Air Quality Monitoring and Sampling Summary Report

Air Quality Monitoring of the Work Zone Perimeter, Localized Weather Patterns and Aggregate Testing

DWR Oroville Dam Emergency Operations
May 05 thru May 18, 2017

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Document Number

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Summary

The work site activities were stable during this time period and no additional monitoring stations were added. None of the established station were modified, or moved.

Air quality monitoring at all of the perimeter monitoring stations was continuous throughout the time period with few interruptions as noted in this report. All sampling methodology adhered to established protocols and there were no changes or modifications to test methodology.

The air monitoring equipment is inspected throughout the sampling episodes to ensure proper operation and to assess the site conditions which may impact sample results. We experienced one (1) storm during this time period, however, the sampling continued, uninterrupted, regardless of the weather. One (1) of the samples 0509-OFD-BPT-01 was overloaded with dust preventing analysis. A short gap in weather data at WS1 was caused by a battery failure during this monitoring period. Two (2) separate events were noted in the dust particulate monitoring when the zero calibration spanned low, generating negative (-) values and was corrected in the next zero span cycle. All of the equipment is being transitioned, in phases, over to direct current (12 volt DC) with solar charging and battery back-up, to ensure continuous operation, no added noise from the sampling stations and the elimination of the use of generators.

The equipment in the field continues to perform well and meets the sampling design for flow rates, volumes and dependability for the CARB Modified AHERA methodology. Occasionally, post flow calibrations exceed 5% increase/decrease and for those samples, the volumes are calculated using the lower of the values to produce a more conservative structure concentration.

The majority of the asbestos structure counts at the perimeter remain predominantly “None Detected”. Intermittent, detectible concentrations of non-regulated amphibole structures are identified at the Upper Overlook Entry, Diversion Dam, Burma Road and Launch Ramp. The Action Level of 0.005 was not exceeded during this sampling time frame.

It is notable that chrysotile asbestos structures are being detected in several of the samples, yet there is no historical geologic documentation of chrysotile asbestos in the work zones. Chrysotile is often associated with truck brakes and clutches and has been identified as common building material in local building structures and chrysotile asbestos is still a legal and commonly used mineral component in our modern society. Non-asbestos structures are detectible and noted in the sample summary and in the laboratory reports. Non-asbestos structures reported include a contribution from non-regulated amphiboles.

1. Sample Locations

Sample locations are established and/or moved in cooperation and with advanced approval by Butte County Air Quality Management District (BCAQMD). The sites that have been selected best represents the quality of the air as it leaves the "outer work zone perimeter". Additionally, the locations are chosen based on alignment with "sensitive receptors".

Sensitive receptors include, but are not limited to, hospitals, schools, daycare facilities, elderly housing and convalescent facilities. These are areas where the occupants are more susceptible to the adverse effects of exposure to toxic chemicals, pesticides, and other pollutants. Extra care must be taken when dealing with contaminants and pollutants in close proximity to areas recognized as sensitive receptors.

Table 1 Dust and Asbestos Structure Monitoring Station Locations

Station	Location	Way Point ID	Latitude	Longitude
1	Intake Yard	WP 246	39°32'5.50"N	121°28'29.36"W
2	Upper Overlook Entry	WP 247	39°31'51.40"N	121°28'36.60"W
3	Upper Overlook	WP 248	39°31'47.50"N	121°28'41.00"W
4	Canyon Drive	WP 249	39°31'39.70"N	121°28'52.10"W
5	N. Diversion Dam	WP 278	39°31'56.24" N	121°33'01.21" W
6	Diversion Dam Yard	WP 251	39°31'54.53" N	121°32'46.52" W
7	SE Diversion Dam	WP 279	39°31'45.38" N	121°33'07.53" W
8	SW Diversion Dam	WP 277	39°31'47.21" N	121°33'16.76" W
9	Burma Road	WP 273	39°32'19.7"N	121°30'48.8"W
10	Cherokee Road	WP 281	39°32'13.4"N	121°32'48.1"W
11	Launch Ramp Parking	WP 009A	39°32'47.4"N	121°29'33.3"W
12	Launch Ramp Turnaround	WP 010A	39°32'50.30"N	121°29'50.00"W

Figure 1 Upper Overlook Sample Station Locations

Figure 2 Diversion Dam Sample Station Locations

Figure 3 Burma Road Sampling Station Location

Figure 4 Launch Ramp Sampling Station Locations

2. Sample Time/Rates/Volume

Air monitoring sample data is the crux of the monitoring program at the Oroville Dam project and strict quality assurance procedures are practiced.

The sampling strategy dictates that two (2) twelve (12) +/- hour samples are collected each day, representing a continuous history of dust and asbestos structures that are experienced at the work zone perimeter.

The following tables show the critical information that is collected on each sample and is provided for evaluation of the thoroughness and accuracy of air sampling episodes

The headings of the tables are explained below:

- Sample Date – Date that the sample was started.

- Sample Number – A specific and unique alpha-numeric numbering system to identify and track each individual sample throughout the journey from collection, sample shipping preparation and Chain-Of Custody though the laboratory analysis and finally to the report.

- Chain of Custody (COC) - In order to use the results of a sampling program as evidence, a written record must be available listing the location of the samples at all times. This is also an important component of good laboratory practices. The COC record is necessary to make a prima facie showing of the integrity of the samples. The samples should be handled only by persons associated in some way with the monitoring program.

