

PREPARED BY:

PACE

8723 E VIA DE COMMERICO #B-102 SCOTTSDALE, AZ 85258 480.991.3595 WWW.PACEWATER.COM

PREPARED FOR:

TRI-CITY REGIONAL SANITARY DISTRICT P.O. BOX 2198 CLAYPOOL, AZ 85532 4th Draft Section 208 Water Quality Management Plan Amendment

Tri-City Regional Sanitary District Wastewater Collection and Treatment System Designated Management Agency Gila County, Arizona

December 2019 (August 2019 3nd Draft Revised)

Prepared For (Applicant):

Tri-City Regional Sanitary District (TRSD)

5515 S. Apache Ave., Suite 200 Globe, AZ 85501-4430

P.O. Box 2198 Claypool, AZ 85532-2198

Prepared By:



Pacific Advanced Civil Engineering, Inc. 8723 E. Via de Commercio #B-102 Scottsdale, AZ 85258 (480) 991-3595

Contact Persons: Michael G. Krebs, PE Duong Do, PE

PACE JN A128

Table of Contents

1 Introduction 1-1 1.1 Abstract 1-1 1.2 Project History 1-3 1.3 Natural Environment 1-4 1.3.1 Geology 1-5 1.3.2 Groundwater Hydrology and Quality 1-5 1.3.3 Undrace Water Hydrology 1-6 1.3.4 Habitat 1-7 2 Project Description 2-1 2.1 Overview 2-1 2.1.2 Tacility Ownership 2-1 2.1.3 Type of Facility 2-1 2.1.4 Uldout Capacity 2-2 2.1.5 Stakeholders and Neighboring Communities 2-2 2.1.6 DMA 2-2 2.1.7 All Facility Locations 2-3 2.1.8 Legal Descriptions 2-3 2.2 Current & Future Conditions 2-4 2.2.1 Population 2-4 2.2.2 Leensus Block Groups Review for Existing Population 2-4 2.2.3 Land Use and Wastewater Flows 2-6 2.2.4 Current & Future Conditions Summary 2-8 3 Wastewater Treatment Facility 3-1 3.1.1 Docation 3-1 3.1.2 Type of Facility <	Abbreviations	iv
1.1 Abstract. 1-1 1.2 Project History 1-3 1.3 Natural Environment. 1-4 1.3.1 Geology 1-5 1.3.2 Groundwater Hydrology and Quality 1-5 1.3.3 Surface Water Hydrology. 1-6 1.3.4 Habitat 1-7 2 Project Description 2-1 2.1 Overview. 2-1 2.1.1 Valoe Service Area 2-1 2.1.2 Facility 2-1 2.1.3 Stakeholders and Neighboring Communities 2-2 2.1.5 Stakeholders and Neighboring Communities 2-2 2.1.6 DMA 2-2 2.1.5 2.1.7 All Facility Locations 2-3 2.1.8 Legal Descriptions 2-3 2.2.1 Current & Future Conditions 2-4 2.2.2 Census Block Groups Review for Existing Population 2-4 2.2.2 Current & Future Conditions Summary 2-8 3 Wastewater Treatment Facility 3-1 3-1 3.1.8 Legal Description 3-2	1 Introduction	1-1
1.2 Project History 1-3 1.3 Natural Environment. 1-4 1.3.1 Gelogy 1-5 1.3.2 Groundwater Hydrology and Quality. 1-5 1.3.3 Surface Water Hydrology 1-6 1.3.4 Habitat 1-7 2 Project Description 2-1 2.1 Overview 2-1 2.1.1 DMA / Service Area 2-1 2.1.2 1.2 Facility Ownership 2-1 2.1.3 Type of Facility 2-2 2.1.5 Stakeholders and Neighboring Communities 2-2 2.1.6 DMA / Service Area 2-2 2.1.7 All Facility Locations 2-3 2.2 Current & Future Conditions 2-4 2.2.2 Current & Future Conditions 2-4 2.2.3 Land Use and Wastewater Flows 2-6 2.4 Current & Future Conditions Summary 2-6 2.4 Current & Future Conditions Summary 2-6 2.4 Current & Future Conditions Summary 2-6 3.1 Wastewater Treatment Facility 3-1	1.1 Abstract	1-1
1.3 Natural Environment .1-4 1.3.1 Geology .1-5 1.3.2 Groundwater Hydrology and Quality .1-5 1.3.3 Surface Water Hydrology .1-6 1.3.4 Habitat .1-7 2 Project Description .2-1 2.1 Overview .2-1 2.1.1 DMA / Service Area .2-1 2.1.2 Facility Ownership .2-1 2.1.3 Stakeholders and Neighboring Communities .2-2 2.1.5 Stakeholders and Neighboring Communities .2-2 2.1.6 DMA .2-2 2.1.7 All Facility Locations .2-3 2.1.8 Legal Descriptions .2-3 2.2 Current & Future Conditions .2-4 2.2.2 Census Block Groups Review for Existing Population .2-4 2.2.1 Population .2-4 2.2.2 Current & Future Conditions Summary .2-6 2.2.4 Current & Future Conditions Summary .2-6 2.3 Wastewater Treatment Facility .3-1 3.1 Natewater Treatment Facility .3-1 3.1.1 Location .3-1 3.1.3 Flow Rates .3-2 3.2 Sewage Collection System .3-2 3.3.2 Reclamation/Reuse	1.2 Project History	1-3
1.3.1 Geology .1-5 1.3.2 Surface Water Hydrology and Quality .1-5 1.3.3 Surface Water Hydrology .1-6 1.3.4 Habitat .1-7 2 Project Description .2-1 2.1.1 DMA / Service Area .2-1 2.1.2 Facility Ownership .2-1 2.1.3 Type of Facility .2-1 2.1.4 DMA / Service Area .2-2 2.1.5 Stakeholders and Neighboring Communities .2-2 2.1.6 DMA .2-2 2.1.7 All Facility Locations .2-3 2.2 Current & Future Conditions .2-3 2.3 Current & Future Conditions .2-4 2.2.1 Population .2-4 2.2.2 Current & Future Conditions Summary .2-6 2.3 Land Use and Wastewater Flows .2-6 2.4 Current & Future Conditions Summary .2-8 3.1.1 Natsewater Treatment Facility .3-1 3.1.1 Sewage Acceptance .3-2 3.1.2 Type of Facility .3-1	1.3 Natural Environment	1-4
1.3.2 Groundwater Hydrology and Quality	1.3.1 Geology	1-5
1.3.3 Surface Water Hydrology. 1-6 1.3.4 Habitat 1-7 2 Project Description. 2-1 2.1 Overview. 2-1 2.1.1 DMA / Service Area 2-1 2.1.2 Facility Ownership 2-1 2.1.3 Stakeholders and Neighboring Communities 2-2 2.1.5 Stakeholders and Neighboring Communities 2-2 2.1.6 DMA 2-2 2.1.7 All Facility Locations 2-3 2.2 Current & Future Conditions 2-4 2.2.1 DMA 2-2 2.1.7 All Facility Locations 2-3 2.2 Current & Future Conditions 2-4 2.2.2 Census Block Groups Review for Existing Population 2-4 2.2.4 Census Block Groups Review for Existing Population 2-4 2.2.2 Census Block Groups Review for Existing Population 2-4 2.2.2 Census Block Groups Review for Existing Population 2-4 3.1 Natewater Treatment Facility 3-1 3.1 Location 3-1 3.1 Descripte	1.3.2 Groundwater Hydrology and Quality	1-5
1.3.4 Flabitat 1-7 2 Project Description 2-1 2.1 Overview 2-1 2.1.1 DMA Service Area 2-1 2.1.2 Facility Overship 2-1 2.1.3 Type of Facility 2-1 2.1.5 Stakeholders and Neighboring Communities 2-2 2.1.5 Stakeholders and Neighboring Communities 2-2 2.1.6 DMA 2-2 2.1.7 All Facility Locations 2-3 2.2 Current & Future Conditions 2-4 2.2.1 Population 2-4 2.2.2 Census Block Groups Review for Existing Population 2-4 2.2.1 Population 2-4 2.2.2 Census Block Groups Review for Existing Population 2-4 2.2.4 Current & Future Conditions Summary 2-8 3 Wastewater Treatment Facility 3-1 3-1 3.1 Location 3-1 3.1.1 Location 3-1 3.1.2 Type of Facility 3-1 3.1.3 Flow Rates 3-2 3.2 Setw	1.3.3 Surface Water Hydrology	
2 Project Description 2-1 2.1 Overview 2-1 2.1.1 DMA / Service Area 2-1 2.1.2 Facility Ownership 2-1 2.1.3 Type of Facility. 2-1 2.1.4 Buildout Capacity. 2-2 2.1.5 Stakeholders and Neighboring Communities 2-2 2.1.6 DMA. 2-2 2.1.7 All Facility Locations 2-3 2.1.8 Legal Descriptions 2-3 2.2.1 Population 2-4 2.2.2 Census Block Groups Review for Existing Population 2-4 2.2.3 Land Use and Wastewater Flows 2-6 2.2.4 Current & Future Conditions Summary 2-8 3 Wastewater Treatment Facility. 3-1 3.1.1 Location 3-1 3.1.2 Type of Facility. 3-1 3.1.3 Flow Rates 3-2 3.2 Sewage Collection System 3-2 3.3.2 Reclamation/Reuse 3-3 3.4.1 New Service Connection Infrastructure 3-3 3.4.2 Service Connection Infrastructure 3-3 3.4.3 Service Connection Infrastructure 3-3 3.4.4 New Service Connection Infrastructure 3-3 3.4.5 Service Connection Infrastruc	1.3.4 Haditat	1-7
2.1 Overview. 2-1 2.1.1 DMA / Service Area 2-1 2.1.2 Facility Ownership 2-1 2.1.3 Type of Facility. 2-1 2.1.4 Buildout Capacity. 2-2 2.1.5 Stakeholders and Neighboring Communities 2-2 2.1.6 DMA 2-2 2.1.7 All Facility Locations 2-2 2.1.8 Legal Descriptions 2-3 2.2 Census Block Groups Review for Existing Population 2-4 2.2.2 Census Block Groups Review for Existing Population 2-4 2.2.4 Current & Future Conditions Summary. 2-8 3 Wastewater Treatment Facility. 3-1 3.1 Use and Wastewater Flows. 2-6 2.2.4 Current & Future Conditions Summary. 2-8 3 Wastewater Treatment Facility. 3-1 3.1.1 Location 3-1 3.1.2 Sewage Acceptance 3-2 3.2 Sewage Acceptance 3-2 3.3 Effluent Management 3-2 3.4 Service Connection Infrastructure	2 Project Description	2-1
21.1 DMA / Service Area 2-1 21.2 Facility Uvenership 2-1 21.3 Type of Facility 2-1 21.4 Buildout Capacity 2-2 21.5 Stakeholders and Neighboring Communities 2-2 21.6 DMA 2-2 21.7 All Facility Locations 2-3 21.8 Legal Descriptions 2-3 21.8 Legal Descriptions 2-4 2.2.1 Population 2-4 2.2.2 Current & Future Conditions 2-4 2.2.1 Population 2-4 2.2.2 Census Block Groups Review for Existing Population 2-4 2.2.4 Current & Future Conditions Summary 2-8 3 Wastewater Treatment Facility 3-1 3-1 3.1.1 Location 3-1 3.1.2 Type of Facility 3-1 3.1.3 Flow Rates 3-2 3.2.4 Sewage Acceptance 3-2 3.3.1 Disknardee 3-2 3.3.2 Reclamation/Reuse 3-2 3.3.3 Aservice Connectio		2-1
21.2 Pacifity Ownership 2-1 21.3 Stakeholders and Neighboring Communities 2-2 21.5 Stakeholders and Neighboring Communities 2-2 21.6 DMA 2-2 21.7 All Facility Locations 2-3 21.8 Legal Descriptions 2-3 2.1 Population 2-4 2.2.1 Population 2-4 2.2.2 Current & Future Conditions 2-4 2.2.2 Current & Future Conditions 2-4 2.2.3 Land Use and Wastewater Flows 2-6 2.2.4 Current & Future Conditions Summary 2-8 3 Wastewater Treatment Facility 3-1 3.1 Location 3-1 3.1 Location 3-1 3.1.3 Flow Rates 3-2 3.1.4 Sewage Collection System 3-2 3.2 Service Connection System 3-2 3.3.4 Service Connection Infrastructure 3-3 3.4.1 New Service Connection Infrastructure 3-3 3.4.2 Service Connection Permiting Process & Procedures 3-4	2.1.1 DIMA / Service Area	2-1
2.1.3 Type of Facility 2-2 2.1.5 Stakeholders and Neighboring Communities 2-2 2.1.6 DMA 2-2 2.1.7 All Facility Locations 2-3 2.1.8 Legal Descriptions 2-3 2.1.8 Legal Descriptions 2-4 2.2.1 Population 2-4 2.2.2 Census Block Groups Review for Existing Population 2-4 2.2.2 Census Block Groups Review for Existing Population 2-4 2.2.2 Current & Future Conditions Summary 2-8 3 Wastewater Treatment Facility 3-1 3.1 Location 3-1 3.1.1 Location 3-1 3.1.1 Location 3-1 3.1.3 Flow Rates 3-2 3.1.4 Sewage Acceptance 3-2 3.2.3 Berlinet Management 3-2 3.3.4 Service Connection Infrastructure 3-3 3.4.1 New Service Connection Infrastructure 3-3 3.4.2 Service Connection Permitting Process & Procedures 3-4 4 Construction Agencies 4	2.1.2 Facility Ownership	2-1 2_1
21.15 Dischard Gepacity 22 21.14 DMA 22 21.16 DMA 22 21.17 All Facility Locations 223 21.18 Legal Descriptions 23 21.27 All Facility Locations 24 22.1 Current & Future Conditions 24 22.2 Census Block Groups Review for Existing Population 24 22.2 Census Block Groups Review for Existing Population 24 22.2 Current & Future Conditions Summary 24 22.2 Current & Future Conditions Summary 24 3.1 Wastewater Treatment Facility 31 3.1 Wastewater Treatment Facility 31 3.1.1 Location 31 3.1.2 Type of Facility 31 3.1.3 Flow Rates 32 3.1.4 Sewage Collection System 32 3.2 Sewage Collection System 32 3.3.2 Reclamation/Reuse 33 3.4 Discharge 32 3.4.2 Service Connection Infrastructure 33	2.1.5 Type of Facility	
21.6 DMA. 2-2 21.7 All Facility Locations 2-3 21.8 Legal Descriptions 2-3 22 Current & Future Conditions 2-4 2.2.1 Population 2-4 2.2.2 Census Block Groups Review for Existing Population 2-4 2.2.3 Land Use and Wastewater Flows 2-6 2.2.4 Current & Future Conditions Summary 2-8 3 Wastewater Treatment Facility 3-1 3.1 Location 3-1 3.1.1 Location 3-1 3.1.2 Type of Facility 3-1 3.1.3 Flow Rates 3-2 3.1.4 Sewage Acceptance 3-2 3.2.3 Refluent Management 3-2 3.3.4 Service Connections 3-3 3.4.1 New Service Connections 3-3 3.4.2 Service Connection Permitting Process & Procedures 3-3 3.4.2 Service Connection Permitting Process & Procedures 3-4 4 Construction 4-1 4-1 4-1 4.1 Potasing 4-2 <	215 Stakeholders and Neighboring Communities	
2.1.7 All Facility Locations 2-3 2.1.8 Legal Descriptions 2-3 2.2 Current & Future Conditions 2-4 2.2.1 Population 2-4 2.2.2 Census Block Groups Review for Existing Population 2-4 2.2.3 Land Use and Wastewater Flows 2-6 2.2.4 Current & Future Conditions Summary 2-8 3 Wastewater Treatment Facility 3-1 3.1.1 Location 3-1 3.1.2 Type of Facility 3-1 3.1.3 Flow Rates 3-2 3.1.4 Sewage Acceptance 3-2 3.3.1 Discharge 3-2 3.3.2 Reclamation/Reuse 3-3 3.4.1 Service Connection Infrastructure 3-3 3.4.2 Service Connection Permitting Process & Procedures 3-4 4 Construction Summary 4-1 4.1 Construction Summary 4-1 4.1 Pasing 4-2 4.2 Service Connection Infrastructure 3-3 3.4.2 Service Connection Permitting Process & Procedures	2.1.6 DMA	
2.1.8 Legal Descriptions 2-3 2.2 Current & Future Conditions 2-4 2.2.1 Population 2-4 2.2.2 Census Block Groups Review for Existing Population 2-4 2.2.3 Land Use and Wastewater Flows 2-6 2.2.4 Current & Future Conditions Summary 2-8 3 Wastewater Treatment Facility 3-1 3.1 Wastewater Treatment Facility 3-1 3.1.1 Location 3-1 3.1.2 Type of Facility 3-1 3.1.3 Flow Rates 3-2 3.1.4 Sewage Collection System 3-2 3.2 Sewage Collection System 3-2 3.3 Fervice Connection Infrastructure 3-3 3.4.1 New Service Connection Infrastructure 3-3 3.4.2 Service Connection Permitting Process & Procedures 3-4 4 Construction 4-1 4.1 4.1 Construction Summary 4-1 4.2 Phasing 4-2 4.3 Construction Agencies 5-3 5.4 Construction Agencies <td>2.1.7 All Facility Locations</td> <td>2-3</td>	2.1.7 All Facility Locations	2-3
2.2 Current & Future Conditions 2-4 2.2.1 Population 2-4 2.2.2 Census Block Groups Review for Existing Population 2-4 2.2.3 Land Use and Wastewater Flows 2-6 2.2.4 Current & Future Conditions Summary 2-8 3 Wastewater Treatment Facility 3-1 3.1 Wastewater Treatment Facility 3-1 3.1.1 Location 3-1 3.1.2 Type of Facility 3-1 3.1.3 Flow Rates 3-2 3.1.4 Sewage Acceptance 3-2 3.2 Setwage Collection System 3-2 3.3.1 Discharge 3-2 3.3.2 Reclamation/Reuse 3-3 3.4.1 New Service Connection Infrastructure 3-3 3.4.2 Service Connection Permitting Process & Procedures 3-4 4 Construction Agencies 4-2 4.3 Construction Agencies 4-2 5.1 Putential Beneficial Impacts 5-1 5.1.1 Potential Beneficial Impacts 5-3 5.2 Groundwater 5-3 <td>2.1.8 Legal Descriptions</td> <td>2-3</td>	2.1.8 Legal Descriptions	2-3
2.2.1 Population 2-4 2.2.2 Census Block Groups Review for Existing Population 2-4 2.2.3 Land Use and Wastewater Flows 2-6 2.2.4 Current & Future Conditions Summary 2-8 3 Wastewater Treatment Facility 3-1 3.1 Wastewater Treatment Facility 3-1 3.1.1 Location 3-1 3.1.2 Type of Facility 3-1 3.1.3 Flow Rates 3-2 3.1.4 Sewage Acceptance 3-2 3.2 Stepage Collection System 3-2 3.3.1 Discharge 3-2 3.3.2 Reclamation/Reuse 3-2 3.3.3 A Service Connection System 3-3 3.4.1 New Service Connection Permitting Process & Procedures 3-3 3.4.2 Service Connection Permitting Process & Procedures 3-4 4 Construction 4-1 4.1 Construction Summary 4-1 4.1 Construction Agencies 5-1 5.1.1 Potential Beneficial Impacts 5-1 5.1.2 Potential Bene	2.2 Current & Future Conditions	2-4
2.2.2 Census Block Groups Review for Existing Population 2-4 2.2.3 Land Use and Wastewater Flows 2-6 2.4 Current & Future Conditions Summary 2-8 3 Wastewater Treatment Facility 3-1 3.1 Wastewater Treatment Facility 3-1 3.1.1 Location 3-1 3.1.2 Type of Facility 3-1 3.1.3 Flow Rates 3-2 3.1.4 Sewage Acceptance 3-2 3.2 Savage Collection System 3-2 3.3.1 Discharge 3-2 3.3.1 Discharge 3-3 3.4 Service Connections Infrastructure 3-3 3.4.1 New Service Connection Infrastructure 3-3 3.4.2 Service Connection Permitting Process & Procedures 3-4 4 Construction 4-1 4.1 A.1 A-1 4.2 Phasing 4-2 4.3 Construction Summary 4-1 4.4 Construction Agencies 5-1 5.1 Surface Water 5-3 5.2<	2.2.1 Population	2-4
2.2.3 Land Use and Wastewater Flows 2-6 2.2.4 Current & Future Conditions Summary 2-8 3 Wastewater Treatment Facility 3-1 3.1 Mastewater Treatment Facility 3-1 3.1.1 Location 3-1 3.1.2 Type of Facility 3-1 3.1.3 Flow Rates 3-2 3.1.4 Sewage Acceptance 3-2 3.2 Sewage Collection System 3-2 3.3 Effluent Management 3-2 3.3.1 Discharge 3-2 3.3.2 Reclamation/Reuse 3-3 3.4 Service Connection Infrastructure 3-3 3.4.1 New Service Connection Permitting Process & Procedures 3-4 4 Construction 4-1 4.1 Construction Summary 4-1 4.2 Phasing 4-2 4.3 Construction Summary 4-1 4.4 Construction Agencies 5-3 5.2 Groundwater 5-3 5.3 Air Quality 5-4 5.4 Gonstruction Permit <t< td=""><td>2.2.2 Census Block Groups Review for Existing Population</td><td>2-4</td></t<>	2.2.2 Census Block Groups Review for Existing Population	2-4
2.2.4 Current & Future Conditions Summary. 2-8 3 Wastewater Treatment Facility. 3-1 3.1 Wastewater Treatment Facility. 3-1 3.1.1 Location 3-1 3.1.2 Type of Facility. 3-1 3.1.3 Flow Rates 3-2 3.1.4 Sewage Acceptance 3-2 3.2 Sewage Collection System 3-2 3.3 Effluent Management 3-2 3.3.1 Discharge 3-2 3.3.2 Reclamation/Reuse 3-3 3.4.3 Service Connection Infrastructure 3-3 3.4.4 New Service Connection Infrastructure 3-3 3.4.1 New Service Connection Infrastructure 3-3 3.4.2 Service Connection Permitting Process & Procedures. 3-4 4 Construction Summary. 4-1 4.2 Phasing. 4-2 4.3 Construction Agencies. 4-2 5.1 Surface Water. 5-1 5.1.1 Potential Adverse Impacts 5-3 5.2 Groundwater 5-3 5	2.2.3 Land Use and Wastewater Flows	2-6
3 Wastewater Treatment Facility 3-1 3.1 Wastewater Treatment Facility 3-1 3.1.1 Location 3-1 3.1.2 Type of Facility 3-1 3.1.3 Flow Rates 3-2 3.1.4 Sewage Acceptance 3-2 3.2 Sewage Collection System 3-2 3.3 Effluent Management 3-2 3.3.1 Discharge 3-2 3.3.2 Reclamation/Reuse 3-3 3.4 Service Connection Infrastructure 3-3 3.4.1 New Service Connection Infrastructure 3-3 3.4.2 Service Connection Permitting Process & Procedures 3-4 4 Construction 4-1 4.1 Construction Summary 4-1 4.2 Phasing 4-2 4.3 Construction Agencies 4-2 5 Impact 5-1 5.1.1 Potential Adverse Impacts 5-3 5.2 Groundwater 5-3 5.3 Air Quality 5-4 6 Permits 6-1 6.1 Aquifer Protection Permit 6-1 6.2 AZPDES Permit 6-1 6.4 Construction Permits 6-1 6.5 Local Floodplain and Drainage Regulations 6-1	2.2.4 Current & Future Conditions Summary	2-8
3.1 Wastewater Treatment Facility 3-1 3.1.1 Location 3-1 3.1.2 Type of Facility 3-1 3.1.3 Flow Rates 3-2 3.1.4 Sewage Acceptance 3-2 3.1.5 Flow Rates 3-2 3.1.4 Sewage Collection System 3-2 3.3 Effluent Management 3-2 3.3.1 Discharge 3-2 3.3.1 Discharge 3-2 3.3.1 Discharge 3-2 3.3.2 Reclamation/Reuse 3-3 3.4.1 New Service Connection Infrastructure 3-3 3.4.1 New Service Connection Permitting Process & Procedures 3-4 4 Construction 4-1 4.1 Construction Summary 4-1 4.2 Phasing 4-2 4.3 Construction Agencies 4-2 5.1 Burpact 5-1 5.1.1 Potential Adverse Impacts 5-3 5.2 Groundwater 5-3 5.3 Air Quality 5-4 6 </td <td>3 Wastewater Treatment Facility</td> <td>3-1</td>	3 Wastewater Treatment Facility	3-1
3.1.1 Location 3-1 3.1.2 Type of Facility 3-1 3.1.3 Flow Rates 3-2 3.1.4 Sewage Acceptance 3-2 3.2 Sewage Collection System 3-2 3.2 Sewage Collection System 3-2 3.3 Effluent Management 3-2 3.3.1 Discharge 3-2 3.3.2 Reclamation/Reuse 3-3 3.4 Service Connections 3-3 3.4.1 New Service Connection Infrastructure 3-3 3.4.2 Service Connection Permitting Process & Procedures 3-4 4 Construction 4-1 4.1 Construction Summary 4-1 4.2 Phasing 4-2 4.3 Construction Agencies 5-1 5.1 Surface Water 5-1 5.1.1 Potential Adverse Impacts 5-1 5.1.2 Potential Beneficial Impacts 5-3 5.2 Groundwater 5-3 5.3 Air Quality 5-4 6 Permits 6-1 <tr< td=""><td>3.1 Wastewater Treatment Facility</td><td>3-1</td></tr<>	3.1 Wastewater Treatment Facility	3-1
3.1.2 Type of Facility	3.1.1 Location	3-1
3.1.3 Flow Rates 3-2 3.1.4 Sewage Acceptance 3-2 3.2 Sewage Collection System 3-2 3.2 Sewage Collection System 3-2 3.3 Effluent Management 3-2 3.3.1 Discharge 3-2 3.3.1 Discharge 3-2 3.3.1 Discharge 3-2 3.3.2 Reclamation/Reuse 3-3 3.4 Service Connection Infrastructure 3-3 3.4.1 New Service Connection Infrastructure 3-3 3.4.2 Service Connection Permitting Process & Procedures 3-4 4 Construction Summary 4-1 4.1 Construction Summary 4-1 4.2 Phasing 4-2 4.3 Construction Agencies 4-2 5 Impact 5-1 5.1 Surface Water 5-1 5.1.2 Potential Adverse Impacts 5-3 5.2 Groundwater 5-3 5.3 Air Quality 5-4 6 Permit 6-1 <td< td=""><td>3.1.2 Type of Facility</td><td>3-1</td></td<>	3.1.2 Type of Facility	3-1
3.1.4 Sewage Acceptance 3-2 3.2 Sewage Collection System 3-2 3.3 Effluent Management 3-2 3.3.1 Discharge 3-2 3.3.2 Reclamation/Reuse 3-3 3.4 Service Connections 3-3 3.4.1 New Service Connection Infrastructure 3-3 3.4.2 Service Connection Permitting Process & Procedures 3-4 4 Construction 4-1 4.1 Construction Summary 4-1 4.2 Phasing 4-2 4.3 Construction Agencies 4-2 4.3 Construction Agencies 4-2 5 Impact 5-1 5.1 Surface Water 5-1 5.1.2 Potential Adverse Impacts 5-3 5.2 Groundwater 5-3 5.3 Air Quality 5-4 6 Permits 6-1 6.1 Aquifer Protection Permit 6-1 6.3 CAG 208 Water Quality Plan Amendment 6-1 6.4 Construction Permits 6-1 <	3.1.3 Flow Rates	3-2
3.2 Sewage Collection System 3-2 3.3 Effluent Management 3-2 3.3.1 Discharge 3-2 3.3.2 Reclamation/Reuse 3-3 3.4 Service Connections 3-3 3.4.1 New Service Connection Infrastructure 3-3 3.4.2 Service Connection Permitting Process & Procedures 3-4 4 Construction 4-1 4.1 Construction Summary 4-1 4.2 Phasing 4-2 4.3 Construction Agencies 4-2 5 Impact 5-1 5.1 Surface Water 5-1 5.1.1 Potential Adverse Impacts 5-1 5.1.2 Potential Beneficial Impacts 5-3 5.2 Groundwater 5-3 5.3 Air Quality 5-4 6 Permits 6-1 6.1 Aquifer Protection Permit 6-1 6.2 AZPDES Permit 6-1 6.3 CAG 208 Water Quality Plan Amendment 6-1 6.4 Construction Permits 6-1 <tr< td=""><td>3.1.4 Sewage Acceptance</td><td>3-2</td></tr<>	3.1.4 Sewage Acceptance	3-2
3.3 Enduent Wanagement 3-2 3.3.1 Discharge 3-2 3.3.2 Reclamation/Reuse 3-3 3.4 Service Connections 3-3 3.4.1 New Service Connection Infrastructure 3-3 3.4.2 Service Connection Permitting Process & Procedures 3-4 4 Construction 4-1 4.1 Construction Summary 4-1 4.2 Phasing 4-2 4.3 Construction Agencies 4-2 5 Impact 5-1 5.1 Surface Water 5-1 5.1.1 Potential Adverse Impacts 5-3 5.2 Groundwater 5-3 5.2 Groundwater 5-3 5.3 Air Quality 5-4 6 Permits 6-1 6.1 Aquifer Protection Permit 6-1 6.1 Aquify Plan Amendment 6-1 6.2 AZPDES Permit 6-1 6.3 CAG 208 Water Quality Plan Amendment 6-1 6.4 Construction Permits 6-1	3.2 Sewage Collection System	
3.3.1 Discharge 3-2 3.3.2 Reclamation/Reuse 3-3 3.4 Service Connections. 3-3 3.4.1 New Service Connection Infrastructure 3-3 3.4.2 Service Connection Permitting Process & Procedures. 3-4 4 Construction 4-1 4.1 Construction Summary 4-1 4.2 Phasing 4-2 4.3 Construction Agencies. 4-2 5.1 Surface Water 5-1 5.1.1 Potential Adverse Impacts 5-1 5.1.2 Potential Beneficial Impacts. 5-3 5.2 Groundwater 5-3 5.3 Air Quality 5-4 6 Permits 6-1 6.1 Aquifer Protection Permit 6-1 6.2 AZPDES Permit 6-1 6.3 CAG 208 Water Quality Plan Amendment 6-1 6.4 Construction Permits 6-1 6.5 Local Floodplain and Drainage Regulations 6-1	3.3 Enluent Management	3-∠ ∘ ∘
3.4 Service Connections. 3-3 3.4.1 New Service Connection Infrastructure 3-3 3.4.2 Service Connection Permitting Process & Procedures. 3-4 4 Construction 4-1 4.1 Construction Summary 4-1 4.2 Phasing. 4-2 4.3 Construction Agencies. 4-2 5 Impact 5-1 5.1.1 Potential Adverse Impacts. 5-1 5.1.2 Potential Beneficial Impacts. 5-3 5.2 Groundwater 5-3 5.3 Air Quality 5-4 6 Permits 6-1 6.1 Aquifer Protection Permit 6-1 6.2 AZPDES Permit 6-1 6.3 CAG 208 Water Quality Plan Amendment 6-1 6.4 Construction Permits 6-1 6.5 Local Floodplain and Drainage Regulations 6-1	3.3.1 Discritige	 ۲-۲
3.4.1 New Service Connection Infrastructure 3-3 3.4.2 Service Connection Permitting Process & Procedures. 3-4 4 Construction 4-1 4.1 Construction Summary 4-1 4.2 Phasing. 4-2 4.3 Construction Agencies. 4-2 5 Impact 5-1 5.1 Surface Water 5-1 5.1.2 Potential Adverse Impacts 5-3 5.2 Groundwater 5-3 5.3 Air Quality 5-4 6 Permits 6-1 6.1 Aquifer Protection Permit 6-1 6.2 AZPDES Permit 6-1 6.3 CAG 208 Water Quality Plan Amendment 6-1 6.4 Construction Permits 6-1 6.5 Local Floodplain and Drainage Regulations 6-1	3.4 Service Connections	
3.4.2 Service Connection Permitting Process & Procedures. 3-4 4 Construction 4-1 4.1 Construction Summary 4-1 4.2 Phasing. 4-2 4.3 Construction Agencies. 4-2 5 Impact 5-1 5.1 Surface Water 5-1 5.1.1 Potential Adverse Impacts 5-1 5.1.2 Potential Beneficial Impacts 5-3 5.2 Groundwater 5-3 5.3 Air Quality 5-4 6 Permits 6-1 6.1 Aquifer Protection Permit 6-1 6.3 CAG 208 Water Quality Plan Amendment 6-1 6.4 Construction Permits 6-1 6.5 Local Floodplain and Drainage Regulations 6-1	3.4.1 New Service Connection Infrastructure	
4 Construction 4-1 4.1 Construction Summary 4-1 4.2 Phasing 4-2 4.3 Construction Agencies 4-2 5 Impact 5-1 5.1 Surface Water 5-1 5.1.1 Potential Adverse Impacts 5-1 5.1.2 Potential Beneficial Impacts 5-3 5.2 Groundwater 5-3 5.3 Air Quality 5-4 6 Permits 6-1 6.1 Aquifer Protection Permit 6-1 6.3 CAG 208 Water Quality Plan Amendment 6-1 6.4 Construction Permits 6-1 6.5 Local Floodplain and Drainage Regulations 6-1	3.4.2 Service Connection Permitting Process & Procedures	3-4
4.1 Construction 4-1 4.2 Phasing 4-2 4.3 Construction Agencies 4-2 4.3 Construction Agencies 4-2 5 Impact 5-1 5.1 Surface Water 5-1 5.1.1 Potential Adverse Impacts 5-1 5.1.2 Potential Beneficial Impacts 5-3 5.2 Groundwater 5-3 5.3 Air Quality 5-4 6 Permits 6-1 6.1 Aquifer Protection Permit 6-1 6.2 AZPDES Permit 6-1 6.3 CAG 208 Water Quality Plan Amendment 6-1 6.4 Construction Permits 6-1 6.5 Local Floodplain and Drainage Regulations 6-1	4 Construction	4.4
4.1 Construction Summary 4-1 4.2 Phasing. 4-2 4.3 Construction Agencies. 4-2 5 Impact 5-1 5.1 Surface Water. 5-1 5.1.1 Potential Adverse Impacts 5-1 5.1.2 Potential Beneficial Impacts 5-3 5.2 Groundwater. 5-3 5.3 Air Quality 5-4 6 Permits 6-1 6.1 Aquifer Protection Permit. 6-1 6.2 AZPDES Permit. 6-1 6.3 CAG 208 Water Quality Plan Amendment 6-1 6.4 Construction Permits 6-1 6.5 Local Floodplain and Drainage Regulations 6-1	4 Construction Summary	4-۱ ا_1
4.3 Construction Agencies. 4-2 4.3 Construction Agencies. 5-1 5.1 Surface Water. 5-1 5.1.1 Potential Adverse Impacts 5-1 5.1.2 Potential Beneficial Impacts 5-3 5.2 Groundwater 5-3 5.3 Air Quality 5-4 6 Permits 6-1 6.1 Aquifer Protection Permit 6-1 6.3 CAG 208 Water Quality Plan Amendment 6-1 6.4 Construction Permits 6-1 6.5 Local Floodplain and Drainage Regulations 6-1	4.1 Construction Summary	
5 Impact 5-1 5.1 Surface Water 5-1 5.1.1 Potential Adverse Impacts 5-1 5.1.2 Potential Beneficial Impacts 5-3 5.2 Groundwater 5-3 5.3 Air Quality 5-4 6 Permits 6-1 6.1 Aquifer Protection Permit 6-1 6.2 AZPDES Permit 6-1 6.3 CAG 208 Water Quality Plan Amendment 6-1 6.4 Construction Permits 6-1 6.5 Local Floodplain and Drainage Regulations 6-1	4.3 Construction Agencies	4-2
5 Impact 5-1 5.1 Surface Water 5-1 5.1.1 Potential Adverse Impacts 5-1 5.1.2 Potential Beneficial Impacts 5-3 5.2 Groundwater 5-3 5.3 Air Quality 5-4 6 Permits 6-1 6.1 Aquifer Protection Permit 6-1 6.2 AZPDES Permit 6-1 6.3 CAG 208 Water Quality Plan Amendment 6-1 6.4 Construction Permits 6-1 6.5 Local Floodplain and Drainage Regulations 6-1		
5.1 Surface Water	5 Impact	5-1
5.1.1 Potential Adverse Impacts 5-1 5.1.2 Potential Beneficial Impacts 5-3 5.2 Groundwater 5-3 5.3 Air Quality 5-4 6 Permits 6-1 6.1 Aquifer Protection Permit 6-1 6.2 AZPDES Permit 6-1 6.3 CAG 208 Water Quality Plan Amendment 6-1 6.4 Construction Permits 6-1 6.5 Local Floodplain and Drainage Regulations 6-1	5.1 Surrace Water	5-1
5.1.2 Potential Beneficial Impacts 5-3 5.2 Groundwater 5-3 5.3 Air Quality 5-4 6 Permits 6-1 6.1 Aquifer Protection Permit 6-1 6.2 AZPDES Permit 6-1 6.3 CAG 208 Water Quality Plan Amendment 6-1 6.4 Construction Permits 6-1 6.5 Local Floodplain and Drainage Regulations 6-1	5.1.1 Potential Adverse Impacts	
5.2 Groundwater 5.3 6.1 Aquifer Protection Permit 6-1 6.2 AZPDES Permit 6-1 6.3 CAG 208 Water Quality Plan Amendment 6-1 6.4 Construction Permits 6-1 6.5 Local Floodplain and Drainage Regulations 6-1	5.2 Groundwater	5-3 5-3
6 Permits 6-1 6.1 Aquifer Protection Permit 6-1 6.2 AZPDES Permit 6-1 6.3 CAG 208 Water Quality Plan Amendment 6-1 6.4 Construction Permits 6-1 6.5 Local Floodplain and Drainage Regulations 6-1	5.3 Air Quality	5-3 5-4
6 Permits 6-1 6.1 Aquifer Protection Permit 6-1 6.2 AZPDES Permit 6-1 6.3 CAG 208 Water Quality Plan Amendment 6-1 6.4 Construction Permits 6-1 6.5 Local Floodplain and Drainage Regulations 6-1	C Deam: 4a	
6.1 Aquiler Protection Permit	6 1 Aquifar Drotaction Dermit	6-1
6.2 Azr Des Ferrint	0.1 Aquiler Plotection Permit	0-1 6 4
6.4 Construction Permits	6.3 CAG 208 Water Auglity Plan Amendment	I-U 1_Ω
6.5 Local Floodplain and Drainage Regulations	6.4 Construction Permits	
	6.5 Local Floodplain and Drainage Regulations	6-1



