

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. **UT0000035**

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

ASHLEY VALLEY OPERATING, LLC

is hereby authorized to discharge from its wastewater treatment facility to receiving waters named **UN-NAMED DITCH TO UNION IRRIGATION CANAL AND ASHLEY CREEK TO THE GREEN RIVER,**

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

This permit shall become effective on January 1, 2021.

This permit expires at midnight on December 31, 2025.

Signed this 6th day of January, 2021.



Erica Brown Gaddis, PhD
Director

DWQ-2020-013719

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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*.

Outfall Number

Location of Discharge Outfall

001

Located at latitude N 40.366969° and longitude -109.414831°. The discharge is through a 30-inch diameter gravity flow pipe leading from the third retention pond to an unnamed ditch.

- 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 VI*, and determined by test procedures described in *Part I. C.5.a* of this permit.
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:

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| Parameter | Effluent Limitations *a | | | | |
|---|-------------------------|--------------------|---------------|---------------|-----------------------------------|
| | Maximum Monthly Avg | Maximum Weekly Avg | Yearly Limit | Daily Minimum | Daily Maximum |
| Total Flow, MGD | 1.5 | -- | -- | -- | -- |
| BOD ₅ , mg/L | 30 | 45 | -- | -- | -- |
| TSS, mg/L | 25 | 35 | -- | -- | -- |
| WET, Chronic Biomonitoring | -- | -- | -- | -- | IC ₂₅ > 16.7% effluent |
| Oil & Grease, mg/L | -- | -- | -- | -- | 10.0 |
| pH, Standard Units | -- | -- | -- | 6.5 | 9 |
| Undissociated H ₂ S, mg/L *e, *f | -- | -- | -- | -- | 1.500/1.000/0.002 |
| TDS, mg/L | -- | -- | -- | -- | 1200 |
| TDS *d | 1 ton/day | -- | 366 tons/year | -- | -- |

| Self-Monitoring and Reporting Requirements *a | | | |
|---|----------------|-------------|-----------|
| Parameter | Frequency | Sample Type | Units |
| Total Flow *b | Continuous | Recorder | MGD |
| BOD ₅ | Monthly | Grab | mg/L |
| TSS | Monthly | Grab | mg/L |
| pH | Monthly | Grab | SU |
| WET – Biomonitoring *c | Semi- annually | Grab | Pass/Fail |
| Oil & Grease | Monthly | Grab | mg/L |
| TDS, mg/L | Monthly | Grab | mg/L |
| TDS *d | Monthly | Grab | tons/day |
| Undissociated H ₂ S, mg/L *e, *f | Monthly | Grab | mg/L |

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

*b Flow measurements of influent/effluent volume shall be made in such a manner that the permittee can affirmatively demonstrate that representative values are being obtained.

*c One semi-annual sample is to be collected during irrigation season (April – October) and one to be collected during the non-irrigation season (November – March). Tests will be conducted using both *Ceriodaphnia dubia* and *Pimephales promelas* (fathead minnow) species.

*d No tons per day loading limit will be applied if the concentration of TDS in the discharge is equal to or less than 500 mg/L as a thirty-day average. However, if the thirty-day average TDS concentration exceeds 500 mg/L, then the permittee cannot discharge more than one-ton per day or 366 tons per year as a sum from all discharge points exceeding 500 mg/L as a thirty-day average. If the permittee cannot achieve one-ton per day or 366 tons per year as a sum from all applicable

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Outfalls, the permittee will be required to account for the excess salinity/TDS tonnage by developing a treatment process, participating in a salinity offset program, or other type of mechanism to remove or offset the excess salinity/TDS. See Colorado River Basin Salinity Control Program Offset Agreement section below for agreement details.

- *e Method for H₂S calculation can be found in the most recent edition of *Standard Methods for the Examination of Water and Wastewater*. In the event any value associated with this parameter is non-detect, 0.5 of the detection limit will be used to calculate the reported value.
- *f The effective date for the final undissociated H₂S limit of 0.002 mg/L is November 1, 2022. At time of permit issue interim limit will be 1.500 mg/L and the interim limit of 1.000 mg/L will take effect April 1, 2021.

| Date | H ₂ S Parameter Limit, mg/L |
|------------------|--|
| Permit Issue | 1.500 |
| April 1, 2021 | 1.000 |
| November 1, 2022 | 0.002 |

3. Colorado River Basin Salinity Control Program Offset Agreement

- a. According to the Colorado River Basin Salinity Control Program: Utah, Monitoring and Evaluation Report, FY2019 the cumulative cost of offsetting 1 ton of salt in the Uinta Basin is \$155. As of August 2020 AVO has hired an independent consulting firm to examine water chemistry and use at the Ashley Valley Oil Fields. DWQ has agreed to provide an **85% reduction, averaged over a period of roughly three years**, while AVO examines and starts to implement solutions. This payment will become due on January 31, covering the previous calendar year (January through December); with the expectation of the first payment which will cover permit issuance through December 2021 (due January 31, 2022). There will also be a 10% fee added to offset cost to cover the Utah Department of Agriculture and Food administrative fee, as they solicit and implement offset projects. As part of this offset agreement, AVO must submit data gathered and request for future offset agreement by January 1, 2023. Any violation of this agreement will revoke it, and the offset will return to current rate as determined by the Colorado River Basin Salinity Control Program.

| Date | Action | Cost Reduction Applied |
|------------------|--|------------------------|
| January 31, 2022 | Salinity Offset Payment Due (Permit issue through December 31, 2021) | 95% |
| January 1, 2023 | AVO submits data gathered and submits request for future offset agreement | NA |
| January 31, 2023 | Salinity Offset Payment Due (January 1, 2022 through December 31, 2022) | 85% |
| January 1, 2024 | Agreement Expires (Cost/ ton becomes current rate or new cost determined by new agreement) | NA |
| January 31, 2024 | Salinity Offset Payment Due (January 1, 2023 through December 31, 2023) | 75% |

4. Undissociated H₂S Compliance Schedule

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- a. AVO has hired Linkan Engineering to address continued H2S limit exceedance issues. Linkan Engineering proposed a plan to achieve compliance that consists of two phases, with hope that issues will be addressed with actions taken in Phase I. If issues are addressed by Phase I, Phase II will not be needed. First table below outlines Compliance Schedule milestones. Note higher initial interim limit is to allow for additional testing. Any violation of milestones will revoke the Compliance Schedule and the final permit limit of 0.002 mg/L will immediately become active.

| Date | Milestone |
|-------------------|---|
| Permit Issue Date | H2S interim limit of 1.500 mg/L in effect |
| April 1, 2021 | H2S interim limit of 1.000 mg/L in effect |
| August 1, 2021 | Phase I design package submitted to DWQ for review |
| August 1, 2022 | Phase I updates installed |
| September 1, 2022 | If needed, AVO submits request for Phase II updates * |
| November 1, 2022 | H2S final limit of 0.002 mg/L in effect |

| Date | H2S Parameter Limit, mg/L |
|------------------|---------------------------|
| Permit Issue | 1.500 |
| April 1, 2021 | 1.000 |
| November 1, 2022 | 0.002 |

*If approved, Compliance Schedule will be modified.

5. Chronic Whole Effluent Toxicity (WET) Testing.

- a. *Whole Effluent Testing – Chronic Toxicity.*

Starting immediately, the permittee shall semi-annually conduct chronic static renewal toxicity tests on a grab sample of the final effluent at Outfall 001. The sample shall be collected at the point of compliance before mixing with the receiving water.

Three samples are required and samples shall be collected on Monday, Wednesday and Friday of each sampling period or collected on a two day progression for each sampling period. This may be changed with Director approval.

The chronic toxicity tests shall be conducted in general accordance with the procedures set out in the latest revision of *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms, Fourth Edition*, October 2002, EPA—821-R-02-013 as per 40 CFR 136.3(a) TABLE IA-LIST OF APPROVED BIOLOGICAL METHODS . Tests will be conducted using both Ceriodaphnia dubia and Pimephales promelas (fathead minnow) species.

A multi dilution test consisting of at least five concentrations and a control is required at two dilutions below and two above the RWC, if possible. If test acceptability criteria are not met for control survival, growth, or reproduction, the test shall be considered invalid. A valid replacement test is required within the specified sampling period to remain in compliance with this permit. Chronic toxicity occurs when, during a chronic toxicity test, the 25% inhibition concentration (IC25) calculated on the basis of test organism survival and growth or survival and reproduction, is less than or equal to 16.7 % effluent concentration (equivalent to the RWC). If a sample is found to be chronically toxic during a routine test, the monitoring frequency shall become biweekly (see *Part I. C.5.b Accelerated Testing*). (the Director may enter acceptable

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variations in the test procedure here as documented in the Fact Sheet Statement of Basis and based on the test acceptability criteria as contained in Utah Pollutant Discharge Elimination System (UPDES) Permitting and Enforcement Guidance Document for Whole Effluent Toxicity Control February, 2018). If possible, dilution water should be obtained from the receiving stream.

If the permit contains a total residual chlorine limitation such that it may interfere with WET testing (>0.20 mg/L), the permittee may dechlorinate the sample in accordance with the standard method. If dechlorination is negatively affecting the test, the permittee may collect the sample just before chlorination with Director approval.

Semi-annual test results shall be reported along with the Discharge Monitoring Report (DMR) submitted for the end of the required reporting period (e.g., biomonitoring results for the calendar quarter ending March 31 shall be reported with the DMR due April 28, with the remaining biomonitoring report submitted with DMR on October 28). Monthly test results shall be reported along with the DMR submitted for that month. The format for the report shall be consistent with Appendix C of "Utah Pollutant Discharge Elimination System (UPDES) Permitting and Enforcement Guidance Document for Whole Effluent Toxicity, Utah Division of Water Quality, February, 2018.

If the results for ten consecutive tests indicate no chronic toxicity, the permittee may submit a request to the Director to allow a reduction in chronic toxicity testing by alternating species, or using only the most sensitive species. The permit issuing authority may approve or deny the request based on the results and other available information without public notice. If the request is approved, the test procedures are to be the same as specified above for the test species. Under no circumstances shall monitoring for WET at major facilities be reduced less than quarterly. Minor facilities may be less than quarterly at the discretion of the Director.

