GW – 028

Annual DP Report (Part 15 of 16)

2015

upon the analytical characterization data and profile to be provided, the TSDF will process the material to remove organics prior to land disposal. However, because the samples indicate that the soil is not characteristically hazardous (toxicity) and all of the sample concentrations were below the land disposal restrictions treatment standards for soils, NRC requests that the soils in the three containers be designated as non-hazardous waste under a "no longer contained-in" determination. This designation will not affect NRC's decision to protectively manage the soils through off-site treatment and disposal, but NMED's action on our "no longer contained-in determination request" will affect the hazardous materials designation on a RCRA manifest.

If you have any questions or comments regarding this request, please feel free to contact me at 575-746-5487 or Robert Combs at 575-746-5382.

Sincerely,

Scott M. Denton
Environmental Manager
Navajo Refining Company, L.L.C.

Enclosures

c: Robert Combs, NRC
Micki Schultz, NRC
Pam Krueger, ARCADIS
Leslie Barras, TRC

Table 1 - Waste Soil Characterization Analytical Results
Tank 815
Navajo Refining Company, Artesia, New Mexico

Analyte	Toxicity Characteristic Limit (mg/L)	Hazardous Waste Treatment Standards (mg/kg)				Alternative Treatment Standards for Soils (mg/kg)				Analytical Results		
		K048	K049	K051	K052	K048	K049	K051	K052	S. Bro 25	S. Bro 53	S. Bro 49
Semivolatile Organic Compounds (mg/kg)												
2,4-Dimethylphenol	--	--	NA	--	NA	--	NA	--	NA	<18.5	<3.81	<38.1
Acenaphthene	--	--	--	NA	--	--	--	NA	--	1.25 J	0.168 J	0.845 J
Anthracene	--	--	3.4	3.4	--	--	34	34	--	0.552 J	0.262 J	1.35 J
Benz(a)anthracene	--	--	--	3.4	3.4	--	--	34	34	0.246 J	0.634	2.63 J
Benzo(a)pyrene	--	3.4	3.4	3.4	--	34	34	34	--	<1.83	0.488 J	2.13 J
bis(2-Ethylhexyl) phthalate	--	28	28	28	--	280	280	280	--	<18.5	<3.81	<38.1
Carbon disulfide	--	--	NA	--	--	--	NA	--	--	not analyzed	not analyzed	not analyzed
Chrysene	--	3.4	3.4	3.4	--	34	34	34	--	0.395 J	0.662	6.86
Di-n-butyl phthalate	--	28	--	28	--	280	--	280	--	<18.5	<3.81	<38.1
Fluorene	--	NA	--	NA	--	NA	--	NA	--	2.2	0.290 J	0.994 J
m-Cresol (3-methylphenol)	--	--	--	--	5.6	--	--	--	56	<18.5	<3.81	<38.1
Naphthalene	--	5.6	5.6	5.6	5.6	56	56	56	56	2.03	0.160 J	<3.77
o-Cresol (2-methylphenol)	--	--	--	--	5.6	--	--	--	56	<18.5	<3.81	<38.1
p-Cresol (4-methylphenol)	--	--	--	--	5.6	--	--	--	56	<18.5	<3.81	<38.1
Phenanthrene	--	5.6	5.6	5.6	5.6	56	56	56	56	0.996 J	0.896	3.87
Phenol	--	6.2	6.2	6.2	6.2	62	62	62	62	<18.5	<3.81	<38.1
Pyrene	--	8.2	8.2	8.2	--	82	82	82	--	1.82 J	1.59	10.4
TCLP Volatile Organic Compounds (mg/L)												
1,1-Dichloroethene	0.7	--	--	--	--	--	--	--	--	<0.050	<0.050	<0.050
1,2-Dichloroethane	0.5	--	--	--	--	--	--	--	--	<0.050	<0.050	<0.050
2-Butanone	200	--	--	--	--	--	--	--	--	<0.50	<0.50	<0.50
Benzene	0.5	--	--	--	--	--	--	--	--	<0.050	<0.050	<0.050
Carbon tetrachloride	0.5	--	--	--	--	--	--	--	--	<0.050	<0.050	<0.050
Chlorobenzene	100	--	--	--	--	--	--	--	--	<0.050	<0.050	<0.050
Chloroform	6	--	--	--	--	--	--	--	--	<0.25	<0.25	<0.25
Tetrachloroethene	0.7	--	--	--	--	--	--	--	--	<0.050	<0.050	<0.050
Trichloroethene	0.5	--	--	--	--	--	--	--	--	<0.050	<0.050	<0.050
Vinyl Chloride	0.2	--	--	--	--	--	--	--	--	<0.050	<0.050	<0.050
TCLP Semivolatile Organic Compounds (mg/L)												
1,4-Dichlorobenzene	7.5	--	--	--	--	--	--	--	--	<0.10	<0.10	<0.10
2,4,5-Trichlorophenol	400	--	--	--	--	--	--	--	--	<0.10	<0.10	<0.10
2,4,6-Trichlorophenol	2	--	--	--	--	--	--	--	--	<0.10	<0.10	<0.10
2,4-Dinitrotoluene	0.13	--	--	--	--	--	--	--	--	<0.10	<0.10	<0.10
Cresols, Total	200	--	--	--	--	--	--	--	--	<0.20	<0.20	<0.20
Hexachlorobenzene	0.13	--	--	--	--	--	--	--	--	<0.10	<0.10	<0.10
Hexachlorobutadiene	0.5	--	--	--	--	--	--	--	--	<0.10	<0.10	<0.10
Hexachloroethane	3	--	--	--	--	--	--	--	--	<0.10	<0.10	<0.10
Nitrobenzene	2	--	--	--	--	--	--	--	--	<0.10	<0.10	<0.10
Pentachlorophenol	100	--	--	--	--	--	--	--	--	<0.10	<0.10	<0.10
Pyridine	5	--	--	--	--	--	--	--	--	<0.10	<0.10	<0.10

Table 1 - Waste Soil Characterization Analytical Results

Tank 815

Navajo Refining Company, Artesia, New Mexico

Analyte	Toxicity Characteristic Limit (mg/L)	Hazardous Waste Treatment Standards (mg/kg)				Alternative Treatment Standards for Soils (mg/kg)				Analytical Results		
		K048	K049	K051	K052	K048	K049	K051	K052	S. Bro 25	S. Bro 53	S. Bro 49
TCLP Metals (mg/L)												
Arsenic	5	--	--	--	--	--	--	--	--	<0.450	<0.450	<0.450
Barium	100	--	--	--	--	--	--	--	--	<1.40	<1.40	<1.40
Cadmium	1	--	--	--	--	--	--	--	--	<0.450	<0.450	<0.450
Chromium	5	0.6	0.6	0.6	0.6	6	6	6	6	<0.450	<0.450	<0.450
Lead	5	--	--	--	--	--	--	--	--	<0.450	<0.450	<0.450
Mercury	0.2	--	--	--	--	--	--	--	--	<0.0100	<0.0100	<0.0100
Nickel	--	11	11	11	11	110	110	110	110	<0.450	<0.450	<0.450
Selenium	1	--	--	--	--	--	--	--	--	<0.450	<0.450	<0.450
Silver	5	--	--	--	--	--	--	--	--	<0.450	<0.450	<0.450
Total Metals (mg/kg)												
Total Lead	--	NA	NA	NA	NA	NA	NA	NA	NA	20.9	13.1	40.2
Total Petroleum Hydrocarbons (mg/kg)												
Diesel Range Organics	--	--	--	--	--	--	--	--	--	30,000	5,260	9,610

Notes and Abbreviations:

-- Analyte is not listed as characteristically hazardous or as an analyte associated with the listed waste.

< x = Sample result was not detected with reporting limit value of x.

B = The indicated compound was found in the associated method blank as well as the laboratory samples.

J = Estimated value below the lowest calibration point.

mg/kg = milligrams per kilogram

mg/L = milligrams per liter

NA = Analyte .identified in 40 CFR 268.40 as associated with the waste code, but standard listed as "not applicable for non-wastewater forms"

ANALYTICAL REPORT

June 02, 2015

ARCADIS US - TX

Sample Delivery Group:	L763904
Samples Received:	05/08/2015
Project Number:	TX001155.0000
Description:	Navajo Refining Company - Artesia, NM

Report To:

Pam Krueger
2929 Briarpark Dr., Suite 300
Houston, TX 77042

Entire Report Reviewed By:

Pamela A. Langford

Pam Langford

Pam Langford
Technical Service Representative

TANK 815 S. BRO 25 L763904-01 Waste

Collected by: I. Castro
Collected date/time: 05/07/15 09:10
Received date/time: 05/08/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Mercury by Method 7470A	WG788910	1	05/14/15 21:17	05/15/15 06:53	ESC
Metals (ICP) by Method 6010B	WG789056	1	05/15/15 20:28	05/17/15 14:37	JDG
Preparation by Method 1311	WG788648	1	05/13/15 15:58	05/13/15 15:59	BG
Preparation by Method 1311	WG788704	1	05/14/15 14:41	05/14/15 14:42	LJN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG789017	1	05/14/15 21:09	05/15/15 14:48	ADF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG789393	1	05/17/15 09:45	05/17/15 09:45	MCB

TANK 815 S. BRO 53 L763904-02 Waste

Collected by: I. Castro
Collected date/time: 05/07/15 09:25
Received date/time: 05/08/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Mercury by Method 7470A	WG788910	1	05/14/15 21:17	05/15/15 07:00	ESC
Metals (ICP) by Method 6010B	WG789056	1	05/15/15 20:28	05/17/15 14:41	JDG
Preparation by Method 1311	WG788648	1	05/13/15 15:58	05/13/15 15:59	BG
Preparation by Method 1311	WG788704	1	05/14/15 14:41	05/14/15 14:42	LJN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG789017	1	05/14/15 21:09	05/15/15 15:58	ADF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG789393	1	05/17/15 10:44	05/17/15 10:44	MCB

TANK 815 S. BRO 49 L763904-03 Waste

Collected by: I. Castro
Collected date/time: 05/07/15 09:40
Received date/time: 05/08/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Mercury by Method 7470A	WG788952	1	05/14/15 21:57	05/15/15 09:23	ESC
Metals (ICP) by Method 6010B	WG789055	1	05/15/15 23:32	05/17/15 13:39	JDG
Preparation by Method 1311	WG788648	1	05/13/15 15:58	05/13/15 15:59	BG
Preparation by Method 1311	WG788704	1	05/14/15 14:41	05/14/15 14:42	LJN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG789017	1	05/14/15 21:09	05/15/15 16:21	ADF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG789393	1	05/17/15 11:04	05/17/15 11:04	MCB

TRIP BLANK L763904-04 GW

Collected by: I. Castro
Collected date/time: 05/07/15 00:00
Received date/time: 05/08/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Volatile Organic Compounds (GC/MS) by Method 8260B	WG787918	1	05/17/15 08:15	05/17/15 08:15	MCB

TANK 815 S. BRO 25 L763904-05 Solid

Collected by: I. Castro
Collected date/time: 05/07/15 09:10
Received date/time: 05/08/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Metals (ICP) by Method 6010B	WG788480	1	05/12/15 18:27	05/13/15 12:35	LTB
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG788184	50	05/11/15 18:23	05/12/15 20:21	KMF
Semi-Volatile Organic Compounds (GC) by Method 3546/DRO	WG788415	100	05/12/15 18:02	05/13/15 14:40	CLG
Total Solids by Method 2540 G-2011	WG788085	1	05/11/15 13:39	05/12/15 09:21	MEL

