FACT SHEET STATEMENT OF BASIS UTAH POLLUTANT DISCHARGE ELIMINATION SYSTEM GENERAL PERMIT FOR TREATED GROUNDWATER AND SURFACE WATER PERMIT NUMBER UTG790000

APPROPRIATENESS OF THE GENERAL PERMIT AND BACKGROUND

Utah Administrative Code (UAC) Section R317-8-2 authorizes the issuance of general Utah Pollutant Discharge Elimination System (UPDES) permits to categories of point sources within the same geographical area which involve similar type of operations, discharge the same types of wastes, and require similar effluent limitations and pollution control measures. Gas station type facilities with Standard Industrial Classification (SIC) code 5541 and National American Industry Classification System (NAICS) code 447110 are the most common permit applicants for the Treated Groundwater and Surface Water Permit. Common activities that may require a permit to discharge treated surface water include cleanup of spills of hazardous or regulated materials, including fuel spills. Due to an increased number of incidental spills to surface water over the last five years requiring clean up prior to discharge, the Division of Water Quality (DWQ) has updated this permit to clarify that treated surface water is an allowable discharge under this permit.

In Utah, approximately 10,000 underground storage tanks (USTs) are used for storing petroleum products and other hazardous substances. It is estimated that approximately one-third of these USTs are leaking or have leaked hazardous substances. In an effort to help protect groundwater and public health, the Utah Division of Environmental Response and Remediation (DERR) has developed and implemented UST regulations. These regulations govern cleanup operations for areas which have been contaminated by petroleum products from leaking USTs. Cleanup often consists of pumping contaminated groundwater, treating it, and then discharging the treated effluent directly to surface waters, to a municipal sewer system, or re-injecting it back into the ground. For discharges of treated groundwater to surface waters or storm drains, an UPDES discharge permit from the DWQ is required.

Although leaking underground storage tanks (LUSTs) are the most common sources of pollutants leaching into groundwater, other spills or leaks may introduce contaminants that are remediated using the same equipment and techniques as a LUST site. This general UPDES permit has been adopted by the State of Utah in order to expedite the permitting process and may be used to cover the cleanup of contaminated groundwater and surface water whenever, in the opinion of the Director of the DWQ, the general permitting criteria are met. These cleanup operations satisfy the criteria for general permit coverage and would be more effectively controlled under a general permit rather than by individual permits.

A petroleum cleanup typically begins with an effort to recover any free-phase petroleum product. Pumping contaminated groundwater and/or floating product to above ground storage tanks or oil/water separators accomplish this. The wastewater then generally requires additional treatment to remove the dissolved organic compounds prior to discharge. Additional treatment may include, but is not limited to, air sparging/stripping and/or granular activated carbon adsorption.

COVERAGE UNDER THE GENERAL PERMIT

This general UPDES permit shall apply to discharges of treated groundwater and surface water that have been produced at petroleum or other cleanup operations located in the State of Utah. Anyone wishing to be considered eligible for coverage under the permit must submit a completed Notice of Intent (NOI) application form, which is located at the end of the general permit, and also available on the DWQ website¹. After receipt of a completed NOI the Director may deny coverage, request additional information, or authorize the discharge by signing the NOI.

Any owner or operator who feels that coverage under this general permit is not appropriate may request to be excluded from coverage by applying for an individual permit. The Director may approve or deny this request. In addition, the Director may require any person authorized by this general permit to apply for and obtain an individual permit. Lastly, no discharges to Category 1 or 2 (as defined by UAC R317-2-3) waters will be authorized under this permit.