6.6	Sludge Management	Տ-1
7 Fina	nce Information	7-1
7.1	Project Financing	7-1
7.2	Financial Status	7-1
8 Refe	rences	3-1

Tables

Table 1 – Status of Residential Treatment Systems Throughout TRSD	1-3
Table 2 – TRSD Capacity Phasing	2-2
Table 3 – Surrounding Community Population Trends	2-5
Table 4 – EJSCREEN Population Data	2-5
Table 5 – TRSD Future Population Projections	2-6
Table 6 – EDU Assessment	2-7
Table 7 – TRSD Total Estimated EDU Count by Land Use Type	2-7
Table 8 – TRSD Total EDUs and Wastewater Flow Projections by Phase	2-8
Table 9 – TRSD Reasonable Growth Estimates	2-8
Table 10 – TRSD Phasing	4-2
Table 11 - TRSD Actual Annual Revenues and Expenditures	7-2
•	

Figures

Figure 1 – Location Map	1-1
Figure 2 – Phasing Map	1-2
Figure 3 – TRSD DMA Exclusion Map	2-3
Figure 4 – Census Block Groups Map	2-4

Appendices

Appendix A	ADEQ Checklist
Appendix B	
Appendix C	Letters of Support
Appendix D	
Appendix E	
Appendix F	Communications
Appendix G	Maps
Appendix H	Affected Population
Appendix I	



Abbreviations

AAC	Arizona Administrative Code
ACC Title 18 EQ	Arizona Administrative Code Title 18 Environmental Quality
ADEQ	Arizona Department of Environmental Quality
ADWR	Arizona Department of Water Resources
APP	Aquifer Protection Permit
ARS	Arizona Revised Statutes
AZPDES	Arizona Pollutant Discharge Elimination System
BADCT	Best Available Demonstrated Control Technology
BMP	Best Management Practices
BHP	BHP Billiton
CAG	Central Arizona Governments
CDP	Census Designated Places
CFR	Code of Federal Regulations
CVCC	Cobre Valley Country Club
CVSD	Cobre Valley Sanitary District
CWA	Clean Water Act
DMA	Designated Management Area
EA	Environmental Assessment
EDU	Equivalent Dwelling Unit
EPA	Environmental Protection Agency
FMI	Freeport McMoRan Inc.
GCWD	Gila County Wastewater Division
Globe	City of Globe
IGA	Intergovernmental Agreement
IPR	Improvements on Possessory Rights
LF	Linear Feet
MBR	
MGD	Million Gallons per Day
MHI	Median Household Income
Miami	Town of Miami
MLSS	Mixed-Liquor Suspended Solids
NOV	Notice of Violation
NPV	
O&M	Operation and Maintenance
PACE	Pacific Advanced Civil Engineering, Inc.
PCWWTF	Pinal Creek Wastewater Treatment Facility
PER	Preliminary Engineering Report



PPM	Parts per Million
PSD	Pinal Sanitary District
RCAC	Rural Communities Assistance Corporation
RD	Rural Development
RFC	Reconstruction Finance Corporation
ROI	Resolution of Intention
ROW	Right-of-Way
RUS	Rural Utilities Service
RWAA	Rural Water Association of Arizona
SF	Square Feet
SWPPP	Stormwater Pollution Prevention Plan
TRSD	Tri-City Regional Sanitary District
USACE	United States Army Corp of Engineers
USCB	United States Census Bureau
USDA	United States Department of Agriculture
USPW	Uniform Series Present Worth
WIFA	Water Infrastructure Finance Authority of Arizona
WQARF	Pinal Creek Water Quality Assurance Revolving Fund
WQMP	Water Quality Management Plan
WRF	Water Reclamation Facility
WWTP	Wastewater Treatment Plant



1 Introduction

The Tri-City Regional Sanitary District (TRSD) is seeking approval of an amendment to the Central Arizona Governments (CAG) Section 208 Water Quality Management Plan (WQMP). This amendment is for a new wastewater collection and treatment system, as well as seeking Environmental Protection Agency (EPA) approval of the TRSD name designation as Designated Management Agency (DMA) within its boundary as further discussed in Section 1.1. The project objective is to provide a permanent wastewater collection and treatment system to its residences and businesses to address the public health issues associated with current onsite wastewater treatment methods.

TRSD encompasses approximately 5.45 square miles located in Gila County, Arizona between the Town of Miami (Miami) and City of Globe (Globe). This area is located about 80 miles east of the City of Phoenix. TRSD is an Arizona Sanitary District, established in 2011, formed with a foundation and mission to improve the quality of life for the Tri-City area of southern Gila County, Arizona by developing a plan to provide and manage a new wastewater collection and treatment system. Figure 1 below shows the location of the project area and Exhibit 1 illustrates the existing facilities (Appendix G).



Figure 1 – Location Map

1.1 Abstract

This amendment provides planning information for amending the current CAG 208 WQMP for the inclusion of a new wastewater collection system (including gravity mains, force mains, lift stations, etc.) and a new Water Reclamation Facility (WRF) for the TRSD area. Upon the approval of this amendment, TRSD is seeking EPA approval of the TRSD named designation as DMA of its boundary.

TRSD was formed by the merger of two existing sanitary districts known as Cobre Valley Sanitary District (CVSD) and Pinal Sanitary District (PSD), established in 1969 and 1982, respectively. In 2011, the Gila County Board of Supervisors called for an election proposing the merger of these two sanitary districts for convenience and necessity to address the public health concerns in the area. This election resulted in





the formal merger whereby CVSD and PSD became TRSD. TRSD had a surveyor formally prepare a legal description of the TRSD boundary in 2018, which is recorded with Gila County. Appendix D includes the following:

- 1969 Cobre Valley Sanitary District Formation Documents
- 1982 Pinal Sanitary District Formation Documents
- 2011 TRSD Formation Res 001 Merger of CVSD & PSD
- 2018 TRSD Boundary Legal Description & Recording

Due to the merger of CVSD and PSD, TRSD now administers both of the recognized designated management agencies (DMAs). Currently, the CAG Section 208 WQMP dated February 2016 identifies PSD and CVSD as DMAs of their respective existing boundaries. PSD's DMA designation was recognized in 1983 and CVSD's in 1985. The TRSD administration of these existing DMAs is supported by a clarification issued to CAG by Arizona Department of Environmental Quality (ADEQ) (Appendix F). It should be noted that historically, no official action was taken by TRSD to obtain approval of its DMA because the DMA of the newly formed sanitary district was simply the combination of the existing DMA's of CVSD and PSD. Therefore, at the time official action by CAG and the EPA was not pursued. Recently, TRSD has worked with neighboring communities of Globe and Miami to negotiate specific areas of the DMA boundaries (details discussed in Section 2.1.6). The certified and recorded TRSD legal description and DMA boundary map is included in Appendix D.

In the pursuit of funding, due to the magnitude of the overall project, it will be implemented with a three-phase approach. See Figure 2 below.



Figure 2 – Phasing Map

Upon completion, approximately 4,200 residents will directly benefit from this new wastewater collection and treatment system and the entire community will begin to see some environmental and economical



improvements in the area. This project consists of the installation of 159,276+/- linear feet (LF) of gravity main lines, 27,500+/- LF of force main, approximately 415 new manholes, about 2,159 new service connections, and a newly constructed 0.65 million gallons per day (MGD) membrane bioreactor (MBR) WRF. Exhibit 2 Preliminary Collection & Treatment System (Appendix G) illustrates the proposed project phasing and infrastructure.

All generated domestic wastewater flows will be conveyed to the new TRSD WRF, which will be designed to have treatment capacity of 0.65 MGD at full buildout. The WRF will be owned, operated and maintained by TRSD, and TRSD will be responsible for the effluent management. It is anticipated that the WRF will be a modular design using the MBR process with multiple phases to accommodate additional flows as the collection system phases are completed. The contemporary membrane filtration technology will provide extremely high quality treated wastewater (known as effluent).

1.2 Project History

Many of the existing septic systems and cesspools within TRSD are in poor and failing condition. Cesspools were prohibited in the 1970's because they were described as a health and safety risk to humans and the environment as stated in the Arizona Administrative Code (AAC) R18-9-A309.A.4. Based on recent discussions with Gila County, an analysis of residential properties within TRSD indicates 89% of the existing facilities are in violation of the Clean Water Act (CWA) and AAC. In addition, a study was conducted in 2012 by Gila County to assess sewage treatment within TRSD named "Sewage Treatment Study, Tri-City Regional Sanitary District" dated November 2012 (Appendix I). This study discusses the extensive use of cesspools or substandard septic systems for sewage disposal within TRSD.

Gila County has documented the development of residential homes including real property, Improvements on Possessory Rights (IPR), and motor homes since 1905. Most homes constructed from 1905 to 1970 used cesspools as primary means of sewage disposal. In the 1970's, construction of cesspools was prohibited in the United States due to their inability to treat wastewater before discharge. Further regulations were established in 1990 to improve septic system processes and testing. Thus, two major assumptions are used in this report to determine the current conditions of the TRSD existing facilities. All residential homes built between 1905 and 1970 are assumed to use cesspools. All residential homes built between 1970 and 1990 are assumed to have substandard septic systems. Therefore, all existing homes constructed between 1905 and 1900 are assumed to violate current standards for sewage disposal. The status of residential treatment systems throughout TRSD is shown in the table below.

Total Estimated Residential Properties	1,827	
Residential Properties with Cesspools	1,188	65%
Residential Properties with Substandard Septic Systems		24%
Total Systems in Violation	1,622	89%
Total Adequate Systems	205	11%

Table	1 – Status	of Residential	Treatment	Systems	Throughout	TRSD
Iable	I – Status	or itesidential	Treatment	Systems	moughout	11.30

ADEQ has delegated enforcement of the use of cesspools and independent septic systems to Gila County within its boundaries. Gila County has refrained from actively seeking out properties in violation as a large portion of the community would suffer the repercussions of these violations leading to increased number of abandoned homes and associated hardship. Discussions with Wastewater Division Manager of Gila County, has put estimates of abandoned homes at about 300-400 within TRSD. Once an onsite wastewater system is determined to be 1) an outlawed cesspool, 2) a failing/substandard system, or 3) a failed system, the homeowner is left with few options. If it were a failing/substandard system, the owner would need pay to have it repaired and updated to modern standards. If it is a cesspool or failed system, the system must be abandoned. Once abandoned, a new system would need to be installed on a new piece of land. If this option is not feasible due to lack of available budget or land, the only option is to abandon the property because water service will be discontinued.



The responsibility for maintaining or replacing the septic systems currently remains with the homeowners and the need for replace would be determined by the homeowner as well. If the existing system can be replaced, the cost to homeowners for replacement of a failing onsite system could range from about \$5,000 to \$12,000 depending on the type, size and complexity of the system (Gila County, Arizona, 2014; Gila County, Arizona - Wastewater Department, 2014; SepticTankGuide.com, 2018). In an instance where a new piece of land is required, installing a new system can range from \$8,000 to \$25,000 (Hurd, 2016).

Other costs incurred by the homeowner suggested by guidelines on septic system maintenance are to have a septic system professionally inspected and pumped every one to five years (depending on system and use) with cost estimates ranging anywhere from \$425 to \$500 (SepticTankGuide.com, 2018; Gila County, Arizona - Wastewater Department, 2014; Hurd, 2016). Unfortunately, with the Median Household Income (MHI) of only approximately \$26,000, many residents would not be able to handle the financial burden of the installation of such a system.

Furthermore, a majority of the homes within the TRSD do not have enough usable land on which to install a replacement septic system. It is estimated that the average lot size in the TRSD is 5,000 ft² while the mining subdivisions have lot sizes of 3,750 ft², which equates to an average density of 8.72 to 11.63 homes per acre. Current regulations require any subdivisions with a density of greater than one (1) home per acre to reduce the nitrogen contribution to the ground in addition to removing the biological contaminants and viruses through advanced treatment systems or a wastewater collection and treatment system. Some small lots qualify to use the enhanced sewage treatment qualities of an alternative system to overcome the lot limitations. However, the system cost is normally more than the appraised value of the property. Some multiple lot properties have been able to replace failed cesspools with septic systems. Usually there are multiple cesspools replaced by one septic system.

Bechtel Tract, located within the Russell Road Area (southern portion of TRSD), is a 10-acre tract of land consisting of single-family homes. Bechtel Tract was constructed under financing from the Reconstruction Finance Corporation (RFC) with a small collection system and a centralized disposal system. The system is currently under the management of BHP Billiton (BHP), a local mining company, and is provided at no cost to the residents of Bechtel Tract. For years this collection system, septic tank, and leach field represented an above average sewer treatment process for the region. The system has since exhausted its useful life span. Efforts by BHP have been made to maintain the system serviceability over the years; these efforts include regular observation and maintenance as well as the installation of additional leach field lines in 1984. Upkeep costs will only continue to increase as the system continues to age. Due to the deteriorating collection lines and substandard disposal, this system poses significant health and environmental concerns.

