6.3	0.01	pH Units	"	B5E0693	"	"	LaMotte pH PockeTester	
Sample Temperature	46	1.0	°C	"	B5E0692	"	"	"	

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**Pz Sump #1 C-150**  
**1502219-04 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Wet Chemistry by EPA or APHA Standard Methods**

Total Alkalinity, CaCO3	790	10	mg/L	1	B5E0706	27-May-15	27-May-15	SM 2320B	
Bicarbonate, CaCO3	790	10	"	"	"	"	"	"	
Carbonate, CaCO3	ND	10	"	"	"	"	"	"	
Hydroxide, CaCO3	ND	10	"	"	"	"	"	"	
Total Dissolved Solids	4900	10	"	"	B5E0739	28-May-15	28-May-15	2540C	

**Anions by EPA Method 300.0**

Bromide	8.3	2.0	mg/L	5	B5E0625	22-May-15	22-May-15	EPA 300.0	
Chloride	1600	40	"	100	"	"	23-May-15	"	
Fluoride	ND	2.0	"	5	"	"	22-May-15	"	R-06
Nitrate as NO3	ND	9.0	"	"	"	"	"	"	R-06
Sulfate	650	40	"	100	"	"	23-May-15	"	

**Total Metals by EPA 6000/7000 Series Methods**

Antimony	ND	0.050	mg/L	1	B5E0668	27-May-15	27-May-15	EPA 6010B	
Arsenic	ND	0.020	"	"	"	"	"	"	
Barium	0.14	0.020	"	"	"	"	"	"	
Beryllium	ND	0.010	"	"	"	"	"	"	
Boron	60	2.5	"	25	"	"	29-May-15	"	
Cadmium	ND	0.0050	"	1	"	"	27-May-15	"	
Calcium	40	0.20	"	"	"	"	"	"	
Chromium	ND	0.010	"	"	"	"	"	"	
Cobalt	ND	0.010	"	"	"	"	"	"	
Copper	ND	0.020	"	"	"	"	"	"	
Iron	0.51	0.050	"	"	"	"	"	"	
Lead	0.014	0.010	"	"	"	"	"	"	
Lithium	0.81	0.025	"	"	"	"	"	"	
Magnesium	35	0.050	"	"	"	"	"	"	
Manganese	0.12	0.010	"	"	"	"	"	"	
Mercury	ND	0.00020	"	"	B5E0670	26-May-15	26-May-15	EPA 7470A	
Molybdenum	ND	0.0050	"	"	B5E0668	27-May-15	29-May-15	EPA 6010B	
Nickel	0.0060	0.0050	"	"	"	"	27-May-15	"	
Potassium	45	1.0	"	"	"	"	"	"	
Selenium	ND	0.050	"	"	"	"	"	"	
Silver	ND	0.010	"	"	"	"	"	"	
Sodium	1400	25	"	25	"	"	29-May-15	"	
Strontium	1.6	0.010	"	1	"	"	27-May-15	"	

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 Bakersfield CA, 93389-1184

Project: Pond Testing  
 Project Number: Coalinga  
 Project Manager: Tim Parcel

Reported:  
 05-Jun-15 17:28

**Pz Sump #1 C-150**  
**1502219-04 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Total Metals by EPA 6000/7000 Series Methods**

Thallium	ND	0.020	mg/L	1	B5E0668	27-May-15	27-May-15	EPA 6010B	
Vanadium	ND	0.050	"	"	"	"	"	"	
Zinc	ND	0.050	"	"	"	"	"	"	

**TEPH by GC FID**

TPH Oil Crude (C8-C40)	65	5.1	mg/L	50	B5E0617	26-May-15	28-May-15	EPA 8015M	QB-01
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Surrogate: <i>o</i> -Terphenyl		112 %	50-150		"	"	"	"	
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**Volatile Organic Compounds by EPA Method 8260B**

**R-05**

Benzene	ND	10	ug/L	20	B5F0007	01-Jun-15	01-Jun-15	EPA 8260B	
Ethylbenzene	ND	10	"	"	"	"	"	"	
Toluene	ND	10	"	"	"	"	"	"	
Xylenes (total)	ND	10	"	"	"	"	"	"	

Surrogate: <i>Dibromofluoromethane</i>		113 %	70-130		"	"	"	"	
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Surrogate: <i>Toluene-d8</i>		96.6 %	70-130		"	"	"	"	
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Surrogate: <i>4-Bromofluorobenzene</i>		99.8 %	70-130		"	"	"	"	
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**Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring**

**R-05**

Acenaphthene	ND	0.51	ug/L	5	B5E0663	26-May-15	29-May-15	EPA 8270M SIM	
Acenaphthylene	ND	0.51	"	"	"	"	"	"	
Anthracene	ND	0.51	"	"	"	"	"	"	
Benz(a)anthracene	ND	0.51	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.51	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.51	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.51	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	0.51	"	"	"	"	"	"	
Chrysene	ND	0.51	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.51	"	"	"	"	"	"	
Fluoranthene	ND	0.51	"	"	"	"	"	"	
<b>Fluorene</b>	<b>0.72</b>	0.51	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.51	"	"	"	"	"	"	
Naphthalene	ND	0.51	"	"	"	"	"	"	
Phenanthrene	<b>1.6</b>	0.51	"	"	"	"	"	"	
Pyrene	<b>0.67</b>	0.51	"	"	"	"	"	"	

Surrogate: <i>p</i> -Terphenyl-d14		131 %	39-177		"	"	"	"	
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Oilfield Environmental and Compliance, INC.

Aera Energy-Coalinga  
P.O. Box 11184  
Bakersfield CA, 93389-1184

Project: Pond Testing  
Project Number: Coalinga  
Project Manager: Tim Parcel

Reported:  
05-Jun-15 17:28

**Pz Sump #1 C-150**  
**1502219-04 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Miscellaneous Physical/Conventional Chemistry Parameters**

Specific Conductance (EC) @ 25 C	7600	0.01	uS/cm	1	B5E0690	21-May-15	21-May-15	Martini Instruments Mi306	
pH	6.6	0.01	pH Units	"	B5E0693	"	"	LaMotte pH PockeTester	
Sample Temperature	45	1.0	°C	"	B5E0692	"	"	"	

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Aera Energy-Coalinga P.O. Box 11184 Bakersfield CA, 93389-1184	Project: Pond Testing Project Number: Coalinga Project Manager: Tim Parcel	Reported: 05-Jun-15 17:28
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**Pz Inlet #1 C-151  
1502219-05 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Wet Chemistry by EPA or APHA Standard Methods**

Total Alkalinity, CaCO3	780	10	mg/L	1	B5E0706	27-May-15	27-May-15	SM 2320B	
Bicarbonate, CaCO3	780	10	"	"	"	"	"	"	
Carbonate, CaCO3	ND	10	"	"	"	"	"	"	
Hydroxide, CaCO3	ND	10	"	"	"	"	"	"	
Total Dissolved Solids	4900	10	"	"	B5E0739	28-May-15	28-May-15	2540C	

**Anions by EPA Method 300.0**

Bromide	8.0	2.0	mg/L	5	B5E0625	22-May-15	23-May-15	EPA 300.0	
Chloride	1600	40	"	100	"	"	23-May-15	"	
Fluoride	ND	2.0	"	5	"	"	23-May-15	"	R-06
Nitrate as NO3	ND	9.0	"	"	"	"	"	"	R-06
Sulfate	630	40	"	100	"	"	23-May-15	"	

**Total Metals by EPA 6000/7000 Series Methods**

Antimony	ND	0.050	mg/L	1	B5E0668	27-May-15	27-May-15	EPA 6010B	
Arsenic	ND	0.020	"	"	"	"	"	"	
Barium	0.14	0.020	"	"	"	"	"	"	
Beryllium	ND	0.010	"	"	"	"	"	"	
Boron	60	2.5	"	25	"	"	29-May-15	"	
Cadmium	ND	0.0050	"	1	"	"	27-May-15	"	
Calcium	39	0.20	"	"	"	"	"	"	
Chromium	ND	0.010	"	"	"	"	"	"	
Cobalt	ND	0.010	"	"	"	"	"	"	
Copper	ND	0.020	"	"	"	"	"	"	
Iron	0.15	0.050	"	"	"	"	"	"	
Lead	0.018	0.010	"	"	"	"	"	"	
Lithium	0.81	0.025	"	"	"	"	"	"	
Magnesium	34	0.050	"	"	"	"	"	"	
Manganese	0.12	0.010	"	"	"	"	"	"	
Mercury	ND	0.00020	"	"	B5E0670	26-May-15	26-May-15	EPA 7470A	
Molybdenum	ND	0.0050	"	"	B5E0668	27-May-15	29-May-15	EPA 6010B	
Nickel	0.0050	0.0050	"	"	"	"	27-May-15	"	
Potassium	45	1.0	"	"	"	"	"	"	
Selenium	ND	0.050	"	"	"	"	"	"	
Silver	ND	0.010	"	"	"	"	"	"	
Sodium	1400	25	"	25	"	"	29-May-15	"	
Strontium	1.6	0.010	"	1	"	"	27-May-15	"	

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Oilfield Environmental and Compliance, INC.