DESCRIPTION OF DISCHARGE AND LOCATION(S)

Petroleum products are mixtures of hydrocarbon compounds with a broad range of physical, chemical, and toxicological properties and chemical composition. Consequently, the concentration of pollutants in wastewaters generated from petroleum leaks is highly variable. See the "*EPA 1986 Technical Report, Interim Report – Fate and Transport of Substances Leaking from Underground Storage Tanks*" for more information on the constituents of petroleum products. Of the types of hydrocarbons found in petroleum products, the aromatics are generally known to be most toxic and, therefore, pose the greatest potential for impact on human health and the environment. Of the aromatics known to be present in gasoline and diesel fuels, the ones that are listed as hazardous substances and/or priority toxics include benzene, toluene, ethylbenzene, xylene (BTEX), and naphthalene. Their concentrations in contaminated ground and surface water will vary depending on the fuel composition and the volatility and solubility of the compound. They will be limited in the permit based on treatability and toxicity data. Lead (in the form of tetraethyl lead) and methyl-tertiary-butyl-ether (MTBE) which were common gasoline additives, must also be addressed and limited based on water quality criteria.

The authorization to discharge provided under this permit is limited to those outfalls specifically designated in the NOI as discharge locations. Discharges at any location not authorized under a UPDES permit are a violation of the Utah Water Quality Act (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.

BASIS FOR EFFLUENT LIMITATIONS

Discharging facilities will be required to meet all effluent limitations based on applicable federal and state regulations. Applicable state requirements are found in UAC R317. In cases where multiple limits have been developed, those that are more stringent apply. In cases where no limits have been developed, Best Professional Judgment (BPJ) may be used where applicable.

A flow limitation of 1 million gallons per day (mgd) has been included in the permit. This limit has increased from the last version of this permit. The flow limitation is based on the U.S. Environmental Protection Agency's (EPA) definition of major and minor facilities under the National Pollutant Discharge Elimination System (NPDES) program. Facilities wishing to discharge over 1 mgd will require an individual permit.

The pH is limited by Utah secondary treatment standards, UAC R317-1-3.2D, to the range of 6.5 to 9.0 standard units.

¹Link: <u>https://deq.utah.gov/water-quality/updes-permitting-program#general</u>

The total suspended solids (TSS) effluent limitations of 25 milligrams per liter (mg/L) for an average monthly concentration and 35 mg/L for an average weekly concentration are based on the Utah secondary treatment standards contained in the Utah Wastewater Disposal Regulations, UAC R317-1-3.2B. The maximum daily TSS concentration allowed is 70 mg/L, which is based on BPJ and is the same as in the previous permit.

The total dissolved solids (TDS) maximum daily effluent limitation will be 1,200 mg/L based on standards included in UAC R317-2-13. In addition, if the discharge is to watersheds within the Colorado River Basin, the TDS discharge shall not exceed one ton of TDS per day based on the requirements of the Colorado River Basin Salinity Control Forum. It is the responsibility of the permittee to maintain annual TDS loading information and submit it to the Director.

The total lead maximum daily effluent limitation will be 0.015 mg/L for waters designated as Class 1C, and 0.10 mg/L for all other Category 3 waters based on state water quality criteria per UAC R317-2-13.

The oil and grease effluent limitation of 10 mg/L and no visible sheen or floating solids are based on BPJ.

Volatile Compounds

Several of the individual constituents of petroleum fuels will also be included in the permit effluent limitations. Benzene, toluene, ethylbenzene, and naphthalene are included because they are the components of gasoline that have been identified as toxic pollutants in the Clean Water Act. Xylene is included because it is one of the contaminants of concern to be regulated under the Safe Drinking Water Act of 1986.

EPA has developed a model NPDES permit for discharges resulting from the cleanup of gasoline released from USTs. The model permit provides effluent limitations for surface water discharges from corrective actions at gasoline UST sites. The limits are based on the characterization of constituents commonly found in gasoline. The permit was developed to assist permitting authorities by recommending specific effluent limitations, standard conditions, and special conditions for inclusion in all NPDES permits for discharges from these sites.

Of the aromatics known to be present in gasoline and diesel fuels, the ones that are listed as hazardous substances and/or priority toxics include naphthalene. Naphthalene has been present in detectable concentration in the effluent of greater than 10% of historic projects. Naphthalene's effluent limitation is based on BPJ and is the same as in the previous permit.

Benzene, for which the EPA Office of Drinking Water has issued a health advisory, is a known human carcinogen. The EPA has set the Maximum Contaminant Level (MCL) for benzene in drinking water at 0.005 mg/L. In addition, EPA's model permit recommends an effluent limitation of 0.005 mg/L. The effluent limit for Benzene in this renewal permit is the same as in the previous permit.

