SITE INFORMATION

Report Type: Work Plan

General Site Info	ormation:									
Site:		Oxy Reverse C	Oxy Reverse C Valve Set 3 Release							
Company:		Solaris Water Midstream								
Section, Townsh	nip and Range	Unit P	Sec. 24	T 24S	R 29E					
Lease Number:		API No.								
County:		Eddy County	Eddy County							
GPS:			32.198580º N			103.93	0730º W			
Surface Owner:		Federal								
Mineral Owner:										
Directions:		approximately 9.9 Road for 0.25 mi	From the intersection of HWY 128 & Twin Wells Road, travel South on Twin Wells Road for approximately 9.9 miles, turn WEST onto McDonald Road for 4.8 mi, turn NORTH onto Gavalin Road for 0.25 mi to location on SOUTHEAST side of lease road							
Rolozso Data:										
Data Released:		12/7/2010								
Type Released.		Produced Water								
Source of Contar	nination:	Valve Set Station								
Fluid Released:		356 bbls								
Fluids Recovered	:	30 bbls								
Official Commun	nication:	•								
Name:	Rob Kirk				Clair Gonza	les				
Company:	Solaris Water Mids	tream, LLC			Tetra Tech					
Address:	907 Tradewinds Blv	٧d			901 W. Wa	I St.				
	Ste B			Ste 100						
City:	Midland Texas, 797	'06			Midland, Te	xas, 79701				
Phone number:	432-203-9020					(432) 687-8123				
Fax:										
Release Data:	Rob.Kirk@solaris	midstream.com			Clair.Gonz	ales@Tetra	atech.com			

Site Characterization	
Depth to Groundwater:	231.02'
Karst Potential:	Low

Recommended Remedial Action Levels (RRALs)							
Benzene	Total BTEX	TPH (GRO+DRO)	TPH (GRO+DRO+MRO)	Chlorides			
10 mg/kg	50 mg/kg	100 mg/kg	100 mg/kg	600 mg/kg			



April 1, 2020

Mr. Mike Bratcher District Supervisor Oil Conservation Division, District 2 811 S. First Street Artesia, New Mexico 88210

Re: Monitoring Work Plan for the Solaris Water Midstream, LLC, Oxy Reverse C Valve Set 3 Release, Unit P, O, N, M, Section 24, Township 24 South, Range 29 East, Eddy County, New Mexico.

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by Solaris Water Midstream, LLC (Solaris) to assess a release that occurred at a weld failure on a cross-manifold connecting multiple produced water lines, located in Unit P, Section 24, Township 24 South, Range 29 East, Eddy County, New Mexico (Site). The spill site coordinates are 32.198580°, -103.930730°. The site location is shown on Figures 1 and 2.

Background

According to the State of New Mexico C-141 Initial Report, the release was discovered on December 7, 2019, and released approximately 356 barrels of produced water due to a weld failure on a manifold. Thirty (30) barrels of the produced water was recovered. The release occurred at the valve set station and began flowing Southeast, following the North shoulder of Gavalin Road, then flowed across McDonald Road into a clearing and migrated into the draw. The impacted areas measuring approximately 2400' x 4'. The C-141 Form is included in Appendix A.

Site Characterization

A site characterization was performed for the site and no lakebeds, sinkholes, playa lakes, residences, schools, hospitals, institutions, churches, springs, private domestic water wells, springs, wetlands, incorporated municipal boundaries, subsurface mines, or floodplains are located within the specified distances. However, the site is in a low karst potential area and migrated into a draw. A watercourse is located within 300' of the site, according to the USGS topographic map.

The nearest water well is listed on the United States Geological Survey (USGS) national water information system, approximately 1.05 miles Northeast of the site, and has a reported depth to groundwater of 231.02' below surface. According to the Chevron Texaco Groundwater Trend map, the average depth to groundwater in the area is approximately 175' below surface. The site characterization data is shown in Appendix B.



Regulatory

A risk-based evaluation was performed for the Site in accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills and Releases, updated August 14, 2018. The guidelines require a risk-based evaluation of the site to determine recommended remedial action levels (RRAL) for benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in soil. The proposed RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/kg) and 50 ppm for total BTEX (sum of benzene, toluene, ethylbenzene, and xylene). Based upon the site characterization, the proposed RRAL for TPH is 100 mg/kg (GRO + DRO + MRO). Additionally, based on the site characterization, the proposed RRAL for chlorides is 600 mg/kg.

Soil Assessment and Analytical Results

Lease Road Area

On December 17, 2019, Tetra Tech personnel were onsite to evaluate and sample the release area. A total of seven (7) auger holes (AH-1 through AH-7) were installed in the lease road area of the release, to total depths ranging from surface to 4.5' below surface. Soil samples were collected and submitted to the laboratory for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B, and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The results of the sampling are summarized in Table 1. The sample locations are shown on Figure 3.

Referring to Table 1, none of the samples analyzed showed benzene, TPH, or total BTEX concentrations above the laboratory reporting limits. However, the area of AH-1 showed chloride concentrations above the RRAL from surface to 3.0'-3.5', ranging from 4,120 mg/kg to 9,440 mg/kg. The area of AH-2 showed chloride concentrations of 4,980 mg/kg at 0'-1' and 1,510 mg/kg at 1.0'-1.5' below surface. The area of AH-3 showed chloride concentrations of 615 mg/kg at 0-1'. The area of AH-5 showed a chloride concentration of 4,980 mg/kg from surface to 1.0' and then declined with depth to below the RRALs at 1.0'-1.5' below surface, then again showed an elevation at 1,250 mg/kg at 2.0'-2.5' below surface and 683 mg/kg at 3.0'-3.5' below surface. The area of AH-6 showed a chloride concentration of 902 mg/kg at 0'-1.0' and then declined with depth below the RRALs at 1.0'-1.5' below surface, reported as 2,970 mg/kg. The areas of AH-7 showed a chloride concentration above the RRAL at surface, reported as 2,970 mg/kg. The areas of AH-1, AH-6, and AH-7 were not vertically defined for chlorides; deeper samples were not collected due to the dense formation in the area.

<u>Draw Area</u>

A total of fourteen (14) auger holes were installed in the draw area (AH-8 through AH-21) to total depths ranging from surface to 3.5' below surface. A background auger hole was installed in order to evaluate the natural conditions of the soil. Selected soil samples were collected and submitted to the laboratory for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B, and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C and the results of the sampling are summarized in Table 1. The sample locations are shown on Figure 3.



Referring to Table 1, all the samples analyzed for benzene, total BTEX, and TPH were below the laboratory reporting limits. Also, the areas of auger holes (AH-8 through AH-21) all showed chloride concentrations above the RRAL, with concentrations ranging from 1,880 mg/kg to 8,220 mg/kg. None of the areas of the draw were vertically defined for chloride; deeper samples were not collected due to the dense formation of the draw.

Background

Referring to Table 1, the background samples showed chloride concentrations of 14.4 mg/kg, <5.03 mg/kg, 8.47 mg/kg for depths 0'-1.0', 1.0'-1.5', and 2.0'-2.5' below surface, respectively.

Remediation Plan

Based on the laboratory results, Solaris proposes to excavate the areas of AH-1, AH-2, AH-3, AH-5, AH-6, and AH-7, as shown on Figure 4 and highlighted (green) on Table 1. Due to the location of the release and the flow path, safety concerns and traffic hazards will be considered during the excavation of the areas of AH-1, AH-2, AH-3, AH-5, AH-6, and AH-7, the areas of these augers will be excavated to between 1.0' and 2.0' below surface along the northern shoulder of the lease road to alleviate risk. Five (5) point composite bottom hole and sidewall confirmation samples will be collected every 200 sq. ft to ensure proper removal of the impacted soils. All excavation activities will be completed based on laboratory data unless safety concerns inhibit safe removal of impacted soils.

The proposed excavation depths may not be reached due to wall cave-ins and safety concerns for onsite personnel. Also, impacted soil around oil and gas equipment, structures or lines may not be viable or practicable to be removed due to safely concerns for on-site personnel. Additionally, numerous underground pipelines are in the area. As such, Solaris will excavate the impacted soils to the maximum extent practicable.

Once the excavation is complete, the areas will be backfilled with clean material to surface grade. Solaris estimates approximately 535 cubic yards will be excavated, and the remediation to be implemented 90 days after the work plan is approved.

Revegetation

Solaris proposes to perform reseeding at the site once the remediation is completed. Reseeding will be performed in June 2020 to coincide with the rainy season in Southeastern New Mexico and aid in revegetation. Based on the soils at the site, the BLM Loamy (L) Sites Seed Mixture will be used and will be planted in the amount specified in the pounds pure live seed (PLS) per acre. The seed mixture will be spread by a drill equipped with a depth regulator or a handheld broadcaster and raked. If a handheld broadcaster is used for dispersal, the pounds PLS per acre will be doubled. The soil survey information and BLM seed mixture to be used is included in Appendix D.

Proposed Monitoring Work Plan

Solaris proposes to monitor the draw area (AH-8 through AH-21) every quarter in 2020 and after heavy rainfall events. The draw area has limited access to remediate or access to perform the necessary work in the release area in a safe manner due to wall cave-ins and safety concerns for onsite personnel. Also, impacted soil around structures or lines may not be viable or practicable to be removed due to safety concerns for on-site staff.



Conclusion

Solaris requests an onsite meeting with NMOCD and BLM staff to visualize and discuss the access and safety issues at the site.

Once the monitoring activities have been completed, a final report will be submitted. If you have any questions or comments concerning the assessment or remediation activities for this site, please call at (432) 682-4559.

Respectfully submitted, TETRA TECH

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Clair Gonzales, P.G. Project Manager

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Figures

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REVERSE









Property Located at coordinates 31.198580°, -103.930730° EDDY COUNTY, NEW MEXICO



Source: "New Mexico". 32°11'54.64"N, 103°55'53.33"W. Google Earth. February 2019 .November 14, 2019.

BURIED PIPELINE AFFECTED SPILL AREA



Received by OCD: 4/2/2020 1:19:32 PM

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Tables

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Table 1 Solaris Oxy Reverse C Release Eddy County, New Mexico

Sample ID	Sample	Sample	e BEB Sample	Soil Status TPH (mg/kg)			Benzene	enzene Toluene	Ethlybenzene Xylene	Total BTEX	Chloride				
Sample ID	Date	Depth (ft)	Depth (ft)	In-Situ	Removed	GRO	DRO	ORO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
AH-1	12/17/2019	0-1	-	Х		<50.0	<50.0	<50.0	<50.0	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	5730
	"	1-1.5	-	Х		<50.0	<50.0	<50.0	<50.0	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	9440
	"	2-2.5	-	Х		-	-	-	-	-	-	-	-	-	7950
	"	3-3.5	-	Х		-	-	-	-	-	-	-	-	-	4120
AH-2	12/17/2019	0-1	-	Х		<50.0	<50.0	<50.0	<50.0	<0.00200	<0.00200	<0.00200	< 0.00200	<0.00200	4980
	"	1-1.5	-	Х		<49.8	<49.8	<49.8	<49.8	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	1510
	"	2-2.5	-	Х		-	-	-	-	-	-	-	-	-	49.3
	"	3-3.5	-	Х		-	-	-	-	-	-	-	-	-	16.5
AH-3	12/17/2019	0-1	-	Х		<50.0	<50.0	<50.0	<50.0	<0.00202	<0.00202	<0.00202	< 0.00202	<0.00202	615
	"	1-1.5	-	Х		<49.9	<49.9	<49.9	<49.9	<0.00198	<0.00198	<0.00198	< 0.00198	<0.00198	371
	"	2-2.5	-	Х		-	-	-	-	-	-	-	-	-	123
AH-4	12/17/2019	0-1	-	Х		<49.8	<49.8	<49.8	<49.8	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	243
	"	1-1.5	-	Х		<50.0	<50.0	<50.0	<50.0	< 0.00199	<0.00199	<0.00199	< 0.00199	<0.00199	107
	"	2-2.5	-	Х		-	-	-	-	-	-	-	-	-	27.0
AH-5	12/17/2019	0-1	-	Х		<49.9	<49.9	<49.9	<49.9	< 0.00200	<0.00200	< 0.00200	< 0.00200	< 0.00200	4,980
	"	1-1.5	-	Х		<49.9	<49.9	<49.9	<49.9	< 0.00199	<0.00199	< 0.00199	< 0.00199	< 0.00199	308
	"	2-2.5	-	Х		-	-	-	-	-	-	-	-	-	1,250
	"	3-3.5	-	Х		-	-	-	-	-	-	-	-	-	683
	"	4-4.5	-	Х		-	-	-	-	-	-	-	-	-	32.8
AH-6	12/17/2019	0-1	-	Х		<50.0	<50.0	<50.0	<50.0	< 0.00200	< 0.00200	<0.00200	< 0.00200	< 0.00200	902
	"	1-1.5	-	Х		<49.9	<49.9	<49.9	<49.9	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	382
	"	2-2.5	-	Х		-	-	-	-	-	-	-	-	-	2,420
AH-7	12/17/2019	0-1	-	Х		<49.9	<49.9	<49.9	<49.9	<0.00201	<0.00201	<0.00201	< 0.00201	<0.00201	2,970
AH-8	12/17/2019	0-1	-	Х		<50.0	<50.0	<50.0	<50.0	<0.00202	<0.00202	<0.00202	< 0.00202	<0.00202	4.730
	"	1-1.5	-	Х		<49.8	<49.8	<49.8	<49.8	< 0.00201	<0.00201	<0.00201	< 0.00201	< 0.00201	7,820
	"	2-2.5	-	Х	-	-	-	-	-	-	-	-	-	-	5,930
AH-9	12/17/2019	0-1	-	Х		<50.0	<50.0	<50.0	<50.0	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	6,340
AH-10	12/17/2019	0-1	-	Х		<49.9	<49.9	<49.9	<49.9	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	8,220
AH-11	12/17/2019	0-1	-	X		<49.9	<49.9	<49.9	<49.9	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	3.420
	"	1-1.5	-	x		<50.0	<50.0	<50.0	<50.0	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	3.370
	I		I		l				.00.0	0.000_01	10100201			0.00201	-,

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Table 1 Solaris Oxy Reverse C Release Eddy County, New Mexico

Sample ID	Sample Sample	Sample	BEB	Soil	Status		TPH (mg/kg)		Benzene	Toluene	Ethlybenzene	Xylene	Total BTEX	Chloride
Sample D	Date	Depth (ft)	Depth (ft)	In-Situ	Removed	GRO	DRO	ORO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
AH-12	12/17/2019	0-0.5	-	Х		<49.9	<49.9	<49.9	<49.9	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	3,830
	"	0.5-1	-	Х		<49.9	<49.9	<49.9	<49.9	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	3,580
AH-13	12/17/2019	0-1	-	Х		<49.9	<49.9	<49.9	<49.9	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	3,130
	"	1-1.5	-	Х		<50.0	<50.0	<50.0	<50.0	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	6,600
AH-14	12/17/2019	0-1	-	Х		<50.0	<50.0	<50.0	<50.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	3,870
AH-15	12/17/2019	0-1	-	Х		<49.9	<49.9	<49.9	<49.9	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	2,780
AH-16	12/17/2019	0-1	-	Х		<50.0	<50.0	<50.0	<50.0	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	2,820
	"	1-1.5	-	Х		<50.0	<50.0	<50.0	<50.0	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	2,700
AH-17	12/17/2019	0-0.5	-	Х		<50.0	<50.0	<50.0	<50.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	3,390
AH-18	12/17/2019	0-1	-	Х		<49.9	<49.9	<49.9	<49.9	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	4,080
	"	1-1.5	-	Х		<49.9	<49.9	<49.9	<49.9	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	5,140
	"	2-2.5	-	Х		-	-	-	-	-	-	-	-	-	1,880
AH-19	12/17/2019	0-1	-	Х		<49.8	<49.8	<49.8	<49.8	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	3,920
	"	1-1.5	-	Х		<50.0	<50.0	<50.0	<50.0	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	3,790
	"	2-2.5	-	Х		-	-	-	-	-	-	-	-	-	5,530
AH-20	12/17/2019	0-1	-	Х		<49.9	<49.9	<49.9	<49.9	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	3,440
	"	1-1.5	-	Х		<49.8	<49.8	<49.8	<49.8	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	3,820
	"	2-2.5	-	Х		-	-	-	-	-	-	-	-	-	4,730
AH-21	12/17/2019	0-1	-	Х		<50.0	<50.0	<50.0	<50.0	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	3,450
	"	1-1.5	-	Х		<49.9	<49.9	<49.9	<49.9	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	5,490
	"	2-2.5	-	Х		-	-	-	-	-	-	-	-	-	4,390
	"	3-3.5	-	Х		-	-	-	-	-	-	-	-	-	8,180
Background	12/17/2019	0-1	-	Х		-	-	-	-	-	-	-	-	-	14.4
	"	1-1.5	-	Х		-	-	-	-	-	-	-	-	-	<5.03
	"	2-2.5	-	Х		-	-	-	-	-	-	-	-	-	8.47

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Not Analyzed

Proposed Excavation Depths

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Photos

Solaris Water Midstream, LLC Oxy Reverse C Valve 3 Release Eddy County, New Mexico



Dec 2019.

Area of AH-8- View Southeast



Overlook of canyon into direction of spill- View Northwest

NE



2019

Approximate location of end of spill per client- View Southeast



Looking down spill path- View Northwest



View upstream near AH-15 - View Southeast



View of BG-1 – View Southwest

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Appendix A

District I 1625 N. French Dr., Hobbs, NM 88240 District II 811 S. First St., Artesia, NM 88210 District III 1000 Rio Brazos Road, Aztec, NM 87410 District IV 1220 S. St. Francis Dr., Santa Fe, NM 87505 State of New Mexico Energy Minerals and Natural Resources Department

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Form C-141 Revised August 24, 2018 Submit to appropriate OCD District office

Incident ID	
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party Solaris Water Midstream, LLC	OGRID 371643				
Contact Name Rob Kirk	Contact Telephone O-432 -203 9020 C-469-978-5620				
Contact email rob.kirk@solarismidstream.com	Incident # (assigned by OCD)				
Contact mailing address 907 Tradewinds Blvd., Suite B, Midland, TX 79706					

Location of Release Source

Latitude _____32.19858_

Longitude ____-103.93073_ (NAD 83 in decimal degrees to 5 decimal places)

Site Name Oxy Reverse C Valve Set 3	Site Type Valve Set Station
Date Release Discovered 12/07/2019	API# (if applicable)

Unit Letter	Section	Township	Range	County
SESE	24	24 S	29 E	Eddy

Surface Owner: State Federal Tribal Private (Name: Solaris Water Midstream LLC)

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
Produced Water	Volume Released (bbls) 356	Volume Recovered (bbls) 30
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	Yes No
Condensate	Volume Released (bbls)	Volume Recovered (bbls)
Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

A weld failed on a cross-manifold connecting multiple Produced Water lines. The leak was stopped, and the pipe section was replaced. The released water flowed in a narrow channel near Rawhide Road and then McDonald Road following another narrow-bladed area. The areas impacted covers approximately 2,400 feet by 4 feet or an estimated 9,600 square feet. Release volume was determined by the square footage of the area impacted, the estimated flow rate at the weld failure, and the duration or the leak. The free-standing liquid was cleaned-up. Final residual remediation and reclamation will follow NMOCD recommended guidelines for leaks and spills.

Page 2

Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Was this a major release as defined by	If YES, for what reason(s) does the responsible party consider this a major release?				
19.15.29.7(A) NMAC?	The volume of Produced Water released.				
🖾 Yes 🗌 No					
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc.)?					
Notice given by submittal of this Form C-141 by Rob Kirk, General Manager, HSE and Compliance, Solaris Water Midstream as required by NMOCD.					

Initial Response

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

 \square The source of the release has been stopped.

The impacted area has been secured to protect human health and the environment.

Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.

All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have <u>not</u> been undertaken, explain why:

Initial observations indicate that released material absorbed into the soil in the area described. Some of the liquid and impacted recoverable material was captured at the time of the release.

Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name:Rob Kirk	Title: _General Manager, HSE and Compliance
Signature:	Date:12/08/2019
email: rob.kirk@solarismidstream.com	Telephone: 0-432-203-9020
OCD Only	
Received by:	Date:

Received by OCD: 4/2/2020 1:19:32 PM Form C-141 State of New Mexico

Oil Conservation Division

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Incident ID	
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	(ft bgs)
Did this release impact groundwater or surface water?	🗌 Yes 🗌 No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	🗌 Yes 🗌 No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	🗌 Yes 🗌 No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	🗌 Yes 🗌 No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	🗌 Yes 🗌 No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	🗌 Yes 🗌 No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	🗌 Yes 🗌 No
Are the lateral extents of the release within 300 feet of a wetland?	🗌 Yes 🗌 No
Are the lateral extents of the release overlying a subsurface mine?	🗌 Yes 🗌 No
Are the lateral extents of the release overlying an unstable area such as karst geology?	🗌 Yes 🗌 No
Are the lateral extents of the release within a 100-year floodplain?	🗌 Yes 🗌 No
Did the release impact areas not on an exploration, development, production, or storage site?	🗌 Yes 🗌 No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

Characterization Report Checklist: Each of the following items must be included in the report.

Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
Field data
Data table of soil contaminant concentration data
Depth to water determination
Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
Boring or excavation logs
Determination holds

Photographs including date and GIS information

Topographic/Aerial maps

Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

Page 3

Received by OCD: 4/2/2 Form C-141 Page 4	020 1:19:32 PM State of New M Oil Conservation	exico Division	Incident ID District RP Facility ID Application ID	Page 22 of 9
I hereby certify that the i regulations all operators public health or the envir failed to adequately inve- addition, OCD acceptance and/or regulations.	nformation given above is true and con are required to report and/or file certair onment. The acceptance of a C-141 re stigate and remediate contamination tha e of a C-141 report does not relieve the	nplete to the best of my knowledge release notifications and perform port by the OCD does not relieve at pose a threat to groundwater, su operator of responsibility for con	e and understand that pursuan corrective actions for release the operator of liability shoul rface water, human health or npliance with any other feder	nt to OCD rules and es which may endanger Id their operations have the environment. In ral, state, or local laws
Printed Name:Ro	RCArl	Title: General Manager, Date:04/02/202	, HSE & Compliance 20	
email: rob.kirk@solar	smidstream.com	Teleph	one: 432-203-9020	
OCD Only				
Received by:		Date:		

Received by OCD: 4/2/2020 1:19:32 PM Form C-141 State of New Mexico

Oil Conservation Division

<u>Remediation Plan Checklist</u>: Each of the following items must be included in the plan.

Incident ID	
District RP	
Facility ID	
Application ID	

Remediation Plan

Detailed description of proposed remediation technique Scaled sitemap with GPS coordinates showing delineation points Estimated volume of material to be remediated Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required) Deferral Requests Only: Each of the following items must be confirmed as part of any request for deferral of remediation. Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction. Extents of contamination must be fully delineated. Contamination does not cause an imminent risk to human health, the environment, or groundwater. I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. Printed Name: _ Title: Signature: RPhyl Date: _____ Telephone: _____ email: OCD Only Received by: Date: Approved Approved with Attached Conditions of Approval Denied Deferral Approved Signature: Date:

Page 5

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Appendix B

Water Well Data Average Depth to Groundwater (ft) Solaris Water Midstream, LLC - Oxy Reverse C Valve Set 3 Release Eddy County, New Mexico

29 East

23 South

	23 Sc	3 South 28 East			
6 16.5	5	4	3	2	1
7 2 6.5	8	9	10	11 30.5	12 20
18 63	17	16	15 14	14	13 <mark>12</mark> 33
19	20 56	21	22 39	23 <mark>22'</mark>	24 36
30	29 - 28.7	28	27	26	25 44
31	32	33	34	35	36

		24 South			28	Ea	st				
6	70	5	30	4	30	3		2	55	1	60
7		8	50	9		10		11		12	
						17		20		73	
18		17		16		15		14		13	
		42		29		18		52		34	
19		20		21		22		23		24	
		48									
30		29		28		27		26		25	
31		32		33		34		35		36	

	25 So	outh	28	East	
6	5	4 35	3 32	2	1
	59				Site
7	8	9	10	11	12
18	17	16	15 <mark>48</mark>	14	13
67			49		
19	20	21	22	23	24
	96				
30	29	28	27	26 40	25
	15	90			}
31	32	33	34	35	36
					40

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
10	65				
19	20	21	22	23	24
28					
30	29	28	27	26	25
35					
31	32	33	34	35	36

	24 So	outh	th 29 East		
6	5	4	3	2	1
7 160	8	9	10	11	12
18	17 4	16 <mark>18</mark>	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

	25 So	outh	29		
ہے 6	5	4	3	2	1
40					
7	8	9	10	11	12
			40		
18	17	16	15	14	13
			60		
19	20	21	22	23	24
30	29	28	27	26	25
30					
31	32 115	33	34	35	36

	23 S	outh	3	0 East	
6	5	4	3	2	1
110				250	
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34 440	35	36

	24 Se	outh	30 East							
6	5	4	3	2	1					
7	8 186	9	10	11	12					
18	17	16	15	14	13					
19 231	20	21	22	23	24					
150				400						
30	29	28	27	26	25					
31	32	33	34	35	36					

	25 So	outh	30		
6	5	4	3	2 295	1
7 264	8	9 295	10	11	12 390
18	17	16	15	14	13
19	20	21 265 268	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

88 New Mexico State Engineers Well Reports

- **105** USGS Well Reports
- 90 Geology and Groundwater Conditions in Southern Lea, County, NM (Report 6) Geology and Groundwater Resources of Eddy County, NM (Report 3)
- 34 NMOCD Groundwater Data
- 123 Tetra Tech installed temporary wells and field water level
- 143 NMOCD Groundwater map well location

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Save file of selected sites to local disk for future upload

USGS 321205103544701 24S.30E.19.42113

Eddy County, New Mexico
Latitude 32°12'05", Longitude 103°54'47" NAD27
Land-surface elevation 3,188 feet above NAVD88
The depth of the well is 452 feet below land surface.
This well is completed in the Rustler Formation (312RSLR) local aquifer.

Output formats								
Table of data								
Tab-separated data								
Graph of data								
Reselect period								

Date 🗘	Time ≎	♥ Water- level ≎ date-time accuracy	Water level, feet below land surface	Water level, feet above specific vertical datum	Referenced vertical \$ datum	Ø Water- level accuracy	Ø Status ≎	Pethod of measurement	Ø Measuring ≎ agency	Source of measurement	♥ Water- level ≎ approval status
1958-10-24		D	227.70			2		U		U	A
1959-03-19		D	227.75			2		U		U	А
1975-12-10		D	231.78			2		U		U	А
1976-01-16		D	237.26			2		U		U	А
1976-12-01		D	230.73			2		U		U	А
1977-01-14		D	230.62			2		U		U	А
1983-02-01		D	235.93			2		U		U	A
1987-10-15		D	233.30			2		S		U	A
1998-01-27		D	231.02			2		S		U	A

Explanation

Costion	~	Codo	~	Description
Section	Ŷ	Lode	Ŷ	Description





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Appendix C

for Tetra Tech- Midland

Project Manager: Rob Kirk

Solaris Oxy Reverse C

212C-MD-02030

23-DEC-19

Collected By: Client





1211 W. Florida Ave Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122): Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054) Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

> Xenco-Dallas (EPA Lab Code: TX01468): Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16) Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21) Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19) Xenco-Carlsbad (LELAP): Louisiana (05092) Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5) Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757) Xenco-Tampa: Florida (E87429), North Carolina (483)



23-DEC-19

Project Manager: **Rob Kirk Tetra Tech- Midland** 901 West Wall ST Midland, TX 79701

Reference: XENCO Report No(s): 647094 Solaris Oxy Reverse C Project Address: Eddy County, New Mexico

Rob Kirk:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 647094. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 647094 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Jession Vramer

Jessica Kramer Project Assistant

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994. Certified and approved by numerous States and Agencies. A Small Business and Minority Status Company that delivers SERVICE and QUALITY

Houston - Dallas - Midland - San Antonio - Phoenix - Oklahoma - Latin America





Sample Id BG-1 (0'-1') BG-1 (1'-1.5') BG-1 (2'-2.5')

Sample Cross Reference 647094



Tetra Tech- Midland, Midland, TX

Solaris Oxy Reverse C

Matrix	Date Collected	Sample Depth	Lab Sample Id
S	12-17-19 00:00		647094-001
S	12-17-19 00:00		647094-002
S	12-17-19 00:00		647094-003

.



CASE NARRATIVE

Client Name: Tetra Tech- Midland Project Name: Solaris Oxy Reverse C

Project ID: 212C-MD-02030 Work Order Number(s): 647094 Report Date: 23-DEC-19 Date Received: 12/19/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3111362 Inorganic Anions by EPA 300/300.1

Lab Sample ID 647094-002 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 647094-001, -002.

The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.



Project Id:

Project Location:

Contact:

212C-MD-02030

Eddy County, New Mexico

Rob Kirk

Certificate of Analysis Su	1247094 ummary
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Tetra Tech- Midland, Midland, TX Project Name: Solaris Oxy Reverse C



Date Received in Lab:Thu Dec-19-19 02:54 pmReport Date:23-DEC-19Project Manager:Jessica Kramer

Analysis Requested	Lab Id:	647094-00)1	647094-00)2	647094-00	03		
	Field Id:	BG-1 (0'-1)	BG-1 (1'-1.	5')	BG-1 (2'-2.	.5')		
	Depth:								
	Matrix:	SOIL		SOIL		SOIL			
	Sampled:	Dec-17-19 0	Dec-17-19 00:00		Dec-17-19 00:00		00:00		
Inorganic Anions by EPA 300/300.1	Extracted:	Dec-20-19 15:00		Dec-20-19 15:00		Dec-20-19 15:10			
	Analyzed:	Dec-20-19 19:21		Dec-20-19 17:50		Dec-20-19 15:44			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Chloride		14.4	5.02	<5.03	5.03	8.47	5.04		

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

fession kenner

Jessica Kramer Project Assistant

Final 1.000



Flagging Criteria



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- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- **B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- **D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F RPD exceeded lab control limits.
- J The target analyte was positively identified below the quantitation limit and above the detection limit.
- U Analyte was not detected.
- L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- **H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K Sample analyzed outside of recommended hold time.
- **JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- ** Surrogate recovered outside laboratory control limit.
- BRL Below Reporting Limit.
- RL Reporting Limit
- MDL Method Detection Limit SDL Sample Detection Limit LOD Limit of Detection
- PQL Practical Quantitation Limit MQL Method Quantitation Limit LOQ Limit of Quantitation
- DL Method Detection Limit
- NC Non-Calculable

SMP Clie	nt Sample	BLK	Method Blank	
BKS/LCS	Blank Spike/Laboratory Control Sample	BKSD/LCSD	Blank Spike Duplicate/Labo	ratory Control Sample Duplicate
MD/SD	Method Duplicate/Sample Duplicate	MS	Matrix Spike	MSD: Matrix Spike Duplicate

- + NELAC certification not offered for this compound.
- * (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation



BS / BSD Recoveries



Project Name: Solaris Oxy Reverse C

Work Order #: 647094							Pro	ject ID: 2	212C-MD-0)2030			
Analyst: CHE	Date Prepared: 12/20/2019					Date Analyzed: 12/20/2019							
Lab Batch ID: 3111362 Sample: 7692998-	-BKS	Batc	h #: 1					Matrix: S	Solid				
Units: mg/kg		BLAN	K /BLANK S	SPIKE / H	BLANK S	NK SPIKE DUPLICATE RECOVERY STUDY							
Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag		
Chloride	<0.858	250	252	101	250	253	101	0	90-110	20			
Analyst: CHE	D	ate Prepa	red: 12/20/201	19	Date Analyzed: 12/20/2019								
Lab Batch ID: 3111363 Sample: 7693002-2	-BKS	BKS Batch #: 1 Matrix: Solid											
Units: mg/kg		BLAN	K /BLANK S	SPIKE / H	BLANK S	K SPIKE DUPLICATE RECOVERY STUDY							
Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag		
Chloride	<5.00	250	264	106	250	264	106	0	90-110	20			

Relative Percent Difference RPD = $200^{*}|(C-F)/(C+F)|$ Blank Spike Recovery [D] = $100^{*}(C)/[B]$ Blank Spike Duplicate Recovery [G] = $100^{*}(F)/[E]$ All results are based on MDL and Validated for QC Purposes

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Form 3 - MS / MSD Recoveries



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Project Name: Solaris Oxy Reverse C

Work Order # :	647094						Project I	D: 212C-1	MD-0203	0		
Lab Batch ID:	3111362	QC- Sample ID:	647094	-001 S	Ba	tch #:	1 Matri	x: Soil				
Date Analyzed:	12/20/2019	Date Prepared:	12/20/2	2019	Ar	alyst: (CHE					
Reporting Units:	mg/kg		Ι	MATRIX SPIK	E / MAT	RIX SP	IKE DUPLICA	TE REC	OVERY	STUDY		
Inorga	nic Anions by EPA 300/300.1	Parent Sample Result	Spike Added	Spiked Sample Result [C]	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
	Analytes	[A]	[B]	[-]	[D]	[E]	[-]	[G]				
Chloride		14.4	301	282	89	301	315	100	11	90-110	20	X
Lab Batch ID:	3111362	QC- Sample ID:	647094	-002 S	Ba	tch #:	1 Matri	x: Soil				
Date Analyzed:	12/20/2019	Date Prepared:	12/20/2	2019	Ar	alyst: (CHE					
Reporting Units:	mg/kg		Ι	MATRIX SPIK	E / MAT	RIX SP	IKE DUPLICA	TE REC	OVERY	STUDY		
Inorga	nic Anions by EPA 300/300.1	Parent Sample Result	Spike Added	Spiked Sample Result [C]	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
		FA1	[D]	1.41	/	(73)	[-]	IC1		/ *		
	Analytes	[A]	[B]		[D]	[E]		[6]				
Chloride	Analytes	3.05	[B] 302	312	[D] 102	[E] 302	316	104	1	90-110	20	
Chloride Lab Batch ID:	Analytes 3111363	[A] 3.05 QC- Sample ID:	[B] 302 646744	312 I-005 S	[D] 102 Ba	[E] 302 atch #:	316 1 Matri	104 x: Soil	1	90-110	20	
Chloride Lab Batch ID: Date Analyzed:	Analytes 3111363 12/20/2019	QC- Sample ID: Date Prepared:	[B] 302 646744 12/20/2	312 -005 S 2019	[D] 102 Ba An	[E] 302 ntch #: nalyst: (316 1 Matri CHE	104 x: Soil	1	90-110	20	
Chloride Lab Batch ID: Date Analyzed: Reporting Units:	Analytes 3111363 12/20/2019 mg/kg	[A] 3.05 QC- Sample ID: Date Prepared:	[B] 302 646744 12/20/2	312 -005 S 2019 MATRIX SPIK	[D] 102 Ba An E / MAT	302 atch #: nalyst: CRIX SP	316 1 Matri CHE IKE DUPLICA	104 x: Soil	1 OVERY	90-110 STUDY	20	
Chloride Lab Batch ID: Date Analyzed: Reporting Units: Inorga	Analytes 3111363 12/20/2019 mg/kg nic Anions by EPA 300/300.1	[A] 3.05 QC- Sample ID: Date Prepared: Parent Sample Result	[B] 302 646744 12/20/2 N Spike Added	312 -005 S 2019 MATRIX SPIK Spiked Sample Result [C]	[D] 102 Ba An E / MAT Spiked Sample %R	[E] 302 ntch #: nalyst: (TRIX SP) Spike Added	316 1 Matri CHE IKE DUPLICA Duplicate Spiked Sample Result [F]	TE REC Spiked Dup. %R	1 OVERY RPD %	90-110 STUDY Control Limits %R	20 Control Limits %RPD	Flag
Chloride Lab Batch ID: Date Analyzed: Reporting Units: Inorga	Analytes 3111363 12/20/2019 mg/kg nic Anions by EPA 300/300.1 Analytes	[A] 3.05 QC- Sample ID: Date Prepared: Parent Sample Result [A]	[B] 302 646744 12/20/2 N Spike Added [B]	312 I-005 S 2019 MATRIX SPIK Spiked Sample Result [C]	[D] 102 Ba An E / MAT Spiked Sample %R [D]	[E] 302 ntch #: nalyst: (TRIX SP) Spike Added [E]	316 1 Matri CHE IKE DUPLICA Duplicate Spiked Sample Result [F]	TE REC Spiked Dup. %R [G]	1 OVERY RPD %	90-110 STUDY Control Limits %R	20 Control Limits %RPD	Flag

Matrix Spike Percent Recovery $[D] = 100^{*}(C-A)/B$ Relative Percent Difference $RPD = 200^{*}|(C-F)/(C+F)|$

.

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.



Form 3 - MS / MSD Recoveries



Project Name: Solaris Oxy Reverse C

Work Order # :	647094						Project I	D: 212C-	MD-0203	0		
Lab Batch ID:	3111363	QC- Sample ID:	647094	-003 S	Ba	tch #:	1 Matri	x: Soil				
Date Analyzed:	12/20/2019	Date Prepared:	12/20/2	2019	Ar	nalyst: (CHE					
Reporting Units:	mg/kg		Ν	MATRIX SPIK	E / MAI	RIX SPI	IKE DUPLICA	TE REC	OVERY	STUDY		
Inorgan	nic Anions by EPA 300/300.1	Parent Sample Result	Spike	Spiked Sample Result	Spiked Sample	Spike	Duplicate Spiked Sample Result [E]	Spiked Dup. % P	RPD	Control Limits	Control Limits	Flag
	[A]	[B]	[0]	[D]	[E]	Kesut [F]	[G]	/0	701			
Chloride	Chloride			260	100	252	254	97	2	90-110	20	

Matrix Spike Percent Recovery $[D] = 100^{*}(C-A)/B$ Relative Percent Difference $RPD = 200^{*}|(C-F)/(C+F)|$ Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Received by OCD: 4/2/2020 1:19:32 PM

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Page 39 of 90

	Relinquished by:		Malins	Relinguished by:				ВО	BO	BO	(LAB USE)	LAB #	-		Receiving Laborator	Invoice to:	Project Location: (county, state)	Project Name:	Client Name:		Analysis Requ
	Date: Time:	Date: Tillie.	12,19,2019 14.54	Date: Time				3-1 (2'-2.5')	à-1 (1'-1.5)	3-1 (0'-1')		SAMPLE IDENTIFICATION		up on straigle labruport.	y: Xenco	Tetra Tech, Inc.	Eddy County, New Mexico	Oxy Reverse C	Solaris	Tetra Tech, Inc.	est of Chain of Custody Record
ORIGINAL COI	Received by:	heceived by:	Y IQI	Beceived hv:				12.17.2021	12.17.2020	12.17.2019	DATE	YEAR:	SAMPLING		Sampler Signature:		Project #:		Site Manager:		
γc	Date:	. Date:	10/1a/14					×	×	×	WATEI SOIL HCL	R	MATRIX		Brittany Lo		212C-MD-	-	Rob Kirk	4000 N. Big Spri 401 Midland,T Tel (432) 6 Fax (432) 6	
	Time:	I ime:	1934	T				X 1	X 1	X 1	HNO ₃ ICE # CONT	AINE			gno	-	-02030			ing Street, Ste Texas 79705 382-3946	
(Circle) HAND DELIVERED		Sample Temperature	ONLY					2	Z	Z	FILTERI BTEX 80 TPH TX TPH 80 ⁻ PAH 82 ⁻ Total Me TCLP Me TCLP Vo TCLP Se	ED () 021B 1005 15M (70C tals A etals olatile	(/N) BTI (Ext to GRO Ag As E Ag As s olatiles	EX 8260 o C35) - DRO - Ba Cd Cr Ba Cd Ci	B ORO - Pb Se r Pb Se	MRO) Hg Hg			ANA		1041
FEDEX UPS Tracking #:	Special Report Limits or TRRP	JRUSH: Same Day 24 nr 4						X	×	×	RCI GC/MS \ GC/MS S PCB's 8 NORM PLM (Asl Chloride General	/ol. 8 Semi. 082 / besto Si Wate	3260B Vol. 8 608 s) ulfate er Che	/ 624 3270C/62 TDS mistry (s	5 ee atta	ached I	ist)	>pecity internod No.)			JAM Page _
	Report	¹⁸ nr /2 nr) - - -								Anion/Ca Hold	ation	Balan	ce							1 of 1

Final 1.000

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Received by OCD: 4/2/2020 1:19:32 PM



XENCO Laboratories



Prelogin/Nonconformance Report- Sample Log-In

Client: Tetra Tech- Midland Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient Date/ Time Received: 12/19/2019 02:54:00 PM Temperature Measuring device used : R8 Work Order #: 647094 Comments Sample Receipt Checklist .6 #1 *Temperature of cooler(s)? #2 *Shipping container in good condition? Yes #3 *Samples received on ice? Yes #4 *Custody Seals intact on shipping container/ cooler? N/A #5 Custody Seals intact on sample bottles? N/A #6*Custody Seals Signed and dated? N/A #7 *Chain of Custody present? Yes #8 Any missing/extra samples? No #9 Chain of Custody signed when relinquished/ received? Yes #10 Chain of Custody agrees with sample labels/matrix? Yes #11 Container label(s) legible and intact? Yes #12 Samples in proper container/ bottle? Yes #13 Samples properly preserved? Yes #14 Sample container(s) intact? Yes #15 Sufficient sample amount for indicated test(s)? Yes

#16 All samples received within hold time? #17 Subcontract of sample(s)?

#18 Water VOC samples have zero headspace?