The majority of the TRSD area from a public health standpoint, without the installation of a wastewater collection and treatment system, will see the unsanitary conditions progressively worsen. As more and more cesspools and septic systems fail, homeowners of these small properties will allow wastewater to flow onto the ground until reported. As system failures become more frequent, the potential for waterborne illness increases. Children, the elderly, pets and wildlife are at higher risk as they are more vulnerable to contaminated areas that are exposed due to failing systems.

Without the installation of a regional wastewater collection and treatment system, economic hardship will continue. The smaller parcels will progressively be abandoned because these failing systems are not repairable/replaceable resulting in increased vacancy, declining property values, and property owners not being able to sell their properties.

1.3 Natural Environment

TRSD encompasses an area of approximately 5.45 square miles located in Gila County between the Town of Miami and City of Globe. TRSD lies within the Upper Pinal Creek watershed, Russell Gulch watershed, Bloody Tanks Wash watershed, and Miami Wash watershed at approximately 3,400 feet above mean sea level. The major stream drainages in the area are the Bloody Tanks wash (southwestern to northeastern flow) and the Miami wash watershed (flows north of the Bloody Tanks Wash and is east of Miami).



The Miami, Globe and TRSD areas were originally established due to the rich bodies of copper ore discovered within the surrounding Webster, Granite, and Pinal Mountains in the late 1800s. Globe was founded in 1876 and incorporated in 1907, while Miami was established in 1907 and incorporated in 1918. The main economy of the Globe-Miami area remains heavily involved in the mining industry with over 20 percent of its employment related to mining and copper production (Arizona Department of Commerce, 2014).

The most recent environmental reporting completed for the area was Environmental Assessment (EA) prepared by Logan Simpson in 2018. This report was prepared to accompany the Preliminary Engineering Report (PER) as required by the United States Department of Agriculture – Rural Development (USDA-RD) in order to apply for funding assistance. The size of the project caused the USDA-RD to encourage phasing the project. The project will be completed in three phases. Consequently, the PER (authored by Pacific Advanced Civil Engineering, Inc. dba PACE) and EA are focused on only Phase I of III. Both a PER and EA will be prepared for Phase II and Phase III individually More details regarding the phasing is presented later in this report in Section 4.1 Construction Summary.

After review of other, more dated similar environmental planning, it is presumed that the other phases will be analogous to the Phase I area. The following discussions are from the Logan Simpson Environmental Assessment (2018) regarding Phase I.

1.3.1 <u>Geology</u>

The Logan Simpson EA (2018) describes the area geological elements:

Uses and activities that dominate the visual setting of the area include open pit mining, commercial and industrial land uses, urban infrastructure (streets, overhead transmission lines, lighting, and signage) and residential development. The pattern of the existing infrastructure and residential and commercial development is strongly influenced by the numerous ephemeral drainages running generally in a north-south direction in between small, rounded ridges covered by [sparse], open vegetation. These ephemeral drainages expose light colored soils. Vegetation within the area is sparse and generally consists of low stature shrubs with isolated and dispersed trees. (p. 32-33)

1.3.2 Groundwater Hydrology and Quality

Logan Simpson (2018) discusses the TRSD Phase I groundwater hydrology and quality:

In the Salt River Lakes sub-basin of the Salt River groundwater basin that occupies the portion of Gila County in the general vicinity of the project area, unconsolidated sands and gravels within the floodplains of streams and washes form an alluvial aquifer (Arizona Department of Water Resources...2010). In the Globe-Miami area, most of the area's municipal and industrial water supply comes from the Gila conglomerate that forms a local aquifer (ADWR 2010). Groundwater in the area is located at a depth of 15 to 30 feet (ADWR 2010). Water is also supplied to the Globe-Miami area by a limestone aquifer and small basin-fill deposits forming isolated groundwater aquifers. Mining activities in the vicinity of the project area have impacted water quality in the alluvial aquifer along Miami Wash and Pinal Creek, consisting of elevated concentrations of metals and sulfate (ADWR 2010). (p. 43)

Groundwater contamination has been identified within the proposed project area associated with the Pinal Creek Water Quality Assurance Revolving Fund (WQARF) site. This WQARF site follows the floodplains of Bloody Tanks Wash and Russell Gulch, to their confluence with Pinal Creek. The ADEQ WQARF program investigates and cleans up contaminated soil sites and groundwater across the state. The primary pollutant concerns are waste rock from nearby mining activities and heavy metals from acid-metal runoff from tailings. Contamination is also found in



the alluvial aquifer of Bloody Tanks Wash-Miami Wash-Pinal Creek, in the regional Gila conglomerate aquifer. Groundwater from the alluvial aquifer is generally not used because it is contaminated. Water provided by the [Arizona] Water Company or the City of Globe to the residents of Miami, Globe, and Claypool comes from the Gila conglomerate aquifer outside of the boundaries of the WQARF site and is tested to ensure it meets all state and federal drinking water standards. Cleanup of the Pinal Creek WQARF site resulting from decades of mining contamination is ongoing. (p. 43)

The existing residential treatment systems, consisting of cesspools and septic systems, currently used for wastewater disposal within the TRSD [boundary] have generated concerns about the quality of groundwater in the area. Many of the septic systems in use have been improperly maintained and/or were poorly located and improperly designed and installed, resulting in discharge of untreated wastewater and pollutants (e.g., nitrogen) into the environment, ultimately affecting groundwater.... (p. 43-44)

The majority of wastewater disposal within the TRSD [boundary] is facilitated through individual treatment systems for residences and some businesses. Although these systems can adequately treat wastewater, the lack of proper maintenance can result in the release of improperly treated or untreated wastewater into the environment. (p. 44)

Both Globe and Miami have municipal wastewater collection and treatment systems for the areas under their jurisdiction. FMI recently completed construction of a new WRF for the Town of Miami that nearly doubles the treatment capacity from the previous wastewater system. Treated wastewater from the Miami WRF meets all EPA and ADEQ standards, and treated effluent is used by FMI for mining operations and golf course irrigation, as well as to replenish the aquifers. The Pinal Creek Wastewater Treatment Facility [Globe treatment facility] receives domestic wastewater from residential and commercial sources in Globe. Treated wastewater from this facility is discharged into Pinal Creek and the Salt River Basin and meets all EPA and ADEQ standards. (p. 44)

1.3.3 Surface Water Hydrology

Logan Simpson (2018) discusses the TRSD Phase I surface water hydrology:

The Phase I area is within the Upper Salt River watershed. The two principal drainages in the Phase I area are Bloody Tanks Wash and Russell Gulch, which are ephemeral⁹ drainages that flow northwest to Pinal Creek, a tributary of the Salt River (Figure 4). Several smaller ephemeral drainages occur within the Phase I area, draining into Bloody Tanks Wash. Ephemeral drainages receive flow from heavy precipitation and snowmelt and are not recharged by groundwater. The majority of precipitation occurs during the months of July and August. Some surface water may seep through to groundwater, but it is typically dissipated by runoff and evaporation. No perennial streams (continuously flowing) were identified in the Phase I area and no unique, impaired, or non-attaining waters are located in or near the project area.

Stormwater refers to water runoff from either pervious or impervious surfaces as the result of rain or snow. Stormwater can capture chemicals, sediment, and general debris and transport them to adjacent waterbodies. Stormwater pollution can originate from many sources including water runoff from parking lots, residential areas, industrial facilities, construction projects, streets, and various urban areas. In the project area, stormwater is conveyed by naturally occurring



ephemeral drainages, some of which have been manipulated and paved with streets and curbs. (p. 43)

1.3.4 <u>Habitat</u>

1.3.4.1 Vegetation

Logan Simpson (2018) discusses the TRSD Phase I vegetation:

is typically characterized by the presence of perennial grasses in an otherwise scrub-dominated landscape. Stem and leaf succulents are also well represented. Vegetation in this area is transitional, with many plant species present that are more indicative of lower-elevation desertscrub communities and higher-elevation chaparral communities...

Vegetation within the area includes non-native landscaped plants in residential and commercial frontages, as well as non-native invasive species within the roadway rights-of-ways. Plant species observed throughout the project limits during a site reconnaissance visit include desert broom (Baccharis sarothroides), velvet mesquite (Prosopis velutina), oaks (Quercus spp.), junipers (Juniperus spp.), catclaw acacia (Senegalia greggii), desert spoon (Dasylirion wheeleri), rabbitbrush (Ericameria nauseosa), foothills paloverde (Parkinsonia microphylla), blue paloverde (Parkinsonia Florida), tree-of-heaven (Ailanthus altissima), and Russian thistle (Salsola tragus). (p. 35)

1.3.4.2 General Fish and Wildlife Resources

Logan Simpson (2018) discusses the TRSD Phase I general fish and wildlife resources:

Fauna typically occurring in the biotic community associated with the project area include blacktailed jackrabbit (Lepus californicus), desert cottontail (Sylvilagus auduboni), brush mouse (Peromyscus boylii), coyote (Canis latrans), mule deer (Odocoileus hemionus), common raven (Corvus corax), scaled quail (Callipepla squamata), roadrunner (Geococcyx californianus), mourning dove (Zenaida macroura), house finch (Carpodacus mexicanus), black-chinned sparrow (Spizella atrogularis), and lark sparrow (Chondestes grammacus). (p. 35)



2 Project Description

2.1 Overview

2.1.1 DMA / Service Area

As discuss in Section 1.1, TRSD encompasses approximately 5.45 square miles located in Gila County, Arizona between Miami and Globe. This area is located about 80 miles east of the City of Phoenix. Recently, TRSD has worked with neighboring communities of Globe and Miami to negotiate specific areas of the DMA boundaries (details discussed in Section 2.1.6). The certified and recorded TRSD legal description and DMA boundary map is included in Appendix D. Upon the approval of this amendment, TRSD is seeking EPA approval of the TRSD named designation as DMA of its boundary.

2.1.2 Facility Ownership

The new WRF, lift station and wastewater collection systems will be owned, operated and maintained by TRSD. Land will need to be acquired for the installation of the new TRSD WRF and the construction of the regional lift stations and the neighborhood lift stations. The actual land requirements will be determined during the engineering design phase of the improvements. TRSD is currently in negotiations with BHP for the acquisition (by either purchase or lease) of land for the locations of both the proposed new WRF and the new TRSD Lift Station in Phase I.

The project may require the acquisition of additional Right-of-Ways (ROWs) or easements along proposed collection piping alignments if there are no existing easements defined when they cross into private property. TRSD has identified potential collection line ROW issues where existing roads are not on public ROWs. TRSD and its consultants have formed a working relationship with Gila County through numerous communications with the Public Works Director and others. Through this relationship, TRSD has gained support of Gila County in assistance with efforts to resolve these issues.

2.1.3 <u>Type of Facility</u>

Currently, there are no existing TRSD facilities. The project, at full buildout, will consist of the installation of the following new wastewater collection and treatment system infrastructure:

- 159,276+/- linear feet (LF) of gravity mains
- 27,500+/- LF of force main
- 415+/- new manholes
- 2,159+/- new service connections
- 0.65 MGD membrane bioreactor (MBR) water reclamation facility

The proposed new 0.65 MGD MBR WRF facility will consist of a headworks system, secondary activated sludge process with membrane filtration and disinfection (either chlorination or ultraviolet). The treatment facility will not include a septage receiving station. The treated wastewater (or effluent) from this type of WRF will meet Class A+ Reclaimed Water Standards which is the highest effluent quality classification for the State of Arizona detailed in Arizona Administrative Code Title 18 Environmental Quality (ACC Title 18 EQ). This effluent will be discharged into Russell Gulch, a contributor to Pinal Creek. Exhibit 2 identifies the proposed WRF location, and Exhibit 3 is a closer look with both a conceptual layout of the WRF and an area for potential location of the discharge point within Russell Gulch (Appendix G). Since the effluent will meet ACC Title 18 EQ standards, it will allow the potential for effluent to be reused for unrestricted irrigation of public landscape and common areas. The anticipated permitting required will be an ADEQ Aquifer Protection Permit (APP) and Arizona Pollutant Discharge Elimination System (AZPDES) permit.

Biosolids will be produced by the proposed WRF. At full buildout, the facility will produce approximately 1,200 lbs per day. Biosolids land application is a future possibility; however, this option is not being considered at this time. The biosolids will be dewatered for disposal in a landfill. All processes of treatment, handling and selection of disposal facility will be properly permitted under the ADEQ AZPDES program and carried out according to the associated regulations. These regulations include:





- Arizona Revised Statutes (ARS) Chapter 49 The Environment, Article 3.1 Arizona Pollutant Discharge Elimination System Program
- ACC Title 18 Environmental Quality
 - Chapter 09, Article 10: Arizona Pollutant Discharge Elimination System Disposal, Use, and Transportation of Biosolids
- Clean Water Act as amended (33 U.S.C. §1251 et seq.)
- Code of Federal Regulations (CFR)
 - o 40 CFR258: Criteria for Municipal Solid Waste Landfills

The treatment facility will include an Operations and Maintenance (O&M) building. The building will include areas for operations and maintenance duties, including storage and a maintenance/repair shop. It is estimated that this building will be between 2,500 and 3,000 square feet (SF) in floor space.

2.1.4 Buildout Capacity

The proposed new WRF be a 0.65 MGD at full buildout and will be built in three phases.

Phase	Treatment Capacity
Phase I	0.25 MGD
Phase II	0.25 MGD
Phase III	0.15 MGD
Totals at Full Buildout	0.65 MGD

Table 2 – TRSD Capacity Phasing

2.1.5 <u>Stakeholders and Neighboring Communities</u>

The major stakeholders are the residents, business, industries and other users within the TRSD boundary, especially those who will potentially be served by the project. As a sanitary district, TRSD has the authority, with formal support of its users, to incur debt and levy a tax for the purpose of providing a community service to those within its boundaries.

Other stakeholders and neighboring communities are listed below. It is intended that these agencies and service providers will be informed of any planned public meetings and will be encouraged to attend to be fully informed of the available project information.

- Gila County
- Town of Miami
- City of Globe
- San Carlos Apache Tribe
- Freeport McMoRan Inc. (FMI)
- BHP Billiton (BHP)
- Cobre Valley Regional Medical Center
- Arizona Eastern Railway

- Rural Communities Assistance Corporation (RCAC)
- Rural Water Association of Arizona (RWAA)
- Arizona Water Company
- Local realtors
- Arizona Public Service (APS)
- Southwest Gas
- Cable One (Sparklight)
- CenturyLink

Letters of support have been received from Globe and Miami (Appendix C). TRSD has reached out to the San Carlos Apache Tribe, but have not heard back at this time.

2.1.6 <u>DMA</u>

As discussed in Section 1.1, TRSD was formed by the merger of two existing sanitary districts, CVSD and PSD. Due to the merger of CVSD and PSD, TRSD now administers both of the recognized designated management agencies (DMAs). As the administrator of these documented existing DMAs, TRSD is only entity that has the authority to make any modifications. Appendix D includes all formation and merger



documentation, and the recorded legal description and boundary map. Upon the approval of this amendment, TRSD is seeking EPA approval of the TRSD named designation as DMA of its boundary.

Recently, TRSD has worked with neighboring City of Globe (Globe) and Town of Miami (Miami) to negotiate specific areas of the DMA boundaries. TRSD Board has agreed to modify significant portions of its DMA to Globe that lie within its city boundaries and other portions to Miami because they are areas Miami is already servicing. Additional coordination is anticipated to take place to negotiate possible intergovernmental agreements (IGAs) to address any servicing overlap between all agencies.



Figure 3 – TRSD DMA Exclusion Map

2.1.7 All Facility Locations

Currently, there are no existing TRSD facilities. All proposed new TRSD facility locations are illustrated on Exhibit 2 Preliminary Collection & Treatment System (Appendix G). At this time, there are no specific addresses to supply. As described in Section 2.1.2 Facility Ownership land acquisitions are in negotiation stages and will be determined during the engineering design phase of the improvements. TRSD has entered into preliminary discussions with BHP (local mining company) for the acquisition (either by purchase or lease) of property for the locations of both the proposed new WRF and new TRSD Lift Station.

2.1.8 Legal Descriptions

The complete existing DMA boundary is within Township 1 North, Range 15 East of the Gila and Salt River Meridian. The full, recorded legal description is included in Appendix D.



2.2 Current & Future Conditions

2.2.1 <u>Population</u>

Precise population records for the TRSD are not available because the boundary encompasses a collection of unincorporated community areas that are not recognized by the United States Census Bureau (USCB). To develop reasonable estimates of the affected population, trends and growth within the TRSD, several methods were performed including examining USBC Census Block Groups (CBGs), USBC Census Designated Places (CDPs), and utilization of the Environmental Justice Screening and Mapping Tool (EJSCREEN) provided by the Environmental Protection Agency (EPA).

2.2.2 Census Block Groups Review for Existing Population

One information source reviewed to develop a population estimate was the 2010 Census Block Map Series, also referred to as the Geographic Unit (GU) block maps. This source is produced to support the 2010 Decennial Census data release. These maps display tabulation geography down to the census block level" (United States Census Bureau, 2013). Figure 4 – Census Block Groups Map illustrates the CBGs that contribute to the TRSD area. With the TRSD boundary including just portions of numerous CBGs, this data would only provide very rough estimates of the population figures.



Figure 4 – Census Block Groups Map



2.2.2.1 Review of Surrounding Communities for Existing Population and Trends

Another consideration for developing population estimates and trends was to look at the growth patterns of CDPs in the Globe-Miami area, see Table 3 below for population trends for surrounding communities.

Community	1990	2000	2010	1990-2010
City of Globe	6,062	7,486	7,157	18%
Town of Miami	2,018	1,936	1,765	-13%
Claypool (CDP)	1,942	1,794	1,538	-21%
Central Heights-Midland (CDP)	2,969	2,694	2,534	-15%
Globe-Miami Region (CDPs)	12,991	13,910	12,994	0%

Table 3 – Surrounding Community Population Trends

Note: City of Globe decreased 4% in population from 2000-2010

Miami, Claypool, and Central Heights-Midland have all experienced a consistent decline in population for the past 20 years. Globe did sharply increase in population between the 1990 and 2000 census, but has since declined in the most recent census. This indicates a regional trend of population decline. Some of the population decrease in these TRSD area communities may very likely be attributed to the diminishing conditions, amount of abandoned properties, and/or properties that have had water supply disconnected due to violations of onsite wastewater management. Additionally, mining activity can affect population growth/loss within a region.

2.2.2.2 TRSD Estimated Affected Population and Growth Projections

Due to the lack of specific recorded population information, during the development of the PER, the USDA recommended using the Environmental Justice Screening and Mapping Tool (EJSCREEN) provided by the Environmental Protection Agency (EPA). This tool allows the user to draw a freestyle boundary to select a specific area. This action was completed independently for TRSD Phase I, Phase II and Phase III. Appendix H includes the reports of each boundary with detailed population estimates. The EJSCREEN data includes the 2010 Census to determine estimated existing population and US Census Bureau American Community Survey (ACS) information to estimate growth from 2011 to 2015.

Table 4 summarizes the figures obtained from EJSCREEN. Using the 2010 Census data, the overall TRSD population is approximately 4,200 (Line 1). The ACS 2011-2015 population estimates (Line 4) were then used to calculate the Growth Estimate (Line 7), Growth Estimate percentage (Line 8) and the Growth Estimate percentage annually (Line 9). When considering the result of an estimated 3% annual growth for the overall TRSD, it seems high compared to the documented trends of population decline shown for the surrounding communities.

Line	Data Description	TRSD Phase I	TRSD Phase II	TRSD Phase III	TRSD Total
1	Census 2010 Population	1,586	1,490	1,042	4,118
2	Census 2010 Housing Units	777	689	519	1,985
3	Census 2010 Persons/Housing Units	2.04	2.16	2.01	2.07
4	ACS 2011-2015 Population Estimate	1,922	1,780	1,032	4,734
5	ACS 2011-2015 Housing Units Estimate	863	824	571	2,258
6	ACS 2011-2015 Persons/Housing Units Estimate	2.23	2.16	1.81	2.10
7	Population Growth Estimate (Line 4 – Line 1)	336	290	-10	616
8	Population Growth Estimate % (Line 7 / Line 1)	21%	19%	-1%	15%
9	Population Growth Estimate % per Year (Line 8 / 5)	4.2%	3.9%	-0.2%	3.0%

Table 4 – EJSCREEN Population Data





Utilizing the EJSCREEN estimated population annual growth of 3%, the future population projections were calculated and are summarized in Table 5.

Population Year	Source / Estimate	Population
2010	US Census	4,118
2018	Present Estimate	5,217
2023	5-Year Estimate	6,047
2028	10-Year Estimate	7,011
2038	20-Year Estimate	9,422

Table 5 – TRSD Future Population Projections

2.2.3 Land Use and Wastewater Flows

Without documented historical information for the TRSD boundary such as the population estimates/growth projections or a wastewater master plan for land use information, an alternative method needed to be used. The only recorded information available is the parcel information managed by the Gila County Assessor's Office. Through an evaluation of potential equivalent dwelling units (EDU), a methodology was developed to present land use data, estimate flow projections, and offer reasonable growth projections.

2.2.3.1 Methodology

The most updated parcel data was obtained from the Gila County Assessor's office in mid-2018 (due to lag in the accessor's updates, the information is as of December 2017). The parcel information included Assessor's Parcel Numbers (APN), land use, lot size, parcel maps, owner information, and number of structures. Parcel data and aerial photography were used to understand the current conditions of the TRSD and locate occupied parcels. Parcels were evaluated to determine the feasibility of connection to the TRSD wastewater collection system. A preliminary design of the collection system was then developed using this information (Exhibit 2 in Appendix G). To evaluate in more depth, the areas that will be receiving new service, aerial imagery was used in conjunction with geographic information system (GIS) software to review each parcel. After review of all parcels and properties within the TRSD area, some parcels were not included in the estimations for various reasons such as land considered undevelopable due to site constraints, etc.

2.2.3.2 Equivalent Dwelling Unit (EDU) Assessment

Each parcel was reviewed in conjunction with the preliminary layout of the new collection system and given a category description to help determine EDUs and the number of new service connections, (the EDU count does not always equal the number of new connections). The following guidelines were used in the calculations.

- Each occupied residential parcel accounted for one (1) EDU.
- Residential parcels with multiple units or structures were quantified with additional EDUs as required.
- Parcels classified as "mobile homes" are assumed (by the Gila County Assessor's office) to have one (1) connection per parcel where the main line meets the property, however, for the purpose of estimating the EDU count and projecting wastewater flows, each individual mobile home was assessed 1 EDU.
- Improvements on Possessory Rights (IPR) parcels were considered to have separate connections for each leased lot within a parcel containing IPR.
- Commercial, industrial, and vacant property EDUs were estimated on gross acreage of the parcel.

Once the parcel guidelines were determined, the parcels were categorized for the purpose of 1) estimating potential wastewater flows and 2) calculating "frontage" for use in the assessment district process. The following Table 6 summarizes the categories, subcategory/descriptions and EDU calculation factors used.



Table 6 – EDU Assessment

Category	Subcategory / Descriptions	EDU Calculation Factor
Occupied	 "Parcels With Frontage" (parcels that have at least one EDU and are adjacent to or within 300 ft of the proposed pipeline) "Parcels Without Frontage" (parcels that have at least one EDU and are adjacent to or within 300 ft of the proposed pipeline) "ROW Parcel" (Parcels that will be requested to grant ROW for other parcels without frontage to receive service) "Dependent on ROW Parcel" (parcels that require other parcels to grant ROW to receive service) 	Residential 1 EDU Commercial 7.5 EDU/acre Industrial 3.75 EDU/acre
Vacant	Uninhibited parcels within the area that are adjacent to or within 300 ft of the proposed collection line. May be a ROW parcel or Dependent on ROW Parcel.	Residential <0.33 acre = 1 EDU >0.33 acre = 3.75 EDU/acre

2.2.3.3 Land Use

Using the methodology described above, EDU estimates for all included parcels were summarized by land use type in the following Table 7.

Land Use Type	Phase I EDU	Phase II EDU	Phase III EDU	Total EDU
Residential	648	434	546	1,628
Residential Mobile	84	212	46	342
Residential IPR	74	0	0	74
Commercial	174	147	138	460
Industrial	30	62	1	93
Vacant Mobile	1	3	0	4
Vacant IPR	0	0	0	0
Vacant	339	388	343	1,070
Other	24	5	9	38
Totals	1,374	1,251	1,084	3,709

Table 7 – TRSD Total Estimated EDU Count by Land Use Type

2.2.3.4 Wastewater Flow Calculations

2.2.3.4.1 Design Flow

ADEQ requires a value of 80 gallons per capita per day per individual residing in a dwelling for a wastewater collection system under AAC R18-9-E301(D) and AAC R18-9-B301(K), excluding peaking factors. Using this value with the estimate of Census 2010 Persons/Housing Units of approximately 2.07 (Table 4, Line 3 of (Total TRSD) provides a calculation of about 165 gallons per day (GPD)/EDU. To account for any possible variance due to the nature of the methodology applied, a buffer is being applied. While the parcel research method accounts for Gila County data as well as aerial surveys, there is the possibility of variances when only working with conceptual planning information for the 3,000+ parcels. To estimate the projected wastewater flows for this new collection system, a design 175 GPD/EDU will be used.

2.2.3.4.2 Future Wastewater Flow Projections (Reasonable Growth)

Table 8 shows a summary of projected EDUs, flow projections and the estimated population that will be served for each phase of the TRSD wastewater collection and treatment system.



Phase	EDU	Flow Capacity (GPD)	Estimated Population
Phase I	1,374	240,402	2,457
Phase II	1,251	218,925	2,535
Phase III	1,084	192,442	1,741
Totals at Full Buildout	3,709	651,768	6,733

Table 8 – TRSD Total EDUs and Wastewater Flow Projections by Phase

The parcel research methodology used to estimate EDU and flow projections considers the status of the community. So when considering future flow projections and planning capacity, a significant factor is the vacant properties. Although there are various reasons that these are vacant and as discussed in Project History on page 1-3, many properties may be left vacant because of the lack of sewer service leading to deterioration of the community value by a large amount of abandoned homes. Table 7 – TRSD Total Estimated EDU Count by Land Use Type shows that 1,070 of the total estimated EDUs are vacant properties. Instead of using projected population for the preliminary/conceptual planning, these vacant properties are being considered reasonable growth. With the installation of a collection and treatment system, thereby having a positive impact on the community, will bring value to the area and potentially create an atmosphere supportive of property development.

