

STATE OF UTAH
DIVISION OF WATER QUALITY
DEPARTMENT OF ENVIRONMENTAL QUALITY
SALT LAKE CITY, UTAH

UTAH POLLUTANT DISCHARGE ELIMINATION SYSTEM (UPDES) PERMITS

Minor Industrial Permit No. **UT0026174**

In compliance with provisions of the Utah *Water Quality Act, Title 19, Chapter 5, Utah Code Annotated ("UCA") 1953, as amended* (the "Act"),

BIG WEST OIL LLC

is hereby authorized to discharge single pass engine cooling water and wastewater from the RO process (reject water) from its water treatment facility

Big West Oil

to receiving waters named

SALT LAKE SEWAGE CANAL,

in accordance with specific limitations, outfalls, and other conditions set forth herein.

This permit shall become effective on May 01, 2023

This permit expires at midnight on April 30, 2028.

Signed this First day of May, 2023.



John K. Mackey, P.E.
Director

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PART I
DISCHARGE PERMIT NO. UT0026174
WASTEWATER

I. DISCHARGE LIMITATIONS AND REPORTING REQUIREMENTS

A. Description of Discharge Points. The authorization to discharge wastewater provided under this part is limited to those outfalls specifically designated below as discharge locations. Discharges at any location not authorized under a UPDES permit are violations of the *Act* and may be subject to penalties under the *Act*. Knowingly discharging from an unauthorized location or failing to report an unauthorized discharge may be subject to criminal penalties as provided under the *Act*.

<u>Outfall Number</u>	<u>Location of Discharge Outfall</u>
001	Located at <u>latitude</u> 40°50'12" and longitude 111°55'31". The discharge will be through a pipe to the ground, flowing across to the Salt Lake Sewage Canal and on to the Northwest Drain Canal.

B. Narrative Standard. It shall be unlawful, and a violation of this permit, for the permittee to discharge or place any waste or other substance in such a way as will be or may become offensive such as unnatural deposits, floating debris, oil, scum, or other nuisances such as color, odor or taste, or cause conditions which produce undesirable aquatic life or which produce objectionable tastes in edible aquatic organisms; or result in concentrations or combinations of substances which produce undesirable physiological responses in desirable resident fish, or other desirable aquatic life, or undesirable human health effects, as determined by a bioassay or other tests performed in accordance with standard procedures.

C. Specific Limitations and Self-Monitoring Requirements.

1. Effective immediately, and lasting through the life of this permit, there shall be no acute or chronic toxicity in Outfall 001 as defined in *Part VIII*.
2.
 - a. Effective immediately and lasting the duration of this permit, the permittee is authorized to discharge from Outfall 001. Such discharges shall be limited and monitored by the permittee as specified below:

Parameter	Effluent Limitations *a				
	Maximum Monthly Avg	Maximum Weekly Avg	Yearly Average	Daily Minimum	Daily Maximum
Total Flow	0.12	-	-	-	0.33
Oil & Grease, mg/L	-	-	-	-	10.0
pH, Standard Units	-	-	-	6.5	9

*a, See Definitions, Part VIII, for definition of terms.

Effluent Self-Monitoring and Reporting Requirements *a			
Parameter	Frequency	Sample Type	Units
Total Flow *b	Continuous	Recorder	MGD
TSS, Effluent *d	Monthly	Composite	mg/L
pH	Weekly	Grab	SU
DO	Weekly	Grab	mg/L
Oil & Grease *f	Monthly	Grab	mg/L
Orthophosphate (as P)	Monthly	Composite *c	mg/L

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Effluent Self-Monitoring and Reporting Requirements *a			
Parameter	Frequency	Sample Type	Units
Total Phosphorus (as P)	Monthly	Composite *c	mg/L
TDS, mg/L *j	Monthly	Composite	mg/L
Temperature, mg/L *l,	Weekly	Grab	°C
Metals, *d	Annually	Composite/Grab	mg/L
Organic Toxics	Once	Grab	mg/L
*a, See Definitions, <i>Part VIII</i> , for definition of terms.			
*b, If the rate of discharge is controlled, the rate and duration of discharge shall be reported.			
*c, In R317-1-3.3, D, 3 the rule states that all monitoring (TBPEL related) shall be based on 24-hour composite samples by use of an automatic sampler or a minimum of four grab samples collected a minimum of two hours apart.			
*d, See Metals Monitoring Table Below for list of metals to monitor for.			

Metals Monitoring Table	
Parameter	Sample Type
Total Arsenic	Composite
Total Cadmium	
Total Chromium	
Total Copper	
Total Lead	
Total Molybdenum	
Total Nickel	
Total Selenium	
Total Silver	
Total Zinc	
Total Cyanide	Composite/Grab
Total Mercury	Grab

3. Compliance Schedule

a. There is no Compliance Schedule included in this renewal permit.

4. Acute/Chronic Whole Effluent Toxicity (WET) Testing.

As part of the nationwide effort to control toxics, biomonitoring requirements are being included in all major permits and in minor permits for facilities where effluent toxicity is an existing or potential concern. Authorization for requiring effluent biomonitoring is provided for in UAC R317-8-4.2 and R317-8-5.3. The Whole Effluent Toxicity (WET) Control Guidance Document, February 2018, outlines guidance to be used by Utah Division of Water Quality staff and by permittee's for implementation of WET control through the UPDES discharge permit program.

Big West Oil is a minor facility with no reasonable potential for toxicity in the effluent. As a result, biomonitoring of the effluent will not be required. However, the permit will contain a WET reopener provision.

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D. Reporting of Monitoring Results.

1. Reporting of Wastewater Monitoring Results Monitoring results obtained during the previous month shall be summarized for each month and reported on by NetDMR, entered into NetDMR no later than the 28th day of the month following the completed reporting period. The first report is due on June 28, 2023. If no discharge occurs during the reporting period, “no discharge” shall be reported. Legible copies of these, and all other reports including whole effluent toxicity (WET) test reports required herein, shall be signed and certified in accordance with the requirements of *Signatory Requirements (see Part VII.G)*, and submitted by NetDMR.

II. INDUSTRIAL PRETREATMENT REQUIREMENTS

This section is only applicable if the permittee discharges to a POTW.

A. Definitions. For this section, the following definitions shall apply:

1. *Indirect Discharge* means the introduction of pollutants into a publicly-owned treatment works (POTW) from any non-domestic source regulated under section 307 (b), (c) or (d) of the CWA.
2. *Interference* means a discharge which, alone or in conjunction with a discharge or discharges from other sources, both:
 - a. Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and
 - b. Therefore is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent State or local regulations): Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) (including title II, more commonly referred to as the Resource Conservation and Recovery Act (RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to subtitle D of the SWDA), the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act.
3. *Pass Through means* a Discharge which exits the POTW into waters of the United States in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation).
4. *Publicly Owned Treatment Works or POTW* means a treatment works, as defined by section 212 of the CWA, which is owned by a State or municipality (as defined by section 502(4) of the CWA). This definition includes any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature. It also includes sewers, pipes and other conveyances only if they convey wastewater to a POTW Treatment Plant. The term also means the municipality, as defined in section 502(4) of the CWA, which has jurisdiction over the Indirect Discharges to and the discharges from such a treatment works.
5. *Significant industrial user (SIU)* is defined as an industrial user discharging to a POTW that satisfies any of the following:
 - a. Has a process wastewater flow of 25,000 gallons or more per average work day;
 - b. Has a flow greater than five percent of the flow carried by the municipal system receiving the waste;
 - c. Is subject to Categorical Pretreatment Standards, or

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- d. Has a reasonable potential for adversely affecting the operation of the POTW or violating any pretreatment standard or requirement;
6. *User or Industrial User (IU)* means a source of Indirect Discharge.
- B. Discharge to POTW. Any wastewaters discharged to the sanitary sewer, either as a direct discharge or as a hauled waste, are subject to Federal, State and local pretreatment regulations. Pursuant to Section 307 of The Water Quality Act of 1987, the permittee shall comply with all applicable federal General Pretreatment Regulations promulgated at 40 CFR 403, the State Pretreatment Requirements at UAC R317-8-8, and any specific local discharge limitations developed by the Publicly Owned Treatment Works (POTW) accepting the wastewaters. At a minimum, the discharge into a POTW must meet the requirements of Part II.D. and E. of the permit.
- C. Hazardous Waste Notification. The permittee must notify the POTW, the EPA Regional Waste Management Director, the Director and the State hazardous waste authorities in writing if they discharge any substance into a POTW that, if otherwise disposed of, would be considered a hazardous waste under 40 CFR 261. This notification must include the name of the hazardous waste, the EPA hazardous waste number, and the type of discharge (continuous or batch).
- D. General and Specific Prohibitions.
1. General Prohibitions. The permittee may not introduce into a POTW any pollutant(s) which cause Pass Through or Interference. These general prohibitions and the specific prohibitions in paragraph 2. of this section apply to the introducing pollutants into a POTW whether or not the permittee is subject to other National Pretreatment Standards or any national, State, or local Pretreatment Requirements.
 2. Specific Prohibitions. The following pollutants shall not be introduced into a POTW:
 - a. Pollutants which create a fire or explosion hazard in the publicly owned treatment works (POTW), including, but not limited to, wastestreams with a closed cup flashpoint of less than 140°F (60°C);
 - b. Pollutants, which will cause corrosive structural damage to the POTW, but in no case, discharges with a pH lower than 5.0;
 - c. Solid or viscous pollutants in amounts which will cause obstruction to the flow in the POTW resulting in interference;
 - d. Any pollutant, including oxygen demanding pollutants (BOD, etc.), released in a discharge at such volume or strength as to cause interference in the POTW;
 - e. Heat in amounts, which will inhibit biological activity in the POTW, resulting in interference, but in no case, heat in such quantities that the influent to the sewage treatment works exceeds 104°F (40°C));
 - f. Petroleum oil, nonbiodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through;
 - g. Pollutants, which result in the presence of toxic gases, vapor, or fumes within the POTW in a quantity that may cause worker health or safety problems;

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- h. Any trucked or hauled pollutants, except at discharge points designated by the POTW;
or
 - i. Any pollutant that causes pass through or interference at the POTW.
 - j. Any specific pollutant which exceeds any local limitation established by the POTW.
- E. Categorical Standards. In addition to the general and specific limitations expressed in *Part II. D.* of this section, applicable National Categorical Pretreatment Standards must be met by all industrial users discharging into a POTW. These standards are published in the federal regulations at *40 CFR 405 through 471*.

III. BIOSOLIDS REQUIREMENTS

The State of Utah has adopted the 40 CFR 503 federal regulations for the disposal of sewage sludge (biosolids) by reference. However, since this facility does not generate, receive, treat or dispose of biosolids. Therefore 40 CFR 503 does not apply.

PART IV
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STORM WATER

I. STORM WATER REQUIREMENTS.

- A. Industrial Storm Water Permit. Based on the type of industrial activities occurring at the facility, the permittee is required to maintain separate coverage or an appropriate exclusion under the Multi-Sector General Permit (MSGP) for Storm Water Discharges Associated with Industrial Activities (UTR000000). If the facility is not already covered, the permittee has 30 days from when this permit is issued to submit the appropriate Notice of Intent (NOI) for the MSGP or exclusion documentation.

- B. Construction Storm Water Permit. Any construction at the facility that disturbs an acre or more of land, including less than an acre if it is part of a common plan of development or sale, is required to obtain coverage under the UPDES Construction General Storm Water Permit (UTRC00000). Permit coverage must be obtained prior to land disturbance. If the site qualifies, a Low Erosivity Waiver (LEW) Certification may be submitted instead of permit coverage.

II. MONITORING, RECORDING & GENERAL REPORTING REQUIREMENTS

- A. Representative Sampling. Samples taken in compliance with the monitoring requirements established under *Part I* shall be collected from the effluent stream prior to discharge into the receiving waters. Samples and measurements shall be representative of the volume and nature of the monitored discharge. Samples of biosolids shall be collected at a location representative of the quality of biosolids immediately prior to the use-disposal practice.
- B. Monitoring Procedures. Monitoring must be conducted according to test procedures approved under *Utah Administrative Code ("UAC") R317-2-10 and 40CFR Part 503*, unless other test procedures have been specified in this permit.
- C. Penalties for Tampering. The *Act* provides that any person who falsifies, tampers with, or knowingly renders inaccurate, any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than six months per violation, or by both.
- D. Compliance Schedules. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any Compliance Schedule of this permit shall be submitted no later than 14 days following each schedule date.
- E. Additional Monitoring by the Permittee. If the permittee monitors any parameter more frequently than required by this permit, using test procedures approved under *UAC R317-2-10 and 40 CFR 503* or as specified in this permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or the Biosolids Report Form. Such increased frequency shall also be indicated. Only those parameters required by the permit need to be reported.
- F. Records Contents. Records of monitoring information shall include:
1. The date, exact place, and time of sampling or measurements;
 2. The individual(s) who performed the sampling or measurements;
 3. The date(s) and time(s) analyses were performed;
 4. The individual(s) who performed the analyses;
 5. The analytical techniques or methods used; and,
 6. The results of such analyses.
- G. Retention of Records. The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least five years from the date of the sample, measurement, report or application. This period may be extended by request of the Director at any time. A copy of this UPDES permit must be maintained on site during the duration of activity at the permitted location
- H. Twenty-four Hour Notice of Noncompliance Reporting.
1. The permittee shall (orally) report any noncompliance including transportation accidents, spills, and uncontrolled runoff from biosolids transfer or land application sites which may seriously endanger health or environment, as soon as possible, but no later than twenty-four (24) hours from the time the permittee first became aware of circumstances. The report shall be made to the Division of Water Quality, (801) 536-4300, or 24-hour answering service (801) 536-4123.

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2. The following occurrences of noncompliance shall be reported by telephone (801) 536-4300 as soon as possible but no later than 24 hours from the time the permittee becomes aware of the circumstances:
 - a. Any noncompliance which may endanger health or the environment;
 - b. Any unanticipated bypass, which exceeds any effluent limitation in the permit (See *Part VI.G, Bypass of Treatment Facilities.*);
 - c. Any upset which exceeds any effluent limitation in the permit (See *Part VI.H, Upset Conditions.*);
 - d. Violation of a daily discharge limitation for any of the pollutants listed in the permit; or,
 - e. Violation of any of the Table 3 metals limits, the pathogen limits, the vector attraction reduction limits or the management practices for biosolids that have been sold or given away.
3. A written submission shall also be provided within five days of the time that the permittee becomes aware of the circumstances. The written submission shall contain:
 - a. A description of the noncompliance and its cause;
 - b. The period of noncompliance, including exact dates and times;
 - c. The estimated time noncompliance is expected to continue if it has not been corrected;
 - d. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance; and,
 - e. Steps taken, if any, to mitigate the adverse impacts on the environment and human health during the noncompliance period.
4. The Director may waive the written report on a case-by-case basis if the oral report has been received within 24 hours by the Division of Water Quality, (801) 536-4300.
5. Reports shall be submitted to the addresses in *Part I.D, Reporting of Monitoring Results.*
- I. Other Noncompliance Reporting. Instances of noncompliance not required to be reported within 24 hours shall be reported at the time that monitoring reports for *Part I.D* are submitted. The reports shall contain the information listed in *Part V.H.3*
- J. Inspection and Entry The permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:
 1. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of the permit;
 2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

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3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit, including but not limited to, biosolids treatment, collection, storage facilities or area, transport vehicles and containers, and land application sites;
4. Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by the *Act*, any substances or parameters at any location, including, but not limited to, digested biosolids before dewatering, dewatered biosolids, biosolids transfer or staging areas, any ground or surface waters at the land application sites or biosolids, soils, or vegetation on the land application sites; and,
5. The permittee shall make the necessary arrangements with the landowner or leaseholder to obtain permission or clearance, the Director, or authorized representative, upon the presentation of credentials and other documents as may be required by law, will be permitted to enter without delay for the purposes of performing their responsibilities.

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III. COMPLIANCE RESPONSIBILITIES

- A. Duty to Comply. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity, which may result in noncompliance with permit requirements.
- B. Penalties for Violations of Permit Conditions. The *Act* provides that any person who violates a permit condition implementing provisions of the *Act* is subject to a civil penalty not to exceed \$10,000 per day of such violation. Any person who willfully or negligently violates permit conditions or the Act is subject to a fine not exceeding \$25,000 per day of violation. Any person convicted under *UCA 19-5-115(2)* a second time shall be punished by a fine not exceeding \$50,000 per day. Except as provided at *Part VI.G, Bypass of Treatment Facilities* and *Part VI.H, Upset Conditions*, nothing in this permit shall be construed to relieve the permittee of the civil or criminal penalties for noncompliance.
- C. Need to Halt or Reduce Activity not a Defense. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
- D. Duty to Mitigate. The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit, which has a reasonable likelihood of adversely affecting human health or the environment. The permittee shall also take all reasonable steps to minimize or prevent any land application in violation of this permit.
- E. Proper Operation and Maintenance. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems, which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.
- F. Removed Substances. Collected screening, grit, solids, sludge, or other pollutants removed in the course of treatment shall be disposed of in such a manner so as to prevent any pollutant from entering any waters of the state or creating a health hazard. Sludge/digester supernatant and filter backwash shall not directly enter either the final effluent or waters of the state by any other direct route.
- G. Bypass of Treatment Facilities.
1. Bypass Not Exceeding Limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to paragraph 2 and 3 of this section.
 2. Prohibition of Bypass.

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- a. Bypass is prohibited, and the Director may take enforcement action against a permittee for bypass, unless:
 - (1) Bypass was unavoidable to prevent loss of human life, personal injury, or severe property damage;
 - (2) There were no feasible alternatives to bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgement to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance, and
 - (3) The permittee submitted notices as required under *section VI.G.3*.
- b. The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three conditions listed in *sections VI.G.2.a (1), (2) and (3)*.

3. Notice.

- a. *Anticipated bypass*. Except as provided above in *section VI.G.2* and below in *section VI.G.3.b*, if the permittee knows in advance of the need for a bypass, it shall submit prior notice, at least ninety days before the date of bypass. The prior notice shall include the following unless otherwise waived by the Director:
 - (1) Evaluation of alternative to bypass, including cost-benefit analysis containing an assessment of anticipated resource damages;
 - (2) A specific bypass plan describing the work to be performed including scheduled dates and times. The permittee must notify the Director in advance of any changes to the bypass schedule;
 - (3) Description of specific measures to be taken to minimize environmental and public health impacts;
 - (4) A notification plan sufficient to alert all downstream users, the public and others reasonably expected to be impacted by the bypass;
 - (5) A water quality assessment plan to include sufficient monitoring of the receiving water before, during and following the bypass to enable evaluation of public health risks and environmental impacts; and,
 - (6) Any additional information requested by the Director.
- b. *Emergency Bypass*. Where ninety days advance notice is not possible, the permittee must notify the Director, and the Director of the Department of Natural Resources, as soon as it becomes aware of the need to bypass and provide to the Director the information in *section VI.G.3.a.(1) through (6)* to the extent practicable.

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- c. *Unanticipated bypass.* The permittee shall submit notice of an unanticipated bypass to the Director as required under *Part IV.H, Twenty Four Hour Reporting*. The permittee shall also immediately notify the Director of the Department of Natural Resources, the public and downstream users and shall implement measures to minimize impacts to public health and environment to the extent practicable.

H. Upset Conditions.

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with technology based permit effluent limitations if the requirements of paragraph 2 of this section are met. Director's administrative determination regarding a claim of upset cannot be judiciously challenged by the permittee until such time as an action is initiated for noncompliance.
2. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
 - a. An upset occurred and that the permittee can identify the cause(s) of the upset;
 - b. The permitted facility was at the time being properly operated;
 - c. The permittee submitted notice of the upset as required under *Part V.H, Twenty-four Hour Notice of Noncompliance Reporting*; and,
 - d. The permittee complied with any remedial measures required under *Part VI.D, Duty to Mitigate*.
3. Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

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IV. GENERAL REQUIREMENTS

- A. Planned Changes. The permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when the alteration or addition could significantly change the nature or increase the quantity of parameters discharged or pollutant sold or given away. This notification applies to pollutants, which are not subject to effluent limitations in the permit. In addition, if there are any planned substantial changes to the permittee's existing sludge facilities or their manner of operation or to current sludge management practices of storage and disposal, the permittee shall give notice to the Director of any planned changes at least 30 days prior to their implementation.
- B. Anticipated Noncompliance. The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity, which may result in noncompliance with permit requirements.
- C. Permit Actions. This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.
- D. Duty to Reapply. If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee shall apply for and obtain a new permit. The application shall be submitted at least 180 days before the expiration date of this permit.
- E. Duty to Provide Information. The permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.
- F. Other Information. When the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or any report to the Director, it shall promptly submit such facts or information.
- G. Signatory Requirements. All applications, reports or information submitted to the Director shall be signed and certified.
 - 1. All permit applications shall be signed by either a principal executive officer or ranking elected official.
 - 2. All reports required by the permit and other information requested by the Director shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:
 - a. The authorization is made in writing by a person described above and submitted to the Director, and,
 - b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters. A duly authorized

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representative may thus be either a named individual or any individual occupying a named position.

3. Changes to authorization. If an authorization under *paragraph VII.G.2* is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of *paragraph VII.G.2* must be submitted to the Director prior to or together with any reports, information, or applications to be signed by an authorized representative.
4. Certification. Any person signing a document under this section shall make the following 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."

- H. Penalties for Falsification of Reports. The *Act* provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction be punished by a fine of not more than \$10,000.00 per violation, or by imprisonment for not more than six months per violation, or by both.
- I. Availability of Reports. Except for data determined to be confidential under *UAC R317-8-3.2*, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the office of Director. As required by the *Act*, permit applications, permits and effluent data shall not be considered confidential.
- J. Oil and Hazardous Substance Liability. Nothing in this permit shall be construed to preclude the permittee of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under the *Act*.
- K. Property Rights. The issuance of this permit does not convey any property rights of any sort, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.
- L. Severability. The provisions of this permit are severable, and if any provisions of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.
- M. Transfers. This permit may be automatically transferred to a new permittee if:
 1. The current permittee notifies the Director at least 20 days in advance of the proposed transfer date;

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DISCHARGE PERMIT NO. UT0026174

2. The notice includes a written agreement between the existing and new permittee's containing a specific date for transfer of permit responsibility, coverage, and liability between them; and,
 3. The Director does not notify the existing permittee and the proposed new permittee of his or her intent to modify, or revoke and reissue the permit. If this notice is not received, the transfer is effective on the date specified in the agreement mentioned in paragraph 2 above.
- N. State or Federal Laws. Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation under authority preserved by *UCA 19-5-117* and *Section 510* of the *Act* or any applicable Federal or State transportation regulations, such as but not limited to the Department of Transportation regulations.
- O. Water Quality - Reopener Provision. This permit may be reopened and modified (following proper administrative procedures) to include the appropriate effluent limitations and compliance schedule, if necessary, if one or more of the following events occurs:
1. Water Quality Standards for the receiving water(s) to which the permittee discharges are modified in such a manner as to require different effluent limits than contained in this permit.
 2. A final wasteload allocation is developed and approved by the State and/or EPA for incorporation in this permit.
 3. Revisions to the current CWA § 208 areawide treatment management plans or promulgations/revisions to TMDLs (40 CFR 130.7) approved by the EPA and adopted by DWQ which calls for different effluent limitations than contained in this permit.
- P. Biosolids – Reopener Provision. This permit may be reopened and modified (following proper administrative procedures) to include the appropriate biosolids limitations (and compliance schedule, if necessary), management practices, other appropriate requirements to protect public health and the environment, or if there have been substantial changes (or such changes are planned) in biosolids use or disposal practices; applicable management practices or numerical limitations for pollutants in biosolids have been promulgated which are more stringent than the requirements in this permit; and/or it has been determined that the permittees biosolids use or land application practices do not comply with existing applicable state or federal regulations.
- Q. Toxicity Limitation - Reopener Provision. This permit may be reopened and modified (following proper administrative procedures) to include WET testing, a WET limitation, a compliance schedule, a compliance date, additional or modified numerical limitations, or any other conditions related to the control of toxicants if toxicity is detected during the life of this permit.
- R. Storm Water-Reopener Provision. At any time during the duration (life) of this permit, this permit may be reopened and modified (following proper administrative procedures) as per *UAC R317.8*, to include, any applicable storm water provisions and requirements, a storm water pollution prevention plan, a compliance schedule, a compliance date, monitoring and/or reporting requirements, or any other conditions related to the control of storm water discharges to "waters-of-State".

V. DEFINITIONS

A. Wastewater.

1. The "7-day (and weekly) average", other than for *E. coli* bacteria, fecal coliform bacteria, and total coliform bacteria, is the arithmetic average of all samples collected during a consecutive 7-day period or calendar week, whichever is applicable. Geometric means shall be calculated for *E. coli* bacteria, fecal coliform bacteria, and total coliform bacteria. The 7-day and weekly averages are applicable only to those effluent characteristics for which there are 7-day average effluent limitations. The calendar week, which begins on Sunday and ends on Saturday, shall be used for purposes of reporting self-monitoring data on discharge monitoring report forms. Weekly averages shall be calculated for all calendar weeks with Saturdays in the month. If a calendar week overlaps two months (i.e., the Sunday is in one month and the Saturday in the following month), the weekly average calculated for that calendar week shall be included in the data for the month that contains Saturday.
2. The "30-day (and monthly) average," other than for *E. coli* bacteria, fecal coliform bacteria and total coliform bacteria, is the arithmetic average of all samples collected during a consecutive 30-day period or calendar month, whichever is applicable. Geometric means shall be calculated for *E. coli* bacteria, fecal coliform bacteria and total coliform bacteria. The calendar month shall be used for purposes of reporting self-monitoring data on discharge monitoring report forms.
3. "Act," means the *Utah Water Quality Act*.
4. "Acute toxicity" occurs when 50 percent or more mortality is observed for either test species at any effluent concentration (lethal concentration or "LC₅₀").
5. "Annual Loading Cap" is the highest allowable phosphorus loading discharged over a calendar year, calculated as the sum of all the monthly loading discharges measured during a calendar year divided by the number of monthly discharges measured during that year.
6. "Bypass," means the diversion of waste streams from any portion of a treatment facility.
7. "Chronic toxicity" occurs when the IC₂₅< XX% effluent. The XX% effluent is the concentration of the effluent in the receiving water, at the end of the mixing zone expressed as per cent effluent.
8. "IC₂₅" is the concentration of toxicant (given in % effluent) that would cause a 25% reduction in mean young per female, or a 25% reduction in overall growth for the test population.
9. "Composite Samples" shall be flow proportioned. The composite sample shall, as a minimum, contain at least four (4) samples collected over the compositing period. Unless otherwise specified, the time between the collection of the first sample and the last sample shall not be less than six (6) hours nor more than 24 hours. Acceptable methods for preparation of composite samples are as follows:
 - a. Constant time interval between samples, sample volume proportional to flow rate at time of sampling;

PART VIII
DISCHARGE PERMIT NO. UT0026174

- b. Constant time interval between samples, sample volume proportional to total flow (volume) since last sample. For the first sample, the flow rate at the time the sample was collected may be used;
 - c. Constant sample volume, time interval between samples proportional to flow (i.e., sample taken every “X” gallons of flow); and,
 - d. Continuous sample volume, with sample collection rate proportional to flow rate.
10. “CWA” means *The Federal Water Pollution Control Act*, as amended, by *The Clean Water Act of 1987*.
11. “Daily Maximum” (Daily Max.) is the maximum value allowable in any single sample or instantaneous measurement.
12. “EPA,” means the United States Environmental Protection Agency.
13. “Director,” means Director of the Division of Water Quality.
14. A “grab” sample, for monitoring requirements, is defined as a single “dip and take” sample collected at a representative point in the discharge stream.
15. An “instantaneous” measurement, for monitoring requirements, is defined as a single reading, observation, or measurement.
16. “Severe Property Damage,” means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
17. “Upset,” means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation.

**FACT SHEET AND STATEMENT OF BASIS
BIG WEST OIL
PERMIT: DISCHARGE,
UPDES PERMIT NUMBER: UT0026174
MINOR INDUSTRIAL**

FACILITY CONTACTS

Person Name: Mike Swanson
Position: President, Refinery Division
Phone Number: Phone Number: (801) 296-7716
Email: Environmental@bigwestoil.com

Facility Name: Big West Oil LLC
Mailing and Facility Address: 333 West Center Street
North Salt Lake, Utah 84054
Telephone: (801) 296-7716
Actual Address: 333 West Center Street

DESCRIPTION OF FACILITY

Big West Oil LLC operates an oil refinery in North Salt Lake, Utah. Until recently, Big West obtained all process and fire suppression water from the local municipality (North Salt Lake) and discharged all process water to the local sewer district (South Davis Sewer District). The refinery has added a groundwater extraction and reverse osmosis (RO) treatment system to serve the refinery's process water needs. Process water for the facility from the new extraction and RO treatment system is supplemented with culinary water from the North Salt Lake as needed. Additionally, as a result of new fire regulations, Big West has added a new process using the treated groundwater to deluge existing propane tanks at the facility in the event of a fire.

This permit and the discharge that is authorizes through Outfall 001 are for the single pass engine cooling water and wastewater from the RO process (filtrate) only. No other process water or wastewater are permitted for discharge through Outfall 001.

This permit and discharge are for the new fire suppression process at the refinery, single pass engine cooling water and wastewater from the RO process (filtrate). The propane tanks and discharge are located in the South East and West portion of the property respectively. The source for water is a groundwater well. Water is pumped up to the surface and sent to the reverse osmosis (RO) treatment system. The RO filtrate goes to Outfall 001 and the permeate is sent to utility water system which is supplemented by culinary water from the city system when needed.

Plant utility water is used as makeup water for onsite cooling tower blowdown, process makeup water, and in the fire suppression system. A portion of the utility water from the RO system is directed to a larger reservoir onsite. Water in the reservoir is used in in the fire suppression system. When the fire water (FW) pumps are activated during a fire, they take water from the tank and pump it into the fire suppression system. A portion of this flow is circulated back through the engines as cooling water which will then be discharged

through Outfall 001. If there is no fire, but the engines are being tested to ensure their operation, or if they are being operated due to engine maintenance, the fire suppression water is piped back to the reservoir onsite.

The FW pumps are tested for 30 minutes weekly. The test consists of running the engine FW pumps in a recirculating setting. They take water from the treated water tank and pump it back to the tank. A small portion of the water is sent through the motors as cooling water. This cooling water is then discharged at Outfall 001. When the tests are conducted, the FW pumps are run one at a time, and the pumped water recirculates to the onsite storage tank. During a fire emergency at the refinery, the pumps would be run concurrently.

The groundwater well is housed in the same building as all the FW pumps. This will reduce the risk of any leaks or spills of engine fluid from being discharged to the surface water, or carried away during a precipitation event. Located next to the pump building are the reservoir tank (west side), and the RO system building (east side). Floor drains in the buildings are directed to the discharge to the local sewer district.

The RO system has two RO Units that will reject up to 40 gpm. There are currently 5 FW pumps. One pump (P-995) is older, the other four are recently installed and identical.

Pump Flow Rates				
Pump	Flow, gpm			
	at 60 °F	at 80 °F	at 100 °F	Max
RO Pad (2 @ 40 gpm)	80	80	80	80
Firewater Pump (P-995)	40	42	44	80
Firewater Pumps	24.8	26.4	28	unspecified

The discharge of process wastewater and sanitary waste through Outfall 001 is prohibited. Big West discharges all sanitary waste and process wastewater to the local sewer district (South Davis Sewer District) and has been permitted to do this through the district Pretreatment Program.

The chronic flow level for the system is 80 gpm (0.178 cfs) or 0.12 MGD which will be a monthly average flow limit.

The acute flow for the system is expected to occur when the system is undergoing a full load test of the pumps. This would be the base RO system flow plus the cooling water from all five pumps. The acute flow should be 227.6 gpm (0.3277 cfs) or 0.33 MGD which would be a maximum daily flow.

TBPEL considerations.

This facility does not introduce phosphorus or phosphorus containing products into the waste stream. There will be no annual limit for phosphorus in the permit. There will still be monitoring related to the TBPEL rules, but this monitoring will only be on the effluent, and may be reduced or eliminated in the future.

Anti-degradation Review

Since this is a new discharge, the permittee conducted a level II antidegradation review (L2ADR) and submitted it with the application. The L2ADR was conducted using a preliminary WLA supplied by DWQ. The facility will be treating high quality groundwater and discharging the treatment process waste water,

and discharging the treated product. The result is that they do not have the expected potential to reduce the assimilative capacity of, and should not negatively impact the receiving water. The L2ADR (and application) is included in Attachment 3 of this FSSOB.

DISCHARGE

DESCRIPTION OF DISCHARGE

Big West Oil is a new facility so there is no history of discharge.

<u>Outfall</u>	<u>Description of Discharge Point</u>
001	Located at latitude 40°50'12" North and longitude 111°55'31" West. The discharge will be through a pipe to the ground, flowing across to the Salt Lake Sewage Canal and on to the Northwest Drain Canal.

RECEIVING WATERS AND STREAM CLASSIFICATION

The discharges will be to the Salt Lake Sewage Canal, which is a Class 2B, 3E, AND 5D according to *Utah Administrative Code (UAC) R317-2-13*:

- Class 2B -- Protected for infrequent primary contact recreation. Also protected for secondary contact recreation where there is a low likelihood of ingestion of water or a low degree of bodily contact with the water. Examples include, but are not limited to, wading, hunting, and fishing.
- Class 3E -- Severely habitat-limited waters. Narrative standards will be applied to protect these waters for aquatic wildlife.
- Class 5D Farmington Bay
Geographical Boundary -- All open waters at or below approximately 4,208-foot elevation east of Antelope Island and south of the Antelope Island Causeway, excluding salt evaporation ponds.
Beneficial Uses -- Protected for infrequent primary and secondary contact recreation, waterfowl, shore birds and other water-oriented wildlife including their necessary food chain.

BASIS FOR EFFLUENT LIMITATIONS

Limitations on pH are based on current Utah Secondary Treatment Standards, UAC R317-1-3.2. Total suspended solids (TSS), Oil and grease limits are based on best professional judgment (BPJ). Attached is a Wasteload Analysis for this discharge into the receiving water. It has been determined that this discharge will not cause a violation of water quality standards. An Antidegradation Level II review was conducted and shows that water quality impacts are minimal. The permittee is expected to be able to comply with these limitations.

Reasonable Potential Analysis

Since January 1, 2016, DWQ has conducted reasonable potential analysis (RP) on all new and renewal applications received after that date. RP for this permit renewal was conducted following DWQ's September 10, 2015 Reasonable Potential Analysis Guidance (RP Guidance). There are four outcomes defined in the RP Guidance: Outcome A, B, C, or D. These Outcomes provide a frame work for what routine monitoring or effluent limitations are required.

There is no discharge history at this time to base the RP on. It will be conducted when the permit is renewed. A copy of the RP analysis is included at the end of this Fact Sheet.

The permit limitations are

Parameter	Effluent Limitations *a				
	Maximum Monthly Avg	Maximum Weekly Avg	Yearly Average	Daily Minimum	Daily Maximum
Total Flow	0.12	-	-	-	0.33
Oil & Grease, mg/L	-	-	-	-	10.0
pH, Standard Units	-	-	-	6.5	9

*a, See Definitions, Part VIII, for definition of terms.

SELF-MONITORING AND REPORTING REQUIREMENTS

The permit will require reports to be submitted monthly and annually, as applicable, on Discharge Monitoring Report (DMR) forms due 28 days after the end of the monitoring period. Effective January 1, 2017, monitoring results must be submitted using NetDMR unless the permittee has successfully petitioned for an exception. Big West has not petitioned for an exemption to this requirement. Lab sheets for biomonitoring must be attached to the biomonitoring DMR. Lab sheets for metals and toxic organics must be attached to the DMRs.

Effluent Self-Monitoring and Reporting Requirements *a			
Parameter	Frequency	Sample Type	Units
Total Flow *b	Continuous	Recorder	MGD
pH	Weekly	Grab	SU
DO	Weekly	Grab	mg/L
Oil & Grease	Monthly	Grab	mg/L
TDS	Monthly	Composite	mg/L
TSS	Monthly	Composite	mg/L
Orthophosphate (as P)	Monthly	Composite *c	mg/L
Total Phosphorus (as P)	Monthly	Composite *c	mg/L
Temperature	Weekly	Grab	°C
Metals *d	Annually	Composite/Grab	mg/L
Organic Toxics	Once	Grab	mg/L

*a, See Definitions, Part VIII, for definition of terms.

*b, If the rate of discharge is controlled, the rate and duration of discharge shall be reported.

*c, In R317-1-3.3, D, 3 the rule states that all monitoring (TBPEL related) shall be based on 24-hour composite samples by use of an automatic sampler or a minimum of four grab samples collected a minimum of two hours apart.

*d, See Metals Monitoring Table Below for list of metals to monitor for.

Metals Monitoring Table	
Parameter	Sample Type
Total Arsenic	Composite
Total Cadmium	
Total Chromium	

Metals Monitoring Table	
Parameter	Sample Type
Total Copper	
Total Lead	
Total Molybdenum	
Total Nickel	
Total Selenium	
Total Silver	
Total Zinc	
Total Cyanide	
Total Mercury	Composite/Grab
	Grab

BIOSOLIDS

The State of Utah has adopted the 40 CFR 503 federal regulations for the disposal of sewage sludge (biosolids) by reference. However, this facility does not generate, receive, treat or dispose biosolids. Therefore 40 CFR 503 does not apply.

STORM WATER

Separate storm water permits may be required based on the types of activities occurring on site.

Permit coverage under the Multi Sector General Permit (MSGP) for Storm Water Discharges from Industrial Activities is required based on the Standard Industrial Classification (SIC) code for the facility and the types of industrial activities occurring. If the facility is not already covered, it has 30 days from when this permit is issued to submit the appropriate Notice of Intent (NOI) for the MSGP or exclusion documentation.

Permit coverage under the Construction General Storm Water Permit (CGP) is required for any construction at the facility which disturb an acre or more, or is part of a common plan of development or sale that is an acre or greater. A Notice of Intent (NOI) is required to obtain a construction storm water permit prior to the period of construction.

Information on storm water permit requirements can be found at <http://stormwater.utah.gov>

PRETREATMENT REQUIREMENTS

The sanitary wastewater and some of the process wastewater from the facility are discharged to a Publicly Owned Treatment Works (POTW) which is owned and operated by South Davis Sewer District. The permittee must continue to meet the requirements to discharge into the POTW.

Any process wastewater that the permittee discharges to a POTW, either as a direct discharge or as a hauled waste, is subject to federal, state, and local pretreatment regulations. Pursuant to section 307 of the Clean Water Act, the permittee shall comply with all applicable federal general pretreatment regulations promulgated, found in 40 CFR 403, the pretreatment requirements found in UAC R317-8-8, and any specific local discharge limitations developed by the POTW accepting the waste.

In addition, in accordance with 40 CFR 403.12(p)(1), the permittee must notify the POTW, the EPA Regional Waste Management Director, and the State hazardous waste authorities, in writing, if they discharge any substance into a POTW which if otherwise disposed of would be considered a hazardous waste under 40 CFR 261. This notification must include the name of the hazardous waste, the EPA hazardous waste number, and the type of discharge (continuous or batch).

BIOMONITORING REQUIREMENTS

As part of the nationwide effort to control toxics, biomonitoring requirements are being included in all major permits and in minor permits for facilities where effluent toxicity is an existing or potential concern. Authorization for requiring effluent biomonitoring is provided for in UAC R317-8-4.2 and R317-8-5.3. The Whole Effluent Toxicity (WET) Control Guidance Document, February 15, 1991, outlines guidance to be used by Utah Division of Water Quality staff and by permittee's for implementation of WET control through the UPDES discharge permit program.

Big West Oil is a minor facility with no reasonable potential for toxicity in the effluent. As a result, biomonitoring of the effluent will not be required. However, the permit will contain a WET reopener provision.

PERMIT DURATION

It is recommended that this permit be effective for a duration of five (5) years.

Drafted by
Daniel Griffin, Discharge, Reasonable Potential Analysis
Jennifer Robinson, Pretreatment
Lonnie Shull, Biomonitoring
Carl Adams, Storm Water
Suzan Tahir, Wasteload Analysis
Utah Division of Water Quality, (801) 536-4300

PUBLIC NOTICE

Began: March 7, 2023
Ended: April 7, 2023

Comments will be received at: 195 North 1950 West
PO Box 144870
Salt Lake City, UT 84114-4870

The Public Notice of the draft permit was published on the Division of Water Quality Public Notice Webpage.

During the public comment period provided under R317-8-6.5, any interested person may submit written comments on the draft permit and may request a public hearing, if no hearing has already been scheduled. A request for a public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. All comments will be considered in making the final decision and shall be answered as provided in R317-8-6.12.

ADDENDUM TO FSSOB

During finalization of the Permit certain dates, spelling edits and minor language corrections were completed. Due to the nature of these changes they were not considered Major and the permit is not required to be re Public Noticed.

During the PN Period it was determined that the Latitude listed for the outfall was not the same as in the application and Antidegradation Review that were submitted and included in the Public Notice. This was corrected during the finalization of the permit and FSSOB. The Latitude was corrected to match what was submitted in the Permit application and Antidegradation Review. This correction was determined to be minor, and did not require the re-public noticing of the permit and FSSOB. DWQ was also informed that within 2 years of the permit issuance, improvements at the facility will result in the current outfall pipe being extended north to the Salt Lake Sewage Canal. This will change the actual outfall location to latitude 40°50'05" North and longitude 111°55'31" West, but will not require a modification of the permit when this occurs.