* Must be completed for after-hours delivery of samples prior to placing in the refrigerator

Analyst:

PH Device/Lot#:

Checklist completed by: Bull Brianna Teel

Date: 12/19/2019

Yes

N/A

N/A

Checklist reviewed by:

Jession VRAMER

Jessica Kramer

Date: 12/19/2019

for Tetra Tech- Midland

Project Manager: Rob Kirk

Solaris Oxy Reverse C

212C-MD-02030

27-DEC-19

Collected By: Client





1211 W. Florida Ave Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122): Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054) Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

> Xenco-Dallas (EPA Lab Code: TX01468): Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16) Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21) Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19) Xenco-Carlsbad (LELAP): Louisiana (05092) Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5) Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757) Xenco-Tampa: Florida (E87429), North Carolina (483)



27-DEC-19

Project Manager: **Rob Kirk Tetra Tech- Midland** 901 West Wall ST Midland, TX 79701

Reference: XENCO Report No(s): 647093 Solaris Oxy Reverse C Project Address: Eddy County, New Mexico

Rob Kirk:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 647093. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 647093 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Jessica Vramer

Jessica Kramer Project Assistant

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994. Certified and approved by numerous States and Agencies. A Small Business and Minority Status Company that delivers SERVICE and QUALITY

Houston - Dallas - Midland - San Antonio - Phoenix - Oklahoma - Latin America



Sample Id

AH-1 (0'-1')
AH-1 (1'-1.5')
AH-1 (2'-2.5')
AH-1 (3'-3.5')
AH-2 (0'-1')
AH-2 (1'-1.5')
AH-2 (2'-2.5')
AH-2 (3'-3.5')
AH-3 (0'-1')
AH-3 (1'-1.5')
AH-3 (2'-2.5')
AH-4 (0'-1')
AH-4 (1'-1.5')
AH-4 (2'-2.5')
AH-5 (0'-1')
AH-5 (1'-1.5')
AH-5 (2'-2.5')
AH-5 (3'-3.5')
AH-5 (4'-4.5')
AH-6 (0'-1')
AH-6 (1'-1.5')
AH-6(2'-2.5')
AH-7 (0'-1')
AH-8 (0'-1')
AH-8 (1'-1.5')
AH-8 (2'-2.5')
AH-9 (0'-1')
AH-10 (0'-1')
AH-11 (0'-1')
AH-11 (1'-1.5')
AH-12 (0"-6")
AH-12 (6"-1')
AH-13 (0'-1')
AH-13 (1'-1.5')
AH-14 (0'-1')
AH-15 (0'-1')
AH-16 (0'-1')
AH-16 (1'-1.5')
AH-17 (0"-6")
AH-18 (0'-1')
AH-18 (1'-1.5')
AH-18 (2'-2.5')
AH-19 (0'-1')

Sample Cross Reference 647093



Solaris Oxy Reverse C

Matrix	Date Collected	Sample Depth	Lab Sample Id
S	12-17-19 00:00		647093-001
S	12-17-19 00:00		647093-002
S	12-17-19 00:00		647093-003
S	12-17-19 00:00		647093-004
S	12-17-19 00:00		647093-005
S	12-17-19 00:00		647093-006
S	12-17-19 00:00		647093-007
S	12-17-19 00:00		647093-008
S	12-17-19 00:00		647093-009
S	12-17-19 00:00		647093-010
S	12-17-19 00:00		647093-011
S	12-17-19 00:00		647093-012
S	12-17-19 00:00		647093-013
S	12-17-19 00:00		647093-014
S	12-17-19 00:00		647093-015
S	12-17-19 00:00		647093-016
S	12-17-19 00:00		647093-017
S	12-17-19 00:00		647093-018
S	12-17-19 00:00		647093-019
S	12-17-19 00:00		647093-020
S	12-17-19 00:00		647093-021
S	12-17-19 00:00		647093-022
S	12-17-19 00:00		647093-023
S	12-17-19 00:00		647093-024
S	12-17-19 00:00		647093-025
S	12-17-19 00:00		647093-026
S	12-17-19 00:00		647093-027
S	12-17-19 00:00		647093-028
S	12-17-19 00:00		647093-029
S	12-17-19 00:00		647093-030
S	12-17-19 00:00		647093-031
S	12-17-19 00:00		647093-032
S	12-17-19 00:00		647093-033
S	12-17-19 00:00		647093-034
S	12-17-19 00:00		647093-035
S	12-17-19 00:00		647093-036
S	12-17-19 00:00		647093-037
S	12-17-19 00:00		647093-038
S	12-17-19 00:00		647093-039
S	12-17-19 00:00		647093-040
S	12-17-19 00:00		647093-041
S	12-17-19 00:00		647093-042
S	12-17-19 00:00		647093-043

Version: 1.%

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AH-19 (1'-1.5')	
AH-19 (2'-2.5')	
AH-20 (0'-1')	
AH-20 (1'-1.5')	
AH-20 (2'-2.5')	
AH-21 (0'-1')	
AH-21 (1'-1.5')	
AH-21 (2'-2.5')	
AH-21 (3'-3.5')	

Sample Cross Reference 647093



Tetra Tech- Midland, Midland, TX

Solaris Oxy Reverse C

S	12-17-19 00:00	647093-044
S	12-17-19 00:00	647093-045
S	12-17-19 00:00	647093-046
S	12-17-19 00:00	647093-047
S	12-17-19 00:00	647093-048
S	12-17-19 00:00	647093-049
S	12-17-19 00:00	647093-050
S	12-17-19 00:00	647093-051
S	12-17-19 00:00	647093-052

.



CASE NARRATIVE

Client Name: Tetra Tech- Midland Project Name: Solaris Oxy Reverse C

Project ID: 212C-MD-02030 Work Order Number(s): 647093 Report Date: 27-DEC-19 Date Received: 12/19/2019

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3111361 Inorganic Anions by EPA 300/300.1

Lab Sample ID 647062-004 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference.

The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3111362 Inorganic Anions by EPA 300/300.1

Lab Sample ID 647094-002 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference. The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3111368 Inorganic Anions by EPA 300/300.1

Lab Sample ID 647093-020 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 647093-012, -013, -014, -015, -016, -017, -018, -019, -020, -021, -022, -023, -024, -025, -026, -027, -028.

The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3111753 BTEX by EPA 8021B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030. Lab Sample ID 647093-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). m,p-Xylenes recovered below QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 647093-001, -002, -005, -006, -009, -010, -012, -013, -015, -016, -020, -021, -023, -024, -025, -027, -028, -029, -030, -031.

The Laboratory Control Sample for m,p-Xylenes is within laboratory Control Limits, therefore the data was accepted.



CASE NARRATIVE

Client Name: Tetra Tech- Midland Project Name: Solaris Oxy Reverse C

Project ID: 212C-MD-02030 Work Order Number(s): 647093
 Report Date:
 27-DEC-19

 Date Received:
 12/19/2019

Batch: LBA-3111790 BTEX by EPA 8021B Soil samples were not received in Terracore kits and therefore were prepared by method 5030.



Certificate of Analysis Summary 647093

Tetra Tech- Midland, Midland, TX Project Name: Solaris Oxy Reverse C



Project Id:212C-MD-02030Contact:Rob KirkProject Location:Eddy County, New Mexico

Date Received in Lab:Thu Dec-19-19 02:54 pmReport Date:27-DEC-19Project Manager:Jessica Kramer

	Lab Id:	647093-0	001	647093-0	002	647093-0	003	647093-0	04	647093-0	005	647093-	006
Anglucia Deguested	Field Id:	AH-1 (0'-	-1')	AH-1 (1'-	1.5')	AH-1 (2'-2	2.5')	AH-1 (3'-3	3.5')	AH-2 (0'	-1')	AH-2 (1'-	1.5')
Analysis Kequesiea	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL	,	SOIL	
	Sampled:	Dec-17-19	00:00	Dec-17-19	Dec-17-19 00:00		Dec-17-19 00:00		00:00	Dec-17-19 00:00		Dec-17-19	00:00
BTEX by EPA 8021B	Extracted:	Dec-24-19	14:45	Dec-24-19	14:45					Dec-24-19	14:45	Dec-24-19	14:45
	Analyzed:	Dec-25-19	20:20	Dec-25-19	20:40					Dec-25-19	21:00	Dec-25-19	21:21
	Units/RL:	mg/kg	RL	mg/kg	RL					mg/kg	RL	mg/kg	RL
Benzene		< 0.00198	0.00198	< 0.00202	0.00202					< 0.00200	0.00200	< 0.00201	0.00201
Toluene		< 0.00198	0.00198	< 0.00202	0.00202					< 0.00200	0.00200	< 0.00201	0.00201
Ethylbenzene		< 0.00198	0.00198	< 0.00202	0.00202					< 0.00200	0.00200	< 0.00201	0.00201
m,p-Xylenes		< 0.00396	0.00396	< 0.00403	0.00403					< 0.00401	0.00401	< 0.00402	0.00402
o-Xylene		< 0.00198	0.00198	< 0.00202	0.00202					< 0.00200	0.00200	< 0.00201	0.00201
Total Xylenes		< 0.00198	0.00198	< 0.00202	0.00202					< 0.00200	0.00200	< 0.00201	0.00201
Total BTEX		< 0.00198	0.00198	< 0.00202	0.00202					< 0.00200	0.00200	< 0.00201	0.00201
Inorganic Anions by EPA 300/300.1	Extracted:	Dec-20-19	11:15	Dec-20-19	11:15	Dec-20-19	11:15	Dec-20-19	1:15	Dec-20-19	11:15	Dec-20-19	11:15
	Analyzed:	Dec-20-19	15:06	Dec-20-19	15:12	Dec-20-19	15:39	Dec-20-19	5:46	Dec-20-19	16:05	Dec-20-19	16:12
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		5730	49.6	9440	50.4	7950	49.5	4120	25.1	4980	25.0	1510	25.2
TPH By SW8015 Mod	Extracted:	Dec-20-19	10:00	Dec-20-19	10:00					Dec-20-19	10:00	Dec-20-19	10:00
	Analyzed:	Dec-20-19	12:57	Dec-20-19	14:00					Dec-20-19	14:21	Dec-20-19	14:42
	Units/RL:	mg/kg	RL	mg/kg	RL					mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<50.0	50.0	<50.0	50.0					<50.0	50.0	<49.8	49.8
Diesel Range Organics (DRO)		<50.0	50.0	<50.0	50.0					<50.0	50.0	<49.8	49.8
Motor Oil Range Hydrocarbons (MRO)		<50.0	<50.0 50.0		50.0					<50.0	50.0	<49.8	49.8
Total TPH		<50.0	<50.0 50.0		50.0					<50.0	50.0	<49.8	49.8

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Version: 1.%

fession kramer

Jessica Kramer Project Assistant

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212C-MD-02030

Eddy County, New Mexico

Rob Kirk

Project Id:

Project Location:

Contact:

Certificate of Analysis Summary 647093

Tetra Tech- Midland, Midland, TX Project Name: Solaris Oxy Reverse C



Date Received in Lab:Thu Dec-19-19 02:54 pmReport Date:27-DEC-19Project Manager:Jessica Kramer

	Lab Id:	647093-0	007	647093-0	08	647093-0	09	647093-0	010	647093-0	11	647093-0	012
Analysis Paguastad	Field Id:	AH-2 (2'-2	2.5')	AH-2 (3'-3	3.5')	AH-3 (0'-	·1')	AH-3 (1'-	1.5')	AH-3 (2'-2	2.5')	AH-4 (0'	-1')
Analysis Kequestea	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	,
	Sampled:	Dec-17-19	00:00	Dec-17-19 (00:00	Dec-17-19 00:00		Dec-17-19 00:00		Dec-17-19 00:00		Dec-17-19	00:00
BTEX by EPA 8021B	Extracted:					Dec-24-19 14:45		Dec-24-19 14:45				Dec-24-19	14:45
	Analyzed:					Dec-25-192	21:41	Dec-25-19	22:02			Dec-25-19	22:22
	Units/RL:					mg/kg	RL	mg/kg	RL			mg/kg	RL
Benzene						< 0.00202	0.00202	< 0.00198	0.00198			< 0.00201	0.00201
Toluene						< 0.00202	0.00202	< 0.00198	0.00198			< 0.00201	0.00201
Ethylbenzene						< 0.00202	0.00202	< 0.00198	0.00198			< 0.00201	0.00201
m,p-Xylenes						< 0.00403	0.00403	< 0.00396	0.00396			< 0.00402	0.00402
o-Xylene						< 0.00202	0.00202	< 0.00198	0.00198			< 0.00201	0.00201
Total Xylenes						< 0.00202	0.00202	< 0.00198	0.00198			< 0.00201	0.00201
Total BTEX						< 0.00202	0.00202	< 0.00198	0.00198			< 0.00201	0.00201
Inorganic Anions by EPA 300/300.1	Extracted:	Dec-20-19	11:15	Dec-20-19 1	1:15	Dec-20-19	11:15	Dec-20-19	11:15	Dec-20-19	1:15	Dec-20-19	12:15
	Analyzed:	Dec-20-19	16:18	Dec-20-19 1	6:25	Dec-20-19	16:32	Dec-20-19	16:38	Dec-20-19	16:45	Dec-20-19	12:37
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		49.3	5.02	16.5	5.03	615	4.99	371	5.04	123	5.00	243	4.95
TPH By SW8015 Mod	Extracted:					Dec-20-19	10:00	Dec-20-19	10:00			Dec-20-19	10:00
	Analyzed:					Dec-20-19	15:03	Dec-20-19	15:24			Dec-20-19	15:45
	Units/RL:					mg/kg	RL	mg/kg	RL			mg/kg	RL
Gasoline Range Hydrocarbons (GRO)						<50.0	50.0	<49.9	49.9			<49.8	49.8
Diesel Range Organics (DRO)						<50.0	50.0	<49.9	49.9			<49.8	49.8
Motor Oil Range Hydrocarbons (MRO)						<50.0	50.0	<49.9	49.9			<49.8	49.8
Total TPH						<50.0	50.0	<49.9	49.9			<49.8	49.8

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Version: 1.%

fession kramer

Jessica Kramer Project Assistant



Certificate of Analysis Summary 647093

Tetra Tech- Midland, Midland, TX Project Name: Solaris Oxy Reverse C



Project Id:212C-MD-02030Contact:Rob KirkProject Location:Eddy County, New Mexico

Date Received in Lab:Thu Dec-19-19 02:54 pmReport Date:27-DEC-19Project Manager:Jessica Kramer

	Lab Id:	647093-0	013	647093-0)14	647093-0)15	647093-	016	647093-0)17	647093-	018
Anglusis Deguested	Field Id:	AH-4 (1'-1	1.5')	AH-4 (2'-2	2.5')	AH-5 (0'-	-1')	AH-5 (1'-	1.5')	AH-5 (2'-2	2.5')	AH-5 (3'-	3.5')
Analysis Kequesiea	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL	,	SOIL		SOIL	,
	Sampled:	Dec-17-19	00:00	Dec-17-19 (00:00	Dec-17-19 00:00		Dec-17-19 00:00		Dec-17-19	00:00	Dec-17-19	00:00
BTEX by EPA 8021B	Extracted:	Dec-24-19	14:45			Dec-24-19	14:45	Dec-24-19	14:45				
	Analyzed:	Dec-25-19	22:43			Dec-25-192	23:03	Dec-25-19	23:23				
	Units/RL:	mg/kg	RL			mg/kg	RL	mg/kg	RL				
Benzene		< 0.00199	0.00199			< 0.00200	0.00200	< 0.00199	0.00199				
Toluene		< 0.00199	0.00199			< 0.00200	0.00200	< 0.00199	0.00199				
Ethylbenzene		< 0.00199	0.00199			< 0.00200	0.00200	< 0.00199	0.00199				
m,p-Xylenes		< 0.00398	0.00398			< 0.00399	0.00399	< 0.00398	0.00398				
o-Xylene		< 0.00199	0.00199			< 0.00200	0.00200	< 0.00199	0.00199				
Total Xylenes		< 0.00199	0.00199			< 0.00200	0.00200	< 0.00199	0.00199				
Total BTEX		< 0.00199	0.00199			< 0.00200	0.00200	< 0.00199	0.00199				
Inorganic Anions by EPA 300/300.1	Extracted:	Dec-20-19	12:15	Dec-20-19 1	12:15	Dec-20-19	12:15	Dec-20-19	12:15	Dec-20-19	12:15	Dec-20-19	12:15
	Analyzed:	Dec-20-19	13:03	Dec-20-19 1	13:08	Dec-20-19	13:24	Dec-20-19	13:29	Dec-20-19	13:34	Dec-20-19	13:39
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		107	5.03	27.0	5.02	4980	25.2	308	4.98	1250	4.96	683	4.96
TPH By SW8015 Mod	Extracted:	Dec-20-19	10:00			Dec-20-19	10:00	Dec-20-19	10:00				
	Analyzed:	Dec-20-19	16:06			Dec-20-19	16:27	Dec-20-19	16:48				
	Units/RL:	mg/kg	RL			mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		<50.0	50.0			<49.9	49.9	<49.9	49.9				
Diesel Range Organics (DRO)		<50.0	50.0			<49.9	49.9	<49.9	49.9				
Motor Oil Range Hydrocarbons (MRO)		<50.0	50.0			<49.9	49.9	<49.9	49.9				
Total TPH		<50.0	50.0			<49.9	49.9	<49.9	49.9				

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fession kramer

Jessica Kramer Project Assistant

Page 9 of 50



212C-MD-02030

Eddy County, New Mexico

Rob Kirk

Project Id:

Project Location:

Contact:

Certificate of Analysis Summary 647093

Tetra Tech- Midland, Midland, TX Project Name: Solaris Oxy Reverse C



Date Received in Lab:Thu Dec-19-19 02:54 pmReport Date:27-DEC-19Project Manager:Jessica Kramer