- Pre-flow Rate (l/m) - The pre-flow rate (liter/minute) is measured using a NIST traceable Primary Standard. Pumps are allowed a warm-up period according to manufactures specifications.

- Post-flow Rate (l/m) - The post-flow rate (liter/minute) is measured using a NIST traceable Primary Standard at the end of the sampling cycle.

- Avg (l/m) - The average flow rate (liter/minute) is calculated by averaging the pre and post flow rates.

- Time On – Sample Start Time in hours and minutes.

- Time Off – Sample Stop Time in hours and minutes.

- Day/Night Shift – Identifies the portion of the day when this sample was collected.

- Total Minutes – Based on the difference, in minutes, between the start and stop time that the sample was collected.

- Sample Volume (Liters) - is calculated by using the total minutes samples multiplied by the average flow rate.

Table 2 Perimeter - Upper Overlook Sample Time/Rates/Volume

Upper Lookout Perimeter Samples										
Sample Date	Sample Number	COC	Pre-flow Rate (L/min)	Post-flow Rate (L/min)	Avg (L/min)	Time On	Time Off	Day/Night Shift	Total Minutes	Sample Volume (Liters)
05/05/2017	0505-OFD-PMT-01	041712788	3.01	2.94	2.98	5:25	17:22	Day	717	2136.66
	0505-OFD-PMT-02		3.00	2.91	2.96	5:34	17:30		716	2119.36
	0505-OFD-PMT-03		3.01	2.93	2.97	5:40	17:40		720	2138.40
	0505-OFD-PMT-04		3.00	2.93	2.97	5:50	17:50		720	2138.40
	0505-OFD-PMT-05		3.01	2.95	2.98	17:23	5:14	Night	711	2118.78
	0505-OFD-PMT-06		3.01	2.96	2.99	17:32	5:24		712	2128.88
	0505-OFD-PMT-07		3.00	3.00	3.00	17:41	5:32		711	2133.00
	0505-OFD-PMT-08		3.00	3.04	3.02	17:51	5:40		709	2141.18
05/06/2017	0506-OFD-PMT-01	091708756	3.00	2.87	2.94	5:16	17:14	Day	718	2110.92
	0506-OFD-PMT-02		3.00	2.91	2.96	5:25	17:23		718	2125.28
	0506-OFD-PMT-03		3.00	2.87	2.94	5:33	17:28		715	2102.10
	0506-OFD-PMT-04		3.00	2.87	2.94	5:42	17:39		717	2107.98
	0506-OFD-PMT-05		3.00	2.97	2.99	17:16	5:14	Night	718	2146.82
	0506-OFD-PMT-06		3.00	2.94	2.97	17:23	5:22		719	2135.43
	0506-OFD-PMT-07		3.01	2.97	2.99	17:30	5:31		721	2155.79
	0506-OFD-PMT-08		3.00	2.93	2.97	17:40	5:39		719	2135.43
05/07/2017	0507-OFD-PMT-01	331709470	3.01	2.90	2.96	5:15	17:21	Day	726	2148.96
	0507-OFD-PMT-02		3.01	2.91	2.96	5:23	17:30		727	2151.92
	0507-OFD-PMT-03		3.01	2.90	2.96	5:32	17:37		725	2146.00
	0507-OFD-PMT-04		3.00	2.91	2.96	5:41	17:45		724	2143.04
	0507-OFD-PMT-05		3.01	2.98	3.00	17:22	5:26	Night	724	2172.00
	0507-OFD-PMT-06		3.00	2.96	2.98	17:31	5:35		724	2157.52
	0507-OFD-PMT-07		3.01	2.96	2.99	17:38	5:42		724	2164.76
	0507-OFD-PMT-08		3.00	2.94	2.97	17:47	5:52		725	2153.25
05/08/2017	0508-OFD-PMT-01	041713103	3.00	2.86	2.93	5:28	17:32	Day	724	2121.32
	0508-OFD-PMT-02		3.00	2.91	2.96	5:36	17:41		725	2146.00
	0508-OFD-PMT-03		3.00	2.86	2.93	5:43	17:46		723	2118.39
	0508-OFD-PMT-04		3.01	2.91	2.96	5:55	17:59		724	2143.04
	0508-OFD-PMT-05		3.00	2.95	2.98	17:33	5:24	Night	711	2118.78
	0508-OFD-PMT-06		3.00	2.93	2.97	17:42	5:32		710	2108.70
	0508-OFD-PMT-07		3.01	2.95	2.98	17:47	5:45		718	2139.64
	0508-OFD-PMT-08		3.00	2.95	2.98	18:00	5:56		716	2133.68