DWQ-2022-030129

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ATTACHMENT 1

Wasteload Analysis

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State of Utah

SPENCER J. COX
Governor

DEIDRE HENDERSON
Lieutenant Governor

Department of
Environmental Quality

Kimberly D. Shelley
Executive Director

DIVISION OF WATER QUALITY
Erica Brown Gaddis, PhD
Director

MEMORANDUM

TO: Dan Griffin, Permit Writer

FROM: Chris Bittner, Standards Coordinator
Suzan Tahir, Wasteload Analyst

DATE: November 2, 2022

SUBJECT: Big West Oil Level I Antidegradation Review and Waste Load Allocation, Outfall 001

Receiving Water and Designated Uses (UAC R317-2-13):

Outfall 001 discharges to an unnamed drainage ditch to the Salt Lake City Sewage Canal/Northwest Oil Drain (NWOD) and then into Farmington Bay of Great Salt Lake. In accordance with the Utah Administrative Code (UAC) R317-2-13, the unnamed drainage ditch and NWOD are classified as 2B and 3E and Farmington Bay, Great Salt Lake is classified as 5D.

Class 2B Protected for infrequent primary and secondary contact recreation.

Class 3E Severely habitat-limited waters. Narrative standards will be applied to protect these waters for aquatic wildlife.

Class 5D Farmington Bay of the Great Salt Lake. Protected for infrequent primary and secondary contact recreation, waterfowl, shore birds and other water-oriented wildlife including their necessary food chain.

Level I Antidegradation Review (Protection of Uses)

The Level I antidegradation review was conducted in accordance with the *Interim Methods for Evaluating Use Support for Great Salt Lake Utah Pollution Discharge Elimination System (UPDES) Permits* (v. 1.0 January 4, 2016). The Level II anti-degradation review is based on the requirements of UAC R317-2-3. The whole effluent toxicity (WET) requirements are based on the *Utah Pollutant Discharge Elimination System Permit and Enforcement Guidance Document for Whole Effluent Toxicity (DWQ, February, 2018)*. As described in the *Interim Methods*, effluent

pollutant concentrations are screened against Class 3D aquatic life numeric criteria to determine reasonable potential ensuring protection of the designated uses of the receiving waters.

Only inorganic pollutants are considered because the source of the effluent is deep groundwater (>500'). Consistent with the other facilities discharging to NWOD, acute criteria are applied for the NWOD and acute and chronic criteria are applied at the downstream discharge to Farmington Bay. The approach was simplified to meeting the acute and chronic screening criteria in the NWOD because of the relatively low effluent flows (Table 1).

The source of upstream flows in the NWOD are Warm Springs, the Salt Lake City Water Reclamation Facility (SLCWRF), the Chevron Refinery, and stormwaters. The data for flows in the NWOD are based on the *Northwest Oil Drain and Salt Lake Sewage Canal Selenium, Ammonia and Flow Characterization Report* (Stantec, May 10, 2018) (*NWOD Report*). The SLCWRF is the source of the majority of flow upstream of Big West Oil Outfall 001. Because the source of the most of the water is the SLCWRF effluent, ambient pollutant concentrations in the NWOD are based on concentrations measured in the SLCWRF effluent. These concentrations are reported in Table 1 of the January, 2014 *Final Salt Lake City Water Reclamation Facility Effluent Screening Summary Report*.

The maximum allowable acute and chronic pollutant concentrations in the Big West Oil effluent are estimated using the minimum flow reported in the *NWOD Report* for the “Downstream of Chevron Outfall” monitoring location and the maximum concentrations reported for the SLCWRF effluent. The Big West Oil allowable effluent concentrations for copper, chromium, and mercury concentrations are based on the chronic criteria because NWOD concentrations are at the criteria under the limiting conditions assumed. Tables 1, 2, and 3 summarize the assumptions and results.

Table 1. Hardness and Flow

NWOD Hardness mg/L CaCO3	NWOD Flow (MGD)	Big West Oil Outfall 001 Acute (MGD)	Big West Oil Outfall 001 Chronic (MGD)
400	35	0.33	0.12

Table 2. Maximum Allowable Acute Effluent Concentrations for Big West Oil Outfall 001

Constituent	Class 3D Acute Criteria (dissolved)	Maximum Concentration in NWOD (dissolved)	Maximum Allowable Concentration Outfall 001 (dissolved)	Maximum Allowable Concentration Outfall 001 (total)
Aluminum	0.75	0.13	NA	66
Arsenic	0.34	0.0131	98.6	98.6
Cadmium	0.0065	0.00115	1.8	2.0
Chromium VI	0.016	0.011	1.5	1.5
Copper	0.0496	0.030	6.5	6.7

Lead	0.281	0.0016	143	244
Nickel	1.51	0.025	450	451
Selenium	0.0184	0.00221	4.6	4.6
Zinc	0.38	0.05	100	102
Notes: All units mg/l 400 mg/L CaCO ₃ NA=not available NWOD = Northwest Oil Drain/Salt Lake Sewage Canal				

Table 3 Maximum Allowable Chronic Concentrations for Big West Oil Outfall 001

Constituent	Class 3D Chronic Criteria (dissolved)	Maximum Concentration in NWOD (dissolved)	Maximum Allowable Concentration Outfall 001 (dissolved)	Maximum Allowable Concentration Outfall 001 (total)
Aluminum	NA			
Arsenic	0.15	0.0131	40	40
Cadmium	0.002	0.00115	0.15	0.17
Chromium VI/III	0.011	0.011	0.011	0.011
Copper	0.029	0.030	0.029	0.030
Iron	1.0	NA	1.0	1.0
Lead	0.011	0.0016	2.7	4.6
Mercury	0.000012	0.0002	0.000012	0.000012
Nickel	0.17	0.025	42	42
Selenium	0.0046	0.00221	0.47	0.47
Zinc	0.38	0.05	96	98
Notes: All units mg/l 400 mg/L CaCO ₃ NA=not available; for aluminum, only acute criterion is applicable NWOD = Northwest Oil Drain/Salt Lake Sewage Canal				

Whole Effluent Toxicity (WET) Biomonitoring

WET biomonitoring requirements are based on the 2018 *Utah Pollutant Discharge Elimination System Permit and Enforcement Guidance Document for Whole Effluent Toxicity*. The immediate receiving waters are Class 3E, severely habitat limited and dilution of the effluent in the NWOD (also Class 3E) exceeds 20:1 and effluent flows are less than 20 MGD. Under these conditions, no specific modifications for Great Salt Lake are needed. Quarterly acute WET monitoring using alternating species of *Ceriodaphnia dubia* and *Pimephales promelas* (fathead minnow) and the standard permit language from Appendix A of the Utah WET guidance are recommended.

ATTACHMENT 2

Reasonable Potential Analysis

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REASONABLE POTENTIAL ANALYSIS

Water Quality has worked to improve our reasonable potential analysis (RP) for the inclusion of limits for parameters in the permit by using an EPA provided model. As a result of the model, more parameters may be included in the renewal permit. A Copy of the Reasonable Potential Analysis Guidance (RP Guide) is available at water Quality. There are four outcomes for the RP Analysis¹. They are;

- Outcome A: A new effluent limitation will be placed in the permit.
- Outcome B: No new effluent limitation. Routine monitoring requirements will be placed or increased from what they are in the permit,
- Outcome C: No new effluent limitation. Routine monitoring requirements maintained as they are in the permit,
- Outcome D: No limitation or routine monitoring requirements are in the permit.

This is a new discharger therefore there is no data to run the RP against. We can however determine from the processes involved, one can reasonably determine possible pollutants of concern for the permit.

There is a potential for there to be a concentration of dissolved solids as a result of the reverse osmosis system, so the permit will include monitoring for total dissolved solids and metals.

Due to the use of the water as cooling for internal combustion engines, there is a potential for the water to come into contact with oil and grease as well an increase in the temperature of the water. Therefore, the permit will be included monitoring for both parameters and an effluent limit

¹ See Reasonable Potential Analysis Guidance for definitions of terms

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ATTACHMENT 3

Application and Level IIADR

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August 11, 2022

SUBMITTED VIA UTAH DWQ ELECTRONIC SUBMISSION PORTAL

John Mackey, Director
Division of Water Quality
UPDES Program
195 North 1950 West
P.O. Box 144870
Salt Lake City, Utah 84114-4870

RE: UT0026174 UPDES Permit Application

Dear Mr. Mackey:

Please find attached a UPDES Industrial Permit Application (Application). Big West Oil, LLC (BWO) is applying to permit the discharge of water to the Northwest Oil Drain Canal. BWO extracts groundwater onsite and treats it using a Reverse Osmosis (RO) treatment system. The treated water is used at the refinery for cooling water make-up, fire suppression, engine cooling, and in other processes onsite. The RO reject water from this system will be directly discharged from the facility at Outfall 001. Some of the treated water is used in the fire suppression system at the refinery, in both the act of fire suppression and as cooling water for the fire water (FW) pump engines. During use or testing of the FW pumps, the engine cooling water will also be discharged to Outfall 001. Through this application, BWO seeks to permit the discharge of this RO reject and non-contact cooling water to Outfall 001.

Please contact Beau Stander directly with any questions concerning this information at (801) 296-7828 or by email at beau.stander@bigwestoil.com.

Sincerely,

Alec Klinghoffer
VP Refinery Manager

cc: Dan Griffin – Utah DWQ
Enclosure: UPDES Industrial Permit Application

Contents

Application Forms

EPA Application Form 1 – General Information

EPA Application Form 2E – Manufacturing, Commercial, Mining, and Silvicultural Facilities Which Discharge Only Nonprocess Wastewater

Utah Antidegradation Review Form

Attachments


Form 1 Section 7 – Map

Form 2E Section 3 – Additive SDS

Form 2E Section 4 – Outfall Analysis Summary & Reports

EPA Application Form 1
General Information

EPA Identification Number 110000468921	NPDES Permit Number UT0026174	Facility Name Big West Oil LLC	Form Approved 03/05/19 OMB No. 2040-0004
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Form 1 NPDES		U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater GENERAL INFORMATION
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SECTION 1. ACTIVITIES REQUIRING AN NPDES PERMIT (40 CFR 122.21(f) and (f)(1))

Activities Requiring an NPDES Permit	1.1	Applicants Not Required to Submit Form 1	
	1.1.1	Is the facility a new or existing publicly owned treatment works ? If yes, STOP. Do NOT complete Form 1. Complete Form 2A. <input checked="" type="checkbox"/> No	1.1.2 Is the facility a new or existing treatment works treating domestic sewage ? If yes, STOP. Do NOT complete Form 1. Complete Form 2S. <input checked="" type="checkbox"/> No
	1.2	Applicants Required to Submit Form 1	
	1.2.1	Is the facility a concentrated animal feeding operation or a concentrated aquatic animal production facility ? <input type="checkbox"/> Yes → Complete Form 1 and Form 2B. <input checked="" type="checkbox"/> No	1.2.2 Is the facility an existing manufacturing, commercial, mining, or silvicultural facility that is currently discharging process wastewater ? <input type="checkbox"/> Yes → Complete Form 1 and Form 2C. <input checked="" type="checkbox"/> No
	1.2.3	Is the facility a new manufacturing, commercial, mining, or silvicultural facility that has not yet commenced to discharge ? <input type="checkbox"/> Yes → Complete Form 1 and Form 2D. <input checked="" type="checkbox"/> No	1.2.4 Is the facility a new or existing manufacturing, commercial, mining, or silvicultural facility that discharges only nonprocess wastewater ? <input checked="" type="checkbox"/> Yes → Complete Form 1 and Form 2E. <input type="checkbox"/> No
	1.2.5	Is the facility a new or existing facility whose discharge is composed entirely of stormwater associated with industrial activity or whose discharge is composed of both stormwater and non-stormwater ? <input type="checkbox"/> Yes → Complete Form 1 and Form 2F unless exempted by 40 CFR 122.26(b)(14)(x) or (b)(15). <input checked="" type="checkbox"/> No	

SECTION 2. NAME, MAILING ADDRESS, AND LOCATION (40 CFR 122.21(f)(2))

Name, Mailing Address, and Location	2.1	Facility Name		
		Big West Oil LLC		
	2.2	EPA Identification Number		
		110000468921		
	2.3	Facility Contact		
		Name (first and last) Beau Stander	Title Lead Environmental Engineer	Phone number (801) 298-7828
	Email address beau.stander@bigwestoil.com			
2.4	Facility Mailing Address			
	Street or P.O. box 333 West Center Street			
	City or town North Salt Lake	State UT	ZIP code 84054	

EPA Identification Number 110000468921	NPDES Permit Number UT0026174	Facility Name Big West Oil LLC	Form Approved 03/05/19 OMB No. 2040-0004
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Name, Mailing Address, and Location Continued	2.5	Facility Location	
		Street, route number, or other specific identifier 333 West Center Street	
		County name Davis	County code (if known) 011
		City or town North Salt Lake	State UT

SECTION 3. SIC AND NAICS CODES (40 CFR 122.21(f)(3))

SIC and NAICS Codes	3.1	SIC Code(s)	Description (optional)
		2911	Petroleum Refining
	3.2	NAICS Code(s)	Description (optional)
		324110	Petroleum Refineries

SECTION 4. OPERATOR INFORMATION (40 CFR 122.21(f)(4))

Operator Information	4.1	Name of Operator
		Big West Oil LLC
	4.2	Is the name you listed in Item 4.1 also the owner? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	4.3	Operator Status <input type="checkbox"/> Public—federal <input type="checkbox"/> Public—state <input type="checkbox"/> Other public (specify) _____ <input checked="" type="checkbox"/> Private <input type="checkbox"/> Other (specify) _____
	4.4	Phone Number of Operator (801) 296-7700

Operator Information Continued	4.5	Operator Address	
		Street or P.O. Box 333 West Center Street	
		City or town North Salt Lake	State UT
		Email address of operator beau.stander@bigwestoil.com	

SECTION 5. INDIAN LAND (40 CFR 122.21(f)(5))

Indian Land	5.1	Is the facility located on Indian Land? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
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EPA Identification Number 110000468921	NPDES Permit Number UT0026174	Facility Name Big West Oil LLC
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Form Approved 03/05/19
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SECTION 6. EXISTING ENVIRONMENTAL PERMITS (40 CFR 122.21(f)(6))

Existing Environmental Permits	6.1	Existing Environmental Permits (check all that apply and print or type the corresponding permit number for each)				
	<input type="checkbox"/>	NPDES (discharges to surface water)	<input checked="" type="checkbox"/>	RCRA (hazardous wastes) UTD045267127	<input type="checkbox"/>	UIC (underground injection of fluids)
	<input checked="" type="checkbox"/>	PSD (air emissions) <small>AN0122027-04; AN101220075-19/74-19/72-19</small>	<input checked="" type="checkbox"/>	Nonattainment program (CAA) PM2.5; Ozone (Northern Wasatch Front)	<input checked="" type="checkbox"/>	NESHAPs (CAA) See PSD Permits
<input type="checkbox"/>	Ocean dumping (MPRSA)	<input type="checkbox"/>	Dredge or fill (CWA Section 404)	<input checked="" type="checkbox"/>	Other (specify) WW SDSA permit # 3792	

SECTION 7. MAP (40 CFR 122.21(f)(7))

Map	7.1	Have you attached a topographic map containing all required information to this application? (See instructions for specific requirements.) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> CAFO—Not Applicable (See requirements in Form 2B.)
-----	-----	---

SECTION 8. NATURE OF BUSINESS (40 CFR 122.21(f)(8))

Nature of Business	8.1	Describe the nature of your business. Big West Oil is a petroleum refinery that processes approximately 33,000 barrels per day of refinery throughput, producing primarily gasoline and diesel fuel. Products from the process units are transferred to storage tanks in advance of further processing or blending before distribution to markets via pipeline, railcar, and transport truck.
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SECTION 9. COOLING WATER INTAKE STRUCTURES (40 CFR 122.21(f)(9))

Cooling Water Intake Structures	9.1	Does your facility use cooling water? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 10.1.
	9.2	Identify the source of cooling water. (Note that facilities that use a cooling water intake structure as described at 40 CFR 125, Subparts I and J may have additional application requirements at 40 CFR 122.21(r). Consult with your NPDES permitting authority to determine what specific information needs to be submitted and when.) The primary source of cooling water is a groundwater well located on the facility grounds. Supplemental cooling water may be pulled into the system from the public utility water supply, though this would only occur under non-standard operating scenarios.

SECTION 10. VARIANCE REQUESTS (40 CFR 122.21(f)(10))

Variance Requests	10.1	Do you intend to request or renew one or more of the variances authorized at 40 CFR 122.21(m)? (Check all that apply. Consult with your NPDES permitting authority to determine what information needs to be submitted and when.)
		<input type="checkbox"/> Fundamentally different factors (CWA Section 301(n)) <input type="checkbox"/> Water quality related effluent limitations (CWA Section 302(b)(2)) <input type="checkbox"/> Non-conventional pollutants (CWA Section 301(c) and (g)) <input type="checkbox"/> Thermal discharges (CWA Section 316(a)) <input checked="" type="checkbox"/> Not applicable

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Facility Name
Big West Oil LLC

Form Approved 03/05/19
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SECTION 11. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement

11.1	In Column 1 below, mark the sections of Form 1 that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.	
	Column 1	Column 2
	<input checked="" type="checkbox"/> Section 1: Activities Requiring an NPDES Permit	<input type="checkbox"/> w/ attachments
	<input checked="" type="checkbox"/> Section 2: Name, Mailing Address, and Location	<input type="checkbox"/> w/ attachments
	<input checked="" type="checkbox"/> Section 3: SIC Codes	<input type="checkbox"/> w/ attachments
	<input checked="" type="checkbox"/> Section 4: Operator Information	<input type="checkbox"/> w/ attachments
	<input checked="" type="checkbox"/> Section 5: Indian Land	<input type="checkbox"/> w/ attachments
	<input checked="" type="checkbox"/> Section 6: Existing Environmental Permits	<input type="checkbox"/> w/ attachments
	<input checked="" type="checkbox"/> Section 7: Map	<input checked="" type="checkbox"/> w/ topographic map <input type="checkbox"/> w/ additional attachments
	<input checked="" type="checkbox"/> Section 8: Nature of Business	<input type="checkbox"/> w/ attachments
	<input checked="" type="checkbox"/> Section 9: Cooling Water Intake Structures	<input type="checkbox"/> w/ attachments
	<input checked="" type="checkbox"/> Section 10: Variance Requests	<input type="checkbox"/> w/ attachments
<input checked="" type="checkbox"/> Section 11: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments	

11.2 **Certification 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.

Name (print or type first and last name) <i>Alec Klinghoffer</i>	Official title <i>VP Refining Manager</i>
---	--

Signature <i>Alec Klinghoffer</i>	Date signed <i>8/11/22</i>
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EPA Application Form 2E

Manufacturing, Commercial, Mining, and Silvicultural Facilities
Which Discharge Only Nonprocess Wastewater

FORM 2E NPDES		U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL FACILITIES WHICH DISCHARGE ONLY NONPROCESS WASTEWATER
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SECTION 1. OUTFALL LOCATION (40 CFR 122.21(h)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below.							
		Outfall Number	Receiving Water Name	Latitude		Longitude			
		001	Northwest Oil Drain	40°	50'	12" N	111°	55'	31" W
				"	"	"	"	"	"

SECTION 2. DISCHARGE DATE (40 CFR 122.21(h)(2))

Discharge Date	2.1	Are you a new or existing discharger? (Check only one response.)	
		<input type="checkbox"/> New discharger	<input checked="" type="checkbox"/> Existing discharger → SKIP to Section 3.
	2.2	Specify your anticipated discharge date:	

SECTION 3. WASTE TYPES (40 CFR 122.21(h)(3))

Waste Types	3.1	What types of wastes are currently being discharged if you are an existing discharger or will be discharged if you are a new discharger? (Check all that apply.)		
		<input type="checkbox"/> Sanitary wastes	<input type="checkbox"/> Other nonprocess wastewater (describe/explain directly below)	
		<input type="checkbox"/> Restaurant or cafeteria waste		
		<input checked="" type="checkbox"/> Non-contact cooling water		
	3.2	Does the facility use cooling water additives?		
		<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No → SKIP to Section 4.	
	3.3	List the cooling water additives used and describe their composition.		
		Cooling Water Additives <small>(list)</small>	Composition of Additives <small>(if available to you)</small>	
		RO Membrane Antiscalant and Cleaner (Avista Vitec SI 410, ChemTreat RL, Suez Kleen MCT103, or similar products)	See attached Safety Data Sheets	

SECTION 4. EFFLUENT CHARACTERISTICS (40 CFR 122.21(h)(4))

Effluent Characteristics	4.1	Have you completed monitoring for all parameters in the table below at each of your outfalls and attached the results to this application package?						
		<input type="checkbox"/> Yes	<input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority (attach waiver request and additional information) → SKIP to Section 5.					
	4.2	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>	Source <small>(use codes per instructions)</small>	
				Mass	Conc.	Mass	Conc.	
		Biochemical oxygen demand (BOD ₅)						
		Total suspended solids (TSS)	5		24 mg/L		11 mg/L	1
		Oil and grease						
		Ammonia (as N)						
		Discharge flow		0.11988 MGD			4	
	pH (report as range)	5	7.1 - 7.91			1		
	Temperature (winter)		70-100 °F			1		
	Temperature (summer)		75-105 °F			1		

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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NPDES Permit Number
UT0026174

Facility Name
Big West Oil LLC

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OMB No. 2040-0004

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.					
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (Use codes per Instructions.)
				Mass	Conc.	Mass	
		Fecal coliform					
		<i>E. coli</i>					
		Enterococci					
	4.5	Is chlorine used (or will it be used)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.7.					
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (use codes per instructions)
			Mass	Conc.	Mass	Conc.	
	Total Residual Chlorine						
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Section 5.						
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
	Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (use codes per instructions)	
			Mass	Conc.	Mass		Conc.
	Chemical oxygen demand (COD)	5		61 mg/L		20 mg/L	1
	Total organic carbon (TOC)						
SECTION 5. FLOW (40 CFR 122.21(h)(5))							
Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input type="checkbox"/> Yes → Complete this section. <input checked="" type="checkbox"/> No → SKIP to Section 6.					
	5.2	Briefly describe the frequency and duration of flow.					
SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))							
Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). The facility utilizes two reverse osmosis (RO) systems in parallel to treat water pulled from the on-site well. The RO permeate is fed into the cooling water system while the RO reject is discharged to the outfall.					

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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Facility Name
Big West Oil LLC

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information

7.1 Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed.

SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement

8.1 In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.

Column 1	Column 2
<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)
<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments
<input checked="" type="checkbox"/> Section 3: Waste Types	<input checked="" type="checkbox"/> w/ attachments
<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input checked="" type="checkbox"/> w/ attachments
<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments
<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments
<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments
<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments

8.2 **Certification 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.

Name (print or type first and last name)

Alec Klinghofer

Official title

VP Refinery Manager

Signature

Alec Klinghofer

Date signed

8/11/22

Utah Division of Water Quality
Antidegradation Review Form

**Utah Division of Water Quality
Antidegradation Review Form**

Part A: Applicant Information

Facility Name: North Salt Lake Refinery

Facility Owner: Big West Oil LLC

Facility Location: 333 West Center Street, North Salt Lake, UT 84054

Form Prepared By: Beau Stander

Outfall Number: 001

Receiving Water: Northwest Oil Drain and Farmington Bay of Great Salt Lake

What Are the Designated Uses of the Receiving Water (R317-2-6)?
Domestic Water Supply: None
Recreation: 2B - Secondary Contact
Aquatic Life: 3E - Severely Habitat Limited
Agricultural Water Supply: None
Great Salt Lake: 5D - Farmington Bay

Category of Receiving Water (R317-2-3.2, -3.3, and -3.4): Category 3

UPDES Permit Number (if applicable): UT0026174

Effluent Flow Reviewed: 0.11988 MGD
Typically, this should be the maximum daily discharge at the design capacity of the facility. Exceptions should be noted.

What is the application for? (check all that apply)

- A UPDES permit for a new facility, project, or outfall.
- A UPDES permit renewal with an expansion or modification of an existing wastewater treatment works.
- A UPDES permit renewal requiring limits for a pollutant not covered by the previous permit and/or an increase to existing permit limits.
- A UPDES permit renewal with no changes in facility operations.

Part B. Is a Level II ADR required?

This section of the form is intended to help applicants determine if a Level II ADR is required for specific permitted activities. In addition, the Executive Secretary may require a Level II ADR for an activity with the potential for major impact on the quality of waters of the state (R317-2-3.5a.1).

B1. The UPDES permit is new or is being renewed and the proposed effluent concentration and loading limits are higher than the concentration and loading limits in the previous permit and any previous antidegradation review(s).

- Yes** (Proceed to Part B2 of the Form)
- No** No Level II ADR is required and there is no need to proceed further with review questions.

B2. Will any pollutants use assimilative capacity of the receiving water, i.e. do the pollutant concentrations in the effluent exceed those in the receiving waters at critical conditions? For most pollutants, effluent concentrations that are higher than the ambient concentrations require an antidegradation review. For a few pollutants, such as dissolved oxygen, an antidegradation review is required if the effluent concentrations are less than the ambient concentrations in the receiving water. (Refer to Section 3.3 of Implementation Guidance)

- Yes** (Proceed to Part B3 of the Form)
- No** No Level II ADR is required and there is no need to proceed further with review questions.

B3. Are water quality impacts of the proposed project temporary and limited (Section 3.3.3 of Implementation Guidance)? Proposed projects that will have temporary and limited effects on water quality can be exempted from a Level II ADR.

- Yes** Identify the reasons used to justify this determination in Part B3.1 and proceed to Part G. No Level II ADR is required.
- No** A Level II ADR is required (Proceed to Part C)

B3.1 Complete this question only if the applicant is requesting a Level II review exclusion for temporary and limited projects (see R317-2-3.5(b)(3) and R317-2-3.5(b)(4)). For projects requesting a temporary and limited exclusion please indicate the factor(s) used to justify this determination (check all that apply and provide details as appropriate) (Section 3.3.3 of Implementation Guidance):

- Water quality impacts will be temporary and related exclusively to sediment or turbidity and fish spawning will not be impaired.

Factors to be considered in determining whether water quality impacts will be temporary and limited:

- a) The length of time during which water quality will be lowered:
- b) The percent change in ambient concentrations of pollutants:
- c) Pollutants affected:
- d) Likelihood for long-term water quality benefits:
- e) Potential for any residual long-term influences on existing uses:
- f) Impairment of fish spawning, survival and development of aquatic fauna excluding fish removal efforts:

Additional justification, as needed:

Level II ADR

Part C, D, E, and F of the form constitute the Level II ADR Review. The applicant must provide as much detail as necessary for DWQ to perform the antidegradation review. Questions are provided for the convenience of applicants; however, for more complex permits it may be more effective to provide the required information in a separate report. Applicants that prefer a separate report should record the report name here and proceed to Part G of the form.

Optional Report Name:

Part C. Is the degradation from the project socially and economically necessary to accommodate important social or economic development in the area in which the waters are located? *The applicant must provide as much detail as necessary for DWQ to concur that the project is socially and economically necessary when answering the questions in this section. More information is available in Section 6.2 of the Implementation Guidance.*

C1. Describe the social and economic benefits that would be realized through the proposed project, including the number and nature of jobs created and anticipated tax revenues.

C2. Describe any environmental benefits to be realized through implementation of the proposed project.

C3. Describe any social and economic losses that may result from the project, including impacts to recreation or commercial development.

C4. Summarize any supporting information from the affected communities on preserving assimilative capacity to support future growth and development.

C5. Please describe any structures or equipment associated with the project that will be placed within or adjacent to the receiving water.

Part D. Identify and rank (from increasing to decreasing potential threat to designated uses) the parameters of concern. *Parameters of concern are parameters in the effluent at concentrations greater than ambient concentrations in the receiving water. The applicant is responsible for identifying parameter concentrations in the effluent and DWQ will provide parameter concentrations for the receiving water. More information is available in Section 3.3.3 of the Implementation Guidance.*

Parameters of Concern:

Rank	Pollutant	Ambient		Effluent	
		Concentration / Units	Basis	Concentration / Units	Basis
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

Pollutants Evaluated that are not Considered Parameters of Concern:

Pollutant	Ambient Concentration	Effluent Concentration	Justification

Part E. Alternative Analysis Requirements of a Level II

Antidegradation Review. *Level II ADRs require the applicant to determine whether there are feasible less-degrading alternatives to the proposed project. For new and expanded discharges, the Alternatives Analysis must be prepared under the supervision of and stamped by a Professional Engineer registered with the State of Utah. DWQ may grant an exception from this requirement under certain circumstances, such as the alternatives considered potentially feasible do not include engineered treatment alternatives. More information regarding the requirements for the Alternatives Analysis is available in Section 5 of the Implementation Guidance.*

E1. The UPDES permit is being renewed without any changes to flow or concentrations. Alternative treatment and discharge options including changes to operations and maintenance were considered and compared to the current processes. No economically feasible treatment or discharge alternatives were identified that were not previously considered for any previous antidegradation review(s).

Yes (Proceed to Part F)

No or Does Not Apply (Proceed to E2)

E2. Attach as an appendix to this form a report that describes the following factors for all alternative treatment options 1) a technical description of the treatment process, including construction costs and continued operation and maintenance expenses, 2) the mass and concentration of discharge constituents, and 3) a description of the reliability of the system, including the frequency where recurring operation and maintenance may lead to temporary increases in discharged pollutants. Most of this information is typically available from a Facility Plan, if available.

Report Name:

E3. Describe the proposed method and cost of the baseline treatment alternative. The baseline treatment alternative is the minimum treatment required to meet water quality based effluent limits (WQBEL) as determined by the preliminary or final wasteload analysis (WLA) and any secondary or categorical effluent limits.

E4. Were any of the following alternatives feasible and affordable?

Alternative	Feasible	Reason Not Feasible/Affordable
Pollutant Trading	Yes	
Water Recycling/Reuse	Yes	
Land Application	Yes	
Connection to Other Facilities	Yes	
Upgrade to Existing Facility	Yes	
Total Containment	Yes	
Improved O&M of Existing Systems	Yes	
Seasonal or Controlled Discharge	Yes	
New Construction	Yes	
No Discharge	Yes	

E5. From the applicant's perspective, what is the preferred treatment option?

E6. Is the preferred option also the least polluting feasible alternative?

Yes

No

If no, what were less degrading feasible alternative(s)?

If no, provide a summary of the justification for not selecting the least polluting feasible alternative and if appropriate, provide a more detailed justification as an attachment.

Part F. Optional Information

F1. Does the applicant want to conduct optional public review(s) in addition to the mandatory public review? Level II ADRs are public noticed for a thirty day comment period. More information is available in Section 3.7.1 of the Implementation Guidance.

No

Yes

F2. Does the project include an optional mitigation plan to compensate for the proposed water quality degradation?

No

Yes

Report Name:

Part G. Certification of Antidegradation Review

G1. Applicant Certification

The form should be signed by the same responsible person who signed the accompanying permit application or certification.

Based on my inquiry of the person(s) who manage the system or those persons directly responsible for gathering the information, the information in this form and associated documents is, to the best of my knowledge and belief, true, accurate, and complete.

Print Name: Alec Klinghammer

Signature: Alec Klinghammer

Date: 8/14/22

G2. DWQ Approval

To the best of my knowledge, the ADR was conducted in accordance with the rules and regulations outlined in UAC R-317-2-3.

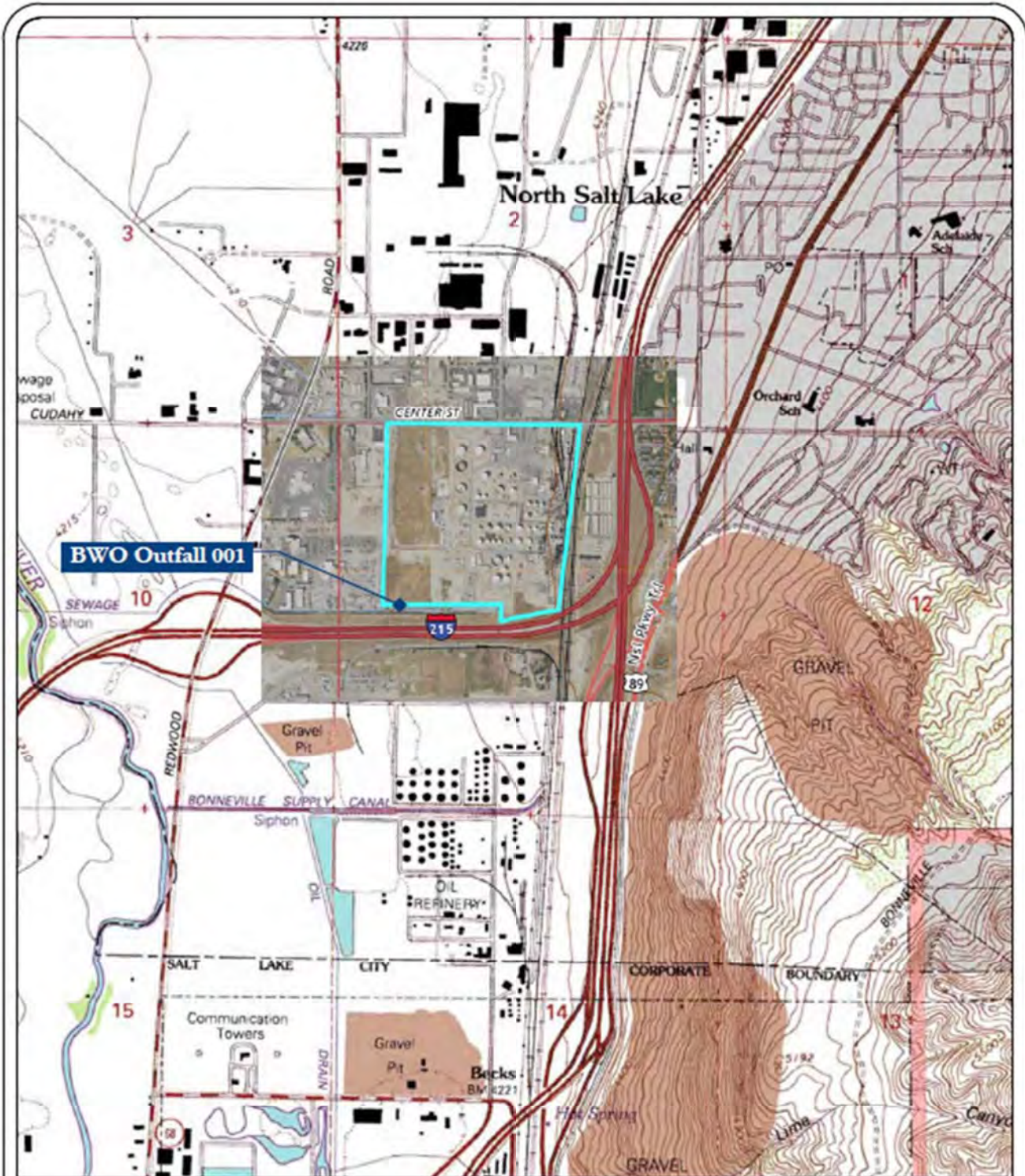
Print Name: _____

Signature: _____

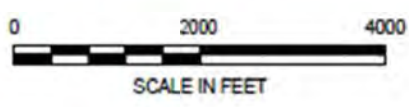
Date: _____

Attachment to EPA Form 1

Section 7 – Map



TOPO: USGS SALT LAKE CITY NORTH
 7.5 MINUTE QUADRANGLE, 1975
 REVISED BY USDA FOREST SERVICE 1998
 2015 AERIAL PHOTO




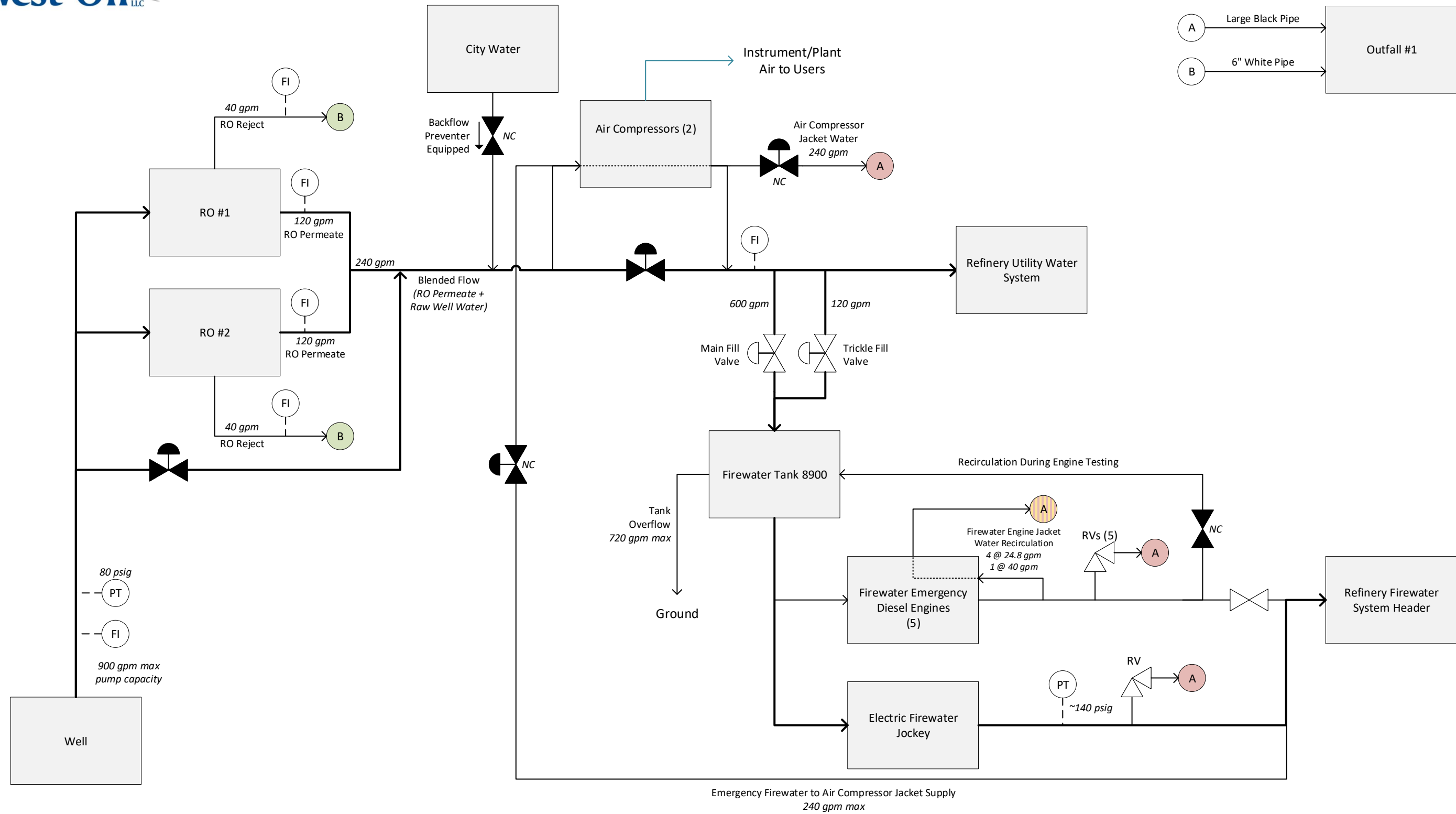
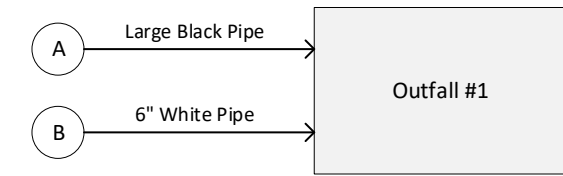
 North Salt Lake Refinery

FIGURE 1
SITE LOCATION MAP
 UPDES Permit Application
 Big West Oil LLC
 North Salt Lake, Utah



Outfall #1 Flow Diagram



Key

- | | | | | | |
|--|------------------|--|-----------------------|--|----------------------|
| | Continuous Flow | | Normally open valve | | Flow Indicator |
| | Periodic Flow | | Normally closed valve | | Pressure Transmitter |
| | Non-Routine Flow | | Relief valve | | Air Flow |

Notes

- Weekly, firewater emergency engines are tested one engine at a time.
- Annually, firewater emergency engines are tested with all engines running together. The recirculation line to Tank 8900 cannot accommodate this flow and the water runs through the refinery firewater system. The deluge is not included in this diagram.
- No routine flow through the air compressor jackets nor relief valves to the outfall should be expected.

Attachment to EPA Form 2E

Section 3 – Additive SDS



1. Company and Product Identification

1.1	Identification – Product Name:	Vitec [®] SI 410
1.2	Other means of identification	Organic Acid, terpolymer
1.2	Synonym:	Mixture, none
1.3	Recommended Use Of The Chemical and Restrictions On Use:	Reverse osmosis membrane antiscalant Use only as directed on the label.
1.4	Name, Address, And Telephone Number Of The Manufacturer, Or Other Responsible Party:	AVISTA TECHNOLOGIES 140 Bosstick Street San Marcos, CA 92069 (760) 744-0536
1.5	Competent Person email address	klindsey@avistatech.com
1.5	24 Hour Emergency No.:	1-800-424-9300 (United States) 1-703-527-3887 (International Collect)



DRINKING WATER TREATMENT ADDITIVES CLASSIFIED BY NSF INTERNATIONAL TO NSF/ANSI 60 AS STANDARD DRINKING WATER TREATMENT CHEMICAL FOR USE IN REVERSE OSMOSIS SYSTEMS AT A MAXIMUM LEVEL OF 3 mg/l

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: This product is amber to pale yellow liquid. This product may burn or irritate contaminated tissue. This product is neither reactive nor flammable. Emergency responders must wear personal protective equipment and have appropriate fire-extinguishing protection) suitable for the situation to which they are responding.