Aera Energy-Coalinga P.O. Box 11184 Bakersfield CA, 93389-1184	Project: Pond Testing Project Number: Coalinga Project Manager: Tim Parcel	Reported: 05-Jun-15 17:28
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**Pz Inlet #1 C-151  
1502219-05 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Total Metals by EPA 6000/7000 Series Methods**

Thallium	ND	0.020	mg/L	1	B5E0668	27-May-15	27-May-15	EPA 6010B	
Vanadium	ND	0.050	"	"	"	"	"	"	
Zinc	ND	0.050	"	"	"	"	"	"	

**TEPH by GC FID**

TPH Oil Crude (C8-C40)	59	2.1	mg/L	20	B5E0617	26-May-15	28-May-15	EPA 8015M	QB-01
Surrogate: o-Terphenyl		128 %	50-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

**HDSP, R-05**

Benzene	ND	50	ug/L	100	B5F0092	03-Jun-15	03-Jun-15	EPA 8260B	
Ethylbenzene	ND	50	"	"	"	"	"	"	
Toluene	ND	50	"	"	"	"	"	"	
Xylenes (total)	ND	50	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		99.4 %	70-130		"	"	"	"	
Surrogate: Toluene-d8		96.7 %	70-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		91.0 %	70-130		"	"	"	"	

**Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring**

Acenaphthene	0.12	0.10	ug/L	1	B5E0663	26-May-15	29-May-15	EPA 8270M SIM	
Acenaphthylene	ND	0.10	"	"	"	"	"	"	
Anthracene	ND	0.10	"	"	"	"	"	"	
Benz(a)anthracene	ND	0.10	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.10	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.10	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.10	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	0.10	"	"	"	"	"	"	
Chrysene	ND	0.10	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.10	"	"	"	"	"	"	
Fluoranthene	ND	0.10	"	"	"	"	"	"	
Fluorene	0.72	0.10	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.10	"	"	"	"	"	"	
Naphthalene	0.30	0.10	"	"	"	"	"	"	
Phenanthrene	1.1	0.10	"	"	"	"	"	"	
Pyrene	ND	0.10	"	"	"	"	"	"	
Surrogate: p-Terphenyl-d14		129 %	39-177		"	"	"	"	

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Oilfield Environmental and Compliance, INC.

Aera Energy-Coalinga  
P.O. Box 11184  
Bakersfield CA, 93389-1184

Project: Pond Testing  
Project Number: Coalinga  
Project Manager: Tim Parcel

Reported:  
05-Jun-15 17:28

**Pz Inlet #1 C-151**  
**1502219-05 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Miscellaneous Physical/Conventional Chemistry Parameters**

Specific Conductance (EC) @ 25 C	8000	0.01	uS/cm	1	B5E0690	21-May-15	21-May-15	Martini Instruments Mi306	
pH	6.5	0.01	pH Units	"	B5E0693	"	"	LaMotte pH PockeTester	
Sample Temperature	52	1.0	°C	"	B5E0692	"	"	"	

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Aera Energy-Coalinga P.O. Box 11184 Bakersfield CA, 93389-1184	Project: Pond Testing Project Number: Coalinga Project Manager: Tim Parcel	Reported: 05-Jun-15 17:28
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**32 Water Plant V-200 In C-60  
1502219-06 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Wet Chemistry by EPA or APHA Standard Methods**

Total Alkalinity, CaCO <sub>3</sub>	910	10	mg/L	1	B5E0706	27-May-15	27-May-15	SM 2320B	
Bicarbonate, CaCO <sub>3</sub>	910	10	"	"	"	"	"	"	
Carbonate, CaCO <sub>3</sub>	ND	10	"	"	"	"	"	"	
Hydroxide, CaCO <sub>3</sub>	ND	10	"	"	"	"	"	"	
Total Dissolved Solids	3900	10	"	"	B5E0739	28-May-15	28-May-15	2540C	

**Anions by EPA Method 300.0**

Bromide	4.5	2.0	mg/L	5	B5E0625	22-May-15	23-May-15	EPA 300.0	
Chloride	990	40	"	100	"	"	23-May-15	"	
Fluoride	ND	2.0	"	5	"	"	23-May-15	"	R-06
Nitrate as NO <sub>3</sub>	ND	9.0	"	"	"	"	"	"	R-06
Sulfate	670	40	"	100	"	"	23-May-15	"	

**Total Metals by EPA 6000/7000 Series Methods**

Antimony	ND	0.050	mg/L	1	B5E0668	27-May-15	27-May-15	EPA 6010B	
Arsenic	ND	0.020	"	"	"	"	"	"	
Barium	0.088	0.020	"	"	"	"	"	"	
Beryllium	ND	0.010	"	"	"	"	"	"	
Boron	53	2.5	"	25	"	"	29-May-15	"	
Cadmium	ND	0.0050	"	1	"	"	27-May-15	"	
Calcium	59	0.20	"	"	"	"	"	"	
Chromium	ND	0.010	"	"	"	"	"	"	
Cobalt	ND	0.010	"	"	"	"	"	"	
Copper	ND	0.020	"	"	"	"	"	"	
Iron	ND	0.050	"	"	"	"	"	"	
Lead	0.019	0.010	"	"	"	"	"	"	
Lithium	0.63	0.025	"	"	"	"	"	"	
Magnesium	46	0.050	"	"	"	"	"	"	
Manganese	0.065	0.010	"	"	"	"	"	"	
Mercury	ND	0.00020	"	"	B5E0670	26-May-15	26-May-15	EPA 7470A	
Molybdenum	ND	0.0050	"	"	B5E0668	27-May-15	29-May-15	EPA 6010B	
Nickel	0.0098	0.0050	"	"	"	"	27-May-15	"	
Potassium	44	1.0	"	"	"	"	"	"	
Selenium	ND	0.050	"	"	"	"	"	"	
Silver	ND	0.010	"	"	"	"	"	"	
Sodium	1100	25	"	25	"	"	29-May-15	"	
Strontium	1.9	0.010	"	1	"	"	27-May-15	"	

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Oilfield Environmental and Compliance, INC.