Table 9 below shows the percentage of vacant properties which allows for approximately 25% capacity as reasonable growth.

Flow Type	Flow Capacity (GPD)	EDU			
Residential	141,050	806			
Commercial / Industrial / Other	99,400	568			
Total	240,450 ¹	1,374			
Parcel Type	Flow Capacity (GPD)	EDU			
Vacant With Frontage	36,750	210			
Vacant Without Frontage	22,750	130			
Total	59,500 ¹	340			
Reasonable Growth					
Vacant Parcels Tota	59,500				
Tota	240,450				
	25%				

Table 9 – TRSD Reasonable Growth Estimates

¹Estimated based on 175 GPD per EDU

2.2.4 Current & Future Conditions Summary

As discussed, the estimated population annual growth of 3% (estimated using the EJSCREEN) is a high estimate based on the review of the documented population of the surrounding areas. Without precise population records for the TRSD, wastewater flows were estimated by the evaluation and calculation of EDUs. For the preliminary/conceptual planning, reasonable growth was then projected by the amount of existing vacant properties within the TRSD DMA that will have a centralized wastewater collection and treatment system available and are more likely to be built upon, sold, etc. to bring flows and population to the area.



3.1 Wastewater Treatment Facility

3.1.1 Location

The New TRSD WRF will require land acquisition of approximately 5-10 acres to have enough area for the infrastructure itself, and to satisfy ADEQ setback requirements. TRSD has been in discussions with BHP regarding the acquisition (by purchase or lease) of property near Gila County Assessor's parcel number 207-23-001C as a potential site. The parcel is located within the area of Russell Road (southern portion of TRSD). Exhibits 2 and 3 show the proposed location and a conceptual layout of the new TRSD WRF (Appendix G).

3.1.2 <u>Type of Facility</u>

The proposed new 0.65 MGD (at full buildout) facility will be a modular design using the membrane bioreactor (MBR) process and will consist of a headworks system, secondary activated sludge process with membrane filtration and disinfection (either chlorination or ultraviolet). The treatment facility will not include a septage receiving station.

The MBR treatment process is similar to traditional activated sludge processes where it uses natural occurring microorganisms for the biological oxidation of organic and nutrient load in the wastewater. However, instead of the traditional clarification process for liquid-solid separation, such as clarifiers, the MBR utilizes submerged in-tank microfiltration membranes to perform the liquid-solid separation. There are several main advantages of the microfiltration membranes. First, the membranes not only perform liquid-solid separation, they also filter the effluent, allowing the effluent to meet tertiary filtration requirements. Microfiltration is a more advanced filtration system than typical tertiary filters, such as sand or cloth. Microfiltration can remove particles down to less than 1 micron. This allows for the removal of inert and organic particulates, larger microorganisms (i.e., bacteria, crypto sporidium and giardia), turbidity and even some viruses. Typical tertiary filtration systems, on the other hand, can only remove down to 5 microns or larger. With the exception of final disinfection, effluent from an MBR meets the highest effluent quality standards for the State of Arizona detailed in ACC Title 18 EQ standards.

The new WRF will be designed with an open treatment process, process ventilation and some odor, noise and aesthetic controls. The design will include strategies to minimize the release of odors to avoid impact to any neighbors. With an ultimate build out of 0.65 MGD, the noise, odor and aesthetic setback requirement is 750 ft. This setback distance is required for facilities within a treatment capacity range of 0.5 MGD to less than 1.0 MGD.

An influent lift station will not be required since all of the flows will be pumped to the new WRF via offsite lift stations. The wastewater flow will first enter the facility at the headworks system that will consists of screening to remove trash and large inorganic materials. Grit removal and flow equalization may be required depending on treatment process selected; however, this can also be performed at the collection system lift stations.

Biosolids will be produced by the proposed WRF. At full buildout, the facility will produce approximately 1,200 lbs per day. Biosolids land application is a future possibility; however, this option is not being considered at this time. The biosolids will be dewatered for disposal in a landfill. All processes of treatment, handling and selection of disposal facility will be properly permitted under the ADEQ AZPDES program and carried out according to the associated regulations. These regulations include:

- Arizona Revised Statutes (ARS) Chapter 49 The Environment, Article 3.1 Arizona Pollutant Discharge Elimination System Program
- ACC Title 18 Environmental Quality
 - Chapter 09, Article 10: Arizona Pollutant Discharge Elimination System Disposal, Use, and Transportation of Biosolids
- Clean Water Act as amended (33 U.S.C. §1251 et seq.)
- Code of Federal Regulations (CFR)
 - o 40 CFR258: Criteria for Municipal Solid Waste Landfills



The treatment facility will include an operations and maintenance (O&M) building. The building will include areas for operations and maintenance duties, including storage and a maintenance/repair shop. It is estimated that this building will be between 2,500 and 3,000 square feet (SF) in floor space.

3.1.3 Flow Rates

The current proposed WRF design capacity phasing is 0.25 MGD for Phase I, an addition of 0.25 MGD for Phase II, and 0.15 MGD for Phase III. The ultimate buildout for the facility with all three phases will be 0.65 MGD. All design capacities are based on Maximum Month Average Daily Flow.

3.1.4 <u>Sewage Acceptance</u>

This facility will be designed to accept 100% domestic wastewater flows for treatment. Industrial / commercial wastewater will not be accepted without pretreatment. Any future industrial / commercial wastewater acceptance will require TRSD Board action. At that time, the policies and procedures will be developed to ensure any discharge accepted will meet the ADEQ / EPA Pretreatment Standards.

The treatment facility will not include a septage receiving station. Currently within the area, two options for septage receiving are at the Town of Miami and the Superstition Mountain Community Facilities District in Apache Junction.

3.2 Sewage Collection System

Based on evaluations performed by Gila County, it is estimated that nearly 90% of the properties within TRSD are currently served by either substandard/failing septic systems or cesspools. A centralized collection system will be designed and constructed to facilitate the abandonment of the existing cesspools and septic systems.

The project, at full buildout, will consist of the installation of the following new wastewater collection system infrastructure:

- 159,276+/- linear feet (LF) of gravity mains
- 27,500+/- LF of force main
- 415+/- new manholes
- 2,159+/- new service connections

If terrain warrants, individual lift stations and pumps may be used for specific parcels within the area. It is the intent of TRSD that the collection system will be installed within existing road ROWs. In those areas where it is not feasible to install the collection mains in a ROW, it will be necessary to secure an easement from the property owner.

3.3 Effluent Management

3.3.1 <u>Discharge</u>

3.3.1.1 Effluent Quality

Beyond meeting the regulatory requirements, TRSD prefers that the new WRF produce the best effluent feasible to demonstrate environmental stewardship in the region. At a minimum, ADEQ requires new facilities to produce effluent that will meet ACC Title 18 EQ classification called Best Available Demonstrated Control Technology (BADCT). The BADCT effluent requirements are as follows:

- 1. BOD5: <30 mg/l
- 2. TSS: <30 mg/l
- 3. PH: 6.0 9.0
- 4. TN: <10 mg/l
- 5. E. Coli: Non-detect in 4 out of 7 daily samples, single sample maximum not to exceed 23 cfu/100mL



The TRSD facility effluent will also meet ACC Title 18 EQ Class A+ Reclaimed Water Standard classification, which is similar to BADCT with the additional requirements of tertiary filtration and turbidity limits of less than 2 NTU (nephelometric turbidity units). The Class A+ classification will allow the potential for the effluent to be reused for unrestricted irrigation of public landscape and common areas.

Typically, the BADCT plus filtration will meet AZPDES permit requirements, however, ADEQ may impose additional effluent quality limits on a facility that discharges into washes or ephemeral streams. Any required additional limits will not be known until the ADEQ permitting pre-application meeting during the early design phase.

3.3.1.2 Effluent Management

Due to the ongoing flushing process of Pinal Creek, FMI (a mining company and a TRSD project stakeholder), has expressed interest in the flows produced by the new TRSD WRF to be discharged into Russell Gulch which is a contributor to Pinal Creek. This would contribute to the overall environmental cleaning within the region. A specific discharge point has not yet been determined, however, if the proposed area of property near Gila County Assessor's parcel number 207-23-001C is acquired for use and the proposed WRF location shown on Exhibit 3 (Appendix G) is determined the best fit for the parcel, an area of Russell Gulch has been designated to hold the discharge location. This area is identified on Exhibit 3 as well.

This WRF will have a constant discharge. Discharge volume from the WRF will be dependent on the number of connections. As homes are phased in, the flow will increase. The buildout flow will be 0.65 MGD, equating to an annual discharge volume of approximately 237 million gallons.

3.3.2 <u>Reclamation/Reuse</u>

Since the effluent will also meet ACC Title 18 EQ Class A+ Reclaimed Water Standards, it will allow the potential for the effluent to be reused for unrestricted irrigation of public landscape and common areas. Until a reuse option is implemented, the WRF will be discharging into Russell Gulch. This discharge requires an ADEQ AZPDES permit. Based on the requirements; this may affect the disposal for excess effluent, requiring the use of other disposal options, such as percolation basins or injection wells.

Currently, there are several available options for potential effluent reuse for the new TRSD WRF; however, at this time TRSD is not pursuing these options. The options include:

- A number of the mining companies in the area have expressed interest in utilizing the facility's effluent within their operations. Any discussions of this usage would include the mining company providing pumps and piping to convey the effluent to the desired locations.
- The local golf course, Cobre Valley Country Club (CVCC) has expressed interest in obtaining the effluent for irrigation of the course. CVCC struggles to obtain enough water to keep the course green. Any discussions of this usage would include CVCC providing pumps and piping to convey the effluent to the golf course.
- Discussions have taken place regarding the utilization of the effluent to create a lake with a surrounding regional community park constructed for recreational use, providing an amenity for the area. The cost of the lake and park would not be bore wholly by TRSD, but would be a collaboration by a number of interested groups in the region including Gila County.

3.4 Service Connections

3.4.1 <u>New Service Connection Infrastructure</u>

New service connections will include a lateral from the main line to the existing connection at the residence or business, abandonment (in place) of the existing onsite wastewater treatment system (cesspool, septic tank, leach fields), and restoration of the yard. Exhibit 5 (Appendix G) illustrates a typical lateral connection. This work will include the following for each new connection:

- The abandonment in place of existing residential cesspools and septic systems
- Installation of laterals from existing homes to the new mains including 2-way building cleanout



3.4.2 <u>Service Connection Permitting Process & Procedures</u>

TRSD has been and will continue working closely with Gila County Wastewater Division (GCWD) to ensure all current residents and new customers are supported during the development/construction phases of this project and thereafter. All permitting will continue to be facilitated through Gila County. Procedures during and after the development of this wastewater collection and treatment project are summarized below.

3.4.2.1 Existing TRSD customers that have no immediate need for any changes to their property and have onsite treatment systems that are in working condition

These customers will be contacted by TRSD to coordinate connection as the new system is developed.

3.4.2.2 Existing TRSD customers that experience issues with onsite systems prior to available connection to the new TRSD system

These customers must contact GCWD for assistance for temporary solutions. GCWD is responsible for the area's environmental protection and receives its authority by delegation from ADEQ. GCWD is committed to find temporary solutions that benefit both the environment and the customer while continuing to meet ADEQ requirements. These solutions will vary based on the specific issue and the timing of connection to the TRSD system.

3.4.2.3 Existing and new customers seeking a building permit prior to available connection to the TRSD system

These customers must follow Gila County's existing building permit process. TRSD will be collaborating with Gila County to revise its building permit checklist to include a requirement that during the permitting process, any customer that lies within the TRSD DMA boundary will need to contact TRSD and obtain a TRSD Wastewater Treatment Service Acknowledgment Form. This form will be issued to address the customers' specific situation regarding wastewater treatment. This form will address situations such as:

- Acknowledgment by customer that a new wastewater collection and treatment system will be available and customer will be required to connect and will be receiving a TRSD bill. The anticipated timing of connection will be provided.
- Acknowledgment by customer that should they experience issues with an existing onsite system prior to connection that they must contact GCWD for assistance in compliance until the TRSD system is available.
- Acknowledgment by customer that should they install a new onsite treatment system that they will be required to connect to the TRSD systems once wastewater treatment is available at the customer location.
- Acknowledgment by customer that should they elect to refuse the initial service connection, they will still be responsible for the assessment that will finance the availability of service to the property. Then, if in the future they wish to connect, customer may be charged a tap/connection fee and will be responsible for the cost to run the lateral from their existing home to the main line, including the 2-way building cleanout.



4 Construction

4.1 Construction Summary

The main scheduling element that will drive the project schedule is the funding process, as TRSD will be pursuing United States Department of Agriculture Rural Development (USDA-RD) funding for all phases. Currently, TRSD has pursued funding through the USDA-RD for Phase I of III. In August of 2018, the USDA-RD issued a Letter of Conditions (LOC) offering TRSD funding for Phase I and consists of about 57% grant and about 43% loan. TRSD intends to immediately begin the process of pursing funding for the remaining phases.

Phase I design is anticipated to begin in 2019 and will take approximately 14 months to complete. Phase I construction is estimated at approximately 16 months to completion. Within the 16 month construction period, the WRF will be constructed, taking about 12 months and will be completed prior to the collection system completion. Each additional phase will follow and have similar design and construction times. It is the intent of TRSD that these phases will overlap to bring completion of full buildout around 2026.

Service connections will be connected to the system as the infrastructure is constructed and the treatment facility is online and ready for influent flows. For example, in Phase I, after the WRF is completed and online, each individual property will have a lateral installed from the newly constructed main line to the connection at the residence or business. At this time, the system will be live and begin accepting these flows for treatment. Once connected, the onsite wastewater treatment system will be abandoned (in place) and then the yard will be restored. This process will be similarly executed in the other phases as well.

Some key design and constructability problems that will need to be addressed are as follows:

- Special care will need to be exercised with regard to excavation as some challenges may arise with old, abandoned and unrecorded existing utilities.
- Traffic control could pose some potential challenges to the construction schedule and maintaining access for homeowners who live adjacent to construction activities.
- Floodways:
 - Portions of the collection mains and the WRF may have to be installed within floodways. USACE Section 404 permit issues may have to be addressed during final design.
 - Per ADEQ in AAC R-18-9-E301.D.2.c, sewer lines crossing or constructed in floodways need to be installed 2' below the 100-year storm scour depth or scour protection shall be provided if the depth cannot be maintained.
- Narrow Streets: Pavement widths are less than 25 feet wide.
 - Many of the main lines are within narrow residential streets. This makes access to and from the homes difficult during construction operations.
 - Narrow streets create design and construction difficulties. Care must be taken during the main line design to ensure adequate separation is maintained from other utilities like gas, water and electricity that need to be avoided to keep relocation costs low.
 - Potential asphalt variation may create issues.
- Steep Terrain: Much of the TRSD area is constructed within steep, mountainous terrain. Care must be taken during the design to ensure that the collection line is installed at reasonable slopes.



4.2 Phasing

The construction of each phase will be strategized to ensure WRF capacity is operational prior to the completion of the associated phased collection system.

Phase	Year Capacity Available	Flow Capacity (GPD)	EDUs	Estimated Population	Treatment Capacity
Phase I	2021	240,402	1,374	2,457	0.25 MGD
Phase II	2023	218,925	1,251	2,535	0.25 MGD
Phase III	2026	192,442	1,084	1,741	0.15 MGD
Totals a	t Full Buildout	651,768	3,709	6,733	0.65 MGD

Table 10 – TRSD Phasing

4.3 Construction Agencies

Following guidelines of the USDA-RD for construction procurement, TRSD will follow USDA-RD requirements for free and open competition. Each phase will be put out to public bid to obtain a licensed general contractor to facilitate and manage the construction of the awarded project phase.



5 Impact

Overall, the impact to the community from the TRSD Wastewater Collection and Treatment Project will be beneficial. With the majority of the residential properties within TRSD utilizing onsite treatment systems and being in violation of the CWA, AAC, and or ADEQ regulations, the implementation of this project will improve environmental conditions. The public health conditions will improve because of the decommissioning of the failing and/or failed onsite wastewater systems thereby cleaning up the groundwater and stormwater runoff by reducing pollution risk.

With the installation of a collection and treatment system will bring value to the area and potentially create an atmosphere supportive of property development. Gila County Wastewater Division Manager agrees that the project will be economically beneficial to the residents and businesses because an increase in property values can encourage the refilling of abandoned homes and improve the overall improvement of the quality of life in the area.

Potential adverse impacts are associated with the results of conducting a large construction project. However, most of these potential adverse impacts can be minimized or avoided by employing Best Management Practices (BMPs). These include following proper regulatory agency guidelines and permitting process to ensure proper execution of the project to support environmental protection. During construction, there will be possible traffic interruption, but it is only a temporary inconvenience.

5.1 Surface Water

5.1.1 <u>Potential Adverse Impacts</u>

The potential adverse impacts to the surface water in the area and the BMPs that will be employed to minimize these impacts are described below.

5.1.1.1 Jack and Bore Activities with Jurisdictional Waters of the United States

Adverse Impact:

Potential crossings that will require jack and bore activities within jurisdictional waters of the United States

BMP:

Ensure construction activities comply with the requirements of the Section 404 Permit and Section 401 Water Quality Certification. Logan Simpson (2018) summarizes these practices:

To comply with the terms and conditions of these permits, discharges of fill or dredged material (including all earthwork activities, such as clearing, grading, filling, and excavating) into watercourses would be minimized or avoided to the maximum extent practicable. Fill or dredged material would not involve the use of unsuitable material or pollutants in toxic amounts. In addition, no excess concrete, curing agents, formwork, loose embankment materials, or fuel would be disposed of within the project area. Additionally, vegetation cover similar to present levels would be reestablished relatively quickly reducing the potential for soil erosion and increased sedimentation. (p. 44)



5.1.1.2 Stormwater Runoff

Adverse Impact:

Potential increase in stormwater runoff

BMP:

Logan Simpson (2018) explains:

As part of the AZPDES permit, a Stormwater Pollution Prevention Plan (SWPPP) would be prepared and implemented, which would minimize potential sediment transport by requiring the use of stormwater and erosion control BMPs. (p. 45)

Gila County has developed a Grading and Drainage Ordinance (Number 08-01) to promote the public health, safety, and general welfare, and to minimize public and private losses by regulating grading and drainage of all land within the unincorporated area of Gila County, Arizona. The [TRSD project] would require obtaining a grading permit from the Gila County Public Works Director or designee. In addition, construction impacts would be confined to the minimum area necessary to complete the project. (p. 45)

5.1.1.3 Floodplain

Portions of the collection system may have to be installed in the floodplain. The design will be coordinated with Gila County to obtain a floodplain use permit as necessary and with the U.S. Army Corps of Engineers (USACE) 404 permit issues during design. Logan Simpson (2018) describes the two new critical facility locations relative to the floodplains:

WRF – The location of the proposed WRF is outside of the 100-year floodplain ([Exhibit 6 in Appendix G]), and pumps and other wastewater infrastructure would be constructed outside the floodplain limits, where possible. The WRF is located near the boundaries of a 500-year floodplain. During final design, a 500-year floodplain analysis would be performed to determine impact and elevations to ensure this critical facility is designed to be protected from a 500-year flood event.

Lift Station – The location of a new lift station, necessary to move wastewater to the proposed WRF, would be located in the 100-year floodplain and near the boundaries of a 500-year floodplain ([Exhibit 6]). The entire TRSD [boundary] was analyzed to maximize natural sewer flows dictated by gravity. Initial evaluations identified the lift station, to be most effective, should be located west of Ragus Road and south of the Arizona Eastern Railway. Consideration was given to four parcels in this vicinity (west of Ragus Road, north of the Eastern Railway), including a Safeway and Walmart. All four parcels are located entirely within the floodplain. Two of the parcels were removed from consideration as they consist of residential properties. Ease of access from Ragus Road was the determining factor between the final two parcels. During final design, a 500-year floodplain analysis would be performed to determine impact and elevations to ensure this critical facility is designed to be protected from a 500-year flood event. No impacts to the floodplain are anticipated [because] the estimated footprint of the lift station is approximately 20-feet by 20-feet.... A Gila County Floodplain Use Permit would be required for the project. (p. 17-18)

Adverse Impact:

Potential risk to the new infrastructure (specifically the new TRSD WRF and Lift Station) if located within a floodplain, and risk of impacting flood flows or elevations by changing landscape with new construction



BMP:

As long as all Gila County and USACE processes are followed when constructing in the floodplains, Logan Simpson (2018) concludes:

The [TRSD project] would result in temporary disruptions to floodplains where construction activities within the 100-year floodplain are unavoidable. The construction related activities are not anticipated to change the floodplain elevation to a point that would impact the floodplain, either temporarily or permanently. No impacts on flood flows or flood elevations are anticipated as a result of the [TRSD project], as the [TRSD Project] would not permanently impede or redirect flows. Therefore, the [TRSD project] is anticipated to have no impacts to floodplains, provided the applicable BMPs are implemented. (p. 18)

5.1.2 Potential Beneficial Impacts

Logan Simpson (2018) describes the potential beneficial impacts to the surface water.

Beneficial Impact:

Approximately 200,000 gpd of Class A+ effluent is proposed for discharge to Russell Gulch; located approximately 500 feet east of the proposed [TRSD] WRF.... Russell Gulch is a tributary of Pinal Creek and it is anticipated that the 200,000 gpd discharge of reclaimed water to Russell Gulch would contribute to surface flow, thereby improving the ongoing clean-up efforts of the Pinal Creek WQARF site. The additional daily flows may help move contaminants in the drainageway downstream towards the WQARF water treatment plant, contributing to the overall environmental clean-up of the region. ... [F]low to Russell Gulch may also result in the ponding of water and establishment of wetlands and/or wildlife habitat downstream of the [TRSD] WRF. (p. 45)

Beneficial Impact:

As a result of the stormwater control measures, implementation of the SWPPP, and compliance with necessary permits required for the construction and operation of the new facilities, no short-term direct or indirect [adverse] impacts to surface water would occur as a result of the [project]. Providing existing septic users, and potential future development, with connection to a municipal sewer system would eliminate potential [adverse] impacts to surface waters from septic fields and the sewage lagoons.... Long-term direct beneficial impacts would occur to surface water as failing septic systems are abandoned, thereby eliminating the risk of system failures and untreated wastewater being discharged into the environment. Additionally, indirect long-term beneficial impacts may occur if daily surface discharge to Russell Gulch expedites efforts to clean up the Pinal Creek WQARF site and if wetlands and/or wildlife habitat is created downstream of the WRF. The development of a new regional sanitary district would help to protect the health and safety of the community and promote additional development within or adjacent to the Phase I [boundary]. (p. 45-46)

5.2 Groundwater

The adverse impacts to area groundwater, similarly to the surface water, can be minimized or avoided by applying best management practices to the execution of the project such as the closure of the onsite treatment systems being performed according to Title 18 Chapter 9 of the AAC (R18-9-A309) General Provisions for On-site Wastewater Treatment Facilities, Section D.

The TRSD project will have significant beneficial impact to the area ground water; Logan Simpson (2018) illustrates:



As described in Section 1.2, the installation of a municipal sewer system and WRF would provide a municipal collection and treatment system within TRSD's [boundary]. Providing existing septic users and potential future development with connection to a municipal sewer system would eliminate potential groundwater pollution from septic fields. Connecting current septic users to a municipal sewer system would also help to protect the health and safety of the community through the protection of groundwater quality in the area. The installation of municipal sewer lines and construction of a WRF would eliminate potential groundwater pollution from approximately 810 nitrogen-rich septic tanks, which could contaminate the upper aquifer....

With the implementation of BMPs, compliance with any/all permits required for the project (including appropriate measures for the removal and/or closure of septic systems), no short-term direct or indirect [adverse] impacts to groundwater would occur as a result of the [project]. Connecting current septic users, and potential future development, to a municipal sewer system would help to protect the health and safety of the community through the protection of groundwater in the area. Long-term, direct, beneficial, impacts would occur to groundwater as failing septic systems are abandoned, thereby eliminating the risk of system failures and untreated wastewater potentially reaching the groundwater. Additionally, long-term, indirect, beneficial impacts would occur with the removal of failing septic tanks and the potential expedited clean up the Pinal Creek WQARF site. (p. 48)

For any projects built within the TRSD DMA boundary prior to services being available, TRSD will be collaborating with Gila County to revise its procedure for the issuance of building permits by having the applicant indicate whether the property lies within the boundary. Then TRSD and the Gila County will work with the applicant to ensure the owner will have proper onsite treatment until the new collection and treatment system is made available.

5.3 Air Quality

Logan Simpson (2018) outlines the potential air quality impacts:

Air emissions resulting from the [TRSD project] would include fugitive dust ($PM_{2.5}$ and PM_{10} emissions) associated with construction activities (such as trenching, grading, and installation of project elements), clearing of vegetation, and vehicles driving on unpaved surfaces. Exhaust from construction worker, material delivery vehicles, and other equipment during construction of the proposed site, such as portable electrical generators would result in localized, short-term increases in CO and NOx emissions. Estimated emissions associated with the installation of the proposed sewer collection system were calculated during the preparation of the 2011 [Draft] Environmental Report [by AMEC] and were found "to be well below the general conformity thresholds defined under 40 CFR 51.853" (AMEC 2011). The WRF is less than one acre. With the inclusion of the WRF, emissions are still expected to remain below the *de minimis* thresholds of 100 tons per year for PM_{10} and SO_2 .