2.1	Physical Hazards Summary	None
	Potential Health Hazards Summary	Acute Oral Toxicity, category 4 Skin corrosion Category 1B Serious eye damage, Category 1 STOT repeated exposure category 2
	Potential Ecological Effects Summary	None
2.1	Classification Of Product	
	U.S. OSHA classification	Skin, eye corrosive Acute Oral Toxicity, category 4
	Classification as per EC 1272/2008 (CLP/GHS)	Skin corrosion Category 1B Serious eye damage, Category 1 STOT repeated exposure category 2 Xn Harmful
	WHMIS classification	E, corrosive

Hazardous Materials Information System (HMIS) Rating

Health	2
Flammability	0
Physical Hazard	0
Protective Equipment	C

2.2 Label Elements OSHA/GHS

General Warnings	P101 P102 P103	If medical advice is needed, have product container or label at hand. Keep out of reach of children. Read label before use
Signal Word	DANGER	
Hazard statements	H302 H314 H318	Harmful if swallowed Causes severe skin burns and eye damage Causes serious eye damage
Precautionary statements	P271 P281 P312 P302/P352 P337 + P313 P404	Use only outdoors or in a well-ventilated area. Use personal protective equipment as required. IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. IF ON SKIN: Wash with plenty of soap and water. If eye irritation persists: Get medical advice/attention. Store in a closed container.

Hazard pictograms



2.3	Unclassified Hazards	None
2.4	Ingredients with unknown acute toxicity	None

3. COMPOSITION and INFORMATION ON INGREDIENTS

Chemical name CAS # EINECS #	% w/w	US OSHA	GHS/EU CLP	WHMIS
Acrylic Polymer Proprietary Proprietary	60 - 70	Low Hazard	Unknown	Not classified
Chelate agent Proprietary Proprietary	30 - 40	Corrosive	Acute Oral Toxicity, category 4 Skin corrosion Category 1B Serious eye damage, Category 1 STOT repeated exposure Category 2 Xn Harmful; R 22-36-38; S2-13-24-25-26-36-46 Keep out of reach of children. Keep away from food, drink and animal feeding stuffs. Avoid contact with skin.	E, corrosive

			Avoid contact with eyes. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing. If swallowed, seek medical advice immediately and show this container or label	
Water or other chemicals do not contribute to any additional hazards of this product	balance	N/A	N/A	N/A
PRODUCT		Corrosive	Acute Oral Toxicity, Category 4 Skin corrosion Category 1B Serious eye damage, Category 1 STOT repeated exposure Category 2	E, Corrosive

NE = Not Established. C = Ceiling Limit. See Section 16 for Definitions of Terms Used.

4. FIRST-AID MEASURES

4.1 Description of Necessary Measures

- Skin exposure:** If this product contaminates the skin, immediately begin decontamination with running water. Remove exposed or contaminated clothing, taking care not to contaminate eyes. Victim should seek immediate medical attention if any adverse exposure symptoms develop.
- Eye exposure:** If this product enters the eyes, open victim's eyes while under gently running water. Use sufficient force to open eyelids. Have victim "roll" eyes. Minimum flushing is for 15 minutes. Victim must seek medical attention.
- Inhalation:** If vapors, mists, or sprays of this product are inhaled, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Remove or cover gross contamination to avoid exposure to rescuers.
- Ingestion:** If this product is swallowed, CALL PHYSICIAN OR POISON CONTROL CENTER FOR MOST CURRENT INFORMATION. DO NOT INDUCE VOMITING. Have victim rinse mouth with water, if conscious. Never induce vomiting or give a diluent (e.g., water) to someone who is unconscious, having convulsions, or unable to swallow. If contaminated individual is convulsing, maintain an open airway and obtain immediate medical attention.

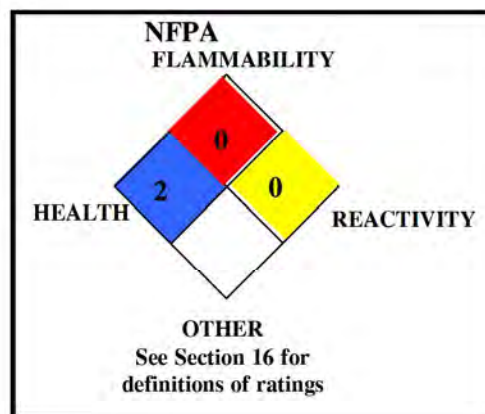
- 4.2 Most Important Symptoms/Effects:** **Immediate:** Inhalation exposure may cause coughing or sneezing. Symptoms of skin and eye contact may include redness and irritation. Ingestion may cause stomach pains, cramps, and gastritis.
Delayed: Prolonged or repeated skin overexposure to this product may cause dermatitis (dry, red skin). Symptoms may include tingling, redness, and visible injury.

- 4.3 Indication Of Immediate Medical Attention And Special Treatment Needed, If Necessary:** **TARGET ORGANS:** Acute: Skin, eyes. Chronic: Skin.

Victims of chemical exposure must be taken for medical attention if any adverse effects occur. Rescuers should be taken for medical attention if necessary. Take a copy of label and SDS to physician or health professional with victim.

5. FIRE-FIGHTING MEASURES

Flammable properties Non-flammable aqueous solution



Flash Point °C: Not applicable.

Autoignition Temperature °C: Not applicable.

Flammable Limits (in air by volume, %):

Upper: Not applicable.

Lower: Not applicable.

- 5.1 Suitable And Unsuitable Extinguishing Media: This material will not contribute to the intensity of a fire. Use extinguishing material suitable to the surrounding fire.
- | | | | |
|-------------|-----|----------------|-----|
| Water spray | YES | Carbon dioxide | YES |
| Foam | YES | Dry chemical | YES |
| Halon | YES | Other | YES |
- 5.2 Specific Hazards Arising From Chemical: When involved in a fire, this material may decompose and produce irritating fumes and toxic gases (e.g., carbon monoxide, carbon dioxide, and phosphorous oxides).
- Explosion Sensitivity to Mechanical Impact: Not applicable.
Explosion Sensitivity to Static Discharge: Not applicable.
- 5.3 Special Protective Equipment And Precautions For Fire-Fighters: Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Move containers from fire area if it can be done without risk to personnel. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.

6. ACCIDENTAL RELEASE MEASURES

- 6.1 Personal Precautions
- Uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. In case of a spill, clear the affected area and protect people.
- Protective equipment For small releases (< 5 gallons), clean up spilled liquid wearing gloves, goggles, faceshield, and suitable body protection. The minimum Personal Protective Equipment recommended for response to non-incident releases (more than 5 gallons) should be Level B: triple-gloves (neoprene gloves and nitrile gloves over latex gloves), chemical resistant suit and boots, hard hat, and Self-Contained Breathing Apparatus.
- Emergency procedures Monitoring must indicate that exposure levels are below those provided in Section 3 (Composition and Information on Ingredients) and that oxygen levels are above 19.5% before anyone is permitted in the area without Self-Contained Breathing Apparatus.
- 6.2 Methods and Materials for Containment and Cleaning Up Soak up or wet vacuum spilled liquid. Neutralize residue with sodium bicarbonate or other neutralizing agent for acids. Decontaminate the area thoroughly. Test area with litmus paper to ensure neutralization. Place all spill residues in a suitable container. Dispose of in accordance with applicable U.S. Federal, State, or local procedures, or appropriate local standards (see Section 13, Disposal Considerations).

7. HANDLING and STORAGE

- 7.1 Precautions for Safe Handling All employees who handle this material should be trained to handle it safely. Open containers carefully on a stable surface. Empty containers may contain residual liquid; therefore, empty containers should be handled with care.
- As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash thoroughly after handling this product. Do not eat or drink while handling this material. Avoid generating mists and sprays of this product. Remove contaminated clothing immediately.
- During equipment maintenance follow practices indicated in Section 6 (Accidental Release Measures) to decontaminate equipment or clean-up small spills. Make certain that application equipment is locked and tagged-out safely if necessary. Collect all rinsates and dispose of according to applicable U.S. Federal, State, or local procedures or appropriate local standards.
- 7.2 Conditions For Safe Storage Store containers in a cool, dry location, away from direct sunlight, sources of intense heat, or where freezing is possible. Store away from incompatible materials. Material should be stored in secondary containers, or in a diked area, as appropriate. Storage and use areas should be covered with impervious materials. Keep container tightly closed when not in use. If appropriate, post warning signs in storage and use areas. Inspect all incoming containers before storage, to ensure containers are properly labeled and not damaged.
- Incompatibilities Strong bases, amines, strong oxidizers, very strong acids, water reactive materials. It may react with metals to generate hydrogen gas. The product may release toxic gases if in contact with sulfides or sulfites.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

8.1 Control Parameters

CHEMICAL NAME	CAS #	% w/w	EXPOSURE LIMITS IN AIR					
			ACGIH-TLV		OSHA-PEL			OTHER mg/m ³
			TWA mg/m ³	STEL mg/m ³	TWA mg/m ³	STEL mg/m ³	IDLH mg/m ³	
Acrylic Polymer		60 - 70	NE	NE	NE	NE	NE	NE
Chelate agent	Proprietary	30 - 40	NE	NE	NE	NE	NE	NE
Water or other chemicals do not contribute to any additional hazards of this product		Balance	NE	NE	NE	NE	NE	NE

- 8.2 Appropriate Engineering Controls. Use with adequate ventilation to ensure exposure levels are maintained below the limits provided in this Section or as low as reasonably achievable. Ensure eyewash/safety shower stations are available near areas where this product is used.
- 8.3 Personal Protective Equipment
- Respiratory protection: None needed under normal conditions of use. Use NIOSH approved respirators if ventilation is inadequate to control mists or vapor. If respiratory protection is needed, use only protection authorized in the U.S. Federal OSHA Standard (29 CFR 1910.134), applicable U.S. State regulations, or the applicable local standards. Oxygen levels below 19.5% are considered IDLH by OSHA. In such atmospheres, use of a full-face piece pressure/demand SCBA or a full-face piece, supplied air respirator with auxiliary self-contained air supply is required under OSHA's Respiratory Protection Standard (1910.134-1998).
- Eye protection: Use approved safety goggles or safety glasses, as described in OSHA 29 CFR 1910.133. Splash goggles with a faceshield may be needed if splash hazards exist.
- Hand protection: Wear chemical impervious gloves (e.g., Solvex™, Neoprene).
- Body protection: If needed, use body protection appropriate for task (e.g., Tyvek suit, rubber apron) to protect from splashes and sprays.

9. PHYSICAL and CHEMICAL PROPERTIES

Appearance	This product is amber to pale yellow liquid.		
Odor		Odor Threshold	N/A
Melting Point °C	Similar to water	pH	0.5 – 2.0
Initial Boiling Point °C	100	Boiling Point Range °C	N/A
Flammability	Non-flammable	Evaporation Rate (water = 1)	Similar to water
Vapor Density (air = 1)	Similar to water	Vapor Pressure mm Hg @ 20°C:	18
Solubility (in water)	Soluble	Relative density (water = 1)	1.2 – 1.3
Viscosity	Similar to water	Oil-Water Partition Coefficient	N/A
Decomposition Temperature	N/A		
How To Detect This Substance (Warning Properties):	The color and odor may act as warning properties associated with this product. Turns pH paper red.		

10. STABILITY and REACTIVITY

10.1	Reactivity	Not considered reactive.
10.2	Chemical Stability	Stable
10.3	Possibility of hazardous reactions	Hazardous polymerization will not occur.
10.4	Conditions to avoid	Avoid mixing with incompatible materials.
10.5	Incompatible Materials	Strong bases, amines, strong oxidizers, very strong acids, water reactive materials. It may react with metals to generate hydrogen gas. The product may release toxic gases if in contact with sulfides or sulfites.
10.6	Hazardous Decomposition Products	Thermal decomposition of this product may generate carbon monoxide, carbon dioxide, and phosphorus oxides.

11. TOXICOLOGICAL INFORMATION

11.1	Information on Toxicological Effects			
	Toxicity data for hazardous ingredients	Oral LD ₅₀ mg/kg	Dermal LD ₅₀ mg/kg	Inhalation LD ₅₀ mg/kg
	Acrylic Polymer	LD ₅₀ (oral, rat) > 5000 mg/kg	LD ₅₀ (dermal, rabbit) > 2000 mg/kg	N/A
		Eye irritation-rabbit: inconsequential irritation Skin irritation-rabbit: practically non-irritating		
	Chelate agent	LD ₅₀ (oral, mouse) = 1800 mg/kg	N/A	N/A
		TDL ₀ (intraperitoneal, mouse) = 200 mg/kg/female 7 days post; Teratogenic effects TDL ₀ (intraperitoneal, mouse) = 40 mg/kg/female 7 days post; Reproductive effects TDL ₀ (subcutaneous, mouse) = 200 mg/kg/female 13 days after conception; Reproductive: Specific Developmental Abnormalities; musculoskeletal system TDL ₀ (subcutaneous, mouse) = 1400 mg/kg/female 11-17 days after conception; Reproductive: Effects on Embryo or Fetus: fetotoxicity (except death, e.g. stunted fetus), Specific Developmental Abnormalities: Abnormalities: musculoskeletal system.		
	Potential routes of exposure	Inhalation, skin contact, eye contact		
	Potential effects of acute over-exposure	Inhalation exposure may cause tingling, coughing, sneezing, and difficulty breathing. Symptoms of skin and eye contact may include redness and irritation. Ingestion may cause stomach pains, cramps, and gastritis.		
	Potential effects of chronic over-exposure	Prolonged or repeated skin overexposure to this product may cause dermatitis (dry, red skin). Symptoms may include tingling, redness, and visible injury.		
	Symptoms of over-exposure	Immediate: Inhalation exposure may cause tingling, coughing, sneezing, and difficulty breathing. Symptoms of skin and eye contact may include redness and irritation.		

		Ingestion may cause stomach pains, cramps, and gastritis. Delayed: Prolonged or repeated skin overexposure to this product may cause dermatitis (dry, red skin). Symptoms may include tingling, redness, and visible injury.				
	Conditions aggravated by over-exposure	Preexisting dermatitis, other skin conditions, and respiratory conditions may be aggravated by exposures to this product.				
	Recommendations to physicians:	Treat symptoms and eliminate exposure.				
	Irritation	YES This product can be irritating to contaminated tissue.				
	Sensitization	NO				
	Carcinogenicity	NTP	IARC	US OSHA	CAL OSHA	67/548 EEC Annex 1
		NO	NO	NO	NO	NO
	Mutagenicity	NO				
	Reproductive toxicity	NO				
	Biological Exposure Index	N/A				
	Other potential health effects	Currently, there are no Biological Exposure Indices (BEIs) for any component of this product.				

12. ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

12.1	Ecotoxicity	LC ₅₀ , mg/L	EC ₅₀ , mg/L
	ACRYLIC POLYMER		
	Aquatic	LC ₅₀ (<i>Salmo gairdneri</i>) > 1100 mg/L/ 96 hours	EC ₅₀ (algae) = 72.4 mg/L/ 72 hours EC ₅₀ (<i>Daphnia magna</i>) > 1040 mg/L/ 48 hours
	Terrestrial	N/A	N/A
	CHELATE AGENT		
	Aquatic	LC ₅₀ (freshwater fish) > 1000 mg/L LC ₅₀ (Rainbow trout, 48 h) > 3440 mg/L	EC ₅₀ (freshwater invertebrate) > 1000 mg/L EC ₅₀ (Algae inhibition) > 1000 mg/L EC ₅₀ (<i>Daphnia magna</i>) 265 mg/L EC ₅₀ (Algae inhibition, 96 hr) 860 mg/L
	Terrestrial	N/A	N/A
12.2	Persistence and Degradability	The components of this product decompose in soil and water.	
12.3	Bioaccumulative Potential	The components of this product are not expected to bioaccumulate.	
12.4	Mobility in Soil	When spilled onto soil, this product will infiltrate downward, the rate being greater with lower concentration because of reduced viscosity. During transport through the soil, this product will dissolve some of the soil material, in particular, carbonate-based materials.	
12.5	Other Adverse Ecological Effects	This product may be harmful to aquatic life <u>if large volumes</u> of it are released into an aquatic environment.	

13. DISPOSAL CONSIDERATIONS

Preparing Wastes of this Product for Disposal	Waste disposal must be in accordance with appropriate U.S. Federal, State, and local regulations or with local regulations. This product, if unaltered by the handling, may be disposed of by treatment at a permitted facility or as advised by your local waste regulatory authority.
Disposal of Contaminated Packaging	Cleaned containers can be recycled or disposed of as non-contaminated waste, if authorized by your local authorities. Dispose of containers as required by local regulations.
U.S. EPA Waste Number	D002 is applicable for this product as supplied if it becomes a waste material

14. TRANSPORTATION INFORMATION

THIS MATERIAL IS HAZARDOUS AS DEFINED BY 49 CFR 172.101 BY THE U.S. DEPARTMENT OF TRANSPORTATION.

14.1	UN Number	UN 3265
14.2	UN Proper Shipping Name	Corrosive liquid, acidic, organic, n.o.s. (1- (Hydroxethylidene)-bis-phosphonic acid)
14.3	Transport Hazard Class(es)	8
	Transport label(s) required	8
14.4	Packing Group	PG II
14.5	Marine Pollutant	Not applicable
	NA Emergency Response Guide Number (2012)	153
14.6	Transport in Bulk (Annex II of MARPOL 73/78 and IBC Code)	F-A, S-B
14.7	Special Transport Precautions	Keep away from bases; Category B; Clear of living quarters
	National Motor Freight Classification	#70

International Air Transport Association

	UN Number	UN 3265
	UN Proper Shipping Name	Corrosive liquid, acidic, organic, n.o.s. (1- (Hydroxethylidene)-bis-phosphonic acid)
	Transport Hazard Class(es)	8
	Transport label(s) required	8
	Packing Group	PG II
	IATA Emergency Response Code	8L
	Limited Quantity	Y840
	Packaging Instructions	851/855

International Maritime Organization

UN Number	UN 3265
UN Proper Shipping Name	Corrosive liquid, acidic, organic, n.o.s. (1- (Hydroxethylidene)-bis-phosphonic acid)
Transport Hazard Class(es)	8
Transport label(s) required	8
Packing Group	PG II
Marine Pollutant	Not applicable
NA Emergency Response Guide Number (2012)	153
Transport in Bulk (Annex II of MARPOL 73/78 and IBC Code)	F-A, S-B

15. SAFETY, HEALTH and ENVIRONMENTAL REGULATIONS SPECIFIC FOR THE PRODUCT

PROGRAM	CHELATE AGENT	ACRYLIC POLYMER
US EPA PROGRAMS		
Clean Air Act Hazardous Air Pollutants	NO	NO
Safe Drinking Water Act	NO	NO
RCRA F, K, P, U or	NO	NO

D-lists		
SARA 302 RQ	NO	NO
SARA 302 TPQ	NO	NO
SARA 313 LISTED	NO	NO
SARA CHEMICAL CATEGORIES		
SARA 311/312 ACUTE	YES	NO
SARA 311/312 CHRONIC	NO	NO
SARA 311/312 FIRE	NO	NO
SARA 311/312 PRESSURE	NO	NO
SARA 311/312 REACTIVITY	NO	NO
EPA EXTREMELY HAZARDOUS SUBSTANCE	NO	NO
CALIFORNIA SAFE DRINKING WATER ACT (Proposition 65)		
This product does not contain any chemical listed on the California Safe Drinking Water Act list (Proposition 65)		
US OSHA PROGRAMS		
PEL	NO	NO
PSM	NO	NO
CHEMICAL SECURITY PROGRAMS		
DHS CFATS	NO	NO
CHEMICAL WEAPONS CONVENTION		
	NO	NO
US DRUG ENFORCEMENT ADMINISTRATION		
DEA Controlled Substances	NO	NO
CHEMICAL INVENTORY PROGRAMS		
WHMIS	E	NO
DSL	YES	NO
NDSL	N/A	N/A
REACH Pre-registered List	YES	N/A
TSCA	YES	N/A
European Inventory of Existing Commercial Chemical Substances (EINECS)	YES	N/A
EU No-Longer Polymers List (NLP)	YES	N/A
EEC Classification Packaging, and Labeling of Dangerous Substances(Annex 1)	Xn Harmful	NO
Philippines	YES	N/A
Japan	NO	N/A
Australia	YES	N/A
Korea	YES	N/A
China	NO	N/A
New Zealand Inventory of Chemicals	YES	N/A

16. OTHER INFORMATION

16.1	Original Preparation	6 April 2008; update 16 April 2009
16.2	Revision History	17 March 2015 Reformatted to GHS Requirements October 7, 2016, Content corrections
16.3	Prepared by	ADVANCED CHEMICAL SAFETY, Inc. PO Box 152329 San Diego, CA 92195 (858)-874-5577
16.4	Date of Printing	October 7, 2016

DEFINITIONS OF TERMS

16.5	A large number of abbreviations and acronyms appear on a SDS. Some of these which are commonly used include the following:	
	Section 2	<p>GHS: Global Harmonization System OSHA: U.S. Occupational Safety and Health Administration. CLP: Classification and Packaging WHMIS: Workplace Hazardous Materials Information System STOT: Specific Target Organ Toxicity</p>
	Section 3	<p>CAS #: Chemical Abstract Service index number EINECS #: European Chemical Substances Information System index number</p>
	Section 5	<p>NFPA: Nation Fire Protection Association Health Hazard: 0 (material that on exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials); 1 (materials that on exposure under fire conditions could cause irritation or minor residual injury); 2 (materials that on intense or continued exposure under fire conditions could cause temporary incapacitation or possible residual injury); 3 (materials that can on short exposure could cause serious temporary or residual injury); 4 (materials that under very short exposure could cause death or major residual injury). Flammability Hazard Reactivity Hazard: Refer to definitions for "Hazardous Materials Identification System".</p> <p>Flash Point: Minimum temperature at which a liquid gives off sufficient vapors to form an ignitable mixture with air. Autoignition Temperature: The minimum temperature required to initiate combustion in air with no other source of ignition. LEL: The lowest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source. UEL: The highest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source.</p>
	Section 8	<p>ACGIH - American Conference of Governmental Industrial Hygienists, a professional association which establishes exposure limits. TLV - Threshold Limit Value - an airborne concentration of a substance which represents conditions under which it is generally believed that nearly all workers may be repeatedly exposed without adverse effect. The duration must be considered, including the 8-hour Time Weighted Average (TWA), the 15-minute Short Term Exposure Limit, and the instantaneous Ceiling Level (C). Skin absorption effects must also be considered PEL - Permissible Exposure Limit - This exposure value means exactly the same as a TLV, except that it is enforceable by OSHA. The OSHA Permissible Exposure Limits are based in the 1989 PELs and the June, 1993 Air Contaminants Rule (Federal Register: 58: 35338-35351 and 58: 40191). Both the current PELs and the vacated PELs are indicated. The phrase, "Vacated 1989 PEL," is placed next to the PEL which was vacated by Court Order. IDLH - Immediately Dangerous to Life and Health - This level represents a concentration from which one can escape within 30-minutes without suffering escape-preventing or permanent injury. The DFG - MAK is the Republic of Germany's Maximum Exposure Level, similar to the U.S. PEL. NIOSH is the National Institute of Occupational Safety and Health, which is the research arm of the U.S. Occupational Safety and Health Administration (OSHA). NIOSH issues exposure guidelines called Recommended Exposure Levels (RELs). When no exposure guidelines are established, an entry of NE (Not Established) is made for reference.</p>
	Section 11	<p>LD₅₀ : Lethal Dose (solids & liquids) which kills 50% of the exposed animals; LC₅₀ : Lethal Concentration (gases) which kills 50% of the exposed animals; ppm: Concentration expressed in parts of material per million parts of air or water; mg/m³ : Concentration expressed in weight of substance per volume of air; mg/kg: Quantity of material, by weight, administered to a test subject, based on their body weight in kg IARC - the International Agency for Research on Cancer; NTP - the National Toxicology Program, RTECS - the Registry of Toxic Effects of Chemical Substances, OSHA and CAL/OSHA. IARC and NTP rate chemicals on a scale of decreasing potential to cause human cancer with rankings from 1 to 4. Subrankings (2A, 2B, etc.) are also used. TDLo, the lowest dose to cause a symptom and TCLo the lowest concentration to cause a symptom; TDo, LDLo, and LDo, or TC, TCo, LCLo, and LCo, the lowest dose (or concentration) to cause lethal or toxic effects. BEI - Biological Exposure Indices, represent the levels of determinants which are most likely to be observed in specimens collected from a healthy worker who has been exposed to chemicals to the same extent as a worker with inhalation exposure to the TLV.</p>
	Section 12	<p>LC₅₀: The lowest concentration in water which kills 50% of the test subjects. EC₅₀: The Effect Concentration in water at which 50% of the test species is affected.</p>
	Section 13	US EPA Hazardous Waste Codes: refer to 40 CFR 261.20
	Section 14	<p>DOT: US Department of Transportation IATA: International Air Transport Association IMO: International Maritime Organization MARPOL: International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978 IBC Code : Merchant Shipping Code</p>
	Section 15	<p>RCRA: US Resource Conservation and Recovery Act SARA: US Superfund Amendments and Reauthorization Act PSM: US OSHA Process Safety Management CFATS: US Department of Homeland Security Chemical Facility Anti-terrorism Standard DSL: Canadian Domestic Substances List NDSL: Canadian Non-Domestic Substances List REACH: European Registration, Evaluation, Authorization and Restriction of Chemicals list TSCA: US Toxic Substances Control Act</p>

SAFETY DATA SHEET

Section 1. Chemical Product and Company Identification

Product Name:	ChemTreat RL124
Product Use:	Reverse Osmosis Treatment
Supplier's Name:	ChemTreat, Inc.
Emergency Telephone Number:	(800)424-9300 (Toll Free)
Address (Corporate Headquarters):	5640 Cox Road Glen Allen, VA 23060
Telephone Number for Information:	(800)648-4579
Date of SDS:	February 4, 2020
Revision Date:	February 4, 2020
Revision Number:	20020401AN

Section 2. Hazard(s) Identification



Signal Word:	DANGER
GHS Classification(s):	Corrosive to Metals – Category 1 Respiratory sensitization – Category 1 Sensitization Skin – Category 1 Skin corrosion/irritation – Category 2 Eye damage/irritation – Category 2a
Hazard Statement(s):	H290 May be corrosive to metals. H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled. H317 May cause an allergic skin reaction. H315 Causes skin irritation. H319 Causes serious eye irritation.
Precautionary Statement(s):	Sulphites may cause sensitization to susceptible individuals.
Prevention:	P234 Keep only in original container. P261 Avoid breathing dust/fume/gas/mist/vapors/spray. P264 Wash thoroughly after handling. P272 Contaminated work clothing should not be allowed out of the workplace. P280 Wear protective gloves/protective clothing/eye protection/face protection. P284 Wear respiratory protection.



Response:

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.
P337 + P313 If eye irritation persists, get medical advice/attention.
P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor.
P362 Take off contaminated clothing and wash before reuse.
P390 Absorb spillage to prevent material damage.

Storage:

P406 Store in a corrosive resistant container with a resistant inner liner.

Disposal:

P501 Dispose of contents and container in accordance with applicable local, regional, national, and/or international regulations.

System of Classification Used:

Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Hazards Not Otherwise Classified:

None.

Section 3. Composition/Hazardous Ingredients

Component	CAS Registry #	Wt.%
Sodium bisulfite	7631-90-5	15 - 40

Comments

If chemical identity and/or exact percentage of composition has been withheld, this information is considered to be a trade secret.

Section 4. First Aid Measures

Inhalation:	Remove to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/physician if you feel unwell.
Eyes:	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.
Skin:	Wash with plenty of soap and water. Take off contaminated clothing and wash before re-use. If skin irritation occurs, seek medical advice/attention.
Ingestion:	DO NOT INDUCE VOMITING. Rinse mouth. Call a POISON CENTER or doctor/physician if you feel unwell.
Most Important Symptoms:	N/D
Indication of Immediate Medical Attention and Special Treatment Needed, If Necessary:	N/A

Section 5. Fire Fighting Measures

Flammability of the Product:	Not flammable.
Suitable Extinguishing Media:	Use extinguishing media suitable to surrounding fire.
Specific Hazards Arising from the Chemical:	Use water spray to keep containers cool.
Protective Equipment:	If product is involved in a fire, wear full protective clothing including a positive-pressure, NIOSH approved, self-contained breathing apparatus.

Section 6. Accidental Release Measures

Personal Precautions:	Use appropriate Personal Protective Equipment (PPE).
Environmental Precautions:	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers.
Methods for Cleaning up:	Contain and recover liquid when possible. Flush spill area with water spray.
Other Statements:	If RQ (Reportable Quantity) is exceeded, report to National Spill Response Office at 1-800-424-8802. Reportable Quantity of the product is 3883 Gal.

Section 7. Handling and Storage

Handling:	Wear appropriate Personal Protective Equipment (PPE) when handling this product. Do not get in eyes, or on skin and clothing. Wash thoroughly after handling. Do not ingest. Avoid breathing vapors, mist or dust.
Storage:	Store away from incompatible materials (see Section 10). Store at ambient temperatures. Keep container securely closed when not in use. Label precautions also apply to empty container. Recondition or dispose of empty containers in accordance with government regulations. For Industrial use only. Do not store below 30°F. Do not freeze. Store above Freeze Point. If freezes, then mechanical mixing is required.

Section 8. Exposure Controls/Personal Protection

Exposure Limits

Component	Source	Exposure Limits
Sodium bisulfite	ACGIH TLV	5 mg/m ³ TWA

Engineering Controls:	Use only with adequate ventilation. The use of local ventilation is recommended to control emission near the source.
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Personal Protection

Eyes:	Wear chemical splash goggles or safety glasses with full-face shield. Maintain eyewash fountain in work area.
Skin:	Maintain quick-drench facilities in work area. Wear butyl rubber or neoprene gloves. Wash them after each use and replace as necessary. If conditions warrant, wear protective clothing such as boots, aprons, and coveralls to prevent skin contact.
Respiratory:	If misting occurs, use NIOSH approved organic vapor/acid gas dual cartridge respirator with a dust/mist prefilter in accordance with 29 CFR 1910.134.

Section 9. Physical and Chemical Properties

Physical State and Appearance:	Liquid, Yellow, Clear
Specific Gravity:	1.235 @ 20°C
pH:	3.9 @ 20°C, 100.0%
Freezing Point:	30°F
Flash Point:	N/D
Odor:	Strong
Melting Point:	N/A
Initial Boiling Point and Boiling Range:	212°F
Solubility in Water:	Complete
Evaporation Rate:	<1
Vapor Density:	N/D
Molecular Weight:	N/D
Viscosity:	<100 CPS @ 20°C
Flammability (solid, gas):	N/D
Flammable Limits:	N/A
Autoignition Temperature:	N/A
Density:	10.30 LB/GA
Vapor Pressure:	<17.5
% VOC:	0
Odor Threshold	N/D
n-octanol Partition Coefficient	N/D
Decomposition Temperature	N/D

Section 10. Stability and Reactivity

Chemical Stability:	Stable at normal temperatures and pressures.
Incompatibility with Various Substances:	Strong oxidizers, Strong acids, Mineral acids, Metals or metal oxides.
Hazardous Decomposition Products:	Sulfur dioxide gas.
Possibility of Hazardous Reactions:	None known.
Reactivity:	N/D
Conditions To Avoid:	N/D

Section 11. Toxicological Information

Acute Toxicity

Chemical Name	Exposure	Type of Effect	Concentration	Species
Sodium bisulfite	Oral	LD50	2000 MG/KG	Rat

Carcinogenicity Category

Component	Source	Code	Brief Description
Sodium bisulfite	N/E	N/E	N/E

Likely Routes of Exposure: N/D

Symptoms

Inhalation: N/D

Eye Contact: N/D

Skin Contact: N/D

Ingestion: N/D

Skin Corrosion/Irritation: N/D

Serious Eye Damage/Eye Irritation: N/D

Sensitization: N/D

Germ Cell Mutagenicity: N/D

Reproductive/Developmental Toxicity: N/D

Specific Target Organ Toxicity

Single Exposure: N/D

Repeated Exposure: N/D

Aspiration Hazard: N/D

Comments: None.

Section 12. Ecological Information

Ecotoxicity

Species	Duration	Type of Effect	Test Results
Sheepshead Minnow	96h	LC50	100 mg/l
Mysid Shrimp	48h	LC50	70.7 mg/l
Fathead Minnow	96h	LC50	>1000 mg/l
	96h	LC50	849 mg/l
	7d	NOEC	600 mg/l
	7d	LOEC	1200 mg/l
	7d	IC25	750 mg/l
Ceriodaphnia dubia	48h	LC50	390.4 mg/l
	48h	LC50	459 mg/l
	7d	NOEC	300 mg/l
	7d	LOEC	600 mg/l
	7d	IC25	420 mg/l

Persistence and Biodegradability: N/D

Bioaccumulative Potential: N/D

Mobility In Soil: N/D

Other Adverse Effects: N/D

Comments: None.

Section 13. Disposal Considerations

Dispose of in accordance with local, state and federal regulations.

Section 14. Transport Information

Controlling Regulation	UN/NA#:	Proper Shipping Name:	Technical Name:	Hazard Class:	Packing Group:
DOT	UN2693	BISULPHITES, AQUEOUS SOLUTIONS, N.O.S.	(SODIUM BISULFITE)	8	PGIII
Over 3883 GA	RQ UN2693	BISULPHITES, AQUEOUS SOLUTIONS, N.O.S.	(SODIUM BISULFITE)	8	PGIII
TDG	UN2693	BISULPHITES, AQUEOUS SOLUTIONS, N.O.S.	(SODIUM BISULFITE)	8	PGIII
IMDG	UN2693	BISULPHITES, AQUEOUS SOLUTIONS, N.O.S.	(SODIUM BISULFITE)	8	PGIII
ICAO	UN2693	BISULPHITES, AQUEOUS SOLUTIONS, N.O.S.	(SODIUM BISULFITE)	8	PGIII

Note: N/A

Section 15. Regulatory Information

Inventory Status

United States (TSCA):

Canada (DSL/NDSL):

All ingredients listed.

All ingredients listed.



Federal Regulations

SARA Title III Rules

Sections 311/312 Hazard Classes

Fire Hazard:	No
Reactive Hazard:	No
Release of Pressure:	No
Acute Health Hazard:	Yes
Chronic Health Hazard:	No

Other Sections

Component	Section 313 Toxic Chemical	Section 302 EHS TPQ	CERCLA RQ
Sodium bisulfite	N/A	N/A	5000

Comments: None.

State Regulations

California Proposition 65: None known.

Special Regulations

Component	States
Sodium bisulfite	MA, MN, NY, PA, WA

Compliance Information

NSF: Certified to NSF/ANSI Standard 60
Maximum use rate for potable water – 50 mg/L
This product ships as NSF from:
Ashland, VA
Eldridge, IA
Nederland, TX
Facility #32 USA

Food Regulations: N/A

KOSHER: This product is certified by the Orthodox Union as kosher pareve.
Only when prepared by the following ChemTreat facilities:
Ashland, VA; Eldridge, IA; Nederland, TX; Fontana, CA.

Halal: This product has not been evaluated for Halal approval.

FIFRA: N/A



Other: None

Comments: None.

Section 16. Other Information

HMIS Hazard Rating

Health:	2
Flammability:	0
Physical Hazard:	0
PPE:	X

Notes:

The PPE rating depends on circumstances of use. See Section 8 for recommended PPE.

The Hazardous Material Information System (HMIS) is a voluntary, subjective alpha-numeric symbolic system for recommending hazard risk and personal protection equipment information. It is a subjective rating system based on the evaluator's understanding of the chemical associated risks. The end-user must determine if the code is appropriate for their use.

Abbreviations

Abbreviation	Definition
<	Less Than
>	Greater Than
ACGIH	American Conference of Governmental Industrial Hygienists
EHS	Environmental Health and Safety Dept
N/A	Not Applicable
N/D	Not Determined
N/E	Not Established
OSHA	Occupational Health and Safety Dept
PEL	Personal Exposure Limit
STEL	Short Term Exposure Limit
TLV	Threshold Limit Value
TWA	Time Weight Average
UNK	Unknown

Prepared by: Product Compliance Department; ProductCompliance@chemtreat.com

Revision Date: February 4, 2020



Disclaimer

Although the information and recommendations set forth herein (hereinafter "information") are presented in good faith and believed to be correct as of the date hereof, ChemTreat, Inc. makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will ChemTreat, Inc. be responsible for damages of any nature whatsoever resulting from the use or reliance upon information. No representation or warranties, either expressed or implied, of merchantability, fitness for a particular purpose, or of any other nature are made hereunder with respect to information or the product to which information refers.



SAFETY DATA SHEET

Section 1. Chemical Product and Company Identification

Product Name:	ChemTreat RL1000
Product Use:	Reverse Osmosis and Resin Cleaner
Supplier's Name:	ChemTreat, Inc.
Emergency Telephone Number:	(800)424-9300 (Toll Free)
Address (Corporate Headquarters):	5640 Cox Road Glen Allen, VA 23060
Telephone Number for Information:	(800)648-4579
Date of SDS:	May 23, 2019
Revision Date:	May 23, 2019
Revision Number:	19052301AN

Section 2. Hazard(s) Identification



Signal Word:	DANGER
GHS Classification(s):	Skin corrosion/irritation – Category 1b Eye damage/irritation – Category 1 Acute Toxicity Oral – Category 4
Hazard Statement(s):	H314 Causes severe skin burns and eye damage. H318 Causes serious eye damage. H302 Harmful if swallowed.
Precautionary Statement(s):	

Prevention:	P260 Do not breathe dust/fume/gas/mist/vapors/spray. P264 Wash thoroughly after handling. P270 Do not eat, drink, or smoke when using this product. P271 Use only outdoors or in a well-ventilated area. P280 Wear protective gloves/protective clothing/eye protection/face protection.
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Response:

P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P301 + 330 + 331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower
P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER/doctor.
P363 Wash contaminated clothing before reuse.

Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents and container in accordance with applicable local, regional, national, and/or international regulations.

System of Classification Used:

Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Hazards Not Otherwise Classified:

None.

Section 3. Composition/Hazardous Ingredients

Component	CAS Registry #	Wt.%
Sodium hydroxide	1310-73-2	1 - 5
Benzene, 1,1-oxybis,tetrapropylene sulfonated sodium salt	119345-04-9	1 - 5

Comments

If chemical identity and/or exact percentage of composition has been withheld, this information is considered to be a trade secret.

Section 4. First Aid Measures

Inhalation:

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a poison center or doctor/physician.

Eyes:

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor/physician.



Skin: Immediately remove/take off all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before re-use. Immediately call a poison center or doctor/physician.

Ingestion: DO NOT INDUCE VOMITING. Rinse mouth. Call a POISON CENTER or doctor/physician.

Most Important Symptoms: N/D

Indication of Immediate Medical Attention and Special Treatment Needed, If Necessary: N/A

Section 5. Fire Fighting Measures

Flammability of the Product: Not flammable.

Suitable Extinguishing Media: Use extinguishing media suitable to surrounding fire.

Specific Hazards Arising from the Chemical: Use water spray to keep containers cool.

Protective Equipment: If product is involved in a fire, wear full protective clothing including a positive-pressure, NIOSH approved, self-contained breathing apparatus.

Section 6. Accidental Release Measures

Personal Precautions: Use appropriate Personal Protective Equipment (PPE).

Environmental Precautions: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers.

Methods for Cleaning up: Contain and recover liquid when possible. Flush spill area with water spray.

Other Statements: If RQ (Reportable Quantity) is exceeded, report to National Spill Response Office at 1-800-424-8802.

Section 7. Handling and Storage

Handling: Wear appropriate Personal Protective Equipment (PPE) when handling this product. Do not get in eyes, or on skin and clothing. Wash thoroughly after handling. Do not ingest. Avoid breathing vapors, mist or dust.

Storage: Store away from incompatible materials (see Section 10). Store at ambient temperatures. Keep container securely closed when not in use. Label precautions also apply to empty container. Recondition or dispose of empty containers in accordance with government regulations. For Industrial use only. Do not store or handle in aluminum, zinc, copper, or their alloys. Store above Freeze Point.

Section 8. Exposure Controls/Personal Protection

Exposure Limits

Component	Source	Exposure Limits
Sodium hydroxide	ACGIH TLV	2 mg/m ³ Ceiling
	OSHA PEL	2 mg/m ³ TWA
Benzene, 1,1-oxybis,tetrapropylene sulfonated sodium salt	N/E	N/E

Engineering Controls: Use only with adequate ventilation. The use of local ventilation is recommended to control emission near the source.

Personal Protection

Eyes: Wear chemical splash goggles or safety glasses with full-face shield. Maintain eyewash fountain in work area.

Skin: Maintain quick-drench facilities in work area. Wear butyl rubber or neoprene gloves. Wash them after each use and replace as necessary. If conditions warrant, wear protective clothing such as boots, aprons, and coveralls to prevent skin contact.

Respiratory: If misting occurs, use NIOSH approved organic vapor/acid gas dual cartridge respirator with a dust/mist prefilter in accordance with 29 CFR 1910.134.