Aera Energy-Coalinga  
 P.O. Box 11184  
 Bakersfield CA, 93389-1184

Project: Pond Testing  
 Project Number: Coalinga  
 Project Manager: Tim Parcel

Reported:  
 05-Jun-15 17:28

**32 Water Plant V-200 In C-60  
 1502219-06 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Total Metals by EPA 6000/7000 Series Methods**

Thallium	ND	0.020	mg/L	1	B5E0668	27-May-15	27-May-15	EPA 6010B	
Vanadium	ND	0.050	"	"	"	"	"	"	
Zinc	ND	0.050	"	"	"	"	"	"	

**TEPH by GC FID**

TPH Oil Crude (C8-C40)	80	5.1	mg/L	50	B5E0617	26-May-15	28-May-15	EPA 8015M	QB-01
Surrogate: o-Terphenyl		111 %	50-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

**HDSP, R-05**

Benzene	ND	50	ug/L	100	B5F0092	03-Jun-15	03-Jun-15	EPA 8260B	
Ethylbenzene	ND	50	"	"	"	"	"	"	
Toluene	ND	50	"	"	"	"	"	"	
Aromatics (total)	ND	50	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		100 %	70-130		"	"	"	"	
Surrogate: Toluene-d8		96.2 %	70-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		89.0 %	70-130		"	"	"	"	

**Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring**

**R-05**

Acenaphthene	1.1	0.52	ug/L	5	B5E0663	26-May-15	29-May-15	EPA 8270M SIM	
Acenaphthylene	ND	0.52	"	"	"	"	"	"	
Anthracene	ND	0.52	"	"	"	"	"	"	
Benz(a)anthracene	ND	0.52	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.52	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.52	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.52	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	0.52	"	"	"	"	"	"	
Chrysene	0.68	0.52	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.52	"	"	"	"	"	"	
Fluoranthene	0.62	0.52	"	"	"	"	"	"	
Fluorene	11	0.52	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.52	"	"	"	"	"	"	
Naphthalene	6.1	0.52	"	"	"	"	"	"	
Phenanthrene	13	0.52	"	"	"	"	"	"	
Pyrene	0.94	0.52	"	"	"	"	"	"	
Surrogate: p-Terphenyl-d14		144 %	39-177		"	"	"	"	

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**32 Water Plant V-200 In C-60  
1502219-06 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Miscellaneous Physical/Conventional Chemistry Parameters**

Specific Conductance (EC) @ 25 C	6000	0.01	uS/cm	1	B5E0690	21-May-15	21-May-15	Martini Instruments Mi306	
pH	6.5	0.01	pH Units	"	B5E0693	"	"	LaMotte pH PockeTester	
Sample Temperature	57	1.0	°C	"	B5E0692	"	"	"	

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**32 Water Plant Treater Drains V-307 C-61  
1502219-07 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Wet Chemistry by EPA or APHA Standard Methods**

Total Alkalinity, CaCO <sub>3</sub>	880	10	mg/L	1	B5E0706	27-May-15	27-May-15	SM 2320B	
Bicarbonate, CaCO <sub>3</sub>	880	10	"	"	"	"	"	"	
Carbonate, CaCO <sub>3</sub>	ND	10	"	"	"	"	"	"	
Hydroxide, CaCO <sub>3</sub>	ND	10	"	"	"	"	"	"	
Total Dissolved Solids	3800	10	"	"	B5E0739	28-May-15	28-May-15	2540C	

**Anions by EPA Method 300.0**

Bromide	4.0	2.0	mg/L	5	B5E0625	22-May-15	23-May-15	EPA 300.0	
Chloride	930	40	"	100	"	"	23-May-15	"	
Fluoride	ND	2.0	"	5	"	"	23-May-15	"	
Nitrate as NO <sub>3</sub>	ND	9.0	"	"	"	"	"	"	
Sulfate	480	40	"	100	"	"	23-May-15	"	

**Total Metals by EPA 6000/7000 Series Methods**

Antimony	ND	0.050	mg/L	1	B5E0668	27-May-15	27-May-15	EPA 6010B	
Arsenic	ND	0.020	"	"	"	"	"	"	
Barium	0.15	0.020	"	"	"	"	"	"	
Beryllium	ND	0.010	"	"	"	"	"	"	
Boron	55	2.5	"	25	"	"	29-May-15	"	
Cadmium	ND	0.0050	"	1	"	"	27-May-15	"	
Calcium	46	0.20	"	"	"	"	"	"	
Chromium	ND	0.010	"	"	"	"	"	"	
Cobalt	ND	0.010	"	"	"	"	"	"	
Copper	ND	0.020	"	"	"	"	"	"	
Iron	0.22	0.050	"	"	"	"	"	"	
Lead	0.023	0.010	"	"	"	"	"	"	
Lithium	0.56	0.025	"	"	"	"	"	"	
Magnesium	42	0.050	"	"	"	"	"	"	
Manganese	0.014	0.010	"	"	"	"	"	"	
Mercury	ND	0.00020	"	"	"	"	"	"	
Molybdenum	ND	0.0050	"	"	B5E0670	26-May-15	26-May-15	EPA 7470A	
Nickel	0.0054	0.0050	"	"	B5E0668	27-May-15	29-May-15	EPA 6010B	
Potassium	53	1.0	"	"	"	"	27-May-15	"	
Selenium	ND	0.050	"	"	"	"	"	"	
Silver	ND	0.010	"	"	"	"	"	"	
Sodium	1000	25	"	25	"	"	29-May-15	"	
Strontium	2.6	0.010	"	1	"	"	27-May-15	"	

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Oilfield Environmental and Compliance, INC.

Aera Energy-Coalinga  
 P.O. Box 11184  
 Bakersfield CA, 93389-1184

Project: Pond Testing  
 Project Number: Coalinga  
 Project Manager: Tim Parcel

Reported:  
 05-Jun-15 17:28

**32 Water Plant Treater Drains V-307 C-61**  
**1502219-07 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Oilfield Environmental and Compliance**

**Total Metals by EPA 6000/7000 Series Methods**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Thallium	ND	0.020	mg/L	1	B5E0668	27-May-15	27-May-15	EPA 6010B	
Vanadium	ND	0.050	"	"	"	"	"	"	
Zinc	ND	0.050	"	"	"	"	"	"	

**TEPH by GC FID**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
TPH Oil Crude (C8-C40)	43	2.1	mg/L	20	B5E0617	26-May-15	28-May-15	EPA 8015M	QB-01
Surrogate: o-Terphenyl		102 %	50-150		"	"	"	"	

**R-05, HDSP**

**Volatile Organic Compounds by EPA Method 8260B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	50	ug/L	100	B5F0092	03-Jun-15	03-Jun-15	EPA 8260B	
Ethylbenzene	ND	50	"	"	"	"	"	"	
Toluene	ND	50	"	"	"	"	"	"	
Xylenes (total)	ND	50	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		101 %	70-130		"	"	"	"	
Surrogate: Toluene-d8		95.8 %	70-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		88.6 %	70-130		"	"	"	"	

**Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	0.46	0.10	ug/L	1	B5E0663	26-May-15	29-May-15	EPA 8270M SIM	
Acenaphthylene	ND	0.10	"	"	"	"	"	"	
Anthracene	ND	0.10	"	"	"	"	"	"	
Benz(a)anthracene	ND	0.10	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.10	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.10	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.10	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	0.10	"	"	"	"	"	"	
Chrysene	ND	0.10	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.10	"	"	"	"	"	"	
Fluoranthene	0.23	0.10	"	"	"	"	"	"	
Fluorene	3.0	0.10	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.10	"	"	"	"	"	"	
Naphthalene	0.81	0.10	"	"	"	"	"	"	
Phenanthrene	4.8	0.52	"	5	"	"	01-Jun-15	"	
Pyrene	0.42	0.10	"	1	"	"	29-May-15	"	
Surrogate: p-Terphenyl-d14		108 %	39-177		"	"	"	"	

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P.O. Box 11184  
Bakersfield CA, 93389-1184

Project: Pond Testing  
Project Number: Coalinga  
Project Manager: Tim Parcel

Reported:  
05-Jun-15 17:28

**32 Water Plant Treater Drains V-307 C-61  
1502219-07 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Miscellaneous Physical/Conventional Chemistry Parameters**

Specific Conductance (EC) @ 25 C	11200	0.01	uS/cm	1	B5E0690	21-May-15	21-May-15	Martini Instruments Mi306	
pH	6.9	0.01	pH Units	"	B5E0693	"	"	LaMotte pH PockeTester	
Sample Temperature	76	1.0	°C	"	B5E0692	"	"	"	

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Aera Energy-Coalinga P.O. Box 11184 Bakersfield CA, 93389-1184	Project: Pond Testing Project Number: Coalinga Project Manager: Tim Parcel	Reported: 05-Jun-15 17:28
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**Wet Chemistry by EPA or APHA Standard Methods - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B5E0706 - Wetchem default method**

**Blank (B5E0706-BLK1)** Prepared & Analyzed: 27-May-15

Total Alkalinity, CaCO3	ND	10	mg/L							
Bicarbonate, CaCO3	ND	10	"							
Carbonate, CaCO3	ND	10	"							
Hydroxide, CaCO3	ND	10	"							