The aggregate BTEX parameter's effluent limitation will be set equal to EPA's model permit at 0.1 mg/L and is the same as in the previous permit.

MTBE is included as a pollutant of concern with the effluent limitation based on BPJ and is the same as in the previous permit.

Total Toxic Organics

The aromatic chemicals are the primary sources of concern at cleanup sites. However, many of the toxic organics may be found in contaminated ground and surface water. They are often used as solvents or as oil additives to extend the useful life of oils. Although there are variations of toxicity among the toxic organic pollutants, a number are known carcinogens and many pose significant environmental hazards. Since there are potential adverse effects associated with these organics, they must also be addressed. The control of toxic organics will be achieved in this permit by setting an effluent limit for total toxic organics (TTO). TTO is defined as the sum of the concentrations of the specific toxic organic compounds (listed in Table B of the NOI) found in the wastewater discharge.

All permittees are required to do an initial screening for all of the priority toxics prior to NOI submittal (see Table B of the NOI for a full list of the TTOs). From then on, only those organics that were detected in concentrations equal to or greater than 0.25 times (or, 25%) the numeric criteria in R317-2-14, in the initial influent screening are required to be analyzed for during discharge.

The maximum daily effluent limitation for TTO is 2.0 mg/L and is the same as in the previous permit. This is similar to the EPA pretreatment standards for TTO in several industries in which toxic organics are a concern, such as the "Electroplating and Metal Finishing" and the "Electrical and Electronic Components" categories. Organics generally have a higher solubility in hydrocarbons than in water and are therefore present in highest concentrations in the oily waste stream of the wastewater. Since the treatment systems employed in these cleanup projects are designed to remove the waste oil, they should sufficiently reduce organic chemicals as well.

For receiving waters which do not have designated use Class 1C Drinking Water, Total Petroleum Hydrocarbon (TPH) analyses may be substituted for the TTO analyses upon approval from the Director. It is the permittee's responsibility to petition the Director. The Director may then approve, partially approve, or deny the request based on all available information. If approval is given, the modification will take place without a public notice.

Metals

Additional monitoring shall be required for facilities where metals are detected in concentrations equal to or greater than 0.25 times (25% of) the numeric criteria in R317-2-14, as identified in Part IV of the NOI. Because the receiving waterbody will vary based on the permitted discharge authorized under this general permit, effluent limits are based on the most stringent numeric criteria included in R317-2-14 to ensure water quality is protected.

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

This general permit has effluent limitations and monitoring provisions for discharges to **Category 3 waters** with designated use **Class 1C Drinking Water** as well as for discharges to **all other Category 3 waters**. These designations were made to address the different water quality standards of the receiving waters and the requirements for antidegradation Review. Designated uses of waters of the State are listed in UAC R317-2-13. Effluent limitations and monitoring requirements are as follows:

Table 1. Effluent Limitations						
	Effluent Limitations ^a					
Effluent Characteristics ^{b, c}	Daily	Daily	Average	Average		
	Minimum	Maximum	Weekly ^d	Monthly ^d		
Flow, million gallons per day (mgd)		1 e				
pH, standard units (SU)	6.5	9.0				
Total Suspended Solids (TSS), mg/L		70	35	25		
Total Dissolved Solids (TDS), mg/L		1,200 f				
Total Recoverable Lead, mg/L		0.005 ^g				
Oil & Grease, mg/L ^h		10				
Benzene, mg/L		0.005				
BTEX, mg/L ⁱ		0.1				
MTBE, mg/L		0.2				
Naphthalene, mg/L		0.7				
Total Toxic Organics (TTO)		2.0 ^j				
Individual Toxic Organics		k				
Total Petroleum Hydrocarbon (TPH)		1.0				
GRO, mg/L 1						
TPH-DRO, mg/L ¹		1.0				
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a. See Definitions, Part VII.A in the permit for definition of terms.

b. There shall be no visible sheen or floating solids or visible foam other than in trace amounts.

c. There shall be no discharge of sanitary wastes or process water other than the treated groundwater.

d. Average Weekly and Average Monthly Effluent Limitations will not apply if discharge occurs only once during project coverage as a continuous discharge not lasting more than 48 hours.

e. The daily maximum represents the maximum flow allowed for all outfalls combined, per day.