Section 9. Physical and Chemical Properties

Physical State and Appearance:	Liquid, Colorless, Clear
Specific Gravity:	1.040 @ 20°C
pH:	13.2 @ 20°C, 100.0%
Freezing Point:	32°F
Flash Point:	N/D
Odor:	Mild
Melting Point:	N/A
Initial Boiling Point and Boiling Range:	N/D
Solubility in Water:	Complete
Evaporation Rate:	N/A
Vapor Density:	N/D
Molecular Weight:	N/D
Viscosity:	N/D
Flammability (solid, gas):	N/D
Flammable Limits:	N/A
Autoignition Temperature:	N/A
Density:	8.67 LB/GA
Vapor Pressure:	N/D
% VOC:	0
Odor Threshold	N/D
n-octanol Partition Coefficient	N/D
Decomposition Temperature	N/D

Section 10. Stability and Reactivity

Chemical Stability:	Stable at normal temperatures and pressures.
Incompatibility with Various Substances:	Acids, Strong oxidizers.
Hazardous Decomposition Products:	Oxides of carbon.
Possibility of Hazardous Reactions:	None known.
Reactivity:	N/D
Conditions To Avoid:	N/D

Section 11. Toxicological Information

Acute Toxicity

Chemical Name	Exposure	Type of Effect	Concentration	Species
Sodium hydroxide	Oral	LD50	300 MG/KG	Rat
	Dermal	LD50	1350 MG/KG	Rabbit

Carcinogenicity Category

Component	Source	Code	Brief Description
Sodium hydroxide	N/E	N/E	N/E
Benzene, 1,1-oxybis,tetrapropylene sulfonated sodium salt	N/E	N/E	N/E

Likely Routes of Exposure: N/D

Symptoms

Inhalation: N/D

Eye Contact: N/D

Skin Contact: N/D

Ingestion: N/D

Skin Corrosion/Irritation: N/D

Serious Eye Damage/Eye Irritation: N/D

Sensitization: N/D

Germ Cell Mutagenicity: N/D

Reproductive/Developmental Toxicity: N/D

Specific Target Organ Toxicity

Single Exposure: N/D

Repeated Exposure: N/D

Aspiration Hazard: N/D

Comments: None.

Section 12. Ecological Information

Ecotoxicity

Species	Duration	Type of Effect	Test Results
Ceriodaphnia dubia	48h	LC50	287 mg/l
Fathead Minnow	96h	LC50	132 mg/l

Persistence and Biodegradability: N/D

Bioaccumulative Potential: N/D

Mobility In Soil: N/D

Other Adverse Effects: N/D

Comments: None.

Section 13. Disposal Considerations

Dispose of in accordance with local, state and federal regulations.
EPA corrosivity characteristic hazardous waste D002 when disposed of in the original product form.

Section 14. Transport Information

Controlling Regulation	UN/NA#:	Proper Shipping Name:	Technical Name:	Hazard Class:	Packing Group:
DOT	UN1760	CORROSIVE LIQUIDS, N.O.S.	(SODIUM HYDROXIDE)	8	PGII
IMDG	UN1760	CORROSIVE LIQUIDS, N.O.S.	(SODIUM HYDROXIDE)	8	PGII
ICAO	UN1760	CORROSIVE LIQUIDS, N.O.S.	(SODIUM HYDROXIDE)	8	PGII
SCT	UN1760	CORROSIVE LIQUIDS, N.O.S.	(SODIUM HYDROXIDE)	8	PGII
TDG	UN1760	CORROSIVE LIQUIDS, N.O.S.	(SODIUM HYDROXIDE)	8	PGII

Note: N/A



Section 15. Regulatory Information

Inventory Status

United States (TSCA):
Canada (DSL/NDSL):

All ingredients listed.
All ingredients listed.

Federal Regulations

SARA Title III Rules

Sections 311/312 Hazard Classes

Fire Hazard:	No
Reactive Hazard:	No
Release of Pressure:	No
Acute Health Hazard:	Yes
Chronic Health Hazard:	No

Other Sections

Component	Section 313 Toxic Chemical	Section 302 EHS TPQ	CERCLA RQ
Sodium hydroxide	N/A	N/A	1000
Benzene, 1,1-oxybis,tetrapropylene sulfonated sodium salt	N/A	N/A	N/A

Comments: None.

State Regulations

California Proposition 65: None known.

Special Regulations

Component	States
Sodium hydroxide	MA, MN, NY, PA, WA
Benzene, 1,1-oxybis,tetrapropylene sulfonated sodium salt	None.



Compliance Information

NSF:	Certified to NSF/ANSI Standard 60 NSF as a membrane cleaner. This product is designed to be used off-line and flushed out prior to using the system for drinking water. This product ships as NSF from: Ashland, VA Eldridge, IA Nederland, TX
Food Regulations:	N/A
KOSHER:	This product has not been evaluated for Kosher approval.
Halal:	This product has not been evaluated for Halal approval.
FIFRA:	N/A
Other:	None

Comments: None.

Section 16. Other Information

HMIS Hazard Rating

Health:	3
Flammability:	0
Physical Hazard:	0
PPE:	X

Notes: The PPE rating depends on circumstances of use. See Section 8 for recommended PPE.
The Hazardous Material Information System (HMIS) is a voluntary, subjective alpha-numeric symbolic system for recommending hazard risk and personal protection equipment information. It is a subjective rating system based on the evaluator's understanding of the chemical associated risks. The end-user must determine if the code is appropriate for their use.

Abbreviations

Abbreviation	Definition
<	Less Than
>	Greater Than
ACGIH	American Conference of Governmental Industrial Hygienists



Abbreviation	Definition
EHS	Environmental Health and Safety Dept
N/A	Not Applicable
N/D	Not Determined
N/E	Not Established
OSHA	Occupational Health and Safety Dept
PEL	Personal Exposure Limit
STEL	Short Term Exposure Limit
TLV	Threshold Limit Value
TWA	Time Weight Average
UNK	Unknown

Prepared by: Product Compliance Department; ProductCompliance@chemtreat.com

Revision Date: May 23, 2019

Disclaimer

Although the information and recommendations set forth herein (hereinafter "information") are presented in good faith and believed to be correct as of the date hereof, ChemTreat, Inc. makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will ChemTreat, Inc. be responsible for damages of any nature whatsoever resulting from the use or reliance upon information. No representation or warranties, either expressed or implied, of merchantability, fitness for a particular purpose, or of any other nature are made hereunder with respect to information or the product to which information refers.

SAFETY DATA SHEET

Section 1. Chemical Product and Company Identification

Product Name:	ChemTreat RL2016
Product Use:	Reverse Osmosis and Resin Cleaner
Supplier's Name:	ChemTreat, Inc.
Emergency Telephone Number:	(800)424-9300 (Toll Free)
Address (Corporate Headquarters):	5640 Cox Road Glen Allen, VA 23060
Telephone Number for Information:	(800)648-4579
Date of SDS:	April 9, 2020
Revision Date:	April 9, 2020
Revision Number:	20040901AN

Section 2. Hazard(s) Identification



Signal Word:	WARNING
GHS Classification(s):	Acute Toxicity Dermal – Category 4 Acute Toxicity Inhalation – Category 4 Acute Toxicity Oral – Category 4 Eye damage/irritation – Category 2b Skin corrosion/irritation – Category 3 Specific Target Organ Toxicity – Single Exposure – Category 2
Hazard Statement(s):	H312 Harmful in contact with skin. H332 Harmful if inhaled. H302 Harmful if swallowed. H316 Causes mild skin irritation. H320 Causes eye irritation. H371 May cause damage to organs.
Precautionary Statement(s):	
Prevention:	P264 Wash thoroughly after handling. P270 Do not eat, drink, or smoke when using this product. P280 Wear protective gloves/protective clothing/eye protection/face protection. P271 Use only outdoors or in a well-ventilated area. P261 Avoid breathing dust/fume/gas/mist/vapors/spray.



Response:

P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P330 Rinse mouth.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P312 Call a POISON CENTER or doctor/physician if you feel unwell.
P362 + P364 Take off contaminated clothing and wash it before reuse.
P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing
P332 + P313 If skin irritation develops or persists, get medical advice/attention.
P337 + P313 If eye irritation persists, get medical advice/attention.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Storage:

None.

Disposal:

P501 Dispose of contents and container in accordance with applicable local, regional, national, and/or international regulations.

System of Classification Used:

Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Hazards Not Otherwise Classified:

None.

Section 3. Composition/Hazardous Ingredients

Component	CAS Registry #	Wt. %
Citric acid	77-92-9	10 - 30
1-Hydroxyethylidene-1,1-diphosphonic acid	2809-21-4	3 - 7

Comments

If chemical identity and/or exact percentage of composition has been withheld, this information is considered to be a trade secret.

Section 4. First Aid Measures

Inhalation:	Remove to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/physician if you feel unwell.
Eyes:	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.
Skin:	Remove contaminated clothing. Wash exposed area with large amounts of soap and water. If skin irritation develops or persists, get medical advice/attention.
Ingestion:	DO NOT INDUCE VOMITING. Rinse mouth. Call a POISON CENTER or doctor/physician.
Most Important Symptoms:	N/D
Indication of Immediate Medical Attention and Special Treatment Needed, If Necessary:	N/A

Section 5. Fire Fighting Measures

Flammability of the Product:	Not flammable.
Suitable Extinguishing Media:	Use extinguishing media suitable to surrounding fire.
Specific Hazards Arising from the Chemical:	None known.
Protective Equipment:	If product is involved in a fire, wear full protective clothing including a positive-pressure, NIOSH approved, self-contained breathing apparatus.

Section 6. Accidental Release Measures

Personal Precautions:	Use appropriate Personal Protective Equipment (PPE).
Environmental Precautions:	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers.
Methods for Cleaning up:	Contain and recover liquid when possible. Flush spill area with water spray.
Other Statements:	None.

Section 7. Handling and Storage

Handling:	Wear appropriate Personal Protective Equipment (PPE) when handling this product. Do not get in eyes, or on skin and clothing. Wash thoroughly after handling. Do not ingest. Avoid breathing vapors, mist or dust.
Storage:	Store away from incompatible materials (see Section 10). Store at ambient temperatures. Keep container securely closed when not in use. Label precautions also apply to empty container. Recondition or dispose of empty containers in accordance with government regulations. For Industrial use only. Store above Freeze Point.

Section 8. Exposure Controls/Personal Protection

Exposure Limits

Component	Source	Exposure Limits
Citric acid	N/E	N/E
1-Hydroxyethylidene-1,1-diphosphonic acid	N/E	N/E

Engineering Controls:	Use only with adequate ventilation. The use of local ventilation is recommended to control emission near the source.
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Personal Protection

Eyes:	Wear chemical splash goggles or safety glasses with full-face shield. Maintain eyewash fountain in work area.
Skin:	Maintain quick-drench facilities in work area. Wear butyl rubber or neoprene gloves. Wash them after each use and replace as necessary. If conditions warrant, wear protective clothing such as boots, aprons, and coveralls to prevent skin contact.
Respiratory:	If misting occurs, use NIOSH approved organic vapor/acid gas dual cartridge respirator with a dust/mist prefilter in accordance with 29 CFR 1910.134.

Section 9. Physical and Chemical Properties

Physical State and Appearance:	Liquid, Colorless, Clear
Specific Gravity:	1.093 @ 20°C
pH:	1.0 @ 20°C, 100.0%
Freezing Point:	32°F
Flash Point:	N/D
Odor:	Mild
Melting Point:	N/A
Initial Boiling Point and Boiling Range:	212°F
Solubility in Water:	Complete
Evaporation Rate:	N/A
Vapor Density:	N/D
Molecular Weight:	N/D
Viscosity:	N/A
Flammability (solid, gas):	N/D
Flammable Limits:	N/A
Autoignition Temperature:	N/A
Density:	9.12 LB/GA
Vapor Pressure:	N/D
% VOC:	N/D
Odor Threshold	N/D
n-octanol Partition Coefficient	N/D
Decomposition Temperature	N/D

Section 10. Stability and Reactivity

Chemical Stability:	Stable at normal temperatures and pressures.
Incompatibility with Various Substances:	Bases, Strong oxidizers.
Hazardous Decomposition Products:	Oxides of carbon, Oxides of phosphorus.
Possibility of Hazardous Reactions:	None known.
Reactivity:	N/D
Conditions To Avoid:	N/D

Section 11. Toxicological Information

Acute Toxicity

Chemical Name	Exposure	Type of Effect	Concentration	Species
1-Hydroxyethylidene-1,1-diphosphonic acid	Oral	LD50	2400 MG/KG	Rat
	Dermal	LD50	7940 MG/KG	Rabbit

Carcinogenicity Category

Component	Source	Code	Brief Description
Citric acid	N/E	N/E	N/E
1-Hydroxyethylidene-1,1-diphosphonic acid	N/E	N/E	N/E

Likely Routes of Exposure: N/D

Symptoms

Inhalation: N/D

Eye Contact: N/D

Skin Contact: N/D

Ingestion: N/D

Skin Corrosion/Irritation: N/D

Serious Eye Damage/Eye Irritation:	N/D
Sensitization:	N/D
Germ Cell Mutagenicity:	N/D
Reproductive/Developmental Toxicity:	N/D
Specific Target Organ Toxicity	
Single Exposure:	N/D
Repeated Exposure:	N/D
Aspiration Hazard:	N/D
Comments:	None.

Section 12. Ecological Information

Ecotoxicity

Species	Duration	Type of Effect	Test Results
Ceriodaphnia dubia	48h	LC50	>1000 mg/l
Fathead Minnow	96h	LC50	>1000 mg/l
Rainbow Trout	96h	LC50	7906 mg/l
Mysid Shrimp	48h	LC50	>1000 mg/l
Sheepshead Minnow	96h	LC50	>1000 mg/l

Persistence and Biodegradability:	N/D
Bioaccumulative Potential:	N/D
Mobility In Soil:	N/D
Other Adverse Effects:	N/D
Comments:	None.

Section 13. Disposal Considerations

Dispose of in accordance with local, state and federal regulations.
EPA corrosivity characteristic hazardous waste D002 when disposed of in the original product form.

Section 14. Transport Information

Controlling Regulation	UN/NA#:	Proper Shipping Name:	Technical Name:	Hazard Class:	Packing Group:
DOT	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A
IMDG	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A
TDG	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A
ICAO	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A

Note: N/A

Section 15. Regulatory Information

Inventory Status

United States (TSCA):
Canada (DSL/NDSL):

All ingredients listed.
All ingredients listed.



Federal Regulations

SARA Title III Rules

Sections 311/312 Hazard Classes

Fire Hazard:	No
Reactive Hazard:	No
Release of Pressure:	No
Acute Health Hazard:	Yes
Chronic Health Hazard:	No

Other Sections

Component	Section 313 Toxic Chemical	Section 302 EHS TPQ	CERCLA RQ
Citric acid	N/A	N/A	N/A
1-Hydroxyethylidene-1,1-diphosphonic acid	N/A	N/A	N/A

Comments: None.

State Regulations

California Proposition 65: None known.

Special Regulations

Component	States
Citric acid	None.
1-Hydroxyethylidene-1,1-diphosphonic acid	None.

Compliance Information

NSF: Certified to NSF/ANSI Standard 60 NSF as a membrane cleaner. This product is designed to be used off-line and flushed out prior to using the system for drinking water. This product ships as NSF from:
Ashland, VA
Eldridge, IA
Nederland, TX

Food Regulations: N/A

KOSHER: This product is certified by the Orthodox Union as kosher pareve. Only when prepared by the following ChemTreat facilities:
Ashland, VA; Eldridge, IA; Nederland, TX.



Halal: This product has not been evaluated for Halal approval.
 FIFRA: N/A
 Other: None

Comments: None.

Section 16. Other Information

HMIS Hazard Rating

Health:	1
Flammability:	0
Physical Hazard:	1
PPE:	X

Notes: The PPE rating depends on circumstances of use. See Section 8 for recommended PPE. The Hazardous Material Information System (HMIS) is a voluntary, subjective alpha-numeric symbolic system for recommending hazard risk and personal protection equipment information. It is a subjective rating system based on the evaluator's understanding of the chemical associated risks. The end-user must determine if the code is appropriate for their use.

Abbreviations

Abbreviation	Definition
<	Less Than
>	Greater Than
ACGIH	American Conference of Governmental Industrial Hygienists
EHS	Environmental Health and Safety Dept
N/A	Not Applicable
N/D	Not Determined
N/E	Not Established
OSHA	Occupational Health and Safety Dept
PEL	Personal Exposure Limit
STEL	Short Term Exposure Limit
TLV	Threshold Limit Value
TWA	Time Weight Average
UNK	Unknown

Prepared by: Product Compliance Department; ProductCompliance@chemtreat.com

Revision Date: April 9, 2020



Disclaimer

Although the information and recommendations set forth herein (hereinafter "information") are presented in good faith and believed to be correct as of the date hereof, ChemTreat, Inc. makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will ChemTreat, Inc. be responsible for damages of any nature whatsoever resulting from the use or reliance upon information. No representation or warranties, either expressed or implied, of merchantability, fitness for a particular purpose, or of any other nature are made hereunder with respect to information or the product to which information refers.



SAFETY DATA SHEET

Section 1. Chemical Product and Company Identification

Product Name:	ChemTreat RL9907
Product Use:	Reverse Osmosis Treatment
Supplier's Name:	ChemTreat, Inc.
Emergency Telephone Number:	(800)424-9300 (Toll Free)
Address (Corporate Headquarters):	5640 Cox Road Glen Allen, VA 23060
Telephone Number for Information:	(800)648-4579
Date of SDS:	September 10, 2019
Revision Date:	September 10, 2019
Revision Number:	19091001AN

Section 2. Hazard(s) Identification



Signal Word:	WARNING
GHS Classification(s):	Eye damage/irritation – Category 2b Skin corrosion/irritation – Category 2 Acute Toxicity Inhalation – Category 4 Acute Toxicity Oral – Category 5
Hazard Statement(s):	H320 Causes eye irritation. H315 Causes skin irritation. H332 Harmful if inhaled. H303 May be harmful if swallowed.
Precautionary Statement(s):	
Prevention:	P264 Wash thoroughly after handling. P280 Wear protective gloves/protective clothing/eye protection/face protection. P261 Avoid breathing dust/fume/gas/mist/vapors/spray. P271 Use only outdoors or in a well-ventilated area.

Response: P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313 If eye irritation persists, get medical advice/attention.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P332 + P313 If skin irritation develops or persists, get medical advice/attention.
P362 + P364 Take off contaminated clothing and wash it before reuse.
P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing
P312 Call a POISON CENTER or doctor/physician if you feel unwell.

Storage: None.

Disposal: None.

System of Classification Used: Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Hazards Not Otherwise Classified: None.

Section 3. Composition/Hazardous Ingredients

Component	CAS Registry #	Wt. %
Diethylenetriamine penta methylene phosphonic acid, sodium salt	22042-96-2	10 - 30
2-Phosphono-1,2,4-butanetricarboxylic acid, sodium salt	40372-66-5	3 - 7

Comments If chemical identity and/or exact percentage of composition has been withheld, this information is considered to be a trade secret.

Section 4. First Aid Measures

Inhalation: Remove to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/physician if you feel unwell.

Eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.



Skin: Wash with plenty of soap and water. Take off contaminated clothing and wash before re-use. If skin irritation occurs, seek medical advice/attention.

Ingestion: DO NOT INDUCE VOMITING. Rinse mouth. Call a POISON CENTER or doctor/physician if you feel unwell.

Most Important Symptoms: N/D

Indication of Immediate Medical Attention and Special Treatment Needed, If Necessary: N/A

Section 5. Fire Fighting Measures

Flammability of the Product: Not flammable.

Suitable Extinguishing Media: Use extinguishing media suitable to surrounding fire.

Specific Hazards Arising from the Chemical: Use water spray to keep containers cool.

Protective Equipment: If product is involved in a fire, wear full protective clothing including a positive-pressure, NIOSH approved, self-contained breathing apparatus.

Section 6. Accidental Release Measures

Personal Precautions: Use appropriate Personal Protective Equipment (PPE).

Environmental Precautions: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers.

Methods for Cleaning up: Contain and recover liquid when possible. Flush spill area with water spray.

Other Statements: None.

Section 7. Handling and Storage

Handling: Wear appropriate Personal Protective Equipment (PPE) when handling this product. Do not get in eyes, or on skin and clothing. Wash thoroughly after handling. Do not ingest. Avoid breathing vapors, mist or dust.

Storage: Store away from incompatible materials (see Section 10). Store at ambient temperatures. Keep container securely closed when not in use. Label precautions also apply to empty container. Recondition or dispose of empty containers in accordance with government regulations. For Industrial use only. Store above Freeze Point.

Section 8. Exposure Controls/Personal Protection

Exposure Limits

Component	Source	Exposure Limits
Diethylenetriamine penta methylene phosphonic acid, sodium salt	N/E	N/E
2-Phosphono-1,2,4-butanetricarboxylic acid, sodium salt	N/E	N/E

Engineering Controls: Use only with adequate ventilation. The use of local ventilation is recommended to control emission near the source.

Personal Protection

Eyes: Wear chemical splash goggles or safety glasses with full-face shield. Maintain eyewash fountain in work area.

Skin: Maintain quick-drench facilities in work area. Wear butyl rubber or neoprene gloves. Wash them after each use and replace as necessary. If conditions warrant, wear protective clothing such as boots, aprons, and coveralls to prevent skin contact.

Respiratory: If misting occurs, use NIOSH approved organic vapor/acid gas dual cartridge respirator with a dust/mist prefilter in accordance with 29 CFR 1910.134.

Section 9. Physical and Chemical Properties

Physical State and Appearance:	Liquid, Amber, Clear
Specific Gravity:	1.131 @ 20°C
pH:	2.8 @ 20°C, 100.0%
Freezing Point:	32°F
Flash Point:	N/D
Odor:	Mild
Melting Point:	N/D
Initial Boiling Point and Boiling Range:	212°F
Solubility in Water:	Complete
Evaporation Rate:	N/D
Vapor Density:	N/D
Molecular Weight:	N/D
Viscosity:	<100 CPS @ 20°C
Flammability (solid, gas):	N/D
Flammable Limits:	N/A
Autoignition Temperature:	N/A
Density:	9.43 LB/GA
Vapor Pressure:	N/D
% VOC:	N/D
Odor Threshold	N/D
n-octanol Partition Coefficient	N/D
Decomposition Temperature	N/D

Section 10. Stability and Reactivity

Chemical Stability:	Stable at normal temperatures and pressures.
Incompatibility with Various Substances:	Strong oxidizers, Strong bases.
Hazardous Decomposition Products:	Oxides of carbon.
Possibility of Hazardous Reactions:	None known.
Reactivity:	N/D
Conditions To Avoid:	N/D

Section 11. Toxicological Information

Acute Toxicity

Chemical Name	Exposure	Type of Effect	Concentration	Species
2-Phosphono-1,2,4-butanetricarboxylic acid, sodium salt	Dermal	LD50	>4000 MG/KG	Rat
	Oral	LD50	>6500 MG/KG	Rat
	Inhalation	LC50	>3000 MG/M3	Rat

Carcinogenicity Category

Component	Source	Code	Brief Description
Diethylenetriamine penta methylene phosphonic acid, sodium salt	N/E	N/E	N/E
2-Phosphono-1,2,4-butanetricarboxylic acid, sodium salt	N/E	N/E	N/E

Likely Routes of Exposure: N/D

Symptoms

Inhalation: N/D

Eye Contact: N/D

Skin Contact: N/D

Ingestion: N/D

Skin Corrosion/Irritation: N/D

Serious Eye Damage/Eye Irritation: N/D

Sensitization: N/D

Germ Cell Mutagenicity: N/D

Reproductive/Developmental Toxicity: N/D

Specific Target Organ Toxicity

Single Exposure: N/D

Repeated Exposure: N/D

Aspiration Hazard: N/D

Comments: None.

Section 12. Ecological Information

Ecotoxicity

Species	Duration	Type of Effect	Test Results
Ceriodaphnia dubia	48h	LC50	2609 mg/l
Fathead Minnow	96h	LC50	>10000 mg/l

Persistence and Biodegradability: N/D

Bioaccumulative Potential: N/D

Mobility In Soil: N/D

Other Adverse Effects: N/D

Comments: Aquatic toxicity data is based on testing of a similar product.

Section 13. Disposal Considerations

Dispose of in accordance with local, state and federal regulations.

Section 14. Transport Information

Controlling Regulation	UN/NA#:	Proper Shipping Name:	Technical Name:	Hazard Class:	Packing Group:
DOT	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A
SCT	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A



Note: N/A

Section 15. Regulatory Information

Inventory Status

United States (TSCA):
Canada (DSL/NDSL):

All ingredients listed.
All ingredients listed.

Federal Regulations

SARA Title III Rules

Sections 311/312 Hazard Classes

Fire Hazard:	No
Reactive Hazard:	No
Release of Pressure:	No
Acute Health Hazard:	Yes
Chronic Health Hazard:	No

Other Sections

Component	Section 313 Toxic Chemical	Section 302 EHS TPQ	CERCLA RQ
Diethylenetriamine penta methylene phosphonic acid, sodium salt	N/A	N/A	N/A
2-Phosphono-1,2,4-butanetricarboxylic acid, sodium salt	N/A	N/A	N/A

Comments: None.

State Regulations

California Proposition 65: None known.

Special Regulations

Component	States
Diethylenetriamine penta methylene phosphonic acid, sodium salt	None.
2-Phosphono-1,2,4-butanetricarboxylic acid, sodium salt	None.



Compliance Information

NSF: Certified to NSF/ANSI Standard 60
Maximum use rate for potable water – 15 mg/L
This product ships as NSF from:
Ashland, VA
Eldridge, IA

Food Regulations: N/A

KOSHER: This product is certified by the Orthodox Union as Kosher for Passover and year-round use.
Only when prepared by the following ChemTreat facilities:
Ashland, VA.
Only when prepared by the following ChemTreat facilities:
Eldridge, IA.

Halal: This product has not been evaluated for Halal approval.

FIFRA: N/A

Other: None

Comments: None.

Section 16. Other Information

HMIS Hazard Rating

Health:	1
Flammability:	0
Physical Hazard:	0
PPE:	X

Notes: The PPE rating depends on circumstances of use. See Section 8 for recommended PPE.
The Hazardous Material Information System (HMIS) is a voluntary, subjective alpha-numeric symbolic system for recommending hazard risk and personal protection equipment information. It is a subjective rating system based on the evaluator's understanding of the chemical associated risks. The end-user must determine if the code is appropriate for their use.



Abbreviations

Abbreviation	Definition
<	Less Than
>	Greater Than
ACGIH	American Conference of Governmental Industrial Hygienists
EHS	Environmental Health and Safety Dept
N/A	Not Applicable
N/D	Not Determined
N/E	Not Established
OSHA	Occupational Health and Safety Dept
PEL	Personal Exposure Limit
STEL	Short Term Exposure Limit
TLV	Threshold Limit Value
TWA	Time Weight Average
UNK	Unknown

Prepared by: Product Compliance Department; ProductCompliance@chemtreat.com

Revision Date: September 10, 2019

Disclaimer

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SAFETY DATA SHEET

KLEEN MCT103

1. Chemical product and company identification

Product name KLEEN MCT103
Synonyms Not available.
Recommended use and Limitations on use
 Recommended use Reverse Osmosis membrane cleaner
Issue date Jan-26-2011
Revision date 15/01/2018
Supersedes date 14/01/2018

Company/undertaking identification

SUEZ Water Technologies (Wuxi) Co., Ltd.
 B Block-C Area Xixia Road, Mechanical & Electronic Zone,
 Wuxi New District, Jiangsu, China
 Postal code: 214028
 Fax: 86-510-85201757
 Tel: 4008878280
 Email: GRC.SDSTeam@suez.com

Emergency telephone

86-532-83889090

2. Hazards identification

Emergency overview May be harmful if swallowed. Causes severe skin burns and eye damage.

Hazard categories

Physical hazards	Not classified.	
Health hazards	Acute toxicity, oral	Category 5
	Skin corrosion/irritation	Category 1
	Serious eye damage/eye irritation	Category 1
Environmental hazards	Not classified.	

Label elements

Pictograms



Signal word

Danger

Hazard statement

H303	May be harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.

Precautionary statement

Prevention

P201	Avoid breathing dust/fume/gas/mist/vapours/spray.
P202	Obtain special instructions before use.
P262	Do not handle until all safety precautions have been read and understood.
P264	Do not get in eyes, on skin, or on clothing.
P264	Wash thoroughly after handling.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

Response

SAFETY DATA SHEET

KLEEN MCT103

P301 + P330 + P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P353	Rinse skin with water/shower.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P363	Wash contaminated clothing before reuse.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P310	Immediately call a POISON CENTER/doctor.

Storage

P405	Store locked up.
P410	Protect from sunlight.

Disposal

P501	Dispose of contents/container in accordance with local/regional/national/international regulations.
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Physical and chemical hazards The product is stable and non-reactive under normal conditions of use, storage and transport. No unusual fire or explosion hazards noted.

Health hazards May be harmful if swallowed. Causes severe skin burns. Causes serious eye damage.

Environmental hazards The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Supplemental information None.

3. Composition/information on ingredients

Substance/mixture Mixtures

Chemical name	Concentration (%)	CAS Number
Hydroxyacetic acid	10 - 30	79-14-1
N-hydroxyethylenediamine triacetic acid trisodium salt	10 - 30	139-89-9

4. First aid measures

Inhalation	Call a physician if symptoms develop or persist.
Skin contact	Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.
Eye contact	Rinse with water. Continue rinsing. Call a physician or poison control center immediately.
Ingestion	Call a physician or poison control center immediately. Rinse mouth. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Most important symptoms and health effects	Corrosive effects. Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.
Expected acute symptoms and delayed symptoms	Corrosive effects. Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.
Personal protection for first-aid responders	IF exposed or concerned: Get medical advice/attention. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.
Notes to physician	Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim under observation. Symptoms may be delayed.

5. Fire-fighting measures

Extinguishing media	Foam. Powder. Carbon dioxide (CO ₂).
Extinguishing media to avoid	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards	During fire, gases hazardous to health may be formed.
Special fire fighting procedures	Move containers from fire area if you can do so without risk.
Protection of fire-fighters	Move containers from fire area if you can do so without risk.

SAFETY DATA SHEET

KLEEN MCT103

General fire hazards No unusual fire or explosion hazards noted.
Specific methods Use standard firefighting procedures and consider the hazards of other involved materials.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel Keep unnecessary personnel away. Do not breathe mist or vapor. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

For emergency responders Keep unnecessary personnel away.

Environmental precautions Not available.

Clean-up methods and materials and containment measures Use water spray to reduce vapors or divert vapor cloud drift.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. Put material in suitable, covered, labeled containers. For waste disposal, see section 13 of the SDS.

Recovery and neutralization Not available.

Prevention of secondary hazards Not available.

7. Handling and storage

Handling Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe mist or vapor. Do not get in eyes, on skin, or on clothing. Do not taste or swallow. When using, do not eat, drink or smoke. Should be handled in closed systems, if possible. Provide adequate ventilation. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices.

Storage Store locked up. Store in original tightly closed container.

8. Exposure controls/personal protection

Exposure limits
 No exposure limits noted for ingredient(s).

Biological limit values No biological exposure limits noted for the ingredient(s).

Monitoring methods Follow standard monitoring procedures.

Engineering measures Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station.

Personal protective equipment

Respiratory protection Chemical respirator with organic vapor cartridge and full facepiece.

Hand protection Rubber, butyl, viton or neoprene glove. Wash off after each use. Replace as necessary. Wear appropriate chemical resistant gloves.

Eye protection Splash proof chemical goggles. Face shield. Wear safety glasses with side shields (or goggles) and a face shield.

Skin and body protection Chemical resistant clothing. Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Hygiene measures Observe any medical surveillance requirements. Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

SAFETY DATA SHEET

KLEEN MCT103

9. Physical and chemical properties

Appearance	Liquid
Physical state	Liquid.
Form	Not available.
Color	Colorless to amber
Odor	Slight acetic acid odor
pH (concentrated product)	3.4 Neat
pH in aqueous solution	3.3 (5% Solution)
Melting point/freezing point	-21 °C
Boiling point, initial boiling point, and boiling range	99 °C
Flash point	Not available.
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	18 mmHg
Vapor pressure temp.	21 °C
Vapor density	> 1
Relative density	1.35
Relative density temperature	21 °C
Density	Not available.
Solubility(ies)	
Solubility (water)	100 %
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Evaporation rate	Slower than Ether
Flammability (solid, gas)	Not applicable.
Other data	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
Pour point	-18 °C
Specific gravity	1.35
Viscosity	50 mPa.s
Viscosity temperature	21 °C
VOC (Weight %)	10 % ESTIMATED

10. Stability and reactivity

Stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Not available.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

SAFETY DATA SHEET

KLEEN MCT103

Acute toxicity	May be harmful if swallowed.	
Product	Species	Test Results
KLEEN MCT103 (CAS Mixture)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 5000 mg/kg, (Calculated according to GHS additivity formula)
<i>Inhalation</i>		
LC50	Rat	> 5 mg/l, 4 Hours, (Calculated according to GHS additivity formula)
<i>Oral</i>		
LD50	Rat	4923 mg/kg, (Calculated according to GHS additivity formula)
Components	Species	Test Results
Hydroxyacetic acid (CAS 79-14-1)		
Acute		
<i>Inhalation</i>		
LC50	Rat	3.6 mg/L, 4 Hour
<i>Oral</i>		
LD50	Rat	2040 mg/kg
N-hydroxyethylenediamine triacetic acid trisodium salt (CAS 139-89-9)		
Acute		
<i>Inhalation</i>		
LC50	Rat	> 10.054 mg/l, 4 Hour
<i>Oral</i>		
LD50	Rat	1780 mg/kg
* Estimates for product may be based on additional component data not shown.		
Routes of exposure	Ingestion. Skin contact. Eye contact.	
Symptoms	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.	
Skin corrosion/irritation	Causes severe skin burns and eye damage.	
Serious eye damage/eye irritation	Causes serious eye damage.	
Respiratory or skin sensitization		
Respiratory sensitization	Not a respiratory sensitizer.	
Skin sensitizer	This product is not expected to cause skin sensitization.	
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.	
Carcinogenicity	Not classified.	
Toxic to reproduction	This product is not expected to cause reproductive or developmental effects.	
Specific target organ toxicity following single exposure	Not available.	
Specific target organ toxicity following repeated exposure	Not available.	
Aspiration hazard	Not an aspiration hazard.	
Chronic effects	Prolonged exposure may cause chronic effects.	

SAFETY DATA SHEET

KLEEN MCT103

12. Ecological information

Ecotoxicological data

Product		Species	Test Results
KLEEN MCT103 (CAS Mixture)	0% Mortality	Fathead Minnow	2000 mg/L, Static Bioassay with 48-Hour Renewal, 96 hour, (pH adjusted)
	Aquatic		
	Crustacea	LC50	Daphnia magna
	NOEL	Daphnia magna	1060 mg/L, Static Renewal Bioassay, 48 hour, (pH adjusted)

* Estimates for product may be based on additional component data not shown.

Ecotoxicity Not available.

Bioaccumulation

Bioaccumulative potential

Octanol/water partition coefficient log Kow

Hydroxyacetic acid -1.11

Mobility in soil No data available for this product.

Other hazardous effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

Environmental fate The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Persistence and degradability

No data is available on the degradability of this product.

- COD (mgO₂/g) 335 (calculated data)
- BOD 5 (mgO₂/g) 70 (calculated data)
- BOD 28 (mgO₂/g) 105 (calculated data)
- Closed Bottle Test (% Degradation in 28 days) 23 (calculated data)
- Zahn-Wellens Test (% Degradation in 28 days) 27 (calculated data)
- TOC (mg C/g) 150 (calculated data)

13. Disposal considerations

Residual waste Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

Local disposal regulations Collect and reclaim or dispose in sealed containers at licensed waste disposal site.

14. Transport information

CNDG

UN number	UN3265
UN proper shipping name	Corrosive liquid, acidic, organic, n.o.s. (HYDROXYACETIC ACID)
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	II

International regulations If detailed packaging information is needed, please contact your GE Water & Process Technologies representative or customer service

SAFETY DATA SHEET

KLEEN MCT103

IATA

UN number UN3265
 UN proper shipping name Corrosive liquid, acidic, organic, n.o.s. (Hydroxyacetic acid)
 Transport hazard class(es)
 Class 8
 Subsidiary risk -
 Packing group II
 Environmental hazards No.
 ERG Code 153
 Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number UN3265
 UN proper shipping name CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (Hydroxyacetic acid)
 Transport hazard class(es)
 Class 8
 Subsidiary risk -
 Packing group II
 Environmental hazards
 Marine pollutant No.
 EmS F-A, S-B
 Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not established.

CNDG; IATA; IMDG



15. Regulatory information

Inventory of Existing Chemical Substances in China

Country(s) or region	Inventory name	On inventory (yes/no)*
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

SAFETY DATA SHEET

KLEEN MCT103

Applicable regulations

OELs. Occupational Exposure Limits for Hazardous Agents in the Workplace, Part 1, Chemical Hazardous Agents
Law of the Peoples Republic of China on prevention of environmental pollution caused by solid waste
Provisions on the Environmental Administration of New Chemical substances
Rule of safety use the chemicals in workplace
List of Dangerous Goods
Classification and Labeling of Dangerous Chemical Substances Commonly Used
Safety Administration Regulations of the Hazardous Chemicals
National Catalogue of Hazardous Waste
Dangerous Chemical Products This safety data sheet conforms to the following laws, regulations and standards:
Regulations on the Control over Safety of Dangerous Chemicals
Regulations on Labor Protection in Workplaces Where Toxic Products Are Used
Measures for the Safe Use of Chemicals in Workplaces
Safety Data Sheet for Chemical Products - Content and Order of Sections (GB/T 16483-2008)
General Rules for Preparation of Precautionary Labels for Chemicals (GB15258-2009)
Packing Symbol of Dangerous Goods(GB190-2009)
Packing - Pictorial Marking for Handling of Goods (GB/T191-2009)

Occupational exposure limits for hazardous agents in the workplace (GBZ 2.1-2007)

Not listed.

National Catalogue of Hazardous Wastes

Hydroxyacetic acid (CAS 79-14-1)

Classification and code of dangerous goods (GB 6944-2012)

Regulated.

List of Dangerous Goods (GB 12268-2012)

Regulated.

The Principle of Classification of Transport Packaging Groups of Dangerous Goods (GB/T15098-2008)

Regulated.

General Specifications for Transport Packages of Dangerous Goods (GB 12463-2009)

Regulated.

Regulations on Road Transport of Dangerous Goods

Regulated.

Regulations on Rail Road Transport of Dangerous Goods

Regulated.

UN Recommendations on the Transport of Dangerous Goods (UN RTDG)

Regulated.

16. Other information

References

EPA: AQUIRE database
NLM: Hazardous Substances Data Base
US. IARC Monographs on Occupational Exposures to Chemical Agents

Safety data sheets of raw materials.

List of abbreviations

CAS: Chemical Abstract Service Registration Number
NFPA: National Fire Protection Association
ACGIH: American Conference of Governmental Industrial Hygienists
TWA: Time Weighted Average
STEL: Short Term Exposure Limit
LD50: Lethal Dose, 50%
LC50: Lethal Concentration, 50%
EC50: Effect Concentration, 50%
NOEL: No Observed Effect Level
COD: Chemical Oxygen Demand
BOD: Biochemical Oxygen Demand
TOC: Total Organic Carbon
CEN: European Committee for Standardisation

Further information

Correction in Section: 2,3,11,14

SAFETY DATA SHEET

KLEEN MCT103

Disclaimer

Information presented herein has been compiled from sources considered to be dependable. The information in the sheet was written based on the best knowledge and experience currently available. Suez Water Technologies does not make any warranty or representation (express or implied) with respect to the accuracy, completeness, or usefulness of the information contained in this guide.

Revision information

Exposure controls/personal protection: Engineering measures
GHS: Classification

Attachment to EPA Form 2E
Section 4 – Outfall Analysis Summary & Reports

Big West Oil LLC

Outfall 001 Analysis Summary

Date	Sample Name	Pollutant (mg/L)													
		pH	TSS	COD	Aluminum	Arsenic	Cadmium	Chromium	Copper	Iron	Lead	Mercury	Nickel	Selenium	Zinc
6/14/2021	Outfall 1			61		0.0224	< 0.0005	< 0.002	0.00354		< 0.002	< 0.00009	< 0.002	< 0.002	0.00604
7/16/2021	Outfall 1	7.91	13.4	< 10		0.028	< 0.0005	< 0.002	< 0.003		< 0.002	< 0.00009	< 0.002	< 0.002	0.00711
3/3/2022	Outfall 1	7.9	24	< 10		0.002	< 0.0002	0.0017	0.0658		0.0006	< 0.0002	0.0007	< 0.0005	< 0.01
5/19/2022	Outfall 1											0.000002			
5/19/2022	Outfall 1	7.1	< 4	10	0.07	0.0008	< 0.0002	0.0028	0.0113	0.02	< 0.0005	< 0.0002	0.0008	0.0022	
6/21/2022	Outfall 1	7.8	< 4	< 10		0.0007	< 0.0002	< 0.005	0.01		< 0.0005	< 0.0002	< 0.005	0.0011	< 0.01
7/27/2022	Outfall 1	7.6	< 4	< 10		0.0006	< 0.0002	< 0.005	0.005		< 0.0005	< 0.00015	< 0.005	0.0014	< 0.01
Average ¹		7.66	9.9	18.5	0.07	0.0091	0.00030	0.003	0.01644	0.02	0.001017	0.000133	0.0026	0.001533	0.00863
Max Conc. In NWOD ²		N/A	N/A	N/A	0.13	0.0131	0.00115	0.011	0.03	N/A	0.0016	0.0002	0.025	0.00221	0.05

Notes:

¹For averaging purposes, a value equivalent to the detection limit was conservatively assumed when the analysis result was below the detection limit.