- b. *Accelerated Testing.* When whole effluent toxicity is indicated during routine WET testing as specified in this permit, the permittee shall notify the Director in writing within 5 days after becoming aware of the test result. The permittee shall perform an accelerated schedule of WET testing to establish whether a pattern of toxicity exists unless the permittee notifies the Director and commences a PTI, TIE, or a TRE. Accelerated testing or the PTI, TIE, or TRE will begin within fourteen days after the permittee becomes aware of the test result. Accelerated testing shall be conducted as specified under Part I. Pattern of Toxicity. If the accelerated testing demonstrates no pattern of toxicity, routine monitoring shall be resumed.
- c. *Pattern of Toxicity.* A pattern of toxicity is defined by the results of a series of up to five biomonitoring tests pursuant to the accelerated testing requirements using a full set of dilutions for acute (five plus the control) and five effluent dilutions for chronic (five plus the control), on the species found to be more sensitive, once every week for up to five consecutive weeks for acute and once every two weeks up to ten consecutive weeks for chronic.

If two (2) consecutive tests (not including the scheduled test which triggered the search for a pattern of toxicity) do not result in an exceedance of the acute or chronic toxicity criteria, no further accelerated testing will be required and no pattern of toxicity will

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be found to exist. The permittee will provide written verification to the Director within 5 days of determining no pattern of toxicity exists, and resume routine monitoring.

A pattern of toxicity may or may not be established based on the following:

WET tests should be run at least weekly (acute) or every two weeks (chronic) (note that only one test should be run at a time), for up to 5 tests, until either:

1) 2 consecutive tests fail, or 3 out of 5 tests fail, at which point a pattern of toxicity will have been identified, or

2) 2 consecutive tests pass, or 3 out of 5 tests pass, in which case no pattern of toxicity is identified.

d. *Preliminary Toxicity Investigation.*

(1) When a pattern of toxicity is detected the permittee will notify the Director in writing within 5 days and begin an evaluation of the possible causes of the toxicity. The permittee will have 15 working days from demonstration of the pattern of toxicity to complete an optional Preliminary Toxicity Investigation (PTI) and submit a written report of the results to the Director. The PTI may include, but is not limited to: additional chemical and biological monitoring, examination of pretreatment program records, examination of discharge monitoring reports, a thorough review of the testing protocol, evaluation of treatment processes and chemical use, inspection of material storage and transfer areas to determine if any spill may have occurred.

(2) If the PTI identifies a probable toxicant and/or a probable source of toxicity, the permittee shall submit, as part of its final results, written notification of that effect to the Director. Within thirty days of completing the PTI the permittee shall submit to the Director for approval a control program to control effluent toxicity and shall proceed to implement such plan in accordance with the Director's approval. The control program, as submitted to or revised by the Director, will be incorporated into the permit. After final implementation, the permittee must demonstrate successful removal of toxicity by passing a two species WET test as outlined in this permit. With adequate justification, the Director may extend these deadlines.

(3) If no probable explanation for toxicity is identified in the PTI, the permittee shall notify the Director as part of its final report, along with a schedule for conducting a Phase I Toxicity Reduction Evaluation (TRE) (see *Part I.C.5.e* Toxicity Reduction Evaluation).

(4) If toxicity spontaneously disappears during the PTI, the permittee shall submit written notification to that effect to the Director, with supporting testing evidence.

e. *Toxicity Reduction Evaluation (TRE).* If a pattern of toxicity is detected the permittee shall initiate a TIE/TRE within 7 days unless the Director has accepted the decision to complete a PTI. With adequate justification, the Director may extend the 7-day deadline. The purpose of the TIE portion of a TRE will be to establish the cause of the

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toxicity, locate the source(s) of the toxicity, and the TRE will control or provide treatment for the toxicity.

A TRE may include but is not limited to one, all, or a combination of the following:

- (1) Phase I – Toxicity Characterization
- (2) Phase II – Toxicity Identification Procedures
- (3) Phase III – Toxicity Control Procedures
- (4) Any other appropriate procedures for toxicity source elimination and control.

If the TRE establishes that the toxicity cannot be immediately eliminated, the permittee shall submit a proposed compliance plan to the Director. The plan shall include the proposed approach to control toxicity and a proposed compliance schedule for achieving control. If the approach and schedule are acceptable to the Director, this permit may be reopened and modified.

If toxicity spontaneously disappears during the TIE/TRE, the permittee shall submit written notification to that effect to the Director.

If the TRE shows that the toxicity is caused by a toxicant(s) that may be controlled with specific numerical limitations, the permittee shall submit the following:

- (a) An alternative control program for compliance with the numerical requirements.
- (b) If necessary, as determined by the Director, provide a modified biomonitoring protocol which compensates for the pollutant(s) being controlled numerically.

This permit may be reopened and modified to incorporate any additional numerical limitations, a modified compliance schedule if judged necessary by the Director, and/or modified WET testing requirements without public notice.

Failure to conduct an adequate TIE/TRE plan or program as described above, or the submittal of a plan or program judged inadequate by the Director, shall be considered a violation of this permit. After implementation of TIE/TRE plan, the permittee must demonstrate successful removal of toxicity by passing a two species WET test as outlined in this permit.

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 a Discharge Monitoring Report Form (EPA No. 3320-1)* or by NetDMR, post-marked or entered into NetDMR no later than the 28th day of the month following the completed reporting period. The first report is due on January 28, 2021. 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, or to the Division of Water Quality at the following address:

Department of Environmental Quality
Division of Water Quality
PO Box 144870
Salt Lake City, Utah 84114-4870

* Starting January 1, 2017 monitoring results must be submitted using NetDMR unless the permittee has successfully petitioned for an exception.

II. STORM WATER REQUIREMENTS.

- A. Industrial Storm Water Permit. If the facility has a storm water discharge that results in the discharge of a reportable quantity or contributes to a water quality standard violation as described in *UAC R317-8-3.9(2)(a)3*, the permittee is required to obtain 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 the reportable discharge or violation occurs 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 (UTRC000000). 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.

III. 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

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report shall be made to the Division of Water Quality, (801) 536-4300, or 24-hour answering service (801) 536-4123.

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 IV.G, Bypass of Treatment Facilities.*);
 - c. Any upset which exceeds any effluent limitation in the permit (See *Part IV.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 III.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;

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2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
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.

K. Pretreatment Reporting Requirements.

1. Discharges to a POTW. Any process wastewater that the facility may discharge to the sanitary sewer, either as direct discharge or as a hauled waste, is subject to federal, state and local pretreatment regulations. Pursuant to Section 307 of the CWA, the permittee shall comply with all applicable Federal General Pretreatment Regulations promulgated, found in *40 CFR Part 403*, the State Pretreatment Requirements found in *UAC R317-8-8*, and any specific local discharge limitations developed by the Publicly Owned Treatment Works (POTW) accepting the waste.
2. Hazardous Waste Requirements. In accordance with *40 CFR Part 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 Part 261*. This notification must include the name of the hazardous waste, the EPA hazardous waste number, and the type of discharge (continuous or batch).
3. Hauled Hazardous Waste. Notification must be provided to the Pretreatment Coordinator for the Division of Water Quality 14 days prior to discharge to a POTW which does not have an approved pretreatment program.

IV. 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 IV.G, Bypass of Treatment Facilities* and *Part IV.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.

- 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 IV.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 IV.G.2.a (1), (2) and (3)*.

3. Notice.

- a. *Anticipated bypass.* Except as provided above in *section IV.G.2* and below in *section IV.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 IV.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 II.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 III.H*, *Twenty-four Hour Notice of Noncompliance Reporting*; and,
 - d. The permittee complied with any remedial measures required under *Part IV.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.

- I. Toxic Pollutants. The permittee shall comply with effluent standards or prohibitions established under Section 307(a) of *CWA* for toxic pollutants within the time provided in the regulations that establish those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

- J. Changes in Discharge of Toxic Substances. Notification shall be provided to the Director Secretary as soon as the permittee knows of, or has reason to believe:

1. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
 - a. One hundred micrograms per liter (100 ug/L);
 - b. Two hundred micrograms per liter (200 ug/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 ug/L) for 2,4-dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
 - c. Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with *UAC R317-8-3.4(7)* or (10); or,

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- d. The level established by the Director in accordance with *UAC R317-8-4.2(6)*.
- 2. That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
 - a. Five hundred micrograms per liter (500 ug/L);
 - b. One milligram per liter (1 mg/L) for antimony;
 - c. Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with *UAC R317-8-3.4(9)*; or,
 - d. The level established by the Executive Secretary in accordance with *UAC R317-8-4.2(6)*.

V. 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 V.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 V.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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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, whole effluent toxicity (WET) limitations, a compliance date, a compliance schedule, a change in the whole effluent toxicity (biomonitoring) protocol, additional or modified numerical limitations, or any other conditions related to the control of toxicants if one or more of the following events occur;
1. Toxicity is detected, as per *Part I.C.4.a* of this permit, during the duration of this permit.

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2. The TRE results indicate that the toxicant(s) represent pollutant(s) or pollutant parameter(s) that may be controlled with specific numerical limits and the Director concludes that numerical controls are appropriate.
 3. Following the implementation of numerical control(s) of toxicant(s), the Director agrees that a modified biomonitoring protocol is necessary to compensate for those toxicants that are controlled numerically.
 4. The TRE reveals other unique conditions or characteristics, which in the opinion of the permit issuing authority justify the incorporation of unanticipated special conditions in the 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".