**LCS (B5E0706-BS1)** Prepared & Analyzed: 27-May-15

Total Alkalinity, CaCO3	2120	10	mg/L	2500		84.8	80-120			
Bicarbonate, CaCO3	ND	10	"	0.00			80-120			
Carbonate, CaCO3	2050	10	"	2500		81.8	80-120			
Hydroxide, CaCO3	ND	10	"	0.00			80-120			

**Duplicate (B5E0706-DUP1)** Source: 1502092-01 Prepared & Analyzed: 27-May-15

Total Alkalinity, CaCO3	355	10	mg/L		357			0.562	20	
Bicarbonate, CaCO3	355	10	"		357			0.562	20	
Carbonate, CaCO3	ND	10	"		ND				20	
Hydroxide, CaCO3	ND	10	"		ND				20	

**Duplicate (B5E0706-DUP2)** Source: 1502146-01 Prepared & Analyzed: 27-May-15

Total Alkalinity, CaCO3	498	10	mg/L		501			0.601	20	
Bicarbonate, CaCO3	498	10	"		501			0.601	20	
Carbonate, CaCO3	ND	10	"		ND				20	
Hydroxide, CaCO3	ND	10	"		ND				20	

**Batch B5E0739 - 2540 C TDS Prep**

**Blank (B5E0739-BLK1)** Prepared & Analyzed: 28-May-15

Total Dissolved Solids	ND	10	mg/L							
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P.O. Box 11184  
Bakersfield CA, 93389-1184

Project: Pond Testing  
Project Number: Coalinga  
Project Manager: Tim Parcel

Reported:  
05-Jun-15 17:28

**Wet Chemistry by EPA or APHA Standard Methods - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B5E0739 - 2540 C TDS Prep</b>										
<b>LCS (B5E0739-BS1)</b>										
Prepared & Analyzed: 28-May-15										
Total Dissolved Solids	1200	10	mg/L	1000		122	75-125			
<b>LCS Dup (B5E0739-BSD1)</b>										
Prepared & Analyzed: 28-May-15										
Total Dissolved Solids	1200	10	mg/L	1000		119	75-125	1.99	10	
<b>Duplicate (B5E0739-DUP1)</b>										
Source: 1502219-01 Prepared & Analyzed: 28-May-15										
Total Dissolved Solids	7000	10	mg/L		6900			2.59	10	

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**Anions by EPA Method 300.0 - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B5E0625 - EPA 300.0/300.1 Anions Prep</b>										
<b>Blank (B5E0625-BLK1)</b> Prepared & Analyzed: 22-May-15										
Nitrate as NO3	ND	1.8	mg/L							
Bromide	ND	0.40	"							
Chloride	ND	0.40	"							
Fluoride	ND	0.40	"							
Sulfate	ND	0.40	"							
<b>Blank (B5E0625-BLK2)</b> Prepared & Analyzed: 26-May-15										
Nitrate as NO3	ND	1.8	mg/L							
Bromide	ND	0.40	"							
Chloride	ND	0.40	"							
Fluoride	ND	0.40	"							
Sulfate	ND	0.40	"							
<b>LCS (B5E0625-BS1)</b> Prepared & Analyzed: 22-May-15										
Bromide	5.01	0.40	mg/L	5.00		100	90-110			
Nitrate as NO3	21.7	1.8	"	22.2		98.0	90-110			
Chloride	4.89	0.40	"	5.00		97.8	90-110			
Fluoride	4.87	0.40	"	5.00		97.4	90-110			
Sulfate	5.24	0.40	"	5.00		105	90-110			
<b>LCS (B5E0625-BS2)</b> Prepared & Analyzed: 26-May-15										
Nitrate as NO3	19.7	1.8	mg/L	22.2		88.8	90-110			QM-08
Bromide	4.51	0.40	"	5.00		90.1	90-110			
Chloride	4.51	0.40	"	5.00		90.2	90-110			
Fluoride	4.24	0.40	"	5.00		84.9	90-110			QM-08
Sulfate	4.48	0.40	"	5.00		89.5	90-110			QM-08
<b>LCS Dup (B5E0625-BSD1)</b> Prepared & Analyzed: 22-May-15										
Bromide	4.88	0.40	mg/L	5.00		97.6	90-110	2.61	20	
Nitrate as NO3	21.3	1.8	"	22.2		96.3	90-110	1.83	20	
Chloride	4.79	0.40	"	5.00		95.7	90-110	2.15	20	
Fluoride	5.49	0.40	"	5.00		110	90-110	12.1	20	
Sulfate	5.44	0.40	"	5.00		109	90-110	3.89	20	

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**Anions by EPA Method 300.0 - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B5E0625 - EPA 300.0/300.1 Anions Prep**

**LCS Dup (B5E0625-BSD2)**

Prepared & Analyzed: 26-May-15

Nitrate as NO3	20.3	1.8	mg/L	22.2		91.4	90-110	2.93	20	
Bromide	4.64	0.40	"	5.00		92.7	90-110	2.84	20	
Chloride	4.62	0.40	"	5.00		92.4	90-110	2.45	20	
Fluoride	4.51	0.40	"	5.00		90.2	90-110	6.12	20	
Sulfate	4.66	0.40	"	5.00		93.1	90-110	3.96	20	

**Duplicate (B5E0625-DUP1)**

Source: 1502211-01

Prepared & Analyzed: 22-May-15

Nitrate as NO3	ND	3.6	mg/L		ND				20	
Bromide	ND	0.80	"		ND				20	
Fluoride	ND	0.80	"		ND				20	
Sulfate	ND	0.80	"		ND				20	

**Duplicate (B5E0625-DUP2)**

Source: 1502211-01RE1

Prepared & Analyzed: 22-May-15

Chloride	1470	20	mg/L		1450			0.812	20	
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**Duplicate (B5E0625-DUP3)**

Source: 1502211-01RE2

Prepared & Analyzed: 26-May-15

Nitrate as NO3	ND	3.6	mg/L		ND				20	
Bromide	8.05	0.80	"		7.77			3.56	20	
Fluoride	0.306	0.80	"		0.356			15.1	20	
Sulfate	4.33	0.80	"		4.36			0.782	20	

**Matrix Spike (B5E0625-MS1)**

Source: 1502211-01

Prepared & Analyzed: 22-May-15

Nitrate as NO3	46.4	3.8	mg/L	46.6	ND	99.5	80-120			
Bromide	10.9	0.84	"	10.5	ND	104	80-120			
Fluoride	10.1	0.84	"	10.5	ND	96.3	80-120			
Sulfate	11.2	0.84	"	10.5	ND	107	80-120			

**Matrix Spike (B5E0625-MS2)**

Source: 1502211-01RE1

Prepared & Analyzed: 22-May-15

Chloride	1780	21	mg/L	263	1450	124	80-120			E, QM-4X
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**Anions by EPA Method 300.0 - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B5E0625 - EPA 300.0/300.1 Anions Prep**

Matrix Spike (B5E0625-MS3)	Source: 1502211-01RE2		Prepared & Analyzed: 26-May-15							
Bromide	16.9	0.84	mg/L	10.5	7.77	86.9	80-120			
Nitrate as NO3	40.3	3.8	"	46.6	ND	86.4	80-120			
Fluoride	9.16	0.84	"	10.5	0.356	83.6	80-120			
Sulfate	13.4	0.84	"	10.5	4.36	86.2	80-120			

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Project: Pond Testing  
Project Number: Coalinga  
Project Manager: Tim Parcel

Reported:  
05-Jun-15 17:28

**Total Metals by EPA 6000/7000 Series Methods - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B5E0668 - EPA 3010A**

**Blank (B5E0668-BLK1)**

Prepared & Analyzed: 27-May-15

Antimony	ND	0.050	mg/L
Arsenic	ND	0.020	"
Barium	ND	0.020	"
Beryllium	ND	0.010	"
Boron	ND	0.10	"
Cadmium	ND	0.0050	"
Calcium	ND	0.20	"
Chromium	ND	0.010	"
Cobalt	ND	0.010	"
Copper	ND	0.020	"
Iron	ND	0.050	"
Lead	ND	0.010	"
Lithium	ND	0.025	"
Magnesium	ND	0.050	"
Manganese	ND	0.010	"
Nickel	ND	0.0050	"
Potassium	ND	1.0	"
Selenium	ND	0.050	"
Silver	ND	0.010	"
Strontium	ND	0.010	"
Thallium	ND	0.020	"
Vanadium	ND	0.050	"
Zinc	ND	0.050	"