Upper Lookout Perimeter Samples										
Sample Date	Sample Number	COC	Pre-flow Rate (L/min)	Post-flow Rate (L/min)	Avg (L/min)	Time On	Time Off	Day/Night Shift	Total Minutes	Sample Volume (Liters)
05/09/2017	0509-OFD-PMT-01	511701295	3.01	2.88	2.95	5:26	17:32	Day	726	2141.70
	0509-OFD-PMT-02		3.00	2.92	2.96	5:34	17:43		729	2157.84
	0509-OFD-PMT-03		3.01	2.96	2.99	5:47	17:51		724	2164.76
	0509-OFD-PMT-04		3.00	2.96	2.98	6:00	18:05		725	2160.50
	0509-OFD-PMT-05		3.01	3.03	3.02	17:33	5:32	Night	719	2171.38
	0509-OFD-PMT-06		3.00	2.99	3.00	17:43	5:39		716	2148.00
	0509-OFD-PMT-07		3.01	3.04	3.03	17:53	5:50		717	2172.51
	0509-OFD-PMT-08		3.00	3.24	3.00	18:07	6:04		717	2151.00
05/10/2017	0510-OFD-PMT-01	091709113	3.00	2.98	2.99	5:35	17:21	Day	706	2110.94
	0510-OFD-PMT-02		3.01	2.89	2.95	5:41	17:30		709	2091.55
	0510-OFD-PMT-03		3.00	3.00	3.00	5:53	17:36		703	2109.00
	0510-OFD-PMT-04		3.00	2.91	2.96	6:08	17:49		701	2074.96
	0510-OFD-PMT-05		3.01	3.03	3.02	17:23	5:36	Night	733	2213.66
	0510-OFD-PMT-06		3.00	3.05	3.03	17:31	5:44		733	2220.99
	0510-OFD-PMT-07		3.00	3.07	3.04	17:37	5:47		730	2219.20
	0510-OFD-PMT-08		3.00	3.05	3.03	17:50	6:03		733	2220.99
05/11/2017	0511-OFD-PMT-01	331709785	3.00	2.89	2.95	5:37	17:01	Day	684	2017.80
	0511-OFD-PMT-02		3.00	2.89	2.95	5:45	17:08		683	2014.85
	0511-OFD-PMT-03		3.00	2.88	2.94	5:48	17:13		685	2013.90
	0511-OFD-PMT-04		3.00	2.89	2.95	6:08	17:24		676	1994.20
	0511-OFD-PMT-05		3.00	3.00	3.00	17:02	5:19	Night	737	2211.00
	0511-OFD-PMT-06		3.00	3.01	3.01	17:09	5:27		738	2221.38
	0511-OFD-PMT-07		3.00	3.04	3.02	17:14	5:32		738	2228.76
	0511-OFD-PMT-08		3.00	3.06	3.03	17:25	5:45		740	2242.20
05/12/2017	0512-OFD-PMT-01	041713635	3.00	2.90	2.95	5:20	18:50	Day	810	2389.50
	0512-OFD-PMT-02		3.00	2.90	2.95	5:28	18:38		790	2330.50
	0512-OFD-PMT-03		3.00	2.93	2.97	5:33	17:30		717	2129.49
	0512-OFD-PMT-04		3.00	2.89	2.95	5:46	18:20		754	2224.30
	0512-OFD-PMT-05		3.00	3.00	3.00	18:51	5:23	Night	632	1896.00
	0512-OFD-PMT-06		3.00	3.02	3.01	18:40	5:30		650	1956.50
	0512-OFD-PMT-07		3.01	3.02	3.02	17:33	5:36		723	2183.46
	0512-OFD-PMT-08		3.01	3.11	3.06	18:21	5:48		687	2102.22

Upper Lookout Perimeter Samples										
Sample Date	Sample Number	COC	Pre-flow Rate (L/min)	Post-flow Rate (L/min)	Avg (L/min)	Time On	Time Off	Day/Night Shift	Total Minutes	Sample Volume (Liters)
05/13/2017	0513-OFD-PMT-01	91709394	3.00	2.88	2.94	5:24	17:22	Day	718	2110.92
	0513-OFD-PMT-02		3.00	2.89	2.95	5:31	17:30		719	2121.05
	0513-OFD-PMT-03		3.00	2.92	2.96	5:38	17:36		718	2125.28
	0513-OFD-PMT-04		3.00	2.88	2.94	5:49	17:46		717	2107.98
	0513-OFD-PMT-05		3.01	3.01	3.01	17:23	5:25	Night	722	2173.22
	0513-OFD-PMT-06		3.00	3.03	3.02	17:32	5:33		721	2177.42
	0513-OFD-PMT-07		3.00	3.01	3.01	17:38	5:38		720	2167.20
	0513-OFD-PMT-08		3.00	3.07	3.04	17:47	5:48		721	2191.84
05/14/2017	0514-OFD-PMT-01	321711839	3.00	2.87	2.94	5:26	17:22	Day	716	2105.04
	0514-OFD-PMT-02		3.00	2.91	2.96	5:35	17:29		714	2113.44
	0514-OFD-PMT-03		3.00	2.93	2.97	5:40	17:35		715	2123.55
	0514-OFD-PMT-04		3.00	2.9	2.95	5:49	17:46		717	2115.15
	0514-OFD-PMT-05		3.01	3.02	3.02	17:26	5:22	Night	716	2162.32
	0514-OFD-PMT-06		3.00	3.09	3.05	17:31	5:30		719	2192.95
	0514-OFD-PMT-07		3.00	3.00	3.00	17:36	5:38		722	2166.00
	0514-OFD-PMT-08		3.00	3.13	3.07	17:48	5:53		725	2225.75
05/15/2017	0515-OFD-PMT-01	041713903	3.01	2.89	2.95	5:24	17:22	Day	718	2118.10
	0515-OFD-PMT-02		3.00	2.89	2.95	5:32	17:30		718	2118.10
	0515-OFD-PMT-03		3.00	2.90	2.95	5:39	17:38		719	2121.05
	0515-OFD-PMT-04		3.00	2.87	2.94	5:54	17:46		712	2093.28
	0515-OFD-PMT-05		3.00	2.94	2.97	17:23	5:25	Night	722	2144.34
	0515-OFD-PMT-06		3.01	2.99	3.00	17:32	5:36		724	2172.00
	0515-OFD-PMT-07		3.00	2.99	3.00	17:39	5:41		722	2166.00
	0515-OFD-PMT-08		3.00	3.06	3.03	17:45	5:54		729	2208.87
05/16/2017	0516-OFD-PMT-01	331710079	3.01	2.94	2.98	5:26	17:18	Day	712	2121.76
	0516-OFD-PMT-02		3.00	2.96	2.98	5:37	17:26		709	2112.82
	0516-OFD-PMT-03		3.00	2.97	2.99	5:42	17:33		711	2125.89
	0516-OFD-PMT-04		3.00	2.95	2.98	5:55	17:43		708	2109.84
	0516-OFD-PMT-05		3.00	3.04	3.02	17:20	5:33	Night	733	2213.66
	0516-OFD-PMT-06		3.00	3.05	3.03	17:28	5:40		732	2217.96
	0516-OFD-PMT-07		3.01	3.01	3.01	17:34	5:48		734	2209.34
	0516-OFD-PMT-08		3.00	3.09	3.05	17:45	6:00		735	2241.75