VI. 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. "Bypass," means the diversion of waste streams from any portion of a treatment facility.
6. "Chronic toxicity" occurs when the IC₂₅ < 16.7% effluent. The 16.7% effluent is the concentration of the effluent in the receiving water, at the end of the mixing zone expressed as per cent effluent.
7. "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.
8. "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;
 - 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;

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- 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.
- 9. “CWA” means *The Federal Water Pollution Control Act*, as amended, by *The Clean Water Act of 1987*.
 - 10. “Daily Maximum” (Daily Max.) is the maximum value allowable in any single sample or instantaneous measurement.
 - 11. “EPA,” means the United States Environmental Protection Agency.
 - 12. “Director,” means Director of the Division of Water Quality.
 - 13. A “grab” sample, for monitoring requirements, is defined as a single “dip and take” sample collected at a representative point in the discharge stream.
 - 14. An “instantaneous” measurement, for monitoring requirements, is defined as a single reading, observation, or measurement.
 - 15. POTW or publicly owned treatment works means a treatment works as defined by section 212 of the Act, which is owned by a State or municipality (as defined by section 502(4) of the Act). 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 Act, which has jurisdiction over the Indirect Discharges to and the discharges from such a treatment works.
 - 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
ASHLEY VALLEY OPERATING, LLC
RENEWAL PERMIT: DISCHARGE
UPDES PERMIT NUMBER: UT0000035
MINOR INDUSTRIAL

FACILITY CONTACTS

Person Name: Lanham Frazier
Position: Operations Manager, Ashley Valley Operating Company, LLC
Phone Number: (281) 455-0552

Person Name: James Roush
Position: Plant Operator, Ashley Valley Operating Company, LLC
Phone Number: (435) -279-7144

Facility Name: Ashley Valley Operating (AVO)
Mailing and Facility Address: 55 Waugh Drive, Suite 550
Houston, TX 77007
Actual Address: South 5500 East
Jensen, UT 84035

DESCRIPTION OF FACILITY

Ashley Valley Operating, LLC is the current permit holder of Ashley Valley Operating, LLC (AVO), thus the Ashley Valley Unit North Production Facility located in Uintah County near Jensen, Utah. AVO became the permit holder effective December 1, 2014. Historically, water produced in association with oil production in the area flowed through three facilities which were permitted to discharge water. Two of the facilities, CIMA (UT0021768) and "USA Pan American Facility" (UT0000124) have since been terminated as result of facility closure. The Ashley Valley Unit North Production Facility (UT0000035) continues to discharge water produced in association with oil production in the area. The Ashley Valley Unit North Production Facility has a Standard Industrial Classification (SIC) Code 1311 for crude petroleum and natural gas extraction. Under normal operations the facility continuously discharges effluent, which consists of groundwater produced concurrently with oil production from Ashley Valley oil field. The produced water is separated from the oil by both mechanical and gravity means in treatment vessels along with three retention ponds in series. The final effluent discharges from a culvert leaving the third retention pond, and flows through an unnamed ditch approximately 1/4 of a mile to a private retention pond before continuing down an unnamed ditch approximately another 1/2 mile where it flows through a diversion structure, mixes with canal water, and flows into the Union Irrigation Canal. The canal has diverter to control whether water flows into Ashley Creek or provides for local irrigation. During irrigation season most, if not all, of the water is diverted into the Union Irrigation Canal. During the non-irrigation season most is diverted to Ashley Creek.

SUMMARY OF CHANGES FROM PREVIOUS PERMIT

AVO has improved their treatment process – most notably adding an additional aeration tank. AVO has also installed an agitator in pond 2 to improve aeration, upgraded piping between retention ponds and Outfall 001 to improve functionality, modified a gunbarrel, and installed an oil and water separator used to measure oil production. Lastly, AVO has added levy height to detention ponds to increase capacity.

AVO discharges into the Colorado River Basin, thus must comply with the Colorado River System Water Quality Standards for Salinity. Under this program AVO is allowed 1 ton/day salt loading, or 366 tons/year. In the past the Division of Water Quality (DWQ) has granted a waiver from this standard, but based on recent review, waiver has been denied for this permit cycle. See COLORADO RIVER BASIN SALINITY CONTROL PROGRAM OFFSET section in this document for agreement details.

DISCHARGE

DESCRIPTION OF DISCHARGE

AVO has been reporting self-monitoring results on Discharge Monitoring Reports on a monthly basis. There have been numerous violations during the last permit cycle.

| <u>Outfall</u> | <u>Description of Discharge Point</u> |
|----------------|---|
| 001 | Located at latitude N 40.366969° and longitude -109.414831°. The discharge is through a 30-inch diameter gravity flow pipe leading from the third retention pond to an unnamed ditch. |

RECEIVING WATERS AND STREAM CLASSIFICATION

The final discharge from AVO flows into an unnamed ditch, which flows into Ashley Creek, thence to the Green River. The designated beneficial uses of Ashley Creek and tributaries, from confluence with Green River to Steinaker diversion are 2B, 3B, and 4 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 3B -- Protected for warm water species of game fish and other warm water aquatic life, including the necessary aquatic organisms in their food chain.
- Class 4 -- Protected for agricultural uses including irrigation of crops and stock watering.

BASIS FOR EFFLUENT LIMITATIONS

Limitations pH are based on current Utah Secondary Treatment Standards, UAC R317-1-3.2. Oil and grease are based on best professional judgment (BPJ). The rest of the parameters have been determined by the Wasteload Analysis, which is attached. It has been determined that this discharge will not cause a violation of water quality standards. An Antidegradation Level II review is not required since the Level I review shows that water quality impacts are minimal. The permittee is expected to be able to comply with

these limitations.

Total dissolved solids (TDS) limitations are based upon Utah Water Quality Standards for concentration values and the Colorado River Basin Salinity Control Forum (CRBSCF) for mass loading values when applicable as authorized in *UAC R317-2-4*. Regarding TDS loading, the CRBSCF Policy entitled “NPDES Permit Program Policy for Implementation of Colorado River Salinity Standards” (Policy), with the most current version dated October 2017, requires the TDS loading limitation of one-ton per day (or 366 tons per year) as a sum from all discharge points, unless the average concentration of TDS is 500 mg/L or less. If the concentration of TDS at any Outfall is less than or equal to 500 mg/L as a thirty day average, then no loading limit applies for that Outfall. The one-ton per day (or 366 tons per year) loading limit applies only to those Outfalls exceeding 500 mg/L as a thirty day average. Outfalls exceeding 500 mg/L as a thirty day average, collectively, need to meet the one-ton per day (or 366 tons per year) limit. If one-ton per day (or 366 tons per year) TDS cannot be achieved, then the permittee will be required to remove salinity/TDS in excess of one-ton per day (or 366 tons per year) by developing a treatment process, participating in a salinity off-set program, or developing some type of mechanism to remove the salinity/TDS unless a demonstration is made by the permittee resulting an exemption to these requirements. AVO has recently submitted information requesting an exemption, but the DWQ has denied the full exemption for this permit cycle -- therefore, participation in a salinity-offset program or other applicable mechanism is required.

COLORADO RIVER BASIN SALINITY CONTROL PROGRAM OFFSET

According to the *Colorado River Basin Salinity Control Program: Utah, Monitoring and Evaluation Report, FY2019* the cumulative cost of offsetting 1 ton of salt in the Uinta Basin is \$155. As of August 2020 AVO has hired an independent consulting firm to examine water chemistry and use at the Ashley Valley Oil Fields. DWQ has agreed to provide an **85% reduction, averaged over a period of roughly three years**, while AVO examines and starts to implement solutions. This payment will become due on January 31, covering the previous calendar year (January through December), with the expectation of the first payment which will cover permit issuance through December 2021 (due January 31, 2022). There will also be a 10% fee added to offset cost to cover the Utah Department of Agriculture and Food administrative fee, as they solicit and implement offset projects. As part of this offset agreement, AVO must submit data gathered and request for future offset agreement by January 1, 2023. Any violation of this agreement will revoke it, and the offset will return to current rate as determined by the *Colorado River Basin Salinity Control Program*.

| Date | Action | Cost Reduction Applied |
|------------------|--|-------------------------------|
| January 31, 2022 | Salinity Offset Payment Due (Permit issue through December 31, 2021) | 95% |
| January 1, 2023 | AVO submits data gathered and submits request for future offset agreement | NA |
| January 31, 2023 | Salinity Offset Payment Due (January 1, 2022 through December 31, 2022) | 85% |
| January 1, 2024 | Agreement Expires (Cost/ ton becomes current rate or new cost determined by new agreement) | NA |
| January 31, 2024 | Salinity Offset Payment Due (January 1, 2023 through December 31, 2023) | 75% |

UNDISSOCIATED H2S COMPLIANCE SCHEDULE

The DWQ has determined that AVO's current discharge is in violation of the narrative water quality standards due to excessive growth of sulphide-loving bacteria in the receiving water. As a result, the aquatic water quality standard for undissociated hydrogen sulfide of 0.002 mg/L will be applied to the discharge as an end-of-pipe limit. AVO has hired Linkan Engineering to address continued H2S limit exceedance issues. Linkan Engineering proposed a plan to achieve compliance that consists of two phases, with hope that issues will be addressed with actions taken in Phase I. If issues are addressed by Phase I, Phase II will not be needed. First table below outlines Compliance Schedule milestones. Note higher initial interim limit is to allow for additional testing. Any violation of milestones will revoke the Compliance Schedule and the final permit limit of 0.002 mg/L will immediately become active.

| Date | Milestone |
|-------------------|---|
| Permit Issue Date | H2S interim limit of 1.500 mg/L in effect |
| April 1, 2021 | H2S interim limit of 1.000 mg/L in effect |
| August 1, 2021 | Phase I design package submitted to DWQ for review |
| August 1, 2022 | Phase I updates installed |
| September 1, 2022 | If needed, AVO submits request for Phase II updates * |
| November 1, 2022 | H2S final limit of 0.002 mg/L in effect |

| Date | H2S Parameter Limit, mg/L |
|------------------|---------------------------|
| Permit Issue | 1.500 |
| April 1, 2021 | 1.000 |
| November 1, 2022 | 0.002 |

*If approved, Compliance Schedule will be modified.

Reasonable Potential Analysis

Since January 1, 2016, the 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 was no metal data reported during the last permit cycle, so RP was not performed on metals.