²Maximum concentration in the Northwest Oil Drain canal as provided in the January 18, 2022 Level I Antidegradation Review and Waste Load Allocation.



Sally Kaiser
Big West Oil, LLC
333 West Center
North Salt Lake, UT 84054
TEL: (801) 296-7732

RE: Outfall 1 / 31702

Dear Sally Kaiser:

Lab Set ID: 2106400

3440 South 700 West
Salt Lake City, UT 84119

American West Analytical Laboratories received sample(s) on 6/14/2021 for the analyses presented in the following report.

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web: www.awal-labs.com

American West Analytical Laboratories (AWAL) is accredited by The National Environmental Laboratory Accreditation Program (NELAP) in Utah and Texas; and is state accredited in Colorado, Idaho, New Mexico, Wyoming, and Missouri.

All analyses were performed in accordance to the NELAP protocols unless noted otherwise. Accreditation scope documents are available upon request. If you have any questions or concerns regarding this report please feel free to call.

Jennifer Osborn
Laboratory Director

Jose Rocha
QA Officer

The abbreviation "Surr" found in organic reports indicates a surrogate compound that is intentionally added by the laboratory to determine sample injection, extraction, and/or purging efficiency. The "Reporting Limit" found on the report is equivalent to the practical quantitation limit (PQL). This is the minimum concentration that can be reported by the method referenced and the sample matrix. The reporting limit must not be confused with any regulatory limit. Analytical results are reported to three significant figures for quality control and calculation purposes.

Thank You,

Approved by:

Jose G. Rocha	Digitally signed by Jose G. Rocha Date: 2021.06.25 14:55:43 -06'00'
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Laboratory Director or designee



INORGANIC ANALYTICAL REPORT

Client: Big West Oil, LLC
Project: Outfall 1 / 31702
Lab Sample ID: 2106400-001
Client Sample ID: Outfall 1
Collection Date: 6/14/2021 920h
Received Date: 6/14/2021 1019h

Contact: Sally Kaiser

Analytical Results

TOTAL METALS

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 web: www.awal-labs.com

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Antimony	mg/L	6/15/2021 1002h	6/23/2021 1511h	E200.8	0.00400	< 0.00400	
Arsenic	mg/L	6/15/2021 1002h	6/21/2021 846h	E200.8	0.00200	0.0224	
Beryllium	mg/L	6/15/2021 1002h	6/23/2021 1511h	E200.8	0.00200	< 0.00200	
Cadmium	mg/L	6/15/2021 1002h	6/21/2021 846h	E200.8	0.000500	< 0.000500	
Chromium	mg/L	6/15/2021 1002h	6/21/2021 846h	E200.8	0.00200	< 0.00200	
Copper	mg/L	6/15/2021 1002h	6/21/2021 846h	E200.8	0.00300	0.00354	
Lead	mg/L	6/15/2021 1002h	6/21/2021 846h	E200.8	0.00200	< 0.00200	
Mercury	mg/L	6/14/2021 1157h	6/14/2021 1603h	E245.1	0.0000900	< 0.0000900	
Nickel	mg/L	6/15/2021 1002h	6/21/2021 846h	E200.8	0.00200	< 0.00200	
Selenium	mg/L	6/15/2021 1002h	6/21/2021 846h	E200.8	0.00200	< 0.00200	
Silver	mg/L	6/15/2021 1002h	6/21/2021 846h	E200.8	0.00200	< 0.00200	
Thallium	mg/L	6/15/2021 1002h	6/21/2021 846h	E200.8	0.00200	< 0.00200	
Zinc	mg/L	6/15/2021 1002h	6/21/2021 846h	E200.8	0.00600	0.00604	

Jennifer Osborn
 Laboratory Director

Jose Rocha
 QA Officer



INORGANIC ANALYTICAL REPORT

Client: Big West Oil, LLC
Project: Outfall 1 / 31702
Lab Sample ID: 2106400-001
Client Sample ID: Outfall 1
Collection Date: 6/14/2021 920h
Received Date: 6/14/2021 1019h

Contact: Sally Kaiser

Analytical Results

<u>Compound</u>	<u>Units</u>	<u>Date Prepared</u>	<u>Date Analyzed</u>	<u>Method Used</u>	<u>Reporting Limit</u>	<u>Analytical Result</u>	<u>Qual</u>
Chemical Oxygen Demand	mg/L		6/16/2021 700h	HACH 8000	10.0	61.0	
Total Dissolved Solids	mg/L		6/15/2021 1240h	SM2540C	50.0	6,850	
Total Suspended Solids	mg/L		6/14/2021 1500h	SM2540D	3.00	14.8	

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web: www.awal-labs.com

Jennifer Osborn
Laboratory Director

Jose Rocha
QA Officer



ORGANIC ANALYTICAL REPORT

Client: Big West Oil, LLC
Project: Outfall 1 / 31702
Lab Sample ID: 2106400-001D
Client Sample ID: Outfall 1
Collection Date: 6/14/2021 920h
Received Date: 6/14/2021 1019h

Contact: Sally Kaiser

Test Code: 608.3-W

Analytical Results

Pesticides/PCBs PP List by GC/ECD Method 608.3

Analyzed: 6/14/2021 2101h **Extracted:** 6/14/2021 1316h
Units: µg/L **Dilution Factor:** 1 **Method:** EPA608

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Jennifer Osborn
Laboratory Director

Jose Rocha
QA Officer

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
4,4'-DDD	72-54-8	0.0201	< 0.0201	
4,4'-DDE	72-55-9	0.0201	< 0.0201	
4,4'-DDT	50-29-3	0.0201	< 0.0201	
Aldrin	309-00-2	0.0201	< 0.0201	
alpha-BHC	319-84-6	0.0201	< 0.0201	
Aroclor 1016	12674-11-2	0.503	< 0.503	
Aroclor 1221	11104-28-2	0.503	< 0.503	
Aroclor 1232	11141-16-5	0.503	< 0.503	
Aroclor 1242	53469-21-9	0.503	< 0.503	
Aroclor 1248	12672-29-6	0.503	< 0.503	
Aroclor 1254	11097-69-1	0.503	< 0.503	
Aroclor 1260	11096-82-5	0.503	< 0.503	
beta-BHC	319-85-7	0.0201	< 0.0201	
Chlordane, total	57-74-9	0.201	< 0.201	
delta-BHC	319-86-8	0.0201	< 0.0201	@
Dieldrin	60-57-1	0.0201	< 0.0201	
Endosulfan I	959-98-8	0.0201	< 0.0201	
Endosulfan II	33213-65-9	0.0201	< 0.0201	
Endosulfan sulfate	1031-07-8	0.0201	< 0.0201	
Endrin	72-20-8	0.0201	< 0.0201	
Endrin aldehyde	7421-93-4	0.0201	< 0.0201	
gamma-BHC	58-89-9	0.0201	< 0.0201	
Heptachlor	76-44-8	0.0201	< 0.0201	
Heptachlor epoxide	1024-57-3	0.0201	< 0.0201	
Toxaphene	8001-35-2	0.251	< 0.251	

Surrogate	Units: µg/L	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: Decachlorobiphenyl		2051-24-3	0.0962	0.1508	63.8	15-149	
Surr: Tetrachloro-m-xylene		877-09-8	0.0813	0.1508	54.0	10-124	

@ - High RPD due to suspected sample non-homogeneity or matrix interference.



ORGANIC ANALYTICAL REPORT

Client: Big West Oil, LLC
Project: Outfall 1 / 31702
Lab Sample ID: 2106400-001B
Client Sample ID: Outfall 1
Collection Date: 6/14/2021 920h
Received Date: 6/14/2021 1019h

Contact: Sally Kaiser

Test Code: 625.1-W-3511

Analytical Results

SVOA PP List by GC/MS Method 625.1/3511

Analyzed: 6/15/2021 1113h **Extracted:** 6/14/2021 1120h
Units: µg/L **Dilution Factor:** 1 **Method:** EPA625.1

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Jennifer Osborn
Laboratory Director

Jose Rocha
QA Officer

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
1,2,4-Trichlorobenzene	120-82-1	10.0	< 10.0	
1,2-Dichlorobenzene	95-50-1	10.0	< 10.0	
1,3-Dichlorobenzene	541-73-1	10.0	< 10.0	
1,4-Dichlorobenzene	106-46-7	10.0	< 10.0	
2,2'-Oxybis(1-chloropropane)	108-60-1	10.0	< 10.0	
2,4,6-Trichlorophenol	88-06-2	10.0	< 10.0	
2,4-Dichlorophenol	120-83-2	10.0	< 10.0	
2,4-Dimethylphenol	105-67-9	10.0	< 10.0	
2,4-Dinitrophenol	51-28-5	10.0	< 10.0	
2,4-Dinitrotoluene	121-14-2	10.0	< 10.0	
2,6-Dinitrotoluene	606-20-2	10.0	< 10.0	
2-Chloronaphthalene	91-58-7	10.0	< 10.0	
2-Chlorophenol	95-57-8	10.0	< 10.0	
2-Nitrophenol	88-75-5	10.0	< 10.0	
3,3'-Dichlorobenzidine	91-94-1	10.0	< 10.0	
4,6-Dinitro-2-methylphenol	534-52-1	10.0	< 10.0	
4-Bromophenyl phenyl ether	101-55-3	10.0	< 10.0	S
4-Chloro-3-methylphenol	59-50-7	10.0	< 10.0	
4-Chlorophenyl phenyl ether	7005-72-3	10.0	< 10.0	
4-Nitrophenol	100-02-7	10.0	< 10.0	
Acenaphthene	83-32-9	10.0	< 10.0	
Acenaphthylene	208-96-8	10.0	< 10.0	
Anthracene	120-12-7	10.0	< 10.0	
Azobenzene	103-33-3	10.0	< 10.0	
Benz(a)anthracene	56-55-3	10.0	< 10.0	
Benzidine	92-87-5	10.0	< 10.0	@
Benzo(a)pyrene	50-32-8	10.0	< 10.0	
Benzo(b)fluoranthene	205-99-2	10.0	< 10.0	
Benzo(g,h,i)perylene	191-24-2	10.0	< 10.0	



Lab Sample ID: 2106400-001B

Client Sample ID: Outfall 1

Analyzed: 6/15/2021 1113h

Extracted: 6/14/2021 1120h

Units: µg/L

Dilution Factor: 1

Method: EPA625.1

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Jennifer Osborn
Laboratory Director

Jose Rocha
QA Officer

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Benzo(k)fluoranthene	207-08-9	10.0	< 10.0	
Bis(2-chloroethoxy)methane	111-91-1	10.0	< 10.0	
Bis(2-chloroethyl) ether	111-44-4	10.0	< 10.0	
Bis(2-ethylhexyl) phthalate	117-81-7	10.0	< 10.0	
Butyl benzyl phthalate	85-68-7	10.0	< 10.0	
Chrysene	218-01-9	10.0	< 10.0	
Dibenz(a,h)anthracene	53-70-3	10.0	< 10.0	
Diethyl phthalate	84-66-2	10.0	< 10.0	
Dimethyl phthalate	131-11-3	10.0	< 10.0	
Di-n-butyl phthalate	84-74-2	10.0	< 10.0	
Di-n-octyl phthalate	117-84-0	10.0	< 10.0	
Fluoranthene	206-44-0	10.0	< 10.0	
Fluorene	86-73-7	10.0	< 10.0	
Hexachlorobenzene	118-74-1	10.0	< 10.0	
Hexachlorobutadiene	87-68-3	10.0	< 10.0	
Hexachlorocyclopentadiene	77-47-4	10.0	< 10.0	
Hexachloroethane	67-72-1	10.0	< 10.0	
Indeno(1,2,3-cd)pyrene	193-39-5	10.0	< 10.0	
Isophorone	78-59-1	10.0	< 10.0	
Naphthalene	91-20-3	10.0	< 10.0	
Nitrobenzene	98-95-3	10.0	< 10.0	
N-Nitrosodimethylamine	62-75-9	10.0	< 10.0	@
N-Nitrosodi-n-propylamine	621-64-7	10.0	< 10.0	
N-Nitrosodiphenylamine	86-30-6	10.0	< 10.0	
Pentachlorophenol	87-86-5	10.0	< 10.0	
Phenanthrene	85-01-8	10.0	< 10.0	
Phenol	108-95-2	10.0	< 10.0	
Pyrene	129-00-0	10.0	< 10.0	S



Lab Sample ID: 2106400-001B

Client Sample ID: Outfall 1

Analyzed: 6/15/2021 1113h

Extracted: 6/14/2021 1120h

Units: µg/L

Dilution Factor: 1

Method: EPA625.1

Surrogate	Units: µg/L	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 2,4,6-Tribromophenol		118-79-6	52.1	50.00	104	20-195	
Surr: 2-Fluorobiphenyl		321-60-8	23.7	25.00	95.0	29-154	
Surr: 2-Fluorophenol		367-12-4	40.6	50.00	81.2	10-120	
Surr: Nitrobenzene-d5		4165-60-0	32.3	25.00	129	45-174	
Surr: Phenol-d6		13127-88-3	32.1	50.00	64.1	10-120	
Surr: Terphenyl-d14		1718-51-0	32.5	25.00	130	42-164	

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! - Matrix spike recovery indicates matrix interference. The method is in control as indicated by the LCS.

@ - High RPD due to suspected sample non-homogeneity or matrix interference.

S - High LCS, MS, and MSD recoveries indicate possible bias high. Data deemed acceptable as the analyte was not observed in the field sample.

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web: www.awal-labs.com

Jennifer Osborn
Laboratory Director

Jose Rocha
QA Officer



ORGANIC ANALYTICAL REPORT

Client: Big West Oil, LLC
Project: Outfall 1 / 31702
Lab Sample ID: 2106400-001C
Client Sample ID: Outfall 1
Collection Date: 6/14/2021 920h
Received Date: 6/14/2021 1019h

Contact: Sally Kaiser

Test Code: 624.1-W

Analytical Results

VOAs PP List by GC/MS Method 624.1

Analyzed: 6/17/2021 1332h **Extracted:**
Units: µg/L **Dilution Factor:** 1 **Method:** EPA624.1

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Jennifer Osborn
Laboratory Director

Jose Rocha
QA Officer

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
1,1,1-Trichloroethane	71-55-6	2.00	< 2.00	
1,1,2,2-Tetrachloroethane	79-34-5	2.00	< 2.00	
1,1,2-Trichloroethane	79-00-5	2.00	< 2.00	
1,1-Dichloroethane	75-34-3	2.00	< 2.00	
1,1-Dichloroethene	75-35-4	2.00	< 2.00	
1,2-Dichlorobenzene	95-50-1	2.00	< 2.00	
1,2-Dichloroethane	107-06-2	2.00	< 2.00	
1,2-Dichloropropane	78-87-5	2.00	< 2.00	
1,3-Dichlorobenzene	541-73-1	2.00	< 2.00	
1,4-Dichlorobenzene	106-46-7	2.00	< 2.00	
2-Chloroethyl vinyl ether	110-75-8	5.00	< 5.00	
Acrolein	107-02-8	5.00	< 5.00	
Acrylonitrile	107-13-1	10.0	< 10.0	
Benzene	71-43-2	2.00	< 2.00	
Bromodichloromethane	75-27-4	2.00	< 2.00	
Bromoform	75-25-2	2.00	< 2.00	
Bromomethane	74-83-9	5.00	< 5.00	B
Carbon tetrachloride	56-23-5	2.00	< 2.00	
Chlorobenzene	108-90-7	2.00	< 2.00	
Chloroethane	75-00-3	2.00	< 2.00	
Chloroform	67-66-3	2.00	< 2.00	
Chloromethane	74-87-3	3.00	< 3.00	
cis-1,3-Dichloropropene	10061-01-5	2.00	< 2.00	
Dibromochloromethane	124-48-1	2.00	< 2.00	
Ethylbenzene	100-41-4	2.00	< 2.00	
Methylene chloride	75-09-2	2.00	< 2.00	
Naphthalene	91-20-3	2.00	< 2.00	
Tetrachloroethene	127-18-4	2.00	< 2.00	
Toluene	108-88-3	2.00	< 2.00	



Lab Sample ID: 2106400-001C

Client Sample ID: Outfall 1

Analyzed: 6/17/2021 1332h

Extracted:

Units: µg/L

Dilution Factor: 1

Method: EPA624.1

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
trans-1,2-Dichloroethene	156-60-5	2.00	< 2.00	
trans-1,3-Dichloropropene	10061-02-6	2.00	< 2.00	
Trichloroethene	79-01-6	2.00	< 2.00	
Vinyl chloride	75-01-4	1.00	< 1.00	

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Surrogate	Units: µg/L	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 1,2-Dichloroethane-d4		17060-07-0	50.3	50.00	101	70-130	
Surr: 4-Bromofluorobenzene		460-00-4	50.6	50.00	101	80-152	
Surr: Dibromofluoromethane		1868-53-7	48.6	50.00	97.2	72-135	
Surr: Toluene-d8		2037-26-5	48.9	50.00	97.7	70-130	

B - This analyte was also detected in the method blank below the PQL.

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Jennifer Osborn
Laboratory Director

Jose Rocha
QA Officer

WORK ORDER Summary

Work Order: **2106400**

Page 1 of 1

Client: Big West Oil, LLC

Due Date: 6/28/2021

Client ID: BIG200

Contact: Sally Kaiser

Project: Outfall 1 / 31702

QC Level: I

WO Type: Standard

Comments: cc: Danny Ryan and environmental@bigwestoil.com;

DB

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel	Storage
2106400-001A	Outfall 1	6/14/2021 0920h	6/14/2021 1019h	200.8-W	Aqueous	df - metals	1
				<i>12 SEL Analytes: SB AS BE CD CR CU PB NI SE AG TL ZN</i>			
				200.8-W-PR		df - metals	
				HG-DW-245.1		df - metals	
				HG-DW-PR		df - metals	
2106400-001B				3511-SVOA-PR		semi	5
				625.1-W-3511		semi	
				<i>Test Group: 625.1-W-3511-PP; # of Analytes: 57 / # of Surr: 6</i>			
2106400-001C				624.1-W		VOCFridge	3
				<i>Test Group: 624.1-W-PP; # of Analytes: 33 / # of Surr: 4</i>			
2106400-001D				3510-PEST-PR		df - pest/pcb	
				608.3-W		df - pest/pcb	
				<i>Test Group: 608.3-W-PP; # of Analytes: 25 / # of Surr: 2</i>			
2106400-001E				TDS-W-2540C		df - tss/tds	1
				TSS-W-2540D		df - tss/tds	
2106400-001F				COD-HACH8000		df - cod	

and sally.kaiser@bigwestoil.com



American West Analytical Laboratories
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 www.awal-labs.com

CHAIN OF CUSTODY

2106400

All analysis will be conducted using NELAP accredited methods and all data will be reported using AWAL's standard analyte lists and reporting limits (PQL) unless specifically requested otherwise on this Chain of Custody and/or attached documentation.

Page _____ of _____

Client: Big West Oil LLC
 Address: 333 W. Center St.
 City, State, Zip: NSL, UTAH 84054
 Contact: Sally Kaiser & Danny Ryan
 Phone #: 801-580-0184 Cell #: _____
 ← E-mail: environmental@bigwestoil.com
 Project Name: HPD OUTFALL I
 Project #: _____
 PO #: 31702
 Sampler Name: Levi Warren

QC Level:		Turn Around Time:		Rush sets received after 4:00 pm are considered received on the next business day.		Due Date:										
1	2	2+	3	3+	1	2	3	4	5	Std	06/28	21				
15	# of Containers	Sample Matrix	HEAVY METALS	TOXIC TOTAL ORGANICS	TDS	TSS	COD	<input type="checkbox"/> Report down to the MDL <input type="checkbox"/> Include EDD: <input type="checkbox"/> Lab Filter for: <input type="checkbox"/> Field Filtered For: For Compliance With: <input type="checkbox"/> NELAP <input type="checkbox"/> RCRA <input type="checkbox"/> CWA <input type="checkbox"/> SDWA <input type="checkbox"/> ELAP/AZLA <input type="checkbox"/> NLLAP <input type="checkbox"/> Non-Compliance <input checked="" type="checkbox"/> Other: <u>UPDES</u> Known Hazards & Sample Comments	Unless other arrangements have been made, signed reports will be emailed by 5:00 pm on the day they are due. Laboratory Use Only COC Tape Was: 1 Present on Outer Package Y N <u>NA</u> 2 Unbroken on Outer Package Y N <u>NA</u> 3 Present on Sample Y N <u>NA</u> 4 Unbroken on Sample Y N <u>NA</u> Samples Were: 1 Shipped or hand delivered <u>Y</u> 2 Ambient or Chilled <u>Y</u> 3 Temperature <u>3.9</u> °C 4 Received Intact Y N 5 Properly Preserved Y N Checked at bench 6 Received Within Holding Times Y N Sample Labels and COC Record Match? Y N							
									OUTFALL 1	6/14/21	9:20 AM	X	X	X	X	X

Relinquished by: <u>Levi Warren</u> Signature: _____ Date: <u>6/14/21</u> Time: <u>10:19</u>	Received by: <u>Denise Brown</u> Signature: _____ Date: <u>6/14/21</u> Time: <u>10:19</u>
Relinquished by: _____ Signature: _____ Date: _____ Time: _____	Received by: _____ Signature: _____ Date: _____ Time: _____
Relinquished by: _____ Signature: _____ Date: _____ Time: _____	Received by: _____ Signature: _____ Date: _____ Time: _____

Special Instructions:

By signing this Chain of Custody you are agreeing to permit AWAL to subcontract any analyses not normally performed at AWAL.

Receipt Condition and Preservation Check Sheet

Lab Set ID: 2106400
 pH Lot #: 6700

Samples Were: <input type="checkbox"/> Shipped By: <input checked="" type="checkbox"/> Hand Delivered <input type="checkbox"/> Ambient <input checked="" type="checkbox"/> Chilled Temperature <u>3.9</u> °C	Received Within Hold: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A Notes:	Received Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A Notes:
COC Tape Was: Present on Outer Package: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A Unbroken on Outer Package: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A Present on Sample: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A Unbroken on Sample: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Properly Preserved: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Checked at Bench Notes:	Sample Labels and COC Record Match? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Notes:

Sample Set Extension and pH

Analysis	Preservative	-001																	
Ammonia	pH < 2 H ₂ SO ₄																		
COD	pH < 2 H ₂ SO ₄	yes																	
Cyanide	pH > 10 NaOH																		
Metals	pH < 2 HNO ₃	yes																	
NO ₂ & NO ₃	pH < 2 H ₂ SO ₄																		
O & G	pH < 2 HCL																		
Phenols	pH < 2 H ₂ SO ₄																		
Sulfide	pH > 9 NaOH, ZnAC																		
TKN	pH < 2 H ₂ SO ₄																		
T PO ₄	pH < 2 H ₂ SO ₄																		
Cr VI+	pH > 9 (NH ₄) ₂ SO ₄																		

- * The sample required additional preservative upon receipt.
- + The sample was received unpreserved.
- ▲ The sample was received unpreserved and therefore preserved upon receipt.
- # The sample pH was unadjustable to a pH < 2 due to the sample matrix.
- The sample pH was unadjustable to a pH > ____ due to the sample matrix interference.



Sally Kaiser
Big West Oil, LLC
333 West Center
North Salt Lake, UT 84054
TEL: (801) 296-7732

RE: Monthly Outfall #1 Effluent Testing

Dear Sally Kaiser:

Lab Set ID: 2107421

3440 South 700 West
Salt Lake City, UT 84119

American West Analytical Laboratories received sample(s) on 7/16/2021 for the analyses presented in the following report.

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American West Analytical Laboratories (AWAL) is accredited by The National Environmental Laboratory Accreditation Program (NELAP) in Utah and Texas; and is state accredited in Colorado, Idaho, New Mexico, Wyoming, and Missouri.

All analyses were performed in accordance to the NELAP protocols unless noted otherwise. Accreditation scope documents are available upon request. If you have any questions or concerns regarding this report please feel free to call.

Jennifer Osborn
Laboratory Director

Jose Rocha
QA Officer

The abbreviation "Surr" found in organic reports indicates a surrogate compound that is intentionally added by the laboratory to determine sample injection, extraction, and/or purging efficiency. The "Reporting Limit" found on the report is equivalent to the practical quantitation limit (PQL). This is the minimum concentration that can be reported by the method referenced and the sample matrix. The reporting limit must not be confused with any regulatory limit. Analytical results are reported to three significant figures for quality control and calculation purposes.

Thank You,

Approved by:

Jennifer Osborn
Digitally signed by
Jennifer Osborn
DN: cn=Jennifer Osborn,
o=AWAL, ou=Organics,
email=jenn@awal-labs.
com, c=US
Date: 2021.08.02
11:48:03 -06'00'

Laboratory Director or designee

Sample(s) were subcontracted for the following analyses:

WET



INORGANIC ANALYTICAL REPORT

Client: Big West Oil, LLC **Contact:** Sally Kaiser
Project: Monthly Outfall #1 Effluent Testing
Lab Sample ID: 2107421-001
Client Sample ID: Outfall Samples
Collection Date: 7/16/2021 836h
Received Date: 7/16/2021 946h

Analytical Results

TOTAL METALS

3440 South 700 West
Salt Lake City, UT 84119

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Jennifer Osborn
Laboratory Director

Jose Rocha
QA Officer

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Antimony	mg/L	7/16/2021 1344h	7/19/2021 2035h	E200.8	0.00400	< 0.00400	
Arsenic	mg/L	7/16/2021 1344h	7/19/2021 1430h	E200.8	0.00200	0.0280	
Beryllium	mg/L	7/16/2021 1344h	7/19/2021 1430h	E200.8	0.00200	< 0.00200	
Cadmium	mg/L	7/16/2021 1344h	7/19/2021 1430h	E200.8	0.000500	< 0.000500	
Chromium	mg/L	7/16/2021 1344h	7/19/2021 1430h	E200.8	0.00200	< 0.00200	
Copper	mg/L	7/16/2021 1344h	7/19/2021 1430h	E200.8	0.00300	< 0.00300	
Lead	mg/L	7/16/2021 1344h	7/19/2021 1430h	E200.8	0.00200	< 0.00200	
Mercury	mg/L	7/16/2021 1217h	7/16/2021 1611h	E245.1	0.0000900	< 0.0000900	
Nickel	mg/L	7/16/2021 1344h	7/19/2021 1430h	E200.8	0.00200	< 0.00200	
Selenium	mg/L	7/16/2021 1344h	7/19/2021 1430h	E200.8	0.00200	< 0.00200	
Silver	mg/L	7/16/2021 1344h	7/19/2021 1430h	E200.8	0.00200	< 0.00200	
Thallium	mg/L	7/16/2021 1344h	7/19/2021 1430h	E200.8	0.00200	< 0.00200	
Zinc	mg/L	7/16/2021 1344h	7/19/2021 1430h	E200.8	0.00600	0.00711	



INORGANIC ANALYTICAL REPORT

Client: Big West Oil, LLC **Contact:** Sally Kaiser
Project: Monthly Outfall #1 Effluent Testing
Lab Sample ID: 2107421-001
Client Sample ID: Outfall Samples
Collection Date: 7/16/2021 836h
Received Date: 7/16/2021 946h

Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Chemical Oxygen Demand	mg/L		7/21/2021 647h	HACH 8000	10.0	< 10.0	
Dissolved Oxygen	mg/L		7/16/2021 1048h	SM4500-O-G	0.500	5.36	~
pH @ 25° C	pH Units		7/16/2021 1155h	SM4500-H+B	1.00	7.91	
Total Dissolved Solids	mg/L		7/16/2021 1210h	SM2540C	20.0	7,780	
Total Suspended Solids	mg/L		7/16/2021 1500h	SM2540D	1.50	13.4	

-- The above result was not performed in accordance with NELAP requirements.

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Jennifer Osborn
Laboratory Director

Jose Rocha
QA Officer



ORGANIC ANALYTICAL REPORT

Client: Big West Oil, LLC **Contact:** Sally Kaiser
Project: Monthly Outfall #1 Effluent Testing
Lab Sample ID: 2107421-001D
Client Sample ID: Outfall Samples
Collection Date: 7/16/2021 836h
Received Date: 7/16/2021 946h

Test Code: 608.3-W

Analytical Results

Pesticides/PCBs PP List by GC/ECD Method 608.3

Analyzed: 7/20/2021 1156h **Extracted:** 7/16/2021 1110h
Units: µg/L **Dilution Factor:** 1 **Method:** EPA608

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Jennifer Osborn
Laboratory Director

Jose Rocha
QA Officer

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
4,4'-DDD	72-54-8	0.0208	< 0.0208	
4,4'-DDE	72-55-9	0.0208	< 0.0208	
4,4'-DDT	50-29-3	0.0208	< 0.0208	
Aldrin	309-00-2	0.0208	< 0.0208	
alpha-BHC	319-84-6	0.0208	< 0.0208	
Aroclor 1016	12674-11-2	0.521	< 0.521	
Aroclor 1221	11104-28-2	0.521	< 0.521	
Aroclor 1232	11141-16-5	0.521	< 0.521	
Aroclor 1242	53469-21-9	0.521	< 0.521	
Aroclor 1248	12672-29-6	0.521	< 0.521	
Aroclor 1254	11097-69-1	0.521	< 0.521	
Aroclor 1260	11096-82-5	0.521	< 0.521	
beta-BHC	319-85-7	0.0208	< 0.0208	
Chlordane, total	57-74-9	0.208	< 0.208	
delta-BHC	319-86-8	0.0208	< 0.0208	
Dieldrin	60-57-1	0.0208	< 0.0208	
Endosulfan I	959-98-8	0.0208	< 0.0208	
Endosulfan II	33213-65-9	0.0208	< 0.0208	
Endosulfan sulfate	1031-07-8	0.0208	< 0.0208	
Endrin	72-20-8	0.0208	< 0.0208	
Endrin aldehyde	7421-93-4	0.0208	< 0.0208	
gamma-BHC	58-89-9	0.0208	< 0.0208	
Heptachlor	76-44-8	0.0208	< 0.0208	
Heptachlor epoxide	1024-57-3	0.0208	< 0.0208	
Toxaphene	8001-35-2	0.260	< 0.260	

Surrogate	Units: µg/L	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: Decachlorobiphenyl		2051-24-3	0.130	0.1562	83.2	15-149	
Surr: Tetrachloro-m-xylene		877-09-8	0.0921	0.1562	58.9	10-124	



ORGANIC ANALYTICAL REPORT

Client: Big West Oil, LLC
Project: Monthly Outfall #1 Effluent Testing
Lab Sample ID: 2107421-001C
Client Sample ID: Outfall Samples
Collection Date: 7/16/2021 836h
Received Date: 7/16/2021 946h

Contact: Sally Kaiser

Test Code: 625.1-W-3511

Analytical Results

SVOA PP List by GC/MS Method 625.1/3511

Analyzed: 7/19/2021 1519h **Extracted:** 7/16/2021 1139h
Units: µg/L **Dilution Factor:** 1 **Method:** EPA625.1

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Jennifer Osborn
Laboratory Director

Jose Rocha
QA Officer

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
1,2,4-Trichlorobenzene	120-82-1	9.57	< 9.57	
1,2-Dichlorobenzene	95-50-1	9.57	< 9.57	
1,3-Dichlorobenzene	541-73-1	9.57	< 9.57	
1,4-Dichlorobenzene	106-46-7	9.57	< 9.57	
2,2'-Oxybis(1-chloropropane)	108-60-1	9.57	< 9.57	
2,4,6-Trichlorophenol	88-06-2	9.57	< 9.57	
2,4-Dichlorophenol	120-83-2	9.57	< 9.57	
2,4-Dimethylphenol	105-67-9	9.57	< 9.57	
2,4-Dinitrophenol	51-28-5	9.57	< 9.57	
2,4-Dinitrotoluene	121-14-2	9.57	< 9.57	
2,6-Dinitrotoluene	606-20-2	9.57	< 9.57	
2-Chloronaphthalene	91-58-7	9.57	< 9.57	
2-Chlorophenol	95-57-8	9.57	< 9.57	
2-Nitrophenol	88-75-5	9.57	< 9.57	
3,3'-Dichlorobenzidine	91-94-1	9.57	< 9.57	
4,6-Dinitro-2-methylphenol	534-52-1	9.57	< 9.57	
4-Bromophenyl phenyl ether	101-55-3	9.57	< 9.57	
4-Chloro-3-methylphenol	59-50-7	9.57	< 9.57	
4-Chlorophenyl phenyl ether	7005-72-3	9.57	< 9.57	
4-Nitrophenol	100-02-7	9.57	< 9.57	
Acenaphthene	83-32-9	9.57	< 9.57	
Acenaphthylene	208-96-8	9.57	< 9.57	
Anthracene	120-12-7	9.57	< 9.57	
Azobenzene	103-33-3	9.57	< 9.57	
Benz(a)anthracene	56-55-3	9.57	< 9.57	
Benzidine	92-87-5	9.57	< 9.57	
Benzo(a)pyrene	50-32-8	9.57	< 9.57	
Benzo(b)fluoranthene	205-99-2	9.57	< 9.57	
Benzo(g,h,i)perylene	191-24-2	9.57	< 9.57	



Lab Sample ID: 2107421-001C
Client Sample ID: Outfall Samples

Analyzed: 7/19/2021 1519h **Extracted:** 7/16/2021 1139h
Units: µg/L **Dilution Factor:** 1 **Method:** EPA625.1

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Salt Lake City, UT 84119

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Jennifer Osborn
Laboratory Director

Jose Rocha
QA Officer

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Benzo(k)fluoranthene	207-08-9	9.57	< 9.57	
Bis(2-chloroethoxy)methane	111-91-1	9.57	< 9.57	
Bis(2-chloroethyl) ether	111-44-4	9.57	< 9.57	
Bis(2-ethylhexyl) phthalate	117-81-7	9.57	< 9.57	
Butyl benzyl phthalate	85-68-7	9.57	< 9.57	
Chrysene	218-01-9	9.57	< 9.57	
Dibenz(a,h)anthracene	53-70-3	9.57	< 9.57	
Diethyl phthalate	84-66-2	9.57	< 9.57	
Dimethyl phthalate	131-11-3	9.57	< 9.57	
Di-n-butyl phthalate	84-74-2	9.57	< 9.57	
Di-n-octyl phthalate	117-84-0	9.57	< 9.57	
Fluoranthene	206-44-0	9.57	< 9.57	
Fluorene	86-73-7	9.57	< 9.57	
Hexachlorobenzene	118-74-1	9.57	< 9.57	
Hexachlorobutadiene	87-68-3	9.57	< 9.57	
Hexachlorocyclopentadiene	77-47-4	9.57	< 9.57	
Hexachloroethane	67-72-1	9.57	< 9.57	
Indeno(1,2,3-cd)pyrene	193-39-5	9.57	< 9.57	
Isophorone	78-59-1	9.57	< 9.57	
Naphthalene	91-20-3	9.57	< 9.57	
Nitrobenzene	98-95-3	9.57	< 9.57	
N-Nitrosodimethylamine	62-75-9	9.57	< 9.57	
N-Nitrosodi-n-propylamine	621-64-7	9.57	< 9.57	
N-Nitrosodiphenylamine	86-30-6	9.57	< 9.57	
Pentachlorophenol	87-86-5	9.57	< 9.57	
Phenanthrene	85-01-8	9.57	< 9.57	
Phenol	108-95-2	9.57	< 9.57	@
Pyrene	129-00-0	9.57	< 9.57	

Surrogate	Units: µg/L	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 2,4,6-Tribromophenol		118-79-6	39.9	47.86	83.4	20-195	
Surr: 2-Fluorobiphenyl		321-60-8	20.3	23.93	84.8	29-154	
Surr: 2-Fluorophenol		367-12-4	35.2	47.86	73.5	10-120	
Surr: Nitrobenzene-d5		4165-60-0	25.2	23.93	105	45-174	
Surr: Phenol-d6		13127-88-3	23.6	47.86	49.4	10-120	
Surr: Terphenyl-d14		1718-51-0	28.0	23.93	117	42-164	

¹ - Matrix spike recovery indicates matrix interference. The method is in control as indicated by the LCS.
@ - High RPD due to suspected sample non-homogeneity or matrix interference.



ORGANIC ANALYTICAL REPORT

Client: Big West Oil, LLC
Project: Monthly Outfall #1 Effluent Testing
Lab Sample ID: 2107421-001B
Client Sample ID: Outfall Samples
Collection Date: 7/16/2021 836h
Received Date: 7/16/2021 946h

Contact: Sally Kaiser

Test Code: 624.1-W

Analytical Results

VOAs PP List by GC/MS Method 624.1

Analyzed: 7/19/2021 831h **Extracted:**
Units: µg/L **Dilution Factor:** 1 **Method:** EPA624.1

3440 South 700 West
Salt Lake City, UT 84119

Phone: (801) 263-8686
 Toll Free: (888) 263-8686
 Fax: (801) 263-8687
 e-mail: awal@awal-labs.com

web: www.awal-labs.com

Jennifer Osborn
 Laboratory Director

Jose Rocha
 QA Officer

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
1,1,1-Trichloroethane	71-55-6	2.00	< 2.00	
1,1,2,2-Tetrachloroethane	79-34-5	2.00	< 2.00	
1,1,2-Trichloroethane	79-00-5	2.00	< 2.00	
1,1-Dichloroethane	75-34-3	2.00	< 2.00	
1,1-Dichloroethene	75-35-4	2.00	< 2.00	
1,2-Dichlorobenzene	95-50-1	2.00	< 2.00	
1,2-Dichloroethane	107-06-2	2.00	< 2.00	
1,2-Dichloropropane	78-87-5	2.00	< 2.00	
1,3-Dichlorobenzene	541-73-1	2.00	< 2.00	
1,4-Dichlorobenzene	106-46-7	2.00	< 2.00	
2-Chloroethyl vinyl ether	110-75-8	5.00	< 5.00	
Acrolein	107-02-8	5.00	< 5.00	
Acrylonitrile	107-13-1	10.0	< 10.0	
Benzene	71-43-2	2.00	6.72	
Bromodichloromethane	75-27-4	2.00	< 2.00	
Bromoform	75-25-2	2.00	< 2.00	
Bromomethane	74-83-9	5.00	< 5.00	
Carbon tetrachloride	56-23-5	2.00	< 2.00	
Chlorobenzene	108-90-7	2.00	< 2.00	
Chloroethane	75-00-3	2.00	< 2.00	
Chloroform	67-66-3	2.00	< 2.00	
Chloromethane	74-87-3	3.00	< 3.00	
cis-1,3-Dichloropropene	10061-01-5	2.00	< 2.00	
Dibromochloromethane	124-48-1	2.00	< 2.00	
Ethylbenzene	100-41-4	2.00	< 2.00	
Methylene chloride	75-09-2	2.00	< 2.00	
Naphthalene	91-20-3	2.00	< 2.00	
Tetrachloroethene	127-18-4	2.00	< 2.00	
Toluene	108-88-3	2.00	7.91	



Lab Sample ID: 2107421-001B
Client Sample ID: Outfall Samples

Analyzed: 7/19/2021 831h **Extracted:**
Units: µg/L **Dilution Factor:** 1 **Method:** EPA624.1

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
trans-1,2-Dichloroethene	156-60-5	2.00	< 2.00	
trans-1,3-Dichloropropene	10061-02-6	2.00	< 2.00	
Trichloroethene	79-01-6	2.00	< 2.00	
Vinyl chloride	75-01-4	1.00	< 1.00	

3440 South 700 West
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 e-mail: awal@awal-labs.com

web: www.awal-labs.com

Jennifer Osborn
 Laboratory Director

Jose Rocha
 QA Officer

Surrogate	Units: µg/L	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 1,2-Dichloroethane-d4		17060-07-0	48.5	50.00	96.9	70-130	
Surr: 4-Bromofluorobenzene		460-00-4	50.7	50.00	101	80-152	
Surr: Dibromofluoromethane		1868-53-7	47.2	50.00	94.5	72-135	
Surr: Toluene-d8		2037-26-5	50.0	50.00	100	70-130	

¹ - Matrix spike recovery indicates matrix interference. The method is in control as indicated by the LCS.