Upper Lookout Perimeter Samples										
Sample Date	Sample Number	COC	Pre-flow Rate (L/min)	Post-flow Rate (L/min)	Avg (L/min)	Time On	Time Off	Day/Night Shift	Total Minutes	Sample Volume (Liters)
05/17/2017	0517-OFD-PMT-01	091709680	3.02	2.90	2.96	5:34	17:19	Day	705	2086.80
	0517-OFD-PMT-02		3.00	2.91	2.96	5:41	17:28		707	2092.72
	0517-OFD-PMT-03		3.01	2.94	2.98	5:49	17:36		707	2106.86
	0517-OFD-PMT-04		3.00	2.90	2.95	6:03	17:47		704	2076.80
	0517-OFD-PMT-05		2.70	2.72	2.71	17:20	5:22	night	722	1956.62
	0517-OFD-PMT-06		2.70	2.73	2.72	17:31	5:30		719	1955.68
	0517-OFD-PMT-07		2.70	2.70	2.70	17:37	5:37		720	1944.00
	0517-OFD-PMT-08		2.70	2.76	2.73	17:50	5:48		718	1960.14
05/18/2017	0518-OFD-PMT-01	331710249	2.70	2.67	2.69	5:23	17:15	Day	712	1915.28
	0518-OFD-PMT-02		2.70	2.59	2.65	5:31	17:24		713	1889.45
	0518-OFD-PMT-03		2.70	2.59	2.65	5:38	17:31		713	1889.45
	0518-OFD-PMT-04		2.70	2.57	2.57	5:49	17:42		713	1832.41
	0518-OFD-PMT-05		2.70	2.73	2.72	17:16	5:24	Night	728	1980.16
	0518-OFD-PMT-06		2.70	2.76	2.73	17:26	5:31		725	1979.25
	0518-OFD-PMT-07		2.70	2.74	2.72	17:43	5:48		725	1972.00

Table 3 Diversion Dam Sample Time/Rates/Volume

Diversion Dam Perimeter Samples										
Sample Date	Sample Number	COC	Pre-flow Rate (L/min)	Post-flow Rate (L/min)	Avg (L/min)	Time On	Time Off	Day/Night Shift	Total Minutes	Sample Volume (Liters)
05/05/2017	0505-OFD-TPT-01	041712789	3.50	3.50	3.50	5:16	17:01	Day	705	2467.50
	0505-OFD-TPT-02		3.50	3.44	3.47	5:24	17:12		708	2456.76
	0505-OFD-TPT-03		3.49	3.54	3.52	5:33	17:19		706	2485.12
	0505-OFD-TPT-04		3.48	3.26	3.26	5:41	17:24		703	2291.78
	0505-OFD-TPT-05		3.00	3.01	3.01	5:57	17:40		703	2116.03
	0505-OFD-TPT-06		3.50	3.46	3.48	17:07	5:20	Night	733	2550.84
	0505-OFD-TPT-07		3.44	3.58	3.51	17:14	5:30		736	2583.36
	0505-OFD-TPT-08		3.48	3.45	3.47	17:20	5:40		740	2567.80
	0505-OFD-TPT-09		3.47	3.35	3.41	17:26	5:52		746	2543.86
	0505-OFD-TPT-10		3.00	3.00	3.00	17:43	6:05		742	2226.00
05/06/2017	0506-OFD-TPT-01	091708755	3.50	3.57	3.54	5:21	17:25	Day	724	2562.96
	0506-OFD-TPT-02		3.55	3.65	3.60	5:32	17:35		723	2602.80
	0506-OFD-TPT-03		3.47	3.60	3.54	5:44	17:45		721	2552.34
	0506-OFD-TPT-04		3.49	3.56	3.53	5:55	17:53		718	2534.54
	0506-OFD-TPT-05		3.00	2.94	2.97	6:12	18:06		714	2120.58
	0506-OFD-TPT-06		3.56	3.53	3.55	17:26	5:24	Night	718	2548.90
	0506-OFD-TPT-07		3.48	3.39	3.44	17:39	5:34		715	2459.60
	0506-OFD-TPT-08		3.53	3.37	3.45	17:49	5:48		719	2480.55
	0506-OFD-TPT-09		3.49	3.41	3.45	17:55	5:58		723	2494.35
	0506-OFD-TPT-10		3.00	3.04	3.02	18:10	8:13		843	2545.86
05/07/2017	0507-OFD-TPT-01	331709473	3.52	3.66	3.59	5:25	18:20	Day	775	2782.25
	0507-OFD-TPT-02		3.51	3.55	3.53	5:38	17:38		720	2541.60
	0507-OFD-TPT-03		3.53	3.61	3.57	5:52	17:57		725	2588.25
	0507-OFD-TPT-04		3.50	3.42	3.46	6:02	18:06		724	2505.04
	0507-OFD-TPT-05		3.00	2.94	2.97	8:15	18:34		619	1838.43
	0507-OFD-TPT-06		3.51	3.37	3.44	18:21	6:02	Night	701	2411.44
	0507-OFD-TPT-07		3.49	3.42	3.46	17:39	6:10		751	2598.46
	0507-OFD-TPT-08		3.55	3.45	3.50	17:58	6:23		745	2607.50
	0507-OFD-TPT-09		3.50	3.34	3.42	18:07	6:31		744	2544.48
	0507-OFD-TPT-10		3.00	3.02	3.01	18:22	6:40		738	2221.38