**Blank (B5E0668-BLK2)**

Prepared: 27-May-15 Analyzed: 29-May-15

Molybdenum	ND	0.0050	mg/L
Sodium	ND	1.0	"

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**Total Metals by EPA 6000/7000 Series Methods - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B5E0668 - EPA 3010A**

LCS (B5E0668-BS1)				Prepared & Analyzed: 27-May-15						
Antimony	2.22	0.050	mg/L	2.00		111	80-120			
Arsenic	2.19	0.020	"	2.00		110	80-120			
Barium	2.30	0.020	"	2.00		115	80-120			
Beryllium	2.34	0.010	"	2.00		117	80-120			
Boron	2.10	0.10	"	2.00		105	80-120			
Cadmium	2.15	0.0050	"	2.00		108	80-120			
Calcium	11.2	0.20	"	10.0		112	80-120			
Chromium	2.10	0.010	"	2.00		105	80-120			
Cobalt	2.20	0.010	"	2.00		110	80-120			
Copper	2.15	0.020	"	2.00		107	80-120			
Iron	11.3	0.050	"	10.0		113	80-120			
Lead	2.12	0.010	"	2.00		106	80-120			
Lithium	2.31	0.025	"	2.00		116	80-120			
Magnesium	11.3	0.050	"	10.0		113	80-120			
Manganese	11.1	0.010	"	10.0		111	80-120			
Nickel	2.18	0.0050	"	2.00		109	80-120			
Potassium	11.3	1.0	"	10.0		113	80-120			
Selenium	2.15	0.050	"	2.00		107	80-120			
Silver	0.102	0.010	"	0.100		102	80-120			
Strontium	2.30	0.010	"	2.00		115	80-120			
Thallium	2.22	0.020	"	2.00		111	80-120			
Vanadium	2.21	0.050	"	2.00		111	80-120			
Zinc	2.08	0.050	"	2.00		104	80-120			

LCS (B5E0668-BS2)				Prepared: 27-May-15 Analyzed: 29-May-15						
Molybdenum	2.10	0.0050	mg/L	2.00		105	80-120			
Sodium	10.6	1.0	"	10.0		106	80-120			

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Project: Pond Testing  
 Project Number: Coalinga  
 Project Manager: Tim Parcel

Reported:  
 05-Jun-15 17:28

**Total Metals by EPA 6000/7000 Series Methods - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B5E0668 - EPA 3010A**

**LCS Dup (B5E0668-BSD1)**

Prepared & Analyzed: 27-May-15

Antimony	2.20	0.050	mg/L	2.00		110	80-120	0.949	20	
Arsenic	2.21	0.020	"	2.00		110	80-120	0.773	20	
Barium	2.28	0.020	"	2.00		114	80-120	0.961	20	
Beryllium	2.30	0.010	"	2.00		115	80-120	1.72	20	
Boron	2.18	0.10	"	2.00		109	80-120	3.84	20	
Cadmium	2.15	0.0050	"	2.00		107	80-120	0.186	20	
Calcium	11.1	0.20	"	10.0		111	80-120	0.718	20	
Chromium	2.22	0.010	"	2.00		111	80-120	5.28	20	
Cobalt	2.18	0.010	"	2.00		109	80-120	0.457	20	
Copper	2.25	0.020	"	2.00		113	80-120	4.73	20	
Iron	11.1	0.050	"	10.0		111	80-120	1.16	20	
Lead	2.12	0.010	"	2.00		106	80-120	0.141	20	
Lithium	2.30	0.025	"	2.00		115	80-120	0.651	20	
Strontium	11.1	0.050	"	10.0		111	80-120	2.05	20	
Magnesium	11.0	0.010	"	10.0		110	80-120	1.09	20	
Manganese	11.0	0.010	"	10.0		110	80-120	1.09	20	
Nickel	2.17	0.0050	"	2.00		109	80-120	0.322	20	
Potassium	11.1	1.0	"	10.0		111	80-120	1.88	20	
Selenium	2.17	0.050	"	2.00		108	80-120	1.07	20	
Silver	0.106	0.010	"	0.100		106	80-120	3.84	20	
Strontium	2.26	0.010	"	2.00		113	80-120	1.36	20	
Thallium	2.22	0.020	"	2.00		111	80-120	0.0902	20	
Vanadium	2.32	0.050	"	2.00		116	80-120	4.68	20	
Zinc	2.08	0.050	"	2.00		104	80-120	0.0480	20	

**LCS Dup (B5E0668-BSD2)**

Prepared: 27-May-15 Analyzed: 29-May-15

Molybdenum	2.17	0.0050	mg/L	2.00		108	80-120	2.90	20	
Sodium	10.7	1.0	"	10.0		107	80-120	0.562	20	

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**Total Metals by EPA 6000/7000 Series Methods - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B5E0668 - EPA 3010A**

<b>Duplicate (B5E0668-DUP1)</b>		<b>Source: 1502205-01</b>			<b>Prepared &amp; Analyzed: 27-May-15</b>					
Antimony	ND	0.050	mg/L		ND				20	
Arsenic	ND	0.020	"		ND				20	
Barium	0.426	0.020	"		0.440			3.03	20	
Beryllium	ND	0.010	"		ND				20	
Boron	33.0	0.10	"		34.4			4.24	20	
Cadmium	ND	0.0050	"		ND				20	
Calcium	34.5	0.20	"		35.9			3.89	20	
Chromium	ND	0.010	"		ND				20	
Cobalt	ND	0.010	"		ND				20	
Copper	ND	0.020	"		ND				20	
Iron	0.346	0.050	"		0.374			7.86	20	
Lead	ND	0.010	"		ND				20	
Lithium	4.60	0.025	"		4.74			3.02	20	
Magnesium	31.5	0.050	"		32.4			2.97	20	
Manganese	0.0615	0.010	"		0.0635			3.20	20	
Nickel	0.00380	0.0050	"		ND				20	
Potassium	90.2	1.0	"		90.4			0.222	20	
Selenium	0.0459	0.050	"		0.0616			29.2	20	QR-04
Silver	ND	0.010	"		ND				20	
Strontium	1.48	0.010	"		1.52			2.93	20	
Thallium	ND	0.020	"		ND				20	
Vanadium	ND	0.050	"		ND				20	
Zinc	ND	0.050	"		ND				20	

<b>Duplicate (B5E0668-DUP2)</b>		<b>Source: 1502205-01</b>			<b>Prepared: 27-May-15 Analyzed: 29-May-15</b>					
Molybdenum	ND	0.0050	mg/L		ND				20	

<b>Duplicate (B5E0668-DUP3)</b>		<b>Source: 1502205-01RE1</b>			<b>Prepared: 27-May-15 Analyzed: 29-May-15</b>					
Sodium	3210	25	mg/L		3120			2.76	20	

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Aera Energy-Coalinga  
 P.O. Box 11184  
 Bakersfield CA, 93389-1184

Project: Pond Testing  
 Project Number: Coalinga  
 Project Manager: Tim Parcel

Reported:  
 05-Jun-15 17:28

**Total Metals by EPA 6000/7000 Series Methods - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B5E0668 - EPA 3010A**

Matrix Spike (B5E0668-MS1)	Source: 1502205-01			Prepared & Analyzed: 27-May-15						
Antimony	2.16	0.050	mg/L	2.00	ND	108	82-127			
Arsenic	2.43	0.020	"	2.00	ND	122	83-130			
Barium	2.66	0.020	"	2.00	0.440	111	76-136			
Beryllium	2.30	0.010	"	2.00	ND	115	78-123			
Boron	33.8	0.10	"	2.00	34.4	NR	71-134			QM-4X
Cadmium	2.09	0.0050	"	2.00	ND	104	86-120			
Calcium	45.8	0.20	"	10.0	35.9	99.1	82-128			
Chromium	2.00	0.010	"	2.00	ND	100	80-123			
Cobalt	2.00	0.010	"	2.00	ND	100	80-123			
Copper	1.98	0.020	"	2.00	ND	98.8	81-128			
Iron	11.1	0.050	"	10.0	0.374	107	88-120			
Lead	1.86	0.010	"	2.00	ND	92.8	71-128			
Lithium	7.75	0.025	"	2.00	4.74	150	57-156			
Magnesium	42.7	0.050	"	10.0	32.4	102	83-123			
Manganese	10.5	0.010	"	10.0	0.0635	105	74-131			
Nickel	2.04	0.0050	"	2.00	ND	102	85-121			
Potassium	103	1.0	"	10.0	90.4	126	73-141			
Selenium	2.34	0.050	"	2.00	0.0616	114	50-151			
Silver	0.108	0.010	"	0.100	ND	108	71-136			
Strontium	3.74	0.010	"	2.00	1.52	111	67-142			
Thallium	1.67	0.020	"	2.00	ND	83.5	61-134			
Vanadium	2.14	0.050	"	2.00	ND	107	82-126			
Zinc	2.14	0.050	"	2.00	ND	107	88-123			