Lab Id:	647093-0)19	647093-0	20	647093-0	021	647093-0	022	647093-0	023	647093-	024
Field Id:	AH-5 (4'-4	4.5')	AH-6 (0'-	1')	AH-6 (1'-	1.5')	AH-6(2'-2	2.5')	AH-7 (0'	'-1')	AH-8 (0	'-1')
Depth:												
Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
Sampled:	Dec-17-19	00:00	Dec-17-19 00:00		Dec-17-19 00:00		Dec-17-19	00:00	Dec-17-19 00:00		Dec-17-19	00:00
Extracted:			Dec-24-19 1	Dec-24-19 14:45		Dec-24-19 14:45			Dec-24-19 14:4:		Dec-24-19	14:45
Analyzed:			Dec-26-19 0	01:02	Dec-26-19	01:22			Dec-26-19	01:43	Dec-26-19	02:03
Units/RL:			mg/kg	RL	mg/kg	RL			mg/kg	RL	mg/kg	RL
			< 0.00200	0.00200	< 0.00201	0.00201			< 0.00201	0.00201	< 0.00202	0.00202
			< 0.00200	0.00200	< 0.00201	0.00201			< 0.00201	0.00201	< 0.00202	0.00202
			< 0.00200	0.00200	< 0.00201	0.00201			< 0.00201	0.00201	< 0.00202	0.00202
			< 0.00399	0.00399	< 0.00402	0.00402			< 0.00402	0.00402	< 0.00403	0.00403
			< 0.00200	0.00200	< 0.00201	0.00201			< 0.00201	0.00201	< 0.00202	0.00202
			< 0.00200	0.00200	< 0.00201	0.00201			< 0.00201	0.00201	< 0.00202	0.00202
			< 0.00200	0.00200	< 0.00201	0.00201			< 0.00201	0.00201	< 0.00202	0.00202
Extracted:	Dec-20-19	12:15	Dec-20-19 1	2:15	Dec-20-19	12:15	Dec-20-19	12:15	Dec-20-19	12:15	Dec-20-19	12:15
Analyzed:	Dec-20-19	13:44	Dec-20-19 1	3:56	Dec-20-19	14:12	Dec-20-19	14:17	Dec-20-19	14:33	Dec-20-19	14:38
Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
	32.8	5.01	902	5.00	382	5.04	2420	25.2	2970	25.2	4730	25.3
Extracted:			Dec-20-19 1	0:00	Dec-20-19	10:00			Dec-20-19	10:00	Dec-20-19	10:00
Analyzed:			Dec-20-19 1	7:30	Dec-20-19	17:52			Dec-20-19	18:13	Dec-20-19	18:34
Units/RL:			mg/kg	RL	mg/kg	RL			mg/kg	RL	mg/kg	RL
			<50.0	50.0	<49.9	49.9			<49.9	49.9	<50.0	50.0
			<50.0	50.0	<49.9	49.9			<49.9	49.9	<50.0	50.0
			<50.0	50.0	<49.9	49.9			<49.9	49.9	<50.0	50.0
			<50.0	50.0	<49.9	49.9			<49.9	49.9	<50.0	50.0
	Lab Id: Field Id: Depth: Matrix: Sampled: Extracted: Analyzed: Units/RL: Extracted: Analyzed: Units/RL: Extracted: Analyzed: Units/RL:	Lab Id:647093-0Field Id:AH-5 (4'-a)Depth:0Matrix:SOILSampled:Dec-17-19 (10)Extracted:0Analyzed:0Units/RL:0Extracted:0Dec-20-190Units/RL:0Units/RL:0Stracted:0Analyzed:0Units/RL:0Units	Lab Id: 647093-019 Field Id: AH-5 (4'-4.5') Depth: SOIL Matrix: SOIL Sampled: Dec-17-19 00:00 Extracted: Dec-17-19 00:00 Extracted: Units/RL: Units/RL: Dec-20-19 00:00 Extracted: Dec-20-19 00:00 Extracted: Dec-20-19 12:15 Analyzed: Dec-20-19 12:15 Matis/RL: Marking RL 32.8 5.01 Extracted: Analyzed: Units/RL: Units/RL Units/RL: Units/RL	Lab Id: 647093-019 647093-0 Field Id: AH-5 (4'-4.5') AH-6 (0'- Depth: SOIL SOIL Matrix: SOIL BC SOIL Sampled: Dec-17-19 00:00 Dec-17-19 0 Extracted: Dec-24-19 1 Analyzed: Dec-26-19 0 Units/RL: mg/kg <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 Dec-20-19 12:15 Dec-20-19 1 Analyzed: Dec-20-19 1 Dec-20-19 1 Units/RL: mg/kg Dec-20-19 1 Analyzed: Dec-20-19 1 Dec-20-19 1 Analy	Lab Id: 647093-019 647093-020 Field Id: AH-5 (4'-4.5') AH-6 (0'-1') Depth: SOIL SOIL Matrix: SOIL Dec-17-19 00:00 Extracted: Dec-17-19 00:00 Dec-24-19 14:45 Analyzed: Dec-26-19 01:02 mg/kg Units/RL: <0.00200 0.00200 Voits/RL: <0.00200 0.00200 Voits/RL: <0.00200 0.00200 Extracted: <0.00200 0.00200 Voits/RL: <0.00200 0.00200 Analyzed: <0.00200 0.00200 Voits/RL: Dec-20-19 12:15 Dec-20-19 12:15 Analyzed: Dec-20-19 12:15 Dec-20-19 13:56 Units/RL: mg/kg RL mg/kg RL 32.8 5.01 902 5.00 Analyzed: Dec-20-19 17:30 Dec-20-19 17:30 Units/RL: mg/kg RL <50.0 50.0 Analyzed: < <50.0 50.0 Dec	Lab Id: 647093-019 647093-020 647093-020 Field Id: AH-5 (4'-4.5') AH-6 (0'-1') AH-6 (1'- Depth: AH-5 (4'-4.5') AH-6 (0'-1') AH-6 (1'- Matrix: SOIL SOIL SOIL SOIL Sampled: Dec-17-19 00:00 Dec-17-19 00:00 Dec-17-19 Extracted: Dec-17-19 00:00 Dec-24-19 14:45 Dec-24-19 Analyzed: Dec-26-19 01:02 Dec-20-19 01:02 <th>Lab Id: 647093-019 647093-020 647093-021 Field Id: AH-5 (4'-4.5') AH-6 (0'-1') AH-6 (1'-1.5') Depth: SOIL SOIL SOIL SOIL Sampled: Dec-17-19 00:00 Dec-17-19 00:00 Dec-24-19 14:45 Dec-24-19 14:45 Analyzed: Dec-26-19 01:02 Dec-26-19 01:02 Dec-26-19 01:02 0.00201 0.00201 Units/RL: mg/kg RL mg/kg RL mg/kg RL Outcould (0.00200 0.00200 0.00200 0.00201 0.00201 0.00201 Extracted: Dec-20-19 12:15 Dec-20-19 12:15 Dec-20-19 12:15 Dec-20-19 12:15 Malyzed: Dec-20-19 13:44 Dec-20-19 13:56 Dec-20-19 14:12 Dec-20-19 14:12 Malyzed: Dec-20-19 13:44 Dec-20-19 17:30 Dec-20-19 10:00 Dec-20-19 10:00 Analyzed: Dec-20-19 17:30 Dec-20-19 10:00 Dec-20-19 10:00 Dec-20-19 10:00 Dec-20-19 17:52 Malyzed: Dec-20-19 17:30 Dec-20-19 17:30 Dec-20-19 17:52 Dec-20-19 17:52 Malyzed: Dec-20-19 17:30 Dec-20-19 17:50 Dec-20-1</th> <th>Lab Id: 647093-019 647093-020 647093-021 647093-021 Field Id: AH-5 (4'-4.5') AH-6 (0'-1') AH-6 (1'-1.5') AH-6(2'-2 Depth: Matrix: SOIL SOIL SOIL SOIL SOIL Sampled: Dec-17-19 00:00 Dec-17-19 00:00 Dec-17-19 00:00 Dec-17-19 00:00 Dec-17-19 00:00 Extracted: Dec-24-19 14:45 Dec-26-19 01:02 Dec-26-19 01:22 Dec-26-19 01:22 Units/RL: mg/kg RL mg/kg RL Matrix <0.00200 0.00201 0.00201 0.00201 <0.00200 0.00200 <0.00201 0.00201 < <0.00200 0.00201 0.00201 0.00201 < <<0.00200 0.00200 <0.00201 0.00201 0.00201 <<0.00200 0.00200 <0.00201 0.00201 0.00201 0.00201 < <<0.00200 0.00200 <0.00201</th> <th>Lab Id: 647093-019 647093-020 647093-021 647093-022 Field Id: AH-5 (4'-4.5') AH-6 (0'-1') AH-6 (1'-1.5') AH-6 (2'-2.5') Depth: SOIL SOIL SOIL SOIL SOIL Sampled: Dec-17-19 00:00 Dec-17-19 00:00 Dec-17-19 00:00 Dec-17-19 00:00 Dec-17-19 00:00 Extracted: Dec-24-19 14:45 Dec-26-19 01:22 Dec-26-19 01:22 Dec-26-19 01:22 Units/RL: mg/kg RL mg/kg RL mg/kg RL Matrix: SOIL</th> <th>Lab Id: 647093-019 647093-020 647093-021 647093-022 647093-022 Field Id: AH-5 (4'-4.5') AH-6 (0'-1') AH-6 (1'-1.5') AH-6 (1'-2.5') AH-7 (0 Depth: SOIL SOIL</th> <th>Lab Id: 647093-019 647093-020 647093-021 647093-022 647093-023 Field Id: AH-5 (4'-4.5') AH-6 (0'-1) AH-6 (1'-1.5') AH-6(2'-2.5') AH-7 (0'-1') Depth: SOIL SOIL<th>Lab Id: 647093-019 647093-020 647093-021 647093-022 647093-023 647093-023 Field Id: AH-5 (4*4.5') AH-6 (0·1') AH-6 (1·1.5') AH-6 (2·2.5') AH-7 (0·1') AH-8 (0 Matrix: SOIL Dec-17-19 00:00 Dec-17-19 00:00 Dec-24-19 14:45 Dec-24-19 14:45 Dec-24-19 14:45 Dec-24-19 01:22 Dec-26-19 01:32 Dec-26-19 01:32 Dec-26-19 01:32 Dec-26-19 01:32 Dec-26-19 01:32 Dec-26-19 01:32 Dec-20-19 01:32 Dec-20-19 01:32 Dec-20-19 01:32</th></th>	Lab Id: 647093-019 647093-020 647093-021 Field Id: AH-5 (4'-4.5') AH-6 (0'-1') AH-6 (1'-1.5') Depth: SOIL SOIL SOIL SOIL Sampled: Dec-17-19 00:00 Dec-17-19 00:00 Dec-24-19 14:45 Dec-24-19 14:45 Analyzed: Dec-26-19 01:02 Dec-26-19 01:02 Dec-26-19 01:02 0.00201 0.00201 Units/RL: mg/kg RL mg/kg RL mg/kg RL Outcould (0.00200 0.00200 0.00200 0.00201 0.00201 0.00201 Extracted: Dec-20-19 12:15 Dec-20-19 12:15 Dec-20-19 12:15 Dec-20-19 12:15 Malyzed: Dec-20-19 13:44 Dec-20-19 13:56 Dec-20-19 14:12 Dec-20-19 14:12 Malyzed: Dec-20-19 13:44 Dec-20-19 17:30 Dec-20-19 10:00 Dec-20-19 10:00 Analyzed: Dec-20-19 17:30 Dec-20-19 10:00 Dec-20-19 10:00 Dec-20-19 10:00 Dec-20-19 17:52 Malyzed: Dec-20-19 17:30 Dec-20-19 17:30 Dec-20-19 17:52 Dec-20-19 17:52 Malyzed: Dec-20-19 17:30 Dec-20-19 17:50 Dec-20-1	Lab Id: 647093-019 647093-020 647093-021 647093-021 Field Id: AH-5 (4'-4.5') AH-6 (0'-1') AH-6 (1'-1.5') AH-6(2'-2 Depth: Matrix: SOIL SOIL SOIL SOIL SOIL Sampled: Dec-17-19 00:00 Dec-17-19 00:00 Dec-17-19 00:00 Dec-17-19 00:00 Dec-17-19 00:00 Extracted: Dec-24-19 14:45 Dec-26-19 01:02 Dec-26-19 01:22 Dec-26-19 01:22 Units/RL: mg/kg RL mg/kg RL Matrix <0.00200 0.00201 0.00201 0.00201 <0.00200 0.00200 <0.00201 0.00201 < <0.00200 0.00201 0.00201 0.00201 < <<0.00200 0.00200 <0.00201 0.00201 0.00201 <<0.00200 0.00200 <0.00201 0.00201 0.00201 0.00201 < <<0.00200 0.00200 <0.00201	Lab Id: 647093-019 647093-020 647093-021 647093-022 Field Id: AH-5 (4'-4.5') AH-6 (0'-1') AH-6 (1'-1.5') AH-6 (2'-2.5') Depth: SOIL SOIL SOIL SOIL SOIL Sampled: Dec-17-19 00:00 Dec-17-19 00:00 Dec-17-19 00:00 Dec-17-19 00:00 Dec-17-19 00:00 Extracted: Dec-24-19 14:45 Dec-26-19 01:22 Dec-26-19 01:22 Dec-26-19 01:22 Units/RL: mg/kg RL mg/kg RL mg/kg RL Matrix: SOIL	Lab Id: 647093-019 647093-020 647093-021 647093-022 647093-022 Field Id: AH-5 (4'-4.5') AH-6 (0'-1') AH-6 (1'-1.5') AH-6 (1'-2.5') AH-7 (0 Depth: SOIL SOIL	Lab Id: 647093-019 647093-020 647093-021 647093-022 647093-023 Field Id: AH-5 (4'-4.5') AH-6 (0'-1) AH-6 (1'-1.5') AH-6(2'-2.5') AH-7 (0'-1') Depth: SOIL SOIL <th>Lab Id: 647093-019 647093-020 647093-021 647093-022 647093-023 647093-023 Field Id: AH-5 (4*4.5') AH-6 (0·1') AH-6 (1·1.5') AH-6 (2·2.5') AH-7 (0·1') AH-8 (0 Matrix: SOIL Dec-17-19 00:00 Dec-17-19 00:00 Dec-24-19 14:45 Dec-24-19 14:45 Dec-24-19 14:45 Dec-24-19 01:22 Dec-26-19 01:32 Dec-26-19 01:32 Dec-26-19 01:32 Dec-26-19 01:32 Dec-26-19 01:32 Dec-26-19 01:32 Dec-20-19 01:32 Dec-20-19 01:32 Dec-20-19 01:32</th>	Lab Id: 647093-019 647093-020 647093-021 647093-022 647093-023 647093-023 Field Id: AH-5 (4*4.5') AH-6 (0·1') AH-6 (1·1.5') AH-6 (2·2.5') AH-7 (0·1') AH-8 (0 Matrix: SOIL Dec-17-19 00:00 Dec-17-19 00:00 Dec-24-19 14:45 Dec-24-19 14:45 Dec-24-19 14:45 Dec-24-19 01:22 Dec-26-19 01:32 Dec-26-19 01:32 Dec-26-19 01:32 Dec-26-19 01:32 Dec-26-19 01:32 Dec-26-19 01:32 Dec-20-19 01:32 Dec-20-19 01:32 Dec-20-19 01:32

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fession kramer

Jessica Kramer Project Assistant

Final 1.000



Certificate of Analysis Summary 647093

Tetra Tech- Midland, Midland, TX Project Name: Solaris Oxy Reverse C



Project Id:212C-MD-02030Contact:Rob KirkProject Location:Eddy County, New Mexico

Date Received in Lab:Thu Dec-19-19 02:54 pmReport Date:27-DEC-19Project Manager:Jessica Kramer

	Lab Id:	647093-0)25	647093-0	026	647093-	027	647093-	028	647093-	029	647093-	030
Amahasia Degraded	Field Id:	AH-8 (1'-	1.5')	AH-8 (2'-2	2.5')	AH-9 (0	-1')	AH-10 (()'-1')	AH-11 (0	'-1')	AH-11 (1'	'-1.5')
Analysis Kequestea	Depth:												
	Matrix:	SOIL		SOIL		SOIL	,	SOIL	,	SOIL	,	SOIL	-
	Sampled:	Dec-17-19	00:00	Dec-17-19 (00:00	Dec-17-19 00:00		Dec-17-19 00:00		Dec-17-19 00:00		Dec-17-19	00:00
BTEX by EPA 8021B	Extracted:	Dec-24-19	14:45			Dec-24-19	14:45	Dec-24-19	14:45	Dec-24-19	14:45	Dec-24-19	14:45
	Analyzed:	Dec-26-19	02:24			Dec-26-19	02:44	Dec-26-19	03:05	Dec-26-19	03:25	Dec-26-19	03:45
	Units/RL:	mg/kg	RL			mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		< 0.00201	0.00201			<0.00199	0.00199	< 0.00200	0.00200	< 0.00200	0.00200	< 0.00201	0.00201
Toluene		< 0.00201	0.00201			< 0.00199	0.00199	< 0.00200	0.00200	< 0.00200	0.00200	< 0.00201	0.00201
Ethylbenzene		< 0.00201	0.00201			< 0.00199	0.00199	< 0.00200	0.00200	< 0.00200	0.00200	< 0.00201	0.00201
m,p-Xylenes		< 0.00402	0.00402			< 0.00398	0.00398	< 0.00399	0.00399	< 0.00401	0.00401	< 0.00402	0.00402
o-Xylene		< 0.00201	0.00201			< 0.00199	0.00199	< 0.00200	0.00200	< 0.00200	0.00200	< 0.00201	0.00201
Total Xylenes		< 0.00201	0.00201			< 0.00199	0.00199	< 0.00200	0.00200	< 0.00200	0.00200	< 0.00201	0.00201
Total BTEX		< 0.00201	0.00201			< 0.00199	0.00199	< 0.00200	0.00200	< 0.00200	0.00200	< 0.00201	0.00201
Inorganic Anions by EPA 300/300.1	Extracted:	Dec-20-19	12:15	Dec-20-19 1	12:15	Dec-20-19	12:15	Dec-20-19	12:15	Dec-20-19	15:00	Dec-20-19	15:00
	Analyzed:	Dec-20-19	14:43	Dec-20-19 1	14:48	Dec-20-19	14:53	Dec-20-19	14:59	Dec-20-19	18:09	Dec-20-19	18:16
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		7820	49.6	5930	50.4	6340	50.0	8220	50.2	3420	24.9	3370	25.0
TPH By SW8015 Mod	Extracted:	Dec-20-19	10:00			Dec-20-19	10:00	Dec-20-19	10:00	Dec-20-19	10:00	Dec-20-19	10:00
	Analyzed:	Dec-20-19	18:55			Dec-20-19	19:17	Dec-20-19	19:38	Dec-20-19	19:59	Dec-20-19	20:20
	Units/RL:	mg/kg	RL			mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<49.8	49.8			<50.0	50.0	<49.9	49.9	<49.9	49.9	<50.0	50.0
Diesel Range Organics (DRO)		<49.8	49.8			<50.0	50.0	<49.9	49.9	<49.9	49.9	<50.0	50.0
Motor Oil Range Hydrocarbons (MRO)		<49.8	49.8			<50.0	50.0	<49.9	49.9	<49.9	49.9	<50.0	50.0
Total TPH		<49.8	49.8 49.8			<50.0	50.0	<49.9	49.9	<49.9	49.9	<50.0	50.0

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fession kenner

Jessica Kramer Project Assistant



212C-MD-02030

Eddy County, New Mexico

Rob Kirk

Project Id:

Project Location:

Contact:

Certificate of Analysis Summary 647093

Tetra Tech- Midland, Midland, TX Project Name: Solaris Oxy Reverse C



Date Received in Lab:Thu Dec-19-19 02:54 pmReport Date:27-DEC-19Project Manager:Jessica Kramer

	Lab Id:	647093-0	031	647093-0	032	647093-0)33	647093-	034	647093-0	035	647093-	036
Analysis Proprested	Field Id:	AH-12 (0"	'-6")	AH-12 (6	"-1')	AH-13 (0	'-1')	AH-13 (1'	-1.5')	AH-14 (0	'-1')	AH-15 (0)'-1')
Analysis Requested	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL	,	SOIL	
	Sampled:	Dec-17-19	00:00										
BTEX by EPA 8021B	Extracted:	Dec-24-19	14:45	Dec-25-19	16:15								
	Analyzed:	Dec-26-19	04:06	Dec-26-19	08:15	Dec-26-19	09:01	Dec-26-19	09:22	Dec-26-19	09:42	Dec-26-19	10:03
	Units/RL:	mg/kg	RL										
Benzene		< 0.00200	0.00200	< 0.00200	0.00200	< 0.00198	0.00198	< 0.00199	0.00199	< 0.00200	0.00200	< 0.00200	0.00200
Toluene		< 0.00200	0.00200	< 0.00200	0.00200	< 0.00198	0.00198	< 0.00199	0.00199	< 0.00200	0.00200	< 0.00200	0.00200
Ethylbenzene		< 0.00200	0.00200	< 0.00200	0.00200	< 0.00198	0.00198	< 0.00199	0.00199	< 0.00200	0.00200	< 0.00200	0.00200
m,p-Xylenes		< 0.00401	0.00401	< 0.00400	0.00400	< 0.00397	0.00397	< 0.00398	0.00398	< 0.00399	0.00399	< 0.00400	0.00400
o-Xylene		< 0.00200	0.00200	< 0.00200	0.00200	< 0.00198	0.00198	< 0.00199	0.00199	< 0.00200	0.00200	< 0.00200	0.00200
Total Xylenes		< 0.00200	0.00200	< 0.00200	0.00200	< 0.00198	0.00198	< 0.00199	0.00199	< 0.00200	0.00200	< 0.00200	0.00200
Total BTEX		< 0.00200	0.00200	< 0.00200	0.00200	< 0.00198	0.00198	< 0.00199	0.00199	< 0.00200	0.00200	< 0.00200	0.00200
Inorganic Anions by EPA 300/300.1	Extracted:	Dec-20-19	15:00										
	Analyzed:	Dec-20-19	18:23	Dec-20-19	18:29	Dec-20-19	18:49	Dec-20-19	18:55	Dec-20-19	19:02	Dec-20-19	19:08
	Units/RL:	mg/kg	RL										
Chloride		3830	25.1	3580	25.0	3130	25.0	6600	50.0	3870	24.8	2780	25.0
TPH By SW8015 Mod	Extracted:	Dec-20-19	10:00										
	Analyzed:	Dec-20-19	20:41	Dec-20-19	15:03	Dec-20-19	15:24	Dec-20-19	15:45	Dec-20-19	16:06	Dec-20-19	16:27
	Units/RL:	mg/kg	RL										
Gasoline Range Hydrocarbons (GRO)		<49.9	49.9	<49.9	49.9	<49.9	49.9	<50.0	50.0	<50.0	50.0	<49.9	49.9
Diesel Range Organics (DRO)		<49.9	49.9	<49.9	49.9	<49.9	49.9	<50.0	50.0	<50.0	50.0	<49.9	49.9
Motor Oil Range Hydrocarbons (MRO)		<49.9	49.9	<49.9	49.9	<49.9	49.9	<50.0	50.0	<50.0	50.0	<49.9	49.9
Total TPH		<49.9	49.9	<49.9	49.9	<49.9	49.9	<50.0	50.0	<50.0	50.0	<49.9	49.9

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Jessica Kramer Project Assistant



Certificate of Analysis Summary 647093

Tetra Tech- Midland, Midland, TX Project Name: Solaris Oxy Reverse C



Project Id:212C-MD-02030Contact:Rob KirkProject Location:Eddy County, New Mexico

Date Received in Lab:Thu Dec-19-19 02:54 pmReport Date:27-DEC-19Project Manager:Jessica Kramer