- f. In addition to the TDS concentration limitation, facilities discharging into watersheds within the Colorado River Basin shall not discharge more than 1.0 ton per day of TDS as a sum from all discharge points. It is the responsibility of the permittee to maintain annual TDS loading information and submit it to the Director.
- g. The freshwater benchmarks values of some metals are dependent on water hardness. These effluent limits have been calculated using an assumption of 25mg/l CaCO3 hardness. No visible sheen or floating solids are permitted.
- h. BTEX shall be measured as the sum of benzene, ethylbenzene, toluene, and xylenes.

i. TTOs combined shall not exceed 2.0 mg/L. No individual toxic organic shall exceed numeric criteria as defined in R317-2-14, or if no numeric criteria exists in R317-2-14, the MCL as defined by EPA

- j. Those toxic organics that were detected in concentrations equal to or greater than 0.25 times (or, 25%) the numeric criteria in R317-2-14, or if no numeric criterial exists in R317-2-14, 0.25 times (or 25%) the drinking water MCL as defined by EPA, in the initial TTO influent screening will be required to be analyzed for during discharge. Toxic organics detected in concentrations equal to or greater than 0.25 times (or, 25%) the numeric criteria in R317-2-14 or the MCL shall have effluent discharge limitations in as defined in R317-2-14, or, if no numeric criteria exists in R317-2-14, the MCL as defined by EPA will be the limit. Individual toxic organics required to be monitored and analyzed on a monthly basis, will be specified in the DWQ section of the NOI upon permit issuance.
- k. Not applicable for Class 1C waters. TPH-GRO and TPH-DRO analyses may be substituted for the TTO analyses upon approval from DWQ. Maximum daily effluent limitations of 1.0 mg/L TPH-GRO and TPH-DRO will be substituted for the TTO effluent limitation. It is the permittee's responsibility to petition the Director. Ongoing treatment systems will be required to conduct at least one TTO analysis per permit cycle. The Director may then approve, partially approve, or deny the request based on all available information. If approval is given, the modification will take place without a public notice.

Table 2. Influent Monitoring Requirements				
Influent Characteristics	Monitoring Requirements ^a			
Influent Characteristics	Measurement Frequency	Sample Type		
TTOs	Prior to submission of the NOI ^b	Grab		
a. See Definitions, Part VII.A of the	he General Permit for definition of terms.			
b. A source sample analyzed for T	TOs must be included in all NOIs.			

Table 3. Effluent Monitoring Requirements				
Monitoring Requirements ^a				
Measurement Frequency	Sample Type			
2/month ^e	Measured			
2/month ^e	Measured			
Monthly	Grab			
2/month ^e	Grab			
2/month ^e	Grab			
2/month ^e	Grab			
Monthly	Grab			
	Monitoring Requipation Measurement Frequency 2/month e 2/month e Monthly 2/month e 2/month e Monthly Monthly Monthly Monthly Monthly Monthly Monthly Monthly			

a. See Definitions, Part VII.A of the General Permit for definition of terms.

b. There shall be no visible sheen or floating solids or visible foam other than in trace amounts.

c. There shall be no discharge of sanitary wastes or process water other than the treated groundwater and/or treated surface water.

d. BTEX shall be measured as the sum of benzene, ethylbenzene, toluene, and xylenes

e. Measurement frequency of two times per month is required for non-batch discharges. Single event, or non-batch discharges, only need to be sampled once per month.

f. Not applicable for Class 1C waters. TPH-GRO and TPH-DRO analyses may be substituted for the TTO analyses upon approval form DWQ. Maximum daily effluent limitations of 1.0 mg/L TPH-GRO and TPH-DRO will be substituted for the TTO effluent limitation. It is the permittee's responsibility to petition the Director. Ongoing treatment systems will be required to conduct at least one TTO analysis per permit cycle. The Director may then approve, partially approve, or deny the request based on all available information. If approval is given, the modification will take place without a public notice.