The permit limitations are:

| Parameter | Effluent Limitations *a | | | | |
|----------------------------|-------------------------|--------------------|----------------|---------------|-----------------------------------|
| | Maximum Monthly Avg | Maximum Weekly Avg | Yearly Average | Daily Minimum | Daily Maximum |
| Total Flow, MGD | 1.5 | -- | -- | -- | -- |
| BOD ₅ , mg/L | 30 | 45 | -- | -- | -- |
| TSS, mg/L | 25 | 35 | -- | -- | -- |
| WET, Chronic Biomonitoring | -- | -- | -- | -- | IC ₂₅ > 16.7% effluent |
| Oil & Grease, mg/L | -- | -- | -- | -- | 10.0 |
| pH, Standard Units | -- | -- | -- | 6.5 | 9 |
| Undissociated H2S, | -- | -- | -- | -- | 1,500/1,000/0.002 |

| | | | | | |
|-------------|--------------|----|------------------|----|------|
| mg/L *e, *f | | | | | |
| TDS, mg/L | -- | -- | -- | -- | 1200 |
| TDS *d | 1 ton/day | -- | 366 tons/year | -- | -- |

SELF-MONITORING AND REPORTING REQUIREMENTS

The following self-monitoring requirements are different than the previous permit. TDS in tons/day will now need to be calculated. 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. Lab sheets for biomonitoring must be attached to the biomonitoring DMR. Lab sheets for metals and toxic organics must be attached to the DMRs.

| Self-Monitoring and Reporting Requirements *a | | | |
|--|----------------|-------------|-----------|
| Parameter | Frequency | Sample Type | Units |
| Total Flow *b | Continuous | Recorder | MGD |
| BOD ₅ | Monthly | Grab | mg/L |
| TSS | Monthly | Grab | mg/L |
| pH | Monthly | Grab | SU |
| WET – Biomonitoring *c | Semi- annually | Grab | Pass/Fail |
| Oil & Grease | Monthly | Grab | mg/L |
| TDS, mg/L | Monthly | Grab | mg/L |
| TDS *d | Monthly | Grab | tons/day |
| Undissociated H ₂ S, mg/L *e, *f | Monthly | Grab | mg/L |

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

*b Flow measurements of influent/effluent volume shall be made in such a manner that the permittee can affirmatively demonstrate that representative values are being obtained.

*c One semi-annual sample is to be collected during irrigation season (April – October) and one to be collected during the non-irrigation season (November – March). Tests will be conducted using both *Ceriodaphnia dubia* and *Pimephales promelas* (fathead minnow) species.

*d No tons per day loading limit will be applied if the concentration of TDS in the discharge is equal to or less than 500 mg/L as a thirty-day average. However, if the thirty-day average TDS concentration exceeds 500 mg/L, then the permittee cannot discharge more than one-ton per day or 366 tons per year as a sum from all discharge points exceeding 500 mg/L as a thirty-day average. If the permittee cannot achieve one-ton per day or 366 tons per year as a sum from all applicable Outfalls, the permittee will be required to account for the excess salinity/TDS tonnage by developing a treatment process, participating in a salinity offset program, or other type of mechanism to remove or offset the excess salinity/TDS. See COLORADO RIVER BASIN SALINITY CONTROL PROGRAM OFFSET section in this document for agreement details.

*e Method for H₂S calculation can be found in the most recent edition of *Standard Methods for the Examination of Water and Wastewater*. In the event any value associated with this parameter is non-detect, 0.5 of the detection limit will be used to calculate the reported value.

- *f The effective date for the final undissociated H₂S limit of 0.002 mg/L is November 1, 2022. At time of permit issue interim limit will be 1.500 mg/L and the interim limit of 1.000 mg/L will take effect April 1, 2021.

| Date | H ₂ S Parameter Limit, mg/L |
|------------------|--|
| Permit Issue | 1.500 |
| April 1, 2021 | 1.000 |
| November 1, 2022 | 0.002 |

BIOSOLIDS

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 is a lagoon, there is not any regular sludge production. Therefore 40 CFR 503 does not apply at this time. In the future, if the sludge needs to be removed from the lagoons and is disposed in some way, the DWQ must be contacted prior to the removal of the sludge to ensure that all applicable state and federal regulations are met.

STORM WATER

STORMWATER REQUIREMENTS

Storm water requirements are not included in this permit. Instead, separate storm water permits may be required based on the types of activities occurring on site.

Permit coverage under the Construction General Storm Water Permit (CGP) is required for any construction at the facility which will 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.

As described in UAC R317-8-3.9(2)(a)3, an industrial storm water permit is only required if the facility has had a storm water discharge that results in the discharge of a reportable quantity or has contributed to a water quality standard violation.

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

PRETREATMENT REQUIREMENTS

There will be no discharge of any process water or by-product to the sanitary sewer. Any wastewater conveyed to a public sanitary sewer is subject to federal, state and local pretreatment regulations. Pursuant to section 307 of the Clean Water Act, AVO shall comply with all applicable federal pretreatment regulations promulgated in 40 CFR Section 403, the State pretreatment requirements found in UAC R317-8-8 and any specific local regulations developed by the wastewater treatment plant. Notification must be provided to the DWQ's Pretreatment Coordinator 14 days prior to discharge to a POTW which does not have an approved pretreatment program.

BIOMONITORING REQUIREMENTS

A nationwide effort to control toxic discharges where effluent toxicity is an existing or potential concern is regulated in accordance with the Utah Pollutant Discharge Elimination System Permit and Enforcement Guidance Document for Whole Effluent Toxicity (WET) Control (biomonitoring), dated February 2018. Authority to require effluent biomonitoring is provided in Permit Conditions, UAC R317-8-4.2, Permit Provisions, UAC R317-8-5.3 and Water Quality Standards, UAC R317-2-5 and R317 -2-7.2.

Acute WET testing was completed at this facility from 2004 to 2009. During that time period there were no acute toxicity failures. As a result it was eliminated from the permit during the last two permit cycles. Based on this information there appears to be no reasonable potential for acute toxicity. During this last permit cycle, testing for chronic toxicity was required, and shall continue to be required for the next permit cycle.

The renewal permit will contain a toxicity limitation re-opener provision that allows for modification of the permit at any time in the future should testing indicate the presence of toxicity in the discharge.

PERMIT DURATION

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

Drafted by
Danielle Lenz, Discharge
Jennifer Robinson, Pretreatment
Lonnie Shull, Biomonitoring
Lisa Stevens, Storm Water
Danielle Lenz, Reasonable Potential Analysis
Nick von Stackelberg, Wasteload Analysis
Utah Division of Water Quality, (801) 536-4300

PUBLIC NOTICE

Began: November 21, 2020
Ended: December 21, 2020

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

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.

Responsiveness Summary

No comments were received during the public comment period.

DWQ-2020-013717

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ATTACHMENT 1

Effluent Monitoring Data

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Effluent Monitoring Data.

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WET Results

| Month | WET Test | Pass / Fail |
|-----------|----------|-------------|
| 9/30/2017 | Chronic | Pass |
| 3/31/2018 | Chronic | Pass |
| 9/30/2018 | Chronic | Pass |
| 3/31/2019 | Chronic | Fail |
| 9/30/2019 | Chronic | Fail |
| 3/31/2020 | Chronic | ND |
| 9/30/2017 | Chronic | ND |
| 3/31/2018 | Chronic | ND |
| 9/30/2018 | Chronic | ND |
| 3/31/2019 | Chronic | Pass |
| 9/30/2019 | Chronic | Pass |

ND = Non-detect

NR= Not reported

ATTACHMENT 2

Wasteload Analysis

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**Utah Division of Water Quality
Statement of Basis
ADDENDUM
Wasteload Analysis and Antidegradation Level I Review**

Date: July 31, 2020

Prepared by: Nicholas von, Stackelberg, P.E.
Watershed Protection Section

Facility: Ashley Valley Operating
UPDES No. UT-0000035

Receiving water: Ashley Creek (2B, 3B, 4)

This addendum summarizes the wasteload analysis that was performed to determine water quality based effluent limits (WQBEL) for this discharge. Wasteload analyses are performed to determine point source effluent limitations necessary to maintain designated beneficial uses by evaluating projected effects of discharge concentrations on in-stream water quality. The wasteload analysis also takes into account downstream designated uses (UAC R317-2-8). Projected concentrations are compared to numeric water quality standards to determine acceptability. The numeric criteria in this wasteload analysis may be modified by narrative criteria and other conditions determined by staff of the Division of Water Quality.

Discharge

Outfall 001: Outfall is located at the discharge pipe from Ashley Valley Operating Pond #3.

The design flow rate of the facility is 1.5 MGD maximum monthly average.

Receiving Water

The receiving water for Outfall 001 is an ephemeral dry wash that drains into the Union Canal. An overflow structure diverts a portion of the flow into Ashley Creek, with the remainder flowing via the Union Canal to the Green River.

Per UAC R317-2-13.1.b, the designated beneficial uses of Ashley Creek and tributaries, from confluence with Green River to Steinaker diversion are 2B, 3B, and 4.

- *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 3B - Protected for warm water species of game fish and other warm water aquatic life, including the necessary aquatic organisms in their food chain.*
- *Class 4 - Protected for agricultural uses including irrigation of crops and stock watering.*

Typically, the critical flow for the wasteload analysis is considered the lowest stream flow for

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Wasteload Analysis
Ashley Valley Operating
UPDES No. UT-0000035

seven consecutive days with a ten year return frequency (7Q10). Due to a lack of flow records for Ashley Creek, the 20th percentile of available flow measurements was calculated to approximate the 7Q10 low flow condition. The source of flow data was DWQ sampling station 4937210 Ashley Creek Above Confluence with Green River at 6550 South Crossing for 2010-2019. The critical low flow condition for Ashley Creek is 11.6 cfs

Ashley Creek water quality was characterized based on samples collected from DWQ monitoring site 4937210 Ashley Creek Above Confluence with Green River at 6550 South Crossing and 4937420 Ashley Creek at US40 Crossing for 2010-2019.

Impaired Waters and TMDL

Ashley Creek is listed as impaired for total dissolved solids (TDS) and selenium according to Utah's 2016 Integrated Report. A TMDL has not been completed for these constituents. Water quality based effluent limits (WQBELs) for these constituents will be set at the applicable water quality standards with no allowance for mixing.

Mixing Zone

Per UAC R317-2-5, the maximum allowable mixing zone is 15 minutes of travel time for acute conditions, not to exceed 50% of stream width, and 2,500 feet for chronic conditions. Water quality standards must be met at the end of the mixing zone. Acute limits were calculated using 50% of the seasonal critical low flow.

Parameters of Concern

The potential parameters of concern identified for the discharge were total suspended solids (TSS), dissolved oxygen (DO), biochemical oxygen demand (BOD₅), dissolved metals, undissociated H₂S, and TDS, as determined in consultation with the UPDES Permit Writer.

Wasteload Allocation Methods

Effluent limits were determined for conservative constituents using a mass balance mixing analysis (UDWQ 2012). The effluent limits for DO and BOD₅ to meet minimum DO criteria in the receiving water was evaluated using the Utah River Model.