	Lab Id:	647093-0)37	647093-0)38	647093-0)39	647093-0	040	647093-0	041	647093-0	042
Anglusis Deguested	Field Id:	AH-16 (0	'-1')	AH-16 (1'-	-1.5')	AH-17 (0'	"-6")	AH-18 (0	'-1')	AH-18 (1'-	-1.5')	AH-18 (2'-	-2.5')
Analysis Kequesiea	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL	,	SOIL		SOIL	
	Sampled:	Dec-17-19	00:00	Dec-17-19	00:00	Dec-17-19	00:00	Dec-17-19	00:00	Dec-17-19	00:00	Dec-17-19	00:00
BTEX by EPA 8021B	Extracted:	Dec-25-19	16:15	Dec-25-19	16:15	Dec-25-19	16:15	Dec-25-19	16:15	Dec-25-19	16:15		
	Analyzed:	Dec-26-19	10:23	Dec-26-19	10:44	Dec-26-19	11:04	Dec-26-19	11:50	Dec-26-19	12:11		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Benzene		< 0.00202	0.00202	< 0.00199	0.00199	< 0.00200	0.00200	< 0.00198	0.00198	< 0.00198	0.00198		
Toluene		< 0.00202	0.00202	< 0.00199	0.00199	< 0.00200	0.00200	< 0.00198	0.00198	< 0.00198	0.00198		
Ethylbenzene		< 0.00202	0.00202	< 0.00199	0.00199	< 0.00200	0.00200	< 0.00198	0.00198	< 0.00198	0.00198		
m,p-Xylenes		< 0.00403	0.00403	< 0.00398	0.00398	< 0.00401	0.00401	< 0.00397	0.00397	< 0.00396	0.00396		
o-Xylene		< 0.00202	0.00202	< 0.00199	0.00199	< 0.00200	0.00200	< 0.00198	0.00198	< 0.00198	0.00198		
Total Xylenes		< 0.00202	0.00202	<0.00199	0.00199	< 0.00200	0.00200	< 0.00198	0.00198	< 0.00198	0.00198		
Total BTEX		< 0.00202	0.00202	<0.00199	0.00199	< 0.00200	0.00200	< 0.00198	0.00198	< 0.00198	0.00198		
Inorganic Anions by EPA 300/300.1	Extracted:	Dec-20-19	15:00	Dec-20-19	15:00	Dec-20-19	15:00	Dec-20-19	15:00	Dec-20-19	15:00	Dec-20-19	15:00
	Analyzed:	Dec-20-19	19:15	Dec-20-19	19:41	Dec-20-19	19:48	Dec-20-19	20:07	Dec-20-19	20:14	Dec-20-19	20:20
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		2820	25.2	2700	25.2	3390	24.9	4080	25.1	5140	24.8	1880	25.0
TPH By SW8015 Mod	Extracted:	Dec-20-19	10:00	Dec-20-19	10:00	Dec-20-19	10:00	Dec-20-19	10:00	Dec-20-19	10:00		
	Analyzed:	Dec-20-19	16:48	Dec-20-19	17:30	Dec-20-19	17:52	Dec-20-19	18:13	Dec-20-19	18:34		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Gasoline Range Hydrocarbons (GRO)		<50.0	50.0	<50.0	50.0	<50.0	50.0	<49.9	49.9	<49.9	49.9		
Diesel Range Organics (DRO)		<50.0	50.0	<50.0	50.0	<50.0	50.0	<49.9	49.9	<49.9	49.9		
Motor Oil Range Hydrocarbons (MRO)		<50.0	50.0	<50.0	50.0	<50.0	50.0	<49.9	49.9	<49.9	49.9		
Total TPH		<50.0	50.0	<50.0	50.0	<50.0	50.0	<49.9	49.9	<49.9	49.9		

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Jessica Kramer Project Assistant

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Contact:

Certificate of Analysis Summary 647093

Tetra Tech- Midland, Midland, TX Project Name: Solaris Oxy Reverse C



Project Id: 212C-MD-02030 Rob Kirk **Project Location:** Eddy County, New Mexico Date Received in Lab: Thu Dec-19-19 02:54 pm Report Date: 27-DEC-19 Project Manager: Jessica Kramer

	Lab Id:	647093-0)43	647093-0	44	647093-0)45	647093-0	46	647093-0	047	647093-0	048
	Field Id:	AH-19 (0	'-1')	AH-19 (1'-	1.5')	AH-19 (2'-	-2.5')	AH-20 (0	-1')	AH-20 (1'-	-1.5')	AH-20 (2'-	-2.5')
Analysis Kequested	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Dec-17-19	00:00	Dec-17-19 (00:00	Dec-17-19	00:00	Dec-17-19	00:00	Dec-17-19	00:00	Dec-17-19	00:00
BTEX by EPA 8021B	Extracted:	Dec-25-19	16:15	Dec-25-19 1	16:15			Dec-25-19	16:15	Dec-25-19	16:15		
	Analyzed:	Dec-26-19	13:50	Dec-26-19 1	14:10			Dec-26-19	14:31	Dec-26-19	14:51		
	Units/RL:	mg/kg	RL	mg/kg	RL			mg/kg	RL	mg/kg	RL		
Benzene		< 0.00201	0.00201	< 0.00201	0.00201			< 0.00199	0.00199	< 0.00202	0.00202		
Toluene		< 0.00201	0.00201	< 0.00201	0.00201			< 0.00199	0.00199	< 0.00202	0.00202		
Ethylbenzene		< 0.00201	0.00201	< 0.00201	0.00201			< 0.00199	0.00199	< 0.00202	0.00202		
m,p-Xylenes		< 0.00402	0.00402	< 0.00402	0.00402			< 0.00398	0.00398	< 0.00404	0.00404		
o-Xylene		< 0.00201	0.00201	< 0.00201	0.00201			< 0.00199	0.00199	< 0.00202	0.00202		
Total Xylenes		< 0.00201	0.00201	< 0.00201	0.00201			< 0.00199	0.00199	< 0.00202	0.00202		
Total BTEX		< 0.00201	0.00201	< 0.00201	0.00201			< 0.00199	0.00199	< 0.00202	0.00202		
Inorganic Anions by EPA 300/300.1	Extracted:	Dec-20-19	15:00	Dec-20-19 1	15:00	Dec-20-19	15:00	Dec-20-19	15:00	Dec-20-19	15:10	Dec-20-19	15:10
	Analyzed:	Dec-20-19	20:27	Dec-20-19 2	20:33	Dec-20-19	20:40	Dec-20-19	20:47	Dec-20-19	16:06	Dec-20-19	16:13
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		3920	25.2	3790	24.9	5530	25.2	3440	25.2	3820	24.8	4730	25.2
TPH By SW8015 Mod	Extracted:	Dec-20-19	10:00	Dec-20-19 1	10:00			Dec-20-19	10:00	Dec-20-19	10:00		
	Analyzed:	Dec-20-19	18:55	Dec-20-19 1	19:17			Dec-20-19	19:38	Dec-20-19	19:59		
	Units/RL:	mg/kg	RL	mg/kg	RL			mg/kg	RL	mg/kg	RL		
Gasoline Range Hydrocarbons (GRO)		<49.8	49.8	<50.0	50.0			<49.9	49.9	<49.8	49.8		
Diesel Range Organics (DRO)		<49.8	49.8	<50.0	50.0			<49.9	49.9	<49.8	49.8		
Motor Oil Range Hydrocarbons (MRO)		<49.8	49.8	<50.0	50.0			<49.9	49.9	<49.8	49.8		
Total TPH		<49.8	49.8	<50.0	50.0			<49.9	49.9	<49.8	49.8		

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Jessica Kramer Project Assistant



212C-MD-02030

Eddy County, New Mexico

Rob Kirk

Project Id:

Project Location:

Contact:

Certificate of Analysis Summary 647093

Tetra Tech- Midland, Midland, TX Project Name: Solaris Oxy Reverse C



Date Received in Lab:Thu Dec-19-19 02:54 pmReport Date:27-DEC-19Project Manager:Jessica Kramer

			1								
	Lab Id:	647093-0	949	647093-0	050	647093-0	51	647093-0	52		
Analysis Requested	Field Id:	AH-21 (0	-1')	AH-21 (1'-	1.5')	AH-21 (2'-2	2.5')	AH-21 (3'-	3.5')		
Analysis Kequestea	Depth:										
	Matrix:	SOIL		SOIL		SOIL		SOIL			
	Sampled:	Dec-17-19	00:00	Dec-17-19	00:00	Dec-17-19 (00:00	Dec-17-19 (00:00		
BTEX by EPA 8021B	Extracted:	Dec-25-19	16:15	Dec-25-19	16:15						
	Analyzed:	Dec-26-19	15:12	Dec-26-19	15:32						
	Units/RL:	mg/kg	RL	mg/kg	RL						
Benzene		< 0.00199	0.00199	< 0.00200	0.00200						
Toluene		< 0.00199	0.00199	< 0.00200	0.00200						
Ethylbenzene		< 0.00199	0.00199	< 0.00200	0.00200						
m,p-Xylenes		< 0.00398	0.00398	< 0.00401	0.00401						
o-Xylene		< 0.00199	0.00199	< 0.00200	0.00200						
Total Xylenes		< 0.00199	0.00199	< 0.00200	0.00200						
Total BTEX		< 0.00199	0.00199	< 0.00200	0.00200						
Inorganic Anions by EPA 300/300.1	Extracted:	Dec-20-19	15:10	Dec-20-19	15:10	Dec-20-19 1	5:10	Dec-20-19 1	5:10		
	Analyzed:	Dec-20-19	16:20	Dec-20-19	16:27	Dec-20-19 1	6:49	Dec-20-19 1	6:57		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Chloride		3450	24.8	5490	49.6	4390	25.0	8180	49.6		
TPH By SW8015 Mod	Extracted:	Dec-20-19	10:00	Dec-20-19	10:00						
	Analyzed:	Dec-20-19	20:20	Dec-20-192	20:41						
	Units/RL:	mg/kg	RL	mg/kg	RL						
Gasoline Range Hydrocarbons (GRO)		<50.0	50.0	<49.9	49.9						
Diesel Range Organics (DRO)		<50.0	50.0	<49.9	49.9						
Motor Oil Range Hydrocarbons (MRO)		<50.0	50.0	<49.9	49.9						
Total TPH		<50.0	50.0	<49.9	49.9						

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Flagging Criteria



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- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- **B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- **D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- **E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F RPD exceeded lab control limits.
- J The target analyte was positively identified below the quantitation limit and above the detection limit.
- U Analyte was not detected.
- L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- **H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- **K** Sample analyzed outside of recommended hold time.
- **JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- ** Surrogate recovered outside laboratory control limit.
- **BRL** Below Reporting Limit.
- RL Reporting Limit
- MDL Method Detection LimitSDLSample Detection LimitLOD Limit of Detection
- PQL Practical Quantitation Limit MQL Method Quantitation Limit LOQ Limit of Quantitation
- DL Method Detection Limit
- NC Non-Calculable

SMP Clier	nt Sample	BLK	Method Blank	
BKS/LCS	Blank Spike/Laboratory Control Sample	BKSD/LCSD	Blank Spike Duplicate/Labor	atory Control Sample Duplicate
MD/SD	Method Duplicate/Sample Duplicate	MS	Matrix Spike	MSD: Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation



Project Name: Solaris Oxy Reverse C

Work Or	ders: 64709	3, 5 - 1 - (17002-001 / SMD	D (1	Project ID:	212C-MD-0	2030	
Lab Batch	#: 3111407	Sample: 647093-0017 SMP	Batch	n: 1 Matrix:	Soil		
Units:	mg/kg	Date Analyzed: 12/20/19 12:57	SU	RROGATE RI	ECOVERY S	STUDY	
	TPH I	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1 Chlorooat	000	Analytes	06.4	00.0	00	70.125]
o Terphenyl			96.4	50.0	90	70-135	
I ah Batch	#• 3111407	Sample: 647093-002 / SMP	49.0 Ratch	50.0 • 1 Matriv	90 Soil	70-155	
Units:	mg/kg	Date Analyzed: 12/20/19 14:00	SU	RROGATE R	ECOVERY S	STUDY	
	TPH I	3y SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1 Chlorooat	000	Analytes	09.7	00.0	00	70.125]
a Tambanul			98.7	99.9 50.0	99	70-135	
Lob Botch	#• 3111/07	Sample: 647093-005 / SMP	49.4 Botch	50.0	Soil	/0-155	
Lab Daten	#: 5111407	Date Applyzed: 12/20/10 14:21	Datch				
	mg/kg	Date Analyzed: 12/20/19 14.21	SU	RROGATE RI	ECOVERYS	STUDY	
	TPH I	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1 Chlorocat		Analytes	20.6	100	00	70.125	
a Tambanul			89.0	50.0	90	70-135	
I ah Batch	#• 3111407	Sample: 647093-006 / SMP	40.0 Rateh	50.0 • 1 Matriv	92 Soil	/0-155	
Lab Dattin	<i>π</i> • 5111407	Data Analyzadi 12/20/10 14:42	Date				
omis.	iiig/Kg	Date Analyzeu. 12/20/17 14.42	50	RROGATE RI	ECOVERYS	STUDY	
	TPH I	3y SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooct	ane		101	99.6	101	70-135	
o-Terphenyl	l		50.1	49.8	101	70-135	
Lab Batch	#: 3111407	Sample: 647093-009 / SMP	Batch	n: 1 Matrix:	Soil		
Units:	mg/kg	Date Analyzed: 12/20/19 15:03	SU	RROGATE R	ECOVERY S	STUDY	
	TPH I	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooct	ane		91.6	99.9	92	70-135	
o-Terphenyl	l		46.8	50.0	94	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B



Project Name: Solaris Oxy Reverse C

Work Or	ders : 64709	3,		Project ID:	212C-MD-0	02030	
Lab Batch	#: 3111410	Sample: 647093-032 / SMP	Batch	: 1 Matrix:	: Soil		
Units:	mg/kg	Date Analyzed: 12/20/19 15:03	SUI	RROGATE R	ECOVERY S	STUDY	
	TPH I	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes					
1-Chlorooct	ane		90.9	99.7	91	70-135	
o-Terphenyl	1		45.6	49.9	91	70-135	
Lab Batch	#: 3111407	Sample: 647093-010 / SMP	Batch	: 1 Matrix:	: Soil		
Units:	mg/kg	Date Analyzed: 12/20/19 15:24	SUI	RROGATE R	ECOVERY S	STUDY	
	TPH I	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chloroocta	ane		98.6	99.7	99	70-135	
o-Terphenyl	l		49.5	49.9	99	70-135	
Lab Batch	#: 3111410	Sample: 647093-033 / SMP	Batch	: 1 Matrix:	: Soil		
Units:	mg/kg	Date Analyzed: 12/20/19 15:24	SUI	RROGATE R	ECOVERY S	STUDY	
	TPH I	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1 Chloroost	000	Anarytes	86.2	00.8		70.125	
o Terphenyl			42.2	40.0	00	70-135	
Lab Batch	#• 3111407	Sample: 647093-012 / SMP	43.2 Batch	49.9	Soil	70-133	
Lab Datch	mg/kg	Data Analyzad: 12/20/19 15:45					
Units.	iiig/kg	Date Analyzeu. 12/20/17 13.45	SUI	RROGATE R	ECOVERYS	STUDY	
	TPH I	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooct	ane		93.3	99.6	94	70-135	
o-Terphenyl	l		46.8	49.8	94	70-135	
Lab Batch	#: 3111410	Sample: 647093-034 / SMP	Batch	: 1 Matrix:	: Soil		
Units:	mg/kg	Date Analyzed: 12/20/19 15:45	SUI	RROGATE R	ECOVERY S	STUDY	
	TPH I	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooct	ane		85.5	99.9	86	70-135	
o-Terphenyl	l		42.6	50.0	85	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B



Project Name: Solaris Oxy Reverse C

Work Or	ders: 64709	3,		Project ID:	212C-MD-0	2030	
Lab Batch	#: 3111407	Sample: 647093-013 / SMP	Batch	a: 1 Matrix:	: Soil		
Units:	mg/kg	Date Analyzed: 12/20/19 16:06	SU	RROGATE R	ECOVERY S	STUDY	
	TPH I	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[10]		
1-Chlorooct	ane		96.4	99.9	96	70-135	
o-Terphenyl			48.3	50.0	97	70-135	
Lab Batch	#: 3111410	Sample: 64/093-035/SMP	Batch	a: 1 Matrix:	Soll		
Units:	mg/kg	Date Analyzed: 12/20/19 16:06	SU	RROGATE R	ECOVERY S	STUDY	
	TPH I	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooct	ane		89.0	100	80	70 135	
o-Ternhenvl			44.3	50.0	80	70-135	
Lab Batch	#• 3111407	Sample: 647093-015 / SMP	Batch	• 1 Matrix	Soil	70-155	
Units:	mg/kg	Date Analyzed: 12/20/19 16:27	SU		ECOVEDV	TUDV	
cints.		Dute Mulyzet. 12/20/19 10:27	501	KKUGAIE K			
	TPH I	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1 Chlorocat	020	Anarytes	04.0	00.7	05	70.125]
o Ternhenvl			42.5	40.0	85	70-135	
Lah Batch	#• 3111410	Sample: 647093-036 / SMP	43.3 Batch	49.9	Soil	70-155	
Lab Datch	mg/kg	Date Applyzed: 12/20/19 16:27					
Cints.	iiig/ Kg	Date Analyzeu: 12/20/19 10.27	501	KKUGAIE K	ECOVERYS	STUDY	
	TPH I	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooct	ane		84.9	99.7	85	70-135	
o-Terphenyl	l		42.9	49.9	86	70-135	
Lab Batch	#: 3111407	Sample: 647093-016 / SMP	Batch	a: 1 Matrix:	: Soil		
Units:	mg/kg	Date Analyzed: 12/20/19 16:48	SU	RROGATE R	ECOVERY S	STUDY	
	TPH I	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooct	ane		97.5	99.8	98	70-135	
o-Terphenyl	l		49.1	49.9	98	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B



Project Name: Solaris Oxy Reverse C

Work Or	ders: 64709	3,		Project ID:	212C-MD-0	2030	
Lab Batch	#: 3111410	Sample: 647093-037 / SMP	Batch	: 1 Matrix:	: Soil		
Units:	mg/kg	Date Analyzed: 12/20/19 16:48	SUF	RROGATE R	ECOVERY S	STUDY	
	TPH I	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			נען		
1-Chlorooct	ane		88.4	99.9	88	70-135	
o-Terphenyl	1		43.5	50.0	87	70-135	
Lab Batch	#: 3111407	Sample: 647093-020 / SMP	Batch	: 1 Matrix:	: Soil		
Units:	mg/kg	Date Analyzed: 12/20/19 17:30	SUF	RROGATE R	ECOVERY S	STUDY	
	TPH I	3y SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooct	ane		02.3	00.00	02	70.135	
o-Terphenyl	1		47.1	50.0	92	70-135	
Lah Batch	#• 3111410	Sample: 647093-038 / SMP		• 1 Matrix	Soil	70-155	
Units:	mg/kg	Date Analyzed: 12/20/19 17:30	SUE		FCOVEDV	TUDV	
			50F	KUGAIE K			
	TPH I	3y SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1-Chlorooct	ane		85.6	100	86	70-135	
o-Terphenyl	1		43.3	50.0	87	70-135	
Lab Batch	#: 3111407	Sample: 647093-021 / SMP	Batch	: 1 Matrix:	: Soil		
Units:	mg/kg	Date Analyzed: 12/20/19 17:52	SUF	RROGATE R	ECOVERY S	STUDY	
	TPH I	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooct	ane		97.0	99.8	97	70-135	
o-Terphenyl	1		48.4	49.9	97	70-135	
Lab Batch	#: 3111410	Sample: 647093-039 / SMP	Batch	: 1 Matrix:	Soil		
Units:	mg/kg	Date Analyzed: 12/20/19 17:52	SUF	RROGATE R	ECOVERY S	STUDY	
	TPH I	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooct	ane		85.9	99.9	86	70-135	
o-Terphenyl	1		/3.1	50.0	86	70.125	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B



Project Name: Solaris Oxy Reverse C

Work Or	ders : 647093	3, Sample: 647003-023 / SMP	Dotah	Project ID:	212C-MD-0	02030	
Lab Datch	#; 5111407	Data Analyzad: 12/20/10 18:13	Datch				
Units.	mg/kg	Date Analyzeu: 12/20/19 18.15	SU	RROGATE RI	ECOVERY	STUDY	
	TPH I	3y SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes					
1-Chloroocta	ane		92.7	99.7	93	70-135	
o-Terphenyl	1		46.6	49.9	93	70-135	
Lab Batch	#: 3111410	Sample: 647093-040 / SMP	Batch	: 1 Matrix:	Soil		
Units:	mg/kg	Date Analyzed: 12/20/19 18:13	SUI	RROGATE RI	ECOVERY S	STUDY	
	TPH I	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chloroocta	ane		85.9	99.8	86	70-135	
o-Terphenyl			43.1	49.9	86	70-135	
Lab Batch	#: 3111407	Sample: 647093-024 / SMP	Batch	: 1 Matrix:	Soil		
Units:	mg/kg	Date Analyzed: 12/20/19 18:34	SUI	RROGATE RI	ECOVERY	STUDY	
	TPH I	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooct	ane		88.1	00.0	88	70.135	
o-Terphenyl			14.9	50.0	90	70-135	
Lab Batch	#: 3111410	Sample: 647093-041 / SMP	 Batch	: 1 Matrix:	Soil	70-155	
Units:	mg/kg	Date Analyzed: 12/20/19 18:34	SU	RROGATE RI	ECOVERY	STUDY	
	TPH I	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chloroocta	ane		83.0	99.7	83	70-135	
o-Terphenyl			41.5	49.9	83	70-135	
Lab Batch	#: 3111407	Sample: 647093-025 / SMP	Batch	: 1 Matrix:	Soil		
Units:	mg/kg	Date Analyzed: 12/20/19 18:55	SUI	RROGATE RI	ECOVERYS	STUDY	
	TPH I	3y SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chloroocta	ane		95.8	99.6	96	70-135	
o-Terphenyl			48.6	49.8	98	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B