WORK ORDER Summary

Work Order: **2107421**

Page 1 of 1

Client: Big West Oil, LLC

Due Date: 8/2/2021

Client ID: BIG200

Contact: Sally Kaiser

Project: Monthly Outfall #1 Effluent Testing

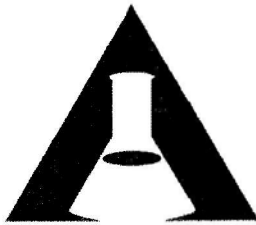
QC Level: I

WO Type: Standard

Comments: Sample for WET testing sent to W.E.T. in American Fork. cc Beau Stander;

K

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel	Storage				
2107421-001A	Outfall Samples	7/16/2021 0836h	7/16/2021 0946h	200.8-W	Aqueous	<input checked="" type="checkbox"/>	DF-Metals	1			
				<i>12 SEL Analytes: SB AS BE CD CR CU PB NI SE AG TL ZN</i>							
				200.8-W-PR		<input type="checkbox"/>	DF-Metals				
				HG-DW-245.1		<input type="checkbox"/>	DF-Metals				
				HG-DW-PR		<input type="checkbox"/>	DF-Metals				
2107421-001B				624.1-W		<input checked="" type="checkbox"/>	VOCFridge	3			
				<i>Test Group: 624.1-W-PP; # of Analytes: 33 / # of Surr: 4</i>							
2107421-001C				3511-SVOA-PR		<input type="checkbox"/>	Walkin-SVOC	5			
				625.1-W-3511		<input checked="" type="checkbox"/>	Walkin-SVOC				
				<i>Test Group: 625.1-W-3511-PP; # of Analytes: 57 / # of Surr: 6</i>							
2107421-001D				3510-PEST-PR		<input type="checkbox"/>	Walkin-Pest/PCB	2			
				608.3-W		<input checked="" type="checkbox"/>	Walkin-Pest/PCB				
				<i>Test Group: 608.3-W-PP; # of Analytes: 25 / # of Surr: 2</i>							
2107421-001E				TDS-W-2540C		<input type="checkbox"/>	Walkin-TDS/TSS	1			
				TSS-W-2540D		<input type="checkbox"/>	Walkin-TDS/TSS				
2107421-001F				PH-4500H+B		<input type="checkbox"/>	DF-pH				
2107421-001G				COD-HACH8000		<input type="checkbox"/>	DF-COD				
2107421-001H				DO-4500OG		<input type="checkbox"/>	DF-DO				
2107421-001I				OUTSIDE LAB		<input type="checkbox"/>	WET	2			



**AMERICAN WEST
ANALYTICAL LABORATORIES**

3440 S. 700 W. SALT LAKE CITY, UT 84119
 PHONE # (801) 263-8686 TOLL FREE # (888) 263-8686
 FAX # (801) 263-8687 EMAIL AWAL@AWAL-LABS.COM

WWW.AWAL-LABS.COM

CHAIN OF CUSTODY

ALL ANALYSIS WILL BE CONDUCTED USING NELAP ACCREDITED METHODS AND ALL DATA WILL BE REPORTED USING AWAL'S STANDARD ANALYTE LISTS AND REPORTING LIMITS (PQL) UNLESS SPECIFICALLY REQUESTED OTHERWISE ON THIS CHAIN OF CUSTODY AND/OR ATTACHED DOCUMENTATION.

2107421
 AWAL LAB SAMPLE SET #
 PAGE _____ OF _____

CLIENT: **Big West Oil, LLC**
 ADDRESS: **333 West Center**
North Salt Lake, UT 84054
 CONTACT: **Sally Kaiser, Beau Stander**
 PHONE #: **801-296-7716** CELL #: _____
 EMAIL: **sally.kaiser@bigwesyoil.com; beau.stander@bigwestoil.com**
 PROJECT NAME: **Monthly Outfall #1 Effluent Testing**
 PROJECT #: _____
 PO #: _____
 SAMPLER NAME: **Levi Warren**

QC Level: 1		Turn Around Time: Standard		Unless other arrangements have been made, signed reports will be emailed by 5:00 pm on the day they are due.		DUE DATE: 8/21/21											
# OF CONTAINERS SAMPLE MATRIX PP 13 metals 200.7/200.8/245.1 TTO VOCs 624 TTO SVOCs 625 TTO Pesticide/PCBs 608 TDS, TSS, pH COD DO* Quarterly WET testing 2 gallons shipped overnight to TRE		<input type="checkbox"/> REPORT DOWN TO THE MDL <input type="checkbox"/> INCLUDE EDD: <input type="checkbox"/> LAB FILTER FOR: <input type="checkbox"/> FIELD FILTERED FOR:		FOR COMPLIANCE WITH: <input type="checkbox"/> NELAP <input type="checkbox"/> RCRA <input checked="" type="checkbox"/> CWA <input type="checkbox"/> SDWA <input type="checkbox"/> ELAP / A2LA <input type="checkbox"/> NLLAP <input type="checkbox"/> NON-COMPLIANCE <input type="checkbox"/> OTHER:		LABORATORY USE ONLY SAMPLES WERE: 1 SHIPPED OR HAND DELIVERED 2 AMBIENT OR CHILLED 3 TEMPERATURE 1.9 °C 4 RECEIVED BROKEN/LEAKING (IMPROPERLY SEALED) Y N 5 PROPERLY PRESERVED Y N CHECKED AT BENCH 6 RECEIVED WITHIN HOLDING TIMES Y N											
		KNOWN HAZARDS & SAMPLE COMMENTS		COC TAPE WAS: 1 PRESENT ON OUTER PACKAGE Y N NA 2 UNBROKEN ON OUTER PACKAGE Y N NA 3 PRESENT ON SAMPLE Y N NA 4 UNBROKEN ON SAMPLE Y N NA DISCREPANCIES BETWEEN SAMPLE LABELS AND COC RECORD? Y N													
SAMPLE ID:	DATE SAMPLED	TIME SAMPLED	# OF CONTAINERS	W	X	X	X	X	X	X	X	X	X	X	X	X	X
1	2	3	4	5	6	7	8	9	10	11	12						

RELINQUISHED BY: SIGNATURE <i>Levi Warren</i>	DATE: 7/16/21	RECEIVED BY: SIGNATURE <i>[Signature]</i>	DATE: 7/16/21	SPECIAL INSTRUCTIONS: DO to be gathered in a BOD bottle with zero headspace put on ice and and delivered to the lab immediately
PRINT NAME: Levi Warren	TIME: 9:46	PRINT NAME: Aimee Rust	TIME: 9:46	
RELINQUISHED BY: SIGNATURE	DATE:	RECEIVED BY: SIGNATURE	DATE:	
PRINT NAME:	TIME:	PRINT NAME:	TIME:	
RELINQUISHED BY: SIGNATURE	DATE:	RECEIVED BY: SIGNATURE	DATE:	
PRINT NAME:	TIME:	PRINT NAME:	TIME:	

Lab Set ID: 210 7421

pH Lot #: 6200

Preservation Check Sheet

Sample Set Extension and pH

Analysis	Preservative	1																
Ammonia	pH <2 H ₂ SO ₄																	
COD	pH <2 H ₂ SO ₄	Yes																
Cyanide	pH >10 NaOH																	
Metals	pH <2 HNO ₃	Yes																
NO ₂ /NO ₃	pH <2 H ₂ SO ₄																	
O & G	pH <2 HCL																	
Phenols	pH <2 H ₂ SO ₄																	
Sulfide	pH >9 NaOH, ZnAC																	
TKN	pH <2 H ₂ SO ₄																	
T PO ₄	pH <2 H ₂ SO ₄																	
Cr VI+	pH >9 (NH ₄) ₂ SO ₄																	

- Procedure:
- 1) Pour a small amount of sample in the sample lid
 - 2) Pour sample from lid gently over wide range pH paper
 - 3) **Do Not** dip the pH paper in the sample bottle or lid
 - 4) If sample is not preserved, properly list its extension and receiving pH in the appropriate column above
 - 5) Flag COC, notify client if requested
 - 6) Place client conversation on COC
 - 7) Samples may be adjusted

Frequency: All samples requiring preservation

- * The sample required additional preservative upon receipt.
- + The sample was received unpreserved.
- ▲ The sample was received unpreserved and therefore preserved upon receipt.
- # The sample pH was unadjustable to a pH < 2 due to the sample matrix.
- The sample pH was unadjustable to a pH > ____ due to the sample matrix interference.



3/17/2022

Work Order: 22C0326
Project: Analytical Utilities, UPDES Outfall

Big West Oil LLC
Attn: Beau Stander
333 West Center Street
North Salt Lake, UT 84054

Client Service Contact: 801.262.7299

The analyses presented on this report were performed in accordance with the National Environmental Laboratory Accreditation Program (NELAP) unless noted in the comments, flags, or case narrative. If the report is to be used for regulatory compliance, it should be presented in its entirety, and not be altered.



Approved By:

Mark Broadhead, Project Manager

Certificate of Analysis

Big West Oil LLC
Beau Stander
333 West Center Street
North Salt Lake, UT 84054

PO#: **40339, Line 3**
Receipt: **3/3/22 14:10 @ 3.4 °C**
Date Reported: **3/17/2022**
Project Name: **Analytical Utilities, UPDES Outfall**

Sample ID: **Outfall #1 UPDES**

Matrix: **Water**

Lab ID: **22C0326-01**

Date Sampled: **3/3/22 9:30**

Sampled By: **Levi Warren**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Minimum Detection Limit</u>	<u>Method</u>	<u>Preparation Date/Time</u>	<u>Analysis Date/Time</u>	<u>Flag(s)</u>
Inorganic							
Chemical Oxygen Demand	ND	mg/L	10	Hach 8000	3/10/22	3/11/22	
Dissolved Oxygen	9.1	mg/L	1.0	EPA 360.1	3/4/22 11:10	3/4/22 11:16	SPH
pH	7.9	pH Units	0.1	SM 4500 H-B	3/3/22 16:01	3/3/22 16:40	SPH
Phosphate, ortho as P	0.01	mg/L	0.01	SM 4500 P-E	3/3/22 19:07	3/3/22 19:07	
Phosphorus, Total as P	0.22	mg/L	0.01	SM 4500 P-E/F	3/8/22	3/9/22	
Total Dissolved Solids (TDS)	844	mg/L	20	SM 2540 C	3/9/22	3/9/22	
Total Suspended Solids (TSS)	24	mg/L	4	SM 2540 D	3/3/22	3/3/22	
Metals							
Antimony, Total	ND	mg/L	0.0005	EPA 200.8	3/7/22	3/10/22	
Arsenic, Total	0.0020	mg/L	0.0005	EPA 200.8	3/7/22	3/10/22	
Beryllium, Total	ND	mg/L	0.0005	EPA 200.8	3/7/22	3/10/22	
Cadmium, Total	ND	mg/L	0.0002	EPA 200.8	3/7/22	3/10/22	
Chromium, Total	0.0017	mg/L	0.0005	EPA 200.8	3/7/22	3/10/22	
Copper, Total	0.0658	mg/L	0.0010	EPA 200.8	3/7/22	3/10/22	
Lead, Total	0.0006	mg/L	0.0005	EPA 200.8	3/7/22	3/10/22	
Mercury, Total	ND	mg/L	0.0002	EPA 245.1	3/15/22	3/16/22	
Nickel, Total	0.0007	mg/L	0.0005	EPA 200.8	3/7/22	3/10/22	
Selenium, Total	ND	mg/L	0.0005	EPA 200.8	3/7/22	3/10/22	
Silver, Total	ND	mg/L	0.0005	EPA 200.8	3/7/22	3/10/22	
Thallium, Total	ND	mg/L	0.0002	EPA 200.8	3/7/22	3/10/22	
Zinc, Total	ND	mg/L	0.01	EPA 200.8	3/7/22	3/10/22	
Pesticides							
4,4'-DDD	ND	ug/L	0.2	EPA 608	3/3/22	3/4/22	
4,4'-DDE	ND	ug/L	0.1	EPA 608	3/3/22	3/4/22	
4,4'-DDT	ND	ug/L	0.2	EPA 608	3/3/22	3/4/22	
Aldrin	ND	ug/L	0.2	EPA 608	3/3/22	3/4/22	
alpha-BHC	ND	ug/L	0.1	EPA 608	3/3/22	3/4/22	
alpha-Chlordane	ND	ug/L	0.1	EPA 608	3/3/22	3/4/22	
beta-BHC	ND	ug/L	0.1	EPA 608	3/3/22	3/4/22	
delta-BHC	ND	ug/L	0.1	EPA 608	3/3/22	3/4/22	
Dieldrin	ND	ug/L	0.1	EPA 608	3/3/22	3/4/22	
Endosulfan I	ND	ug/L	0.1	EPA 608	3/3/22	3/4/22	
Endosulfan II	ND	ug/L	0.2	EPA 608	3/3/22	3/4/22	
Endosulfan sulfate	ND	ug/L	0.2	EPA 608	3/3/22	3/4/22	
Endrin	ND	ug/L	0.1	EPA 608	3/3/22	3/4/22	
Endrin aldehyde	ND	ug/L	0.2	EPA 608	3/3/22	3/4/22	
Endrin ketone	ND	ug/L	0.2	EPA 608	3/3/22	3/4/22	
gamma-Chlordane	ND	ug/L	0.1	EPA 608	3/3/22	3/4/22	
Heptachlor	ND	ug/L	0.1	EPA 608	3/3/22	3/4/22	
Heptachlor epoxide	ND	ug/L	0.1	EPA 608	3/3/22	3/4/22	
Lindane	ND	ug/L	0.05	EPA 608	3/3/22	3/4/22	
Methoxychlor	ND	ug/L	1.0	EPA 608	3/3/22	3/4/22	
PCB-1016	ND	ug/L	2.0	EPA 608	3/3/22	3/4/22	

Certificate of Analysis

Big West Oil LLC
Beau Stander
333 West Center Street
North Salt Lake, UT 84054

PO#: **40339, Line 3**
Receipt: **3/3/22 14:10 @ 3.4 °C**
Date Reported: **3/17/2022**
Project Name: **Analytical Utilities, UPDES Outfall**

Sample ID: **Outfall #1 UPDES (cont.)**

Matrix: **Water**

Lab ID: **22C0326-01**

Date Sampled: **3/3/22 9:30**

Sampled By: **Levi Warren**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Minimum Detection Limit</u>	<u>Method</u>	<u>Preparation Date/Time</u>	<u>Analysis Date/Time</u>	<u>Flag(s)</u>
Pesticides (cont.)							
PCB-1221	ND	ug/L	2.0	EPA 608	3/3/22	3/4/22	
PCB-1232	ND	ug/L	2.0	EPA 608	3/3/22	3/4/22	
PCB-1242	ND	ug/L	2.0	EPA 608	3/3/22	3/4/22	
PCB-1248	ND	ug/L	2.0	EPA 608	3/3/22	3/4/22	
PCB-1254	ND	ug/L	2.0	EPA 608	3/3/22	3/4/22	
PCB-1260	ND	ug/L	2.0	EPA 608	3/3/22	3/4/22	
Toxaphene	ND	ug/L	2.0	EPA 608	3/3/22	3/4/22	
Semi-Volatile Compounds							
1,2,4-Trichlorobenzene	ND	ug/L	1	EPA 625	3/5/22	3/8/22	
1,2-Dichlorobenzene	ND	ug/L	2	EPA 625	3/5/22	3/8/22	
1,2-Diphenylhydrazine	ND	ug/L	2	EPA 625	3/5/22	3/8/22	
1,3-Dichlorobenzene	ND	ug/L	1	EPA 625	3/5/22	3/8/22	
1,4-Dichlorobenzene	ND	ug/L	0.7	EPA 625	3/5/22	3/8/22	
2,4,6-Trichlorophenol	ND	ug/L	1	EPA 625	3/5/22	3/8/22	
2,4-Dichlorophenol	ND	ug/L	0.9	EPA 625	3/5/22	3/8/22	
2,4-Dimethylphenol	ND	ug/L	1	EPA 625	3/5/22	3/8/22	
2,4-Dinitrophenol	ND	ug/L	4	EPA 625	3/5/22	3/8/22	
2,4-Dinitrotoluene	ND	ug/L	0.8	EPA 625	3/5/22	3/8/22	
2,6-Dinitrotoluene	ND	ug/L	0.9	EPA 625	3/5/22	3/8/22	
2-Chloronaphthalene	ND	ug/L	0.6	EPA 625	3/5/22	3/8/22	
2-Chlorophenol	ND	ug/L	2	EPA 625	3/5/22	3/8/22	
2-Nitrophenol	ND	ug/L	2	EPA 625	3/5/22	3/8/22	
3,3'-Dichlorobenzidine	ND	ug/L	2	EPA 625	3/5/22	3/8/22	
4,6-Dinitro-2-methylphenol	ND	ug/L	1	EPA 625	3/5/22	3/8/22	
4-Bromophenyl phenyl ether	ND	ug/L	1	EPA 625	3/5/22	3/8/22	
4-Chloro-3-methylphenol	ND	ug/L	2	EPA 625	3/5/22	3/8/22	
4-Chlorophenyl Phenyl Ether	ND	ug/L	0.6	EPA 625	3/5/22	3/8/22	
4-Nitrophenol	ND	ug/L	4	EPA 625	3/5/22	3/8/22	
Acenaphthene	ND	ug/L	2	EPA 625	3/5/22	3/8/22	
Acenaphthylene	ND	ug/L	0.5	EPA 625	3/5/22	3/8/22	
Anthracene	ND	ug/L	0.7	EPA 625	3/5/22	3/8/22	
Azobenzene	ND	ug/L	2	EPA 625	3/5/22	3/8/22	
Benzidine	ND	ug/L	2	EPA 625	3/5/22	3/8/22	
Benzo (a) anthracene	ND	ug/L	0.9	EPA 625	3/5/22	3/8/22	
Benzo (a) pyrene	ND	ug/L	0.9	EPA 625	3/5/22	3/8/22	
Benzo (b) fluoranthene	ND	ug/L	1	EPA 625	3/5/22	3/8/22	
Benzo (g,h,i) perylene	ND	ug/L	2	EPA 625	3/5/22	3/8/22	
Benzo (k) fluoranthene	ND	ug/L	1	EPA 625	3/5/22	3/8/22	
Bis (2-chloroethoxy) Methane	ND	ug/L	0.7	EPA 625	3/5/22	3/8/22	
Bis (2-chloroethyl) Ether	ND	ug/L	1	EPA 625	3/5/22	3/8/22	
Bis (2-chloroisopropyl) Ether	ND	ug/L	1	EPA 625	3/5/22	3/8/22	J-LOW
Bis (2-ethylhexyl) Phthalate	ND	ug/L	5	EPA 625	3/5/22	3/8/22	
Butylbenzylphthalate	ND	ug/L	0.6	EPA 625	3/5/22	3/8/22	

Certificate of Analysis

Big West Oil LLC
Beau Stander
333 West Center Street
North Salt Lake, UT 84054

PO#: **40339, Line 3**
Receipt: **3/3/22 14:10 @ 3.4 °C**
Date Reported: **3/17/2022**
Project Name: **Analytical Utilities, UPDES Outfall**

Sample ID: **Outfall #1 UPDES (cont.)**

Matrix: **Water**

Lab ID: **22C0326-01**

Date Sampled: **3/3/22 9:30**

Sampled By: **Levi Warren**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Minimum Detection Limit</u>	<u>Method</u>	<u>Preparation Date/Time</u>	<u>Analysis Date/Time</u>	<u>Flag(s)</u>
Semi-Volatile Compounds (cont.)							
Chrysene	ND	ug/L	2	EPA 625	3/5/22	3/8/22	
Dibenzo (a,h) anthracene	ND	ug/L	1	EPA 625	3/5/22	3/8/22	
Diethylphthalate	ND	ug/L	0.6	EPA 625	3/5/22	3/8/22	
Dimethyl phthalate	ND	ug/L	0.8	EPA 625	3/5/22	3/8/22	
Di-n-butylphthalate	ND	ug/L	3	EPA 625	3/5/22	3/8/22	
Di-n-Octylphthalate	ND	ug/L	0.5	EPA 625	3/5/22	3/8/22	
Fluoranthene	ND	ug/L	0.6	EPA 625	3/5/22	3/8/22	
Fluorene	ND	ug/L	0.7	EPA 625	3/5/22	3/8/22	J-LOW
Hexachlorobenzene	ND	ug/L	1	EPA 625	3/5/22	3/8/22	
Hexachlorobutadiene	ND	ug/L	0.5	EPA 625	3/5/22	3/8/22	
Hexachlorocyclopentadiene	ND	ug/L	0.6	EPA 625	3/5/22	3/8/22	
Hexachloroethane	ND	ug/L	0.7	EPA 625	3/5/22	3/8/22	
Indeno (1,2,3-cd) pyrene	ND	ug/L	2	EPA 625	3/5/22	3/8/22	
Isophorone	ND	ug/L	1	EPA 625	3/5/22	3/8/22	
Naphthalene	ND	ug/L	0.9	EPA 625	3/5/22	3/8/22	
Nitrobenzene	ND	ug/L	1	EPA 625	3/5/22	3/8/22	
N-Nitrosodimethylamine	ND	ug/L	0.6	EPA 625	3/5/22	3/8/22	
N-Nitrosodi-n-propylamine	ND	ug/L	0.8	EPA 625	3/5/22	3/8/22	
N-Nitrosodiphenylamine	ND	ug/L	1	EPA 625	3/5/22	3/8/22	
Pentachlorophenol	ND	ug/L	4	EPA 625	3/5/22	3/8/22	
Phenanthrene	ND	ug/L	0.5	EPA 625	3/5/22	3/8/22	
Phenol	ND	ug/L	1	EPA 625	3/5/22	3/8/22	
Pyrene	ND	ug/L	0.6	EPA 625	3/5/22	3/8/22	
Volatile Organic Compounds							
1,1,1-Trichloroethane	ND	ug/L	2	EPA 624	3/5/22	3/5/22	
1,1,2,2-Tetrachloroethane	ND	ug/L	2	EPA 624	3/5/22	3/5/22	
1,1,2-Trichloroethane	ND	ug/L	2	EPA 624	3/5/22	3/5/22	
1,1-Dichloroethane	ND	ug/L	2	EPA 624	3/5/22	3/5/22	
1,1-Dichloroethene	ND	ug/L	2	EPA 624	3/5/22	3/5/22	
1,2,4-Trichlorobenzene	ND	ug/L	2	EPA 624	3/5/22	3/5/22	
1,2-Dichlorobenzene	ND	ug/L	2	EPA 624	3/5/22	3/5/22	
1,2-Dichloroethane	ND	ug/L	2	EPA 624	3/5/22	3/5/22	
1,2-Dichloropropane	ND	ug/L	2	EPA 624	3/5/22	3/5/22	
1,3-Dichlorobenzene	ND	ug/L	2	EPA 624	3/5/22	3/5/22	
1,4-Dichlorobenzene	ND	ug/L	2	EPA 624	3/5/22	3/5/22	
2-Chloroethyl vinyl ether	ND	ug/L	2	EPA 624	3/5/22	3/5/22	
Acrolein	ND	ug/L	2	EPA 624	3/5/22	3/5/22	
Acrylonitrile	ND	ug/L	3	EPA 624	3/5/22	3/5/22	
Benzene	ND	ug/L	2	EPA 624	3/5/22	3/5/22	
Bromodichloromethane	ND	ug/L	2	EPA 624	3/5/22	3/5/22	
Bromoform	ND	ug/L	5	EPA 624	3/5/22	3/5/22	
Bromomethane	ND	ug/L	2	EPA 624	3/5/22	3/5/22	
Carbon Tetrachloride	ND	ug/L	2	EPA 624	3/5/22	3/5/22	

Certificate of Analysis

Big West Oil LLC
Beau Stander
333 West Center Street
North Salt Lake, UT 84054

PO#: **40339, Line 3**
Receipt: **3/3/22 14:10 @ 3.4 °C**
Date Reported: **3/17/2022**
Project Name: **Analytical Utilities, UPDES Outfall**

Sample ID: **Outfall #1 UPDES (cont.)**

Matrix: **Water**

Lab ID: **22C0326-01**

Date Sampled: **3/3/22 9:30**

Sampled By: **Levi Warren**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Minimum Detection Limit</u>	<u>Method</u>	<u>Preparation Date/Time</u>	<u>Analysis Date/Time</u>	<u>Flag(s)</u>
Volatile Organic Compounds (cont.)							
Chlorobenzene	ND	ug/L	2	EPA 624	3/5/22	3/5/22	
Chloroethane	ND	ug/L	2	EPA 624	3/5/22	3/5/22	
Chloroform	ND	ug/L	5	EPA 624	3/5/22	3/5/22	
Chloromethane	ND	ug/L	2	EPA 624	3/5/22	3/5/22	
cis-1,3-Dichloropropene	ND	ug/L	2	EPA 624	3/5/22	3/5/22	
Dibromochloromethane	ND	ug/L	2	EPA 624	3/5/22	3/5/22	
Ethylbenzene	ND	ug/L	2	EPA 624	3/5/22	3/5/22	
Hexachlorobutadiene	ND	ug/L	2	EPA 624	3/5/22	3/5/22	
Methylene Chloride	ND	ug/L	10	EPA 624	3/5/22	3/5/22	
Nitrobenzene	ND	ug/L	3	EPA 624	3/5/22	3/5/22	
Tetrachloroethene	ND	ug/L	2	EPA 624	3/5/22	3/5/22	
Toluene	ND	ug/L	2	EPA 624	3/5/22	3/5/22	
trans-1,2-Dichloroethene	ND	ug/L	2	EPA 624	3/5/22	3/5/22	
trans-1,3-Dichloropropene	ND	ug/L	2	EPA 624	3/5/22	3/5/22	
Trichloroethene	ND	ug/L	2	EPA 624	3/5/22	3/5/22	
Trichlorofluoromethane	ND	ug/L	2	EPA 624	3/5/22	3/5/22	
Vinyl Chloride	ND	ug/L	2	EPA 624	3/5/22	3/5/22	

Certificate of Analysis

Big West Oil LLC
Beau Stander
333 West Center Street
North Salt Lake, UT 84054

PO#: **40339, Line 3**
Receipt: **3/3/22 14:10 @ 3.4 °C**
Date Reported: **3/17/2022**
Project Name: **Analytical Utilities, UPDES Outfall**

Report Footnotes

Abbreviations

ND = Not detected at the corresponding Minimum Reporting Limit (MRL).
1 mg/L = one milligram per liter or 1 mg/kg = one milligram per kilogram = 1 part per million.
1 ug/L = one microgram per liter or 1 ug/kg = one microgram per kilogram = 1 part per billion.
1 ng/L = one nanogram per liter or 1 ng/kg = one nanogram per kilogram = 1 part per trillion.

Flag Descriptions

J-LOW = Estimated low due to low recovery of LCS or CCV
SPH = Sample submitted past method specified holding time.

CHAIN OF CUSTODY - SAMPLE SUBMITTAL FORM

COMPANY: Big West oil LLC
 ADDRESS: 333 W Center St
 CITY/STATE/ZIP: North Salt Lake, UT 84054
 PHONE #: 801-296-7828
 CONTACT: Beav Stander
 EMAIL: beav.stander@bigwestoil.com
 PROJECT: Analytical Utilities, UPDES Outfall
 PO Number: 40339; Line 3
 INVOICE EMAIL ADDRESS: _____

RUSH Due Date:

Standard

* Expedited turnaround subject to additional charge

QC Level

① 2 2+ 3 3+



Chemtech-Ford Laboratories
 9632 South 500 West
 Sandy, UT 84070
 Phone: 801-262-7299
 www.chemtechford.com

22C0324

Sample condition		Delivery Method	
<input checked="" type="checkbox"/> Custody Seal	<input checked="" type="checkbox"/> Correct Containers	<input type="checkbox"/> UPS	<input type="checkbox"/> USPS
<input checked="" type="checkbox"/> Container Intact	<input checked="" type="checkbox"/> Sufficient Sample Volume	<input type="checkbox"/> FedEx	<input checked="" type="checkbox"/> Chemtech-Ford Courier
<input checked="" type="checkbox"/> COC/Labels Agree	<input type="checkbox"/> Headspace Present (VOC)	<input type="checkbox"/> Walk-in	<input type="checkbox"/> Customer Courier
<input checked="" type="checkbox"/> Received on Ice	<input type="checkbox"/> Temperature Blank		
	<input checked="" type="checkbox"/> Received within Holding Time		

Lab Use Only	CLIENT SAMPLE INFORMATION			
	LOCATION / IDENTIFICATION	DATE	TIME	MATRIX
-01	1 outfall #1 UPDES	3/3/22	9:30	W

TESTS REQUESTED																
200.7 PP 13 metals 200.9/245.1	TTO VOCs 624	TTO SVOCs 625	TTO Pesticide/PCBs 608	TDS, TSS, pH	COD	DO ₄								E. Coli/Coliform (Absent/Present)	E. Coli/Coliform (Enumerated)	HPC
X	X	X	X	X	X	X										

Bottle type: M Lot #: W(3) x (5) AG
(2) Ltr. 5 min. Ag N - All client cont.

Sampled by: [print] <u>Levi Warren</u>	Sampled by: [signature] _____	ON ICE	NOT ON ICE	Temp (C°): <u>34</u>
Special Instructions: _____				
Samples received outside the EPA recommended temperature range of 0-6 C° may be rejected.				
Relinquished by: [signature] _____	Date/Time: <u>3/3/22 12:00</u>	Received by: [signature] _____	Date/Time: <u>3-3-22 12:00</u>	
Relinquished by: [signature] _____	Date/Time: <u>3-3-22 14:10</u>	Received by: [signature] _____	Date/Time: <u>3-3-22 14:10</u>	
Relinquished by: [signature] _____	Date/Time: _____	Received by: [signature] _____	Date/Time: _____	

Payment Terms are net 30 days OAC. 1.5% interest charge per month (18% per annum). Client agrees to pay collection costs and attorney's fees.



6/2/2022

Work Order: 22E1590
Project: Analytical Utilities UPDES Outfall

Big West Oil LLC
Attn: Beau Stander
333 West Center Street
North Salt Lake, UT 84054

Client Service Contact: 801.262.7299

The analyses presented on this report were performed in accordance with the National Environmental Laboratory Accreditation Program (NELAP) unless noted in the comments, flags, or case narrative. If the report is to be used for regulatory compliance, it should be presented in its entirety, and not be altered.



Approved By:

Mark Broadhead, Project Manager

Certificate of Analysis

Big West Oil LLC
Beau Stander
333 West Center Street
North Salt Lake, UT 84054

PO#: **40339, Line 3**
Receipt: **5/19/22 11:10 @ 0.4 °C**
Date Reported: **6/2/2022**
Project Name: **Analytical Utilities UPDES Outfall**

Sample ID: **Transfer Blank**

Matrix: **Water**

Date Sampled: **5/19/22 9:40**

Sampled By: **Levi Warren**

Lab ID: **22E1590-01**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Minimum Detection Limit</u>	<u>Method</u>	<u>Preparation Date/Time</u>	<u>Analysis Date/Time</u>	<u>Flag(s)</u>
Metals							
Mercury, Total	ND	ng/L	1.0	EPA 1631	5/24/22	5/25/22	

Certificate of Analysis

Big West Oil LLC
Beau Stander
333 West Center Street
North Salt Lake, UT 84054

PO#: **40339, Line 3**
Receipt: **5/19/22 11:10 @ 0.4 °C**
Date Reported: **6/2/2022**
Project Name: **Analytical Utilities UPDES Outfall**

Sample ID: **UPDES Outfall**

Matrix: **Water**

Date Sampled: **5/19/22 9:45**

Sampled By: **Levi Warren**

Lab ID: **22E1590-02**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Minimum Detection Limit</u>	<u>Method</u>	<u>Preparation Date/Time</u>	<u>Analysis Date/Time</u>	<u>Flag(s)</u>
Metals							
Mercury, Total	2.0	ng/L	1.0	EPA 1631	5/24/22	5/25/22	

Certificate of Analysis

Big West Oil LLC
Beau Stander
333 West Center Street
North Salt Lake, UT 84054

PO#: **40339, Line 3**
Receipt: **5/19/22 11:10 @ 0.4 °C**
Date Reported: **6/2/2022**
Project Name: **Analytical Utilities UPDES Outfall**

Report Footnotes

Abbreviations

ND = Not detected at the corresponding Minimum Reporting Limit (MRL).

1 mg/L = one milligram per liter or 1 mg/kg = one milligram per kilogram = 1 part per million.

1 ug/L = one microgram per liter or 1 ug/kg = one microgram per kilogram = 1 part per billion.

1 ng/L = one nanogram per liter or 1 ng/kg = one nanogram per kilogram = 1 part per trillion.

CHAIN OF CUSTODY - SAMPLE SUBMITTAL FORM

22E 1590



Chemtech-Ford Laboratories
9632 South 500 West
Sandy, UT 84070
Phone: 801-262-7299
www.chemtechford.com

COMPANY: Big West Oil LLC
 ADDRESS: 333 West Center Street
 CITY/STATE/ZIP: North Salt Lake, UT 84054
 PHONE #: 801-296-7828
 CONTACT: Beau Stander
 EMAIL: beau.stander@bigwestoil.com; environmental@bigwestoil.com
 PROJECT: Analytical Utilities, UPDES Outfall
 PO Number: 40339; Line 3
 INVOICE EMAIL ADDRESS: bwo_ap@bigwestoil.com

RUSH Due Date:
Standard

QC Level
① 2 2+ 3 3+

* Expedited turnaround subject to additional charge

Sample condition		Delivery Method	
<input checked="" type="checkbox"/> Custody Seal	<input checked="" type="checkbox"/> Correct Containers	<input type="checkbox"/> UPS	<input type="checkbox"/> USPS
<input checked="" type="checkbox"/> Container Intact	<input checked="" type="checkbox"/> Sufficient Sample Volume	<input type="checkbox"/> FedEx	<input checked="" type="checkbox"/> Chemtech-Ford Courier
<input checked="" type="checkbox"/> COC/Labels Agree	<input type="checkbox"/> Headspace Present (VOC)	<input type="checkbox"/> Walk-in	<input type="checkbox"/> Customer Courier
<input checked="" type="checkbox"/> Received on Ice	<input type="checkbox"/> Temperature Blank		
	<input checked="" type="checkbox"/> Received within Holding Time		

TESTS REQUESTED												
Low Level Hg												

Lab Use Only	CLIENT SAMPLE INFORMATION			
	LOCATION / IDENTIFICATION	DATE	TIME	MATRIX
22E/1590				
01	1 Transfer Blank	5/19/22	9:40	W
02	2 UPDES Outfall	5/19/22	9:45	W
3				
4				
5				
6				
7				
8				
9				
10				

Bottle type 2B
Lot # 1171

Sampled by: [print] <u>Levi Warren</u>	Sampled by: [signature]	ON ICE	NOT ON ICE	Temp (C°): <u>0.4</u>
Special Instructions: Samples received outside the EPA recommended temperature range of 0-6 C° may be rejected.				
Relinquished by: [signature]	Date/Time <u>5/19/22 11:10</u>	Received by: [signature] <u>Denise Bru</u>	Date/Time <u>5/19/22 11:10</u>	
Relinquished by: [signature]	Date/Time	Received by: [signature]	Date/Time	
Relinquished by: [signature]	Date/Time	Received by: [signature]	Date/Time	

Payment Terms are net 30 days OAC 1.5% interest charge per month (18% per annum). Client agrees to pay collection costs and attorney's fees.



6/2/2022

Work Order: 22E1596
Project: Analytical Utilities, UPDES Outfall

Big West Oil LLC
Attn: Beau Stander
333 West Center Street
North Salt Lake, UT 84054

Client Service Contact: 801.262.7299

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Approved By:

Mark Broadhead, Project Manager

Certificate of Analysis

Big West Oil LLC
Beau Stander
333 West Center Street
North Salt Lake, UT 84054

PO#: **40339, Line 3**
Receipt: **5/19/22 11:10 @ 0.4 °C**
Date Reported: **6/2/2022**
Project Name: **Analytical Utilities, UPDES Outfall**

Sample ID: **UPDES Outfall**
Matrix: **Water**
Date Sampled: **5/19/22 10:00**

Sampled By: **Levi Warren**

Lab ID: **22E1596-01**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Minimum Detection Limit</u>	<u>Method</u>	<u>Preparation Date/Time</u>	<u>Analysis Date/Time</u>	<u>Flag(s)</u>
Inorganic							
Chemical Oxygen Demand	10	mg/L	10	Hach 8000	5/20/22	5/23/22	
Dissolved Oxygen	7.2	mg/L	1.0	EPA 360.1	5/19/22 15:04	5/19/22 16:42	SPH
pH	7.1	pH Units	0.1	SM 4500 H-B	5/20/22 8:53	5/20/22 10:24	SPH
Total Dissolved Solids (TDS)	840	mg/L	50	SM 2540 C	5/20/22	5/20/22	
Total Suspended Solids (TSS)	ND	mg/L	4	SM 2540 D	5/19/22	5/19/22	
Metals							
Aluminum, Total	0.07	mg/L	0.05	EPA 200.7	5/27/22	5/27/22	
Antimony, Total	ND	mg/L	0.0005	EPA 200.8	5/27/22	5/27/22	
Arsenic, Total	0.0008	mg/L	0.0005	EPA 200.8	5/27/22	5/27/22	
Beryllium, Total	ND	mg/L	0.0005	EPA 200.8	5/27/22	5/27/22	
Cadmium, Total	ND	mg/L	0.0002	EPA 200.8	5/27/22	5/27/22	
Chromium, Total	0.0028	mg/L	0.0005	EPA 200.8	5/27/22	5/27/22	
Copper, Total	0.0113	mg/L	0.0010	EPA 200.8	5/27/22	5/27/22	
Iron, Total	0.02	mg/L	0.02	EPA 200.7	5/27/22	5/27/22	
Lead, Total	ND	mg/L	0.0005	EPA 200.8	5/27/22	5/27/22	
Mercury, Total	ND	mg/L	0.0002	EPA 245.1	5/20/22	5/20/22	
Nickel, Total	0.0008	mg/L	0.0005	EPA 200.8	5/27/22	5/27/22	
Selenium, Total	0.0022	mg/L	0.0005	EPA 200.8	5/27/22	5/27/22	
Silver, Total	ND	mg/L	0.0005	EPA 200.8	5/27/22	5/27/22	
Thallium, Total	ND	mg/L	0.0002	EPA 200.8	5/27/22	5/27/22	
Pesticides							
4,4'-DDD	ND	ug/L	0.2	EPA 608	5/24/22	5/31/22	
4,4'-DDE	ND	ug/L	0.1	EPA 608	5/24/22	5/31/22	
4,4'-DDT	ND	ug/L	0.2	EPA 608	5/24/22	5/31/22	
Aldrin	ND	ug/L	0.2	EPA 608	5/24/22	5/31/22	
alpha-BHC	ND	ug/L	0.1	EPA 608	5/24/22	5/31/22	
alpha-Chlordane	ND	ug/L	0.1	EPA 608	5/24/22	5/31/22	
beta-BHC	ND	ug/L	0.1	EPA 608	5/24/22	5/31/22	
delta-BHC	ND	ug/L	0.1	EPA 608	5/24/22	5/31/22	
Dieldrin	ND	ug/L	0.1	EPA 608	5/24/22	5/31/22	
Endosulfan I	ND	ug/L	0.1	EPA 608	5/24/22	5/31/22	
Endosulfan II	ND	ug/L	0.2	EPA 608	5/24/22	5/31/22	
Endosulfan sulfate	ND	ug/L	0.2	EPA 608	5/24/22	5/31/22	
Endrin	ND	ug/L	0.1	EPA 608	5/24/22	5/31/22	
Endrin aldehyde	ND	ug/L	0.2	EPA 608	5/24/22	5/31/22	
Endrin ketone	ND	ug/L	0.2	EPA 608	5/24/22	5/31/22	
gamma-Chlordane	ND	ug/L	0.1	EPA 608	5/24/22	5/31/22	
Heptachlor	ND	ug/L	0.1	EPA 608	5/24/22	5/31/22	
Heptachlor epoxide	ND	ug/L	0.1	EPA 608	5/24/22	5/31/22	
Lindane	ND	ug/L	0.05	EPA 608	5/24/22	5/31/22	
Methoxychlor	ND	ug/L	1.0	EPA 608	5/24/22	5/31/22	
PCB-1016	ND	ug/L	2.0	EPA 608	5/24/22	5/31/22	
PCB-1221	ND	ug/L	2.0	EPA 608	5/24/22	5/31/22	

Certificate of Analysis

Big West Oil LLC
Beau Stander
333 West Center Street
North Salt Lake, UT 84054

PO#: **40339, Line 3**
Receipt: **5/19/22 11:10 @ 0.4 °C**
Date Reported: **6/2/2022**
Project Name: **Analytical Utilities, UPDES Outfall**

Sample ID: **UPDES Outfall (cont.)**

Matrix: **Water**

Lab ID: **22E1596-01**

Date Sampled: **5/19/22 10:00**

Sampled By: **Levi Warren**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Minimum Detection Limit</u>	<u>Method</u>	<u>Preparation Date/Time</u>	<u>Analysis Date/Time</u>	<u>Flag(s)</u>
Pesticides (cont.)							
PCB-1232	ND	ug/L	2.0	EPA 608	5/24/22	5/31/22	
PCB-1242	ND	ug/L	2.0	EPA 608	5/24/22	5/31/22	
PCB-1248	ND	ug/L	2.0	EPA 608	5/24/22	5/31/22	
PCB-1254	ND	ug/L	2.0	EPA 608	5/24/22	5/31/22	
PCB-1260	ND	ug/L	2.0	EPA 608	5/24/22	5/31/22	
Toxaphene	ND	ug/L	2.0	EPA 608	5/24/22	5/31/22	
Semi-Volatile Compounds							
1,2,4-Trichlorobenzene	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
1,2-Dichlorobenzene	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
1,2-Diphenylhydrazine	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
1,3-Dichlorobenzene	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
1,4-Dichlorobenzene	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
2,2'-Oxybis(1-Chloropropane)	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
2,4,6-Trichlorophenol	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
2,4-Dichlorophenol	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
2,4-Dimethylphenol	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
2,4-Dinitrophenol	ND	ug/L	10	EPA 625	5/23/22	5/23/22	MS-Low
2,4-Dinitrotoluene	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
2,6-Dinitrotoluene	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
2-Chloronaphthalene	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
2-Chlorophenol	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
2-Methylphenol	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
2-Nitrophenol	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
3 & 4-Methylphenol	ND	ug/L	10	EPA 625	5/23/22	5/23/22	MS-Low
3,3'-Dichlorobenzidine	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
4,6-Dinitro-2-methylphenol	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
4-Bromophenyl phenyl ether	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
4-Chloro-3-methylphenol	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
4-Chlorophenyl Phenyl Ether	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
4-Nitrophenol	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
Acenaphthene	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
Acenaphthylene	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
Anthracene	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
Azobenzene	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
Benzidine	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
Benzo (a) anthracene	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
Benzo (a) pyrene	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
Benzo (b) fluoranthene	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
Benzo (g,h,i) perylene	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
Benzo (k) fluoranthene	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
Bis (2-chloroethoxy) Methane	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
Bis (2-chloroethyl) Ether	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
Bis (2-ethylhexyl) Phthalate	ND	ug/L	10	EPA 625	5/23/22	5/23/22	