Diversion Dam Perimeter Samples										
Sample Date	Sample Number	COC	Pre-flow Rate (L/min)	Post-flow Rate (L/min)	Avg (L/min)	Time On	Time Off	Day/Night Shift	Total Minutes	Sample Volume (Liters)
05/08/2017	0508-OFD-TPT-01	041713106	3.52	3.51	3.52	6:04	17:35	Day	691	2432.32
	0508-OFD-TPT-02		3.53	3.55	3.54	6:11	17:41		690	2442.60
	0508-OFD-TPT-03		3.53	3.51	3.52	6:25	17:49		684	2407.68
	0508-OFD-TPT-04		3.49	3.50	3.50	6:33	17:55		682	2387.00
	0508-OFD-TPT-05		3.00	2.99	3.00	6:53	18:08		675	2025.00
	0508-OFD-TPT-06		3.48	3.38	3.43	17:36	5:57	Night	741	2541.63
	0508-OFD-TPT-07		3.50	3.34	3.42	17:42	6:07		745	2547.90
	0508-OFD-TPT-08		3.46	3.46	3.46	17:50	6:21		751	2598.46
	0508-OFD-TPT-09		3.55	3.34	3.34	17:56	6:27		751	2508.34
	0508-OFD-TPT-10		3.00	3.00	3.00	18:10	6:40		750	2250.00
05/09/2017	0509-OFD-TPT-01	511701296	3.52	3.58	3.55	5:58	17:24	Day	686	2435.30
	0509-OFD-TPT-02		3.49	3.50	3.50	6:08	17:31		683	2390.50
	0509-OFD-TPT-03		3.51	3.52	3.52	6:22	17:38		676	2379.52
	0509-OFD-TPT-04		3.53	3.41	3.47	6:28	17:43		675	2342.25
	0509-OFD-TPT-05		3.00	2.92	2.96	6:41	17:56		675	1998.00
	0509-OFD-TPT-06		3.50	3.38	3.44	17:25	5:28	Night	723	2487.12
	0509-OFD-TPT-07		3.52	3.46	3.49	17:32	5:32		720	2512.80
	0509-OFD-TPT-08		3.53	3.57	3.55	17:39	5:43		724	2570.20
	0509-OFD-TPT-09		3.53	3.29	3.29	17:44	5:49		725	2385.25
	0509-OFD-TPT-10		3.00	3.01	3.01	17:57	6:06		729	2194.29
05/10/2017	0510-OFD-TPT-01	091709118	3.53	3.52	3.53	5:29	17:52	Day	743	2622.79
	0510-OFD-TPT-02		3.49	3.55	3.52	5:34	17:58		744	2618.88
	0510-OFD-TPT-03		3.53	3.47	3.50	5:44	18:04		740	2590.00
	0510-OFD-TPT-04		3.53	3.51	3.52	5:50	18:11		741	2608.32
	0510-OFD-TPT-05		3.00	3.00	3.00	6:08	18:24		736	2208.00
	0510-OFD-TPT-06		3.52	3.45	3.49	17:53	5:43	Night	710	2477.90
	0510-OFD-TPT-07		3.53	3.47	3.50	17:59	5:50		711	2488.50
	0510-OFD-TPT-08		3.55	3.58	3.57	18:05	6:00		715	2552.55
	0510-OFD-TPT-09		3.46	3.41	3.44	18:12	6:05		713	2452.72
	0510-OFD-TPT-10		3.00	3.05	3.03	18:25	6:18		713	2160.39