Models and supporting documentation are available for review upon request.

WET Limits

The percent of effluent in the receiving water in a fully mixed condition, and acute and chronic dilution in a not fully mixed condition are calculated in the WLA in order to generate WET limits. The LC₅₀ (lethal concentration, 50%) percent effluent for acute toxicity and the IC₂₅ (inhibition concentration, 25%) percent effluent for chronic toxicity, as determined by the WET test, needs to be below the WET limits, as determined by the WLA. The WET limit for LC₅₀ is typically 100% effluent and does not need to be determined by the WLA.

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Wasteload Analysis
Ashley Valley Operating
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Table 1: WET Limits for IC₂₅

| Season | Percent Effluent | Dilution Ratio |
|--------|------------------|----------------|
| All | 16.7% | 5:1 |

Effluent Limits

Select WQBELs are summarized in Table 2. The complete list of WQBELs is attached in the Wasteload Addendum. Ammonia limits were set in order to meet instream DO criteria.

Table 2: Water Quality Based Effluent Limits Summary

| Effluent Constituent | Acute | | | Chronic | | |
|--|----------|-------|------------------|----------|-------|------------------|
| | Standard | Limit | Averaging Period | Standard | Limit | Averaging Period |
| Flow (MGD) | | | | | 1.5 | 30 days |
| Dissolved Oxygen (mg/L) | 5.0 | 5.0 | Minimum | 5.5 | 5.5 | 30 days |
| BOD ₅ (mg/L) | N/A | 45.0 | Maximum | N/A | 30.0 | 30 days |
| TDS | 1,200 | 1,200 | Maximum | | | |
| Un-dissociated H ₂ S (mg/L) | 0.002 | 0.002 | Maximum | | | |
| Turbidity Increase (NTU) | 10 | 10 | Maximum | | | |

Antidegradation Level I Review

The objective of the Level I ADR is to ensure the protection of existing uses, defined as the beneficial uses attained in the receiving water on or after November 28, 1975. No evidence is known that the existing uses deviate from the designated beneficial uses for the receiving water. Therefore, the beneficial uses will be protected if the discharge remains below the WQBELs presented in this wasteload.

A Level II Antidegradation Review (ADR) is required if the BOD limits are raised from the secondary standards in the current permit. Otherwise, a Level II ADR is not required for this discharge since the pollutant concentration and load is not increasing under this permit renewal.

Documents:

WLA Document: *AshleyValleyOperatingWLA_2020-07-31.docx*

Wasteload Analysis and Addendum: *AshleyValleyOperatingWLA_2020.xlsm*

References:

Utah Division of Water Quality. 2012. *Utah Wasteload Analysis Procedures Version 1.0*.

Utah Division of Water Quality. 2016. *Utah's 2016 Integrated Report*.

**Utah Division of Water Quality
Salt Lake City, Utah**

**WASTELOAD ANALYSIS [WLA]
Addendum: Statement of Basis**

7/31/2020

Facilities: Ashley Valley Operating
Discharging to: Union Canal => Ashley Creek

UPDES No: UT-0000035

I. Introduction

Wasteload analyses are performed to determine point source effluent limitations necessary to maintain designated beneficial uses by evaluating projected effects of discharge concentrations on in-stream water quality. The wasteload analysis also takes into account downstream designated uses [R317-2-8, UAC]. Projected concentrations are compared to numeric water quality standards to determine acceptability. The anti-degradation policy and procedures are also considered. The primary in-stream parameters of concern may include metals (as a function of hardness), total dissolved solids (TDS), total residual chlorine (TRC), un-ionized ammonia (as a function of pH and temperature, measured and evaluated in terms of total ammonia), and dissolved oxygen.

Mathematical water quality modeling is employed to determine stream quality response to point source discharges. Models aid in the effort of anticipating stream quality at future effluent flows at critical environmental conditions (e.g., low stream flow, high temperature, high pH, etc).

The numeric criteria in this wasteload analysis may always be modified by narrative criteria and other conditions determined by staff of the Division of Water Quality.

II. Receiving Water and Stream Classification

Union Canal => Ashley Creek: 2B, 3B, 4

III. Numeric Stream Standards for Protection of Aquatic Wildlife

| | |
|---------------------------------------|--|
| Total Ammonia (TNH3) | Varies as a function of Temperature and pH Rebound. See Water Quality Standards |
| Chronic Total Residual Chlorine (TRC) | 0.011 mg/l (4 Day Average) 0.019 mg/l (1 Hour Average) |
| Chronic Dissolved Oxygen (DO) | 5.5 mg/l (30 Day Average) 6.0 mg/l (7Day Average) 5.0 mg/l (1 Day Average) |
| Maximum Turbidity Increase | 10.0 NTU |
| Maximum Total Dissolved Solids | 1200.0 mg/l |

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Acute and Chronic Heavy Metals (Dissolved)

| Parameter | 4 Day Average (Chronic) Standard Concentration | 1 Hour Average (Acute) Standard Concentration |
|--|---|--|
| Aluminum | 87.0 ug/l** | 750.0 ug/l |
| Arsenic | 190.0 ug/l | 340.0 ug/l |
| Cadmium | 0.76 ug/l | 8.73 ug/l |
| Chromium III | 268.2 ug/l | 5612 ug/l |
| ChromiumVI | 11.0 ug/l | 16.0 ug/l |
| Copper | 30.5 ug/l | 51.7 ug/l |
| Iron | | 1000 ug/l |
| Lead | 18.6 ug/l | 476.8 ug/l |
| Mercury | 0.012 ug/l | 2.4 ug/l |
| Nickel | 168.5 ug/l | 1516 ug/l |
| Selenium | 4.6 ug/l | 20.0 ug/l |
| Silver | N/A ug/l | 41.1 ug/l |
| Zinc | 387.8 ug/l | 387.8 ug/l |
| * Allowed below discharge | | |
| **Chronic Aluminum standard applies only to waters with a pH < 7.0 and a Hardness < 50 mg/l as CaCO3 | | |

Metals Standards Based upon a Hardness of 400 mg/l as CaCO3

Organics [Pesticides]

| Parameter | 4 Day Average (Chronic) Standard Concentration | 1 Hour Average (Acute) Standard Concentration |
|-------------------|---|--|
| Aldrin | | 1.5 ug/l |
| Carbaryl | 2.1 ug/l | 2.1 ug/l |
| Chlordane | 0.0043 ug/l | 1.2 ug/l |
| Chlorpyrifos | 0.041 ug/l | 0.083 ug/l |
| DDT, DDE | 0.001 ug/l | 0.55 ug/l |
| Diazinon | 0.17 ug/l | 0.17 ug/l |
| Dieldrin | 0.056 ug/l | 0.24 ug/l |
| Endosulfan | 0.056 ug/l | 0.11 ug/l |
| Endrin | 0.036 ug/l | 0.086 ug/l |
| Heptachlor | 0.0038 ug/l | 0.26 ug/l |
| Lindane | 0.08 ug/l | 1 ug/l |
| Methoxychlor | | 0.03 ug/l |
| Mirex | | 0.001 ug/l |
| Nonylphenol | 6.6 ug/l | 28 ug/l |
| Parathion | 0.013 ug/l | 0.066 ug/l |
| PCB's | 0.014 ug/l | |
| Pentachlorophenol | 15 ug/l | 19 ug/l |
| Toxaphene | 0.0002 ug/l | 0.73 ug/l |

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IV. Numeric Stream Standards for Protection of Agriculture

| 4 Day Average (Chronic) Standard Concentration | 1 Hour Average (Acute) Standard Concentration |
|---|--|
| Arsenic | 100.0 ug/l |
| Boron | 750.0 ug/l |
| Cadmium | 10.0 ug/l |
| Chromium | 100.0 ug/l |
| Copper | 200.0 ug/l |
| Lead | 100.0 ug/l |
| Selenium | 50.0 ug/l |
| TDS, Summer | 1200.0 mg/l |

V. Numeric Stream Standards for Protection of Human Health (Class 1C Waters)

| 4 Day Average (Chronic) Standard Metals Concentration | 1 Hour Average (Acute) Standard Concentration |
|--|--|
| Arsenic | |
| Barium | |
| Cadmium | |
| Chromium | |
| Lead | |
| Mercury | |
| Selenium | |
| Silver | |
| Fluoride (3) to | |
| Nitrates as N | |

Chlorophenoxy Herbicides

2,4-D
2,4,5-TP
Endrin
γ-cyclohexane (Lindane)
Methoxychlor
Toxaphene

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Salt Lake City, Utah**

VI. Numeric Stream Standards the Protection of Human Health from Water & Fish Consumption [Toxics]

| | Maximum Conc., ug/l - Acute Standards | |
|---------------------------|--|--------------------------------------|
| | Class 1C | Class 3A, 3B |
| | [2 Liters/Day for 70 Kg Person over 70 Yr.] | [6.5 g for 70 Kg Person over 70 Yr.] |
| Antimony | | 640 ug/l |
| Copper | | |
| Nickel | | 4600 ug/l |
| Selenium | | 4200 ug/l |
| Thallium | | 0.47 ug/l |
| Zinc | | 26000 ug/l |
| Cyanide | | 400 ug/l |
| Asbestos (million fibers/ | | |
| 2,3,7,8-TCDD Dioxin | | 5.1E-09 ug/l |
| Acrolein | | 400 ug/l |
| Acrylonitrile | | 7 ug/l |
| Benzene | | 51 ug/l |
| Bromoform | | 120 ug/l |
| Carbon Tetrachloride | | 5 ug/l |
| Chlorobenzene | | 800 ug/l |
| Chlorodibromomethane | | 21 ug/l |
| Chloroform | | 2000 ug/l |
| Dalapon | | |
| Dichlorobromomethane | | 27 ug/l |
| 1,2-Dichloroethane | | 2000 ug/l |
| 1,1-Dichloroethylene | | 20000 ug/l |
| 1,2-Dichloropropane | | 31 ug/l |
| 1,3-Dichloropropene | | 12 ug/l |
| Ethylbenzene | | 130 ug/l |
| Ethylene Dibromide | | |
| Methyl Bromide | | 10000 ug/l |
| Methylene Chloride | | 1000 ug/l |
| 1,1,2,2-Tetrachloroetha | | 3 ug/l |
| Tetrachloroethylene | | 29 ug/l |
| Toluene | | 520 ug/l |
| 1,2 -Trans-Dichloroethy | | 4000 ug/l |
| 1,1,1-Trichloroethane | | 200000 ug/l |
| 1,1,2-Trichloroethane | | 8.9 ug/l |
| Trichloroethylene | | 7 ug/l |
| Vinyl Chloride | | 1.6 ug/l |
| 2-Chlorophenol | | 800 ug/l |
| 2,4-Dichlorophenol | | 60 ug/l |
| 2,4-Dimethylphenol | | 3000 ug/l |
| 2-Methyl-4,6-Dinitrope | | 30 ug/l |
| 2,4-Dinitrophenol | | 300 ug/l |
| 3-Methyl-4-Chlorophenol | | 2000 ug/l |
| Penetachlorophenol | | 0.04 ug/l |
| Phenol | | 300000 ug/l |
| 2,4,5-Trichlorophenol | | 600 ug/l |
| 2,4,6-Trichlorophenol | | 2.8 ug/l |
| Acenaphthene | | 90 ug/l |
| Anthracene | | 400 ug/l |
| Benzidine | | 0.011 ug/l |
| Benzo(a)Anthracene | | 0.0013 ug/l |