Additional monitoring shall be required for facilities that discharge into watersheds on the Utah state 303(d) list of impaired waters². These facilities shall be required to monitor for the pollutant(s) that contribute to the impairment for these waters monthly. Discharge limitations for pollutants are defined in R317-2-14. Pollutant(s) required to be monitored and sampled for on a monthly basis will be specified in the DWQ section of the NOI.

² The DWQ's most recent Integrated Report can be found on the DWQ website https://deq.utah.gov/division-waterquality, under "Integrated Report Program". EPA requires the DWQ to update and resubmit the Integrated Report every two years and as such, the latest report can be found at the link provided above.

Additional monitoring shall be required for facilities where metals are detected in concentrations equal to or greater than 0.25 times (or, 25%) the numeric criteria in R317-2-14 (and also shown in Table 4 below), as identified in Part IV the NOI. Such facilities shall be required to monitor and limit discharges for metals as specified below:

Table 4. Metal Effluent Limitations			
Effluent Characteristics ^{b, c}	Effluent Limitations (mg/L) ^a		
Arsenic	0.01 / 0.10 ^d		
Barium	1.0		
Beryllium	0.0004 °		
Total Recoverable Cadmium ^g	0.026		
Chromium	0.05 / 0.10 f		
Total Recoverable Copper ^g	0.003		
Mercury	0.002		
Selenium	0.05		
Total Recoverable Silver ^g	0.05		
Total Recoverable Zinc ^g	0.04		
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a. See Definitions, Part VII.A of the General Permit for definition of terms.

b. There shall be no visible sheen or floating solids or visible foam other than in trace amounts.

c. There shall be no discharge of sanitary wastes or process water other than the treated groundwater.

d. Daily effluent concentrations shall not exceed 0.01 mg/L in Class 1C waters. Daily effluent concentrations shall not exceed 0.10 mg/L in all other Category 3 waters.

e. This limit applies only to Class 1C Waters.

f. Daily effluent concentrations shall not exceed 0.05 mg/L in **Class 1C waters.** Daily effluent concentrations shall not exceed 0.10 mg/L in **all other waters.**

g. The freshwater benchmarks values of some metals are dependent on water hardness. These effluent

limits have been calculated using an assumption of 25mg/l CaCO3 hardness.

Permittees shall ensure that they are following Clean Water Act (CWA) approved methods for required monitoring. The Division of Water Quality recommends using these methods for TTOs: EPA Method 624.1 for Volatile Organic Compounds, 625.1 for Semi-Volatile Organic Compounds, and Method 608 for pesticides and PCBs. The Division recommends Method 200.8 for Metals monitoring except Mercury. Method 245.7 should be used for Mercury analysis because this method is sensitive enough to detect at or below effluent limitations for Mercury. Methods should be sufficiently sensitive to detect parameters at or below current effluent limitations.

STORM WATER REQUIREMENTS

Storm water permit requirements are not covered under this permit. Coverage under the UPDES General Permit for Storm Water Discharges from Construction Sites (CGP) (UTRC00000) or the UPDES General Permit for Construction Activity Connected with Single Lot Housing Projects (Common Plan Permit (CPP)) (UTRH00000) is required for projects which disturb greater than one acre or less than one area if part of a common plan of development. These sites must develop and implement a Storm Water Pollution Prevention Plan (SWPPP) utilizing Best Management Practices (BMP) for the control of storm water runoff. All sites disturbing 1 acre or greater or less than one area if part of a common plan of development are required to submit a Notice of Intent (NOI) with the State prior to any disturbance. The permit may be waived for small construction sites that disturb between 1 to 5 acres with a "R" factor of less than 5 (Erosivity Waiver). All point source discharges will be required to place velocity dissipation devices at discharge locations along the length of any outfall channel as necessary to insure non-erosive velocity flow from the structure to water course so that the natural physical and biological characteristics and functions are maintained and protected (e.g. no significant changes in the hydrological regime of the receiving water). A copy of the construction permits and application for Erosivity Waiver can be viewed and downloaded at the Division of Water Quality website at https://deq.utah.gov/water-quality/generalconstruction-storm-water-updes-permits.