Matrix Spike (B5E0668-MS2)	Source: 1502205-01			Prepared: 27-May-15 Analyzed: 29-May-15						
Molybdenum	1.87	0.0050	mg/L	2.00	ND	93.6	85-122			

Matrix Spike (B5E0668-MS3)	Source: 1502205-01RE1			Prepared: 27-May-15 Analyzed: 29-May-15						
Sodium	2960	25	mg/L	10.0	3120	NR	75-125			QM-4X

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Aera Energy-Coalinga P.O. Box 11184 Bakersfield CA, 93389-1184	Project: Pond Testing Project Number: Coalinga Project Manager: Tim Parcel	Reported: 05-Jun-15 17:28
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**Total Metals by EPA 6000/7000 Series Methods - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B5E0670 - EPA 7470A Prep</b>										
<b>Blank (B5E0670-BLK1)</b> Prepared & Analyzed: 26-May-15										
Mercury	ND	0.00020	mg/L							
<b>LCS (B5E0670-BS1)</b> Prepared & Analyzed: 26-May-15										
Mercury	0.0107	0.00020	mg/L	0.0100		107	85-115			
<b>LCS Dup (B5E0670-BSD1)</b> Prepared & Analyzed: 26-May-15										
Mercury	0.0105	0.00020	mg/L	0.0100		105	85-115	2.13	20	
<b>Duplicate (B5E0670-DUP2)</b> Source: 1502219-01RE1 Prepared & Analyzed: 26-May-15										
Mercury	ND	0.00040	mg/L		ND				20	
<b>Matrix Spike (B5E0670-MS2)</b> Source: 1502219-01RE1 Prepared & Analyzed: 26-May-15										
Mercury	0.00802	0.00040	mg/L	0.0100	ND	80.2	75-125			
<b>Matrix Spike Dup (B5E0670-MSD2)</b> Source: 1502219-01RE1 Prepared & Analyzed: 26-May-15										
Mercury	0.00824	0.00040	mg/L	0.0100	ND	82.4	75-125	2.66	20	
<b>Post Spike (B5E0670-PS2)</b> Source: 1502219-01RE1 Prepared & Analyzed: 26-May-15										
Mercury	4.51		ug/L	5.00	0.0126	89.9	85-115			

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Bakersfield CA, 93389-1184

Project: Pond Testing  
Project Number: Coalinga  
Project Manager: Tim Parcel

Reported:  
05-Jun-15 17:28

**TEPH by GC FID - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B5E0617 - EPA 3510C</b>										
<b>Blank (B5E0617-BLK1)</b>										
					Prepared: 26-May-15 Analyzed: 27-May-15					
TPH Oil Crude (C8-C40)	0.181	0.10	mg/L							QB-01
Surrogate: o-Terphenyl	0.100		"	0.100		100	50-150			
<b>LCS (B5E0617-BS1)</b>										
					Prepared: 26-May-15 Analyzed: 27-May-15					
TPH Oil Crude (C8-C40)	1.54	0.10	mg/L	2.00		76.9	70-130			
Surrogate: o-Terphenyl	0.107		"	0.100		107	50-150			
<b>LCS Dup (B5E0617-BSD1)</b>										
					Prepared: 26-May-15 Analyzed: 27-May-15					
TPH Oil Crude (C8-C40)	1.55	0.10	mg/L	2.00		77.4	70-130	0.653	20	
Surrogate: o-Terphenyl	0.111		"	0.100		111	50-150			

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Project: Pond Testing  
 Project Number: Coalinga  
 Project Manager: Tim Parcel

Reported:  
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**Volatile Organic Compounds by EPA Method 8260B - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B5F0007 - EPA 5030B VOCGCMS</b>										
<b>Blank (B5F0007-BLK1)</b>										
Prepared & Analyzed: 01-Jun-15										
Benzene	ND	0.50	ug/L							
Ethylbenzene	ND	0.50	"							
Toluene	ND	0.50	"							
Xylenes (total)	ND	0.50	"							
<i>Surrogate: Dibromofluoromethane</i>	13.7		"	12.5		110	70-130			
<i>Surrogate: Toluene-d8</i>	12.2		"	12.5		97.4	70-130			
<i>Surrogate: 4-Bromofluorobenzene</i>	12.5		"	12.5		100	70-130			
<b>LCS (B5F0007-BS1)</b>										
Prepared & Analyzed: 01-Jun-15										
Benzene	26.6	0.50	ug/L	25.0		106	70-130			
Toluene	25.2	0.50	"	25.0		101	70-130			
<i>Surrogate: Dibromofluoromethane</i>	13.5		"	12.5		108	70-130			
<i>Surrogate: Toluene-d8</i>	12.0		"	12.5		95.9	70-130			
<i>Surrogate: 4-Bromofluorobenzene</i>	12.7		"	12.5		101	70-130			
<b>LCS Dup (B5F0007-BSD1)</b>										
Prepared & Analyzed: 01-Jun-15										
Benzene	26.3	0.50	ug/L	25.0		105	70-130	1.02	20	
Toluene	23.5	0.50	"	25.0		94.2	70-130	6.69	20	
<i>Surrogate: Dibromofluoromethane</i>	13.6		"	12.5		109	70-130			
<i>Surrogate: Toluene-d8</i>	12.0		"	12.5		96.3	70-130			
<i>Surrogate: 4-Bromofluorobenzene</i>	12.1		"	12.5		96.9	70-130			
<b>Duplicate (B5F0007-DUP1)</b>										
<b>Source: 1502190-03</b>										
Prepared & Analyzed: 01-Jun-15										
Benzene	ND	200	ug/L		ND				20	
Ethylbenzene	ND	200	"		ND				20	
Toluene	ND	200	"		ND				20	
Xylenes (total)	ND	200	"		ND				20	
<i>Surrogate: Dibromofluoromethane</i>	13.7		"	12.5		110	70-130			
<i>Surrogate: Toluene-d8</i>	12.1		"	12.5		97.0	70-130			
<i>Surrogate: 4-Bromofluorobenzene</i>	12.4		"	12.5		99.4	70-130			

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Project: Pond Testing  
 Project Number: Coalinga  
 Project Manager: Tim Parcel

Reported:  
 05-Jun-15 17:28

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B5F0007 - EPA 5030B VOCGCMS**

Matrix Spike (B5F0007-MS1)	Source: 1502190-24RE1		Prepared: 01-Jun-15		Analyzed: 02-Jun-15		
Benzene	25.7	0.50	ug/L	25.0	ND	103	70-130
Toluene	19.6	0.50	"	25.0	ND	78.5	70-130
Surrogate: Dibromofluoromethane	12.4		"	12.5		99.3	70-130
Surrogate: Toluene-d8	10.9		"	12.5		87.0	70-130
Surrogate: 4-Bromofluorobenzene	12.0		"	12.5		96.2	70-130

**Batch B5F0092 - EPA 5030B VOCGCMS**

Blank (B5F0092-BLK1)	Prepared & Analyzed: 03-Jun-15						
Benzene	ND	0.50	ug/L				
Ethylbenzene	ND	0.50	"				
Toluene	ND	0.50	"				
Xylenes (total)	ND	0.50	"				
Surrogate: Dibromofluoromethane	12.7		"	12.5		101	70-130
Surrogate: Toluene-d8	12.0		"	12.5		96.2	70-130
Surrogate: 4-Bromofluorobenzene	10.9		"	12.5		87.2	70-130