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| | |
|-----------------------------------|---------------|
| Benzo(a)Pyrene | 0.00013 ug/l |
| Benzofluoranthene | 0.0013 ug/l |
| Benzofluoranthene | 0.013 ug/l |
| Bis(2-Chloro-1-methylethyl) Ether | 0.017 ug/l |
| Bis(2-Chloroethyl) Ether | 4000 ug/l |
| Bis(2-Chloroisopropyl) Ether | 2.2 ug/l |
| Bis(2-Ethylhexyl) Phthalate | 65000 ug/l |
| Butylbenzyl Phthalate | 0.37 ug/l |
| 2-Chloronaphthalene | 0.1 ug/l |
| Chrysene | 1000 ug/l |
| Dibenz(a,h)Anthracene | 0.13 ug/l |
| 1,2-Dichlorobenzene | 0.00013 ug/l |
| 1,3-Dichlorobenzene | 3000 ug/l |
| 1,4-Dichlorobenzene | 10 ug/l |
| 3,3-Dichlorobenzidine | 900 ug/l |
| Diethyl Phthalate | 0.15 ug/l |
| Dimethyl Phthalate | 600 ug/l |
| Di-n-Butyl Phthalate | 2000 ug/l |
| 2,4-Dinitrotoluene | 30 ug/l |
| Dinitrophenols | 1.7 ug/l |
| 1,2-Diphenylhydrazine | 1000 ug/l |
| Fluoranthene | 0.2 ug/l |
| Fluorene | 20 ug/l |
| Hexachlorobenzene | 70 ug/l |
| Hexachlorobutadiene | 0.000079 ug/l |
| Hexachloroethane | 0.01 ug/l |
| Hexachlorocyclopentadiene | 0.1 ug/l |
| Indeno 1,2,3-cdPyrene | 4 ug/l |
| Isophorone | 0.0013 ug/l |
| Nitrobenzene | 1800 ug/l |
| N-Nitrosodiethylamine | 600 ug/l |
| N-Nitrosodimethylamine | 1.24 ug/l |
| N-Nitrosodi-n-Propylamine | 3 ug/l |
| N-Nitrosodiphenylamine | 0.51 ug/l |
| N-Nitrosopyrrolidine | 6 ug/l |
| Pentachlorobenzene | 34 ug/l |
| Pyrene | 0.1 ug/l |
| 1,2,4-Trichlorobenzene | 30 ug/l |
| Aldrin | 0.076 ug/l |
| alpha-BHC | 7.7E-07 ug/l |
| beta-BHC | 0.00039 ug/l |
| gamma-BHC (Lindane) | 0.014 ug/l |
| Hexachlorocyclohexane | 4.4 ug/l |
| Chlordane | 0.01 ug/l |
| 4,4-DDT | 0.00032 ug/l |
| 4,4-DDE | 0.00003 ug/l |
| 4,4-DDD | 0.000018 ug/l |
| Dieldrin | 0.00012 ug/l |
| alpha-Endosulfan | 1.2E-06 ug/l |
| beta-Endosulfan | 30 ug/l |
| Endosulfan Sulfate | 40 ug/l |
| Endrin | 40 ug/l |
| Endrin Aldehyde | 0.03 ug/l |
| Heptachlor | 1 ug/l |
| Heptachlor Epoxide | 5.9E-06 ug/l |
| Methoxychlor | 0.000032 ug/l |
| Polychlorinated Biphenyls | 0.02 ug/l |
| Toxaphene | 0.000064 ug/l |
| | 0.00071 ug/l |

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Salt Lake City, Utah**

VII. Mathematical Modeling of Stream Quality

Model configuration was accomplished utilizing standard modeling procedures. Data points were plotted and coefficients adjusted as required to match observed data as closely as possible.

The modeling approach used in this analysis included one or a combination of the following models.

(1) The Utah River Model, Utah Division of Water Quality, 1992. Based upon STREAMDO IV (Region VIII) and Supplemental Ammonia Toxicity Models; EPA Region VIII, Sept. 1990 and QUAL2E (EPA, Athens, GA).

(2) Utah Ammonia/Chlorine Model, Utah Division of Water Quality, 1992.

(3) AMMTOX Model, University of Colorado, Center of Limnology, and EPA Region 8

(4) Principles of Surface Water Quality Modeling and Control. Robert V. Thomann, et.al.
Harper Collins Publisher, Inc. 1987, pp. 644.

Coefficients used in the model were based, in part, upon the following references:

(1) Rates, Constants, and Kinetics Formulations in Surface Water Quality Modeling. Environmental Research Laboratory, Office of Research and Development, U.S. Environmental Protection Agency, Athens Georgia. EPA/600/3-85/040 June 1985.

(2) Principles of Surface Water Quality Modeling and Control. Robert V. Thomann, et.al.
Harper Collins Publisher, Inc. 1987, pp. 644.

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VIII. Modeling Information

The required information for the model may include the following information for both the upstream conditions at low flow and the effluent conditions:

| | |
|-----------------------|-------------------------------------|
| Flow, Q, (cfs or MGD) | D.O. mg/l |
| Temperature, Deg. C. | Total Residual Chlorine (TRC), mg/l |
| pH | Total NH3-N, mg/l |
| BOD5, mg/l | Total Dissolved Solids (TDS), mg/l |
| Metals, ug/l | Toxic Organics of Concern, ug/l |

Other Conditions

In addition to the upstream and effluent conditions, the models require a variety of physical and biological coefficients and other technical information. In the process of actually establishing the permit limits for an effluent, values are used based upon the available data, model calibration, literature values, site visits and best professional judgement.

Model Inputs

The following is upstream and discharge information that was utilized as inputs for the analysis. Dry washes are considered to have an upstream flow equal to the flow of the discharge.

Current Upstream Information

| Stream | | Critical Low | | | | | | |
|------------------------|----------|--------------|-------|-----------|-------|--------|-----------|------|
| | Flow | Temp. | pH | T-NH3 | BOD5 | DO | TRC | TDS |
| | cfs | Deg. C | | mg/l as N | mg/l | mg/l | mg/l | mg/l |
| Summer (Irrig. Season) | 11.60 | 23.4 | 8.3 | 0.05 | 3.00 | 6.33 | 0.00 | 0.0 |
| Dissolved Metals | Al | As | Cd | CrIII | CrVI | Copper | Fe | Pb |
| | ug/l | ug/l | ug/l | ug/l | ug/l | ug/l | ug/l | ug/l |
| All Seasons | 12.00 | 1.26 | 0.10 | 2.00 | 2.00 | 1.20 | 30.4 | 0.11 |
| Dissolved Metals | Hg | Ni | Se | Ag | Zn | Boron | | |
| | ug/l | ug/l | ug/l | ug/l | ug/l | ug/l | | |
| All Seasons | 0.00106* | 5.00 | 1.06* | 0.50 | 10.00 | 10.0 | * 1/2 MDL | |

Projected Discharge Information

| Season | Flow, MGD | Temp. |
|--------|-----------|-------|
| All | 1.50000 | 21.2 |

All model numerical inputs, intermediate calculations, outputs and graphs are available for discussion, inspection and copy at the Division of Water Quality.

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IX. Effluent Limitations

Current State water quality standards are required to be met under a variety of conditions including in-stream flows targeted to the 7-day, 10-year low flow (R317-2-9).

Other conditions used in the modeling effort coincide with the environmental conditions expected at low stream flows.

Effluent Limitation for Flow based upon Water Quality Standards

In-stream criteria of downstream segments will be met with an effluent flow maximum value as follows:

| Season | Daily Average | |
|--------|---------------|-----------|
| All | 1.500 MGD | 2.321 cfs |

Flow Requirement or Loading Requirement

The calculations in this wasteload analysis utilize the maximum effluent discharge flow of 1.5 MGD. If the discharger is allowed to have a flow greater than 1.5 MGD during 7Q10 conditions, and effluent limit concentrations as indicated, then water quality standards will be violated. In order to prevent this from occurring, the permit writers must include the discharge flow limitation as indicated above; or, include loading effluent limits in the permit.

Effluent Limitation for Whole Effluent Toxicity (WET) based upon WET Policy

Effluent Toxicity will not occur in downstream segments if the values below are met.

| | | | |
|------------------|----------------|-----------------|-----------|
| WET Requirements | LC50 > | 100.0% Effluent | [Acute] |
| | IC25 > | 16.7% Effluent | [Chronic] |
| | Dilution Ratio | 5.00 :1 | |

Effluent Limitation for Biological Oxygen Demand (BOD) based upon Water Quality Standards or Regulations

In-stream criteria of downstream segments for Dissolved Oxygen will be met with an effluent BOD limitation as follows:

| Season | Concentration | | |
|--------|---------------|-------------------|---------------|
| All | 30-day Ave | 30.0 mg/l as BOD5 | 375.2 lbs/day |
| All | Maximum | 45.0 mg/l as BOD6 | 562.8 lbs/day |

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Effluent Limitation for Dissolved Oxygen (DO) based upon Water Quality Standards

In-stream criteria of downstream segments for Dissolved Oxygen will be met with an effluent D.O. limitation as follows:

Season

| | | |
|-----|------------|-----------------|
| All | 30-day Ave | 5.50 mg/L as DO |
| All | Minimum | 5.00 mg/L as DO |

Effluent Limitations for Turbidity based upon Water Quality Standards

Season

Concentration

| | | |
|-----|------------------|----------|
| All | Maximum Increase | 10.0 NTU |
|-----|------------------|----------|

Effluent Limitations for Total Dissolved Solids based upon Water Quality Standards

Season

Concentration

Load

| | | | |
|-----|----------------|-----------|---------------|
| All | Maximum, Acute | 1200 mg/l | 7.50 tons/day |
|-----|----------------|-----------|---------------|

Ashley Creek is listed on Utah's 303(d) list as impaired for TDS (2016)
No assimilative capacity exists for this pollutant. Effluent limit equals the standard.