Potential air emissions from the operation of the proposed WRF would primarily occur at locations where liquid is turbulent, such as the aerated grit tanks, aerated channels, aeration basins, clarifier wells, or other areas that have high turbulence. Emissions would vary in relation to the flow received by the facility, maintenance, and odor control operations (e.g., prechlorination and chlorination to control algal growth). Use of the MBR process would reduce the footprint of the WRF and the need for secondary clarifiers and tertiary filtration process (The MBR Site 2017). In addition, the aeration basin volume may be able to be reduced. These improvements in technology would reduce the volume of air emissions from the facility. Infrequent use of a diesel-



fueled emergency-power generator¹⁸ would also contribute to air emissions; however, emergency-power generators typically run less than 200 hours per year and have a very small impact on local air quality (PLC Enterprises 2013). (p. 58-59)





6 Permits

6.1 Aquifer Protection Permit

An ADEQ Individual Aquifer Protection Permit (APP) will be obtained to allow the operation of the new TRSD WRF. A Type 4.01 General APP will also be obtained for new wastewater collection system.

6.2 AZPDES Permit

An Arizona Pollutant Discharge Elimination System (AZPDES) will be obtained to permit the domestic discharge of the effluent generated by the TRSD WRF. These flows will be discharged into Russell Gulch, which is a contributor to Pinal Creek. Typically, the BADCT plus filtration will meet AZPDES permit requirements, however, ADEQ may impose additional effluent quality limits on a facility that discharges into washes or ephemeral streams. Any required additional limits will not be known until the ADEQ permitting pre-application meeting during the early design phase.

6.3 CAG 208 Water Quality Plan Amendment

A CAG 208 Water Quality Management Plan Amendment will be submitted for the statewide planning of this new collection and treatment system.

6.4 Construction Permits

It is anticipated that the following construction permits will be required:

- 4.01 General Permit Notice of Intent to Discharge
- Discharge Authorization
- Stormwater Pollution Prevention Permit (SWPPP)
- Dust Control Permit

6.5 Local Floodplain and Drainage Regulations

Portions of the collection system may have to be installed in the floodplain. As necessary, the Engineer will coordinate with Gila County concerning the floodplain use permit and the U.S. Army Corps of Engineers (USACE) 404 permit issues during design.

6.6 Sludge Management

The biosolids will be dewatered for disposal in a landfill. All processes of treatment, handling and selection of disposal facility will be properly permitted under the ADEQ AZPDES program and carried out according to the associated regulations. These regulations include:

- Arizona Revised Statutes (ARS) Chapter 49 The Environment, Article 3.1 Arizona Pollutant Discharge Elimination System Program
- Arizona Administrative Code (AAC) Title 18 Environmental Quality
 - Chapter 09, Article 10: Arizona Pollutant Discharge Elimination System Disposal, Use, and Transportation of Biosolids
- Clean Water Act as amended (33 U.S.C. §1251 et seq.)
- Code of Federal Regulations (CFR)
 - o 40 CFR258: Criteria for Municipal Solid Waste Landfills



7 Finance Information

TRSD is an Arizona Sanitary District, established in 2011, formed with a foundation and mission to improve the quality of life for the Tri-City area of southern Gila County, Arizona by developing a plan to provide and manage a new wastewater collection and treatment system. As a sanitary district, TRSD has the authority, with formal support of its users, to incur debt and levy a tax for providing a community service to those within its boundaries. The TRSD legal counsel has included a self-certification statement and legal opinion (Appendix B) that upon the completion of this amendment, ADEQ certification of and official EPA approval of the TRSD designation as DMA, TRSD will have the authority to manage this existing DMA boundary and implement the plan for this project. Appendix B also includes a letter certifying the TRSD financial capability of executing and management of this project.

In the pursuit of funding, due to the magnitude of the overall project, it will be implemented with a threephase approach. TRSD has pursued funding through the USDA-RD for Phase I of III. Through the funding application process, TRSD has procured a Preliminary Engineering Report (PER) and Environmental Assessment (EA) for Phase I of this project. The PER includes an engineer's estimate that considers all potential construction, non-construction and operation and maintenance (O&M) costs.

In August of 2018, the USDA-RD issued a Letter of Conditions (LOC) offering TRSD funding for Phase I and consists of about 57% grant and about 43% loan. Since the project is within a designated Colonia area with a Median Household Income (MHI) of approximately \$26,000, a portion of the USDA-RD grant is Colonia grant funding. These grant funds will be utilized for the following:

- The abandonment in place of existing residential cesspools and septic systems
- Installation of laterals from existing homes to the new mains including 2-way building cleanout

TRSD intends to immediately begin the process of pursing funding for the remaining phases.

7.1 Project Financing

The project will be financed through three sources:

1. Ad Valorem Tax

At this time, TRSD intends to continue its current taxing of all customers to cover administrative costs in order to avoid customers in any one phase to be overburdened. Administrative costs may include items such as management, insurance, safety training, bookkeeping, etc.

2. Operation and Maintenance (O&M) Fee

The wastewater collection and treatment system O&M costs presented in the PER were estimated for TRSD based on similar rural communities throughout Arizona. These costs include a reserve fund for short-lived assets as required by USDA-RD. These reserves are established to assist TRSD with pump and motor replacement, non-routine maintenance, and small equipment replacement, etc. The TRSD O&M fee will be distributed between the residents being served based on the equivalent dwelling units (EDUs) of their property. Per ARS 48-2027(G)(5) an availability fee may be charged to vacant parcels and this fee is limited to 50% of the user fee.

3. Debt Repayment

Primary funding for the project is through the USDA-RD Rural Utilities Service (RUS) program. Repayment for the loan portion of the USDA-RD funding will be repaid based on a per EDU amount. This loan repayment will be assessed and collected through the Gila County Assessor's Office. Homeowners will be offered a one-time cash buyout option or 40-year installment option.

7.2 Financial Status

The current annual expenditures of the TRSD are minimal, as it does not operate or maintain any wastewater infrastructure at this time. The revenues are currently obtained through Gila County Secondary Tax Assessments. The TRSD annual revenues and expenditures are summarized in the following Table 11 - TRSD Actual Annual Revenues and Expenditures.





The tax revenues are secured by Gila County on an annual basis. Since 2015, the State uses one type of property value for taxing purposes, known as the Limited Property Value (LPV).

Category		2017		2018	2019	
Cash on Hand		207,737	\$	250,209	\$	179,690
Revenues						
Interest	\$	1,205	\$	2,109	\$	4,218
Secured Taxes	\$	96,668	\$	102,963	\$	152,407
Unsecured Taxes	\$	1,211	\$	-	\$	1,913
WIFA Planning Grant	\$	-	\$	-	\$	-
Total Revenues	\$	99,084	\$	105,072	\$	158,538
Expenses						
Legal Fees	\$	31,363	\$	18,913	\$	102,463
Board Expenses	\$	-	\$	-	\$	7,201
Facilities and Equipment	\$	-	\$	-	\$	340
Web page	\$	725	\$	683	\$	770
Publishing / Printing	\$	87	\$	1,586	\$	4,982
Office Supplies / Postage		110	\$	116	\$	2,824
Travel	\$	427	\$	193	\$	454
Special Elections - Gila County	\$	-	\$	-	\$	-
Part Time District Manager	\$	-	\$	-	\$	-
Engineering	\$	-	\$	36,147	\$	100,853
WIFA Grant Match	\$	-	\$	-	\$	-
WIFA Grant (Assessment)	\$	-	\$	-	\$	-
Insurance - Liability	\$	1,129	\$	4,787	\$	4,850
Legal / Land / Admin (WIFA soft Money Loan)	\$	-	\$	-	\$	-
Accounting / Bookkeeping	\$	439	\$	174	\$	718
Total Expenses	\$	34,280	\$	62,599	\$	225,455

Table 11 - TRSD Actual Annual Revenues and Expenditures



- AMEC. (2010). Preliminary Basis of Design Report for Wastewater Collection System Improvements for the Town of Miami, Arizona.
- AMEC. (2011). Design Report for the Town of Miami Influent Pump Station Upgrades, Gila County, Arizona.
- AMEC. (2011). Preliminary Engineering Report for Tri-City Regional Sanitary District Wastewater Collection System Improvements, Gila County, Arizona.
- AMEC. (2011). Tri-City Regional Sanitary District Preliminary Engineering Report Proposed Minor Revisions, Gila County, Arizona.
- Arizona Department of Commerce. (2014). *Globe/Miami Community Profile*. Retrieved 24 February, 2015, from http://www.azcommerce.com/doclib/commune/globe-miami.pdf
- Canter, L. W., & Knox, R. C. (1985). Septic Tank System Effects on Ground Water Quality (1st ed.). Chelsea, Michigan: Lewis Publishers, Inc.
- Central Arizona Association of Governments. (2007). *Gila Sub-County Population Projections: 2006-2055*. Retrieved from Central Arizona Association of Governments: http://www.azcommerce.com/econinfo/demographics/population%20projections.html
- Central Arizona Association of Governments. (2009, October). 2009 Existing Population & Housing Estimates by Jurisdiction. Retrieved from Central Arizona Association of Governments: http://www.caagcentral.org/GIS/Database%20Summary%20Reports/PopIncCitySummary2009pdf .pdf
- Coe & Van Loo Consultants, Inc. (2000, December). City of Miami Sewer Schematic.
- Coe & Van Loo Consultants, Inc. (2001). Regional Wastewater Study. Phoenix.
- EMC2. (2009). ADEQ Aquifer Protection Permit Application, Miami Wastewater Reclamation Facility.
- Garrett, J., & Berry, J. (2012). Sewage Treatment Study, Tri-City Regional Sanitary District. Memorandum, Gila County, Arizona, Community Development, Wastewater.
- Gila County, Arizona Wastewater Department. (2014). *Notice of Intent to Discharge Application.* Retrieved September 6, 2018, from Gila County: http://www.gilacountyaz.gov/government/community_development/septic_permits.php
- Gila County, Arizona. (2014, September 6). *Wastewater Department Permits*. Retrieved 2018, from Gila County: http://www.gilacountyaz.gov/government/community_development/septic_permits.php
- Hurd, G. K. (2016, December 12). *How Much Do Septic Tanks Cost? The Stomach-Churning Price Revealed*. Retrieved September 6, 2018, from Realtor.com: https://www.realtor.com/advice/home-improvement/how-much-does-a-septic-system-cost/
- Logan Simpson. (2015). A Class I Cultural Resources Inventory for the Tri-City Regional Sanitary District Project, Gila County, Arizona. Technical Report.
- Logan Simpson. (2015). *Biological Evaluation for Tri-City Regional Sanitary District Project Gila County, AZ*. Technical Report.
- Logan Simpson. (2017). A Class III Cultural Resources Survey and Historic Building Reconissance Survey for the Tri-City Regional Sanitary District Project, Gila County, Arizona. Technical Report.
- Logan Simpson. (2017). Addendum to: A Class III Cultural Resources Survey and Historic Building Reconissance Survey for the Tri-City Regional Sanitary District Project, Gila County, Arizona. Technical Report.
- Logan Simpson. (2018). Environmental Assessment Tri-City Regional Sanitary District Project Wastewater Collection and Treatment Phase I of III Gila County, Arizona. Technical Report.
- SepticTankGuide.com. (2018). Septic Tank Costs. Retrieved September 6, 2018, from Septic Tank Guide: http://www.septictankguide.com/septic-tank-costs.html


- State of Arizona. (2017, December 31). Arizona Administrative Code. *Title 18 Environmental Quality, Chapter 9 Department of Environmental Quality Water Pollution Control, Supp. 17-4*, 89-91. Administrative Rules Division.
- United States Census Bureau. (n.d.). *1990 U.S. Census*. Retrieved from United States Census Bureau: http://www.census.com
- United States Census Bureau. (n.d.). 2000 U.S. Census. Retrieved from United States Census Bureau: http://www.census.com
- United States Census Bureau. (n.d.). 2010 U.S. Census. Retrieved from United States Census Bureau: http://www.census.com
- United States Census Bureau. (2013, January 24). 2010 Census Census Block Maps. Retrieved September 6, 2018, from United States Census Bureau: https://www.census.gov/geo/mapsdata/maps/block/2010/
- United States Department of Agriculture Rural Development. (2011, January 20). Internal Memorandum Re: Health or Sanitary Documentation.
- United States Department of Agriculture Rural Utilities Service. (2013). Bulletin 1780-2 Preliminary Engineering Reports for the Water and Waste Disposal Program.
- United States Environmental Protection Agency . (April 1976). *Environmental Impact Statement: Greater Globe-Miami, Arizona Wastewater Treatment Project.* Pacific Southwest Region IX, San Francisco.







Section 208 Clean Water Act 40 CFR Part 130.6

Requirement	Provide Brief Summary On How Requirements Are Addressed	Addressed On Page
AUTHORITY	TRSD was formed by the merger of two existing sanitary districts, CVSD and PSD. Due to the merger of CVSD and PSD, TRSD now administers both of the recognized designated management agencies (DMAs). As the administrator of these documented existing DMAs, TRSD is only entity that has the authority to make any modifications. Appendix D includes all formation and merger documentation, and the recorded legal description and boundary map. Upon the approval of this amendment, TRSD is seeking EPA approval of the TRSD named designation as DMA of its boundary. Recently, TRSD has worked with neighboring City of Globe (Globe) and Town of Miami (Miami) to negotiate specific areas of the DMA boundaries. TRSD Board has agreed to modify significant portions of its DMA to Globe that lie within its city boundaries and other portions to the Town because they are areas the Town is already servicing. Additional coordination is anticipated to take place to negotiate possible intergovernmental agreements (IGAs) to address any servicing overlap between all agencies.	2-2 to 2-3, Appendix B, Appendix D, Appendix F

	Requirement	Provide Brief Summary On How Requirements Are Addressed	Addressed On Page
<u>20-</u> Cle	YEAR NEEDS early describe the existing wastewater treatment (WWT) facilities:	Currently, there are no physical TRSD facilities. All proposed TRSD facility locations are illustrated on Exhibit 2 Preliminary Collection & Treatment System.	2-1, Appendix G (Exhibit 2)
3)	Show WWT certified and service areas for private utilities and sanitary district boundaries if possible.	The certified and recorded TRSD legal description and boundary map is included in Appendix D.	2-3, Appendix D
Cle 4)	early describe alternatives and the recommended WWT plan: Provide POPTAC population estimates (or COG-approved estimates only where POPTAC not available) over 20-year period.	To develop a reasonable estimate of the population trends and growth within the TRSD, the growth patterns in the surrounding Census Designated Places were considered. Precise population records for the TRSD are not available, however, information has been gathered from the Environmental Justice Screening and Mapping Tool (EJSCREEN) provided by the Environmental Protection Agency (EPA) to gain an understanding of the affected population for this project by drawing out the boundary to get a more accurate population. Based on the 2010 census data and the EPA average growth of 3%, over the 20-year planning period, the population could reach approximately 9,500. However, when considering the historical data for this area, 3% is a high estimate.	2-4 to 2-8, Appendix H
5)	Provide wastewater flow estimates over the 20-year planning period.	Without precise population estimates, the design capacity estimate of 0.65 MGD is based on a methodology was developed to estimate reasonable growth through an understanding of potential equivalent dwelling units (EDU) and projected wastewater flows. 175 GPD/EDU was used to estimate flow of this proposed new collection system.	2-6 to 2-8
6)	Illustrate the WWT planning and service areas.	The certified and recorded TRSD legal description and boundary map is included in Appendix D and is illustrated on Exhibit 2.	2-3, Appendix D, Appendix G (Exhibit 2)
7)	Describe the type and capacity of the recommended WWT Plant.	The proposed new 0.65 MGD MBR WRF facility will consist of a headworks system, secondary activated sludge process with membrane filtration and disinfection (either chlorination or ultraviolet).	2-1, 3-1

	Requirement	Provide Brief Summary On How Requirements Are Addressed	Addressed On Page
8)	Identify water quality problems, consider alternative control measures, and recommend solution for implementation.	Nearly 90% of the residential properties within TRSD have onsite treatment systems (cesspools and substandard septic tanks) in violation of the CWA, Arizona Administrative Code (AAC), and/or ADEQ regulations. This poses risks of groundwater pollution. Connecting current septic users, and potential future development, to a municipal wastewater collection system would help to protect the health and safety of the community through the protection of groundwater in the area. Long-term, direct, beneficial, impacts would occur to groundwater as failing septic systems are abandoned, thereby eliminating the risk of system failures and untreated wastewater potentially reaching the groundwater.	1-3, 3-1 to 3-3, 5-1 to 5-5
9)	If private WWT utilities with certificated areas are within the proposed regional service area, define who (municipal or private utility) serves what area and when. Identify whose sewer lines can be approved in what areas and when?	Not applicable.	
10) Describe method of effluent disposal and reuse sites (if appropriate).	Due to the ongoing flushing process of Pinal Creek, one mining company, FMI (mining company), has expressed interest in the flows being discharged into Russell Gulch which is a contributor to Pinal Creek. This would contribute to the overall environmental cleaning within the region. A specific discharge point has not been determined, but an estimated area is indicated.	2-1, 3-2 to 3-3, 5-3, Appendix G (Exhibit 3)
11) If Sanitary Districts are within a proposed planning or service area, describe who serves the Sanitary Districts and when.	Tri-City Regional Sanitary District (merger of Cobre Valley Sanitary District and Pinal Sanitary District) is the only sanitary district within the boundary and does not currently serve any customers. The proposed project within this CAG WQMP 208 amendment will be the commencement of service by this sanitary district.	2-1

	Requirement	Provide Brief Summary On How Requirements Are Addressed	Addressed On Page
12)	Describe ownership of land proposed for plant sites and reuse areas.	Land will need to be acquired for the installation of the new TRSD WRF and the construction of the regional lift stations and the neighborhood lift stations. The actual land requirements will be determined during the engineering design phase of the improvements. TRSD is currently in negotiations with BHP for the acquisition (by either purchase or lease) of land for the locations of both the proposed new WRF and the new TRSD Lift Station in Phase I.	2-1, 2-3, 3-1, Appendix G (Exhibit 3 & Exhibit 4)
13)	Address time frames in the development of the treatment works.	The main scheduling element that will drive the project schedule is the funding process as TRSD will be pursuing United States Department of Agriculture Rural Development (USDA-RD) funding for all phases. Phase I design is anticipated to begin in 2019 and will take approximately 14 months to complete. Phase I construction is estimated at approximately 16 months to completion. Within the 16 month construction period, the WRF will be constructed, taking about 12 months and will be completed prior to the collection system completion. Each additional phase will follow and have similar design and construction timelines. It is the intent of TRSD that these phases will overlap to bring completion of full buildout around 2026.	4-1 to 4-2
14)	Address financial constraints in the development of the treatment works.	The major constraint is the median household income (MHI) of the area that creates a financial hurdle; however, TRSD has pursued funding through the USDA-RD for Phase I of III and intends to immediately begin the process of pursuing funding for the remaining phases. In August of 2018, the USDA-RD issued a Letter of Conditions (LOC) offering TRSD funding for Phase I and consists of about 57% grant and about 43% loan.	7-1

	Requirement	Provide Brief Summary On How Requirements Are Addressed	Addressed On Page
15)	Describe how discharges will comply with EPA municipal and industrial stormwater discharge regulations (Section 405, CWA).	This facility will be designed to accept 100% domestic wastewater flows for treatment. Industrial / commercial wastewater will not be accepted without pretreatment. Any future industrial / commercial wastewater acceptance will require TRSD Board action. At that time, the policies and procedures will be developed to ensure any discharge accepted will meet the ADEQ / EPA Pretreatment Standards. The treatment facility will not include a septage receiving station. Currently within the area, two options for septage receiving are at the Town of Miami and the Superstition Mountain Community Facilities District in Apache Junction.	3-2
16)	Describe how open areas and recreational opportunities will result from improved water quality and how those will be used.	Overall, with the reduction of groundwater contamination risks by implementing this centralized wastewater collection and treatment system the environmental quality in private yards and common areas throughout TRSD will be improved. Currently, there are a couple of available options for potential effluent reuse for open and recreational areas; however, at this time TRSD is not pursuing these options. 1) The local golf course, Cobre Valley County Club (CVCC) has expressed interest in obtaining the effluent for irrigation of the course. CVCC struggles to obtain enough water to keep the course green. 2) Discussions have taken place regarding the utilization of the effluent to create a lake with a surrounding regional community park constructed for recreational use, providing an amenity for the area.	3-3
17)	Describe potential use of lands associated with treatment works and increased access to water-based recreation, if applicable.	The WRF and lift station land will be used solely for the facility structure. There has been discussions of future use of the effluent to create a lake whereby a regional park be constructed around the lake for use by all who live with in the area. It would provide an amenity for the region.	3-3

	Requirement	Provide Brief Summary On How Requirements Are Addressed	Addressed On Page
REG 18)	ULATIONS Describe types of permits needed, including AZPDES, APP and reuse.	 Anticipated permit requirements are as follow: Individual ADEQ Aquifer Protection Permit (APP) Arizona Pollutant Discharge Elimination System (AZPDES) Construction Permits 4.01 General Permit Notice of Intent to Discharge Discharge Authorization Stormwater Pollution Prevention Permit (SWPP) Dust Control Permit U.S. Army Corps of Engineers (USACE) 404 	6-1
19)	Describe restrictions on AZPDES permits, if needed, for discharge and sludge disposal.	 The biosolids will be dewatered for disposal in a landfill. All processes of treatment, handling and selection of disposal facility will be properly permitted under the ADEQ AZPDES program and carried out according to the associated regulations. These regulations include: Arizona Revised Statutes (ARS) Chapter 49 The Environment, Article 3.1 Arizona Pollutant Discharge Elimination System Program Arizona Administrative Code (AAC) Title 18 Environmental Quality Chapter 09, Article 10: Arizona Pollutant Discharge Elimination System – Disposal, Use, and Transportation of Biosolids Clean Water Act as amended (33 U.S.C. §1251 et seq.) Code of Federal Regulations (CFR) 40 CFR258: Criteria for Municipal Solid Waste Landfills 	3-1, 6-1
20)	Provide documentation of communication with ADEQ Permitting Section 30 to 60 days prior to public hearing regarding the need for specific permits.	Typically, an ADEQ pre-application meeting for permitting takes place during the design phase. At this time, the design has not commenced, therefore no communication with ADEQ has taken place regarding specific permit requirements.	3-3

	Requirement	Provide Brief Summary On How Requirements Are Addressed	Addressed On Page
21)	Describe pretreatment requirements and method of adherence to requirements (Section 208 (b)(2)(D), CWA).	This facility will be designed to accept 100% domestic wastewater flows for treatment. Industrial / commercial wastewater will not be accepted without pretreatment. Any future industrial / commercial wastewater acceptance will require TRSD Board action. At that time, the policies and procedures will be developed to ensure any discharge accepted will meet the ADEQ / EPA Pretreatment Standards. The treatment facility will not include a septage receiving station. Currently within the area, two options for septage receiving are at the Town of Miami and the Superstition Mountain Community Facilities District in Apache Junction.	3-2
22)	Identify, if appropriate, specific pollutants that will be produced from excavations and procedures that will protect ground and surface water quality (Section 208(b)(2)(K) and Section 304, CWA).	Best management practices will be applied during construction to protect surface water and groundwater.	5-1 to 5-5
23)	Describe alternatives and recommendation in the disposition of sludge generated. (Section 405 CWA)	Biosolids will be produced by the proposed WRF. At full buildout, the facility will produce approximately 1,200 lbs per day. Biosolids land application is a future possibility; however, this option is not being considered at this time. The biosolids will be dewatered for disposal in a landfill. All processes of treatment, handling and selection of disposal facility will be properly permitted under the ADEQ AZPDES program and carried out according to the associated regulations.	2-2, 3-1, 6-1

	Requirement	Provide Brief Summary On How Requirements Are Addressed	Addressed On Page
24)	Define any nonpoint issues related to the proposed facility and outline procedures to control them.	The construction of the wastewater facilities will not be a significant source of pollution. Anticipated pollution from construction activities includes fugitive dust, construction equipment exhaust emissions, and construction related solid waste. Erosion control measures during construction and grading will be implemented to prevent potential stormwater runoff to water bodies. The contractor shall comply with local and county regulatory requirements and provisions of construction permits issued including dust control permits. The proposed TRSD WRF will be creating a point source for the community and will alleviate any potential issues due to failing septic systems. Should any issue arise, TRSD will immediately notify ADEQ and work to perform any required mitigation.	5-1 to 5-5
25)	Describe process to handle all mining runoff, orphan sites and underground pollutants, if applicable.	N/A	N/A
26)	If mining related, define where collection of pollutants has occurred, and what procedures are going to be initiated to contain contaminated areas.	N/A	N/A
27)	If mining related, define what specialized procedures will be initiated for orphan sites, if applicable.	N/A	N/A
28)	STRUCTION Define construction priorities and time schedules for initiation and completion.	Phase I design is anticipated to begin in 2019 and will take approximately 14 months to complete. Phase I construction is estimated at approximately 16 months to completion. Within the 16 month construction period, the WRF will be constructed, taking about 12 months and will be completed prior to the collection system completion. Each additional phase will follow and have similar design and construction times. It is the intent of TRSD that these phases will overlap to bring completion of full buildout around 2026.	4-1

	Requirement	Provide Brief Summary On How Requirements Are Addressed	Addressed On Page
29)	Identify agencies that will construct, operate and maintain the facilities and otherwise carry out the plan.	Following guidelines of the USDA-RD for construction procurement, TRSD will follow USDA-RD requirements for free and open competition. Each phase will be put out to public bid to obtain a licensed general contractor to facilitate and manage the construction of the awarded project phase. Once constructed, the facility will be owned and operated by TRSD.	N/A
30)	Identify construction activity-related sources of pollution and set forth procedures and methods to control, to the extent feasible, such sources.	Anticipated pollutants during constructions may include dust, related solid waste, etc. Best management practices will be applied and outlined in the SWPPP.	5-1 to 5-4, 6-1
FINA CAR	NCING AND OTHER MEASURES NECESSARY TO RY OUT THE PLAN	N/A	N/A
31)	If plan proposes to take over certificated private utility, describe how, when and financing will be managed.		
32)	Describe any significant measure necessary to carry out the plan, e.g., institutional, financial, economic, etc.	Securing adequate funding	7-1
33)	Describe proposed method(s) of community financing.	Grants, loans, ad valorem tax, operation and maintenance fee, and debt repayment assessed and collected through the Gila County Assessor's Office	7-1
34)	Provide financial information to assure DMA has financial capability to operate and maintain wastewater system over its useful life.	Financial capability letter is provided in Appendix C.	7-1, Appendix C