**LCS (B5F0092-BS1)** Prepared & Analyzed: 03-Jun-15

Benzene	27.4	0.50	ug/L	25.0		110	70-130
Toluene	25.3	0.50	"	25.0		101	70-130
Surrogate: Dibromofluoromethane	12.3		"	12.5		98.6	70-130
Surrogate: Toluene-d8	12.0		"	12.5		95.9	70-130
Surrogate: 4-Bromofluorobenzene	11.0		"	12.5		87.7	70-130

**LCS Dup (B5F0092-BSD1)** Prepared & Analyzed: 03-Jun-15

Benzene	27.6	0.50	ug/L	25.0		110	70-130	0.691	20
Toluene	24.4	0.50	"	25.0		97.8	70-130	3.62	20
Surrogate: Dibromofluoromethane	12.4		"	12.5		99.0	70-130		
Surrogate: Toluene-d8	11.8		"	12.5		94.5	70-130		
Surrogate: 4-Bromofluorobenzene	11.1		"	12.5		88.5	70-130		

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**Volatile Organic Compounds by EPA Method 8260B - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B5F0092 - EPA 5030B VOCGCMS**

Duplicate (B5F0092-DUP1)	Source: 1502227-06			Prepared & Analyzed: 03-Jun-15						
Benzene	ND	0.50	ug/L		ND				20	
Ethylbenzene	0.290	0.50	"		0.280			3.51	20	
Toluene	1.14	0.50	"		1.13			0.881	20	
Xylenes (total)	1.84	0.50	"		1.82			1.09	20	
Surrogate: Dibromofluoromethane	12.5		"	12.5		99.8	70-130			
Surrogate: Toluene-d8	12.2		"	12.5		97.4	70-130			
Surrogate: 4-Bromofluorobenzene	11.4		"	12.5		90.9	70-130			

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P.O. Box 11184  
Bakersfield CA, 93389-1184

Project: Pond Testing  
Project Number: Coalinga  
Project Manager: Tim Parcel

Reported:  
05-Jun-15 17:28

**Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B5E0663 - EPA 3510C MS**

**Blank (B5E0663-BLK1)**

Prepared: 26-May-15 Analyzed: 27-May-15

Acenaphthene	ND	0.10	ug/L							
Acenaphthylene	ND	0.10	"							
Anthracene	ND	0.10	"							
Benz(a)anthracene	ND	0.10	"							
Benzo (b) fluoranthene	ND	0.10	"							
Benzo (k) fluoranthene	ND	0.10	"							
Benzo (a) pyrene	ND	0.10	"							
Benzo (g,h,i) perylene	ND	0.10	"							
Chrysene	ND	0.10	"							
Dibenz (a,h) anthracene	ND	0.10	"							
Fluoranthene	ND	0.10	"							
Fluorene	ND	0.10	"							
Indeno (1,2,3-cd) pyrene	ND	0.10	"							
Naphthalene	ND	0.10	"							
Phenanthrene	ND	0.10	"							
Pyrene	ND	0.10	"							
Surrogate: p-Terphenyl-d14	0.950		"	0.800		119	39-177			

**LCS (B5E0663-BS1)**

Prepared: 26-May-15 Analyzed: 27-May-15

Acenaphthene	0.680	0.10	ug/L	0.800		85.0	53-105			
Acenaphthylene	0.710	0.10	"	0.800		88.8	48-110			
Anthracene	0.880	0.10	"	0.800		110	54-120			
Benz(a)anthracene	0.590	0.10	"	0.800		73.8	46-131			
Benzo (b) fluoranthene	0.640	0.10	"	0.800		80.0	45-153			
Benzo (k) fluoranthene	0.870	0.10	"	0.800		109	63-154			
Benzo (a) pyrene	0.650	0.10	"	0.800		81.2	56-134			
Benzo (g,h,i) perylene	0.760	0.10	"	0.800		95.0	36-164			
Chrysene	0.880	0.10	"	0.800		110	72-125			
Dibenz (a,h) anthracene	0.670	0.10	"	0.800		83.8	44-154			
Fluoranthene	0.790	0.10	"	0.800		98.8	71-118			
Fluorene	0.680	0.10	"	0.800		85.0	45-122			
Indeno (1,2,3-cd) pyrene	0.970	0.10	"	0.800		121	40-155			
Naphthalene	0.640	0.10	"	0.800		80.0	49-99			
Phenanthrene	0.600	0.10	"	0.800		75.0	49-117			
Pyrene	0.810	0.10	"	0.800		101	71-119			
Surrogate: p-Terphenyl-d14	0.800		"	0.800		100	39-177			

Dilfield Environmental and Compliance

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Oilfield Environmental and Compliance, INC.

Aera Energy-Coalinga P.O. Box 11184 Bakersfield CA, 93389-1184	Project: Pond Testing Project Number: Coalinga Project Manager: Tim Parcel	Reported: 05-Jun-15 17:28
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**Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B5E0663 - EPA 3510C MS**

<b>LCS Dup (B5E0663-BSD1)</b>				Prepared: 26-May-15 Analyzed: 27-May-15						
Acenaphthene	0.710	0.10	ug/L	0.800		88.8	53-105	4.32	30	
Acenaphthylene	0.710	0.10	"	0.800		88.8	48-110	0.00	30	
Anthracene	0.890	0.10	"	0.800		111	54-120	1.13	30	
Benz(a)anthracene	0.600	0.10	"	0.800		75.0	46-131	1.68	30	
Benzo (b) fluoranthene	0.660	0.10	"	0.800		82.5	45-153	3.08	30	
Benzo (k) fluoranthene	0.920	0.10	"	0.800		115	63-154	5.59	30	
Benzo (a) pyrene	0.710	0.10	"	0.800		88.8	56-134	8.82	30	
Benzo (g,h,i) perylene	0.770	0.10	"	0.800		96.2	36-164	1.31	30	
Chrysene	0.910	0.10	"	0.800		114	72-125	3.35	30	
Dibenz (a,h) anthracene	0.650	0.10	"	0.800		81.2	44-154	3.03	30	
Fluoranthene	0.810	0.10	"	0.800		101	71-118	2.50	30	
Fluorene	0.660	0.10	"	0.800		82.5	45-122	2.99	30	
Indeno (1,2,3-cd) pyrene	0.950	0.10	"	0.800		119	40-155	2.08	30	
Naphthalene	0.650	0.10	"	0.800		81.2	49-99	1.55	30	
Phenanthrene	0.570	0.10	"	0.800		71.2	49-117	5.13	30	
Pyrene	0.830	0.10	"	0.800		104	71-119	2.44	30	
Surrogate: p-Terphenyl-d14	0.780		"	0.800		97.5	39-177			

Oilfield Environmental and Compliance

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Dilfield Environmental and Compliance, INC.

Aera Energy-Coalinga  
P.O. Box 11184  
Bakersfield CA, 93389-1184

Project: Pond Testing  
Project Number: Coalinga  
Project Manager: Tim Parcel

Reported:  
05-Jun-15 17:28

### Notes and Definitions

- R-06 The Reporting Limit has been raised to account for the presence of high levels of analytes.
- R-05 The sample was diluted due to the presence of high levels of non-target analytes resulting in elevated reporting limits.
- R-01 The Reporting Limit has been raised to account for matrix interference.
- QR-04 The RPD exceeded the QC control limits.
- QM-4X The spike recovery was outside of QC acceptance limits for the MS and/or MSD due to analyte concentration at 4 times or greater the spike concentration. The QC batch was accepted based on LCS and/or LCSD recoveries within the acceptance limits.
- QM-08 The spike recovery was outside acceptance limits for the LCS. The batch was accepted based on acceptable LCSD recovery.
- QB-01 The method blank contains analyte at a concentration above the RL/PQL; however, concentration is less than 10% of the sample result, which is negligible according to method criteria.
- HDSP Sample aliquot taken from VOA vial with headspace (air bubble greater than 6 mm diameter).
- E The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate (CLP E-flag).
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

Dilfield Environmental and Compliance

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# PROBLEM CHAIN

CLIENT: AEEA

OEC ID #: 1502219

ISSUES RECORDED BY (DATE/TIME/INITIALS): 05/22/15 C 1650 EEA

ISSUE(S): PLEASE PROVIDE DETAILS OF ISSUE(S) BELOW - Samples/Containers Affected, as necessary.