Diversion Dam Perimeter Samples										
Sample Date	Sample Number	COC	Pre-flow Rate (L/min)	Post-flow Rate (L/min)	Avg (L/min)	Time On	Time Off	Day/Night Shift	Total Minutes	Sample Volume (Liters)
05/11/2017	0511-OFD-TPT-01	331709786	3.48	3.57	3.53	5:44	18:20	Day	756	2668.68
	0511-OFD-TPT-02		3.49	3.58	3.54	5:51	18:40		769	2722.26
	0511-OFD-TPT-03		3.54	3.52	3.53	6:01	18:33		752	2654.56
	0511-OFD-TPT-04		3.46	3.55	3.51	6:06	18:29		743	2607.93
	0511-OFD-TPT-05		3.00	2.95	2.98	6:19	18:55		756	2252.88
	0511-OFD-TPT-06		3.48	3.38	3.43	18:22	5:40	Night	678	2325.54
	0511-OFD-TPT-07		3.51	3.37	3.44	18:44	5:46		662	2277.28
	0511-OFD-TPT-08		3.51	3.48	3.50	18:36	5:57		681	2383.50
	0511-OFD-TPT-09		3.51	3.42	3.47	18:31	6:03		692	2401.24
	0511-OFD-TPT-10		2.99	3.04	3.02	18:57	6:23		686	2071.72
05/12/2017	0512-OFD-TPT-01	041713642	3.52	3.55	3.54	5:41	17:43	Day	722	2555.88
	0512-OFD-TPT-02		3.47	3.52	3.50	5:47	17:50		723	2530.50
	0512-OFD-TPT03		3.49	3.58	3.54	5:58	17:56		718	2541.72
	0512-OFD-TPT-04		3.51	3.25	3.25	6:05	18:00		715	2323.75
	0512-OFD-TPT-05		3.00	2.96	2.98	6:25	18:18		713	2124.74
	0512-OFD-TPT-06		3.46	3.38	3.42	17:45	6:25	Night	760	2599.20
	0512-OFD-TPT-07		3.52	3.44	3.48	17:51	6:40		769	2676.12
	0512-OFD-TPT-08		3.54	3.58	3.56	17:57	6:50		773	2751.88
	0512-OFD-TPT-09		3.00	3.01	3.01	18:05	7:00		775	2332.75
	0512-OFD-TPT-10		3.00	3.09	3.05	18:21	7:20		779	2375.95
05/13/2017	0513-OFD-TPT-01	091709387	3.48	3.47	3.48	6:25	17:30	Day	665	2314.20
	0513-OFD-TPT-02		3.49	3.34	3.42	6:40	17:38		658	2250.36
	0513-OFD-TPT-03		3.52	3.54	3.53	6:50	17:44		654	2308.62
	0513-OFD-TPT-04		2.99	2.97	2.98	7:00	17:50		650	1937.00
	0513-OFD-TPT-05		3.02	2.96	2.99	7:20	18:00		640	1913.60
	0513-OFD-TPT-06		3.47	3.47	3.47	17:35	5:09	Night	694	2408.18
	0513-OFD-TPT-07		3.50	3.42	3.46	17:40	5:18		698	2415.08
	0513-OFD-TPT-08		3.54	3.49	3.52	17:45	5:26		701	2467.52
	0513-OFD-TPT-09		3.00	2.96	2.98	17:51	5:34		703	2094.94
	0513-OFD-TPT-10		3.01	3.00	3.01	18:05	5:57		712	2143.12

Diversion Dam Perimeter Samples										
Sample Date	Sample Number	COC	Pre-flow Rate (L/min)	Post-flow Rate (L/min)	Avg (L/min)	Time On	Time Off	Day/Night Shift	Total Minutes	Sample Volume (Liters)
05/14/2017	0514-OFD-TPT-01	321711840	3.47	3.45	3.46	5:10	16:52	Day	702	2428.92
	0514-OFD-TPT-02		3.46	3.50	3.48	5:21	17:02		701	2439.48
	0514-OFD-TPT-03		3.47	3.39	3.43	5:29	17:10		701	2404.43
	0514-OFD-TPT-04		3.00	2.96	2.98	5:37	17:15		698	2080.04
	0514-OFD-TPT-05		3.00	2.99	3.00	5:59	17:29		690	2070.00
	0514-OFD-TPT-06		3.48	3.33	3.41	16:55	5:15	Night	740	2523.40
	0514-OFD-TPT-07		3.52	3.31	3.31	17:04	5:36		752	2489.12
	0514-OFD-TPT-08		3.49	3.47	3.48	17:13	5:50		757	2634.36
	0514-OFD-TPT-09		3.00	2.94	2.97	17:18	6:06		768	2280.96
	0514-OFD-TPT-10		3.00	2.99	3.00	17:31	6:23		772	2316.00
05/15/2017	0515-OFD-TPT-01	041713915	3.00	2.84	2.84	5:23	16:56	Day	693	1968.12
	0515-OFD-TPT-02		3.00	2.96	2.98	5:42	17:04		682	2032.36
	0515-OFD-TPT-03		3.00	2.96	2.98	6:01	17:17		676	2014.48
	0515-OFD-TPT-04		3.00	2.96	2.98	6:09	17:28		679	2023.42
	0515-OFD-TPT-05		3.00	2.95	2.98	6:26	17:45		679	2023.42
	0515-OFD-TPT-06		3.00	2.99	3.00	16:59	5:12	Night	733	2199.00
	0515-OFD-TPT-07		3.00	2.97	2.99	17:06	5:21		735	2197.65
	0515-OFD-TPT-08		3.00	3.00	3.00	17:19	5:31		732	2196.00
	0515-OFD-TPT-09		3.00	2.99	3.00	17:31	5:44		733	2199.00
	0515-OFD-TPT-10		3.00	2.99	3.00	17:49	6:42		773	2319.00