TANK 815 S. BRO 53 L763904-06 Solid

Collected by: I. Castro
Collected date/time: 05/07/15 09:25
Received date/time: 05/08/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Metals (ICP) by Method 6010B	WG788480	1	05/12/15 18:27	05/13/15 12:40	LTB
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG788184	10	05/11/15 18:23	05/12/15 19:58	KMF
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG788184	20	05/11/15 18:23	05/13/15 20:02	KMF
Semi-Volatile Organic Compounds (GC) by Method 3546/DRO	WG788415	20	05/12/15 18:02	05/13/15 11:35	CLG
Total Solids by Method 2540 G-2011	WG788085	1	05/11/15 13:39	05/12/15 09:21	MEL

TANK 815 S. BRO 49 L763904-07 Solid

Collected by: I. Castro

Collected date/time: 05/07/15 09:40

Received date/time: 05/08/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Metals (ICP) by Method 6010B	WG788480	1	05/12/15 18:27	05/13/15 12:44	LTB
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG788184	100	05/11/15 18:23	05/12/15 20:44	KMF
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG788184	200	05/11/15 18:23	05/13/15 19:38	KMF
Semi-Volatile Organic Compounds (GC) by Method 3546/DRO	WG788415	200	05/12/15 18:02	05/13/15 14:50	CLG
Total Solids by Method 2540 G-2011	WG788085	1	05/11/15 13:39	05/12/15 09:21	MEL

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Pamela A. Langford

Pam Langford

Pam Langford
Technical Service Representative

Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP ZHE Extraction	-		5/14/2015 2:41:09 PM	WG788704
TCLP Extraction	-		5/13/2015 3:58:54 PM	WG788648

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
	mg/l		mg/l	mg/l			
Mercury	ND		0.0100	0.20	1	05/15/2015 06:53	WG788910

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
	mg/l		mg/l	mg/l			
Arsenic	ND		0.450	5	1	05/17/2015 14:37	WG789056
Barium	ND		1.40	100	1	05/17/2015 14:37	WG789056
Cadmium	ND		0.450	1	1	05/17/2015 14:37	WG789056
Chromium	ND		0.450	5	1	05/17/2015 14:37	WG789056
Lead	ND		0.450	5	1	05/17/2015 14:37	WG789056
Nickel	ND		0.450		1	05/17/2015 14:37	WG789056
Selenium	ND		0.450	1	1	05/17/2015 14:37	WG789056
Silver	ND		0.450	5	1	05/17/2015 14:37	WG789056

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
	ug/l		ug/l	ug/l			
Benzene	U		16.5	50.0	1	05/17/2015 09:45	WG789393
Carbon tetrachloride	U		16.5	50.0	1	05/17/2015 09:45	WG789393
Chlorobenzene	U		16.5	50.0	1	05/17/2015 09:45	WG789393
Chloroform	U		82.5	250	1	05/17/2015 09:45	WG789393
1,2-Dichloroethane	U		16.5	50.0	1	05/17/2015 09:45	WG789393
1,1-Dichloroethene	U		16.5	50.0	1	05/17/2015 09:45	WG789393
2-Butanone (MEK)	U		165	500	1	05/17/2015 09:45	WG789393
Tetrachloroethene	U		16.5	50.0	1	05/17/2015 09:45	WG789393
Trichloroethene	U		16.5	50.0	1	05/17/2015 09:45	WG789393
Vinyl chloride	U		16.5	50.0	1	05/17/2015 09:45	WG789393
(S) Toluene-d8	*101*			*88.5-111*		*05/17/2015 09:45*	WG789393
(S) Dibromofluoromethane	*97.8*			*78.3-121*		*05/17/2015 09:45*	WG789393
(S) a,a,a-Trifluorotoluene	*102*			*85.0-114*		*05/17/2015 09:45*	WG789393
(S) 4-Bromofluorobenzene	*104*			*71.0-126*		*05/17/2015 09:45*	WG789393

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
	mg/l		mg/l	mg/l			
1,4-Dichlorobenzene	ND		0.100	7.50	1	05/15/2015 14:48	WG789017
2,4-Dinitrotoluene	ND		0.100	0.13	1	05/15/2015 14:48	WG789017
Hexachlorobenzene	ND		0.100	0.13	1	05/15/2015 14:48	WG789017
Hexachloro-1,3-butadiene	ND		0.100	0.50	1	05/15/2015 14:48	WG789017
Hexachloroethane	ND		0.100	3	1	05/15/2015 14:48	WG789017
Nitrobenzene	ND		0.100	2	1	05/15/2015 14:48	WG789017
Pyridine	ND		0.100	5	1	05/15/2015 14:48	WG789017
3&4-Methyl Phenol	ND		0.100	400	1	05/15/2015 14:48	WG789017
2-Methylphenol	ND		0.100	200	1	05/15/2015 14:48	WG789017
Pentachlorophenol	ND		0.100	100	1	05/15/2015 14:48	WG789017
2,4,5-Trichlorophenol	ND		0.100	400	1	05/15/2015 14:48	WG789017
2,4,6-Trichlorophenol	ND		0.100	2	1	05/15/2015 14:48	WG789017
(S) 2-Fluorophenol	*35.9*		*10.0-77.9*	*87*		*05/15/2015 14:48*	WG789017

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
(S) Phenol-d5	*23.7*		*5.00-70.1*	*67*		*05/15/2015 14:48*	WG789017
(S) Nitrobenzene-d5	*48.2*		*21.8-123*	*120*		*05/15/2015 14:48*	WG789017
(S) 2-Fluorobiphenyl	*51.2*		*29.5-131*	*122*		*05/15/2015 14:48*	WG789017
(S) 2,4,6-Tribromophenol	*75.5*		*11.2-130*	*148*		*05/15/2015 14:48*	WG789017
(S) p-Terphenyl-d14	*58.4*		*29.3-137*	*149*		*05/15/2015 14:48*	WG789017

Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		5/13/2015 3:58:54 PM	WG788648
TCLP ZHE Extraction	-		5/14/2015 2:41:09 PM	WG788704

Mercury by Method 7470A

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Mercury	ND		0.0100	0.20	1	05/15/2015 07:00	WG788910

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Arsenic	ND		0.450	5	1	05/17/2015 14:41	WG789056
Barium	ND		1.40	100	1	05/17/2015 14:41	WG789056
Cadmium	ND		0.450	1	1	05/17/2015 14:41	WG789056
Chromium	ND		0.450	5	1	05/17/2015 14:41	WG789056
Lead	ND		0.450	5	1	05/17/2015 14:41	WG789056
Nickel	ND		0.450		1	05/17/2015 14:41	WG789056
Selenium	ND		0.450	1	1	05/17/2015 14:41	WG789056
Silver	ND		0.450	5	1	05/17/2015 14:41	WG789056

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	U		16.5	50.0	1	05/17/2015 10:44	WG789393
Carbon tetrachloride	U		16.5	50.0	1	05/17/2015 10:44	WG789393
Chlorobenzene	U		16.5	50.0	1	05/17/2015 10:44	WG789393
Chloroform	U		82.5	250	1	05/17/2015 10:44	WG789393
1,2-Dichloroethane	U		16.5	50.0	1	05/17/2015 10:44	WG789393
1,1-Dichloroethene	U		16.5	50.0	1	05/17/2015 10:44	WG789393
2-Butanone (MEK)	U		165	500	1	05/17/2015 10:44	WG789393
Tetrachloroethene	U		16.5	50.0	1	05/17/2015 10:44	WG789393
Trichloroethene	U		16.5	50.0	1	05/17/2015 10:44	WG789393
Vinyl chloride	U		16.5	50.0	1	05/17/2015 10:44	WG789393
(S) Toluene-d8	*101*			*88.5-111*		*05/17/2015 10:44*	WG789393
(S) Dibromofluoromethane	*97.1*			*78.3-121*		*05/17/2015 10:44*	WG789393
(S) a,a,a-Trifluorotoluene	*101*			*85.0-114*		*05/17/2015 10:44*	WG789393
(S) 4-Bromofluorobenzene	*103*			*71.0-126*		*05/17/2015 10:44*	WG789393

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,4-Dichlorobenzene	ND		0.100	7.50	1	05/15/2015 15:58	WG789017
2,4-Dinitrotoluene	ND		0.100	0.13	1	05/15/2015 15:58	WG789017
Hexachlorobenzene	ND		0.100	0.13	1	05/15/2015 15:58	WG789017
Hexachloro-1,3-butadiene	ND		0.100	0.50	1	05/15/2015 15:58	WG789017
Hexachloroethane	ND		0.100	3	1	05/15/2015 15:58	WG789017
Nitrobenzene	ND		0.100	2	1	05/15/2015 15:58	WG789017
Pyridine	ND		0.100	5	1	05/15/2015 15:58	WG789017
3&4-Methyl Phenol	ND		0.100	400	1	05/15/2015 15:58	WG789017
2-Methylphenol	ND		0.100	200	1	05/15/2015 15:58	WG789017
Pentachlorophenol	ND		0.100	100	1	05/15/2015 15:58	WG789017
2,4,5-Trichlorophenol	ND		0.100	400	1	05/15/2015 15:58	WG789017
2,4,6-Trichlorophenol	ND		0.100	2	1	05/15/2015 15:58	WG789017
(S) 2-Fluorophenol	*45.0*		*10.0-77.9*	*87*		*05/15/2015 15:58*	WG789017

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
(S) Phenol-d5	*31.7*		*5.00-70.1*	*67*		*05/15/2015 15:58*	WG789017
(S) Nitrobenzene-d5	*59.1*		*21.8-123*	*120*		*05/15/2015 15:58*	WG789017
(S) 2-Fluorobiphenyl	*63.0*		*29.5-131*	*122*		*05/15/2015 15:58*	WG789017
(S) 2,4,6-Tribromophenol	*81.8*		*11.2-130*	*148*		*05/15/2015 15:58*	WG789017
(S) p-Terphenyl-d14	*65.4*		*29.3-137*	*149*		*05/15/2015 15:58*	WG789017

Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		5/13/2015 3:58:54 PM	WG788648
TCLP ZHE Extraction	-		5/14/2015 2:41:09 PM	WG788704

Mercury by Method 7470A

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Mercury	ND		0.0100	0.20	1	05/15/2015 09:23	WG788952

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Arsenic	ND		0.450	5	1	05/17/2015 13:39	WG789055
Barium	ND		1.40	100	1	05/17/2015 13:39	WG789055
Cadmium	ND		0.450	1	1	05/17/2015 13:39	WG789055
Chromium	ND		0.450	5	1	05/17/2015 13:39	WG789055
Lead	ND		0.450	5	1	05/17/2015 13:39	WG789055
Nickel	ND		0.450		1	05/17/2015 13:39	WG789055
Selenium	ND		0.450	1	1	05/17/2015 13:39	WG789055
Silver	ND		0.450	5	1	05/17/2015 13:39	WG789055