- Samples Received Outside Temp. Range (see below)  NO COC document(s) received with samples
- Incorrect containers for analysis requested  Container label(s) NOT consistent with COC
- OTHER: (if multiple, identify with numbers)

- Container(s) NOT intact or in good condition
- Custody Seals Broken

A) - SAMPLE CONTAINER 6H OUTSIDE OF PH RANGE FOR METALS. (PH 7)

B) VDAS 3I-3J, 4K, 5I-K, 6J-K, 7I-K HAVE HEADSPACE.

RESOLUTIONS: MINIMUM INFO: Issue#(if necessary) - Description - Contact Type (Verbal, email, etc.) - Client Authorization Contact - Date/Time/Initials

A) ADDED 1-0ML H<sub>2</sub>O TO CONTAINERS TO BRING PH TO 7.2. 05/22/15 1648 EEA

B) MARKED CONTAINERS WITH "X" TO NOTIFY ANALYST. 05/22/15 @ 1649 EEA



Oilfield Environmental & Compliance, Inc.  
307 Roemer Way, Suite 300, Santa Maria, Ca 93454  
101 Adkisson Way, Taft, Ca 93268  
Phone: 805-922-4772 / 661-762-9143  
AR@oecusa.com

Date: 05/21/15

Employee Name: Brandon Ganster

Client Name: Aera

Project / Site Name: Pond Testing / Coalinga

Roundtrip Drive Time: 3.6 Hrs

Roundtrip Drive Mileage: 222 miles

Start Field Time: 0700

Stop Field Time: 1500

Start Field Mileage: 107881

Stop Field Mileage: 107899

Consumables:

45 minute Lunch Break

⇒ 8.0 Hours Regular Time & 3.0 Hrs Over-time

(4) Bailer Tubes

Decription / Comment:

Admin Use:

Name: Initials: Date:

Total Drive Time: Total Field Time:

Total Drive Mileage: Total Field Mileage:

TICKET NO. 3622

20 sets

AERA COALINGA  
SUMP TESTING  
TABLE 1

FIELD PARAMETERS AND LABORATORY ANALYSIS

Aera Pond Sampling

each sample

- 4- 1L poly
- 3- VOA w/ HCl
- 2- 1L amber
- 2- 250 mL poly, HNO<sub>3</sub>

Constituents <sup>1</sup>	Analytical Method <sup>2</sup>
<b>Field Parameters</b>	
pH	-
Specific Conductivity	-
Temperature	-
<b>Volatile Organic Compounds</b>	
Benzene	EPA-8260B
Ethylbenzene	EPA-8260B
Toluene	EPA-8260B
Total Xylenes	EPA-8260B
<b>Polynuclear Aromatic Hydrocarbons</b>	
Acenaphthene	EPA-8270C-SIM
Acenaphthylene	EPA-8270C-SIM
Anthracene	EPA-8270C-SIM
Benzo[a]anthracene	EPA-8270C-SIM
Benzo[b]fluoranthene	EPA-8270C-SIM
Benzo[a]pyrene	EPA-8270C-SIM
Benzo[g,h,i]perylene	EPA-8270C-SIM
Chrysene	EPA-8270C-SIM
Dibenzo[a,h]anthracene	EPA-8270C-SIM
Fluoranthene	EPA-8270C-SIM
Fluorene	EPA-8270C-SIM
Indeno[1,2,3-cd]pyrene	EPA-8270C-SIM
Naphthalene	EPA-8270C-SIM
Phenanthrene	EPA-8270C-SIM
Pyrene	EPA-8270C-SIM
<b>Metals</b>	
Total Antimony	EPA-6010B
Total Arsenic	EPA-6010B
Total Barium	EPA-6010B
Total Beryllium	EPA-6010B
Total Cadmium	EPA-6010B
Total Chromium	EPA-6010B
Total Cobalt	EPA-6010B
Total Copper	EPA-6010B
Total Lead	EPA-6010B
Total Mercury	EPA-7470A
Total Molybdenum	EPA-6010B

] 1L poly

3x VOA vials HCl

1L amber

250 mL poly HNO<sub>3</sub>

TABLE 1

FIELD PARAMETERS AND LABORATORY ANALYSIS

Constituents <sup>1</sup>	Analytical Method <sup>2</sup>
Total Nickel	EPA-6010B
<b>Metals (continued)</b>	
Total Selenium	EPA-6010B
Total Silver	EPA-6010B
Total Thallium	EPA-6010B
Total Vanadium	EPA-6010B
Total Zinc	EPA-6010B
Total Boron	EPA-200.7 <i>6010B</i>
Total Lithium	EPA-200.7
Total Strontium	EPA-200.7
Total Iron	EPA-200.7
Total Manganese	EPA-200.7
Total Calcium	EPA-200.7
Total Magnesium	EPA-200.7
Total Sodium	EPA-200.7
Total Potassium	EPA-200.7 ✓
<b>Radionuclides</b>	
Gross Alpha	EPA-9310/SM 7110B
Radium 226	EPA-9315/SM 7110B
Radium 228	EPA-9320/SM 7110B
Total Recoverable Uranium	<i>Fluor Rad.</i> EPA-200.8
<b>Total Petroleum Hydrocarbons</b>	
Total Petroleum Hydrocarbons-Diesel	EPA-8015B
<b>General Chemistry</b>	
Bromide	EPA-300.0
Chloride	EPA-300.0
Nitrate as NO3	EPA-300.0
Sulfate	EPA-300.0
Total Alkalinity as CaCO3	SM 2320B
Fluoride	EPA-300.0
Total Dissolved Solids	SM 2540C

*Covered under previous page*

*] 2x 1L poly - Davi  
250 mL poly HNO<sub>3</sub> - Davi*

*1L amber*

*1L poly*

1. Constituents listed in Attachment B of RWQCB Order 13267 dated April 1, 2015.
2. "-" = not applicable, EPA = Environmental Protection Agency, and SM = Standard Method.

Sample #	Time	Volume	Location	Temp	pH	Conductivity	ID
1	@1000	3L	pond inlet bucket	18.9 F	6.6	22 F	C-13
2	@0830	3L	DEHY water Sample	76 F	6.4	6.4 mS	C-13
3	@1030	3L	water plant	18.2 F	6.3	6.5 mS	C-2
4	@1115	3L	Little Howard Basin	26.7 F	6.2	29.1 uS	C-26
5	@1350	3L	water plant Bailer P.T 700	12.3 F	6.8	9.5 mS	C-31
6	@1430	3L	water plant T-810	22.9 F	6.4	6.2 mS	C-32
7	@0910	3L	water plant waste Basin slurry, Paper meter	8.9 F	6.9	11.4 mS	C-35
<del>8</del>		<del>3L</del>	<del>water plant T-930 inlet</del>				<del>C-37</del>
9	@0850	3L	water plant T-940 Bailer	9.7 F	7.1	6.2 mS	C-38
10	@1730	3L	DEHY lower level inlet	13.5 F	6.4	6.0 mS	C-47
11	@1205	3L	Daly T-323 lower level outlet discharge	33.4 F	6.4	6.0 mS	C-58
12	@1300	3L	DEHY T-317 drain	10.3 F	6.3	28.3 mS	C-59
13	@1310	3L	DEHY T-318 drain	13.9 F	6.8	5.3 mS	C-59

747-3453

14 @1250 cms bump c-125 114°F 6.9pH  
~~inlet~~ Baile 5.6ms

15 @1100 P2 <sup>1245</sup> Sump Inlet #2 113°F 6.6pH 7.6ms  
baile

16 @1015 P2 Pond Inlet #1 C-151  
OFF 2" 126°F 6.5pH 8.0ms

17 @1400 32 water plant c-60 sample box  
V-700 IN 135°F 6.5pH 6.0ms

~~18 32 water plant  
hard out~~

~~19 32 water plant  
soft water inlet~~

~~20 32 water plant  
soft water outlet~~

@1430 21 32 Water Plant Treater Drains  
168°F 6.9pH V-307 C-61  
11.2ms  
35" sample rock