Colorado Salinity Forum Limits Determined by Permitting Section

Effluent Limitations for Hydrogen Sulfide (undissociated) based upon Water Quality Standards

Season

Concentration

Load

| | | | |
|-----|----------------|------------|---------------|
| All | Maximum, Acute | 0.002 mg/l | 0.025 lbs/day |
|-----|----------------|------------|---------------|

The Division has determined that WEO's current discharge is in violation of the narrative water quality standards due to excessive growth of sulphide-loving bacteria in the receiving water. As a result, the aquatic water quality standard for undissociated hydrogen sulfide of 0.002 mg/L will be applied to the discharge as an end-of-pipe limit.

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**Effluent Limitations for Total Recoverable Metals based upon
Water Quality Standards**

In-stream criteria of downstream segments for Dissolved Metals will be met with an effluent limitation as follows (based upon a hardness of 400 mg/l):

| | 4 Day Average | | 1 Hour Average | |
|--------------|---------------|------------------|----------------|------------------|
| | Concentration | Load | Concentration | Load |
| Aluminum* | N/A | N/A | 2,594.6 ug/l | 3.25E+01 lbs/day |
| Arsenic* | 1133.5 ug/l | 9.16E+00 lbs/day | 1,186.7 ug/l | 1.49E+01 lbs/day |
| Cadmium | 4.0 ug/l | 3.26E-02 lbs/day | 30.3 ug/l | 3.80E-01 lbs/day |
| Chromium III | 1599.0 ug/l | 1.29E+01 lbs/day | 19,632.8 ug/l | 2.46E+02 lbs/day |
| Chromium VI* | 56.0 ug/l | 4.53E-01 lbs/day | 51.0 ug/l | 6.39E-01 lbs/day |
| Copper | 177.0 ug/l | 1.43E+00 lbs/day | 177.9 ug/l | 2.23E+00 lbs/day |
| Cyanide* | 31.2 ug/l | 2.52E-01 lbs/day | 77.0 ug/l | 9.65E-01 lbs/day |
| Iron* | N/A | N/A | 3,423.6 ug/l | 4.29E+01 lbs/day |
| Lead | 110.9 ug/l | 8.97E-01 lbs/day | 1,668.3 ug/l | 2.09E+01 lbs/day |
| Mercury* | 0.064 ug/l | 5.18E-04 lbs/day | 8.4 ug/l | 1.05E-01 lbs/day |
| Nickel | 986.1 ug/l | 7.97E+00 lbs/day | 5,292.4 ug/l | 6.63E+01 lbs/day |
| Selenium* | 4.6 ug/l | 3.72E-02 lbs/day | 20.0 ug/l | 2.51E-01 lbs/day |
| Silver | N/A ug/l | N/A lbs/day | 142.5 ug/l | 1.79E+00 lbs/day |
| Zinc | 2276.6 ug/l | 1.84E+01 lbs/day | 1,332.2 ug/l | 1.67E+01 lbs/day |

*Limits for these metals are based on the dissolved standard.

**Effluent Limitations for Organics [Pesticides]
Based upon Water Quality Standards**

In-stream criteria of downstream segments for Organics [Pesticides] will be met with an effluent limit as follows:

| | 4 Day Average | | 1 Hour Average | |
|-------------------|---------------|------------------|----------------|------------------|
| | Concentration | Load | Concentration | Load |
| Aldrin | | | 1.5 ug/l | 2.91E-02 lbs/day |
| Carbaryl | 2.1 ug/l | 2.63E+01 lbs/day | 2.1 ug/l | 4.07E-02 lbs/day |
| Chlordane | 0.0043 ug/l | 5.38E-02 lbs/day | 1.2 ug/l | 2.33E-02 lbs/day |
| Chlorpyrifos | 0.041 ug/l | 5.13E-01 lbs/day | 0.083 ug/l | 1.61E-03 lbs/day |
| DDT, DDE | 0.001 ug/l | 1.25E-02 lbs/day | 0.55 ug/l | 1.07E-02 lbs/day |
| Diazinon | 0.17 ug/l | 2.13E+00 lbs/day | 0.17 ug/l | 3.30E-03 lbs/day |
| Dieldrin | 0.056 ug/l | 7.00E-01 lbs/day | 0.24 ug/l | 4.65E-03 lbs/day |
| Endosulfan | 0.056 ug/l | 7.00E-01 lbs/day | 0.11 ug/l | 2.13E-03 lbs/day |
| Endrin | 0.036 ug/l | 4.50E-01 lbs/day | 0.086 ug/l | 1.67E-03 lbs/day |
| Heptachlor | 0.0038 ug/l | 4.75E-02 lbs/day | 0.26 ug/l | 5.04E-03 lbs/day |
| Lindane | 0.08 ug/l | 1.00E+00 lbs/day | 1 ug/l | 1.94E-02 lbs/day |
| Methoxychlor | | | 0.03 ug/l | 5.82E-04 lbs/day |
| Mirex | | | 0.001 ug/l | 1.94E-05 lbs/day |
| Nonylphenol | 6.6 ug/l | 8.25E+01 lbs/day | 28 ug/l | 5.43E-01 lbs/day |
| Parathion | 0.013 ug/l | 1.63E-01 lbs/day | 0.066 ug/l | 1.28E-03 lbs/day |
| PCB's | 0.014 ug/l | 1.75E-01 lbs/day | | |
| Pentachlorophenol | 15 ug/l | 1.88E+02 lbs/day | 19 ug/l | 3.68E-01 lbs/day |
| Toxaphene | 0.0002 ug/l | 2.50E-03 lbs/day | 0.73 ug/l | 1.42E-02 lbs/day |

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**Effluent Limitations for Protection of Human Health [Toxics Rule]
Based upon Water Quality Standards (Most stringent of 1C or 3A & 3B as appropriate.)**

In-stream criteria of downstream segments for Protection of Human Health [Toxics]
will be met with an effluent limit as follows:

| | Maximum Concentration | Load |
|-----------------------------|------------------------------|------------------|
| Antimony | 640 ug/l | 8.00E+00 lbs/day |
| Copper | | |
| Nickel | 4600 ug/l | 5.75E+01 lbs/day |
| Selenium | 4200 ug/l | 5.25E+01 lbs/day |
| Thallium | 0.47 ug/l | 5.88E-03 lbs/day |
| Zinc | 26000 ug/l | 3.25E+02 lbs/day |
| Cyanide | 400 ug/l | 5.00E+00 lbs/day |
| Asbestos (million fibers/L) | | |
| 2,3,7,8-TCDD Dioxin | 5.1E-09 ug/l | 6.38E-11 lbs/day |
| Acrolein | 400 ug/l | 5.00E+00 lbs/day |
| Acrylonitrile | 7 ug/l | 8.76E-02 lbs/day |
| Benzene | 51 ug/l | 6.38E-01 lbs/day |
| Bromoform | 120 ug/l | 1.50E+00 lbs/day |
| Carbon Tetrachloride | 5 ug/l | 6.25E-02 lbs/day |
| Chlorobenzene | 800 ug/l | 1.00E+01 lbs/day |
| Chlorodibromomethane | 21 ug/l | 2.63E-01 lbs/day |
| Chloroform | 2000 ug/l | 2.50E+01 lbs/day |
| Dalapon | | |
| Dichlorobromomethane | 27 ug/l | 3.38E-01 lbs/day |
| 1,2-Dichloroethane | 2000 ug/l | 2.50E+01 lbs/day |
| 1,1-Dichloroethylene | | |
| 1,2-Dichloropropane | 31 ug/l | 3.88E-01 lbs/day |
| 1,3-Dichloropropene | 12 ug/l | 1.50E-01 lbs/day |
| Ethylbenzene | 130 ug/l | 1.63E+00 lbs/day |
| Ethylene Dibromide | | |
| Methyl Bromide | 10000 ug/l | 1.25E+02 lbs/day |
| Methylene Chloride | 1000 ug/l | 1.25E+01 lbs/day |
| 1,1,2,2-Tetrachloroethane | 3 ug/l | 3.75E-02 lbs/day |
| Tetrachloroethylene | 29 ug/l | 3.63E-01 lbs/day |
| Toluene | 520 ug/l | 6.50E+00 lbs/day |
| 1,2 -Trans-Dichloroethyle | 4000 ug/l | 5.00E+01 lbs/day |
| 1,1,1-Trichloroethane | 200000 ug/l | 2.50E+03 lbs/day |
| 1,1,2-Trichloroethane | 8.9 ug/l | 1.11E-01 lbs/day |
| Trichloroethylene | 7 ug/l | 8.76E-02 lbs/day |
| Vinyl Chloride | 1.6 ug/l | 2.00E-02 lbs/day |
| 2-Chlorophenol | 800 ug/l | 1.00E+01 lbs/day |
| 2,4-Dichlorophenol | 60 ug/l | 7.50E-01 lbs/day |
| 2,4-Dimethylphenol | 3000 ug/l | 3.75E+01 lbs/day |
| 2-Methyl-4,6-Dinitrophenol | 30 ug/l | 3.75E-01 lbs/day |
| 2,4-Dinitrophenol | 300 ug/l | 3.75E+00 lbs/day |
| 3-Methyl-4-Chlorophenol | 2000 ug/l | 2.50E+01 lbs/day |
| Penetachlorophenol | 0.04 ug/l | 5.00E-04 lbs/day |
| Phenol | 300000 ug/l | 3.75E+03 lbs/day |
| 2,4,5-Trichlorophenol | 600 ug/l | 7.50E+00 lbs/day |
| 2,4,6-Trichlorophenol | 2.8 ug/l | 3.50E-02 lbs/day |
| Acenaphthene | 90 ug/l | 1.13E+00 lbs/day |
| Anthracene | 400 ug/l | 5.00E+00 lbs/day |
| Benzidine | 0.011 ug/l | 1.38E-04 lbs/day |
| Benzo(a)Anthracene | 0.0013 ug/l | 1.63E-05 lbs/day |
| Benzo(a)Pyrene | 0.00013 ug/l | 1.63E-06 lbs/day |
| Benzo(b)Fluoranthene | 0.0013 ug/l | 1.63E-05 lbs/day |
| Benzo(k)Fluoranthene | 0.013 ug/l | 1.63E-04 lbs/day |