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	U		16.5	50.0	1	05/17/2015 11:04	WG789393
Carbon tetrachloride	U		16.5	50.0	1	05/17/2015 11:04	WG789393
Chlorobenzene	U		16.5	50.0	1	05/17/2015 11:04	WG789393
Chloroform	U		82.5	250	1	05/17/2015 11:04	WG789393
1,2-Dichloroethane	U		16.5	50.0	1	05/17/2015 11:04	WG789393
1,1-Dichloroethene	U		16.5	50.0	1	05/17/2015 11:04	WG789393
2-Butanone (MEK)	U		165	500	1	05/17/2015 11:04	WG789393
Tetrachloroethene	U		16.5	50.0	1	05/17/2015 11:04	WG789393
Trichloroethene	U		16.5	50.0	1	05/17/2015 11:04	WG789393
Vinyl chloride	U		16.5	50.0	1	05/17/2015 11:04	WG789393
(S) Toluene-d8	*100*			*88.5-111*		*05/17/2015 11:04*	WG789393
(S) Dibromofluoromethane	*97.9*			*78.3-121*		*05/17/2015 11:04*	WG789393
(S) a,a,a-Trifluorotoluene	*101*			*85.0-114*		*05/17/2015 11:04*	WG789393
(S) 4-Bromofluorobenzene	*104*			*71.0-126*		*05/17/2015 11:04*	WG789393

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,4-Dichlorobenzene	ND		0.100	7.50	1	05/15/2015 16:21	WG789017
2,4-Dinitrotoluene	ND		0.100	0.13	1	05/15/2015 16:21	WG789017
Hexachlorobenzene	ND		0.100	0.13	1	05/15/2015 16:21	WG789017
Hexachloro-1,3-butadiene	ND		0.100	0.50	1	05/15/2015 16:21	WG789017
Hexachloroethane	ND		0.100	3	1	05/15/2015 16:21	WG789017
Nitrobenzene	ND		0.100	2	1	05/15/2015 16:21	WG789017
Pyridine	ND		0.100	5	1	05/15/2015 16:21	WG789017
3&4-Methyl Phenol	ND		0.100	400	1	05/15/2015 16:21	WG789017
2-Methylphenol	ND		0.100	200	1	05/15/2015 16:21	WG789017
Pentachlorophenol	ND		0.100	100	1	05/15/2015 16:21	WG789017
2,4,5-Trichlorophenol	ND		0.100	400	1	05/15/2015 16:21	WG789017
2,4,6-Trichlorophenol	ND		0.100	2	1	05/15/2015 16:21	WG789017
(S) 2-Fluorophenol	*38.2*		*10.0-77.9*	*87*		*05/15/2015 16:21*	WG789017

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
(S) Phenol-d5	*25.7*		*5.00-70.1*	*67*		*05/15/2015 16:21*	WG789017
(S) Nitrobenzene-d5	*51.2*		*21.8-123*	*120*		*05/15/2015 16:21*	WG789017
(S) 2-Fluorobiphenyl	*53.5*		*29.5-131*	*122*		*05/15/2015 16:21*	WG789017
(S) 2,4,6-Tribromophenol	*69.8*		*11.2-130*	*148*		*05/15/2015 16:21*	WG789017
(S) p-Terphenyl-d14	*55.3*		*29.3-137*	*149*		*05/15/2015 16:21*	WG789017

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	U		0.330	1.00	1	05/17/2015 08:15	WG787918
Carbon tetrachloride	U		0.380	1.00	1	05/17/2015 08:15	WG787918
Chloroform	U		0.320	5.00	1	05/17/2015 08:15	WG787918
1,2-Dibromoethane	U		0.380	1.00	1	05/17/2015 08:15	WG787918
1,1-Dichloroethane	U		0.260	1.00	1	05/17/2015 08:15	WG787918
1,2-Dichloroethane	U		0.360	1.00	1	05/17/2015 08:15	WG787918
1,1-Dichloroethene	U		0.400	1.00	1	05/17/2015 08:15	WG787918
Ethylbenzene	U		0.380	1.00	1	05/17/2015 08:15	WG787918
Methylene Chloride	U		1.00	5.00	1	05/17/2015 08:15	WG787918
1,1,1,2-Tetrachloroethane	U		0.380	1.00	1	05/17/2015 08:15	WG787918
1,1,2,2-Tetrachloroethane	U		0.130	1.00	1	05/17/2015 08:15	WG787918
Toluene	U		0.780	5.00	1	05/17/2015 08:15	WG787918
1,1,1-Trichloroethane	U		0.319	1.00	1	05/17/2015 08:15	WG787918
1,1,2-Trichloroethane	U		0.380	1.00	1	05/17/2015 08:15	WG787918
Vinyl chloride	U		0.260	1.00	1	05/17/2015 08:15	WG787918
o-Xylene	U		0.340	1.00	1	05/17/2015 08:15	WG787918
m&p-Xylene	U		0.720	2.00	1	05/17/2015 08:15	WG787918
Xylenes, Total	U		1.10	3.00	1	05/17/2015 08:15	WG787918
(S) Toluene-d8	*99.8*			*88.5-111*		*05/17/2015 08:15*	WG787918
(S) Dibromofluoromethane	*93.5*			*78.3-121*		*05/17/2015 08:15*	WG787918
(S) 4-Bromofluorobenzene	*101*			*71.0-126*		*05/17/2015 08:15*	WG787918

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
	%				
Total Solids	90.1		1	05/12/2015 09:21	WG788085

Metals (ICP) by Method 6010B

Analyte	Result (dry)	Qualifier	MDL	RDL (dry)	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg	mg/kg			
Lead	20.9		0.210	0.555	1	05/13/2015 12:35	WG788480

Semi-Volatile Organic Compounds (GC) by Method 3546/DRO

Analyte	Result (dry)	Qualifier	MDL	RDL (dry)	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg	mg/kg			
TPH (GC/FID) High Fraction	30000		85.0	444	100	05/13/2015 14:40	WG788415
(S) o-Terphenyl	*0.000*	X		*50.0-150*		*05/13/2015 14:40*	WG788415

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result (dry)	Qualifier	MDL	RDL (dry)	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg	mg/kg			
Benzo(a)pyrene	U		0.300	1.83	50	05/12/2015 20:21	WG788184
Naphthalene	2.03		0.490	1.83	50	05/12/2015 20:21	WG788184
2,4-Dimethylphenol	U		2.70	18.5	50	05/12/2015 20:21	WG788184
Acenaphthene	1.25	J	0.360	1.83	50	05/12/2015 20:21	WG788184
Anthracene	0.552	J	0.360	1.83	50	05/12/2015 20:21	WG788184
Benzo(A)Anthracene	0.246	J	0.230	1.83	50	05/12/2015 20:21	WG788184
Bis(2-Ethylhexyl)phthalate	U		0.660	18.5	50	05/12/2015 20:21	WG788184
Chrysene	0.395	J	0.310	1.83	50	05/12/2015 20:21	WG788184
Di-n-butyl phthalate	U		0.600	18.5	50	05/12/2015 20:21	WG788184
Fluorene	2.20		0.380	1.83	50	05/12/2015 20:21	WG788184
3&4-Methyl Phenol	U		0.430	18.5	50	05/12/2015 20:21	WG788184
2-Methylphenol	U		0.540	18.5	50	05/12/2015 20:21	WG788184
Phenanthrene	0.996	J	0.290	1.83	50	05/12/2015 20:21	WG788184
Phenol	U		0.390	18.5	50	05/12/2015 20:21	WG788184
Pyrene	1.82	J	0.690	1.83	50	05/12/2015 20:21	WG788184
(S) 2-Fluorophenol	*74.2*	X		*21.1-116*		*05/12/2015 20:21*	WG788184
(S) Phenol-d5	*92.5*	X		*26.3-121*		*05/12/2015 20:21*	WG788184
(S) Nitrobenzene-d5	*163*	X		*21.9-129*		*05/12/2015 20:21*	WG788184
(S) 2-Fluorobiphenyl	*89.1*	X		*34.9-129*		*05/12/2015 20:21*	WG788184
(S) 2,4,6-Tribromophenol	*89.2*	X		*21.6-142*		*05/12/2015 20:21*	WG788184
(S) p-Terphenyl-d14	*114*	X		*21.5-128*		*05/12/2015 20:21*	WG788184

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	87.4		1	05/12/2015 09:21	WG788085

Metals (ICP) by Method 6010B

Analyte	Result (dry)	Qualifier	MDL	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	13.1		0.220	0.572	1	05/13/2015 12:40	WG788480

Semi-Volatile Organic Compounds (GC) by Method 3546/DRO

Analyte	Result (dry)	Qualifier	MDL	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
TPH (GC/FID) High Fraction	5260		17.0	91.5	20	05/13/2015 11:35	WG788415
(S) o-Terphenyl	*0.000*	X		*50.0-150*		*05/13/2015 11:35*	WG788415

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result (dry)	Qualifier	MDL	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzo(a)pyrene	0.488	J	0.120	0.755	20	05/13/2015 20:02	WG788184
Naphthalene	0.160	J	0.100	0.378	10	05/12/2015 19:58	WG788184
2,4-Dimethylphenol	U		0.540	3.81	10	05/12/2015 19:58	WG788184
Acenaphthene	0.168	J	0.0730	0.378	10	05/12/2015 19:58	WG788184
Anthracene	0.262	J	0.0720	0.378	10	05/12/2015 19:58	WG788184
Benzo(A)Anthracene	0.634		0.0490	0.378	10	05/12/2015 19:58	WG788184
Bis(2-Ethylhexyl)phthalate	U		0.140	3.81	10	05/12/2015 19:58	WG788184
Chrysene	0.662		0.0640	0.378	10	05/12/2015 19:58	WG788184
Di-n-butyl phthalate	U		0.120	3.81	10	05/12/2015 19:58	WG788184
Fluorene	0.290	J	0.0780	0.378	10	05/12/2015 19:58	WG788184
3&4-Methyl Phenol	U		0.0890	3.81	10	05/12/2015 19:58	WG788184
2-Methylphenol	U		0.110	3.81	10	05/12/2015 19:58	WG788184
Phenanthrene	0.896		0.0610	0.378	10	05/12/2015 19:58	WG788184
Phenol	U		0.0800	3.81	10	05/12/2015 19:58	WG788184
Pyrene	1.59		0.140	0.378	10	05/12/2015 19:58	WG788184
(S) 2-Fluorophenol	*77.5*			*21.1-116*		*05/12/2015 19:58*	WG788184
(S) Phenol-d5	*79.1*			*26.3-121*		*05/12/2015 19:58*	WG788184
(S) Nitrobenzene-d5	*114*			*21.9-129*		*05/12/2015 19:58*	WG788184
(S) 2-Fluorobiphenyl	*77.3*			*34.9-129*		*05/12/2015 19:58*	WG788184
(S) 2,4,6-Tribromophenol	*91.2*			*21.6-142*		*05/12/2015 19:58*	WG788184
(S) p-Terphenyl-d14	*87.7*			*21.5-128*		*05/12/2015 19:58*	WG788184

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
	%				
Total Solids	87.4		1	05/12/2015 09:21	WG788085

Metals (ICP) by Method 6010B

Analyte	Result (dry)	Qualifier	MDL	RDL (dry)	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg	mg/kg			
Lead	40.2		0.220	0.572	1	05/13/2015 12:44	WG788480