Project Name: Solaris Oxy Reverse C

Work Or	ders: 64709	3,		Project ID:	212C-MD-0	2030	
Lab Batch	#: 3111410	Sample: 647093-0437 SMP	Batch	: 1 Matrix	: Soil		
Units:	mg/kg	Date Analyzed: 12/20/19 18:55	SUI	RROGATE R	ECOVERY S	STUDY	
	TPH I	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes					
1-Chlorooct	ane		82.9	99.6	83	70-135	
o-Terphenyl			41.4	49.8	83	70-135	
Lab Batch	#: 3111407	Sample: 647093-0277 SMP	Batch	: 1 Matrix	: Soil		
Units:	mg/kg	Date Analyzed: 12/20/19 19:17	SUI	RROGATE R	ECOVERY S	STUDY	
	TPH I	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooct	ane	Anarytes	102	0.00	102	70.135	
o-Terphenyl			52.6	50.0	102	70-135	
Lab Batch	#• 3111410	Sample: 647093-044 / SMP	Batch	• 1 Matrix	Soil	70-133	
Lab Daten Units:	mo/ko	Date Analyzed: 12/20/19 19:17	SU]
cints.	1115/115		501	KRUGATE K	ECOVERIS		
	TPH I	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
1.011		Anarytes				50.105	
I-Chiorooct	ane		83.8	99.9 50.0	84	70-135	
I ob Potob	#• 2111407	Somploy 647002 028 / SMD	41.4 Potch	50.0	83 Soil	/0-135	
Lab Datti	π. 5111407	Data Analyzada 12/20/10 10:28	Batch				
Omis:	iiig/kg	Date Analyzeu: 12/20/19 19.36	SUI	RROGATE R	ECOVERYS	STUDY	
	TPH I	3y SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooct	ane		90.9	99.7	91	70-135	
o-Terphenyl	l		46.4	49.9	93	70-135	
Lab Batch	#: 3111410	Sample: 647093-046 / SMP	Batch	: 1 Matrix	: Soil		
Units:	mg/kg	Date Analyzed: 12/20/19 19:38	SUI	RROGATE R	ECOVERY S	STUDY	
	ТРН І	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooct	ane		90.2	99.7	90	70-135	
o-Terphenyl	l		45.3	49.9	91	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B



Project Name: Solaris Oxy Reverse C

Work Or	ders: 64709	3,		Project ID:	212C-MD-0	02030	
Lab Batch	#: 3111407	Sample: 647093-029 / SMP	Batch	: 1 Matrix	: Soil		
Units:	mg/kg	Date Analyzed: 12/20/19 19:59	SUF	RROGATE R	ECOVERY S	STUDY	
	TPH I	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes					
1-Chlorooct	ane		90.8	99.8	91	70-135	
o-Terphenyl	l		46.0	49.9	92	70-135	
Lab Batch	#: 3111410	Sample: 647093-047 / SMP	Batch	: 1 Matrix	: Soil		
Units:	mg/kg	Date Analyzed: 12/20/19 19:59	SUF	RROGATE R	ECOVERY S	STUDY	
	TPH I	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooct	ane		86.3	99.6	87	70-135	
o-Terphenyl	l		42.8	49.8	86	70-135	
Lab Batch	#: 3111407	Sample: 647093-030 / SMP	Batch	: 1 Matrix	: Soil		
Units:	mg/kg	Date Analyzed: 12/20/19 20:20	SUF	ROGATE R	ECOVERYS	STUDY	
	TPH I	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooct	ane		92.2	99.9	92	70-135	
o-Terphenyl	 		47.4	50.0	95	70-135	
Lab Batch	#: 3111410	Sample: 647093-049 / SMP	Batch	: 1 Matrix	: Soil	10 155	
Units:	mg/kg	Date Analyzed: 12/20/19 20:20	SUF	RROGATE R	ECOVERY S	STUDY	
	TPH I	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooct	ane		83.5	99.9	84	70-135	
o-Terphenyl	l		41.8	50.0	84	70-135	
Lab Batch	#: 3111407	Sample: 647093-031 / SMP	Batch	: 1 Matrix	: Soil		I
Units:	mg/kg	Date Analyzed: 12/20/19 20:41	SUF	RROGATE R	ECOVERY S	STUDY	
	TPH I	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooct	ane		96.1	99.7	96	70-135	
o-Terphenyl	l		47.8	49.9	96	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B



Project Name: Solaris Oxy Reverse C

Work Orders : 647093, Lab Batch #: 3111410 Sample: 647093-050 / SMP			Project ID: 212C-MD-02030					
Lab Daten	mg/kg	Date Analyzed: 12/20/19 20:41						
Cints.	iiig/kg	Date Analyzeu: 12/20/17/20.41	50	RROGATE R	ECOVERYS			
	TPH I	3y SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
		Analytes			[U]			
1-Chlorooc	tane		84.4	99.7	85	70-135		
o-Terpheny	1		42.2	49.9	85	70-135		
Lab Batch	#: 3111753	Sample: 647093-001 / SMP	Batcl	h: 1 Matrix	: Soil			
Units:	mg/kg	Date Analyzed: 12/25/19 20:20	SU	RROGATE R	ECOVERY S	STUDY		
	BTEX	K by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluor	obenzene		0.0336	0.0300	112	70-130		
4-Bromoflu	orobenzene		0.0322	0.0300	107	70-130		
Lab Batch	#: 3111753	Sample: 647093-002 / SMP	Batcl	h: 1 Matrix	: Soil			
Units:	mg/kg	Date Analyzed: 12/25/19 20:40	SU	RROGATE R	ECOVERYS	STUDY		
	ВТЕХ	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1 4-Difluor	obenzene		0.0330	0.0300	110	70-130		
4-Bromoflu	lorobenzene		0.0308	0.0300	103	70-130		
Lab Batch	#: 3111753	Sample: 647093-005 / SMP	Batcl	h: 1 Matrix	: Soil	70 150		
Units:	mg/kg	Date Analyzed: 12/25/19 21:00	SU	RROGATE R	ECOVERY	STUDY		
	втех	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluor	obenzene		0.0330	0.0300	110	70-130		
4-Bromoflu	orobenzene		0.0297	0.0300	99	70-130		
Lab Batch	#: 3111753	Sample: 647093-006 / SMP	Batch	h: 1 Matrix	: Soil			
Units:	mg/kg	Date Analyzed: 12/25/19 21:21	SU	RROGATE R	ECOVERY S	STUDY		
	ВТЕХ	K by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluor	obenzene		0.0332	0.0300	111	70-130		
4-Bromoflu	orobenzene		0.0314	0.0300	105	70-130		

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B



Project Name: Solaris Oxy Reverse C

Work Orders : 647093,			Project ID: 212C-MD-02030					
Lab Batch	#: 3111753	Sample: 647093-009 / SMP	Batch	n: 1 Matrix:	Soil			
Units:	mg/kg	Date Analyzed: 12/25/19 21:41	SU	RROGATE RI	ECOVERY S	STUDY		
	BTEX	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
140.0	1	Analytes	0.0222	0.0200		50.100		
4-Bromofluorobenzene 4-Bromofluorobenzene			0.0333	0.0300	111	70-130		
4-Bromofilu	orobenzene	Sec. 47002.010 / SMD	0.0305	0.0300	102	70-130		
Lab Batch	#: 3111/33	Sample: 647093-0107 SMP	Batch	i: 1 Matrix:	5011			
Units:	mg/kg	Date Analyzed: 12/25/19 22:02	SU	RROGATE RI	ECOVERYS	STUDY		
	BTEX	Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1 4-Difluor	benzene		0.0327	0.0300	109	70-130		
4-Bromoflu	orobenzene		0.0281	0.0300	94	70-130		
Lab Batch	#: 3111753	Sample: 647093-012 / SMP	Batch	1 Matrix :	Soil	10 150		
Units:	mg/kg	Date Analyzed: 12/25/19 22:22	SU	RROGATE RI	ECOVERYS	STUDY		
BTEX by EPA 8021B			Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
		Analytes			[D]			
1,4-Difluoro	obenzene		0.0335	0.0300	112	70-130		
4-Bromoflu	orobenzene		0.0306	0.0300	102	70-130		
Lab Batch	#: 3111753	Sample: 647093-013 / SMP	Batch	n: 1 Matrix:	Soil			
Units:	mg/kg	Date Analyzed: 12/25/19 22:43	SU	RROGATE RI	ECOVERY S	STUDY		
	ВТЕХ	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluoro	obenzene		0.0317	0.0300	106	70-130		
4-Bromoflu	orobenzene		0.0289	0.0300	96	70-130		
Lab Batch	#: 3111753	Sample: 647093-015 / SMP	Batch	n: 1 Matrix:	Soil			
Units:	mg/kg	Date Analyzed: 12/25/19 23:03	SU	RROGATE RI	ECOVERYS	STUDY		
	ВТЕХ	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluoro	obenzene		0.0329	0.0300	110	70-130		
4-Bromoflu	orobenzene		0.0297	0.0300	99	70-130		

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B



Project Name: Solaris Oxy Reverse C

Work Or	ders: 64709	3,		Project ID:	212C-MD-0)2030	
Lab Batch	#: 3111753	Sample: 647093-016 / SMP	Batch	n: 1 Matrix:	Soil		
Units:	mg/kg	Date Analyzed: 12/25/19 23:23	SU	RROGATE RI	212C-MD-02030SoilECOVERY STUDYRecovery %R [D]Control Limits %R11170-13010470-130SoilECOVERY STUDYRecovery %R [D]Control Limits %R10870-1303070-130SoilECOVERY STUDYRecovery %R [D]Control Limits %R10870-1303070-1303070-1303070-1303070-1303070-1303070-13010870-13030 <td< th=""><th></th></td<>		
	BTEX	A palytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1.4 Difluor	hanzana	Analytes	0.0222	0.0200	111	70.120	
4-Bromoflu	orobenzene		0.0332	0.0300	104	70-130	
Lab Batch	#: 3111753	Sample: 647093-020 / SMP	Batch		Soil	70-150	
Units:	mg/kg	Date Analyzed: 12/26/19 01:02	SU	RROGATE RI	ECOVERY S	STUDY	
	ВТЕХ	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1.4-Difluoro	benzene		0.0325	0.0300	108	70-130	
4-Bromoflu	orobenzene		0.0278	0.0300	93	70-130	
Lab Batch	#: 3111753	Sample: 647093-021 / SMP	Batch	n: 1 Matrix:	Soil		
Units:	mg/kg	Date Analyzed: 12/26/19 01:22	SU	RROGATE RI	ECOVERYS	STUDY	
	BTEX	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1,4-Difluoro	obenzene		0.0323	0.0300	108	70-130	
4-Bromoflu	orobenzene		0.0297	0.0300	99	70-130	
Lab Batch	#: 3111753	Sample: 647093-023 / SMP	Batch	n: 1 Matrix:	Soil		
Units:	mg/kg	Date Analyzed: 12/26/19 01:43	SU	RROGATE RI	ECOVERY S	STUDY	
	ВТЕХ	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluoro	obenzene		0.0338	0.0300	113	70-130	
4-Bromoflu	orobenzene		0.0313	0.0300	104	70-130	
Lab Batch	#: 3111753	Sample: 647093-024 / SMP	Batch	n: 1 Matrix:	Soil		I
Units:	mg/kg	Date Analyzed: 12/26/19 02:03	SU	RROGATE RI	ECOVERY S	STUDY	
	ВТЕХ	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluoro	obenzene		0.0329	0.0300	110	70-130	
4-Bromoflu	orobenzene		0.0304	0.0300	101	70-130	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B



Project Name: Solaris Oxy Reverse C

Work Or	ders : 64709	3,		Project ID:	212C-MD-0)2030			
Lab Batch	#: 3111753	Sample: 64/093-025 / SMP	Batch	n: 1 Matrix:	Soil				
Units:	mg/kg	Date Analyzed: 12/26/19 02:24	SU	RROGATE RI	ECOVERY S	212C-MD-02030SoilCOVERY STUDYRecovery %R [D]Control Limits %R11070-13010470-130SoilCOVERY STUDYRecovery %R [D]Control Limits %R11070-13010570-130SoilControl Limits %R [D]Control Limits %R [D]10970-130SoilControl Limits %R [D]10970-1309970-130SoilCOVERY STUDYRecovery %R [D]Control Limits %R10970-1309970-130SoilControl Limits %R [D]Covtery STUDYRecovery %R [D]Control Limits %R%R [D]Control Limits %R			
	втех	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluoro	obenzene		0.0331	0.0300	110	70-130			
4-Bromoflu	orobenzene		0.0313 0.0300 104 70-130						
Lab Batch	#: 3111753	Sample: 647093-027 / SMP	Batch	n: 1 Matrix:	Soil	11			
Units:	mg/kg	Date Analyzed: 12/26/19 02:44	SU	RROGATE RI	ECOVERY S	STUDY			
	BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1.4-Difluor	obenzene		0.0329	0.0300	110	70-130			
4-Bromoflu	orobenzene		0.0316	0.0300	105	70-130			
Lab Batch	#: 3111753	Sample: 647093-028 / SMP	Batch	n: 1 Matrix:	Soil				
Units:	mg/kg	Date Analyzed: 12/26/19 03:05	SU	RROGATE RI	ECOVERY	STUDY			
	BTEX	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
		Analytes			[D]				
1,4-Difluoro	obenzene		0.0327	0.0300	109	70-130			
4-Bromoflu	orobenzene		0.0296	0.0300	99	70-130			
Lab Batch	#: 3111753	Sample: 647093-029 / SMP	Batch	n: 1 Matrix:	Soil				
Units:	mg/kg	Date Analyzed: 12/26/19 03:25	SU	RROGATE RI	ECOVERYS	STUDY			
	BTEX	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluoro	obenzene		0.0336	0.0300	112	70-130			
4-Bromoflu	orobenzene		0.0328	0.0300	109	70-130			
Lab Batch	#: 3111753	Sample: 647093-030 / SMP	Batch	n: 1 Matrix:	Soil				
Units:	mg/kg	Date Analyzed: 12/26/19 03:45	SU	RROGATE RI	ECOVERYS	STUDY			
	BTEX	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluoro	obenzene		0.0333	0.0300	111	70-130			
4-Bromoflu	orobenzene		0.0322	0.0300	107	70-130			

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B



Project Name: Solaris Oxy Reverse C

Work Or	ders: 64709	3,		Project ID:	212C-MD-0	2030		
Lab Batch	#: 3111753	Sample: 647093-031 / SMP	Batch	1: 1 Matrix:	Soil			
Units:	mg/kg	Date Analyzed: 12/26/19 04:06	SU	RROGATE RI	ECOVERY S	12C-MD-02030 oilCOVERY STUDYRecovery %R [D]Control Limits %R [D]R11170-130010370-1300oilControl Limits %R [D]R10970-13000170-1300Covery %R [D]10970-13000170-1300Control Limits %R [D]10170-13000111170-130Control Limits %R [D]11170-130000Control Limits %R [D]10011170-130011170-130011170-130111170-130111170-130111170-130111170-1301		
	BTEX	A palytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1.4-Difluor	benzene	Anarytes	0.0224	0.0300	111	70.120]	
4-Bromofluorobenzene			0.0334	0.0300	103	70-130		
Lab Batch	#• 3111790	Sample: 647093-032 / SMP	Batch	• 1 Matrix	Soil	70-130		
Units:	mg/kg	Date Analyzed: 12/26/19 08:15	SU.	RROGATE RI	ECOVERY S	STUDY		
	ВТЕХ	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1.4-Difluoro	benzene		0.0327	0.0300	109	70-130]	
4-Bromoflu	orobenzene		0.0271	0.0300	90	70-130		
Lab Batch	#: 3111790	Sample: 647093-033 / SMP	Batch	n: 1 Matrix:	Soil			
Units:	mg/kg	Date Analyzed: 12/26/19 09:01	SU	RROGATE RI	ECOVERY S	STUDY		
	BTEX	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
		Analytes			[D]			
1,4-Difluoro	obenzene		0.0334	0.0300	111	70-130		
4-Bromoflu	orobenzene		0.0294	0.0300	98	70-130		
Lab Batch	#: 3111790	Sample: 647093-034 / SMP	Batch	n: 1 Matrix:	Soil			
Units:	mg/kg	Date Analyzed: 12/26/19 09:22	SU	RROGATE RI	ECOVERY S	STUDY		
	ВТЕХ	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluoro	obenzene		0.0334	0.0300	111	70-130		
4-Bromoflue	orobenzene		0.0300	0.0300	100	70-130		
Lab Batch	#: 3111790	Sample: 647093-035 / SMP	Batch	n: 1 Matrix:	Soil			
Units:	mg/kg	Date Analyzed: 12/26/19 09:42	SU	RROGATE RI	ECOVERY S	STUDY		
	ВТЕХ	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluoro	obenzene		0.0339	0.0300	113	70-130		
4 Decmofly	1				i	i l		

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B



Project Name: Solaris Oxy Reverse C

Work Or	ders: 64709	3,		Project ID:	212C-MD-0	2030		
Lab Batch	#: 3111/90	Sample: 647093-0367 SMP	Batch: 1 Matrix: Soil					
Units:	mg/kg	Date Analyzed: 12/26/19 10:03	SUI	RROGATE RI	212C-MD-02030 Soil COVERY STUDY Recovery %R Control Limits %R 97 70-130 97 70-130 Soil Control Limits %R 097 70-130 Soil Control Limits %R 097 70-130 Soil Control Limits %R I111 70-130 99 70-130 99 70-130 Soil Control Limits %R I11 70-130 99 70-130 Soil Control Limits %R I113 70-130 98 70-130 98 70-130 98 70-130 98 70-130 98 70-130 99 70-130 90 70-130 91 70-130 92 70-130 93 70-130 94 70-130 95 70-130 96 70-130 96 70-130 96 7			
	BTEX	A polytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1 4 Differen	. 1	Analytes	0.0220	0.0200	110	70.120		
4-Bromofluorobenzene			0.0339	0.0300	113	70-130		
4-Bromoliu	#• 2111700	Somploy 647002 027 / SMD	0.0292	0.0300	9/ Soil	/0-130		
Lab Daten	#: 3111790	Data Analyzada 12/26/10 10:22	Datch		5011			
Units:	mg/kg	Date Analyzed: 12/26/19 10:23	SUI	RROGATE RI	ECOVERY S	STUDY		
	BTEX	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1.4-Difluoro	benzene	11111191003	0.0334	0.0300	111	70-130		
4-Bromoflu	orobenzene		0.0298	0.0300	99	70-130		
Lab Batch	#: 3111790	Sample: 647093-038 / SMP	Batch	: 1 Matrix:	Soil	70 150		
Units:	mg/kg	Date Analyzed: 12/26/19 10:44	SUI	RROGATE RI	ECOVERY S	STUDY		
	BTEX	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
		Analytes			լոյ			
1,4-Difluoro	obenzene		0.0340	0.0300	113	70-130		
4-Bromoflu	orobenzene		0.0294	0.0300	98	70-130		
Lab Batch	#: 3111790	Sample: 647093-039 / SMP	Batch	: 1 Matrix:	Soil			
Units:	mg/kg	Date Analyzed: 12/26/19 11:04	SUI	RROGATE RI	ECOVERY S	STUDY		
	ВТЕХ	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluoro	obenzene		0.0331	0.0300	110	70-130		
4-Bromoflu	orobenzene		0.0289	0.0300	96	70-130		
Lab Batch	#: 3111790	Sample: 647093-040 / SMP	Batch	: 1 Matrix:	Soil			
Units:	mg/kg	Date Analyzed: 12/26/19 11:50	SUI	RROGATE RI	ECOVERY S	STUDY		
	BTEX	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluoro	obenzene		0.0331	0.0300	110	70-130		
4-Bromoflu	orobenzene		0.0302	0.0300	101	70-130		