Diversion Dam Perimeter Samples										
Sample Date	Sample Number	COC	Pre-flow Rate (L/min)	Post-flow Rate (L/min)	Avg (L/min)	Time On	Time Off	Day/Night Shift	Total Minutes	Sample Volume (Liters)
05/16/2017	0516-OFD-TPT-01	331710078	3.00	2.95	2.98	5:14	16:54	Day	700	2086.00
	0516-OFD-TPT-02		3.00	2.99	3.00	5:23	17:02		699	2097.00
	0516-OFD-TPT-03		3.00	2.96	2.98	5:33	17:09		696	2074.08
	0516-OFD-TPT-04		3.00	2.98	2.99	5:46	17:16		690	2063.10
	0516-OFD-TPT-05		3.00	2.95	2.98	6:04	17:29		685	2041.30
	0516-OFD-TPT-06		3.00	2.99	3.00	6:18	17:37		679	2037.00
	0516-OFD-TPT-07		3.00	2.99	3.00	6:27	17:43		676	2028.00
	0516-OFD-TPT-08		3.00	2.98	2.99	6:44	18:10		686	2051.14
	0516-OFD-TPT-09		3.00	2.99	3.00	16:56	5:17	Night	741	2223.00
	0516-OFD-TPT-10		3.00	2.97	2.99	17:04	5:24		740	2212.60
	0516-OFD-TPT-11		3.00	2.97	2.99	17:12	5:33		741	2215.59
	0516-OFD-TPT-12		3.00	2.96	2.98	17:18	5:38		740	2205.20
	0516-OFD-TPT-13		3.00	2.93	2.97	17:29	5:51		742	2203.74
	0516-OFD-TPT-14		3.00	2.99	3.00	17:39	6:01		742	2226.00
	0516-OFD-TPT-15		3.00	3.01	3.01	17:46	6:08		742	2233.42
	0516-OFD-TPT-16		3.00	2.67	2.67	18:05	20:33		148	395.16
			3.00	2.96	2.98	0:44	6:26		342	1019.16
05/17/2017	0517-OFD-TPT-01	091709682	3.00	2.98	2.99	5:19	16:55	Day	696	2081.04
	0517-OFD-TPT-02		3.00	2.98	2.99	5:26	17:03		697	2084.03
	0517-OFD-TPT-03		3.00	2.95	2.98	3:34	17:11		817	2434.66
	0517-OFD-TPT-04		3.00	3.00	3.00	5:42	17:17		695	2085.00
	0517-OFD-TPT-05		3.00	2.98	2.99	5:52	17:27		695	2078.05
	0517-OFD-TPT-06		3.00	2.97	2.99	6:02	17:36		694	2075.06
	0517-OFD-TPT-07		3.00	2.96	2.98	6:10	17:41		691	2059.18
	0517-OFD-TPT-08		3.00	2.97	2.99	6:28	17:58		690	2063.10
	0517-OFD-TPT-09		2.70	2.67	2.69	16:59	5:12	Night	733	1971.77
	0517-OFD-TPT-10		2.70	2.58	2.64	17:05	5:19		734	1937.76
	0517-OFD-TPT-11		2.70	2.68	2.69	17:14	5:28		734	1974.46
	0517-OFD-TPT-12		2.70	2.67	2.69	17:19	5:35		736	1979.84
	0517-OFD-TPT-13		2.70	2.65	2.68	17:29	5:44		735	1969.80
	0517-OFD-TPT-14		2.70	2.65	2.68	17:37	5:52		735	1969.80
	0517-OFD-TPT-15		2.70	2.71	2.71	17:44	6:01		737	1997.27
	0517-OFD-TPT-16		2.70	2.69	2.70	17:59	6:19		740	1998.00

Diversion Dam Perimeter Samples										
	Sample Number	COC	Pre-flow Rate (L/min)	Post-flow Rate (L/min)	Avg (L/min)	Time On	Time Off	Day/Night Shift	Total Minutes	Sample Volume (Liters)
05/18/2017	0518-OFD-TPT-01	331710245	2.70	2.68	2.69	5:14	16:56	Day	702	1888.38
	0518-OFD-TPT-02		2.70	2.67	2.69	5:21	17:05		704	1893.76
	0518-OFD-TPT-03		2.70	2.68	2.69	5:32	17:17		705	1896.45
	0518-OFD-TPT-04		2.70	2.67	2.69	5:37	17:24		707	1901.83
	0518-OFD-TPT-05		2.70	2.66	2.68	5:46	17:35		709	1900.12
	0518-OFD-TPT-06		2.70	2.64	2.67	5:54	17:42		708	1890.36
	0518-OFD-TPT-07		2.70	2.65	2.68	6:04	17:49		705	1889.40
	0518-OFD-TPT-08		2.70	2.68	2.69	6:21	18:03		702	1888.38
	0518-OFD-TPT-09		2.70	2.64	2.67	17:00	5:07	Night	727	1941.09
	0518-OFD-TPT-10		2.70	2.65	2.68	17:10	5:19		729	1953.72
	0518-OFD-TPT-11		2.70	2.67	2.69	17:18	5:28		730	1963.70
	0518-OFD-TPT-12		2.70	2.65	2.68	17:27	5:34		727	1948.36
	0518-OFD-TPT-13		2.70	2.65	2.68	17:36	5:44		728	1951.04
	0518-OFD-TPT-14		2.70	2.67	2.69	17:45	5:54		729	1961.01
	0518-OFD-TPT-15		2.70	2.64	2.67	17:51	6:04		733	1957.11
	0518-OFD-TPT-16		2.70	2.68	2.69	18:06	6:30		744	2001.36