Semi-Volatile Organic Compounds (GC) by Method 3546/DRO

Analyte	Result (dry)	Qualifier	MDL	RDL (dry)	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg	mg/kg			
TPH (GC/FID) High Fraction	9610		170	915	200	05/13/2015 14:50	WG788415
(S) o-Terphenyl	*0.000*	X		*50.0-150*		*05/13/2015 14:50*	WG788415

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result (dry)	Qualifier	MDL	RDL (dry)	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg	mg/kg			
Benzo(a)pyrene	2.13	J	1.20	7.55	200	05/13/2015 19:38	WG788184
Naphthalene	U		1.00	3.77	100	05/12/2015 20:44	WG788184
2,4-Dimethylphenol	U		5.40	38.1	100	05/12/2015 20:44	WG788184
Acenaphthene	0.845	J	0.730	3.77	100	05/12/2015 20:44	WG788184
Anthracene	1.35	J	0.720	3.77	100	05/12/2015 20:44	WG788184
Benzo(A)Anthracene	2.63	J	0.490	3.77	100	05/12/2015 20:44	WG788184
Bis(2-Ethylhexyl)phthalate	U		1.40	38.1	100	05/12/2015 20:44	WG788184
Chrysene	6.86		0.640	3.77	100	05/12/2015 20:44	WG788184
Di-n-butyl phthalate	U		1.20	38.1	100	05/12/2015 20:44	WG788184
Fluorene	0.994	J	0.780	3.77	100	05/12/2015 20:44	WG788184
3&4-Methyl Phenol	U		0.890	38.1	100	05/12/2015 20:44	WG788184
2-Methylphenol	U		1.10	38.1	100	05/12/2015 20:44	WG788184
Phenanthrene	3.87		0.610	3.77	100	05/12/2015 20:44	WG788184
Phenol	U		0.800	38.1	100	05/12/2015 20:44	WG788184
Pyrene	10.4		1.40	3.77	100	05/12/2015 20:44	WG788184
(S) 2-Fluorophenol	*69.5*	X		*21.1-116*		*05/12/2015 20:44*	WG788184
(S) Phenol-d5	*71.0*	X		*26.3-121*		*05/12/2015 20:44*	WG788184
(S) Nitrobenzene-d5	*126*	X		*21.9-129*		*05/12/2015 20:44*	WG788184
(S) 2-Fluorobiphenyl	*86.6*	X		*34.9-129*		*05/12/2015 20:44*	WG788184
(S) 2,4,6-Tribromophenol	*83.2*	X		*21.6-142*		*05/12/2015 20:44*	WG788184
(S) p-Terphenyl-d14	*140*	X		*21.5-128*		*05/12/2015 20:44*	WG788184

Method Blank (MB)

(MB) 05/12/15 09:20

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	%		%	%
Total Solids	0.000900			

L763908-02 Original Sample (OS) • Duplicate (DUP)

(OS) 05/12/15 09:21 • (DUP) 05/12/15 09:22

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	%	%		%		%
Total Solids	79.1	78.0	1	1.44		5

Laboratory Control Sample (LCS)

(LCS) 05/12/15 09:20

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	%	%	%	%	
Total Solids	50.0	50.0	100	85.0-115	

Method Blank (MB)

(MB) 05/15/15 06:34

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Mercury	U		0.0033	0.0100

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 05/15/15 06:36 • (LCSD) 05/15/15 06:38

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Mercury	0.0300	0.0295	0.0284	98	95	80-120			4	20

L763935-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 05/15/15 06:40 • (MS) 05/15/15 06:42 • (MSD) 05/15/15 06:44

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Mercury	0.0300	ND	0.0294	0.0299	98	100	1	75-125			2	20

L764413-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 05/15/15 06:47 • (MS) 05/15/15 06:49 • (MSD) 05/15/15 06:51

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Mercury	0.0300	ND	0.0239	0.0288	80	96	1	75-125			18	20

Method Blank (MB)

(MB) 05/15/15 09:06

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Mercury	U		0.0033	0.0100

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 05/15/15 09:12 • (LCSD) 05/15/15 09:14

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Mercury	0.0300	0.0289	0.0284	96	95	80-120			2	20

L763928-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 05/15/15 09:17 • (MS) 05/15/15 09:19 • (MSD) 05/15/15 09:21

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Mercury	0.0300	ND	0.0289	0.0289	96	96	1	75-125			0	20

Method Blank (MB)

(MB) 05/13/15 10:24

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Lead	U		0.19	0.500

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 05/13/15 10:28 • (LCSD) 05/13/15 10:32

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Lead	100	104	108	104	108	80-120			4	20

L763845-13 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 05/13/15 10:37 • (MS) 05/13/15 10:50 • (MSD) 05/13/15 11:09

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Lead	100	3.93	102	107	98	103	1	75-125			5	20

Method Blank (MB)

(MB) 05/17/15 13:06

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Arsenic	U		0.149	0.450
Barium	U		0.446	1.35
Cadmium	U		0.149	0.450
Chromium	U		0.149	0.450
Lead	U		0.149	0.450
Nickel	U		0.149	0.450
Selenium	U		0.149	0.450
Silver	U		0.149	0.450

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 05/17/15 13:10 • (LCSD) 05/17/15 13:16

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Arsenic	9.00	9.21	9.10	102	101	80-120			1	20
Barium	9.00	9.47	9.40	105	104	80-120			1	20
Cadmium	9.00	9.39	9.30	104	103	80-120			1	20
Chromium	9.00	9.48	9.50	105	106	80-120			0	20
Lead	9.00	9.42	9.34	105	104	80-120			1	20
Nickel	9.00	9.19	9.10	102	101	80-120			1	20
Selenium	9.00	9.70	9.52	108	106	80-120			2	20
Silver	9.00	9.47	9.43	105	105	80-120			0	20

L763928-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 05/17/15 13:21 • (MS) 05/17/15 13:30 • (MSD) 05/17/15 13:34

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	9.00	ND	9.49	9.55	105	106	1	75-125			1	20
Barium	9.00	2.58	11.7	11.6	102	101	1	75-125			1	20
Cadmium	9.00	ND	9.60	9.53	107	106	1	75-125			1	20
Chromium	9.00	0.00831	9.26	9.12	103	101	1	75-125			1	20
Lead	9.00	0.0154	9.41	9.32	104	103	1	75-125			1	20
Nickel	9.00	0.00105	9.25	9.19	103	102	1	75-125			1	20
Selenium	9.00	0.00165	10.2	10.1	113	112	1	75-125			0	20
Silver	9.00	ND	9.62	9.53	107	106	1	75-125			1	20

Method Blank (MB)

(MB) 05/17/15 13:43

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Arsenic	U		0.149	0.450
Barium	U		0.446	1.35
Cadmium	U		0.149	0.450
Chromium	U		0.149	0.450
Lead	U		0.149	0.450
Nickel	U		0.149	0.450
Selenium	U		0.149	0.450
Silver	U		0.149	0.450

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 05/17/15 13:59 • (LCSD) 05/17/15 14:04

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Arsenic	9.00	9.66	9.46	107	105	80-120			2	20
Barium	9.00	9.82	9.61	109	107	80-120			2	20
Cadmium	9.00	9.74	9.52	108	106	80-120			2	20
Chromium	9.00	9.67	9.47	107	105	80-120			2	20
Lead	9.00	9.65	9.44	107	105	80-120			2	20
Selenium	9.00	10.2	9.94	113	110	80-120			2	20
Silver	9.00	9.74	9.52	108	106	80-120			2	20

L764199-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 05/17/15 14:08 • (MS) 05/17/15 14:17 • (MSD) 05/17/15 14:23

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	9.00	0.0209	9.91	9.96	110	110	1	75-125			1	20
Barium	9.00	1.16	10.7	10.6	106	105	1	75-125			1	20
Cadmium	9.00	ND	9.84	9.76	109	108	1	75-125			1	20
Chromium	9.00	0.00609	9.50	9.41	106	105	1	75-125			1	20
Lead	9.00	ND	9.53	9.42	106	105	1	75-125			1	20
Nickel	9.00	0.0629	9.56	9.48	106	105	1	75-125			1	20
Selenium	9.00	0.0407	10.6	10.6	118	117	1	75-125			0	20
Silver	9.00	ND	9.97	9.86	111	110	1	75-125			1	20

Method Blank (MB)

(MB) 05/17/15 06:17

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.000331	0.00100
Carbon tetrachloride	U		0.000379	0.00100
Chloroform	U		0.000324	0.00500
1,2-Dibromoethane	U		0.000381	0.00100
1,1 Dichloroethane	U		0.000259	0.00100
1,2-Dichloroethane	U		0.000361	0.00100
1,1-Dichloroethene	U		0.000398	0.00100
Ethylbenzene	U		0.000384	0.00100
Methylene Chloride	U		0.00100	0.00500
1,1,1,2-Tetrachloroethane	U		0.000385	0.00100
1,1,2,2-Tetrachloroethane	U		0.000130	0.00100
Toluene	U		0.000780	0.00500
1,1,1-Trichloroethane	U		0.000319	0.00100
1,1,2-Trichloroethane	U		0.000383	0.00100
Vinyl chloride	U		0.000259	0.00100
Xylenes, Total	U		0.00106	0.00300
o-Xylene	U		0.000341	0.00100
m&p-Xylenes	U		0.000719	0.00200
(S) Toluene-d8	*98.6*			*88.5-111*
(S) Dibromofluoromethane	*93.1*			*78.3-121*
(S) 4-Bromofluorobenzene	*99.0*			*71.0-126*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 05/17/15 05:07 • (LCSD) 05/17/15 05:25

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.0250	0.0220	0.0217	87.8	86.7	74.8-121			1.27	20
Carbon tetrachloride	0.0250	0.0241	0.0241	96.5	96.4	70.2-123			0.0800	20
Chloroform	0.0250	0.0218	0.0217	87.3	86.9	76.0-121			0.470	20
1,2-Dibromoethane	0.0250	0.0261	0.0260	104	104	76.6-121			0.160	20
1,1-Dichloroethane	0.0250	0.0228	0.0229	91.2	91.4	70.7-126			0.230	20
1,2-Dichloroethane	0.0250	0.0232	0.0236	92.8	94.2	68.8-124			1.55	20
1,1-Dichloroethene	0.0250	0.0229	0.0221	91.5	88.4	67.8-129			3.52	20
Ethylbenzene	0.0250	0.0253	0.0247	101	99.0	78.8-122			2.22	20
Methylene Chloride	0.0250	0.0192	0.0182	76.9	72.6	70.3-120			5.69	20
1,1,1,2-Tetrachloroethane	0.0250	0.0263	0.0260	105	104	74.2-124			1.21	20
1,1,2,2-Tetrachloroethane	0.0250	0.0268	0.0269	107	108	70.7-122			0.110	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 05/17/15 05:07 • (LCSD) 05/17/15 05:25