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B



Project Name: Solaris Oxy Reverse C

Work Or	ders : 64709	3,		Project ID:	212C-MD-0	02030		
Lab Batch	#: 3111790	Sample: 647093-0417 SMP	Batch	a: 1 Matrix:	Soil			
Units:	mg/kg	Date Analyzed: 12/26/19 12:11	SU	RROGATE R	ECOVERY S	STUDY		
	втех	K by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluor	obenzene		0.0326	0.0300	109	70-130		
4-Bromoflu	orobenzene		0.0286 0.0300 95 70-130					
Lab Batch	#: 3111790	Sample: 647093-043 / SMP	Batch	a: 1 Matrix:	Soil			
Units:	mg/kg	Date Analyzed: 12/26/19 13:50	SU	RROGATE R	ECOVERY S	STUDY		
	BTEX	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1.4-Difluor	obenzene		0.0319	0.0300	106	70-130		
4-Bromoflu	orobenzene		0.0276	0.0300	92	70-130		
Lab Batch	#: 3111790	Sample: 647093-044 / SMP	Batch	1 Matrix:	Soil	10 150		
Units:	mg/kg	Date Analyzed: 12/26/19 14:10	SU	RROGATE R	ECOVERY S	STUDY		
	втех	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
		Analytes			[D]			
1,4-Difluor	obenzene		0.0329	0.0300	110	70-130		
4-Bromoflu	orobenzene		0.0286	0.0300	95	70-130		
Lab Batch	#: 3111790	Sample: 647093-046 / SMP	Batch	a: 1 Matrix:	: Soil			
Units:	mg/kg	Date Analyzed: 12/26/19 14:31	SU	RROGATE R	ECOVERY S	STUDY		
	BTEX	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluor	obenzene		0.0338	0.0300	113	70-130		
4-Bromoflu	orobenzene		0.0305	0.0300	102	70-130		
Lab Batch	#: 3111790	Sample: 647093-047 / SMP	Batch	a: 1 Matrix:	: Soil			
Units:	mg/kg	Date Analyzed: 12/26/19 14:51	SU	RROGATE R	ECOVERY S	STUDY		
	ВТЕУ	K by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluor	obenzene		0.0331	0.0300	110	70-130		
4-Bromoflu	orobenzene		0.0307	0.0300	102	70-130		

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B



Project Name: Solaris Oxy Reverse C

Work Orders : 647093,			Project ID: 212C-MD-02030						
Lab Batch	#: 3111790	Sample: 647093-0497 SMP	Batch	a: 1 Matrix:	: Soil				
Units:	mg/kg	Date Analyzed: 12/26/19 15:12	SU	RROGATE R	ECOVERY S	02030 STUDY Control Limits %R 70-130 70-130 STUDY Control Limits %R 70-130 70-130 70-130 70-130 70-130 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 STUDY Control Limits %R 70-135 STUDY Control Limits %R 70-135 STUDY			
	ВТЕХ	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluoro	obenzene		0.0333	0.0300	111	70-130			
4-Bromoflu	orobenzene		0.0319	0.0300	106	70-130			
Lab Batch	#: 3111790	Sample: 647093-050 / SMP	Batch	a: 1 Matrix:	: Soil	1 1			
Units:	mg/kg	Date Analyzed: 12/26/19 15:32	SU	RROGATE R	ECOVERY S	STUDY			
	ВТЕХ	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluoro	obenzene		0.0337	0.0300	112	70-130			
4-Bromoflu	orobenzene		0.0295	0.0300	98	70-130			
Lab Batch	#: 3111407	Sample: 7692950-1-BLK / H	BLK Batch	1 Matrix	: Solid	1 1			
Units:	mg/kg	Date Analyzed: 12/20/19 11:54	SU	RROGATE R	ECOVERY S	STUDY			
	TPH I	3y SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
		Analytes			[D]				
1-Chlorooct	tane		101	100	101	70-135			
o-Terpheny	1		50.8	50.0	102	70-135			
Lab Batch	#: 3111410	Sample: 7692952-1-BLK / H	BLK Batch	1 Matrix	: Solid				
Units:	mg/kg	Date Analyzed: 12/20/19 11:54	SU	RROGATE R	ECOVERY S	STUDY			
	TPH I	3y SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooct	tane		84.9	100	85	70-135			
o-Terpheny	1		42.3	50.0	85	70-135			
Lab Batch	#: 3111753	Sample: 7693246-1-BLK / H	BLK Batch	a: 1 Matrix:	: Solid				
Units:	mg/kg	Date Analyzed: 12/25/19 19:59	SU	RROGATE R	ECOVERY S	STUDY			
	ВТЕХ	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1400	hanzana	-	0.0328	0.0300	109	70-130			
1,4-Diffuor	JUEIIZEIIE		0.0520	0.0500	107	10150			

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B



Project Name: Solaris Oxy Reverse C

Work Or	ders : 64709	3,		Project ID:	212C-MD-0	02030	
Lab Batch #	# : 3111790	Sample: 7693262-1-BLK / 1	BLK Batch	n: 1 Matrix:	Solid		
Units:	mg/kg	Date Analyzed: 12/26/19 07:55	SU	RROGATE RI	ECOVERY S	STUDY	
	втех	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluoro	benzene		0.0327	0.0300	109	70-130	
4-Bromofluo	orobenzene		0.0278	0.0300	93	70-130	
Lab Batch #	#: 3111407	Sample: 7692950-1-BKS /]	BKS Batch	n: 1 Matrix:	Solid	1 1	
Units:	mg/kg	Date Analyzed: 12/20/19 12:14	SU	RROGATE RI	ECOVERY S	STUDY	
	TPH I	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chloroocta	ane		103	100	103	70-135	
o-Terphenyl			51.3	50.0	103	70-135	
Lab Batch #	#: 3111410	Sample: 7692952-1-BKS / 1	BKS Batch	n: 1 Matrix:	Solid		
Units:	mg/kg	Date Analyzed: 12/20/19 12:14	SU	RROGATE RI	ECOVERY	STUDY	
	TPH I	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1-Chloroocta	ane		91.0	100	91	70-135	
o-Terphenyl			43.9	50.0	88	70-135	
Lab Batch #	#: 3111753	Sample: 7693246-1-BKS / 1	BKS Batch	n: 1 Matrix:	Solid		
Units:	mg/kg	Date Analyzed: 12/25/19 17:49	SU	RROGATE RI	ECOVERY S	STUDY	
	ВТЕУ	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluoro	benzene		0.0334	0.0300	111	70-130	
4-Bromofluo	orobenzene		0.0297	0.0300	99	70-130	
Lab Batch #	#: 3111790	Sample: 7693262-1-BKS / 1	BKS Batch	n: 1 Matrix:	Solid		
Units:	mg/kg	Date Analyzed: 12/26/19 05:45	SU	RROGATE RI	ECOVERY S	STUDY	
	втех	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluoro	benzene		0.0330	0.0300	110	70-130	
4-Bromofluo	orobenzene		0.0276	0.0300	92	70-130	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B


Form 2 - Surrogate Recoveries

Project Name: Solaris Oxy Reverse C

Work Or Lab Batch	ders : 64709	3, Sample: 7692950-1-BSD / 1	RSD Batch	Project ID:	212C-MD-0 Solid	2030	
Units:	mg/kg	Date Analyzed: 12/20/19 12:35	SUI	ROGATE R	ECOVERY S	STUDY	
	TPHI	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1 Chlorocat		Anarytes	102	100	100	70.125	
1-Chiorooct			102	100	102	70-135	
I ah Datah	H. 2111410	Samula, 7602052 1 BSD / 1	49.1	50.0	98 Solid	/0-135	
	#: 5111410	Sample: 7092932-1-BSD7	BSD Batch		Solid		
Units:	mg/kg	Date Analyzed: 12/20/19 12:35	SUI	RROGATE R	ECOVERY S	STUDY	
	TPH I	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooct	ane	1 mary tes	90.4	100	90	70.135	
o-Terpheny	1		90.4 42.2	50.0	90	70-135	
Lob Potch	#. 3111753	Sample: 7693246 1 BSD / 1	42.2 RSD Batab	. 1 Motriv	Solid	/0-155	
Lan Daten	#. 5111755	Data Analyzad: 12/25/10 18:10	DSD Datch				
Units:	iiig/kg	Date Analyzeu: 12/23/19 18.10	SUI	ROGATE R	ECOVERYS	STUDY	
	BTEX	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1,4-Difluoro	obenzene		0.0331	0.0300	110	70-130	
4-Bromoflu	orobenzene		0.0289	0.0300	96	70-130	
Lab Batch	#: 3111790	Sample: 7693262-1-BSD / 1	BSD Batch	: 1 Matrix:	Solid		
Units:	mg/kg	Date Analyzed: 12/26/19 06:06	SUI	RROGATE R	ECOVERY S	STUDY	
	втех	K by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluoro	obenzene		0.0341	0.0300	114	70-130	
4-Bromoflu	orobenzene		0.0293	0.0300	98	70-130	
Lab Batch	#: 3111410	Sample: 647062-001 S / MS	S Batch	: 1 Matrix:	Soil		I
Units:	mg/kg	Date Analyzed: 12/20/19 13:18	SUI	RROGATE R	ECOVERY S	STUDY	
	TPH I	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooct	ane		89.8	99.7	90	70-135	
o-Terpheny	1		42.2	49.9	85	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: Solaris Oxy Reverse C

Work Or	ders : 64709	3,		Project ID:	212C-MD-0	02030				
Lab Batch	#: 311140/	Sample: 647093-001 S7 MS	MS Batch: 1 Matrix: Soil 8 SURROGATE RECOVERY STUDY							
Units:	mg/kg	Date Analyzed: 12/20/19 13:18	SUI	RROGATE R	ECOVERY S	STUDY				
	TPH I	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
1.011		Analytes]			
1-Chlorooct	ane		115	99.6	115	70-135				
o-Terphenyl	L	Sec. 1. (17002-001-S / MS	56.1	49.8	113 C-:1	70-135				
Lab Batch	#: 3111/55	Sample: 647093-001 S7 MS	b Batch		5011					
Units:	mg/kg	Date Analyzed: 12/25/19 18:30	SUI	RROGATE R	ECOVERY	STUDY				
	втех	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1.4-Difluoro	benzene		0.0346	0.0300	115	70-130]			
4-Bromoflu	orobenzene		0.0320	0.0300	107	70-130				
Lab Batch	#: 3111790	Sample: 647093-032 S / MS	Batch	: 1 Matrix:	Soil	10 150				
Units:	mg/kg	Date Analyzed: 12/26/19 06:26	SUI	RROGATE R	ECOVERY S	STUDY				
	ВТЕУ	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
		Analytes			[D]					
1,4-Difluoro	obenzene		0.0348	0.0300	116	70-130				
4-Bromoflue	orobenzene		0.0311	0.0300	104	70-130				
Lab Batch	#: 3111410	Sample: 647062-001 SD / M	ISD Batch	: 1 Matrix:	Soil					
Units:	mg/kg	Date Analyzed: 12/20/19 13:39	SUI	RROGATE R	ECOVERY S	STUDY				
	TPH I	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1-Chlorooct	ane		91.5	99.9	92	70-135				
o-Terphenyl	1		43.3	50.0	87	70-135				
Lab Batch	#: 3111407	Sample: 647093-001 SD / N	ISD Batch	: 1 Matrix:	Soil		1			
Units:	mg/kg	Date Analyzed: 12/20/19 13:39	SUI	RROGATE R	ECOVERY S	STUDY				
	TPH I	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1-Chlorooct	ane		113	99.7	113	70-135				
o-Terphenyl	1		51.9	49.9	104	70.135				

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: Solaris Oxy Reverse C

Work Or	rders : 64709	3,		Project ID:	212C-MD-0	02030	
Lab Batch	#: 3111753	Sample: 647093-001 SD / M	ASD Batch	n: 1 Matrix:	Soil		
Units:	mg/kg	Date Analyzed: 12/25/19 18:51	SU	RROGATE RI	ECOVERY S	STUDY	
	втех	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			נען		
1,4-Difluor	obenzene		0.0346	0.0300	115	70-130	
4-Bromoflu	orobenzene		0.0327	0.0300	109	70-130	
Lab Batch	#: 3111790	Sample: 647093-032 SD / N	ASD Batch	n: 1 Matrix:	Soil	·	
Units:	mg/kg	Date Analyzed: 12/26/19 06:46	SU	RROGATE RI	ECOVERY S	STUDY	
	ВТЕУ	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
		Analytes			[~]		
1,4-Difluor	obenzene		0.0345	0.0300	115	70-130	
4-Bromoflu	iorobenzene		0.0315	0.0300	105	70-130	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.



BS / BSD Recoveries



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Project Name: Solaris Oxy Reverse C

							Proj	ect ID:	212C-MD-(02030	
Analyst: KTL	D	ate Prepar	ed: 12/24/202	19			Date A	nalyzed:	12/25/2019		
Lab Batch ID: 3111753 Sample: 7693246-1-	BKS	Batch	n #: 1					Matrix: S	Solid		
Units: mg/kg		BLAN	K/BLANK	SPIKE / I	BLANK S	SPIKE DUP	LICATE	RECOV	ERY STUD	ΟY	
BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00200	0.100	0.118	118	0.100	0.102	102	15	70-130	35	
Toluene	< 0.00200	0.100	0.106	106	0.100	0.0924	92	14	70-130	35	
Ethylbenzene	< 0.00200	0.100	0.104	104	0.100	0.0923	92	12	70-130	35	
m,p-Xylenes	< 0.00400	0.200	0.209	105	0.200	0.185	93	12	70-130	35	
o-Xylene	< 0.00200	0.100	0.106	106	0.100	0.0937	94	12	70-130	35	
Analyst: KTL	D	ate Prepar	ed: 12/25/202	19			Date A	nalyzed:	12/26/2019		
Lab Batch ID: 3111790 Sample: 7693262-1-	BKS	Batch	n#: 1					Matrix: S	Solid		
Lab Batch ID: 3111790 Sample: 7693262-1- Units: mg/kg	BKS	Batch BLAN	n #: 1 K /BLANK \$	SPIKE / I	BLANK S	SPIKE DUP	LICATE	Matrix: S	Solid E RY STUD	ΟY	
Lab Batch ID: 3111790 Sample: 7693262-1- Units: mg/kg BTEX by EPA 8021B Analytes	BKS Blank Sample Result [A]	Batch BLAN Spike Added [B]	n #: 1 K/BLANK Blank Spike Result [C]	SPIKE / I Blank Spike %R [D]	BLANK S Spike Added [E]	SPIKE DUP Blank Spike Duplicate Result [F]	LICATE Blk. Spk Dup. %R [G]	Matrix: S RECOV	Solid ERY STUE Control Limits %R	OY Control Limits %RPD	Flag
Lab Batch ID: 3111790 Sample: 7693262-1- Units: mg/kg BTEX by EPA 8021B BTEX by EPA 8021B Analytes Benzene Benzene Benzene	BKS Blank Sample Result [A] <0.00200	Batch BLAN Spike Added [B] 0.100	n #: 1 K/BLANK Blank Spike Result [C] 0.109	SPIKE / I Blank Spike %R [D] 109	Spike Added [E] 0.100	Blank Spike Duplicate Result [F] 0.0986	LICATE Blk. Spk Dup. %R [G] 99	Matrix: S RECOV	Solid ERY STUE Control Limits %R 70-130	Control Limits %RPD 35	Flag
Lab Batch ID: 3111790 Sample: 7693262-1- Units: mg/kg BTEX by EPA 8021B Analytes Benzene Toluene	BKS Blank Sample Result [A] <0.00200 <0.00200	Batch BLAN Spike Added [B] 0.100 0.100	n #: 1 K/BLANK S Blank Spike Result [C] 0.109 0.0970	SPIKE / I Blank Spike %R [D] 109 97	BLANK S Spike Added [E] 0.100 0.100	SPIKE DUP Blank Spike Duplicate Result [F] 0.0986 0.0888	LICATE Blk. Spk Dup. %R [G] 99 89	Matrix: S RECOVI	Solid ERY STUE Control Limits %R 70-130 70-130	Control Limits %RPD 35 35	Flag
Lab Batch ID: 3111790 Sample: 7693262-1- Units: mg/kg BTEX by EPA 8021B Analytes Benzene Toluene Ethylbenzene	BKS Blank Sample Result [A] <0.00200 <0.00200 <0.00200	Batch BLAN Spike Added [B] 0.100 0.100 0.100	n #: 1 K/BLANK S Blank Spike Result [C] 0.109 0.0970 0.0952	SPIKE / 1 Blank Spike %R [D] 109 97 95	Spike Added [E] 0.100 0.100 0.100	Blank Spike Duplicate Result [F] 0.0986 0.0888 0.0878	LICATE Blk. Spk Dup. %R [G] 99 89 88	Matrix: S RECOVI RPD % 10 9 8	Solid ERY STUE Control Limits %R 70-130 70-130 70-130	Control Limits %RPD 35 35 35	Flag
Lab Batch ID: 3111790 Sample: 7693262-1- Units: mg/kg BTEX by EPA 8021B Analytes Benzene Toluene Ethylbenzene m.p-Xylenes	BKS Blank Sample Result [A] <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00400	Batch BLAN Spike Added [B] 0.100 0.100 0.100 0.200	n #: 1 K /BLANK : Blank Spike Result [C] 0.109 0.0970 0.0952 0.191	SPIKE / J Blank Spike %R [D] 109 97 95 96	Spike Added [E] 0.100 0.100 0.100 0.100 0.200	Blank Spike Duplicate Result [F] 0.0986 0.0888 0.0878 0.179	LICATE Blk. Spk Dup. %R [G] 99 89 88 88 90	Matrix: \$ RECOV RPD % 10 9 8 6	Solid ERY STUE Control Limits %R 70-130 70-130 70-130 70-130	Control Limits %RPD 35 35 35 35 35	Flag

Relative Percent Difference RPD = $200^{*}|(C-F)/(C+F)|$ Blank Spike Recovery [D] = $100^{*}(C)/[B]$ Blank Spike Duplicate Recovery [G] = $100^{*}(F)/[E]$ All results are based on MDL and Validated for QC Purposes



BS / BSD Recoveries



.

Project Name: Solaris Oxy Reverse C

Work Order #: 647093							Proj	ject ID:	212C-MD-()2030	
Analyst: CHE	D	ate Prepar	red: 12/20/202	19			Date A	nalyzed:	12/20/2019		
Lab Batch ID: 3111361 Sample: 76929	88-1-BKS	Batc	h #: 1					Matrix: S	Solid		
Units: mg/kg		BLAN	K /BLANK	SPIKE / 2	BLANK	SPIKE DUP	LICATE	RECOV	ERY STUI	DY	
Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	< 0.858	250	261	104	250	262	105	0	90-110	20	
Analyst: CHE	D	ate Prepar	red: 12/20/202	19			Date A	nalyzed:	12/20/2019		
Lab Batch ID: 3111368 Sample: 76929	92-1-BKS	Batc	h #: 1					Matrix: S	Solid		
Units: mg/kg		BLAN	K /BLANK	SPIKE / 2	BLANK	SPIKE DUP	LICATE	RECOV	ERY STUI	DY	
Inorganic Anions by EPA 300/300.1	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Inorganic Anions by EPA 300/300.1 Analytes Chloride	Blank Sample Result [A] <5.00	Spike Added [B] 250	Blank Spike Result [C] 257	Blank Spike %R [D] 103	Spike Added [E] 250	Blank Spike Duplicate Result [F] 267	Blk. Spk Dup. %R [G] 107	RPD %	Control Limits %R 90-110	Control Limits %RPD 20	Flag
Inorganic Anions by EPA 300/300.1 Analytes Chloride Analyst: CHE	Blank Sample Result [A] <5.00	Spike Added [B] 250 Pate Prepar	Blank Spike Result [C] 257 red: 12/20/202	Blank Spike %R [D] 103	Spike Added [E] 250	Blank Spike Duplicate Result [F] 267	Blk. Spk Dup. %R [G] 107 Date A	RPD % 4 nalyzed:	Control Limits %R 90-110 12/20/2019	Control Limits %RPD 20	Flag
Inorganic Anions by EPA 300/300.1 Analytes Chloride Analyst: CHE Lab Batch ID: 3111362 Sample: 76929	Blank Sample Result [A] <5.00 D 98-1-BKS	Spike Added [B] 250 ate Prepar Batc	Blank Spike Result [C] 257 red: 12/20/202 h #: 1	Blank Spike %R [D] 103	Spike Added [E] 250	Blank Spike Duplicate Result [F] 267	Blk. Spk Dup. %R [G] 107 Date A	RPD % 4 nalyzed: 2 Matrix: 5	Control Limits %R 90-110 12/20/2019 Solid	Control Limits %RPD 20	Flag
Inorganic Anions by EPA 300/300.1 Analytes Chloride Analyst: CHE Lab Batch ID: 3111362 Sample: 76929 Units: mg/kg	Blank Sample Result [A] <5.00 D 98-1-BKS	Spike Added [B] 250 Pate Prepar Bate BLAN	Blank Spike Result [C] 257 red: 12/20/20 h #: 1 K /BLANK	Blank Spike %R [D] 103 19 SPIKE / 1 103 <th< th=""><th>Spike Added [E] 250 BLANK S</th><th>Blank Spike Duplicate Result [F] 267 SPIKE DUP</th><th>Blk. Spk Dup. %R [G] 107 Date A</th><th>RPD % 4 nalyzed: 5 Matrix: 5 RECOV</th><th>Control Limits %R 90-110 12/20/2019 Solid ERY STUI</th><th>Control Limits %RPD 20</th><th>Flag</th></th<>	Spike Added [E] 250 BLANK S	Blank Spike Duplicate Result [F] 267 SPIKE DUP	Blk. Spk Dup. %R [G] 107 Date A	RPD % 4 nalyzed: 5 Matrix: 5 RECOV	Control Limits %R 90-110 12/20/2019 Solid ERY STUI	Control Limits %RPD 20	Flag
Inorganic Anions by EPA 300/300.1 Analytes Chloride Analyst: CHE Lab Batch ID: 3111362 Sample: 76929 Units: mg/kg Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A] <5.00 D 98-1-BKS Blank Sample Result [A]	Spike Added [B] 250 Pate Prepar Bate BLAN Spike Added [B]	Blank Spike Result [C] 257 red: 12/20/20 h #: 1 K /BLANK Spike Result [C]	Blank Spike %R [D] 103 19 SPIKE / 2 SPIKE / 2 Blank Spike %R [D]	Spike Added [E] 250 BLANK S Spike Added [E]	Blank Spike Duplicate Result [F] 267 SPIKE DUP Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G] 107 Date A LICATE Blk. Spk Dup. %R [G]	RPD % 4 nalyzed: 5 Matrix: 5 RECOV	Control Limits %R 90-110 12/20/2019 Solid ERY STUI Control Limits %R	Control Limits %RPD 20 20 OY Control Limits %RPD	Flag

Relative Percent Difference RPD = $200^{*}|(C-F)/(C+F)|$ Blank Spike Recovery [D] = $100^{*}(C)/[B]$ Blank Spike Duplicate Recovery [G] = $100^{*}(F)/[E]$ All results are based on MDL and Validated for QC Purposes



BS / BSD Recoveries



.