PRETREATMENT

Permittees covered by this general permit do not discharge wastewater to a sanitary sewer system. If wastewater is discharged to a sanitary sewer system the permittee must also notify the DWQ Pretreatment Coordinator regarding the discharge. Also, any wastewater that a permittee of this general permit may discharge to the sanitary sewer, either as a direct discharge or as a hauled waste, is subject to federal, state, and local pretreatment regulations. Pursuant to section 307 of the Clean Water Act, the permittee shall comply with all applicable federal general pretreatment regulations promulgated, found in 40 CFR 403, the pretreatment requirements found in UAC R317-8-8, and any specific local discharge limitations developed by the publicly owned treatment works (POTW) accepting the waste.

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

SIGNIFICANT CHANGES FROM PREVIOUS PERMIT

The permit was revised to include treated surface water in addition to treated groundwater. Treated surface water was added to permit discharges to surface water that has been contaminated by operations located in the State of Utah. Common activities that may require a permit to discharge treated surface water include cleanup of spills of hazardous or regulated materials, including fuel spills.

Language was added to clarify that because coverage under this permit is granted based on a temporary and limited nature of the discharge, coverage will not be granted for greater than 12 months. Permittees anticipating discharging for more than 12 months will require an individual UPDES permit.

The permit was revised to remove effluent limits based on the previously completed waste load analyses (WLA). WLA are based on the receiving waters beneficial uses, numeric water quality criteria and antidegradation policy category, and a standard flow rate. Because the receiving waterbody will vary based

on the permitted discharge authorized under this general permit, effluent limits are based on the most stringent numeric criteria included in R317-2-14 to ensure water quality is protected. This resulted in lowering of the total lead and TDS limitations.

Flow limit was increased from 100 gallons per minute, to 1 mgd. The flow limitation is based on the EPA's definition of major and minor facilities under the National Pollutant Discharge Elimination System (NPDES) program. Facilities wishing to discharge over 1 mgd will require an individual UPDES permit.

The threshold for requiring monthly monitoring and analyzing of individual toxic organics was revised from 0.01 mg/L, to 0.25 times (or, 25%) the numeric criteria in R317-2-14. Because the effluent limits vary across toxic organics, a percent of that limit is a more appropriate threshold.

Language was added to clarify that parameters requiring twice monthly monitoring is for non-batch discharges only. Single event, or batch discharges, only need to be sampled once per month.

The effluent limitations and effluent monitoring requirement tables for discharges to category 3 waters with designated Class 1C, and all other category 3 waters were combined for ease of reference. Footnotes are included to explain differing effluent limitations and monitoring requirements for category 3 waters with and without Class 1C designations, as appropriate.

The DWQ has clarified that for receiving waters on the most recent Utah state 303(d) list of impaired waters, permittees will be required to monitor monthly for the pollutant(s) that contribute to for those waters. Discharge limitations for pollutants are defined in R317-2-14. Pollutant(s) required to be monitored and sampled for on a monthly basis will be specified in the DWQ section of the NOI.

The DWQ has added monitoring requirements for facilities where metals are detected in concentrations equal to or greater than 0.25 times (or, 25%) the numeric criteria in R317-2-14, as identified in Part IV of the NOI. Effluent limits are based on the most stringent numeric criteria included in R317-2-14 to ensure water quality is protected.

PERMIT DURATION

As stated in UAC R317-8-5.1(1), UPDES permits shall be effective for a fixed term not to exceed five (5) years.

Drafted by: Andrea Kilbane, Environmental Scientist Utah Division of Water Quality, (385) 501-9586

PUBLIC COMMENT

Began: May 24, 2022 Ended: June 24, 2022

The Public Noticed of the draft permit was published on the Department Website.

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.

No Comments were received during this Public Notice Period.

ADDENDUM TO FACT SHEET STATEMENT OF BASIS

During finalization of the permit certain dates, spelling edits and minor language or formatting corrections may have been completed. Due to the nature of these changes they were not considered major and the permit will not be Public Noticed again.

DWQ-2022-022579