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Toluene	0.0250	0.0228	0.0233	91.1	93.1	79.7-116			2.23	20
1,1,1-Trichloroethane	0.0250	0.0226	0.0235	90.3	94.0	73.2-123			4.00	20
1,1,2-Trichloroethane	0.0250	0.0250	0.0251	100	100	77.7-118			0.350	20
Vinyl chloride	0.0250	0.0223	0.0211	89.3	84.5	65.9-128			5.52	20
Xylenes, Total	0.0750	0.0761	0.0764	101	102	78.7 121			0.360	20
o-Xylene	0.0250	0.0258	0.0258	103	103	77.6-122			0.0300	20
m&p-Xylenes	0.0500	0.0503	0.0506	101	101	78.8-121			0.530	20
(S) Toluene-d8				*99.7*	*101*	*88.5-111*				
(S) Dibromofluoromethane				*97.8*	*94.6*	*78.3-121*				
(S) 4-Bromofluorobenzene				*99.2*	*96.7*	*71.0-126*				

L763891-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 05/17/15 08:32 • (MS) 05/17/15 08:50 • (MSD) 05/17/15 09:07

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.0250	ND	0.0195	0.0212	78.1	84.7	1	54.3-133			8.13	20
Carbon tetrachloride	0.0250	ND	0.0227	0.0233	90.7	93.4	1	55.7-134			2.86	20
Chloroform	0.0250	ND	0.0192	0.0207	76.7	83.0	1	63.0-129			7.91	20
1,2-Dibromoethane	0.0250	ND	0.0226	0.0262	90.4	105	1	67.1-125			15.0	20
1,1-Dichloroethane	0.0250	ND	0.0207	0.0221	82.8	88.5	1	58.5-132			6.65	20
1,2-Dichloroethane	0.0250	ND	0.0206	0.0225	82.4	90.1	1	60.0-126			8.91	20
1,1-Dichloroethene	0.0250	ND	0.0211	0.0222	84.4	88.9	1	51.1-140			5.22	20.2
Ethylbenzene	0.0250	ND	0.0233	0.0260	93.2	104	1	61.4-133			11.1	20
Methylene Chloride	0.0250	ND	0.0159	0.0171	63.7	68.2	1	58.1-122			6.93	20
1,1,1,2-Tetrachloroethane	0.0250	ND	0.0236	0.0252	94.4	101	1	64.0-128			6.73	20
1,1,2,2-Tetrachloroethane	0.0250	ND	0.0252	0.0265	101	106	1	56.0-132			4.85	22.2
Toluene	0.0250	ND	0.0206	0.0233	82.2	93.2	1	61.4-130			12.5	20
1,1,1-Trichloroethane	0.0250	ND	0.0215	0.0224	86.0	89.5	1	58.7-134			3.93	20
1,1,2-Trichloroethane	0.0250	ND	0.0234	0.0259	93.7	104	1	66.3-125			10.0	20
Vinyl chloride	0.0250	ND	0.0197	0.0210	78.9	83.9	1	47.8-137			6.23	20
Xylenes, Total	0.0750	ND	0.0700	0.0780	93.3	104	1	63.3-131			10.9	20
o-Xylene	0.0250	ND	0.0233	0.0256	93.2	103	1	63.3-130			9.58	20
m&p-Xylenes	0.0500	ND	0.0467	0.0524	93.4	105	1	61.7-133			11.5	20
(S) Toluene-d8					*98.7*	*98.7*		*88.5-111*				
(S) Dibromofluoromethane					*98.4*	*93.9*		*78.3-121*				
(S) 4-Bromofluorobenzene					*99.1*	*100*		*71.0-126*				

Method Blank (MB)

(MB) 05/17/15 09:26

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.0165	0.0500
Carbon tetrachloride	U		0.0165	0.0500
Chlorobenzene	U		0.0165	0.0500
Chloroform	U		0.0825	0.250
1,2 Dichloroethane	U		0.0165	0.0500
1,1-Dichloroethene	U		0.0165	0.0500
2-Butanone (MEK)	U		0.165	0.500
Tetrachloroethene	U		0.0165	0.0500
Trichloroethene	U		0.0165	0.0500
Vinyl chloride	U		0.0165	0.0500
(S) Toluene-d8	*101*			*88.5-111*
(S) Dibromofluoromethane	*98.4*			*78.3-121*
(S) a,a,a-Trifluorotoluene	*101*			*85.0-114*
(S) 4-Bromofluorobenzene	*103*			*71.0-126*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 05/17/15 06:53 • (LCSD) 05/17/15 07:12

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.0250	0.0226	0.0252	90.4	101	74.8-121			11.0	20
Carbon tetrachloride	0.0250	0.0235	0.0262	94.0	105	70.2-123			10.9	20
Chlorobenzene	0.0250	0.0229	0.0255	91.5	102	78.1-119			10.7	20
Chloroform	0.0250	0.0231	0.0257	92.5	103	76.0-121			10.7	20
1,2-Dichloroethane	0.0250	0.0236	0.0264	94.5	105	68.8-124			10.9	20
1,1-Dichloroethene	0.0250	0.0237	0.0267	94.7	107	67.8-129			12.2	20
2-Butanone (MEK)	0.125	0.119	0.132	95.1	106	55.0-149			10.6	20
Tetrachloroethene	0.0250	0.0229	0.0257	91.7	103	72.6-126			11.4	20
Trichloroethene	0.0250	0.0229	0.0253	91.7	101	77.7-118			9.78	20
Vinyl chloride	0.0250	0.0254	0.0284	101	113	65.9-128			11.2	20
(S) Toluene-d8				*101*	*101*	*88.5-111*				
(S) Dibromofluoromethane				*99.8*	*98.8*	*78.3-121*				
(S) a,a,a-Trifluorotoluene				*101*	*101*	*85.0-114*				
(S) 4-Bromofluorobenzene				*102*	*102*	*71.0-126*				

L763904-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 05/17/15 09:45 • (MS) 05/17/15 10:05 • (MSD) 05/17/15 10:25

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	1.25	ND	1.06	1.17	84.7	93.4	1	54.3-133			9.86	20
Carbon tetrachloride	1.25	ND	1.05	1.17	84.0	93.7	1	55.7-134			11.0	20
Chlorobenzene	1.25	ND	1.06	1.18	85.0	94.8	1	67.0-125			10.9	20.3
Chloroform	1.25	ND	1.08	1.20	86.5	96.1	1	63.0-129			10.4	20
1,2 Dichloroethane	1.25	ND	1.10	1.22	87.9	97.9	1	60.0 126			10.8	20
1,1-Dichloroethene	1.25	ND	1.09	1.19	86.9	95.4	1	51.1-140			9.29	20.2
2-Butanone (MEK)	6.25	ND	5.08	5.67	81.2	90.7	1	22.4-138			11.0	27
Tetrachloroethene	1.25	ND	1.05	1.17	84.3	93.3	1	53.0-139			10.1	20
Trichloroethene	1.25	ND	1.05	1.17	83.8	93.5	1	44.1-149			10.9	20
Vinyl chloride	1.25	ND	1.18	1.28	94.3	102	1	47.8-137			8.31	20
(S) Toluene-d8					*101*	*102*		*88.5-111*				
(S) Dibromofluoromethane					*99.7*	*98.9*		*78.3-121*				
(S) a,a,a-Trifluorotoluene					*101*	*102*		*85.0-114*				
(S) 4-Bromofluorobenzene					*102*	*101*		*71.0-126*				

Method Blank (MB)

(MB) 05/13/15 09:57

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) High Fraction	U		0.769	4.00
(S) o-Terphenyl	*97.2*			*50.0-150*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 05/13/15 10:07 • (LCSD) 05/13/15 10:17

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) High Fraction	60.0	51.6	51.1	86.0	85.2	50.0-150			0.860	20
(S) o-Terphenyl				*87.8*	*89.9*	*50.0-150*				

Method Blank (MB)

(MB) 05/12/15 11:15

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acenaphthene	U		0.00642	0.0330
Anthracene	U		0.00632	0.0330
Benzo(a)anthracene	U		0.00428	0.0330
Benzo(a)pyrene	U		0.00548	0.0330
Chrysene	U		0.00555	0.0330
Fluorene	U		0.00682	0.0330
Naphthalene	U		0.00889	0.0330
Phenanthrene	U		0.00528	0.0330
Bis(2-ethylhexyl)phthalate	U		0.0120	0.333
Di-n-butyl phthalate	U		0.0109	0.333
Pyrene	U		0.0123	0.0330
2-Methylphenol	U		0.00986	0.333
3&4-Methyl Phenol	U		0.00783	0.333
2,4-Dimethylphenol	U		0.0471	0.333
Phenol	U		0.00695	0.333
(S) Nitrobenzene-d5	*70.2*			*21.9-129*
(S) 2-Fluorobiphenyl	*73.9*			*34.9-129*
(S) p-Terphenyl-d14	*70.1*			*21.5-128*
(S) Phenol-d5	*72.7*			*26.3-121*
(S) 2-Fluorophenol	*68.9*			*21.1-116*
(S) 2,4,6-Tribromophenol	*74.8*			*21.6-142*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 05/12/15 10:28 • (LCSD) 05/12/15 10:51

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acenaphthene	0.667	0.493	0.506	74.0	75.8	48.9-107			2.44	20
Anthracene	0.667	0.528	0.529	79.1	79.4	52.0-112			0.320	20
Benzo(a)anthracene	0.667	0.530	0.515	79.4	77.2	52.3-106			2.86	20
Benzo(a)pyrene	0.667	0.532	0.526	79.7	78.9	51.9-106			1.01	20
Chrysene	0.667	0.507	0.499	76.0	74.7	54.4-110			1.69	20
Fluorene	0.667	0.512	0.524	76.7	78.5	51.1-109			2.35	20
Naphthalene	0.667	0.464	0.473	69.6	71.0	43.4-103			2.02	20
Phenanthrene	0.667	0.502	0.511	75.2	76.6	51.6-107			1.76	20
Bis(2-ethylhexyl)phthalate	0.667	0.513	0.508	76.9	76.1	48.1-116			1.09	20.5
Di-n-butyl phthalate	0.667	0.506	0.512	75.9	76.8	49.7-113			1.22	20
Pyrene	0.667	0.541	0.517	81.2	77.5	47.1-108			4.55	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 05/12/15 10:28 • (LCSD) 05/12/15 10:51

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
2-Methylphenol	0.667	0.448	0.468	67.2	70.1	42.4-100			4.23	20
3&4-Methyl Phenol	0.667	0.512	0.534	76.7	80.0	50.5-115			4.17	20
2,4-Dimethylphenol	0.667	0.472	0.470	70.8	70.4	42.2-110			0.520	20
Phenol	0.667	0.467	0.478	70.0	71.7	41.5-106			2.41	20
(S) Nitrobenzene d5				*72.6*	*72.7*	*21.9 129*				
(S) 2-Fluorobiphenyl				*77.3*	*78.0*	*34.9-129*				
(S) p-Terphenyl-d14				*74.3*	*69.3*	*21.5-128*				
(S) Phenol-d5				*72.3*	*73.2*	*26.3-121*				
(S) 2-Fluorophenol				*70.5*	*69.7*	*21.1-116*				
(S) 2,4,6-Tribromophenol				*88.7*	*87.8*	*21.6-142*				

L764231-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 05/12/15 15:41 • (MS) 05/12/15 16:05 • (MSD) 05/12/15 16:28