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| | | |
|---------------------------------|---------------|------------------|
| Bis2-Chloro1methylether | 0.017 ug/l | 2.13E-04 lbs/day |
| Bis2-Chloro1methylethylether | 4000 ug/l | 5.00E+01 lbs/day |
| Bis2-ChloroethylEther | 2.2 ug/l | 2.75E-02 lbs/day |
| Bis2-ChloroisopropylEther | 65000 ug/l | 8.13E+02 lbs/day |
| Bis2-EthylhexylPhthalate | 0.37 ug/l | 4.63E-03 lbs/day |
| Butylbenzyl Phthalate | 0.1 ug/l | 1.25E-03 lbs/day |
| 2-Chloronaphthalene | 1000 ug/l | 1.25E+01 lbs/day |
| Chrysene | 0.13 ug/l | 1.63E-03 lbs/day |
| Dibenzo(a, h)Anthracene | 0.00013 ug/l | 1.63E-06 lbs/day |
| 1,2-Dichlorobenzene | 3000 ug/l | 3.75E+01 lbs/day |
| 1,3-Dichlorobenzene | 10 ug/l | 1.25E-01 lbs/day |
| 1,4-Dichlorobenzene | 900 ug/l | 1.13E+01 lbs/day |
| 3,3-Dichlorobenzidine | 0.15 ug/l | 1.88E-03 lbs/day |
| Diethyl Phthalate | 600 ug/l | 7.50E+00 lbs/day |
| Dimethyl Phthalate | 2000 ug/l | 2.50E+01 lbs/day |
| Di-n-Butyl Phthalate | 30 ug/l | 3.75E-01 lbs/day |
| 2,4-Dinitrotoluene | 1.7 ug/l | 2.13E-02 lbs/day |
| Dinitrophenols | 1000 ug/l | 1.25E+01 lbs/day |
| 1,2-Diphenylhydrazine | 0.2 ug/l | 2.50E-03 lbs/day |
| Fluoranthene | 20 ug/l | 2.50E-01 lbs/day |
| Fluorene | 70 ug/l | 8.76E-01 lbs/day |
| Hexachlorobenzene | 0.000079 ug/l | 9.88E-07 lbs/day |
| Hexachlorobutadiene | 0.01 ug/l | 1.25E-04 lbs/day |
| Hexachloroethane | 0.1 ug/l | 1.25E-03 lbs/day |
| Hexachlorocyclopentadiene | 4 ug/l | 5.00E-02 lbs/day |
| Ideno 1,2,3-cdPyrene | 0.0013 ug/l | 1.63E-05 lbs/day |
| Isophorone | 1800 ug/l | 2.25E+01 lbs/day |
| Nitrobenzene | 600 ug/l | 7.50E+00 lbs/day |
| N-Nitrosodiethylamine | 1.24 ug/l | 1.55E-02 lbs/day |
| N-Nitrosodimethylamine | 3 ug/l | 3.75E-02 lbs/day |
| N-Nitrosodi-n-Propylamine | 0.51 ug/l | 6.38E-03 lbs/day |
| N-Nitrosodiphenylamine | 6 ug/l | 7.50E-02 lbs/day |
| N-Nitrosopyrrolidine | 34 ug/l | 4.25E-01 lbs/day |
| Pentachlorobenzene | 0.1 ug/l | 1.25E-03 lbs/day |
| Pyrene | 30 ug/l | 3.75E-01 lbs/day |
| 1,2,4-Trichlorobenzene | 0.076 ug/l | 9.51E-04 lbs/day |
| Aldrin | 7.7E-07 ug/l | 9.63E-09 lbs/day |
| alpha-BHC | 0.00039 ug/l | 4.88E-06 lbs/day |
| beta-BHC | 0.014 ug/l | 1.75E-04 lbs/day |
| gamma-BHC (Lindane) | 4.4 ug/l | 5.50E-02 lbs/day |
| Hexachlorocyclohexane (HCH) | 0.01 ug/l | 1.25E-04 lbs/day |
| Chlordane | 0.00032 ug/l | 4.00E-06 lbs/day |
| 4,4-DDT | 0.00003 ug/l | 3.75E-07 lbs/day |
| 4,4-DDE | 0.000018 ug/l | 2.25E-07 lbs/day |
| 4,4-DDD | 0.00012 ug/l | 1.50E-06 lbs/day |
| Dieldrin | 1.2E-06 ug/l | 1.50E-08 lbs/day |
| alpha-Endosulfan | 30 ug/l | 3.75E-01 lbs/day |
| beta-Endosulfan | 40 ug/l | 5.00E-01 lbs/day |
| Endosulfan Sulfate | 40 ug/l | 5.00E-01 lbs/day |
| Endrin | 0.03 ug/l | 3.75E-04 lbs/day |
| Endrin Aldehyde | 1 ug/l | 1.25E-02 lbs/day |
| Heptachlor | 5.9E-06 ug/l | 7.38E-08 lbs/day |
| Heptachlor Epoxide | 0.000032 ug/l | 4.00E-07 lbs/day |
| Methoxychlor | 0.02 ug/l | 2.50E-04 lbs/day |
| Polychlorinated Biphenyls (PCB) | 0.000064 ug/l | 8.00E-07 lbs/day |
| Toxaphene | 0.00071 ug/l | 8.88E-06 lbs/day |

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**Metals Effluent Limitations for Protection of All Beneficial Uses
Based upon Water Quality Standards and Toxics Rule**

| | Class 4 Acute Agricultural ug/l | Class 3 Acute Aquatic Wildlife ug/l | Acute Toxics Drinking Water Source ug/l | Acute Toxics Wildlife ug/l | 1C Acute Health Criteria ug/l | Acute Most Stringent ug/l | Class 3 Chronic Aquatic Wildlife ug/l |
|----------------|--|--|--|---|--|--|--|
| Aluminum | | 2594.6 | | | | 2594.6 | N/A |
| Antimony | | | | 640.0 | | 640.0 | |
| Arsenic | 599.9 | 1186.7 | | | | 599.9 | 1133.5 |
| Barium | | | | | | 0.0 | |
| Beryllium | | | | | | 0.0 | |
| Boron | 3107.0 | | | | | 3107.0 | |
| Cadmium | 59.5 | 30.3 | | | | 30.3 | 4.0 |
| Chromium (III) | | 19632.8 | | | | 19632.8 | 1599.0 |
| Chromium (VI) | 589.9 | 51.0 | | | | 50.99 | 55.99 |
| Copper | 1193.8 | 177.9 | | | | 177.9 | 177.0 |
| Cyanide | | 77.0 | 400.0 | | | 77.0 | 31.2 |
| Iron | | 3423.6 | | | | 3423.6 | |
| Lead | 599.3 | 1668.3 | | | | 599.3 | 110.9 |
| Mercury | | 8.39 | | | | 8.39 | 0.064 |
| Nickel | | 5292.4 | | 4600.0 | | 4600.0 | 986.1 |
| Selenium | 292.0 | 20.0 | | | | 20.0 | 4.6 |
| Silver | | 142.5 | | | | 142.5 | |
| Thallium | | | | 0.5 | | 0.5 | |
| Zinc | | 1332.2 | | | | 1332.2 | 2276.6 |

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Summary Effluent Limitations for Metals [Wasteload Allocation, TMDL]

[If Acute is more stringent than Chronic, then the Chronic takes on the Acute value.]

| | WLA Acute ug/l | WLA Chronic ug/l | |
|----------------|---------------------------|-----------------------------|----------------|
| Aluminum | 2594.6 | N/A | |
| Antimony | 640.0 | | |
| Arsenic | 599.9 | 1133.5 | Acute Controls |
| Barium | | | |
| Beryllium | | | |
| Boron | 3107.0 | | |
| Cadmium | 30.3 | 4.0 | |
| Chromium (III) | 19632.8 | 1599.0 | |
| Chromium (VI) | 51.0 | 56.0 | Acute Controls |
| Copper | 177.9 | 177.0 | |
| Cyanide | 77.0 | 31.2 | |
| Iron | 3423.6 | | |
| Lead | 599.3 | 110.9 | |
| Mercury | 8.4 | 0.1 | |
| Nickel | 4600.0 | 986.1 | |
| Selenium | 20.0 | 4.6 | |
| Silver | 142.5 | N/A | |
| Thallium | 0.5 | | |
| Zinc | 1332.2 | 2276.6 | Acute Controls |

X. Summary Comments

The mathematical modeling and best professional judgement indicate that violations of receiving water beneficial uses with their associated water quality standards, including important down-stream segments, will not occur for the evaluated parameters of concern as discussed above if the effluent limitations indicated above are met.

XI. Notice of UPDES Requirement

This Addendum to the Statement of Basis does not authorize any entity or party to discharge to the waters of the State of Utah. That authority is granted through a UPDES permit issued by the Utah Division of Water Quality. The numbers presented here may be changed as a function of other factors. Dischargers are strongly urged to contact the Permits Section for further information. Permit writers may utilize other information to adjust these limits and/or to determine other limits based upon best available technology and other considerations provided that the values in this wasteload analysis [TMDL] are not compromised. See special provisions in Utah Water Quality Standards for adjustments in the Total Dissolved Solids values based upon background concentration.

ATTACHMENT 3

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.

Initial screening for metals values that were submitted through the discharge monitoring reports showed that a closer look at some of the metals is not needed.

¹ See Reasonable Potential Analysis Guidance for definitions of terms