	Requirement	Provide Brief Summary On How Requirements Are Addressed	Addressed On Page
35)	Provide a time line outlining period of time necessary for carrying out plan implementation.	Provided funding of all phases is obtained in a timely manner, the facility timeline for full buildout is as follows: Phase I 2021 Phase II 2023 Phase III 2026	4-1
36)	Provide financial information indicating the method and measures necessary to achieve project financing. (Section 201 CWA or Section 604 may apply).	 TRSD will be pursuing USDA-RD funding assistance for each phase of this project individually. This funding will be a combination of both grant and low-interest loans. The project will be financed through three sources: 1. Ad Valorem Tax 2. Operation and Maintenance (O&M) Fee 3. Debt Repayment 	7-1
<u>IMPL</u> 37)	EMENTABILITY Describe impacts and implementability of Plan.	Overall, the impact to the community from the TRSD Wastewater Collection and Treatment Project will be beneficial. With the majority of the residential properties within TRSD utilizing onsite treatment systems and being in violation of the CWA, AAC, and or ADEQ regulations, the implementation of this project will improve environmental conditions. The public health conditions will improve by the decommissioning of the failing and/or failed onsite wastewater systems thereby cleaning up the groundwater and stormwater runoff by reducing pollution risks. The installation of a collection and treatment system will bring value to the area and potentially create an atmosphere supportive of property development. Potential adverse impacts are associated with the results of conducting a large construction project, most of which can be minimized or avoided by employing best management practices (BMPs). These include following proper regulatory agency guidelines and permitting process to ensure proper execution of the project to support environmental protection. During construction, there will be possible traffic interruption, but it is only a temporary inconvenience.	5-1 to 5-5

	Requirement	Provide Brief Summary On How Requirements Are Addressed	Addressed On Page
38)	Describe impacts on existing wastewater (WW) facilities, e.g., Sanitary district, infrastructure/facilities and certificated areas.	There are two wastewater treatment facilities in the area of the TRSD boundary at the City of Globe and the Town of Miami. TRSD Phase I will not affect either facility. Connecting to these facilities and/or other collaborations (for example shared operations staff) will be explored for the future Phases II and III.	N/A
39)	Describe how and when existing package plants will be connected to a regional system.	There are currently no plans for connecting a regional system during TRSD Phase I. Collaborating with other plants will be explored for the future Phases II and III.	N/A
40)	Describe the impact on communities and businesses affected by the plan.	Overall, the impact to the community from the TRSD Wastewater Collection and Treatment Project will be beneficial. With the majority of the residential properties within TRSD utilizing onsite treatment systems and being in violation of the CWA, AAC, and or ADEQ regulations, the implementation of this project will improve environmental conditions. The public health conditions will improve by the decommissioning of the failing and/or failed onsite wastewater systems thereby cleaning up the groundwater and stormwater runoff by reducing pollution risks. With the installation of a collection and treatment system will bring value to the area and potentially create an atmosphere supportive of property development. Potential adverse impacts are associated with the results of conducting a large construction project, most of which can be minimized or avoided by employing best management practices (BMPs). These include following proper regulatory agency guidelines and permitting process to ensure proper execution of the project to support environmental protection. During construction, there will be possible traffic interruption, but it is only a temporary inconvenience.	5-1 to 5-4

	Requirement	Provide Brief Summary On How Requirements Are Addressed	Addressed On Page
41)	If a municipal WWT system is proposed, describe how WWT service will be provided until the municipal system is completed: i.e., will package plants and septic systems be allowed and under what circumstances (Interim services).	TRSD has been and will continue working closely with Gila County Wastewater Division (GCWD) to ensure all current residents and new customers are supported during the development/construction phases of this project and thereafter. All permitting will continue to be facilitated through Gila County. Existing customers that have no immediate need for any changes to their property and have onsite treatment systems that are in working condition will be contacted to coordinate connection as the new system is developed. Existing customers that experience issues with onsite systems prior to available connection to the new TRSD system must contact GCWD for assistance for temporary solutions. GCWD is responsible for the area's environmental protection and receives its authority by delegation from ADEQ. GCWD is committed to find temporary solutions that benefit both the environment and the customer. These solutions will vary based on the specific issue and the timing of connection to the TRSD system. Existing and new customers seeking a building permit prior to available connection to the TRSD system. Existing and new customers seeking a building permit prior to available connection to the TRSD system. Existing and new customers seeking a building permit prior to available connection to the TRSD system of the cullaborating with Gila County to revise its building permit checklist to include a requirement that during the permitting process, any customer that lies within the TRSD DMA boundary will need to contact TRSD and obtain a TRSD Wastewater Treatment Service Acknowledgment Form. This form will be issued to address the customers' specific situation regarding wastewater treatment.	3-3
<u>PUB</u>	LIC PARTICIPATION	CAG Responsibility	
42)	Submit copy of mailing list used to notify the public of the public hearing on the 208 Amendment. (40 CFR, Chapter 1, part 25.5)		
43)	List location where documents are available for review at least 30 days before public hearing.	CAG Responsibility	

	Requirement	Provide Brief Summary On How Requirements Are Addressed	Addressed On Page
44)	Submit copy of the public notice of the public hearing as well as an official affidavit of publication from the area newspaper. Clearly show the announcement appeared in the newspaper at least 45 days before the hearing.	CAG Responsibility	
45)	Submit affidavit of publication for official newspaper publication.	CAG Responsibility	
46)	Submit responsiveness summary for public hearing.	CAG Responsibility	

Tri-City Regional Sanitary District

5515 S APACHE AVE STE 200 GLOBE AZ 85501-4430 PO BOX 2198 CLAYPOOL AZ 85532-2198

www.TRSD.org www.TRSD Wastewater.org Malissa Buzan, President. Mary Anne Moreno, Secretary John Chism Stephen Palmer Bill Tower Bill Clemmens, General Counsel Fred Rosenfeld, Bond Counsel

September 04, 2019

original via USPS First-Class Mail copy via email 480-474-9300 office arobles@cagaz.org

Andrea Robles, CAG Executive Director Central Arizona Governments 2540 West Apache Trail – Suite 108 Apache Junction, Arizona 85120-5292

RE: Self Certification Letter re Tri-City Regional Sanitary District

Dear Ms. Robles:

As general counsel for the Tri-City Regional Sanitary District ("TRSD") of Gila County, Arizona, an Arizona Sanitary District, I hereby certify, in connection with the proposed planned wastewater collection and treatment facilities that are planned to serve the residences, businesses, industries and other users within the TRSD (which wastewater facilities are referred to in this letter as the Subject Facilities) as follows:

1. That the TRSD was formed on June 20, 2011 by the merger of the Pinal Sanitary District and the Cobre Valley Sanitary District as set forth in A.R.S. § 48-2001.01; and,

 That pursuant to the Clean Water Act Section 208(c)(2) [33 U.S.C. § 1288(c)(2)], the TRSD is authorized by law:

 A. to carry out appropriate portions of the Central Arizona Governments' Section 208
 Water Quality Management Plan (the "208 Plan") developed under Clean Water Act Section 208, Subsection (b);

 B. to manage effectively the Subject Facilities and any other wastewater treatment works and related facilities serving such area in conformance with the 208 Plan;

C. directly or by contract, to design and construct the Subject Facilities and any other new works, and to operate and maintain new and existing works as required by the 208 Plan;

D. to accept and utilize grants, or other funds from any source, for wastewater treatment and management purposes;

E. to raise revenues, including the assessment of wastewater treatment charges;

F. to incur short- and long-term indebtedness;

G. to assure the implementation of the 208 Plan within the TRSD;

 H. to refuse to receive any wastewater from any customer of TRSD which does not comply with any provisions of the 208 Plan applicable to TRSD; and

to accept industrial wastes for treatment.

Please let me know if you need any additional information in connection with this Self-Certification.

Sincerely,

William L. Clemmens, General Counsel

WLC:rh

cc via email only: Alan Urban, CAG Community Development Coordinator aurban@cagaz.org

Jeff Hays, Community Programs Director jeff.hays@az.usda.gov

Robert Lanford, Community Programs Specialist

robert.lanford@usda.gov

TRSD Self-Certification Letter 09-04-2019

TRSD Board Members & Staff: Malissa Buzan, President maliss39@hotmail.com

Mary Anne Moreno, Secretary mamoreno41@gmail.com

John Chism, Board Member JHC05@cableone.net Stephen Palmer, Board Member StephenPalmer84@yahoo.com

Bill Tower, Board Member williamtower48@icloud.com

Bill Clemmens, TRSD General Counsel wclemmenslaw@cableone.net

Roxie Hadley, Legal Assistant | TRSD Staff RoxieHadley@icloud.com Fred Rosenfeld, TRSD Bond Counsel rosenfeld@gustlaw.com

Leo Valdez, TRSD Financial Advisor Ivaldez@hsemuni.com

Michael Krebs, TRSD Engineer mikekrebs@pacewater.com



150 N. Pine Street Globe, Arizona 85501

March 26, 2019

Malissa Buzan Board President Tri-City Regional Sanitary District PO Box 2198 Claypool, AZ 85532

Dear Ms. Buzan

The purpose of this letter is to express the support by the City of Globe City Council for the Tri-City Regional Sanitary District (TRSD) and their effort to develop modern sewer infrastructure and deliver high quality yet affordable sewer services to the unincorporated areas of southern Gila County between the City of Globe and the town of Miami. It is critical that these underserved areas of our region be provided with wastewater collection infrastructure to improve the quality of life of the residents and to enhance the overall economic viability of the area. As part of our collaborative efforts with the TRSD and the Town of Miami, we look forward to approval of our mutually agreed upon Designated Management Area (DMA) boundary amendments currently under review by Central Arizona Governments (CAG). The City of Globe City Council looks forward to the development of our future partnerships as your USDA funded infrastructure project advances.

Sincerely,

Al Gameros Mayor



ADMINISTRATION

Joseph Heatherly Town Manager Karen Norris Town Clerk

TOWN OF MIAMI Conner Center of the Wor

"Copper Center of the World"

500 W. Sullivan St. Miami, AZ 85539 928-473-4403 www.miamiaz.gov

April 15, 2019

Ms. Mary Ann Moreno Tri City Regional Sanitary District c/o Law Offices of William L. Clemmens 416 West Sullivan Street Miami, Arizona 85539

Dear Ms. Moreno:

The Town of Miami's Council has, for many years, realized that the septic and cesspool collection systems within the area of the old Pinal Sanitary District and the Cobre Valley Sanitary District need to be eliminated. Many years ago, Tri City Regional Sanitary District (TRSD) was formed by the combination of the previous two districts and it initiated a study to develop a sewer collection system. The proposed project to install new sewer collection lines within much of the unincorporated parts of southern Gila County lying between Miami and Globe would be a much needed project addressing many existing sanitary and environmental issues within our community.

The Town of Miami supports the TRSD project and feels it is critical to the overall economic development of our community.

Sincerely,

Darryl Dalley

Mayor, Town of Miami



Darryl Dalley, Mayor Sammy Gonzales, Vice-Mayor Michael Black Patricia Bringhurst Jose "Angel" Medina Dan Moat Don Reiman

315261 STATE OF ARIZONA. County I do hereby ceruly that the Date Feb. 25, 1969 Tisk 3:30 Pr. M. Docher

WITNESS my hand and official seal the day and year first

255

d incord

...Rachengati

Recorder

FORMAL ORDER ESTABLISHING COBRE VALLEY SANITARY DISTRICT

The petitions for the establishment of a Senitary District in the Central Heights and Country Club Manor area came on regularly for hearing before the Board of Supervisors of Gila County, Arizona, in the Court House in Globe, Arizona, on the 3rd day of February, 1969, at the hour of 11:00 o'clock A. M. The Board, after due consideration of all objections made by certain residents of the areas now finds that the petition was duly signed by the required number of owners of real property of the proposed district; that the proposed work is necessary and that the public health, comfort, convenience, necessity and welfare will be produced by establishment of the district set forth in the petition,

IT IS HEREBY ORDERED AND DECLARED:

That a Sanitary District, be, and the same is hereby formed and organized, and that the name of the district shall be known as COBRE VALLEY SANITARY DISTRICT; that the boundaries

are as follows:

Reginning at the South 1-corner of Sec. 22, T. 1 N., R. 15 E., G&SRM., said point also being the SW Cor. Central Heights, Map No. 52, Gila County 'Records; thence easterly 1,325.7 feet along the south boundary of Sec. 22 and of Central Heights to the SE Cor. Central Heights; thence northerly along the east boundary of Central Heights 609.44. 6.67 feet, southeasterly 150 feet; northeasterly 150 feet, southeasterly 450 feet, and northeasterly 100 feet to the east corner of Lot 11, Block 7, Central Heights Addition, said east corner also being the northweaterly sud of the southwesterly bideline of Central Ave. of Doc-Burler Estatus, Map No. 123, C. C. R.; thence following the



westerly along said south right of way line 1330 feet, more of less, to the west boundary E: NW4 Sec. 22: thence, southerly along said west boundary E: NM3 Sec. 22 to the north right of way line of Paxton Avenue D of Country Club Manor; Replatted, Map No. 89, G: C. R.; thence westerly, southwesterly, southerly, southeasterly, easterly, and southerly along the exterior boundary of Block 7; Country Club Manor, Replatted, to a point on the south boundary, Mas Sec. 22; said point being the SW country Club Manor, Country Club Manor, Replatted, and the NW Cor. of Country Club Manor Unit No. 2; Map No: 146, G. C. R.; thence southeasterly, along the southwesterly boundary of Country Club Manor Unit No. 2 a distance of 525 feet, more of less, to the SW Cor. Lot 5, Block 16, Country Club Manor Unit No. 2; thence southerly to the northwest corner of that property described in Dkt. 134, Pg. 266, G. C. R.; thence southerly to the northwest corner of that property described in Dkt. 134, Pg. 266, G. C. R.; thence southerly boundary of said property described in Dkt. 134, Pg. 266, G. C. R., a distance of 525 feet; thence southesterly parallel to English Ave. in SEY SW Sec. 22 a distance of 530 feet; thence southerly parallel to the west boundary of Central Heights Map No. 52, G. C. R.; a distance of 525 feet; thence southesterly parallel to English Ave. in SEY SW Sec. 22 a distance of 530 feet; thence southerly parallel to the west boundary of SW Sec. 22 a distance of 530 feet; thence southerly parallel to the west boundary of SW Sec. 22 and the Swet boundary of Central. Heights, said point also being the W Cor. Lot 19, Block 26, Central Heights; thence southerly along the west boundary of Central Heights, which point is also the S. 2-corner of Sec. 22 and the point of beginning.

roter 255 mit 78

Specifically excluded from the above-described Sanitary District is the Cemetery property, bounded on the north by the north boundary of the StySec. 22; on the east and south by Central Heights, Map No. 52, C. C. R.; and on the west by Country Club Manor Unit No. 2, Map No. 146, C. C. R.

Dated this 3rd_ day of February, 1969.

BOARD OF SUPERVISORS OF GILA COUNTY, ARIZONA

MULT 576 MLE 275

FORMAL ORDER ESTABLISHING

PINAL SANITARY DISTRICT

The Gila County Board of Supervisors having been petitioned to boundaries of said Sanitary District, by the Board's Order on November 2, 1982, an election was held within the proposed brundaries of the Sanitary District so petitioned.

At their Meeting of November 3, 1982, the Gila County Board of Supervisors canvassed the Votes cast as said Special Election held to determine the desire of the prospective residents of such Sanitary District; and found that 438 Votes were cast for the establishment thereof, and 261 Votes were cast against such establishment.

The Board finding said Election was properly held and that it carried successfully; that the proposed work is necessary; and that the public health, comfort, convenience, necessity, and welfare will be promoted by establishment of said Sanitary District;

IT IS HEREBY ORDERED AND DECLARED:

That a Sanitary District oe, and the same is hereby, formed and orgainzed, and that the name of the Sanitary District shall be known as PINAL SANITARY DISTRICT; and the boundaries of said Pinal Sanitary District are as follows:

> Beginning at the Southwest Corner of Section 29; thence along the west line of Section 29 to the Northwest Curner of Section 29; thence in a northwesterly direction to the East & Corner of Section 20; thence northwesterly to the North ' Corner of Section 21; thence north-along the 4 section line of Section 16 to the North 4 Corner of Section 16; thence east along north section line of Sections 16 and 15 to the North & Corner of Section 15; thence south along the & section line to the Center of Section 15; thence east along the 4 section line to the East & corner of Section 15; thence south along the section lines of Section 15, 22, and 27 to the South-east Corner of Section 27; thence west along the south line of Section 27 to the Southwest Corner of Section 27; thence north along the west line of Section 27 to the West & Corner of Section 27; thence westerly along the & section line to the Center of Section 28; thence southwesterly to the Southwest Corner of Section 29, and the true Point of Beginning. All above being in Township 1 North, Range 15 East.

Specifically excluded from the above described Sanitary District is that area comprising Cobre Valley Sanitary District as Recorded in Docket 255, pages 76, 77, and

Page One of Two

Formal Order Establishing Pinal Sanitary District

> 78 in the Gila County Recorder's Office, and any subsequent annexations to said Cobre Valley Sanitary District; and

That area known as the Pioneer Hills Subdivision, as set forth in Maps Nos. 519, 195A, and 519B in the Gila County Recorder's Office.

DATED at Globe, Arizona, this 22nd Day of November, 1982.

GILA COUNTY BOARD OF SUPERVISORS

CELE 576 ME 276

Chairman

Vice-Chairman

Member

ATTEST:

And Marie Phillips Clerk

253 λ, l 490169 STATE OF ARIZONA, County of Gile, se: I do hereby could that the within instrument was tiled and recorded at request of Gila County Board of Supervisors pair Dec. 7, 1982 Yim 2:30 P . M., Dockst 576 Official Page 5 275 & 276 Pale Development in the main model of the synthesis of the second of the MARY X. DE PAOLI, County Recorder 的 DEXED lia 3 Doputy. CAGED

315261 STATE OF ARIZONA. County I do hereby ceruly that the Date Feb. 25, 1969 Tisk 3:30 Pr. M. Docher

WITNESS my hand and official seal the day and year first

255

d incord

...Rachengati

Recorder

FORMAL ORDER ESTABLISHING COBRE VALLEY SANITARY DISTRICT

The petitions for the establishment of a Senitary District in the Central Heights and Country Club Manor area came on regularly for hearing before the Board of Supervisors of Gila County, Arizona, in the Court House in Globe, Arizona, on the 3rd day of February, 1969, at the hour of 11:00 o'clock A. M. The Board, after due consideration of all objections made by certain residents of the areas now finds that the petition was duly signed by the required number of owners of real property of the proposed district; that the proposed work is necessary and that the public health, comfort, convenience, necessity and welfare will be produced by establishment of the district set forth in the petition,

IT IS HEREBY ORDERED AND DECLARED:

That a Sanitary District, be, and the same is hereby formed and organized, and that the name of the district shall be known as COBRE VALLEY SANITARY DISTRICT; that the boundaries

are as follows:

Reginning at the South 1-corner of Sec. 22, T. 1 N., R. 15 E., G&SRM., said point also being the SW Cor. Central Heights, Map No. 52, Gila County 'Records; thence easterly 1,325.7 feet along the south boundary of Sec. 22 and of Central Heights to the SE Cor. Central Heights; thence northerly along the east boundary of Central Heights 609.44. 6.67 feet, southeasterly 150 feet; northeasterly 150 feet, southeasterly 450 feet, and northeasterly 100 feet to the east corner of Lot 11, Block 7, Central Heights Addition, said east corner also being the northweaterly sud of the southwesterly bideline of Central Ave. of Doc-Burler Estatus, Map No. 123, C. C. R.; thence following the



westerly along said south right of way line 1330 feet, more of less, to the west boundary E: NW4 Sec. 22: thence, southerly along said west boundary E: NM3 Sec. 22 to the north right of way line of Paxton Avenue D of Country Club Manor; Replatted, Map No. 89, G: C. R.; thence westerly, southwesterly, southerly, southeasterly, easterly, and southerly along the exterior boundary of Block 7; Country Club Manor, Replatted, to a point on the south boundary, Mas Sec. 22; said point being the SW country Club Manor, Country Club Manor, Replatted, and the NW Cor. of Country Club Manor Unit No. 2; Map No: 146, G. C. R.; thence southeasterly, along the southwesterly boundary of Country Club Manor Unit No. 2 a distance of 525 feet, more of less, to the SW Cor. Lot 5, Block 16, Country Club Manor Unit No. 2; thence southerly to the northwest corner of that property described in Dkt. 134, Pg. 266, G. C. R.; thence southerly to the northwest corner of that property described in Dkt. 134, Pg. 266, G. C. R.; thence southerly boundary of said property described in Dkt. 134, Pg. 266, G. C. R., a distance of 525 feet; thence southesterly parallel to English Ave. in SEY SW Sec. 22 a distance of 530 feet; thence southerly parallel to the west boundary of Central Heights Map No. 52, G. C. R.; a distance of 525 feet; thence southesterly parallel to English Ave. in SEY SW Sec. 22 a distance of 530 feet; thence southerly parallel to the west boundary of SW Sec. 22 a distance of 530 feet; thence southerly parallel to the west boundary of SW Sec. 22 and the Swet boundary of Central. Heights, said point also being the W Cor. Lot 19, Block 26, Central Heights; thence southerly along the west boundary of Central Heights, which point is also the S. 2-corner of Sec. 22 and the point of beginning.

roter 255 mit 78

Specifically excluded from the above-described Sanitary District is the Cemetery property, bounded on the north by the north boundary of the StySec. 22; on the east and south by Central Heights, Map No. 52, C. C. R.; and on the west by Country Club Manor Unit No. 2, Map No. 146, C. C. R.

Dated this 3rd_ day of February, 1969.

BOARD OF SUPERVISORS OF GILA COUNTY, ARIZONA

RESOLUTION NO. 001

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE TRI-CITY REGIONAL SANITARY DISTRICT DECLARING THAT THE PINAL SANITARY DISTRICT AND THE COBRE VALLEY SANITARY DISTRICT, GILA COUNTY, STATE OF ARIZONA ARE MERGED PURSUANT TO ARIZONA REVISED STATUTES §48-2001.01(G).

RECITALS:

WHEREAS, the Pinal Sanitary District, Gila County, was an Arizona Sanitary District formed and operating under the laws of the State of Arizona as set forth in Arizona Revised Statutes ("ARS") §48-2001 et seq.; and,

WHEREAS, the Cobre Valley Sanitary District, Gila County, was an Arizona Sanitary District formed and operating under the laws of the State of Arizona as set forth in Arizona Revised Statutes ("ARS") §48-2001 et seq.; and,

WHEREAS, pursuant to ARS §48-2001.01(A)(2), the board of directors of each of the respective sanitary districts did by a two-thirds vote adopt a resolution requesting that the merger of the districts take place; and,

WHEREAS, pursuant to ARS §48-2001.01(D), the Gila County Board of Supervisors after a public hearing determined that the merger of the Pinal Sanitary District and the Cobre Valley Sanitary District would serve the public convenience, welfare or necessity and called for an election concerning the proposed merger of the districts on May 17, 2011; and,

WHEREAS, the majority of the votes cast in the merger election held on May 17, 2011 were in favor of the merger of the two districts; that pursuant to ARS §48-2001.01(F) the Gila County Board of Supervisors did meet and canvass the returns and determined that the majority of the votes cast at the election held on May 17, 2011 in each of the two districts was in favor of merging the sanitary districts; and that the Board of Supervisors entered that fact in the minutes; and,

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of the Pinal Sanitary District as follows:

THAT pursuant to ARS §48-2001.01(G), the Pinal Sanitary District and the Cobre Valley Sanitary District are hereby merged to become a new Arizona Sanitary District, the Tri-City Regional Sanitary District, Gila County, State of Arizona, and each of the prior districts are hereby joined into the Tri-City Regional Sanitary District.

THAT pursuant to ARS §48-2001.01(G), the Tri-City Regional Sanitary District will be administered by the new Board consisting of five (5) members formed by appointment from the existing members of the boards of directors of the two districts, namely Robert J. Zache, Mary Anne Moreno, Kevin Kenney, Mitch Malkovich and Richard Dixon with Robert J. Zache serving as President and Mary Anne Moreno serving as Secretary.

THAT the officers of Tri-City Regional Sanitary District are hereby authorized to establish a new bank account for the District and to execute such forms as are required by the banking institution and that the funds maintained in the bank accounts of the Pinal Sanitary District and the Cobre Valley Sanitary District are to be placed in said new account as soon as is practicable.

THAT the officers of the District and the attorney for the District are hereby authorized to take all necessary steps to complete the merger of the districts.

THAT pursuant to ARS §48-2001.01(G), this Resolution including the names of the members of the Board of Directors is to be sent to the Gila County Board of Supervisors.

THAT pursuant to ARS §48-2001.01(G), a certified copy of this Resolution and the legal description of the Tri-City Regional Sanitary District are to be recorded at the office of the Gila County Recorder.