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Acenaphthene	0.667	ND	0.529	0.511	79.2	76.7	1	32.2-134			3.30	27.3
Anthracene	0.667	ND	0.538	0.528	80.7	79.2	1	32.3-137			1.87	28.4
Benzo(a)anthracene	0.667	ND	0.531	0.515	79.6	77.3	1	33.3-124			3.00	29
Benzo(a)pyrene	0.667	ND	0.528	0.523	79.1	78.4	1	28.2-128			0.950	28.4
Chrysene	0.667	ND	0.499	0.486	74.8	72.9	1	36.3-129			2.58	28
Fluorene	0.667	ND	0.542	0.525	81.3	78.8	1	34.0-133			3.15	27.1
Naphthalene	0.667	ND	0.489	0.480	73.3	71.9	1	36.4-121			1.94	27.2
Phenanthrene	0.667	ND	0.517	0.510	77.5	76.4	1	30.8-137			1.49	26.5
Bis(2-ethylhexyl)phthalate	0.667	ND	0.525	0.510	78.7	76.5	1	21.8-141			2.85	35.2
Di-n-butyl phthalate	0.667	0.00527	0.532	0.526	78.9	78.0	1	32.2-133			1.12	25.9
Pyrene	0.667	ND	0.529	0.496	79.4	74.3	1	24.1-130			6.53	29.9
2-Methylphenol	0.667	ND	0.474	0.466	71.1	69.9	1	30.3-118			1.70	25.1
3&4-Methyl Phenol	0.667	ND	0.546	0.538	81.9	80.6	1	33.3-141			1.52	25.7
2,4-Dimethylphenol	0.667	ND	0.504	0.498	75.5	74.7	1	12.3-149			1.09	32.3
Phenol	0.667	ND	0.490	0.490	73.5	73.5	1	25.1-130			0.0200	29.6
(S) Nitrobenzene-d5					*76.5*	*76.3*		*21.9-129*				
(S) 2-Fluorobiphenyl					*82.2*	*79.8*		*34.9-129*				
(S) p-Terphenyl-d14					*69.7*	*67.5*		*21.5-128*				
(S) Phenol-d5					*73.9*	*73.8*		*26.3-121*				
(S) 2-Fluorophenol					*75.3*	*74.1*		*21.1-116*				
(S) 2,4,6-Tribromophenol					*91.6*	*91.8*		*21.6-142*				

Method Blank (MB)

(MB) 05/15/15 11:20

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
1,4-Dichlorobenzene	U		0.0330	0.100
2,4-Dinitrotoluene	U		0.0330	0.100
Hexachlorobenzene	U		0.0330	0.100
Hexachloro-1,3-butadiene	U		0.0330	0.100
Hexachloroethane	U		0.0330	0.100
Nitrobenzene	U		0.0330	0.100
Pyridine	U		0.0330	0.100
2-Methylphenol	U		0.0330	0.100
3&4-Methyl Phenol	U		0.0330	0.100
Pentachlorophenol	U		0.0330	0.100
2,4,5-Trichlorophenol	U		0.0330	0.100
2,4,6-Trichlorophenol	U		0.0330	0.100
(S) Nitrobenzene-d5	*60.7*			*21.8-123*
(S) 2-Fluorobiphenyl	*59.3*			*29.5-131*
(S) p-Terphenyl-d14	*59.9*			*29.3-137*
(S) Phenol-d5	*30.3*			*5.00-70.1*
(S) 2-Fluorophenol	*45.1*			*10.0-77.9*
(S) 2,4,6-Tribromophenol	*73.3*			*11.2-130*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 05/15/15 10:10 • (LCSD) 05/15/15 10:33

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
1,4-Dichlorobenzene	0.0500	0.0222	0.0253	44.4	50.6	21.0-89.4			13.1	32.6
2,4-Dinitrotoluene	0.0500	0.0333	0.0371	66.5	74.2	31.2-105			11.0	22
Hexachlorobenzene	0.0500	0.0365	0.0402	73.0	80.5	38.5-116			9.77	20.1
Hexachloro-1,3-butadiene	0.0500	0.0254	0.0295	50.8	59.0	16.1-104			14.9	31.2
Hexachloroethane	0.0500	0.0207	0.0246	41.3	49.2	16.5-89.8			17.4	30.7
Nitrobenzene	0.0500	0.0299	0.0313	59.8	62.5	31.4-106			4.55	25.7
Pyridine	0.0500	0.0112	0.0121	22.5	24.1	13.5-58.9			7.10	32.5
2-Methylphenol	0.0500	0.0259	0.0279	51.8	55.9	26.4-86.9			7.61	26.5
3&4-Methyl Phenol	0.0500	0.0293	0.0312	58.6	62.4	27.9-92.0			6.34	27
Pentachlorophenol	0.0500	0.0340	0.0391	67.9	78.2	10.0-97.4			14.1	35.1
2,4,5-Trichlorophenol	0.0500	0.0356	0.0390	71.3	78.0	34.9-112			9.09	23.9
2,4,6-Trichlorophenol	0.0500	0.0361	0.0404	72.1	80.7	29.8-107			11.2	24.1
(S) Nitrobenzene-d5				*56.6*	*59.6*	*21.8-123*				
(S) 2-Fluorobiphenyl				*59.6*	*62.1*	*29.5-131*				

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 05/15/15 10:10 • (LCSD) 05/15/15 10:33

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
(S) p-Terphenyl-d14				*53.7*	*59.2*	*29.3-137*				
(S) Phenol-d5				*31.3*	*32.6*	*5.00-70.1*				
(S) 2-Fluorophenol				*43.9*	*46.4*	*10.0-77.9*				
(S) 2,4,6-Tribromophenol				*84.0*	*95.6*	*11.2-130*				

L763904-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 05/15/15 14:48 • (MS) 05/15/15 15:11 • (MSD) 05/15/15 15:35

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
1,4-Dichlorobenzene	0.500	ND	0.258	0.255	51.6	50.9	1	14.0-104			1.30	36.4
2,4-Dinitrotoluene	0.500	ND	0.342	0.401	68.5	80.1	1	16.2-135			15.7	20.6
Hexachlorobenzene	0.500	ND	0.379	0.435	75.8	87.0	1	31.9-135			13.8	20
Hexachloro-1,3-butadiene	0.500	ND	0.291	0.285	58.1	57.1	1	15.7-109			1.85	37.6
Hexachloroethane	0.500	ND	0.244	0.238	48.9	47.5	1	10.4-105			2.84	40
Nitrobenzene	0.500	ND	0.309	0.329	61.8	65.8	1	23.1-121			6.35	29
Pyridine	0.500	ND	0.124	0.127	24.8	25.4	1	10.0-77.8			2.61	38.8
2-Methylphenol	0.500	ND	0.262	0.289	52.4	57.8	1	10.0-133			9.89	40
3&4-Methyl Phenol	0.500	ND	0.293	0.321	58.6	64.1	1	17.4-100			9.10	27.7
Pentachlorophenol	0.500	ND	0.415	0.495	83.0	98.9	1	10.0-108			17.6	40
2,4,5-Trichlorophenol	0.500	ND	0.365	0.418	73.0	83.6	1	30.6-120			13.5	33.8
2,4,6-Trichlorophenol	0.500	ND	0.378	0.433	75.6	86.7	1	19.1-114			13.7	29.9
(S) Nitrobenzene-d5					*58.4*	*64.6*		*21.8-123*				
(S) 2-Fluorobiphenyl					*61.8*	*68.0*		*29.5-131*				
(S) p-Terphenyl-d14					*55.8*	*63.0*		*29.3-137*				
(S) Phenol-d5					*29.4*	*31.9*		*5.00-70.1*				
(S) 2-Fluorophenol					*42.8*	*47.2*		*10.0-77.9*				
(S) 2,4,6-Tribromophenol					*90.1*	*108*		*11.2-130*				

Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND,U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.
SDL	Sample Detection Limit.
MQL	Method Quantitation Limit.
Unadj. MQL	Unadjusted Method Quantitation Limit.

Qualifier	Description
J	Estimated value.
X	Surrogate recovery outside the control limit.

ACCREDITATIONS & LOCATIONS

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE.**

State Accreditations

Alabama	40660
Alaska	UST-080
Arizona	AZ0612
Arkansas	88-0469
California	01157CA
Colorado	TN00003
Conneticut	PH-0197
Florida	E87487
Georgia	NELAP
Georgia [1]	923
Idaho	TN00003
Illinois	200008
Indiana	C-TN-01
Iowa	364
Kansas	E-10277
Kentucky [1]	90010
Kentucky [2]	16
Louisiana	AI30792
Maine	TN0002
Maryland	324
Massachusetts	M-TN003
Michigan	9958
Minnesota	047-999-395
Mississippi	TN00003
Missouri	340
Montana	CERT0086
Nebraska	NE-OS-15-05
Nevada	TN-03-2002-34
New Hampshire	2975
New Jersey–NELAP	TN002
New Mexico	TN00003
New York	11742
North Carolina	Env375
North Carolina [1]	DW21704
North Carolina [2]	41
North Dakota	R-140
Ohio–VAP	CL0069
Oklahoma	9915
Oregon	TN200002
Pennsylvania	68-02979
Rhode Island	221
South Carolina	84004
South Dakota	n/a
Tennessee [14]	2006
Texas	T 104704245-07-TX
Texas [5]	LAB0152
Utah	6157585858
Vermont	VT2006
Virginia	109
Washington	C1915
West Virginia	233
Wisconsin	9980939910
Wyoming	A2LA

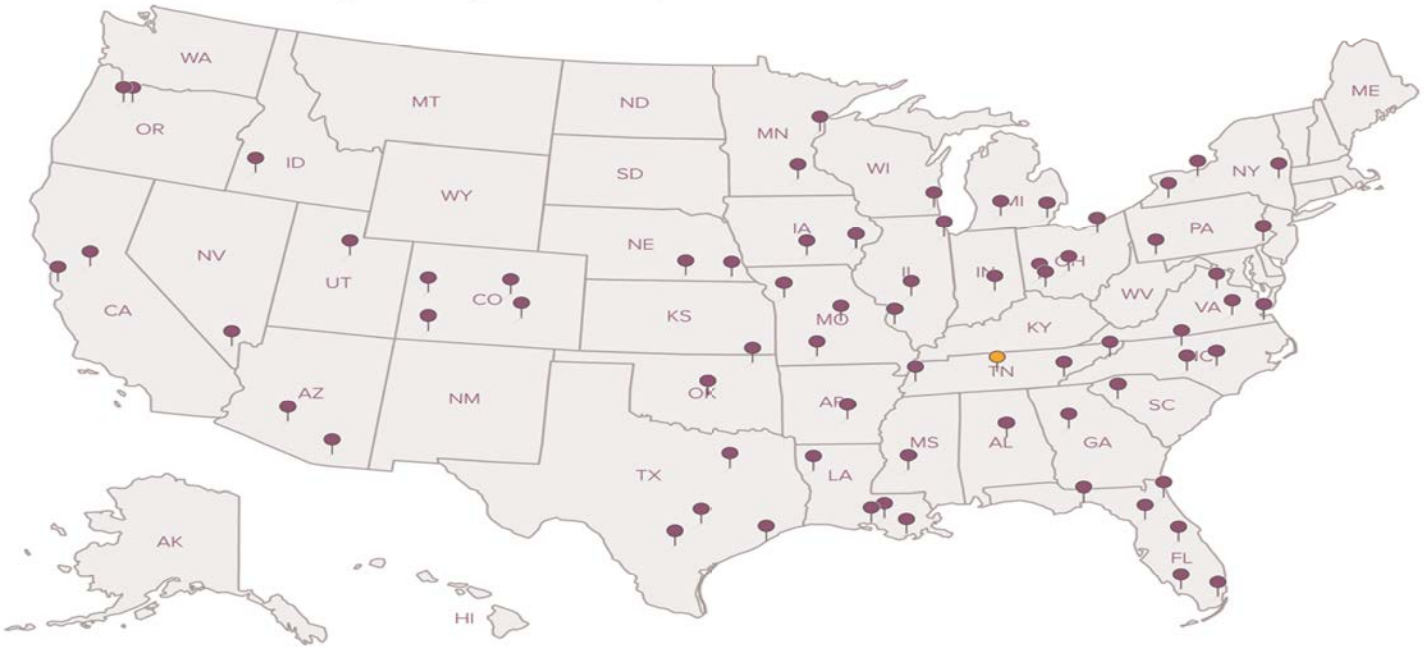
[1.] Drinking Water [2.] Underground Storage Tanks [3.] Aquatic Toxicity [4.] Chemical/Microbiological [5.] Mold [n/a] Accreditation not applicable

Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01
Canada	1461.01
EPA–Crypto	TN00003
AIHA	100789
DOD	1461.01
USDA	S-67674

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**



ARCADIS US - TX

2929 Briarpark Dr., Suite 300
Houston, TX 77042

Billing Information:
Attn: Accounts Payable
630 Plaza Drive, Suite 600
Highlands Ranch, CO 80129

Report to: **Project Manager**

Email To: @arcadis-us.com

Project Description: **Navajo Refining Company - Artesia, NM**

City/State Collected: Artesia/NM

Phone: **713-953-4800**
Fax:

Client Project # ~~TX000838.0000.00004~~ TX001155.0000

Lab Project # **ARCADHTX-NAVAJO**

Collected by (print): I. Castro

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day 200%
___ Next Day 100%
___ Two Day 50%
___ Three Day 25%

Date Results Needed

Email? ___No X__Yes
FAX? ___No ___Yes

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	BTEX 2oz Clr-NoPres	FULL TCLP - P/H 16oz Clr-NoPres	RCI, pH, CYANIDE 8oz Clr-NoPres	SV8270, LEAD 4oz Clr-NoPres	8260 VOCs						Rem./Contaminant	Sample # (lab only)
Tank 815 S.Bro 25	Grab	TCLP	—	5/7/15	9:10	3	X	X	X	X								-01
Tank 815 S.Bro 53	Grab	TCLP	—	5/7/15	9:25	3	X	X	X	X								-02
Tank 815 S.Bro 49	Grab	TCLP	—	5/7/15	9:40	3	X	X	X	X								-03
Trip Blank	—	W	—	—	—	1					X							-04

* Matrix: **SS** - Soil **GW** - Groundwater **WW** - WasteWater **DW** - Drinking Water **OT** - Other_____

Remarks: Full TCLP includes (TCLP metals, TCLP VOCs, TCLP SVOCs, TPH DRO) 6361 0914 4475

pH _____ Temp _____
Flow _____ Other _____

Hold #

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	5/7/15	10:45	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)
			Bozzi Hamis

Samples returned via: ☐ UPS ☒ FedEx ☐ Courier ☐ _____
Temp: 3.7 °C Bottles Received: 10
Date: 5-8-15 Time: 09:00

Condition: (lab use only) NF OK
COC Seal Intact: ___Y ___N ✓NA
pH Checked: NCF:

Chain of Custody Page 1 of 1

ESC LABS SCIENCES
YOUR LAB OF CHOICE
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L # L763904
Table F065
Acctnum: ARCADHTX
Template: T102293
Prelogin: P508494
TSR: 638 - Pam Langford
PB: 5.1 MS
Shipped Via: FedEX Ground

NEW MEXICO
ENVIRONMENT DEPARTMENT

2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303
Phone (505) 476-6000 Fax (505) 476-6030
www.env.nm.gov

SUSANA MARTINEZ
Governor
JOHN A. SANCHEZ
Lieutenant Governor

RYAN FLYNN
Cabinet Secretary
BUTCH TONGATE
Deputy Secretary

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

August 4, 2015

Mr. Scott M. Denton
Environmental Manager
Navajo Refining Company, L.L.C.
P.O. Box 159
Artesia, New Mexico 88211-0159

RE: DENIAL
"NO LONGER CONTAINED-IN" DETERMINATION FOR
CHARACTERIZATION OF SOIL EXCAVATED FROM TANK 815 RELEASE
NAVAJO REFINING COMPANY, L.L.C., ARTESIA REFINERY
EPA ID# NMD048918817
HWB-NRC-MISC

Dear Mr. Denton:

The New Mexico Environment Department (NMED) has received Navajo Refining Company, L.L.C., Artesia Refinery's (the Permittee) *Characterization of Soil Excavated from Tank 815 Release*, dated July 23, 2015. On April 16, 2015, the Permittee notified NMED and the New Mexico Energy, Minerals & Natural Resources Department Oil Conservation Division (OCD) that the sump located adjacent to Tank 815 had overflowed and that a water/diesel mixture from the sump had been released inside the containment area of the North Colony Landfarm (NCL), a hazardous waste management unit (HWMU).

Three roll-off containers were filled with excavated soil from the southeast quadrant of the containment area and one representative soil sample was collected from each roll-off container in May 2015 and submitted to a laboratory to characterize the soil for disposal. Historically, K048, K049, K051, and K052 listed RCRA hazardous wastes were applied to the NCL. Based on the analytical results of the soil samples, the Permittee is requesting a "no longer contained-in" determination from NMED to allow the excavated soil to be managed as nonhazardous waste.

The excavated soil meets New Mexico's residential soil screening levels (SSLs) for all analytes with the exception of benzo(a)anthracene and benzo(a)pyrene. However, benzo(a)anthracene and benzo(a)pyrene are below the industrial SSLs. Although the excavated soil is not a characteristically hazardous waste per 40 CFR Part 261 Subpart C, it is a K-Listed waste because chrysene and pyrene exceed the hazardous constituent standards as defined in Part 268.2(i) of the Land Disposal Restriction (LDR) Treatment Standards listed in 40 CFR Part 268.40 and the Universal Treatment Standards listed in 40 CFR Part 268.48 regulatory limits.

NMED has reviewed the Permittee's request and has determined that the excavated soil is a hazardous waste and does not meet applicable LDR standards. NMED hereby denies the Permittee's request for a "no longer contained-in" determination and must manage the excavated soil as hazardous waste and dispose of the excavated soil at an appropriate facility.

If you have any questions regarding this letter, please contact Leona Tsinnajinnie of my staff at (505) 476-6057.

Sincerely,

for

John E. Kieling
Chief
Hazardous Waste Bureau

cc: D. Cobrain, NMED HWB
N. Dhawan, NMED HWB
K. Van Horn, NMED HWB
L. Tsinnajinnie, NMED HWB
C. Chavez, NMEMNRD OCD
M. Holder, Navajo Refining Company, L.L.C.
R. Combs, Navajo Refining Company, L.L.C., Artesia Refinery
P. Kruger, ARCADIS
L. King, EPA 6PD-N

File: Reading and NRC 2015, HWB-NRC-MISC

Attachment D
Waste Manifests

Smartt Move #295

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
NMD048918817	1	800-424-9300	008302034 JJK

GENERATOR

5. Generator's Name and Mailing Address
Navajo Refining Co., L.L.C. (Artesia)
P.O. Box 159
Artesia, NM 88211-0159
Generator's Phone: 575-748-3311

Generator's Site Address (if different than mailing address)
Navajo Refining Co., L.L.C.
501 E. Main
Artesia, NM 88210

6. Transporter 1 Company Name: Fluid Transports, INC — U.S. EPA ID Number: TXD988057931

7. Transporter 2 Company Name: Fluid Transport — U.S. EPA ID Number: TXD988057931

8. Designated Facility Name and Site Address
U.S. Ecology Texas, Inc.
3277 County Road 69
Robstown, TX 78380 USA
Facility's Phone: 800-242-3209-116
U.S. EPA ID Number: TXD069452340

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ, NA3077, Hazardous Waste, Solid, N.O.S., 9, PG III (K048, K049, K051 & K052 Impacted Soil)	1	CM	27580	P	K048 K049 K051 K052 OUTS 489H
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1. 090091916-0 ERG# 171 Chemtrec Cust# CCN15402
Material passed TCLP but may contain legacy K listed wastes
Unit 8 Tank 815 NCL Impacted Soil Bin Wt. 7,840 Bin # 53

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Bernie Cordeiro — Signature: Bernie Cordeiro — Month 8 Day 14 Year 15

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Michael Jones — Signature: Michael Jones — Month 8 Day 14 Year 15

Transporter 2 Printed/Typed Name: Steve Broker — Signature: Steve Broker — Month 8 Day 17 Year 15

DESIGNATED FACILITY

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
H039			

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name: Robert Gutierrez — Signature: — Month 8 Day 18 Year 15

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

Pick up 8/15

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
	NMD048918817	1	800-424-9300	008302035 JJK

GENERATOR

5. Generator's Name and Mailing Address
Navajo Refining Co., L.L.C. (Artesia)
P.O. Box 159
Artesia, NM 88211-0159
Generator's Phone: 575-748-3311

Generator's Site Address (if different than mailing address)
Navajo Refining Co., L.L.C.
501 E. Main
Artesia, NM 88210

6. Transporter 1 Company Name
Fluid Transports, INC
U.S. EPA ID Number
TXD988057931

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
U.S. Ecology Texas, Inc.
3277 County Road 69
Robstown, TX 78380 USA
Facility's Phone: 800-242-3209-116
U.S. EPA ID Number
TXD069452340

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
X	1. RQ, NA3077, Hazardous Waste, Solid, N.O.S., 9, PG III (K048, K049, K051 & K052 Impacted Soil)	1	CM	9,580	P	K048 K052	K049 OUT S	K051 489H
	2.							
	3.							
	4.							

14. Special Handling Instructions and Additional Information
1. 090091916-0 ERG# 171 Chemtrec Cust# CCN15402
Material passed TCLP but may contain legacy K listed wastes
Unit 8 Tank 815 NCL Impacted Soil Bin Wt. 7,920 Bin # 25

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Dennis Cordero
Signature: Dennis Cordero
Month 8 Day 14 Year 15

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Carey Johnson
Signature:
Month 8 Day 14 Year 15

Transporter 2 Printed/Typed Name:
Signature:
Month Day Year

DESIGNATED FACILITY

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator)
U.S. EPA ID Number

Facility's Phone:

18c. Signature of Alternate Facility (or Generator)
Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
H039			

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name: Robert Gotcher
Signature:
Month 8 Day 17 Year 15

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

255

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: NMD048918817
2. Page 1 of: 1
3. Emergency Response Phone: 800-424-9300
4. Manifest Tracking Number: 008302033 JJK

GENERATOR

5. Generator's Name and Mailing Address: Navajo Refining Co., L.L.C. (Artesia)
P.O. Box 159
Artesia, NM 88211-0159
Generator's Phone: 575-748-3311

Generator's Site Address (if different than mailing address): Navajo Refining Co., L.L.C.
501 E. Main
Artesia, NM 88210

6. Transporter 1 Company Name: Fluid Transports, INC
U.S. EPA ID Number: TXD988057931

7. Transporter 2 Company Name: Fluid Trasports, Inc
U.S. EPA ID Number: TXD988057941

8. Designated Facility Name and Site Address: U.S. Ecology Texas, Inc.
3277 County Road 69
Robstown, TX 78380 USA
Facility's Phone: 800-242-3209-116
U.S. EPA ID Number: TXD069452340

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
X	1. RQ, NA3077, Hazardous Waste, Solid, N.O.S., 9, PG III (K048, K049, K051 & K052 Impacted Soil)	1	CM	18,900	P	K048 K052	K049 OUT $	K051 489H
	2.							
	3.							
	4.							