Project Name: Solaris Oxy Reverse C

Work Order #: 647093							Pro	ject ID:	212C-MD-	02030	
Analyst: CHE	D	ate Prepar	ed: 12/20/20	19			Date A	nalyzed:	12/20/2019		
Lab Batch ID: 3111363 Sample	e: 7693002-1-BKS	Batc	h #: 1					Matrix: S	Solid		
Units: mg/kg		BLAN	K /BLANK	SPIKE / 2	BLANK S	SPIKE DUP	LICATE	RECOV	ERY STUI	DY	
Inorganic Anions by EPA 300, Analytes	/300.1 Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	264	106	250	264	106	0	90-110	20	
Analyst: ARM	D	ate Prepar	ed: 12/20/20	19	-		Date A	nalyzed:	12/20/2019	+	·'
Lab Batch ID: 3111407 Sample	e: 7692950-1-BKS	Bate	h #: 1					Matrix:	Solid		
Units: mg/kg		BLAN	K /BLANK	SPIKE / 2	BLANK S	SPIKE DUP	LICATE	RECOV	ERY STUI	DY	
TPH By SW8015 Mod	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	935	94	1000	943	94	1	70-135	20	
Diesel Range Organics (DRO)	<15.0	1000	973	97	1000	963	96	1	70-135	20	
Analyst: ARM	D	ate Prepar	red: 12/20/20	19	•		Date A	nalyzed:	12/20/2019	1	
Lab Batch ID: 3111410 Sample	e: 7692952-1-BKS	Bate	h #: 1					Matrix:	Solid		
Units: mg/kg		BLAN	K /BLANK	SPIKE / 2	BLANK S	SPIKE DUP	LICATE	RECOV	ERY STUI	DY	
TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	881	88	1000	868	87	1	70-135	20	
Diesel Range Organics (DRO)	<50.0	1000	876	88	1000	832	83	5	70-135	20	

Relative Percent Difference RPD = $200^{*}|(C-F)/(C+F)|$ Blank Spike Recovery [D] = $100^{*}(C)/[B]$ Blank Spike Duplicate Recovery [G] = $100^{*}(F)/[E]$ All results are based on MDL and Validated for QC Purposes



Project Name: Solaris Oxy Reverse C



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Work Order # :	647093						Project II	D: 212C-	MD-0203	C		
Lab Batch ID:	3111753	QC- Sample ID:	647093	-001 S	Ba	tch #:	1 Matrix	x: Soil				
Date Analyzed:	12/25/2019	Date Prepared:	12/24/2	019	An	alyst: H	KTL					
Reporting Units:	mg/kg		N	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
	BTEX by EPA 8021B	Parent Sample Possilt	Spike	Spiked Sample Result	Spiked Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
	Analytes	[A]	Added [B]	[C]	%R [D]	Added [E]	Kesuit [F]	%R [G]	%0	%K	%RPD	
Benzene		<0.00198	0.0992	0.0779	79	0.101	0.0757	75	3	70-130	35	
Toluene		<0.00198	0.0992	0.0742	75	0.101	0.0732	72	1	70-130	35	
Ethylbenzene		<0.00198	0.0992	0.0745	75	0.101	0.0756	75	1	70-130	35	
m,p-Xylenes		< 0.00397	0.198	0.145	73	0.202	0.139	69	4	70-130	35	X
o-Xylene		<0.00198	0.0992	0.0848	85	0.101	0.0856	85	1	70-130	35	
Lab Batch ID:	3111790	QC- Sample ID:	647093	-032 S	Ba	tch #:	1 Matrix	x: Soil				
Date Analyzed:	12/26/2019	Date Prepared:	12/25/2	019	An	alyst: H	KTL					
Reporting Units:	mg/kg		N	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
	BTEX by EPA 8021B	Parent Sample Result	Spike Added	Spiked Sample Result [C]	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag

Analytes	Sample Result [A]	Spike Added [B]	Result [C]	Sample %R [D]	Spike Added [E]	Spiked Sample Result [F]	Dup. %R [G]	RPD %	Limits %R	Limits %RPD	Flag
Benzene	<0.00200	0.0998	0.0997	100	0.100	0.0997	100	0	70-130	35	
Toluene	< 0.00200	0.0998	0.0894	90	0.100	0.0910	91	2	70-130	35	
Ethylbenzene	< 0.00200	0.0998	0.0891	89	0.100	0.0908	91	2	70-130	35	
m,p-Xylenes	< 0.00399	0.200	0.180	90	0.200	0.183	92	2	70-130	35	
o-Xylene	<0.00200	0.0998	0.0906	91	0.100	0.0927	93	2	70-130	35	

 $\begin{array}{ll} Matrix \ Spike \ Percent \ Recovery \quad [D] = 100*(C-A)/B \\ Relative \ Percent \ Difference \quad RPD = 200*|(C-F)/(C+F)| \end{array}$

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E





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Project Name: Solaris Oxy Reverse C

Work Order # :	647093						Project II): 212C-1	MD-02030)		
Lab Batch ID:	3111361	QC- Sample ID:	647004	-011 S	Ba	tch #:	1 Matrix	k: Soil				
Date Analyzed:	12/20/2019	Date Prepared:	12/20/2	019	An	alyst: (CHE					
Reporting Units:	mg/kg		Μ	ATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
Inorgan	ic Anions by EPA 300/300.1	Parent Sample Result	Spike Added	Spiked Sample Result	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD	Control Limits %B	Control Limits %RPD	Flag
	Analytes	[A]	[B]	[0]	[D]	[E]	itesuit [1]	[G]	70	/010		
Chloride		<4.96	248	301	121	248	286	115	5	90-110	20	X
Lab Batch ID:	3111361	QC- Sample ID:	647062	-004 S	Ba	tch #:	1 Matrix	x: Soil				
Date Analyzed:	12/20/2019	Date Prepared:	12/20/2	019	An	alyst: (CHE					
Reporting Units:	mg/kg		Μ	ATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
Inorgan	ic Anions by EPA 300/300.1	Parent Sample Result	Spike	Spiked Sample Result	Spiked Sample	Spike	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD	Control Limits %B	Control Limits	Flag
	Analytes	[A]	[B]	[0]	[D]	[E]	itesuit [1]	[G]	70	/01		
Chloride		243	252	509	106	252	503	103	1	90-110	20	
Lab Batch ID:	3111362	QC- Sample ID:	647094	-001 S	Ba	tch #:	1 Matrix	k: Soil	•		-	
Date Analyzed:	12/20/2019	Date Prepared:	12/20/2	019	An	alyst: (CHE					
Reporting Units:	mg/kg		Μ	ATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
Inorgan	ic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride		14.4	301	282	89	301	315	100	11	90-110	20	X

Matrix Spike Percent Recovery $[D] = 100^{*}(C-A)/B$ Relative Percent Difference RPD = $200^{*}|(C-F)/(C+F)|$

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Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E





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Project Name: Solaris Oxy Reverse C

Work Order # :	647093						Project II	D: 212C-1	MD-0203	C		
Lab Batch ID:	3111362	QC- Sample ID:	647094	-002 S	Ba	tch #:	1 Matri	x: Soil				
Date Analyzed:	12/20/2019	Date Prepared:	12/20/2	019	An	alyst: (CHE					
Reporting Units:	mg/kg		Μ	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
Inorgai	nic Anions by EPA 300/300.1	Parent Sample Posult	Spike	Spiked Sample Result	Spiked Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
	Analytes	[A]	Added [B]		%K [D]	E]	Kesuit [F]	%K [G]	70	%K	%KPD	
Chloride		3.05	302	312	102	302	316	104	1	90-110	20	
Lab Batch ID:	3111363	QC- Sample ID:	646744	-005 S	Ba	tch #:	1 Matri	x: Soil				
Date Analyzed:	12/20/2019	Date Prepared:	12/20/2	019	An	alyst: (CHE					
Reporting Units:	mg/kg		Μ	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
Inorgai	nic Anions by EPA 300/300.1	Parent Sample Result	Spike	Spiked Sample Result	Spiked Sample %B	Spike	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD	Control Limits %R	Control Limits	Flag
	Analytes	[A]	[B]	[0]	[D]	[E]	Ktsuit [F]	[G]	/0	701		
Chloride		423	251	661	95	251	659	94	0	90-110	20	
Lab Batch ID:	3111363	QC- Sample ID:	647094	-003 S	Ba	tch #:	1 Matri	x: Soil				
Date Analyzed:	12/20/2019	Date Prepared:	12/20/2	019	An	alyst: (CHE					
Reporting Units:	mg/kg		Μ	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
Inorgai	nic Anions by EPA 300/300.1	Parent Sample Result	Spike Added	Spiked Sample Result [C]	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
	Analytes	[A]	[R]		[[D]]	(F)		[C]				
Chlorida	Analytes	[A]	[B]	260	[D]	[E]	254	[G]	2	00.110	20	

Matrix Spike Percent Recovery $[D] = 100^{*}(C-A)/B$ Relative Percent Difference RPD = $200^{*}|(C-F)/(C+F)|$ Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E



Project Name: Solaris Oxy Reverse C

SUP ACCREDIES

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Work Order # :	647093						Project II): 212C-1	MD-0203	0		
Lab Batch ID:	3111368	QC- Sample ID:	647093	-012 S	Ba	tch #:	1 Matri	x: Soil				
Date Analyzed:	12/20/2019	Date Prepared:	12/20/2	019	An	alyst: (CHE					
Reporting Units:	mg/kg		N	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
Inorga	anic Anions by EPA 300/300.1	Parent Sample Result	Spike	Spiked Sample Result	Spiked Sample	Spike	Duplicate Spiked Sample Bosult [F]	Spiked Dup. % P	RPD	Control Limits	Control Limits	Flag
	Analytes	[A]	[B]	[0]	[D]	[E]	Kesunt [F]	[G]	/0	70K	70KI D	
Chloride		243	248	495	102	248	482	96	3	90-110	20	
Lab Batch ID:	3111368	QC- Sample ID:	647093	-020 S	Ba	tch #:	1 Matri	k: Soil				
Date Analyzed:	12/20/2019	Date Prepared:	12/20/2	019	An	alyst: (CHE					
Reporting Units:	mg/kg		N	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
Inorga	anic Anions by EPA 300/300.1	Parent Sample Posult	Spike	Spiked Sample Result	Spiked Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
	Analytes	[A]	[B]	[C]	%K [D]	E]	Kesuit [F]	%K [G]	70	%K	%KPD	
Chloride		902	250	1120	87	250	1130	91	1	90-110	20	X
Lab Batch ID:	3111407	QC- Sample ID:	647093	-001 S	Ba	tch #:	1 Matri	k: Soil				
Date Analyzed:	12/20/2019	Date Prepared:	12/20/2	019	An	alyst: A	ARM					
Reporting Units:	mg/kg		N	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
	TPH By SW8015 Mod	Parent	Snike	Spiked Sample Result	Spiked Sample	Snike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
		Sample	Брікс	Rebuit	Sample	Spine	~ F					
	Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
Gasoline Rang	Analytes e Hydrocarbons (GRO)	Sample Result [A]	Added [B] 996	[C] 1060	%R [D]	Added [E] 997	Result [F] 957	% R [G] 96	% 10	%R 70-135	% RPD	

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E





Project Name: Solaris Oxy Reverse C

Work Order # :	647093						Project ID	: 212C-N	AD-02030)		
Lab Batch ID:	3111410	QC- Sample ID:	647062	-001 S	Ba	tch #:	1 Matrix	: Soil				
Date Analyzed:	12/20/2019	Date Prepared:	12/20/2	019	An	alyst: A	ARM					
Reporting Units:	mg/kg		Μ	ATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	FE REC	OVERY S	STUDY		
Т	PH By SW8015 Mod	Parent Sample	Spike	Spiked Sample Result	Spiked Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
	Analytes	[A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
Gasoline Range I	Hydrocarbons (GRO)	<15.0	997	865	87	999	875	88	1	70-135	20	
Diesel Range Org	ganics (DRO)	20.0	997	793	78	999	816	80	3	70-135	20	

Matrix Spike Percent Recovery $[D] = 100^{*}(C-A)/B$ Relative Percent Difference RPD = $200^{*}|(C-F)/(C+F)|$ Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

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UNERS U(Y/N)	1B BTEX 8260B 05 (Ext to C35) M (GRO - DRO - ORO - MRO) C s Ag As Ba Cd Cr Pb Se Hg Is Ag As Ba Cd Cr Pb Se Hg Is Ag As Ba Cd Cr Pb Se Hg	Ag As Ba Cd Cr PP Se Hg Or An Ar S S S S S S S S S S S S S S S S S S
Long	Long	BIEX 8260B tto C35) KO - DRO - ORO - MRO)
Ā	NERS (Y/N)	RS (/N) BTEX 8260B (Ext to C35) (GRO - DRO - ORC Ag As Ba Cd Cr Pb S

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		Relinguished by	a pausinhiniau b	Mar	Relinguished by								-		(LAB USE)	LAB #			Comments:	Booking Labo	Project Location (county, state)	Project Name:			Analysis R
		<i>p</i>	Ċ	Y	/: /:	AH-6 (0'-1')	AH-5 (4'-4 5')	AH-5 (2-2.5)	AH-5 (1'-1.5')	AH-5 (U-1)	AUE (2-2.3)	AH-4 (1'-1.5')	AH-4 (0'-1')	AH-3 (2-2.5')					Xenc	Tetra	1: Eddy	Оху	Sola		equest of Chair
	Daio, Fille,		Date: Time:	12.19.2019 14:54	Date: Time:											SAMPLE IDENTIFICATION			ŏ	t Tech, Inc.	County, New Mexico	Reverse C	ris	Tetra Tech, Inc.	of Custody Record
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\prec					X	< ×	×	×	×	×	×	×	×	×	WATEF SOIL	<u> </u> 7	MATRIX		Britta		212C		Rob Kirk	4000 N. 401 N Tel Fax	
	Date: Time:		Date: Time:	- III.e.	Time: Time:	: ×	×	×	×	×	×	×	×	×	HCL HNO ₃ ICE		PRESERVATIVI METHOD		ny Long		-MD-02030			Big Spring Street, Ste fidland, Texas 79705 I (432) 682-4559 r (432) 682-3946	
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(Circle) HAND DEL	Ć	5	Sample Temperatu	UNE USE	X X				X X	X X		X X	X X		BTEX 80 TPH TX1 TPH 801 PAH 827 Total Met	21B 1005 5M (0C als A	BTE (Ext to GRO -	X 8260 C35) DRO - (a Cd Cr	3 DRO - I Pb Se I	MRO) Hg					2470
IVERED FEDEX	Special	- Rush c		HEMARKS:											TCLP Me TCLP Vol TCLP Ser RCI GC/MS V	tals / atiles ni Vo ol. 8	Ag As B s blatiles 260B /	a Cd Cr 624	Pb Se	Hg		le or Spec	ANALYSIS		20
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		Dato.	Date: Tin	12.19.2019	Date: Tir											MPLE IDENTIFICATION				ch, Inc.	unty, New Mexico	erse C		etra Tech	Custody Record
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VERED FEDEX	Special	Rush C	RUSH:												TCLP Me TCLP Vol TCLP Sei RCI GC/MS V	nals latile: mi Vo ol. 8	Ag As E s platiles 260B /	624	PD Se	Hg		le or Speci	ANALYSIS		10973
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					AH-18 (0'-1')	AH-17 (0"-6")	AH-16 (1'-1.5')	AH-16 (0'-1')	AH-15 (0'-1')	AH-14 (0'-1')	AH-13 (1'-1.5')	AH-13 (0'-1')	AH-12 (6"-1')	AH-12 (0"-6")					tory: Xencc	Tetra	Eddy	Оху Р	Solari	<u>۔</u>	quest of Chain
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	Date		Date		Date	×	×	×	×	×	×	×	×	×	>	< :	WATEF SOIL HCL	2	MATRIX		Brittany I		212C-MI			Rob Kirk	4000 N. Big S 401 Midlan Tel (432 Fax (432	
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Date: Time:	Date: Time:	12.19.2019 14:54	Date: Time:				(3'-3.5')	(2'-2.5')		SAMPLE IDENTIFICATION			Xenco	Tetra Tech, Inc.	Eddy County, New Mexico	Oxy Reverse C	Solaris	Tetra Tech, Inc.	of Chain of Custody Record
Received by:	Received by:	NON	Boo And La				12.17.2020	12.17.2019	DATE	YEAR:	SAMPLING		Sampler Signature:		Project #:		Site Manager:		
Date: 1	Date: 1	Date:					X	X	WATEF SOIL HCL HNO ₃	2	MATRIX PRESEI		Brittany Long		212C-MD-020		Rob Kirk	4000 N. Big Spring Stre 401 Midland, Texas 7 Tel (432) 682-455 Fax (432) 682-394	
lime:	ime:	ime:					^ 1 Z	1 N	# CONTA	AINE	HOD RS (/N)				30			et, Ste 9705 9	
Э. Ö	Sample Temperature	LAB USE							BTEX 80 TPH TX1 TPH 801 PAH 827 Total Meta TCLP Met	21B 005 5M (0C als A tals /	BTE (Ext to GRO - g As Ba Ag As B	X 82606 C35) DRO - (a Cd Cr Ba Cd Cr)RO - I DRO - I D Se I Pb Se	MRO) Hg Hg					DYIDO
Special Report Li	RUSH: Same Di Rush Charges Au	REMARKS:							TCLP Vola TCLP Ser RCI GC/MS Va GC/MS Se PCB's 80 NORM	atiles ni Vo ol. 8 emi. 82 /	s platiles 260B / Vol. 82 608	624 270C/625	5			or Specify Met	ANALYSIS REQUE		5
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	hr								Hold							<u> </u>			_ 1 ດ



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Tetra Tech- Midland	Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambie								
Date/ Time Received: 12.19.2019 02.54.00 PM	Air and Metal samples	Acceptable Range: Ambient							
Work Order #: 647093	Temperature Measurin	g device used:R8							
Sample Rec	eipt Checklist	Comments							
#1 *Temperature of cooler(s)?	.6								
#2 *Shipping container in good condition?	Yes								
#3 *Samples received on ice?	Yes								
#4 *Custody Seals intact on shipping container/ cooler?	N/A								
#5 Custody Seals intact on sample bottles?	N/A								
#6*Custody Seals Signed and dated?	N/A								
#7 *Chain of Custody present?	Yes								
#8 Any missing/extra samples?	No								
#9 Chain of Custody signed when relinquished/ received?	Yes								
#10 Chain of Custody agrees with sample labels/matrix?	Yes								
#11 Container label(s) legible and intact?	Yes								
#12 Samples in proper container/ bottle?	Yes								
#13 Samples properly preserved?	Yes								
#14 Sample container(s) intact?	Yes								
#15 Sufficient sample amount for indicated test(s)?	Yes								
#16 All samples received within hold time?	Yes								
#17 Subcontract of sample(s)?	N/A								
#18 Water VOC samples have zero headspace?	N/A N/A								

* Must be completed for after-hours delivery of samples prior to placing in the refrigerator

Analyst:

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PH Device/Lot#:

Checklist completed by: Billion Tall Brianna Teel

Date: 12.19.2019

Checklist reviewed by: Jessica Veamer

Jessica Kramer

Date: 12.19.2019