PASSED AND ADOPTED this 20th day of June, 2011 by a majority vote of the Board of Directors of the Tri-City Regional Sanitary District, Gila County, State of Arizona.

ache

Robert J. Zache, President

ATTEST:

Mary Anne Moreno, Secretary

APPROVED AS TO FORM:

William L. Clemmens, Attorney

CERTIFICATION

I, Mary Anne Moreno, the duly appointed and acting Secretary of the Board of Directors of the Tri-City Regional Sanitary District of Gila County, Arizona, do hereby certify that the above and foregoing Resolution No. 001 was duly passed and adopted by the Board of Directors at a meeting held on June 20, 2011 and the vote was <u>05</u> aye's, <u>0</u> nay's, <u>0</u> abstained, <u>0</u> were absent and <u>05</u> Board Members were present at such meeting.

Mary Anne Moreno, Secretary

Boundary Description Tri-City Regional Sanitary District

A tract of land being portions of Sections 15, 16, 20, 21, 22, 27, 28 and 29, in Township 1 North, Range 15 East of the Gila and Salt River Meridian, in Gila County, Arizona, more particularly described as follows:

Beginning at the Southwest Corner of said Section 29;

Thence northerly along the west line of said Section 29 to the Northwest Corner of said Section 29;

Thence northeasterly to the East Quarter Corner of said section 20;

Thence northeasterly to the North Quarter Corner of said Section 21;

Thence northerly along the north-south mid-section line of said Section 16 to the North Quarter Corner of said Section 16;

Thence Easterly along the north lines of said Section 16 and Section 15 to the North Quarter Corner of said Section 15;

Thence southerly along the north-south mid-section line of said Section 15 to the Center Quarter Corner of said Section 15;

Thence easterly along the east-west mid-section line of said Section 15 to the East Quarter Corner of said Section 15;

Thence southerly along the east lines of said Section 15, Section 22 and Section 27 to the Southeast Corner of said Section 27;

Thence westerly along the south line of said Section 27 to the Southwest Corner of said Section 27;

Thence northerly along the west line of said Section 27 to the West Quarter Corner of said Section 27;

Thence westerly along the east-west mid-section line of said Section 28 to the Center Quarter Corner of said Section 28;

Thence southwesterly to the Southwest Corner of said Section 29 and the Point of Beginning.

Except any portion of the above-described tract of land within the plat of Pioneer Hills Subdivision, recorded in Map Numbers 519, 519A and 519B, in the records of Gila County, Arizona.

Also except any portion of the above-described tract of land within the plat of Chaparral Estates, recorded as Map Number 455, in the records of Gila County, Arizona.

Also except and portion of the above-described tract of land within the plat of Country Club Annex, recorded as Map Numbers 615 and 615A in the records of Gila County, Arizona.

Also except any portion of the above-described tract of land within the plat of County Club Annex Unit 1, recorded as Map Numbers 688, 688A, 695 and 695A in the records of Gila County, Arizona.

Also except any portion of the above-described tract of land within Parcel No. 1 and also except any portion of the above-described tract of land within Parcel No. 2 as described in Document Number 2006-010079 in the records of Gila County, Arizona.

Also except any portion of the above-described property within the cemetery tract, more particularly described as follows: bounded on the north by the north line of the south half of said Section 22; bounded on the east and south by the plat of Central Heights, recorded as Map Number 52 in the records of Gila County, Arizona; bounded on the west by the plat of Country Club Manor Unit 2, recorded as Map Number 146 in the records of Gila County, Arizona.





When Recorded, Mail to: <u>William L. Clemmens</u> <u>Law Occuss of William L. Clemmens</u> <u>416 W Sullivan St</u> Miami Az 85539-1212

2018-004918 RESL Page: 1 of 5 05/07/2018 03:06:53 PM Receipt #: 18-3457 Rec Fee: \$10.00 Law Office of William L Cler Gila County, Az, Sadie Jo Bingham, Recorder

Clemmens

Caption Heading/Title: Resolution 18-001

Do Not Remove This Sheet, It Is Part Of The Recorded Document

RESOLUTION NO. 18-001

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE TRI-CITY REGIONAL SANITARY DISTRICT, GILA COUNTY, STATE OF ARIZONA ADOPTING AND APPROVING THE OFFICIAL BOUNDARY FOR THE TRI-CITY REGIONAL SANITARY DISTRICT OF GILA COUNTY, ARIZONA.

RECITALS:

WHEREAS, the Tri-City Regional Sanitary District ("TRSD"), Gila County, is an Arizona Sanitary District formed and operating under the laws of the State of Arizona as set forth in Arizona Revised Statutes ("ARS") §48-2001 et seq. and formed by the merger of the Pinal Sanitary District and the Cobre Valley Sanitary District by an election held on May 17, 2011; and approval by the Gila County Board of Supervisors; and,

WHEREAS, the legal description for the boundary of the TRSD and map were prepared at the time of the merger; and,

WHEREAS, Staff of Gila County have raised questions about the legal boundary of TRSD because the legal description of the boundary was never recorded with the Gila County Recorder; and,

WHEREAS, it is the desire of the Board of Directors of TRSD to resolve all issues regarding the TRSD boundary.

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of the TRSD as follows:

THAT, the legal description and map attached hereto are hereby adopted as the official description of the TRSD boundary; and,

THAT, TRSD staff is directed to record the legal description of the boundary with the Gila County Recorder.

PASSED AND ADOPTED this 30th day of April, 2018 by the Board of Directors of the Tri-City Regional Sanitary District, Gila County, State of Arizona.

ATTEST:

Robert J. Zache, President

Mary Anne Møreno, Secretary

CERTIFICATION

I, Mary Anne Moreno, the duly appointed Secretary of the Board of Directors of the Tri-City Regional Sanitary District of Gila County, Arizona, do hereby certify that the above and foregoing Resolution No. 18-001 was duly passed and adopted by the Board of Directors at a meeting held on April 30, 2018 and the vote was 3 aye's, O nay's O abstained, 2were absent, and 3 Board Members were present at such meeting.

Mary Anne Moreno, Secretary

Boundary Description Tri-City Regional Sanitary District

A tract of land being portions of Sections 15, 16, 20, 21, 22, 27, 28 and 29, in Township 1 North, Range 15 East of the Gila and Salt River Meridian, in Gila County, Arizona, more particularly described as follows:

Beginning at the Southwest Corner of said Section 29;

Thence northerly along the west line of said Section 29 to the Northwest Corner of said Section 29;

Thence northeasterly to the East Quarter Corner of said section 20;

Thence northeasterly to the North Quarter Corner of said Section 21;

Thence northerly along the north-south mid-section line of said Section 16 to the North Quarter Corner of said Section 16;

Thence Easterly along the north lines of said Section 16 and Section 15 to the North Quarter Corner of said Section 15;

Thence southerly along the north-south mid-section line of said Section 15 to the Center Quarter Corner of said Section 15;

Thence easterly along the east-west mid-section line of said Section 15 to the East Quarter Corner of said Section 15;

Thence southerly along the east lines of said Section 15, Section 22 and Section 27 to the Southeast Corner of said Section 27;

Thence westerly along the south line of said Section 27 to the Southwest Corner of said Section 27;

Thence northerly along the west line of said Section 27 to the West Quarter Corner of said Section 27;

Thence westerly along the east-west mid-section line of said Section 28 to the Center Quarter Corner of said Section 28;

Thence southwesterly to the Southwest Corner of said Section 29 and the Point of Beginning.

Except any portion of the above-described tract of land within the plat of Pioneer Hills Subdivision, recorded in Map Numbers 519, 519A and 519B, in the records of Gila County, Arizona.

Also except any portion of the above-described tract of land within the plat of Chaparral Estates, recorded as Map Number 455, in the records of Gila County, Arizona.

Also except and portion of the above-described tract of land within the plat of Country Club Annex, recorded as Map Numbers 615 and 615A in the records of Gila County, Arizona.

Also except any portion of the above-described tract of land within the plat of County Club Annex Unit 1, recorded as Map Numbers 688, 688A, 695 and 695A in the records of Gila County, Arizona.

Also except any portion of the above-described tract of land within Parcel No. 1 and also except any portion of the above-described tract of land within Parcel No. 2 as described in Document Number 2006-010079 in the records of Gila County, Arizona.



Also except any portion of the above-described property within the cemetery tract, more particularly described as follows: bounded on the north by the north line of the south half of said Section 22; bounded on the east and south by the plat of Central Heights, recorded as Map Number 52 in the records of Gila County, Arizona; bounded on the west by the plat of Country Club Manor Unit 2, recorded as Map Number 146 in the records of Gila County, Arizona.




Appendix E Record of Public Participation -Intentionally left blank, no information available at this time



ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY



Misael Cabrera Director

Douglas A. Ducey Governor

June 3, 2016

Mr. Alan Urban Central Arizona Governments Community Development Manager 1075 S. Idaho Road, Suite 300 Apache Junction, AZ 85119

Re: DMA Status of Sanitary Districts in Gila County

Dear Mr. Urban:

The letter is in response to your February 12, 2016 request for clarification as to the current status of the Pinal Sanitary, Cobre Valley Sanitary and Tri-City Regional Sanitary Districts as designated management agencies under Section 208 of the Clean Water Act.

The Central Arizona Association of Governments 208 Areawide Water Quality Management Plan Update, September, 1994 identifies both the Pinal Sanitary District and Cobre Valley Sanitary District as designated management agencies (DMA). Pinal and Cobre Valley received their DMA designations in 1983 and 1985, respectively, in order to address serious water quality issues in their areas including failing septic systems and use of cesspools.

In 2011, the Tri-City Regional Sanitary District (TRSD) was formed through the merger of the Pinal and Cobre Valley Sanitary Districts. In the next 12-18 months, TRSD will be preparing a 208 Water Quality Management Plan amendment to the 2016 CAG Areawide Water Quality Management Plan requesting approval to be the DMA for the areas currently assigned to the Pinal Sanitary and Cobre Valley Sanitary Districts and to identify TRSD's plan to address the water quality issues within the District. Until such time as an amendment is processed through CAG and ADEQ and approved by the EPA, Pinal and Cobre Valley remain the recognized DMAs but are being administered by TRSD.

ADEQ apologizes for the delayed response to your request. This particular situation has no precedent that we are aware of, so it has taken some additional time for both historical and legal review. If you have any additional questions, please contact me directly at 602.771.2321.

Sincerely **Baggiore**, Director

Trevor Baggiore, Directo Water Quality Division

Main Office 1110 West Washington Street • Phoenix, AZ 85007 (602) 771-2300 Southern Regional Office 400 West Congress Street • Suite 433 • Tucson, AZ 85701 (520) 628-6733

www.azdeq.gov printed on recycled paper

Tri-City Regional Sanitary District Page 2 of 2

cc: Jared Vollmer, U.S. Environmental Protection Agency, Region 9 Bob Zache, President, Tri-City Regional Sanitary District

COPY



0.1412806-GIS/Droients/4128 PER Amendment 2017112724128 PER Amendment 20



TRI-CITY REGIONAL SANITARY DISTRICT

Gila County

AZ

Legend

	Proposed Force Main
-	Proposed Gravity Main
	Proposed WRF
LS	Proposed Lift Station
	TRSD Phase I
	TRSD Phase II
-	TRSD Phase III
	TRSD Boundary



PRELIMINARY COLLECTION & TREATMENT SYSTEM



TRI-CITY REGIONAL SANITARY DISTRICT

Gila County

Legend

- Russel Gulch
- Proposed Force Main -
 - Culture Sites
 - HEC-RAS 500-Year Flood
 - TRSD Phase I
- Parcel Boundaries
- TRSD Boundary
- Proposed Effluent Discharge Location

200 400 R 100 Date: 9/26/2018 PACE lob Number A128 Drawn By ahashimoto

> Exhibit 3 NEW TRSD WRF

AZ





TRI-CITY REGIONAL SANITARY DISTRICT

AZ

- **Proposed Lift Station**

Flood Hazard Zones

- 1% Chance Annual Flood Hazard 0.2% Chance Annual Flood Hazard
- Regulatory Floodway



Exhibit 4 NEW TRSD LIFT STATION

EXHIBIT 5 - TYPICAL LATERAL CONNECTION









EJSCREEN Census 2010 Summary Report



Location: User-specified polygonal location Ring (buffer): 0-mile radius Description: TRSD Phase I

Summary		Census 2010
Population		1,586
Population Density (per sq. mile)		980
Minority Population		659
% Minority		42%
Households		644
Housing Units		777
Land Area (sq. miles)		1.62
% Land Area		99%
Water Area (sq. miles)		0.01
% Water Area		1%
Population by Race	Number	Percent
Total	1.586	
Population Reporting One Race	1.552	98%
White	1,315	83%
Black	14	1%
American Indian	32	2%
Asian	6	0%
Pacific Islander	0	0%
Some Other Race	186	12%
Population Reporting Two or More Races	34	2%
Total Hispanic Population	599	38%
Total Non-Hispanic Population	987	62%
White Alone	927	58%
Black Alone	14	1%
American Indian Alone	28	2%
Non-Hispanic Asian Alone	6	0%
Pacific Islander Alone	0	0%
Other Race Alone	2	0%
Two or More Races Alone	11	1%
Population by Sex	Number	Percent
Male	752	47%
Female	834	53%
Population by Age	Number	Percent
Age 0-4	93	6%
Age 0-17	387	24%
Age 18+	1,199	76%
Age 65+	303	19%
Households by Tenure	Number	Percent
Total	644	
Owner Occupied	507	79%
Renter Occupied	137	21%

Data Note: Detail may not sum to totals due to rounding. Hispanic population can be of any race. Source: U.S. Census Bureau, Census 2010 Summary File 1.





Location: User-specified polygonal location

Ring (buffer): 0-mile radius

Description: TRSD Phase I

Summary of ACS Estimates	2011 - 2015
Population	1,922
Population Density (per sq. mile)	1,188
Minority Population	660
% Minority	34%
Households	696
Housing Units	863
Housing Units Built Before 1950	356
Per Capita Income	17,719
Land Area (sq. miles) (Source: SF1)	1.62
% Land Area	99%
Water Area (sq. miles) (Source: SF1)	0.01
% Water Area	1%
	2011 - 2015

	2011 - 2015	Percent	MOF (+)
	ACS Estimates	i ci cent	11102 (1)
Population by Race			
Total	1,922	100%	507
Population Reporting One Race	1,895	99%	738
White	1,795	93%	508
Black	0	0%	12
American Indian	0	0%	20
Asian	0	0%	42
Pacific Islander	0	0%	12
Some Other Race	100	5%	144
Population Reporting Two or More Races	28	1%	30
Total Hispanic Population	660	34%	252
Total Non-Hispanic Population	1,262		
White Alone	1,262	66%	450
Black Alone	0	0%	12
American Indian Alone	0	0%	12
Non-Hispanic Asian Alone	0	0%	42
Pacific Islander Alone	0	0%	12
Other Race Alone	0	0%	12
Two or More Races Alone	0	0%	12
Population by Sex			
Male	987	51%	300
Female	936	49%	246
Population by Age			
Age 0-4	160	8%	95
Age 0-17	491	26%	162
Age 18+	1,432	74%	293
Age 65+	449	23%	128

Data Note: Detail may not sum to totals due to rounding. Hispanic population can be of any race. N/A means not available. **Source:** U.S. Census Bureau, American Community Survey (ACS) 2011 - 2015.





Location: User-specified polygonal location Ring (buffer): 0-mile radius Description: TRSD Phase I

	2011 - 2015 ACS Estimates	Percent	MOE (±)
Population 25+ by Educational Attainment			
Total	1,262	100%	300
Less than 9th Grade	88	7%	80
9th - 12th Grade, No Diploma	201	16%	154
High School Graduate	354	28%	110
Some College, No Degree	508	40%	155
Associate Degree	134	11%	87
Bachelor's Degree or more	111	9%	74
Population Age 5+ Years by Ability to Speak English			
Total	1,762	100%	509
Speak only English	1,411	80%	410
Non-English at Home ¹⁺²⁺³⁺⁴	351	20%	176
¹ Speak English "very well"	286	16%	146
² Speak English "well"	22	1%	36
³ Speak English "not well"	0	0%	17
⁴ Speak English "not at all"	44	2%	73
³⁺⁴ Speak English "less than well"	44	2%	73
²⁺³⁺⁴ Speak English "less than very well"	65	4%	78
Linguistically Isolated Households*			
Total	7	100%	22
Speak Spanish	7	100%	19
Speak Other Indo-European Languages	0	0%	12
Speak Asian-Pacific Island Languages	0	0%	12
Speak Other Languages	0	0%	12
Households by Household Income			
Household Income Base	696	100%	175
< \$15,000	106	15%	87
\$15,000 - \$25,000	135	19%	72
\$25,000 - \$50,000	211	30%	84
\$50,000 - \$75,000	173	25%	117
\$75,000 +	71	10%	104
Occupied Housing Units by Tenure			
Total	696	100%	175
Owner Occupied	523	75%	177
Renter Occupied	173	25%	85
Employed Population Age 16+ Years			
Total	1,459	100%	394
In Labor Force	772	53%	283
Civilian Unemployed in Labor Force	114	8%	84
Not In Labor Force	687	47%	243

Data Note: Detail may not sum to totals due to rounding. Hispanic population can be of any race. N/A means not available. Source: U.S. Census Bureau, American Community Survey (ACS) 2011 - 2015.
*Households in which no one 14 and over speaks English "very well" or speaks English only.





Location: User-specified polygonal location Ring (buffer): 0-mile radius Description: TRSD Phase I

	2011 - 2015	Deveent	MOE (±)
	ACS Estimates	Percent	
Population by Language Spoken at Home*			
Total (persons age 5 and above)	1,762	100%	509
English	N/A	N/A	N/A
Spanish	N/A	N/A	N/A
French	N/A	N/A	N/A
French Creole	N/A	N/A	N/A
Italian	N/A	N/A	N/A
Portuguese	N/A	N/A	N/A
German	N/A	N/A	N/A
Yiddish	N/A	N/A	N/A
Other West Germanic	N/A	N/A	N/A
Scandinavian	N/A	N/A	N/A
Greek	N/A	N/A	N/A
Russian	N/A	N/A	N/A
Polish	N/A	N/A	N/A
Serbo-Croatian	N/A	N/A	N/A
Other Slavic	N/A	N/A	N/A
Armenian	N/A	N/A	N/A
Persian	N/A	N/A	N/A
Gujarathi	N/A	N/A	N/A
Hindi	N/A	N/A	N/A
Urdu	N/A	N/A	N/A
Other Indic	N/A	N/A	N/A
Other Indo-European	N/A	N/A	N/A
Chinese	N/A	N/A	N/A
Japanese	N/A	N/A	N/A
Korean	N/A	N/A	N/A
Mon-Khmer, Cambodian	N/A	N/A	N/A
Hmong	N/A	N/A	N/A
Thai	N/A	N/A	N/A
Laotian	N/A	N/A	N/A
Vietnamese	N/A	N/A	N/A
Other Asian	N/A	N/A	N/A
Tagalog	N/A	N/A	N/A
Other Pacific Island	N/A	N/A	N/A
Navajo	N/A	N/A	N/A
Other Native American	N/A	N/A	N/A
Hungarian	N/A	N/A	N/A
Arabic	N/A	N/A	N/A
Hebrew	N/A	N/A	N/A
African	N/A	N/A	N/A
Other and non-specified	N/A	N/A	N/A
Total Non-English	N/A	N/A	N/A

Data Note: Detail may not sum to totals due to rounding. Hispanic population can be of any race. N/A means not available. **Source:** U.S. Census Bureau, American Community Survey (ACS) 2011 - 2015.

*Population by Language Spoken at Home is available at the census tract summary level and up.



EJSCREEN Census 2010 Summary Report



Location: User-specified polygonal location Ring (buffer): 0-mile radius Description: TRSD Phase II

Summary		Census 2010
Population		1,490
Population Density (per sq. mile)		1,397
Minority Population		515
% Minority		35%
Households		597
Housing Units		689
Land Area (sq. miles)		1.07
% Land Area		100%
Water Area (sq. miles)		0.00
% Water Area		0%
Population by Race	Number	Percent
Total	1,490	
Population Reporting One Race	1,439	97%
White	1,218	82%
Black	14	1%
American Indian	35	2%
Asian	5	0%
Pacific Islander	1	0%
Some Other Race	166	11%
Population Reporting Two or More Races	51	3%
Total Hispanic Population	453	30%
Total Non-Hispanic Population	1,037	70%
White Alone	975	65%
Black Alone	12	1%
American Indian Alone	32	2%
Non-Hispanic Asian Alone	5	0%
Pacific Islander Alone	1	0%
Other Race Alone	1	0%
Two or More Races Alone	12	1%
Population by Sex	Number	Percent
Male	727	49%
Female	763	51%
Population by Age	Number	Percent
Age 0-4	102	7%
Age 0-17	395	27%
Age 18+	1,095	73%
Age 65+	256	17%
Households by Tenure	Number	Percent
Total	597	
Owner Occupied	458	77%
Renter Occupied	138	23%

Data Note: Detail may not sum to totals due to rounding. Hispanic population can be of any race. Source: U.S. Census Bureau, Census 2010 Summary File 1.





Location: User-specified polygonal location

Ring (buffer): 0-mile radius

Description: TRSD Phase II

Summary of ACS Estimates		2011 - 2015
Population		1,780
Population Density (per sq. mile)		1,669
Minority Population		487
% Minority		27%
Households		689
Housing Units		824
Housing Units Built Before 1950		146
Per Capita Income		17,752
Land Area (sq. miles) (Source: SF1)		1.07
% Land Area		100%
Water Area (sq. miles) (Source: SF1)		0.00
% Water Area		0%
	2011 - 2015	

	ACS Estimates	Percent	MOE (±)
Population by Race			
Total	1,780	100%	507
Population Reporting One Race	1,764	99%	700
White	1,723	97%	508
Black	0	0%	12
American Indian	0	0%	12
Asian	0	0%	12
Pacific Islander	0	0%	12
Some Other Race	41	2%	144
Population Reporting Two or More Races	16	1%	95
Total Hispanic Population	481	27%	302
Total Non-Hispanic Population	1,299		
White Alone	1,293	73%	450
Black Alone	0	0%	12
American Indian Alone	0	0%	12
Non-Hispanic Asian Alone	0	0%	12
Pacific Islander Alone	0	0%	12
Other Race Alone	0	0%	12
Two or More Races Alone	6	0%	86
Population by Sex			
Male	801	45%	300
Female	980	55%	263
Population by Age			
Age 0-4	106	6%	118
Age 0-17	356	20%	169
Age 18+	1,424	80%	313
Age 65+	313	18%	173

Data Note: Detail may not sum to totals due to rounding. Hispanic population can be of any race. N/A means not available. **Source:** U.S. Census Bureau, American Community Survey (ACS) 2011 - 2015.





Location: User-specified polygonal location Ring (buffer): 0-mile radius Description: TRSD Phase II

	2011 - 2015 ACS Estimates	Percent	MOE (±)
Population 25+ by Educational Attainment			
Total	1,170	100%	335
Less than 9th Grade	79	7%	99
9th - 12th Grade, No Diploma	320	27%	154
High School Graduate	298	25%	200
Some College, No Degree	226	19%	205
Associate Degree	30	3%	87
Bachelor's Degree or more	247	21%	162
Population Age 5+ Years by Ability to Speak English			
Total	1,674	100%	509
Speak only English	1,426	85%	410
Non-English at Home ¹⁺²⁺³⁺⁴	248	15%	176
¹ Speak English "very well"	160	10%	146
² Speak English "well"	71	4%	114
³ Speak English "not well"	12	1%	94
⁴ Speak English "not at all"	4	0%	73
³⁺⁴ Speak English "less than well"	16	1%	94
²⁺³⁺⁴ Speak English "less than very well"	87	5%	114
Linguistically Isolated Households [*]			
Total	35	100%	59
Speak Spanish	35	100%	58
Speak Other Indo-European Languages	0	0%	12
Speak Asian-Pacific Island Languages	0	0%	12
Speak Other Languages	0	0%	12
Households by Household Income			
Household Income Base	689	100%	180
< \$15,000	158	23%	106
\$15,000 - \$25,000	110	16%	102
\$25,000 - \$50,000	179	26%	95
\$50,000 - \$75,000	102	15%	117
\$75,000 +	139	20%	104
Occupied Housing Units by Tenure			
Total	689	100%	180
Owner Occupied	498	72%	177
Renter Occupied	191	28%	117
Employed Population Age 16+ Years			
Total	1,474	100%	394
In Labor Force	741	50%	298
Civilian Unemployed in Labor Force	26	2%	125
Not In Labor Force	733	50%	312

Data Note: Detail may not sum to totals due to rounding. Hispanic population can be of any race. N/A means not available. Source: U.S. Census Bureau, American Community Survey (ACS) 2011 - 2015.
*Households in which no one 14 and over speaks English "very well" or speaks English only.





Location: User-specified polygonal location Ring (buffer): 0-mile radius Description: TRSD Phase II

	2011 - 2015	Deveent	MOE (±)
	ACS Estimates	Percent	
Population by Language Spoken at Home*			
Total (persons age 5 and above)	1,674	100%	509
English	N/A	N/A	N/A
Spanish	N/A	N/A	N/A
French	N/A	N/A	N/A
French Creole	N/A	N/A	N/A
Italian	N/A	N/A	N/A
Portuguese	N/A	N/A	N/A
German	N/A	N/A	N/A
Yiddish	N/A	N/A	N/A
Other West Germanic	N/A	N/A	N/A
Scandinavian	N/A	N/A	N/A
Greek	N/A	N/A	N/A
Russian	N/A	N/A	N/A
Polish	N/A	N/A	N/A
Serbo-Croatian	N/A	N/A	N/A
Other Slavic	N/A	N/A	N/A
Armenian	N/A	N/A	N/A
Persian	N/A	N/A	N/A
Gujarathi	N/A	N/A	N/A
Hindi	N/A	N/A	N/A
Urdu	N/A	N/A	N/A
Other Indic	N/A	N/A	N/A
Other Indo-European	N/A	N/A	N/A
Chinese	N/A	N/A	N/A
Japanese	N/A	N/A	N/A
Korean	N/A	N/A	N/A
Mon-Khmer, Cambodian	N/A	N/A	N/A
Hmong	N/A	N/A	N/A
Thai	N/A	N/A	N/A
Laotian	N/A	N/A	N/A
Vietnamese	N/A	N/A	N/A
Other Asian	N/A	N/A	N/A
Tagalog	N/A	N/A	N/A
Other Pacific Island	N/A	N/A	N/A
Navajo	N/A	N/A	N/A
Other Native American	N/A	N/A	N/A
Hungarian	N/A	N/A	N/A
Arabic	N/A	N/A	N/A
Hebrew	N/A	N/A	N/A
African	N/A	N/A	N/A
Other and non-specified	N/A	N/A	N/A
Total Non-English	N/A	N/A	N/A

Data Note: Detail may not sum to totals due to rounding. Hispanic population can be of any race. N/A means not available. **Source:** U.S. Census Bureau, American Community Survey (ACS) 2011 - 2015.