14. Special Handling Instructions and Additional Information
1. 090091916-0 ERG# 171 Chemtrec Cust# CCN15402
Material passed TCLP but may contain legacy K listed wastes
Unit 8 Tank 815 NCL Impacted Soil Bin Wt. 1,900 Bin # 49

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Deanie Cardenas
Signature: Deanie Cardenas
Month Day Year: 8 15 15

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Florentino Saavedra
Signature:
Month Day Year: 8 14 15

Transporter 2 Printed/Typed Name: Ruben Villa
Signature:
Month Day Year: 08 19 15

DESIGNATED FACILITY

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator) U.S. EPA ID Number

Facility's Phone:

18c. Signature of Alternate Facility (or Generator) Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
H039			

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name: Adrian Villarl
Signature:
Month Day Year: 8 20 15

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

amec foster wheeler

Attachment E
Final C-141

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

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company: Navajo Refining Company, L.L.C.	Contact: Robert Combs
Address: 501 E. Main St., Artesia, NM 88210	Telephone No.: 575-746-5382
Facility Name: Navajo Refining Company, L.L.C.	Facility Type: Petroleum Refinery

Surface Owner: Navajo Refining Company, L.L.C.	Mineral Owner N/A	API No. N/A

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County

Latitude_Longitude 32.852260° / -104.395653°

NATURE OF RELEASE

Type of Release: finished diesel/water	Volume of Release: > 25 bbls	Volume Recovered: 30 bbls
Source of Release: water draw/sump at T-815	Date and Hour of Occurrence: 04/16/15, Unknown time	Date and Hour of Discovery: 04/16/15 6:30 am
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? NM Oil Conservation Division Santa Fe– Left message to Carl Chavez NMED Hazardous Waste Bureau – Left message to Leona Tsinnajinnie	
By Whom? R. Combs	Date and Hour 04/16/15 ~13:00 - 15:00	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.*
N/A

Describe Cause of Problem and Remedial Action Taken.* The water collection sump from T-815 overflowed during routine dewatering of the tank. The water draw valve was immediately closed upon discovery and a vacuum truck was sent to recover any free liquids. The recovered liquids were returned to the crude process.

Describe Area Affected and Cleanup Action Taken.*
Pooled liquids were removed by vacuum truck and absorbent pads were used to remove remaining hydrocarbons. Stained soil was removed to a depth of approximately 12 inches and was placed into three covered, lined roll-off containers. The excavated area was backfilled with clean soil from an off-site source and graded to match the surrounding area. Representative samples were collected from each roll-off container for waste characterization. Removal of the impacted soil from the spill will be collected in roll-off bins and characterized for disposal. The three roll-off bins were transported to U.S. Ecology, Inc. in Robstown, Texas and disposed as hazardous waste.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD 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 NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD 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.

Signature:	OIL CONSERVATION DIVISION	
Printed Name: Robert Combs	Approved by Environmental Specialist:	
Title: Environmental Specialist	Approval Date:	Expiration Date:
E-mail Address: robert.combs@hollyfrontier.com	Conditions of Approval:	Attached ☐
Date: 1/28/16 Phone: 575-746-5382		

* Attach Additional Sheets If Necessary

C.3 November 17, 2015 – Groundwater Expression into Eagle Draw

HOLLYFRONTIER.

January 8, 2016 Submitted by electronic mail

Mr. Carl Chavez, Environmental Engineer
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Drive
Santa Fe, NM 87505

RE: C-141 Report on Seepage into Eagle Draw
Discharge Permit GW-028

Dear Mr. Chavez:

On November 17, 2015, Navajo Refining Company, L.L.C. (Navajo) notified the Oil Conservation Division (OCD) and the New Mexico Environment Department (NMED) Hazardous Waste Bureau (HWB) by telephone that Refinery personnel had observed evidence of the seepage of dark liquids through cracks in a concreted portion of the bank of Eagle Draw within the Refinery. Navajo also notified the National Response Center of this seepage the same day.

This report summarizes Navajo's actions taken to date regarding the seepage, including the measures summarized in your electronic mail of November 17, 2015, and proposed actions based upon our evaluation regarding the likely source of the seepage. Form C-141 is re-provided as Attachment A.

Refinery Setting

The location of the observed seepage along the bank of Eagle Draw is in the northwestern portion of the Refinery. Recovery well (RW) 17 is located on the west side of Eagle Draw, and due north of the observed seepage, and monitor well (MW)-55 is further to the northeast. The area of the seepage is within the Refinery's fenced boundaries. Attachment B provides Figure 1, which is the location of the seepage in relation to an overall Refinery map.

Actions Taken

At the time the incident was internally reported, Environmental Department personnel went out to inspect the seepage to develop an immediate course of action. There was no odor to the seepage itself, but the liquids expressing through cracks in the concrete sidewall appeared to be dark and featured entrained particulate matter. Absorbents were applied in order to remove as much stained material as possible. Although there was no sheen on the surface water in the Draw, field screening of ambient air over the surface water was conducted, but did not indicate

HollyFrontier Navajo Refining LLC
501 East Main • Artesia, NM 88210
(575) 748-3311 • http://www.hollyfrontier.com

the presence of hydrogen sulfide or benzene. Notwithstanding the lack of hydrocarbon odor in the seepage or sheen on the water in the Draw, Navajo protectively placed oil absorbent booms downstream of the observed seepage locations, and booms will be replaced as needed.

Three water samples were collected on November 19, 2015 at the locations shown in Figure 2 (Attachment C). Two of the samples were collected from surface water: sample location ED01-111915 was very near the point where the seepage was observed within Eagle Draw, downstream of the confluence with Clark Draw. The second surface sample, ED02-111915, was collected further downstream within Eagle Draw east of Navajo Road, within the Refinery's fenceline.[1] At OCD's request for comparison purposes, a sample was also collected from monitoring well MW-55 (see Figure 2, Attachment C), which is screened from 13.7 to 23.7 feet below ground surface. The three samples, plus a trip blank for volatile organic compounds (VOC) analysis, were shipped overnight to a certified laboratory for analysis of the constituents requested by OCD (total petroleum hydrocarbons, general chemistry, VOCs, BTEX, and the eight RCRA metals).

The full set of analytes, associated screening levels, and analytical results are summarized in Table 1 (Attachment D), and a copy of the laboratory report (and the contractor's field notes) is provided as Attachment E. (The lab report erroneously identifies surface water sample ED02-111915 as "ED-1111915," as indicated by the markup on the report.) The lab report was also provided to you via electronic mail on December 21, 2015.

The analytical results from the groundwater sample and the two surface water samples were compared to the following screening levels:

- Upper tolerance limit (UTL) calculated for background concentrations of general chemistry parameters and mercury (from Navajo's background groundwater investigation report submitted to OCD and NMED in September 2015);
- Lower of the New Mexico Water Quality Control Commission (WQCC) Water Quality Standard (WQS) provided in 20.6.2.3103 New Mexico Administrative Code (NMAC) or the United States Environmental Protection Agency (USEPA) Maximum Contaminant Level (MCL) for metals (other than mercury) and VOCs.
- TPH screening level provided in the 2012 version of the HWB risk assessment guidance document for TPH DRO and TPH ORO.
- Human Health Surface Water Quality Standards (SWQS)
- Aquatic Life SWQS

As Table 1 (Attachment D) indicates, the water quality of the two surface water samples is affected primarily by total petroleum hydrocarbons (TPH): Diesel Range Organics (DRO) and Oil Range Organics (ORO), even more so than levels in MW-55. The TPH and VOCs in ED02-

[1]The coordinates of the ED01-111915 sample area are latitude 32.852356 and longitude 104.393864, while those of the ED02-111915 sample are latitude 32.852972 and longitude 104.393347.

111955, the downstream surface water sample, are significantly lower than the sample collected nearest the seep, indicating that degradation of these compounds is occurring.

- MW-55: The reported concentration of TPH DRO exceeds the TPH screening level in the sample collected from MW-55. All other constituents of concern (COCs) were either not detected or were reported at concentrations below the screening levels.

- ED01-111955: The reported concentrations of TPH DRO and TPH ORO both exceed the TPH screening level in the sample collected closest to the observed seep. The reported concentrations of arsenic and benzene exceed the EPA MCLs in the sample collected closest to the observed seep. The reported concentration of benzene exceeds the aquatic life chronic SWQS. All other COCs were either not detected or were reported at concentrations below the screening levels.

- ED02-111955: The reported concentrations of TPH DRO and TPH ORO both exceed the TPH screening level in the sample collected on the downstream side of Navajo Road. The reported concentration of potassium exceeds the background UTL in this sample. All other COCs were either not detected or were reported at concentrations below the screening levels.

Evaluation and Recommendations

Navajo has observed higher than normal groundwater levels in the monitoring wells located in the northern portion of the Artesia Refinery during the past two years, most likely due to heavier than normal rainfall in the region during this period. Attachments F and G present the historic precipitation data for the area and ground elevation trends. We believe that impacted groundwater associated with a solid waste management unit and/or an area of contamination, which is being monitored and, in some cases, recovered through implementation of the Facility-Wide Ground Water Monitoring Program (FWGWMP), is the seepage liquid. The constituents of concern measured in the surface water samples appear to be consistent generally with results of recent FWGWMP events for the adjacent wells and recovery trenches.

In addition to the actions taken thus far, we propose the following:

- Conduct weekly inspections of the seepage area for the month of January 2016 to visually examine for additional seepage and potential sheens on surface water in Eagle Draw.
- As needed, apply absorbents to recover/remove any seepage.
- Ensure that booms are ready and serviceable to put into use in surface waters in Eagle Draw, as needed.
- Take and record water level elevations in RW-17A and RW-17G on a weekly basis during the month of January 2016 in order to evaluate fluctuations in levels in comparison to weather.

- Operate RW-7 and RW-8 consistently during the month of January 2016 in order to reduce groundwater elevations.
- Repair the concrete fissures in this specific locale of Eagle Draw.

Should you have any questions about this notification report, please do not hesitate to contact me at (575) 746-5487 or scott.denton@hollyfrontier.com.

Sincerely,

Scott M. Denton
Environmental Manager

c: Robert A. Combs, Artesia Refinery, Environmental Specialist
Leona Tsinnajinnie, NMED HWB

Enclosures:

Attachment A – Form C-141
Attachment B – Figure 1 (Location of Seepage within the Refinery)
Attachment C – Figure 2 (Locations of November 19, 2015 Samples)
Attachment D – Table 1 (Analytical Results and Comparison Standards)
Attachment E – Analytical Lab Report with Contractor Field Notes
Attachment F – Precipitation Data January 2011 – November 2015
Attachment G – GW Level Trends

Attachment A

Form C-141

(Previously provided to OCD)