Certificate of Analysis

Big West Oil LLC
Beau Stander
333 West Center Street
North Salt Lake, UT 84054

PO#: **40339, Line 3**
Receipt: **5/19/22 11:10 @ 0.4 °C**
Date Reported: **6/2/2022**
Project Name: **Analytical Utilities, UPDES Outfall**

Sample ID: **UPDES Outfall (cont.)**

Matrix: **Water**

Lab ID: **22E1596-01**

Date Sampled: **5/19/22 10:00**

Sampled By: **Levi Warren**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Minimum Detection Limit</u>	<u>Method</u>	<u>Preparation Date/Time</u>	<u>Analysis Date/Time</u>	<u>Flag(s)</u>
Semi-Volatile Compounds (cont.)							
Butylbenzylphthalate	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
Carbazole	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
Chrysene	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
Dibenzo (a,h) anthracene	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
Diethylphthalate	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
Dimethyl phthalate	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
Di-n-butylphthalate	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
Di-n-Octylphthalate	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
Fluoranthene	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
Fluorene	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
Hexachlorobenzene	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
Hexachlorobutadiene	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
Hexachlorocyclopentadiene	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
Hexachloroethane	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
Indeno (1,2,3-cd) pyrene	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
Isophorone	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
Naphthalene	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
n-Decane	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
Nitrobenzene	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
N-Nitrosodimethylamine	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
N-Nitrosodi-n-propylamine	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
N-Nitrosodiphenylamine	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
n-Octadecane	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
Pentachlorophenol	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
Phenanthrene	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
Phenol	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
Pyrene	ND	ug/L	10	EPA 625	5/23/22	5/23/22	
Volatile Organic Compounds							
1,1,1,2-Tetrachloroethane	ND	ug/L	5	EPA 624	5/27/22	5/26/22	
1,1,1-Trichloroethane	ND	ug/L	5	EPA 624	5/27/22	5/26/22	
1,1,2,2-Tetrachloroethane	ND	ug/L	5	EPA 624	5/27/22	5/26/22	
1,1,2-Trichloroethane	ND	ug/L	5	EPA 624	5/27/22	5/26/22	
1,1-Dichloroethane	ND	ug/L	5	EPA 624	5/27/22	5/26/22	
1,1-Dichloroethene	ND	ug/L	5	EPA 624	5/27/22	5/26/22	
1,1-Dichloropropene	ND	ug/L	5	EPA 624	5/27/22	5/26/22	
1,2,3-Trichlorobenzene	ND	ug/L	5	EPA 624	5/27/22	5/26/22	
1,2,3-Trichloropropane	ND	ug/L	5	EPA 624	5/27/22	5/26/22	
1,2,4-Trichlorobenzene	ND	ug/L	5	EPA 624	5/27/22	5/26/22	
1,2,4-Trimethylbenzene	ND	ug/L	5	EPA 624	5/27/22	5/26/22	
1,2-Dibromo-3-chloropropane	ND	ug/L	5	EPA 624	5/27/22	5/26/22	
1,2-Dibromoethane (EDB)	ND	ug/L	5	EPA 624	5/27/22	5/26/22	
1,2-Dichlorobenzene	ND	ug/L	5	EPA 624	5/27/22	5/26/22	
1,2-Dichloroethane	ND	ug/L	5	EPA 624	5/27/22	5/26/22	

Certificate of Analysis

Big West Oil LLC
Beau Stander
333 West Center Street
North Salt Lake, UT 84054

PO#: **40339, Line 3**
Receipt: **5/19/22 11:10 @ 0.4 °C**
Date Reported: **6/2/2022**
Project Name: **Analytical Utilities, UPDES Outfall**

Sample ID: **UPDES Outfall (cont.)**

Matrix: **Water**

Lab ID: **22E1596-01**

Date Sampled: **5/19/22 10:00**

Sampled By: **Levi Warren**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Minimum Detection Limit</u>	<u>Method</u>	<u>Preparation Date/Time</u>	<u>Analysis Date/Time</u>	<u>Flag(s)</u>
Volatile Organic Compounds (cont.)							
1,2-Dichloropropane	ND	ug/L	5	EPA 624	5/27/22	5/26/22	
1,3,5-Trimethylbenzene	ND	ug/L	5	EPA 624	5/27/22	5/26/22	
1,3-Dichlorobenzene	ND	ug/L	5	EPA 624	5/27/22	5/26/22	
1,3-Dichloropropane	ND	ug/L	5	EPA 624	5/27/22	5/26/22	
1,4-Dichlorobenzene	ND	ug/L	5	EPA 624	5/27/22	5/26/22	
2,2-Dichloropropane	ND	ug/L	5	EPA 624	5/27/22	5/26/22	
2-Chloroethyl vinyl ether	ND	ug/L	5	EPA 624	5/27/22	5/26/22	
2-Chlorotoluene	ND	ug/L	5	EPA 624	5/27/22	5/26/22	
4-Chlorotoluene	ND	ug/L	5	EPA 624	5/27/22	5/26/22	
4-Isopropyltoluene	ND	ug/L	5	EPA 624	5/27/22	5/26/22	
Acetone	ND	ug/L	50	EPA 624	5/27/22	5/26/22	
Acrolein	ND	ug/L	100	EPA 624	5/27/22	5/26/22	
Acrylonitrile	ND	ug/L	50	EPA 624	5/27/22	5/26/22	
Benzene	ND	ug/L	2	EPA 624	5/27/22	5/26/22	
Bromobenzene	ND	ug/L	5	EPA 624	5/27/22	5/26/22	
Bromochloromethane	ND	ug/L	5	EPA 624	5/27/22	5/26/22	
Bromodichloromethane	ND	ug/L	5	EPA 624	5/27/22	5/26/22	
Bromoform	ND	ug/L	5	EPA 624	5/27/22	5/26/22	
Bromomethane	ND	ug/L	5	EPA 624	5/27/22	5/26/22	
Carbon Disulfide	ND	ug/L	5	EPA 624	5/27/22	5/26/22	
Carbon Tetrachloride	ND	ug/L	5	EPA 624	5/27/22	5/26/22	
Chlorobenzene	ND	ug/L	5	EPA 624	5/27/22	5/26/22	
Chloroethane	ND	ug/L	5	EPA 624	5/27/22	5/26/22	
Chloroform	ND	ug/L	5	EPA 624	5/27/22	5/26/22	
Chloromethane	ND	ug/L	5	EPA 624	5/27/22	5/26/22	
cis-1,2-Dichloroethene	ND	ug/L	5	EPA 624	5/27/22	5/26/22	
cis-1,3-Dichloropropene	ND	ug/L	5	EPA 624	5/27/22	5/26/22	
Dibromochloromethane	ND	ug/L	5	EPA 624	5/27/22	5/26/22	
Dibromomethane	ND	ug/L	5	EPA 624	5/27/22	5/26/22	
Dichlorodifluoromethane	ND	ug/L	5	EPA 624	5/27/22	5/26/22	J-LOW
Ethyl Acetate	ND	ug/L	50	EPA 624	5/27/22	5/26/22	
Ethylbenzene	ND	ug/L	5	EPA 624	5/27/22	5/26/22	
Hexachlorobutadiene	ND	ug/L	5	EPA 624	5/27/22	5/26/22	
Isopropylbenzene	ND	ug/L	5	EPA 624	5/27/22	5/26/22	
Methyl Ethyl Ketone	ND	ug/L	50	EPA 624	5/27/22	5/26/22	
Methyl Isobutyl Ketone	ND	ug/L	50	EPA 624	5/27/22	5/26/22	
Methylene Chloride	ND	ug/L	10	EPA 624	5/27/22	5/26/22	
Methyl-tert-butyl ether (MTBE)	ND	ug/L	5	EPA 624	5/27/22	5/26/22	
Naphthalene	ND	ug/L	5	EPA 624	5/27/22	5/26/22	
n-Butylbenzene	ND	ug/L	5	EPA 624	5/27/22	5/26/22	
n-Propyl Benzene	ND	ug/L	5	EPA 624	5/27/22	5/26/22	
sec-Butyl Benzene	ND	ug/L	5	EPA 624	5/27/22	5/26/22	
Styrene	ND	ug/L	5	EPA 624	5/27/22	5/26/22	

Certificate of Analysis

Big West Oil LLC
Beau Stander
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North Salt Lake, UT 84054

PO#: **40339, Line 3**
Receipt: **5/19/22 11:10 @ 0.4 °C**
Date Reported: **6/2/2022**
Project Name: **Analytical Utilities, UPDES Outfall**

Sample ID: **UPDES Outfall (cont.)**

Matrix: **Water**

Lab ID: **22E1596-01**

Date Sampled: **5/19/22 10:00**

Sampled By: **Levi Warren**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Minimum Detection Limit</u>	<u>Method</u>	<u>Preparation Date/Time</u>	<u>Analysis Date/Time</u>	<u>Flag(s)</u>
Volatile Organic Compounds (cont.)							
tert-Butylbenzene	ND	ug/L	5	EPA 624	5/27/22	5/26/22	
Tetrachloroethene	ND	ug/L	5	EPA 624	5/27/22	5/26/22	
Toluene	ND	ug/L	5	EPA 624	5/27/22	5/26/22	
trans-1,2-Dichloroethene	ND	ug/L	5	EPA 624	5/27/22	5/26/22	
trans-1,3-Dichloropropene	ND	ug/L	5	EPA 624	5/27/22	5/26/22	
Trichloroethene	ND	ug/L	5	EPA 624	5/27/22	5/26/22	
Trichlorofluoromethane	ND	ug/L	5	EPA 624	5/27/22	5/26/22	
Vinyl Chloride	ND	ug/L	5	EPA 624	5/27/22	5/26/22	
Xylenes, total	ND	ug/L	5	EPA 624	5/27/22	5/26/22	

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North Salt Lake, UT 84054

PO#: **40339, Line 3**
Receipt: **5/19/22 11:10 @ 0.4 °C**
Date Reported: **6/2/2022**
Project Name: **Analytical Utilities, UPDES Outfall**

Report Footnotes

Abbreviations

ND = Not detected at the corresponding Minimum Reporting Limit (MRL).
1 mg/L = one milligram per liter or 1 mg/kg = one milligram per kilogram = 1 part per million.
1 ug/L = one microgram per liter or 1 ug/kg = one microgram per kilogram = 1 part per billion.
1 ng/L = one nanogram per liter or 1 ng/kg = one nanogram per kilogram = 1 part per trillion.

Flag Descriptions

J-LOW = Estimated low due to low recovery of LCS or CCV
MS-Low = Estimated low due to Matrix Spike recovery.
SPH = Sample submitted past method specified holding time.

CHAIN OF CUSTODY - SAMPLE SUBMITTAL FORM

22E1596

COMPANY: Big West Oil LLC
 ADDRESS: 333 West Center Street
 CITY/STATE/ZIP: North Salt Lake, UT 84054
 PHONE #: 801-296-7828
 CONTACT: Beau Stander
 EMAIL: beau.stander@bigwestoil.com; environmental@bigwestoil.com
 PROJECT: Analytical Utilities, UPDES Outfall
 PO Number: 40339; Line 3
 INVOICE EMAIL ADDRESS: bwo_ap@bigwestoil.com

RUSH Due Date:

Standard

QC Level

① 2 2+ 3 3+



Chemtech-Ford Laboratories
 9612 South 500 West
 Sandy, UT 84070
 Phone: 801-262-7299
 www.chemtechford.com

Sample condition		Delivery Method	
<input checked="" type="checkbox"/> Custody Seal	<input checked="" type="checkbox"/> Correct Containers	<input type="checkbox"/> UPS	<input type="checkbox"/> USPS
<input checked="" type="checkbox"/> Container Intact	<input checked="" type="checkbox"/> Sufficient Sample Volume	<input type="checkbox"/> FedEx	<input checked="" type="checkbox"/> Chemtech-Ford Courier
<input checked="" type="checkbox"/> COC/Labels Agree	<input checked="" type="checkbox"/> Headspace Present (VOC)	<input type="checkbox"/> Walk-in	<input checked="" type="checkbox"/> Customer Courier
<input checked="" type="checkbox"/> Received on Ice	<input type="checkbox"/> Temperature Blank		
	<input checked="" type="checkbox"/> Received within Holding Time		

TESTS REQUESTED															
Lab Use Only	CLIENT SAMPLE INFORMATION	PP 13 metals 200.7 / 200.8 / 245.1	TTO VOCs 624	TTO SVOCs 625	TTO Pesticide/PCBs 608	TDS, TSS, pH	COD	DO4					E. Coli/Coliform (Absent/Present)	E. Coli/Coliform (Enumerated)	HPC
22E1596	LOCATION / IDENTIFICATION	DATE	TIME	MATRIX											
01	UPDES Outfall	5/19/22	10:00	W	X	X	X	X	X	X					
2.															
3.															
4.															
5.															
6.															
7.															
8.															
9.															
10.															

Bottle type 17 w/ 55) 24) Ag N
 Lot # dist elist = 14 dist elist dist

Sampled by: (print) <u>Levi Warren</u>	Sampled by: (signature) <u>[Signature]</u>	<input checked="" type="checkbox"/> ON ICE <input type="checkbox"/> NOT ON ICE Temp (C°): <u>0.4</u>
Special Instructions:		Samples received outside the EPA recommended temperature range of 0-6 C° may be rejected.
Relinquished by: (signature) <u>[Signature]</u>	Date/Time <u>5/19/22 11:10</u>	Received by: (signature) <u>Denise Bru</u>
Relinquished by: (signature)	Date/Time	Received by: (signature)
Relinquished by: (signature)	Date/Time	Received by: (signature)

Payment Terms are net 30 days OAC. 1.5% interest charge per month (18% per annum). Client agrees to pay collection costs and attorney's fees.



7/13/2022

Work Order: 22F1800
Project: Analytical Utilities, UPDES Outfall

Big West Oil LLC
Attn: Beau Stander
333 West Center Street
North Salt Lake, UT 84054

Client Service Contact: 801.262.7299

The analyses presented on this report were performed in accordance with the National Environmental Laboratory Accreditation Program (NELAP) unless noted in the comments, flags, or case narrative. If the report is to be used for regulatory compliance, it should be presented in its entirety, and not be altered.



Approved By:

Mark Broadhead, Project Manager



CHEMTECH-FORD
LABORATORIES

Big West Oil LLC
333 West Center Street
North Salt Lake, UT 84054

Project: Analytical Utilities, UPDES Outfall
Project Manager: Beau Stander

<u>Laboratory ID</u>	<u>Sample Name</u>
22F1800-01	UPDES Outfall

Amended Report Narrative

Report Changes:

As, Cd, Pb and Se by method 200.7 have been removed and results by method 200.8 have been added to the report.

Certificate of Analysis

Big West Oil LLC
Beau Stander
333 West Center Street
North Salt Lake, UT 84054

PO#: **40339 - Line 3**
Receipt: **6/21/22 12:03 @ 19.0 °C**
Date Reported: **7/13/2022**
Project Name: **Analytical Utilities, UPDES Outfall**

Sample ID: **UPDES Outfall**

Matrix: **Water**

Lab ID: **22F1800-01**

Date Sampled: **6/21/22 10:20**

Sampled By: **Levi Warren**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Minimum Detection Limit</u>	<u>Method</u>	<u>Preparation Date/Time</u>	<u>Analysis Date/Time</u>	<u>Flag(s)</u>
Inorganic							
Chemical Oxygen Demand	ND	mg/L	10	Hach 8000	6/22/22	6/23/22	
pH	7.8	pH Units	0.1	SM 4500 H-B	6/21/22 14:19	6/21/22 14:46	SPH
Total Dissolved Solids (TDS)	616	mg/L	20	SM 2540 C	6/22/22	6/22/22	
Total Suspended Solids (TSS)	ND	mg/L	4	SM 2540 D	6/21/22	6/21/22	
Metals							
Antimony, Total	ND	mg/L	0.02	EPA 200.7	6/28/22	6/28/22	
Arsenic, Total	0.0007	mg/L	0.0005	EPA 200.8	6/28/22	6/28/22	
Beryllium, Total	ND	mg/L	0.001	EPA 200.7	6/28/22	6/28/22	
Cadmium, Total	ND	mg/L	0.0002	EPA 200.8	6/28/22	6/28/22	
Chromium, Total	ND	mg/L	0.005	EPA 200.7	6/28/22	6/28/22	
Copper, Total	0.010	mg/L	0.005	EPA 200.7	6/28/22	6/28/22	
Lead, Total	ND	mg/L	0.0005	EPA 200.8	6/28/22	6/28/22	
Mercury, Total	ND	mg/L	0.0002	EPA 245.1	6/22/22	6/23/22	
Nickel, Total	ND	mg/L	0.005	EPA 200.7	6/28/22	6/28/22	
Selenium, Total	0.0011	mg/L	0.0005	EPA 200.8	6/28/22	6/28/22	
Silver, Total	ND	mg/L	0.005	EPA 200.7	6/28/22	6/28/22	
Thallium, Total	ND	mg/L	0.0002	EPA 200.8	6/28/22	6/28/22	
Zinc, Total	ND	mg/L	0.01	EPA 200.7	6/28/22	6/28/22	
Pesticides							
4,4'-DDD	ND	ug/L	0.2	EPA 608	6/27/22	6/29/22	
4,4'-DDE	ND	ug/L	0.1	EPA 608	6/27/22	6/29/22	
4,4'-DDT	ND	ug/L	0.2	EPA 608	6/27/22	6/29/22	
Aldrin	ND	ug/L	0.2	EPA 608	6/27/22	6/29/22	
alpha-BHC	ND	ug/L	0.1	EPA 608	6/27/22	6/29/22	
alpha-Chlordane	ND	ug/L	0.1	EPA 608	6/27/22	6/29/22	
beta-BHC	ND	ug/L	0.1	EPA 608	6/27/22	6/29/22	
delta-BHC	ND	ug/L	0.1	EPA 608	6/27/22	6/29/22	
Dieldrin	ND	ug/L	0.1	EPA 608	6/27/22	6/29/22	
Endosulfan I	ND	ug/L	0.1	EPA 608	6/27/22	6/29/22	
Endosulfan II	ND	ug/L	0.2	EPA 608	6/27/22	6/29/22	
Endosulfan sulfate	ND	ug/L	0.2	EPA 608	6/27/22	6/29/22	
Endrin	ND	ug/L	0.1	EPA 608	6/27/22	6/29/22	
Endrin aldehyde	ND	ug/L	0.2	EPA 608	6/27/22	6/29/22	
Endrin ketone	ND	ug/L	0.2	EPA 608	6/27/22	6/29/22	
gamma-Chlordane	ND	ug/L	0.1	EPA 608	6/27/22	6/29/22	
Heptachlor	ND	ug/L	0.1	EPA 608	6/27/22	6/29/22	
Heptachlor epoxide	ND	ug/L	0.1	EPA 608	6/27/22	6/29/22	
Lindane	ND	ug/L	0.05	EPA 608	6/27/22	6/29/22	
Methoxychlor	ND	ug/L	1.0	EPA 608	6/27/22	6/29/22	
PCB-1016	ND	ug/L	2.0	EPA 608	6/27/22	6/29/22	
PCB-1221	ND	ug/L	2.0	EPA 608	6/27/22	6/29/22	
PCB-1232	ND	ug/L	2.0	EPA 608	6/27/22	6/29/22	
PCB-1242	ND	ug/L	2.0	EPA 608	6/27/22	6/29/22	

Certificate of Analysis

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Beau Stander
333 West Center Street
North Salt Lake, UT 84054

PO#: **40339 - Line 3**
Receipt: **6/21/22 12:03 @ 19.0 °C**
Date Reported: **7/13/2022**
Project Name: **Analytical Utilities, UPDES Outfall**

Sample ID: **UPDES Outfall (cont.)**

Matrix: **Water**

Lab ID: **22F1800-01**

Date Sampled: **6/21/22 10:20**

Sampled By: **Levi Warren**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Minimum Detection Limit</u>	<u>Method</u>	<u>Preparation Date/Time</u>	<u>Analysis Date/Time</u>	<u>Flag(s)</u>
Pesticides (cont.)							
PCB-1248	ND	ug/L	2.0	EPA 608	6/27/22	6/29/22	
PCB-1254	ND	ug/L	2.0	EPA 608	6/27/22	6/29/22	
PCB-1260	ND	ug/L	2.0	EPA 608	6/27/22	6/29/22	
Toxaphene	ND	ug/L	2.0	EPA 608	6/27/22	6/29/22	
Semi-Volatile Compounds							
1,2,4-Trichlorobenzene	ND	ug/L	2	EPA 625	6/22/22	6/23/22	
1,2-Dichlorobenzene	ND	ug/L	2	EPA 625	6/22/22	6/23/22	
1,2-Diphenylhydrazine	ND	ug/L	2	EPA 625	6/22/22	6/23/22	
1,3-Dichlorobenzene	ND	ug/L	2	EPA 625	6/22/22	6/23/22	
1,4-Dichlorobenzene	ND	ug/L	2	EPA 625	6/22/22	6/23/22	
2,2'-Oxybis(1-Chloropropane)	ND	ug/L	1	EPA 625	6/22/22	6/23/22	
2,4,6-Trichlorophenol	ND	ug/L	2	EPA 625	6/22/22	6/23/22	
2,4-Dichlorophenol	ND	ug/L	2	EPA 625	6/22/22	6/23/22	
2,4-Dimethylphenol	ND	ug/L	0.7	EPA 625	6/22/22	6/23/22	
2,4-Dinitrophenol	ND	ug/L	6	EPA 625	6/22/22	6/23/22	
2,4-Dinitrotoluene	ND	ug/L	0.6	EPA 625	6/22/22	6/23/22	
2,6-Dinitrotoluene	ND	ug/L	1	EPA 625	6/22/22	6/23/22	
2-Chloronaphthalene	ND	ug/L	1	EPA 625	6/22/22	6/23/22	
2-Chlorophenol	ND	ug/L	1	EPA 625	6/22/22	6/23/22	
2-Nitrophenol	ND	ug/L	1	EPA 625	6/22/22	6/23/22	
3,3'-Dichlorobenzidine	ND	ug/L	3	EPA 625	6/22/22	6/23/22	
4,6-Dinitro-2-methylphenol	ND	ug/L	5	EPA 625	6/22/22	6/23/22	
4-Bromophenyl phenyl ether	ND	ug/L	1	EPA 625	6/22/22	6/23/22	
4-Chloro-3-methylphenol	ND	ug/L	0.6	EPA 625	6/22/22	6/23/22	
4-Chlorophenyl Phenyl Ether	ND	ug/L	1	EPA 625	6/22/22	6/23/22	
4-Nitrophenol	ND	ug/L	0.7	EPA 625	6/22/22	6/23/22	
Acenaphthene	ND	ug/L	1	EPA 625	6/22/22	6/23/22	
Acenaphthylene	ND	ug/L	1	EPA 625	6/22/22	6/23/22	
Anthracene	ND	ug/L	1	EPA 625	6/22/22	6/23/22	
Azobenzene	ND	ug/L	1	EPA 625	6/22/22	6/23/22	
Benzidine	ND	ug/L	3	EPA 625	6/22/22	6/23/22	
Benzo (a) anthracene	ND	ug/L	1	EPA 625	6/22/22	6/23/22	
Benzo (a) pyrene	ND	ug/L	1	EPA 625	6/22/22	6/23/22	
Benzo (b) fluoranthene	ND	ug/L	1	EPA 625	6/22/22	6/23/22	
Benzo (g,h,i) perylene	ND	ug/L	1	EPA 625	6/22/22	6/23/22	
Benzo (k) fluoranthene	ND	ug/L	1	EPA 625	6/22/22	6/23/22	
Bis (2-chloroethoxy) Methane	ND	ug/L	2	EPA 625	6/22/22	6/23/22	
Bis (2-chloroethyl) Ether	ND	ug/L	1	EPA 625	6/22/22	6/23/22	
Bis (2-ethylhexyl) Phthalate	ND	ug/L	2	EPA 625	6/22/22	6/23/22	
Butylbenzylphthalate	ND	ug/L	4	EPA 625	6/22/22	6/23/22	
Chrysene	ND	ug/L	0.9	EPA 625	6/22/22	6/23/22	
Dibenzo (a,h) anthracene	ND	ug/L	0.8	EPA 625	6/22/22	6/23/22	
Diethylphthalate	ND	ug/L	2	EPA 625	6/22/22	6/23/22	

Certificate of Analysis

Big West Oil LLC
Beau Stander
333 West Center Street
North Salt Lake, UT 84054

PO#: **40339 - Line 3**
Receipt: **6/21/22 12:03 @ 19.0 °C**
Date Reported: **7/13/2022**
Project Name: **Analytical Utilities, UPDES Outfall**

Sample ID: **UPDES Outfall (cont.)**

Matrix: **Water**

Lab ID: **22F1800-01**

Date Sampled: **6/21/22 10:20**

Sampled By: **Levi Warren**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Minimum Detection Limit</u>	<u>Method</u>	<u>Preparation Date/Time</u>	<u>Analysis Date/Time</u>	<u>Flag(s)</u>
Semi-Volatile Compounds (cont.)							
Dimethyl phthalate	ND	ug/L	2	EPA 625	6/22/22	6/23/22	
Di-n-butylphthalate	ND	ug/L	5	EPA 625	6/22/22	6/23/22	
Di-n-Octylphthalate	ND	ug/L	0.8	EPA 625	6/22/22	6/23/22	
Fluoranthene	ND	ug/L	1	EPA 625	6/22/22	6/23/22	
Fluorene	ND	ug/L	1	EPA 625	6/22/22	6/23/22	
Hexachlorobenzene	ND	ug/L	1	EPA 625	6/22/22	6/23/22	
Hexachlorobutadiene	ND	ug/L	2	EPA 625	6/22/22	6/23/22	
Hexachlorocyclopentadiene	ND	ug/L	0.9	EPA 625	6/22/22	6/23/22	
Hexachloroethane	ND	ug/L	2	EPA 625	6/22/22	6/23/22	
Indeno (1,2,3-cd) pyrene	ND	ug/L	0.9	EPA 625	6/22/22	6/23/22	
Isophorone	ND	ug/L	1	EPA 625	6/22/22	6/23/22	
Naphthalene	ND	ug/L	1	EPA 625	6/22/22	6/23/22	
Nitrobenzene	ND	ug/L	7	EPA 625	6/22/22	6/23/22	
N-Nitrosodimethylamine	ND	ug/L	0.5	EPA 625	6/22/22	6/23/22	
N-Nitrosodi-n-propylamine	ND	ug/L	2	EPA 625	6/22/22	6/23/22	
N-Nitrosodiphenylamine	ND	ug/L	2	EPA 625	6/22/22	6/23/22	
Pentachlorophenol	ND	ug/L	1	EPA 625	6/22/22	6/23/22	
Phenanthrene	ND	ug/L	1	EPA 625	6/22/22	6/23/22	
Phenol	ND	ug/L	0.8	EPA 625	6/22/22	6/23/22	
Pyrene	ND	ug/L	1	EPA 625	6/22/22	6/23/22	
Volatile Organic Compounds							
1,1,1-Trichloroethane	ND	ug/L	2	EPA 624	6/26/22	6/26/22	
1,1,2,2-Tetrachloroethane	ND	ug/L	2	EPA 624	6/26/22	6/26/22	
1,1,2-Trichloroethane	ND	ug/L	2	EPA 624	6/26/22	6/26/22	
1,1-Dichloroethane	ND	ug/L	2	EPA 624	6/26/22	6/26/22	
1,1-Dichloroethene	ND	ug/L	2	EPA 624	6/26/22	6/26/22	
1,2,4-Trichlorobenzene	ND	ug/L	2	EPA 624	6/26/22	6/26/22	
1,2-Dichlorobenzene	ND	ug/L	2	EPA 624	6/26/22	6/26/22	
1,2-Dichloroethane	ND	ug/L	2	EPA 624	6/26/22	6/26/22	
1,2-Dichloropropane	ND	ug/L	2	EPA 624	6/26/22	6/26/22	
1,3-Dichlorobenzene	ND	ug/L	2	EPA 624	6/26/22	6/26/22	
1,4-Dichlorobenzene	ND	ug/L	2	EPA 624	6/26/22	6/26/22	
2-Chloroethyl vinyl ether	ND	ug/L	2	EPA 624	6/26/22	6/26/22	J-LOW
Acrolein	ND	ug/L	2	EPA 624	6/26/22	6/26/22	
Acrylonitrile	ND	ug/L	3	EPA 624	6/26/22	6/26/22	
Benzene	ND	ug/L	2	EPA 624	6/26/22	6/26/22	
Bromodichloromethane	ND	ug/L	2	EPA 624	6/26/22	6/26/22	
Bromoform	ND	ug/L	5	EPA 624	6/26/22	6/26/22	
Bromomethane	ND	ug/L	2	EPA 624	6/26/22	6/26/22	
Carbon Tetrachloride	ND	ug/L	2	EPA 624	6/26/22	6/26/22	
Chlorobenzene	ND	ug/L	2	EPA 624	6/26/22	6/26/22	
Chloroethane	ND	ug/L	2	EPA 624	6/26/22	6/26/22	
Chloroform	ND	ug/L	5	EPA 624	6/26/22	6/26/22	

Certificate of Analysis

Big West Oil LLC
Beau Stander
333 West Center Street
North Salt Lake, UT 84054

PO#: **40339 - Line 3**
Receipt: **6/21/22 12:03 @ 19.0 °C**
Date Reported: **7/13/2022**
Project Name: **Analytical Utilities, UPDES Outfall**

Sample ID: **UPDES Outfall (cont.)**

Matrix: **Water**

Lab ID: **22F1800-01**

Date Sampled: **6/21/22 10:20**

Sampled By: **Levi Warren**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Minimum Detection Limit</u>	<u>Method</u>	<u>Preparation Date/Time</u>	<u>Analysis Date/Time</u>	<u>Flag(s)</u>
Volatile Organic Compounds (cont.)							
Chloromethane	ND	ug/L	2	EPA 624	6/26/22	6/26/22	
cis-1,3-Dichloropropene	ND	ug/L	2	EPA 624	6/26/22	6/26/22	
Dibromochloromethane	ND	ug/L	2	EPA 624	6/26/22	6/26/22	
Ethylbenzene	ND	ug/L	2	EPA 624	6/26/22	6/26/22	
Hexachlorobutadiene	ND	ug/L	2	EPA 624	6/26/22	6/26/22	
Methylene Chloride	ND	ug/L	10	EPA 624	6/26/22	6/26/22	
Nitrobenzene	ND	ug/L	3	EPA 624	6/26/22	6/26/22	
Tetrachloroethene	ND	ug/L	2	EPA 624	6/26/22	6/26/22	
Toluene	ND	ug/L	2	EPA 624	6/26/22	6/26/22	
trans-1,2-Dichloroethene	ND	ug/L	2	EPA 624	6/26/22	6/26/22	
trans-1,3-Dichloropropene	ND	ug/L	2	EPA 624	6/26/22	6/26/22	
Trichloroethene	ND	ug/L	2	EPA 624	6/26/22	6/26/22	
Trichlorofluoromethane	ND	ug/L	2	EPA 624	6/26/22	6/26/22	
Vinyl Chloride	ND	ug/L	2	EPA 624	6/26/22	6/26/22	

Certificate of Analysis

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Beau Stander
333 West Center Street
North Salt Lake, UT 84054

PO#: **40339 - Line 3**
Receipt: **6/21/22 12:03 @ 19.0 °C**
Date Reported: **7/13/2022**
Project Name: **Analytical Utilities, UPDES Outfall**

Report Footnotes

Abbreviations

ND = Not detected at the corresponding Minimum Reporting Limit (MRL).

1 mg/L = one milligram per liter or 1 mg/kg = one milligram per kilogram = 1 part per million.

1 ug/L = one microgram per liter or 1 ug/kg = one microgram per kilogram = 1 part per billion.

1 ng/L = one nanogram per liter or 1 ng/kg = one nanogram per kilogram = 1 part per trillion.

Flag Descriptions

J-LOW = Estimated low due to low recovery of LCS or CCV

S-AC = Acid surrogate recovery outside of control limits. The data was accepted based on valid recovery of remaining two acid surrogates.

SPH = Sample submitted past method specified holding time.

CHAIN OF CUSTODY - SAMPLE SUBMITTAL FORM

COMPANY: Big West Oil LLC
 ADDRESS: 333 West Center Street
 CITY/STATE/ZIP: North Salt Lake, UT 84054
 PHONE #: 801-296-7828
 CONTACT: Beau Stander
 EMAIL: beau.stander@bigwestoil.com; environmental@bigwestoil.com
 PROJECT: Analytical Utilities, UPDES Outfall
 PO Number: 40339; Line 3
 INVOICE EMAIL ADDRESS: bwo_ap@bigwestoil.com

RUSH Due Date:

Standard

QC Level
 ① 2 2+ 3 3+



Chemtech-Ford Laboratories
 9632 South 500 West
 Sandy, UT 84070
 Phone: 801-262-7299
 www.chemtechford.com

22F1800

Sample condition		Delivery Method	
<input type="checkbox"/> Custody Seal	<input checked="" type="checkbox"/> Correct Containers	<input type="checkbox"/> UPS	<input type="checkbox"/> USPS
<input checked="" type="checkbox"/> Container Intact	<input checked="" type="checkbox"/> Sufficient Sample Volume	<input type="checkbox"/> FedEx	<input type="checkbox"/> Chemtech-Ford Courier
<input checked="" type="checkbox"/> COC/Labels Agree	<input type="checkbox"/> Headspace Present (VOC)	<input type="checkbox"/> Walk-in	<input type="checkbox"/> Customer Courier
<input checked="" type="checkbox"/> Received on Ice	<input type="checkbox"/> Temperature Blank		
	<input checked="" type="checkbox"/> Received within Holding Time		

Lab Use Only	CLIENT SAMPLE INFORMATION			
	LOCATION / IDENTIFICATION	DATE	TIME	MATRIX
-01	1. UPDES Outfall	6/21/22	10:20	Aq.
	2.			
	3.			
	4.			
	5.			
	6.			
	7.			
	8.			
	9.			
	10.			

TESTS REQUESTED											
PP 13 metals 200.7 / 200.8 / 245.1	TTO VOCs 624	TTO SVOCs 625	TTO Pesticide/PCBs 608	TDS, TSS, pH	COD	DO4 — per Beau Stander DB 6/21/22					
X	X	X	X	X	X	X					

Bottle type _____
Lot # _____

Sampled by: [print] <u>Levi Warren</u>	Sampled by: [signature] <u>[Signature]</u>	ON ICE	NOT ON ICE	Temp (C°): <u>19.0</u>
Special instructions:		Samples received outside the EPA recommended temperature range of 0-6 C° may be rejected.		
Relinquished by: [signature] <u>[Signature]</u>	Date/Time: <u>6/21/22 1203</u>	Received by: [signature] <u>[Signature]</u>	Date/Time: <u>6/21/22 1203</u>	
Relinquished by: [signature]	Date/Time:	Received by: [signature]	Date/Time:	
Relinquished by: [signature]	Date/Time:	Received by: [signature]	Date/Time:	

Payment Terms are net 30 days OAC. 1.5% interest charge per month (18% per annum). Client agrees to pay collection costs and attorney's fees.

Work Order # 22F1800

CHEMTECH FORD LABORATORIES

Sample Receipt



CHEMTECH-FORD
LABORATORIES

Delivery Method:

- UPS
- USPS
- FedEx
- Chemtech Courier
- Walk-in
- Customer Courier

Receiving Temperature 19.0 °C

Sample #	Container	Chemtech Lot # or Preservative	Number of Subsamples	Preserved by Client/Third Party	Preserved in Receiving/Laboratory	Filtered in Field by Client	Misc Volume (oz/mL)	Comments
-01	Ag	1171						
	N	1198						
	M	1207						
	S(4)							client
	V(2)	1135						
	X(4)							client (amber)

Sample Condition
(check if yes)

- Custody Seals
- Containers Intact
- COC can be matched to bottles
- Received on Ice
- Correct Containers(s)
- Sufficient Sample Volume
- Headspace Present (VOC)
- Temperature Blank
- Received within Holding Time

Plastic Containers

- A- Plastic Unpreserved
- B- Miscellaneous Plastic
- C- Cyanide Qt (NaOH)
- E- Coliform/Ecoli/HPC
- F- Sulfide Qt (Zn Acetate)
- L- Mercury 1631
- M- Metals Pint (HNO3)
- N- Nutrient Pint (H2SO4)
- R- Radiological (HNO3)
- S- Sludge Cups/Tubs
- Q- Plastic Bag

Glass Containers

- D- 625 (Na2SO3)
- G- Glass Unpreserved
- H- HAAs (NH4Cl)
- J- 508/515/525 (Na2SO3)
- K- 515.3 Herbicides
- O- Oil & Grease (HCl)
- P- Phenols (H2SO4)
- T- TOC/TDX (H3PO4)
- U- 531 (MCAA, Na2SO3)
- V- 524/THMs (Ascorbic Acid)
- W- 8260 VOC (1:1 HCl)
- X- Vial Unpreserved
- Y- 624/504 (Na2SO3)
- Z- Miscellaneous Glass



8/10/2022

Work Order: 22G2388
Project: Analytical Utilities, UPDES Outfall

Big West Oil LLC
Attn: Beau Stander
333 West Center Street
North Salt Lake, UT 84054

Client Service Contact: 801.262.7299

The analyses presented on this report were performed in accordance with the National Environmental Laboratory Accreditation Program (NELAP) unless noted in the comments, flags, or case narrative. If the report is to be used for regulatory compliance, it should be presented in its entirety, and not be altered.