*Population by Language Spoken at Home is available at the census tract summary level and up.



EJSCREEN Census 2010 Summary Report



Location: User-specified polygonal location Ring (buffer): 0-mile radius Description: TRSD Phase III

Summary		Census 2010
Population		1,042
Population Density (per sq. mile)		734
Minority Population		355
% Minority		34%
Households		455
Housing Units		519
Land Area (sq. miles)		1.42
% Land Area		100%
Water Area (sq. miles)		0.00
% Water Area		0%
Population by Race	Number	Percent
Total	1,042	
Population Reporting One Race	1,015	97%
White	850	82%
Black	12	1%
American Indian	17	2%
Asian	6	1%
Pacific Islander	4	0%
Some Other Race	126	12%
Population Reporting Two or More Races	27	3%
Total Hispanic Population	311	30%
Total Non-Hispanic Population	731	70%
White Alone	687	66%
Black Alone	11	1%
American Indian Alone	16	2%
Non-Hispanic Asian Alone	6	1%
Pacific Islander Alone	2	0%
Other Race Alone	1	0%
Two or More Races Alone	8	1%
Population by Sex	Number	Percent
Male	502	48%
Female	540	52%
Population by Age	Number	Percent
Age 0-4	56	5%
Age 0-17	252	24%
Age 18+	790	76%
Age 65+	198	19%
Households by Tenure	Number	Percent
Total	455	
Owner Occupied	349	77%
Renter Occupied	106	23%

Data Note: Detail may not sum to totals due to rounding. Hispanic population can be of any race. Source: U.S. Census Bureau, Census 2010 Summary File 1.





Location: User-specified polygonal location

Ring (buffer): 0-mile radius

Description: TRSD Phase III

Summary of ACS Estimates		2011 - 2015
Population		1,032
Population Density (per sq. mile)		727
Minority Population		461
% Minority		45%
Households		509
Housing Units		571
Housing Units Built Before 1950		35
Per Capita Income		17,722
Land Area (sq. miles) (Source: SF1)		1.42
% Land Area		100%
Water Area (sq. miles) (Source: SF1)		0.00
% Water Area		0%
	2011 - 2015	

	ACS Estimates	Percent	MOE (±)
Population by Race			
Total	1,032	100%	428
Population Reporting One Race	973	94%	607
White	973	94%	415
Black	0	0%	12
American Indian	0	0%	12
Asian	0	0%	12
Pacific Islander	0	0%	12
Some Other Race	0	0%	144
Population Reporting Two or More Races	59	6%	95
Total Hispanic Population	446	43%	302
Total Non-Hispanic Population	586		
White Alone	571	55%	385
Black Alone	0	0%	12
American Indian Alone	0	0%	12
Non-Hispanic Asian Alone	0	0%	12
Pacific Islander Alone	0	0%	12
Other Race Alone	0	0%	12
Two or More Races Alone	15	1%	86
Population by Sex			
Male	555	54%	284
Female	477	46%	263
Population by Age			
Age 0-4	14	1%	118
Age 0-17	246	24%	169
Age 18+	786	76%	313
Age 65+	206	20%	173

Data Note: Detail may not sum to totals due to rounding. Hispanic population can be of any race. N/A means not available. **Source:** U.S. Census Bureau, American Community Survey (ACS) 2011 - 2015.





Location: User-specified polygonal location Ring (buffer): 0-mile radius

Description: TRSD Phase III

	2011 - 2015 ACS Estimates	Percent	MOE (±)
Population 25+ by Educational Attainment			
Total	728	100%	335
Less than 9th Grade	127	17%	99
9th - 12th Grade, No Diploma	40	6%	136
High School Graduate	264	36%	200
Some College, No Degree	247	34%	205
Associate Degree	14	2%	87
Bachelor's Degree or more	50	7%	162
Population Age 5+ Years by Ability to Speak English			
Total	1,019	100%	417
Speak only English	761	75%	398
Non-English at Home ¹⁺²⁺³⁺⁴	258	25%	176
¹ Speak English "very well"	153	15%	146
² Speak English "well"	0	0%	114
³ Speak English "not well"	106	10%	94
⁴ Speak English "not at all"	0	0%	73
³⁺⁴ Speak English "less than well"	106	10%	94
²⁺³⁺⁴ Speak English "less than very well"	106	10%	114
Linguistically Isolated Households*			
Total	0	0%	59
Speak Spanish	0	0%	58
Speak Other Indo-European Languages	0	0%	12
Speak Asian-Pacific Island Languages	0	0%	12
Speak Other Languages	0	0%	12
Households by Household Income			
Household Income Base	509	100%	180
< \$15,000	166	33%	106
\$15,000 - \$25,000	117	23%	102
\$25,000 - \$50,000	121	24%	95
\$50,000 - \$75,000	33	7%	97
\$75,000 +	71	14%	94
Occupied Housing Units by Tenure			
Total	509	100%	180
Owner Occupied	282	55%	135
Renter Occupied	227	45%	117
Employed Population Age 16+ Years		1070	
Total	859	100%	341
In Labor Force	577	67%	298
Civilian Unemployed in Labor Force	94	11%	125
Not In Labor Force	283	33%	312

Data Note: Detail may not sum to totals due to rounding. Hispanic population can be of any race. N/A means not available. Source: U.S. Census Bureau, American Community Survey (ACS) 2011 - 2015.
*Households in which no one 14 and over speaks English "very well" or speaks English only.





Location: User-specified polygonal location Ring (buffer): 0-mile radius Description: TRSD Phase III

	2011 - 2015	Percent	MOE (±)
	ACS Estimates	i crocite	mor (=)
Population by Language Spoken at Home*			
Total (persons age 5 and above)	1,019	100%	417
English	N/A	N/A	N/A
Spanish	N/A	N/A	N/A
French	N/A	N/A	N/A
French Creole	N/A	N/A	N/A
Italian	N/A	N/A	N/A
Portuguese	N/A	N/A	N/A
German	N/A	N/A	N/A
Yiddish	N/A	N/A	N/A
Other West Germanic	N/A	N/A	N/A
Scandinavian	N/A	N/A	N/A
Greek	N/A	N/A	N/A
Russian	N/A	N/A	N/A
Polish	N/A	N/A	N/A
Serbo-Croatian	N/A	N/A	N/A
Other Slavic	N/A	N/A	N/A
Armenian	N/A	N/A	N/A
Persian	N/A	N/A	N/A
Gujarathi	N/A	N/A	N/A
Hindi	N/A	N/A	N/A
Urdu	N/A	N/A	N/A
Other Indic	N/A	N/A	N/A
Other Indo-European	N/A	N/A	N/A
Chinese	N/A	N/A	N/A
Japanese	N/A	N/A	N/A
Korean	N/A	N/A	N/A
Mon-Khmer, Cambodian	N/A	N/A	N/A
Hmong	N/A	N/A	N/A
Thai	N/A	N/A	N/A
Laotian	N/A	N/A	N/A
Vietnamese	N/A	N/A	N/A
Other Asian	N/A	N/A	N/A
Tagalog	N/A	N/A	N/A
Other Pacific Island	N/A	N/A	N/A
Navajo	N/A	N/A	N/A
Other Native American	N/A	N/A	N/A
Hungarian	N/A	N/A	N/A
Arabic	N/A	N/A	N/A
Hebrew	N/A	N/A	N/A
African	N/A	N/A	N/A
Other and non-specified	NI/A	NI/A	N/A
Total Non-English	N/A	N/A	N/A

Data Note: Detail may not sum to totals due to rounding. Hispanic population can be of any race. N/A means not available. **Source:** U.S. Census Bureau, American Community Survey (ACS) 2011 - 2015.

*Population by Language Spoken at Home is available at the census tract summary level and up.

745 N Rose Mofford Way (Mail to: 1400 E Ash St) Globe Arizona 85501 (928)425-3231 Ext. 4224 FAX (928)425-0829



608 E. Hwy 260 Payson, Arizona 85541 (928)474-9276 FAX (928)474-0802

GILA COUNTY COMMUNITY DEVELOPMENT

Robert Gould, Director

Joe Mendoza, Deputy Director

SEWAGE TREATMENT STUDY TRI-CITY REGIONAL SANITARY DISTRICT NOVEMBER 2012

by Jake Garrett, PE, Gila County Wastewater Department Manager Jim Berry Gila County Wastewater Department Engineering Technician

Why the Maps: The project originally started as a visual method of identifying areas of concern for catastrophic failure of sewage handling and major public health concerns. It now demonstrates the predominance of cesspool use within Tri-City Regional Sanitary District (TRSD).

The Data for the Maps: Every property file in the possession of the Gila County Wastewater Department was examined to find sewage system permits of any type and citizen complaints for surfacing sewage or gray water leaving the property. A former Health Department Director told us that the earliest Gila County records for septic system permits are dated in 1979, that by 1984 Gila County had become "good" at seeing that septic systems were permitted, that permit requests were made by mail and that data provided was minimal and accuracy was lacking. As a result, by policy, Gila County does not recognize any percolation test results for tests conducted prior to 1990 due to the crude percolation test methods used.

Only 5 years of complaint data is available beginning in mid-2007. Prior to that time the Arizona Department of Environmental Quality (ADEQ) required that all complaint data be filed by street address rather than parcel number for auditing purposes. Consequently that information was not part of the property file and was discarded when ADEQ's audit directions changed in 2007.

A complaint is resolved and the public health hazard corrected when the property owner stops sewage from surfacing and/or gray water from ponding on or leaving his property and the contaminated area is properly cleaned and disinfected. If the property owner does not respond in 24 hours an escalating, 3-step, 3-day written violation process is begun which culminates in a Notice of Violation and Demand for Compliance. Should the owner not comply with the Demand for Compliance water service to the home is discontinued per Arizona Statute.

The Area: Tri-City Regional Sanitary District encompasses the unincorporated area between the Town of Miami and the City of Globe in southern Gila County, Arizona. The majority of this area was developed for housing during the first $\frac{1}{2}$ of the 20th century mining boom. Subdivisions featured lots 25'x 150' (3750 ft²) with a small area in the

PLANNING & ZONING . BUILDING SAFETY . FLOODPLAIN . WASTEWATER . CODE ENFORCEMENT

bottom of the canyon that was suitable for home and cesspool construction with the rear portion of the lot rising very steeply uphill. In addition the ground transitioned from runoff deposited loose material to a very hard and nonporous Gila Conglomerate as the building site approached the foot of the slope. Today most of these homes have nowhere close to enough usable land in which a replacement septic system can be installed. A few of these properties might qualify to use the enhanced sewage treatment qualities of an alternative system to overcome the lot limitations. In those cases the system cost is normally more than the appraised value of the property.

Cesspool Facts: Interviews with Gila County Health Department personnel and local septic system contractors with personal knowledge about the construction practices, public attitudes and permitting during the time period from late 1950's through the early 2000's produced the following recollections:

- In 1976 the <u>USE</u> of cesspools was prohibited by Engineering Bulletin 12, the Arizona Department of Health Service guidance document for the design and installation of septic and alternative systems.
- Homes served by cesspools were constructed beginning in 1907 or earlier. These cesspools are now 105 years old ... or new cesspools were constructed to replace those that filled or failed (probably multiple times) until the mid to late 1980's when permitting became expected by a majority of citizens.
- As of this date no action has been taken by the State of Arizona to enforce the prohibition on the use of cesspools in areas where pollution of ground or surface waters cannot be proven. Absent statewide enforcement the use of cesspools by an individual home in these areas has been allowed to continue until it fails either structurally or hydraulically.
- By policy Gila County does not allow expansion or remodeling of any home served by a cesspool.
- A former Gila County Health Department Director told us that:
 - o Public attitudes shifted toward installing septic systems rather than cesspools in 1979
 - At that time most permits were mailed to the Globe Health Department offices.
- A local contractor stated that his business got busy installing septic systems in early 1970.
- No permits were ever issued for cesspools however they are referenced in the building files upon occasion. Those mentioned are shown on the maps.
- Banks throughout Arizona are now and have been for 3-5 years declining to lend on homes served by a cesspool.
- It is estimated that the average lot size within the TRSD boundary is 5,000 ft² while the mining subdivisions had lot sizes of 3,750 ft². These lot sizes equate to an average density of 8.72 to 11.63 homes per acre. Current regulations would require any subdivision with a density of greater than one (1) home per acre to reduce the Nitrogen contribution to the ground in addition to removing the biological contaminants and viruses through advanced treatment systems or a sewer collection and treatment system.

Conclusions that can be drawn from the maps:

- There are very few permitted septic systems within the TRSD boundary.
- Very few unpermitted septic systems have been found in the building files.
- Cesspools are likely used for sewage disposal on all lots that do not have either a permitted or unpermitted system. This represents vast majority of homes within TRSD.
- Some multiple lot properties have been able to replace failed cesspools with septic systems. Usually there are multiple cesspools replaced by one septic system.
- Some functioning cesspools have been identified in the last 5 years.
- Several cesspools have failed and the properties have become unusable.
- Gray water complaints represent properties that are experiencing cesspool problems. Homeowners usually remove their gray water from the cesspool in an effort to extend its life. Many of these properties have a history of multiple complaints in the last 5 years indicating that their cesspool is nearing failure.

- All lots that do not show a permitted system (since 2001 rule) are in danger of failure as is evidenced by the number of surfacing sewage complaints and Notices of Violation (NOV's)
- Based on the sewage and gray water complaint and NOV properties it is estimated that between 5% and 10% of the homes within TRSD have experienced cesspool problems within the last 5 years

Estimate of homes within TRSD using cesspools and sub-standard septic systems:

This estimate is presented in support of the maps and conclusions that are presented above. An estimate of the number of homes served by cesspools and substandard septic systems within the TRSD boundary was made from the 2000 U.S. Census Bureau data for Gila County by logical reasoning and the following assumptions:

• Percentages of homes constructed in southern Gila County is represented by the sum of

Globe and Miami home construction and those in northern Gila County is represented by Payson home construction.

- Cesspool use stopped in 1969.
- Substandard septic systems were installed through 1989 when an updated Bulletin 12 was introduced by the Arizona Department of Environmental Quality.

From these rough calculations it is reasonable to assume that there are at least 1342 operating cesspools and 266 operating substandard septic systems within the TRSD boundary. This estimate would then say that there are 1608 homes within TRSD that are served by cesspools or substandard septic systems.

Jake Garrett Wastewater Department Manager November 14, 2012 745 N Rose Mofford Way Globe Arizona 85501 (928)425-3231 Ext. 4224 FAX (928)425-0829



608 E. Hwy 260 Payson, Arizona 85541 (928)474-9276 FAX (928)474-0802

GILA COUNTY COMMUNITY DEVELOPMENT

Robert Gould, Director

Cesspools: Water Quality and Your Property Value

The Hard, Cold Facts about Cesspools:

A cesspool is an outhouse with running water. Cesspools discharge untreated waste into the soil that will ultimately contaminate the ground water. **Cesspools have not been** *approved for use in Arizona since 1976 because they are a major source of ground water contamination.* No permits for the construction of new cesspools have been issued since that time.

Cesspools may not be repaired in any way. When a cesspool fails it must be replaced by an approved Onsite Wastewater Treatment and Disposal System or the property must cease to be occupied. Replacement is very difficult or impossible due to small lot size, poor soils, proximity to streams and other severe lot constraints.

In current ADEQ regulations cesspools are not a permitted method of wastewater disposal and are prohibited expressly under R18-9-A309(A)(4) and R18-5-408(D). Because of this fact many financial institutions are not lending on properties serviced by a cesspool.

Cesspool Definition:

Underground pit into which raw household wastewater is discharged and from which the liquid seeps into the surrounding soil; may or may not be partially lined.

How a cesspool functions:

A cesspool is a covered hole or pit for receiving sewage from a house. Another way of thinking about a cesspool is that it is an outhouse with running water. Usually the walls are constructed out of concrete, brick or concrete blocks and the top cover is usually a poured concrete slabor timbers. The constructions of the sidewalls are loose to allow the effluent water to penetrate through the holes, allowing the water to pass into the native soil while the solids build up in the pit.

This solid waste, very similar to what you see in outhouse pits, may partially crumble into smaller pieces over time and be partially carried into the environment in a totally untreated state by the new liquids entering the cesspool. This material is a host for many disease-causing viruses, bacteria, and parasites. Unlike septic systems, cesspools provide no treatment of the raw sewage and thus discharge untreated human waste into the soil and ultimately contaminate the ground water.

By contrast, septic systems remove 100% of the disease-causing viruses, bacteria, and parasites. In a properly designed and installed septic system the tank retains 60 to

70% of the solids, oil, and grease that pass into the system and provides some treatment. The partially treated wastewater is then discharged into the leach lines, where the surrounding soil provides final treatment of the sewage prior to its discharge into the environment.

Cesspools in Gila County:

Cesspools were the preferred method of waste disposal in Gila County through the late 1960's. At that time, a transition to installation of septic systems started and by 1984 all permitted installations were septic systems. Based on US Census 2000 information, it is estimated that there are nearly 3,000 cesspools still in operation in Gila County. Most properties utilizing cesspools for human waste disposal are located in dense unincorporated areas in southern Gila County and the forest subdivisions of northern Gila County, Tonto Basin and Young. Dense from an on-site sewage system point of view means greater than 2 homes per acre. Most of these densely populated areas have 8-10 homes per acre. Many of these areas are along and very close to flowing streams and are major contributors to stream pollution.

Cesspool Failure:

When a cesspool's lid, sides or structural members deteriorate or collapse and sewage comes to the surface or backs up into the home, it is determined to have failed and must be corrected immediately. Possible corrective actions include:

- Ceasing use of the home or
- Install an appropriate wastewater treatment system.

Most cesspools are located on extremely small lots. In addition, these lots usually have very poor soil conditions and steep slopes and/or large retaining walls and may be very near running streams. *These conditions will almost always preclude installation of a conventional septic system.* In many cases installation of a more costly alternative sewage treatment system that treats sewage to a much higher degree, requires less disposal area and overcomes many site specific obstacles will not be possible.

Arizona Department of Environmental Quality (ADEQ) Cesspool Statement:

"ADEQ recognizes that a number of residential cesspools remain in operation in Gila County and across the state. However, since their operation is generally prohibited and They unacceptably endanger water quality and the public health and safety ... their continued operation should not be encouraged. ADEQ believes that home inspectors and on-site transfer inspections that may occur should encourage potential buyers to require the installation of a permitted facility."

Gila County Policy Statement

The current Gila County Wastewater Department policy regarding *waste systems installed prior to 1976* is stated in the Gila County Health Department letter dated 12/9/1996 and partially quoted here:

"<u>Any</u> system that was installed prior to 1976 including but not limited to cesspools, homemade septic tanks, or other sewage disposal hybrid devices would be grandfathered in until these "systems" fail or the residence plumbing is modified."

In support of this policy the following practices were implemented:

Nuisance Complaint Investigation:

Should failure be discovered through the complaint process, while investigating a possible Environmental Nuisance or during any normal business activity undertaken by Gila County, the failure must be immediately corrected. Possible corrective actions include:

- \circ Ceasing use of the home or
- Install an appropriate wastewater treatment system.
 (Failure means any structural or hydraulic failure and is evidenced by such things as collapsed lids, deterioration of sidewall structural components, back-up of sewage into the home, groundwater contamination or surfacing of sewage.)

Building Clearance:

The Wastewater Department will not approve the submittal of building plans for any property served by a cesspool if those plans expand the footprint of buildings or structures on the property or alter the wastewater flow characteristics (bedrooms or plumbing fixtures) of the property.

Conclusion:

Don't let your dependence on a cesspool get you into a hole that you can't dig yourself out of!

1400 East Ash Street Globe Arizona 85501 (928)425-3231 Ext. 8512 FAX (928)425-0829



714 S. Beeline Hwy, Suite 200 Payson, Arizona 85541 (928)474-9276 FAX (928)474-0802

GILA COUNTY COMMUNITY DEVELOPMENT

Robert Gould, Director

August 8, 2008

Wastewater Department Policy Statement Re: Cesspool Replacement Policy

Policy Statement

The current Gila County Wastewater Department policy regarding *waste systems installed prior to* **1976** is stated in the Gila County Health Department letter dated 12/9/1996 and partially quoted here:

"<u>Any</u> system that was installed prior to 1976 including but not limited to cesspools, homemade septic tanks, or other sewage disposal hybrid devices would be grandfathered in until these "systems" fail or the residence plumbing is modified."

In support of this policy the following practices were implemented:

Nuisance Complaint Investigation:

Should failure be discovered through the complaint process, while investigating a
possible Environmental Nuisance or during any normal business activity undertaken by
Gila County, the failure must be immediately corrected. Possible corrective actions
include:

o Ceasing use of the home or

o Install an appropriate wastewater treatment system.

(Failure means any structural or hydraulic failure and is evidenced by such things as collapsed lids, deterioration of sidewall structural components, back-up of sewage into the home, groundwater contamination or surfacing of sewage.)

Building Clearance:

The Wastewater Department will not approve the submittal of building plans for any property served by a cesspool if those plans alter the wastewater flow characteristics (increase number of bedrooms or plumbing fixtures) on the property.

Respectfully

Jake Garrett, P.E. Wastewater Department Manager 745 N Rose Mofford Way Globe Arizona 85501 (928)425-3231 Ext. 4224 FAX (928)425-0829



608 E. Hwy 260 Payson, Arizona 85541 (928)474-9276 FAX (928)474-0802

GILA COUNTY COMMUNITY DEVELOPMENT

Robert Gould, Director

USE OF CESSPOOLS IS PROHIBITED BY LAW

If you have a cesspool ... you are

BREAKING THE LAW

Every Time You Flush

Arizona Administrative Code (AAC)

R18-9-A309. General Provisions for On-site Wastewater Treatment Facilities

- **A.** General requirements and prohibitions.
 - 1. No person shall discharge sewage or wastewater that contains sewage from an on-site wastewater treatment facility except under an Aquifer Protection Permit issued by the Director.
 - 2. A person shall not install, allow to be installed, or maintain a connection between any part of an on-site wastewater treatment facility and a drinking water system or supply so that sewage or wastewater contaminates the drinking water.
 - 3. A person shall not bypass or release sewage or partially treated sewage that has not completed the treatment process from an on-site wastewater treatment facility.
 - 4. A person shall not use a cesspool for sewage disposal.

•••

R18-5-408. Individual sewage disposal systems

- A. Recommendations are found in the engineering bulletins of the Department and such additional requirements as may be provided by local health departments to assist in approval regarding the design, installation and operation of individual sewage disposal systems. Copies of these bulletins may be obtained from the Department.
- B. Where soil conditions and terrain features or other conditions are such that individual sewage disposal systems cannot be expected to function satisfactorily or where groundwater or soil conditions are such that individual sewage disposal systems may cause pollution of groundwater, they are prohibited.
- C. Where such installations may create an unsanitary condition or public health nuisance, individual sewage disposal systems are prohibited.
- D. The use of cesspools is prohibited.

•••



ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

1110 West Washington Street • Phoenix, Arizona 85007 (602) 771-2300 • www.azdeq.gov



April 7, 2008

Jake Garrett, P.E. Gila County Community Development Division Wastewater Department Manager 714 S. Beeline Hwy, Ste 200 Payson, AZ 85541

Dear Mr. Garrett:

We have received your letter dated March 18, 2008 regarding cesspools. First, any information provided to you by our Department suggesting that cesspools are to be inspected or transferred under A.A.C. Title 18 is incorrect. Cesspools are not a permitted method of wastewater disposal and are prohibited expressly under R18-9-A309(A)(4) and R18-5-408(D). Accordingly, they are not subject to the notice of transfer requirements of R18-9-A304, the presale inspection rules of R18-9-A316, or the repair provisions of R18-9-A309(A)(9).

In addition to being prohibited under the "General Provisions for On-site Wastewater Treatment Facilities" section of the rule, cesspools do not meet the requirement of the R18-9-B301(I)(1)(b). That provision refers specifically to "[a]n on-site wastewater treatment facility with flows less than 20,000 gallons per day operating before January 1, 2001." The definition of "on-site wastewater treatment facility" is provided in rule (R18-9-101(27));

"On-site wastewater treatment facility" means a <u>conventional septic tank system</u> or <u>alternative system</u> installed at a site to treat and dispose of wastewater, predominantly of human origin, generated at that site. ...

ADEQ recognizes that a number of residential cesspools remain in operation in Gila County and across the state. However, since their operation is generally prohibited and, as your letter effectively conveys, they unacceptably endanger water quality and the public health and safety, their continued operation should not be encouraged. ADEQ believes that home inspectors and on-site transfer inspections that may occur should encourage potential buyers to require the installation of a permitted facility. Also, we would like to explore with you ways to educate current and potential homeowners of the prohibition against cesspool operation and appropriate methodologies to phase out their use in Gila County.

Southern Regional Office 400 West Congress Street • Suite 433 • Tucson, AZ 85701 (520) 628-6733

Printed on recycled paper

Jake Garrett April 2, 2008 Page 2

Please feel free to call me at (602) 771-2306 or David Lelsz at (602) 771-4447.

Sincerely,

John Card

Yoan Card, Director Water Quality Division