Approved By:

Mark Broadhead, Project Manager

Certificate of Analysis

Big West Oil LLC
Beau Stander
333 West Center Street
North Salt Lake, UT 84054

PO#: **40339 - Line 3**
Receipt: **7/28/22 15:05 @ 8.1 °C**
Date Reported: **8/10/2022**
Project Name: **Analytical Utilities, UPDES Outfall**

Sample ID: **UPDES Outfall**

Matrix: **Water**

Lab ID: **22G2388-01**

Comment: **Some Metals looged by 200.8 per history**

Date Sampled: **7/27/22 9:35**

Sampled By: **Levi Warren**

Parameter	Result	Units	Minimum Detection Limit	Method	Preparation Date/Time	Analysis Date/Time	Flag(s)
Inorganic							
Chemical Oxygen Demand	ND	mg/L	10	Hach 8000	8/1/22	8/1/22	
pH	7.6	pH Units	0.1	SM 4500 H-B	7/28/22 16:10	7/28/22 17:10	SPH
Total Dissolved Solids (TDS)	824	mg/L	20	SM 2540 C	7/29/22	7/29/22	
Total Suspended Solids (TSS)	ND	mg/L	4	SM 2540 D	7/29/22	7/29/22	
Metals							
Antimony, Total	ND	mg/L	0.02	EPA 200.7	8/8/22	8/8/22	
Arsenic, Total	0.0006	mg/L	0.0005	EPA 200.8	8/4/22	8/4/22	
Beryllium, Total	ND	mg/L	0.001	EPA 200.7	8/8/22	8/8/22	
Cadmium, Total	ND	mg/L	0.0002	EPA 200.8	8/4/22	8/4/22	
Chromium, Total	ND	mg/L	0.005	EPA 200.7	8/8/22	8/8/22	
Copper, Total	0.005	mg/L	0.005	EPA 200.7	8/8/22	8/8/22	
Lead, Total	ND	mg/L	0.0005	EPA 200.8	8/4/22	8/4/22	
Mercury, Total	ND	mg/L	0.00015	EPA 245.1	8/2/22	8/2/22	
Nickel, Total	ND	mg/L	0.005	EPA 200.7	8/8/22	8/8/22	
Selenium, Total	0.0014	mg/L	0.0005	EPA 200.8	8/4/22	8/4/22	
Silver, Total	ND	mg/L	0.005	EPA 200.7	8/8/22	8/8/22	
Thallium, Total	ND	mg/L	0.0002	EPA 200.8	8/4/22	8/4/22	
Zinc, Total	ND	mg/L	0.01	EPA 200.7	8/8/22	8/8/22	
Pesticides							
4,4'-DDD	ND	ug/L	0.2	EPA 608	7/27/22	8/1/22	
4,4'-DDE	ND	ug/L	0.1	EPA 608	7/27/22	8/1/22	
4,4'-DDT	ND	ug/L	0.2	EPA 608	7/27/22	8/1/22	
Aldrin	ND	ug/L	0.2	EPA 608	7/27/22	8/1/22	
alpha-BHC	ND	ug/L	0.1	EPA 608	7/27/22	8/1/22	
alpha-Chlordane	ND	ug/L	0.1	EPA 608	7/27/22	8/1/22	
beta-BHC	ND	ug/L	0.1	EPA 608	7/27/22	8/1/22	
delta-BHC	ND	ug/L	0.1	EPA 608	7/27/22	8/1/22	
Dieldrin	ND	ug/L	0.1	EPA 608	7/27/22	8/1/22	
Endosulfan I	ND	ug/L	0.1	EPA 608	7/27/22	8/1/22	
Endosulfan II	ND	ug/L	0.2	EPA 608	7/27/22	8/1/22	
Endosulfan sulfate	ND	ug/L	0.2	EPA 608	7/27/22	8/1/22	
Endrin	ND	ug/L	0.1	EPA 608	7/27/22	8/1/22	
Endrin aldehyde	ND	ug/L	0.2	EPA 608	7/27/22	8/1/22	
Endrin ketone	ND	ug/L	0.2	EPA 608	7/27/22	8/1/22	
gamma-Chlordane	ND	ug/L	0.1	EPA 608	7/27/22	8/1/22	
Heptachlor	ND	ug/L	0.1	EPA 608	7/27/22	8/1/22	
Heptachlor epoxide	ND	ug/L	0.1	EPA 608	7/27/22	8/1/22	
Lindane	ND	ug/L	0.05	EPA 608	7/27/22	8/1/22	
Methoxychlor	ND	ug/L	1.0	EPA 608	7/27/22	8/1/22	
PCB-1016	ND	ug/L	2.0	EPA 608	7/27/22	8/1/22	
PCB-1221	ND	ug/L	2.0	EPA 608	7/27/22	8/1/22	
PCB-1232	ND	ug/L	2.0	EPA 608	7/27/22	8/1/22	

Project Name: **Analytical Utilities, UPDES Outfall**

CtF WO#: **22G2388**

Certificate of Analysis

Big West Oil LLC
Beau Stander
333 West Center Street
North Salt Lake, UT 84054

PO#: **40339 - Line 3**
Receipt: **7/28/22 15:05 @ 8.1 °C**
Date Reported: **8/10/2022**
Project Name: **Analytical Utilities, UPDES Outfall**

Sample ID: **UPDES Outfall (cont.)**

Matrix: **Water**

Lab ID: **22G2388-01**

Comment: **Some Metals looged by 200.8 per history**

Date Sampled: **7/27/22 9:35**

Sampled By: **Levi Warren**

Parameter	Result	Units	Minimum Detection Limit	Method	Preparation Date/Time	Analysis Date/Time	Flag(s)
Pesticides (cont.)							
PCB-1242	ND	ug/L	2.0	EPA 608	7/27/22	8/1/22	
PCB-1248	ND	ug/L	2.0	EPA 608	7/27/22	8/1/22	
PCB-1254	ND	ug/L	2.0	EPA 608	7/27/22	8/1/22	
PCB-1260	ND	ug/L	2.0	EPA 608	7/27/22	8/1/22	
Toxaphene	ND	ug/L	2.0	EPA 608	7/27/22	8/1/22	
Semi-Volatile Compounds							
1,2,4-Trichlorobenzene	ND	ug/L	2	EPA 625	8/2/22	8/5/22	
1,2-Dichlorobenzene	ND	ug/L	2	EPA 625	8/2/22	8/5/22	J-LOW
1,2-Diphenylhydrazine	ND	ug/L	2	EPA 625	8/2/22	8/5/22	J-LOW
1,3-Dichlorobenzene	ND	ug/L	2	EPA 625	8/2/22	8/5/22	
1,4-Dichlorobenzene	ND	ug/L	2	EPA 625	8/2/22	8/5/22	
2,2'-Oxybis(1-Chloropropane)	ND	ug/L	1	EPA 625	8/2/22	8/5/22	
2,4,6-Trichlorophenol	ND	ug/L	2	EPA 625	8/2/22	8/5/22	
2,4-Dichlorophenol	ND	ug/L	2	EPA 625	8/2/22	8/5/22	
2,4-Dimethylphenol	ND	ug/L	0.7	EPA 625	8/2/22	8/5/22	
2,4-Dinitrophenol	ND	ug/L	6	EPA 625	8/2/22	8/5/22	
2,4-Dinitrotoluene	ND	ug/L	0.6	EPA 625	8/2/22	8/5/22	
2,6-Dinitrotoluene	ND	ug/L	1	EPA 625	8/2/22	8/5/22	
2-Chloronaphthalene	ND	ug/L	1	EPA 625	8/2/22	8/5/22	
2-Chlorophenol	ND	ug/L	1	EPA 625	8/2/22	8/5/22	
2-Nitrophenol	ND	ug/L	1	EPA 625	8/2/22	8/5/22	
3,3'-Dichlorobenzidine	ND	ug/L	3	EPA 625	8/2/22	8/5/22	
4,6-Dinitro-2-methylphenol	ND	ug/L	5	EPA 625	8/2/22	8/5/22	
4-Bromophenyl phenyl ether	ND	ug/L	1	EPA 625	8/2/22	8/5/22	
4-Chloro-3-methylphenol	ND	ug/L	0.6	EPA 625	8/2/22	8/5/22	
4-Chlorophenyl Phenyl Ether	ND	ug/L	1	EPA 625	8/2/22	8/5/22	
4-Nitrophenol	ND	ug/L	0.7	EPA 625	8/2/22	8/5/22	
Acenaphthene	ND	ug/L	1	EPA 625	8/2/22	8/5/22	
Acenaphthylene	ND	ug/L	1	EPA 625	8/2/22	8/5/22	
Anthracene	ND	ug/L	1	EPA 625	8/2/22	8/5/22	
Azobenzene	ND	ug/L	1	EPA 625	8/2/22	8/5/22	
Benzidine	ND	ug/L	3	EPA 625	8/2/22	8/5/22	
Benzo (a) anthracene	ND	ug/L	1	EPA 625	8/2/22	8/5/22	
Benzo (a) pyrene	ND	ug/L	1	EPA 625	8/2/22	8/5/22	
Benzo (b) fluoranthene	ND	ug/L	1	EPA 625	8/2/22	8/5/22	
Benzo (g,h,i) perylene	ND	ug/L	1	EPA 625	8/2/22	8/5/22	
Benzo (k) fluoranthene	ND	ug/L	1	EPA 625	8/2/22	8/5/22	
Bis (2-chloroethoxy) Methane	ND	ug/L	2	EPA 625	8/2/22	8/5/22	
Bis (2-chloroethyl) Ether	ND	ug/L	1	EPA 625	8/2/22	8/5/22	
Bis (2-ethylhexyl) Phthalate	ND	ug/L	2	EPA 625	8/2/22	8/5/22	
Butylbenzylphthalate	ND	ug/L	4	EPA 625	8/2/22	8/5/22	
Chrysene	ND	ug/L	0.9	EPA 625	8/2/22	8/5/22	

Certificate of Analysis

Big West Oil LLC
Beau Stander
333 West Center Street
North Salt Lake, UT 84054

PO#: **40339 - Line 3**
Receipt: **7/28/22 15:05 @ 8.1 °C**
Date Reported: **8/10/2022**
Project Name: **Analytical Utilities, UPDES Outfall**

Sample ID: **UPDES Outfall (cont.)**

Matrix: **Water**

Lab ID: **22G2388-01**

Comment: **Some Metals looged by 200.8 per history**

Date Sampled: **7/27/22 9:35**

Sampled By: **Levi Warren**

Parameter	Result	Units	Minimum Detection Limit	Method	Preparation Date/Time	Analysis Date/Time	Flag(s)
Semi-Volatile Compounds (cont.)							
Dibenzo (a,h) anthracene	ND	ug/L	0.8	EPA 625	8/2/22	8/5/22	
Diethylphthalate	ND	ug/L	2	EPA 625	8/2/22	8/5/22	
Dimethyl phthalate	ND	ug/L	2	EPA 625	8/2/22	8/5/22	
Di-n-butylphthalate	ND	ug/L	5	EPA 625	8/2/22	8/5/22	J-High
Di-n-Octylphthalate	ND	ug/L	0.8	EPA 625	8/2/22	8/5/22	
Fluoranthene	ND	ug/L	1	EPA 625	8/2/22	8/5/22	
Fluorene	ND	ug/L	1	EPA 625	8/2/22	8/5/22	
Hexachlorobenzene	ND	ug/L	1	EPA 625	8/2/22	8/5/22	
Hexachlorobutadiene	ND	ug/L	2	EPA 625	8/2/22	8/5/22	
Hexachlorocyclopentadiene	ND	ug/L	0.9	EPA 625	8/2/22	8/5/22	
Hexachloroethane	ND	ug/L	2	EPA 625	8/2/22	8/5/22	
Indeno (1,2,3-cd) pyrene	ND	ug/L	0.9	EPA 625	8/2/22	8/5/22	
Isophorone	ND	ug/L	1	EPA 625	8/2/22	8/5/22	
Naphthalene	ND	ug/L	1	EPA 625	8/2/22	8/5/22	
Nitrobenzene	ND	ug/L	7	EPA 625	8/2/22	8/5/22	
N-Nitrosodimethylamine	ND	ug/L	0.5	EPA 625	8/2/22	8/5/22	
N-Nitrosodi-n-propylamine	ND	ug/L	2	EPA 625	8/2/22	8/5/22	
N-Nitrosodiphenylamine	ND	ug/L	2	EPA 625	8/2/22	8/5/22	
Pentachlorophenol	ND	ug/L	1	EPA 625	8/2/22	8/5/22	
Phenanthrene	ND	ug/L	1	EPA 625	8/2/22	8/5/22	
Phenol	ND	ug/L	0.8	EPA 625	8/2/22	8/5/22	
Pyrene	ND	ug/L	1	EPA 625	8/2/22	8/5/22	
Volatile Organic Compounds							
1,1,1-Trichloroethane	ND	ug/L	2	EPA 624	8/3/22	8/3/22	
1,1,2,2-Tetrachloroethane	ND	ug/L	2	EPA 624	8/3/22	8/3/22	
1,1,2-Trichloroethane	ND	ug/L	2	EPA 624	8/3/22	8/3/22	
1,1-Dichloroethane	ND	ug/L	2	EPA 624	8/3/22	8/3/22	
1,1-Dichloroethene	ND	ug/L	2	EPA 624	8/3/22	8/3/22	
1,2,4-Trichlorobenzene	ND	ug/L	2	EPA 624	8/3/22	8/3/22	
1,2-Dichlorobenzene	ND	ug/L	2	EPA 624	8/3/22	8/3/22	
1,2-Dichloroethane	ND	ug/L	2	EPA 624	8/3/22	8/3/22	
1,2-Dichloropropane	ND	ug/L	2	EPA 624	8/3/22	8/3/22	
1,3-Dichlorobenzene	ND	ug/L	2	EPA 624	8/3/22	8/3/22	
1,4-Dichlorobenzene	ND	ug/L	2	EPA 624	8/3/22	8/3/22	
2-Chloroethyl vinyl ether	ND	ug/L	2	EPA 624	8/3/22	8/3/22	J-LOW
Acrolein	2	ug/L	2	EPA 624	8/3/22	8/3/22	J
Acrylonitrile	3	ug/L	3	EPA 624	8/3/22	8/3/22	J
Benzene	ND	ug/L	2	EPA 624	8/3/22	8/3/22	
Bromodichloromethane	ND	ug/L	2	EPA 624	8/3/22	8/3/22	
Bromoform	ND	ug/L	5	EPA 624	8/3/22	8/3/22	
Bromomethane	7	ug/L	2	EPA 624	8/3/22	8/3/22	
Carbon Tetrachloride	ND	ug/L	2	EPA 624	8/3/22	8/3/22	

Certificate of Analysis

Big West Oil LLC
Beau Stander
333 West Center Street
North Salt Lake, UT 84054

PO#: **40339 - Line 3**
Receipt: **7/28/22 15:05 @ 8.1 °C**
Date Reported: **8/10/2022**
Project Name: **Analytical Utilities, UPDES Outfall**

Sample ID: **UPDES Outfall (cont.)**

Matrix: **Water**

Lab ID: **22G2388-01**

Comment: **Some Metals looged by 200.8 per history**

Date Sampled: **7/27/22 9:35**

Sampled By: **Levi Warren**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Minimum Detection Limit</u>	<u>Method</u>	<u>Preparation Date/Time</u>	<u>Analysis Date/Time</u>	<u>Flag(s)</u>
Volatile Organic Compounds (cont.)							
Chlorobenzene	ND	ug/L	2	EPA 624	8/3/22	8/3/22	
Chloroethane	ND	ug/L	2	EPA 624	8/3/22	8/3/22	
Chloroform	ND	ug/L	5	EPA 624	8/3/22	8/3/22	
Chloromethane	ND	ug/L	2	EPA 624	8/3/22	8/3/22	
cis-1,3-Dichloropropene	ND	ug/L	2	EPA 624	8/3/22	8/3/22	
Dibromochloromethane	ND	ug/L	2	EPA 624	8/3/22	8/3/22	
Ethylbenzene	ND	ug/L	2	EPA 624	8/3/22	8/3/22	
Hexachlorobutadiene	ND	ug/L	2	EPA 624	8/3/22	8/3/22	
Methylene Chloride	ND	ug/L	10	EPA 624	8/3/22	8/3/22	
Nitrobenzene	ND	ug/L	3	EPA 624	8/3/22	8/3/22	
Tetrachloroethene	ND	ug/L	2	EPA 624	8/3/22	8/3/22	J-LOW
Toluene	ND	ug/L	2	EPA 624	8/3/22	8/3/22	
trans-1,2-Dichloroethene	ND	ug/L	2	EPA 624	8/3/22	8/3/22	
trans-1,3-Dichloropropene	ND	ug/L	2	EPA 624	8/3/22	8/3/22	
Trichloroethene	ND	ug/L	2	EPA 624	8/3/22	8/3/22	
Trichlorofluoromethane	ND	ug/L	2	EPA 624	8/3/22	8/3/22	
Vinyl Chloride	ND	ug/L	2	EPA 624	8/3/22	8/3/22	

Certificate of Analysis

Big West Oil LLC
Beau Stander
333 West Center Street
North Salt Lake, UT 84054

PO#: **40339 - Line 3**
Receipt: **7/28/22 15:05 @ 8.1 °C**
Date Reported: **8/10/2022**
Project Name: **Analytical Utilities, UPDES Outfall**

Report Footnotes

Abbreviations

ND = Not detected at the corresponding Minimum Reporting Limit (MRL).
1 mg/L = one milligram per liter or 1 mg/kg = one milligram per kilogram = 1 part per million.
1 ug/L = one microgram per liter or 1 ug/kg = one microgram per kilogram = 1 part per billion.
1 ng/L = one nanogram per liter or 1 ng/kg = one nanogram per kilogram = 1 part per trillion.

Flag Descriptions

J = Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).
J-High = Estimated High due to high recovery of LCS or CCV
J-LOW = Estimated low due to low recovery of LCS or CCV
ME = Recovery was outside of the lab control limits but was within Marginal Exceedance limit (± 4 stdev of mean recovery). Batch is considered to be in control based on recoveries of other analytes.
SPH = Sample submitted past method specified holding time.

22G2388

CHAIN OF CUSTODY - SAMPLE SUBMITTAL FORM

COMPANY: Big West Oil LLC
ADDRESS: 333 West Center Street
CITY/STATE/ZIP: North Salt Lake, UT 84054
PHONE #: 801-296-7828
CONTACT: Beau Stander
EMAIL: beau.stander@bigwestoil.com; environmental@bigwestoil.com
PROJECT: Analytical Utilities, UPDES Outfall
PO Number: 40339; Line 3
INVOICE EMAIL ADDRESS: bwo_ap@bigwestoil.com

RUSH Due Date:
Standard

QC Level
1 2 2+ 3 3+



Table with Sample condition and Delivery Method sections. Includes checkboxes for Custody Seal, Container Intact, COC/Labels Agree, Received on Ice, Correct Containers, Sufficient Sample Volume, Headspace Present (VOC), Temperature Blank, Received within Holding Time, UPS, USPS, Chemtech-Ford Courier, and Customer Courier.

TESTS REQUESTED table with columns for various tests: PP 13 metals 200.7 / 200.8 / 245.1, TTO VOCs 624, TTO SVOCs 625, TTO Pesticide/PCBs 608, TDS, TSS, pH, COD, E. Coli/Colliform (Abseny/Present), E. Coli/Colliform (Enumerated), HPC. Row 1 is marked with 'X' for all tests.

CLIENT SAMPLE INFORMATION table with columns: Lab Use Only, LOCATION / IDENTIFICATION, DATE, TIME, MATRIX. Row 1 contains handwritten entry: 01, UPDES Outfall, 7/27/22, 9:35, Ag.

Signature and date fields for Sampled by, Relinquished by, and Received by. Includes handwritten signatures and dates like 7/28/22 1240 and 7/28/22 1505. Also includes 'ON ICE' and temperature '8.1'.

Payment Terms are net 30 days DAC. 1.5% interest charge per month (18% per annum). Client agrees to pay collection costs and attorney's fees.

Work Order # 22G2388

CHEMTECH FORD LABORATORIES

Sample Receipt



CHEMTECH-FORD
LABORATORIES

Delivery Method:

- UPS
- USPS
- FedEx
- Chemtech Courier
- Walk-in
- Customer Courier

Receiving Temperature 8.1 °C

Sample #	Container	Chemtech Lot # or Preservative	Number of Subsamples	Preserved by Client/Third Party	Preserved in Receiving/Laboratory	Preserved in Field by Client	Misc Volume (oz/ml)	Comments
01	Ag	1171						
	N	1205						
	M	1207						
	S(4)	1193						
	Y(2)	1212						
	X(4)							client

Sample Condition
(check if yes)

- Custody Seals
- Containers Intact
- COC can be matched to bottles
- Received on Ice
- Correct Container(s)
- Sufficient Sample Volume
- Headspace Present (VOC)
- Temperature Blank
- Received within Holding Time

Plastic Containers

- A- Plastic Unpreserved
- B- Miscellaneous Plastic
- C- Cyanide Qi (NaOH)
- E- Coliform/E.coli/HPC
- F- Sulfide Qt (Zn Acetate)
- L- Mercury 1631
- M- Metals Pint (HNO3)
- N- Nutrient Pint (H2SO4)
- R- Radiological (HNO3)
- S- Sludge Cups/Tubs
- Q- Plastic Bag

Glass Containers

- D- 625 (Na2SO3)
- G- Glass Unpreserved
- H- HAAs (NH4Cl)
- J- 508/515/525 (Na2SO3)
- K- 515.3 Herbicides
- O- Oil & Grease (HCl)
- P- Phenols (H2SO4)
- T- TOC/TOX (H3PO4)
- U- 531 (MCAA, Na2SO3)
- V- 524/THMs (Ascorbic Acid)
- W- 8260 VOC (1:1 HCl)
- X- Vial Unpreserved
- Y- 624/504 (Na2SO3)
- Z- Miscellaneous Glass



Sally Kaiser
Big West Oil, LLC
333 West Center
North Salt Lake, UT 84054
TEL: (801) 296-7732

RE: Outfall 1 / 31702

Dear Sally Kaiser:

Lab Set ID: 2106400

3440 South 700 West
Salt Lake City, UT 84119

American West Analytical Laboratories received sample(s) on 6/14/2021 for the analyses presented in the following report.

Phone: (801) 263-8686
Toll Free: (888) 263-8686
Fax: (801) 263-8687
e-mail: awal@awal-labs.com
web: www.awal-labs.com

American West Analytical Laboratories (AWAL) is accredited by The National Environmental Laboratory Accreditation Program (NELAP) in Utah and Texas; and is state accredited in Colorado, Idaho, New Mexico, Wyoming, and Missouri.

All analyses were performed in accordance to the NELAP protocols unless noted otherwise. Accreditation scope documents are available upon request. If you have any questions or concerns regarding this report please feel free to call.

Jennifer Osborn
Laboratory Director

Jose Rocha
QA Officer

The abbreviation "Surr" found in organic reports indicates a surrogate compound that is intentionally added by the laboratory to determine sample injection, extraction, and/or purging efficiency. The "Reporting Limit" found on the report is equivalent to the practical quantitation limit (PQL). This is the minimum concentration that can be reported by the method referenced and the sample matrix. The reporting limit must not be confused with any regulatory limit. Analytical results are reported to three significant figures for quality control and calculation purposes.

Thank You,

Approved by:

Jose G. Rocha
Digitally signed
by Jose G.
Rocha
Date: 2021.06.25
14:55:43 -06'00'

Laboratory Director or designee



INORGANIC ANALYTICAL REPORT

Client: Big West Oil, LLC
Project: Outfall 1 / 31702
Lab Sample ID: 2106400-001
Client Sample ID: Outfall 1
Collection Date: 6/14/2021 920h
Received Date: 6/14/2021 1019h

Contact: Sally Kaiser

Analytical Results

TOTAL METALS

3440 South 700 West
Salt Lake City, UT 84119

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 Fax: (801) 263-8687
 e-mail: awal@awal-labs.com
 web: www.awal-labs.com

Jennifer Osborn
Laboratory Director

Jose Rocha
QA Officer

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Antimony	mg/L	6/15/2021 1002h	6/23/2021 1511h	E200.8	0.00400	< 0.00400	
Arsenic	mg/L	6/15/2021 1002h	6/21/2021 846h	E200.8	0.00200	0.0224	
Beryllium	mg/L	6/15/2021 1002h	6/23/2021 1511h	E200.8	0.00200	< 0.00200	
Cadmium	mg/L	6/15/2021 1002h	6/21/2021 846h	E200.8	0.000500	< 0.000500	
Chromium	mg/L	6/15/2021 1002h	6/21/2021 846h	E200.8	0.00200	< 0.00200	
Copper	mg/L	6/15/2021 1002h	6/21/2021 846h	E200.8	0.00300	0.00354	
Lead	mg/L	6/15/2021 1002h	6/21/2021 846h	E200.8	0.00200	< 0.00200	
Mercury	mg/L	6/14/2021 1157h	6/14/2021 1603h	E245.1	0.0000900	< 0.0000900	
Nickel	mg/L	6/15/2021 1002h	6/21/2021 846h	E200.8	0.00200	< 0.00200	
Selenium	mg/L	6/15/2021 1002h	6/21/2021 846h	E200.8	0.00200	< 0.00200	
Silver	mg/L	6/15/2021 1002h	6/21/2021 846h	E200.8	0.00200	< 0.00200	
Thallium	mg/L	6/15/2021 1002h	6/21/2021 846h	E200.8	0.00200	< 0.00200	
Zinc	mg/L	6/15/2021 1002h	6/21/2021 846h	E200.8	0.00600	0.00604	



INORGANIC ANALYTICAL REPORT

Client: Big West Oil, LLC
Project: Outfall 1 / 31702
Lab Sample ID: 2106400-001
Client Sample ID: Outfall 1
Collection Date: 6/14/2021 920h
Received Date: 6/14/2021 1019h

Contact: Sally Kaiser

Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Chemical Oxygen Demand	mg/L		6/16/2021 700h	HACH 8000	10.0	61.0	
Total Dissolved Solids	mg/L		6/15/2021 1240h	SM2540C	50.0	6,850	
Total Suspended Solids	mg/L		6/14/2021 1500h	SM2540D	3.00	14.8	

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Salt Lake City, UT 84119

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web: www.awal-labs.com

Jennifer Osborn
Laboratory Director

Jose Rocha
QA Officer



ORGANIC ANALYTICAL REPORT

Client: Big West Oil, LLC
Project: Outfall 1 / 31702
Lab Sample ID: 2106400-001D
Client Sample ID: Outfall 1
Collection Date: 6/14/2021 920h
Received Date: 6/14/2021 1019h

Contact: Sally Kaiser

Test Code: 608.3-W

Analytical Results

Pesticides/PCBs PP List by GC/ECD Method 608.3

Analyzed: 6/14/2021 2101h **Extracted:** 6/14/2021 1316h

Units: µg/L **Dilution Factor:** 1 **Method:** EPA608

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web: www.awal-labs.com

Jennifer Osborn

Laboratory Director

Jose Rocha

QA Officer

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
4,4'-DDD	72-54-8	0.0201	< 0.0201	
4,4'-DDE	72-55-9	0.0201	< 0.0201	
4,4'-DDT	50-29-3	0.0201	< 0.0201	
Aldrin	309-00-2	0.0201	< 0.0201	
alpha-BHC	319-84-6	0.0201	< 0.0201	
Aroclor 1016	12674-11-2	0.503	< 0.503	
Aroclor 1221	11104-28-2	0.503	< 0.503	
Aroclor 1232	11141-16-5	0.503	< 0.503	
Aroclor 1242	53469-21-9	0.503	< 0.503	
Aroclor 1248	12672-29-6	0.503	< 0.503	
Aroclor 1254	11097-69-1	0.503	< 0.503	
Aroclor 1260	11096-82-5	0.503	< 0.503	
beta-BHC	319-85-7	0.0201	< 0.0201	
Chlordane, total	57-74-9	0.201	< 0.201	
delta-BHC	319-86-8	0.0201	< 0.0201	@
Dieldrin	60-57-1	0.0201	< 0.0201	
Endosulfan I	959-98-8	0.0201	< 0.0201	
Endosulfan II	33213-65-9	0.0201	< 0.0201	
Endosulfan sulfate	1031-07-8	0.0201	< 0.0201	
Endrin	72-20-8	0.0201	< 0.0201	
Endrin aldehyde	7421-93-4	0.0201	< 0.0201	
gamma-BHC	58-89-9	0.0201	< 0.0201	
Heptachlor	76-44-8	0.0201	< 0.0201	
Heptachlor epoxide	1024-57-3	0.0201	< 0.0201	
Toxaphene	8001-35-2	0.251	< 0.251	

Surrogate	Units: µg/L	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: Decachlorobiphenyl		2051-24-3	0.0962	0.1508	63.8	15-149	
Surr: Tetrachloro-m-xylene		877-09-8	0.0813	0.1508	54.0	10-124	

@ - High RPD due to suspected sample non-homogeneity or matrix interference.



ORGANIC ANALYTICAL REPORT

Client: Big West Oil, LLC
Project: Outfall 1 / 31702
Lab Sample ID: 2106400-001B
Client Sample ID: Outfall 1
Collection Date: 6/14/2021 920h
Received Date: 6/14/2021 1019h

Contact: Sally Kaiser

Test Code: 625.1-W-3511

Analytical Results

SVOA PP List by GC/MS Method 625.1/3511

Analyzed: 6/15/2021 1113h **Extracted:** 6/14/2021 1120h
Units: µg/L **Dilution Factor:** 1 **Method:** EPA625.1

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web: www.awal-labs.com

Jennifer Osborn

Laboratory Director

Jose Rocha

QA Officer

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
1,2,4-Trichlorobenzene	120-82-1	10.0	< 10.0	
1,2-Dichlorobenzene	95-50-1	10.0	< 10.0	
1,3-Dichlorobenzene	541-73-1	10.0	< 10.0	
1,4-Dichlorobenzene	106-46-7	10.0	< 10.0	
2,2'-Oxybis(1-chloropropane)	108-60-1	10.0	< 10.0	
2,4,6-Trichlorophenol	88-06-2	10.0	< 10.0	
2,4-Dichlorophenol	120-83-2	10.0	< 10.0	
2,4-Dimethylphenol	105-67-9	10.0	< 10.0	
2,4-Dinitrophenol	51-28-5	10.0	< 10.0	
2,4-Dinitrotoluene	121-14-2	10.0	< 10.0	
2,6-Dinitrotoluene	606-20-2	10.0	< 10.0	
2-Chloronaphthalene	91-58-7	10.0	< 10.0	
2-Chlorophenol	95-57-8	10.0	< 10.0	
2-Nitrophenol	88-75-5	10.0	< 10.0	
3,3'-Dichlorobenzidine	91-94-1	10.0	< 10.0	
4,6-Dinitro-2-methylphenol	534-52-1	10.0	< 10.0	
4-Bromophenyl phenyl ether	101-55-3	10.0	< 10.0	S
4-Chloro-3-methylphenol	59-50-7	10.0	< 10.0	
4-Chlorophenyl phenyl ether	7005-72-3	10.0	< 10.0	
4-Nitrophenol	100-02-7	10.0	< 10.0	
Acenaphthene	83-32-9	10.0	< 10.0	
Acenaphthylene	208-96-8	10.0	< 10.0	
Anthracene	120-12-7	10.0	< 10.0	
Azobenzene	103-33-3	10.0	< 10.0	
Benz(a)anthracene	56-55-3	10.0	< 10.0	
Benzidine	92-87-5	10.0	< 10.0	@
Benzo(a)pyrene	50-32-8	10.0	< 10.0	
Benzo(b)fluoranthene	205-99-2	10.0	< 10.0	
Benzo(g,h,i)perylene	191-24-2	10.0	< 10.0	



Lab Sample ID: 2106400-001B

Client Sample ID: Outfall 1

Analyzed: 6/15/2021 1113h

Extracted: 6/14/2021 1120h

Units: µg/L

Dilution Factor: 1

Method: EPA625.1

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Jennifer Osborn
Laboratory Director

Jose Rocha

QA Officer

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Benzo(k)fluoranthene	207-08-9	10.0	< 10.0	
Bis(2-chloroethoxy)methane	111-91-1	10.0	< 10.0	
Bis(2-chloroethyl) ether	111-44-4	10.0	< 10.0	
Bis(2-ethylhexyl) phthalate	117-81-7	10.0	< 10.0	
Butyl benzyl phthalate	85-68-7	10.0	< 10.0	
Chrysene	218-01-9	10.0	< 10.0	
Dibenz(a,h)anthracene	53-70-3	10.0	< 10.0	
Diethyl phthalate	84-66-2	10.0	< 10.0	'
Dimethyl phthalate	131-11-3	10.0	< 10.0	'
Di-n-butyl phthalate	84-74-2	10.0	< 10.0	
Di-n-octyl phthalate	117-84-0	10.0	< 10.0	
Fluoranthene	206-44-0	10.0	< 10.0	
Fluorene	86-73-7	10.0	< 10.0	'
Hexachlorobenzene	118-74-1	10.0	< 10.0	
Hexachlorobutadiene	87-68-3	10.0	< 10.0	
Hexachlorocyclopentadiene	77-47-4	10.0	< 10.0	'
Hexachloroethane	67-72-1	10.0	< 10.0	
Indeno(1,2,3-cd)pyrene	193-39-5	10.0	< 10.0	
Isophorone	78-59-1	10.0	< 10.0	
Naphthalene	91-20-3	10.0	< 10.0	
Nitrobenzene	98-95-3	10.0	< 10.0	
N-Nitrosodimethylamine	62-75-9	10.0	< 10.0	'@
N-Nitrosodi-n-propylamine	621-64-7	10.0	< 10.0	
N-Nitrosodiphenylamine	86-30-6	10.0	< 10.0	
Pentachlorophenol	87-86-5	10.0	< 10.0	
Phenanthrene	85-01-8	10.0	< 10.0	'
Phenol	108-95-2	10.0	< 10.0	
Pyrene	129-00-0	10.0	< 10.0	S



Lab Sample ID: 2106400-001B

Client Sample ID: Outfall 1

Analyzed: 6/15/2021 1113h

Extracted: 6/14/2021 1120h

Units: µg/L

Dilution Factor: 1

Method: EPA625.1

Surrogate	Units: µg/L	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 2,4,6-Tribromophenol		118-79-6	52.1	50.00	104	20-195	
Surr: 2-Fluorobiphenyl		321-60-8	23.7	25.00	95.0	29-154	
Surr: 2-Fluorophenol		367-12-4	40.6	50.00	81.2	10-120	
Surr: Nitrobenzene-d5		4165-60-0	32.3	25.00	129	45-174	
Surr: Phenol-d6		13127-88-3	32.1	50.00	64.1	10-120	
Surr: Terphenyl-d14		1718-51-0	32.5	25.00	130	42-164	

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Salt Lake City, UT 84119

¹ - Matrix spike recovery indicates matrix interference. The method is in control as indicated by the LCS.

@ - High RPD due to suspected sample non-homogeneity or matrix interference.

S - High LCS, MS, and MSD recoveries indicate possible bias high. Data deemed acceptable as the analyte was not observed in the field sample.

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web: www.awal-labs.com

Jennifer Osborn
Laboratory Director

Jose Rocha
QA Officer



ORGANIC ANALYTICAL REPORT

Client: Big West Oil, LLC
Project: Outfall 1 / 31702
Lab Sample ID: 2106400-001C
Client Sample ID: Outfall 1
Collection Date: 6/14/2021 920h
Received Date: 6/14/2021 1019h

Contact: Sally Kaiser

Test Code: 624.1-W

Analytical Results

VOAs PP List by GC/MS Method 624.1

Analyzed: 6/17/2021 1332h **Extracted:**
Units: µg/L **Dilution Factor:** 1 **Method:** EPA624.1

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Jennifer Osborn

Laboratory Director

Jose Rocha

QA Officer

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
1,1,1-Trichloroethane	71-55-6	2.00	< 2.00	
1,1,2,2-Tetrachloroethane	79-34-5	2.00	< 2.00	
1,1,2-Trichloroethane	79-00-5	2.00	< 2.00	
1,1-Dichloroethane	75-34-3	2.00	< 2.00	
1,1-Dichloroethene	75-35-4	2.00	< 2.00	
1,2-Dichlorobenzene	95-50-1	2.00	< 2.00	
1,2-Dichloroethane	107-06-2	2.00	< 2.00	
1,2-Dichloropropane	78-87-5	2.00	< 2.00	
1,3-Dichlorobenzene	541-73-1	2.00	< 2.00	
1,4-Dichlorobenzene	106-46-7	2.00	< 2.00	
2-Chloroethyl vinyl ether	110-75-8	5.00	< 5.00	
Acrolein	107-02-8	5.00	< 5.00	
Acrylonitrile	107-13-1	10.0	< 10.0	
Benzene	71-43-2	2.00	< 2.00	
Bromodichloromethane	75-27-4	2.00	< 2.00	
Bromoform	75-25-2	2.00	< 2.00	
Bromomethane	74-83-9	5.00	< 5.00	B
Carbon tetrachloride	56-23-5	2.00	< 2.00	
Chlorobenzene	108-90-7	2.00	< 2.00	
Chloroethane	75-00-3	2.00	< 2.00	
Chloroform	67-66-3	2.00	< 2.00	
Chloromethane	74-87-3	3.00	< 3.00	
cis-1,3-Dichloropropene	10061-01-5	2.00	< 2.00	
Dibromochloromethane	124-48-1	2.00	< 2.00	
Ethylbenzene	100-41-4	2.00	< 2.00	
Methylene chloride	75-09-2	2.00	< 2.00	
Naphthalene	91-20-3	2.00	< 2.00	
Tetrachloroethene	127-18-4	2.00	< 2.00	
Toluene	108-88-3	2.00	< 2.00	



Lab Sample ID: 2106400-001C

Client Sample ID: Outfall 1

Analyzed: 6/17/2021 1332h

Extracted:

Units: µg/L

Dilution Factor: 1

Method: EPA624.1

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
trans-1,2-Dichloroethene	156-60-5	2.00	< 2.00	
trans-1,3-Dichloropropene	10061-02-6	2.00	< 2.00	
Trichloroethene	79-01-6	2.00	< 2.00	
Vinyl chloride	75-01-4	1.00	< 1.00	

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Surrogate	Units: µg/L	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 1,2-Dichloroethane-d4		17060-07-0	50.3	50.00	101	70-130	
Surr: 4-Bromofluorobenzene		460-00-4	50.6	50.00	101	80-152	
Surr: Dibromofluoromethane		1868-53-7	48.6	50.00	97.2	72-135	
Surr: Toluene-d8		2037-26-5	48.9	50.00	97.7	70-130	

B - This analyte was also detected in the method blank below the PQL.

Jennifer Osborn
Laboratory Director

Jose Rocha
QA Officer

WORK ORDER Summary

Work Order: **2106400**

Page 1 of 1

Client: Big West Oil, LLC

Due Date: 6/28/2021

Client ID: BIG200

Contact: Sally Kaiser

Project: Outfall 1 / 31702

QC Level: I

WO Type: Standard

Comments: cc: Danny Ryan and environmental@bigwestoil.com;

DB

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel	Storage
2106400-001A	Outfall 1	6/14/2021 0920h	6/14/2021 1019h	200.8-W	Aqueous	df - metals	1
				<i>12 SEL Analytes: SB AS BE CD CR CU PB NI SE AG TL ZN</i>			
				200.8-W-PR		df - metals	
				HG-DW-245.1		df - metals	
				HG-DW-PR		df - metals	
2106400-001B				3511-SVOA-PR		semi	5
				625.1-W-3511		semi	
				<i>Test Group: 625.1-W-3511-PP; # of Analytes: 57 / # of Surr: 6</i>			
2106400-001C				624.1-W		VOCFridge	3
				<i>Test Group: 624.1-W-PP; # of Analytes: 33 / # of Surr: 4</i>			
2106400-001D				3510-PEST-PR		df - pest/pcb	
				608.3-W		df - pest/pcb	
				<i>Test Group: 608.3-W-PP; # of Analytes: 25 / # of Surr: 2</i>			
2106400-001E				TDS-W-2540C		df - tss/tds	1
				TSS-W-2540D		df - tss/tds	
2106400-001F				COD-HACH8000		df - cod	

and sally.kaiser@bigwestoil.com



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CHAIN OF CUSTODY

2106400
 AWAL Lab Sample Set #

All analysis will be conducted using NELAP accredited methods and all data will be reported using AWAL's standard analyte lists and reporting limits (PQL) unless specifically requested otherwise on this Chain of Custody and/or attached documentation.

Page _____ of _____

Client: 316 WEST OIL LLC
 Address: 333 W. CENTER ST.
 City, State, Zip: NSL, UTAH 84054
 Contact: Sally Kaiser & Danny Ryan
 Phone #: 801-580-0184 Cell #: _____
 ← E-mail: environmental@bigwestoil.com
 Project Name: HPD OUTFALL I
 Project #: _____
 PO #: 31702
 Sampler Name: Levi Warren

QC Level:		Turn Around Time:		Rush sets received after 4:00 pm are considered received on the next business day.		Due Date:										
1	2	2+	3	3+	1	2	3	4	5	Std	6/28	21				
15	# of Containers	Sample Matrix	HEAVY METALS	TOXIC TOTAL ORGANICS	TDS	TSS	COD	<input type="checkbox"/> Report down to the MDL <input type="checkbox"/> Include EDD: <input type="checkbox"/> Lab Filter for: <input type="checkbox"/> Field Filtered For: For Compliance With: <input type="checkbox"/> NELAP <input type="checkbox"/> RCRA <input type="checkbox"/> CWA <input type="checkbox"/> SDWA <input type="checkbox"/> ELAP / A2LA <input type="checkbox"/> NLLAP <input type="checkbox"/> Non-Compliance <input checked="" type="checkbox"/> Other: <u>UPDES</u> Known Hazards & Sample Comments	Unless other arrangements have been made, signed reports will be emailed by 5:00 pm on the day they are due. Laboratory Use Only COC Tape Was: 1 Present on Outer Package <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <u>NA</u> 2 Unbroken on Outer Package <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <u>NA</u> 3 Present on Sample <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <u>NA</u> 4 Unbroken on Sample <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <u>NA</u> Samples Were: 1 Shipped or hand delivered <input checked="" type="checkbox"/> 2 Ambient or Chilled <input checked="" type="checkbox"/> 3 Temperature <u>3.9</u> °C 4 Received Intact <input type="checkbox"/> Y <input checked="" type="checkbox"/> N 5 Properly Preserved <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Checked at bench 6 Received Within Holding Times <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Sample Labels and COC Record Match? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N							
									OUTFALL 1	6/14/21	9:20 AM	X	X	X	X	X

Relinquished by: <u>[Signature]</u> Signature	Date: <u>6/14/21</u>	Received by: <u>[Signature]</u> Signature	Date: <u>6/14/21</u>
Print Name: <u>Levi Warren</u>	Time: <u>10:19</u>	Print Name: <u>Denise Brown</u>	Time: <u>10:19</u>
Relinquished by: _____ Signature	Date: _____	Received by: _____ Signature	Date: _____
Print Name: _____	Time: _____	Print Name: _____	Time: _____
Relinquished by: _____ Signature	Date: _____	Received by: _____ Signature	Date: _____
Print Name: _____	Time: _____	Print Name: _____	Time: _____

Special Instructions:

By signing this Chain of Custody you are agreeing to permit AWAL to subcontract any analyses not normally performed at AWAL.

Receipt Condition and Preservation Check Sheet

Lab Set ID: 2106400
 pH Lot #: 6700

Samples Were: <input type="checkbox"/> Shipped By: <input checked="" type="checkbox"/> Hand Delivered <input type="checkbox"/> Ambient <input checked="" type="checkbox"/> Chilled Temperature <u>3.9</u> °C	Received Within Hold: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A Notes:	Received Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A Notes:
COC Tape Was: Present on Outer Package: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A Unbroken on Outer Package: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A Present on Sample: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A Unbroken on Sample: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Properly Preserved: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Checked at Bench Notes:	Sample Labels and COC Record Match? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Notes:

Sample Set Extension and pH

Analysis	Preservative	-001																	
Ammonia	pH < 2 H ₂ SO ₄																		
COD	pH < 2 H ₂ SO ₄	yes																	
Cyanide	pH > 10 NaOH																		
Metals	pH < 2 HNO ₃	yes																	
NO ₂ & NO ₃	pH < 2 H ₂ SO ₄																		
O & G	pH < 2 HCL																		
Phenols	pH < 2 H ₂ SO ₄																		
Sulfide	pH > 9 NaOH, ZnAC																		
TKN	pH < 2 H ₂ SO ₄																		
T PO ₄	pH < 2 H ₂ SO ₄																		
Cr VI+	pH > 9 (NH ₄) ₂ SO ₄																		

- * The sample required additional preservative upon receipt.
- + The sample was received unpreserved.
- ▲ The sample was received unpreserved and therefore preserved upon receipt.
- # The sample pH was unadjustable to a pH < 2 due to the sample matrix.
- The sample pH was unadjustable to a pH > ____ due to the sample matrix interference.