Table 4 Burma Road Sample Time/Rates/Volume

Burma Road Perimeter Samples										
Sample Date	Sample Number	COC	Pre-flow Rate (L/min)	Post-flow Rate (L/min)	Avg (L/min)	Time On	Time Off	Day/Night Shift	Total Minutes	Sample Volume (Liters)
05/05/2017	0505-OFD-BPT-01	041712787	3.00	2.98	2.99	6:24	18:01	Day	697	2084.03
	0505-OFD-BPT-02		3.00	2.99	3.00	18:04	7:08	Night	784	2352.00
05/06/2017	0506-OFD-BPT-01	091708754	3.00	3.03	3.02	7:12	18:41	Day	689	2080.78
	0506-OFD-BPT-02		3.00	2.90	2.95	18:44	9:18	Night	874	2578.30
05/07/2017	0507-OFD-BPT-01	331709475	3.00	3.03	3.02	9:22	19:13	Day	591	1784.82
	0507-OFD-BPT-02		3.00	3.03	3.02	19:17	5:27	Night	610	1842.20
05/08/2017	0508-OFD-BPT-01	041713119	3.00	3.03	3.02	5:30	18:44	Day	794	2397.88
	0508-OFD-BPT-02		3.00	3.00	3.00	18:48	5:18	Night	630	1890.00
05/09/2017	0509-OFD-BPT-01	511701298	3.00	2.93	2.97	5:21	18:15	Day	774	2298.78
	0509-OFD-BPT-02		3.00	3.11	3.06	18:17	6:43	Night	746	2282.76
05/10/2017	0510-OFD-BPT-01	091709112	3.00	2.98	2.99	6:46	18:58	Day	732	2188.68
	0510-OFD-BPT-02		3.00	3.04	3.02	19:00	6:46	Night	706	2132.12
05/11/2017	0511-OFD-BPT-01	331709784	3.00	2.96	2.98	6:49	19:13	Day	744	2217.12
	0511-OFD-BPT-02		3.00	3.01	3.01	19:24	6:49	Night	685	2061.85
05/12/2017	0512-OFD-BPT-01	041713639	3.00	2.94	2.97	6:51	18:40	Day	709	2105.73
	0512-OFD-BPT-02		3.00	3.09	3.05	18:42	7:43	Night	781	2382.05
05/13/2017	0513-OFD-BPT-01	091709389	3.00	2.98	2.99	7:45	18:25	Day	640	1913.60
	0513-OFD-BPT-02		2.99	3.06	3.03	18:28	6:18	Night	710	2151.30
05/14/2017	0514-OFD-BPT-01	321711836	3.00	2.86	2.93	6:23	17:48	Day	685	2007.05
	0514-OFD-BPT-02		3.00	3.03	3.02	17:51	6:44	Night	773	2334.46
05/15/2017	0515-OFD-BPT-01	041713907	3.00	2.80	2.80	6:46	18:11	Day	685	1918.00
	0515-OFD-BPT-02		3.00	2.96	2.98	18:15	6:10	Night	715	2130.70
05/16/2017	0516-OFD-BPT-01	331710076	3.00	3.01	3.01	6:15	18:20	Day	725	2182.25
	0516-OFD-BPT-02		3.00	3.01	3.01	18:25	5:34	Night	669	2013.69
05/17/2017	0517-OFD-BPT-01	091709678	3.00	2.91	2.96	5:29	17:31	Day	722	2137.12
	0517-OFD-BPT-02		2.70	2.71	2.71	17:36	5:29	Night	713	1932.23
05/18/2017	0518-OFD-BPT-01	331710243	2.70	2.58	2.64	5:41	18:32	Day	771	2035.44
	0518-OFD-BPT-02		2.70	2.80	2.75	18:37	5:35	Night	658	1809.50

Table 5 Launch Ramp Sample Time/Rates/Volume

Launch Ramp Perimeter Samples										
Sample Date	Sample Number	COC	Pre-flow Rate (L/min)	Post-flow Rate (L/min)	Avg (L/min)	Time On	Time Off	Day/Night Shift	Total Minutes	Sample Volume (Liters)
05/05/2017	0505-OFD-LRP-01	331709299	3.01	2.95	2.98	6:14	18:07	Day	713	2124.74
	0505-OFD-LRP-02		3.01	2.89	2.95	6:22	18:14		712	2100.40
	0505-OFD-LRP-03		3.01	2.97	2.99	18:08	6:00	Night	712	2128.88
	0505-OFD-LRP-04		3.02	2.98	3.00	18:16	6:09		713	2139.00
05/06/2017	0506-OFD-LRP-01	091708762	3.01	2.89	2.95	6:02	17:58	Day	716	2112.20
	0506-OFD-LRP-02		3.00	2.92	2.96	6:11	18:06		715	2116.40
	0506-OFD-LRP-03		3.00	2.94	2.97	17:59	6:01	Night	722	2144.34
	0506-OFD-LRP-04		3.00	2.95	2.98	18:07	6:07		720	2145.60
05/07/2017	0507-OFD-LRP-01	331709466	3.00	2.91	2.96	6:02	18:06	Day	724	2143.04
	0507-OFD-LRP-02		3.01	2.95	2.98	6:08	18:13		725	2160.50
	0507-OFD-LRP-03		3.01	2.97	2.99	18:07	6:18	Night	731	2185.69
	0507-OFD-LRP-04		3.00	2.95	2.98	18:14	6:27		733	2184.34
05/08/2017	0508-OFD-LRP-01	041713113	3.00	2.88	2.94	6:20	18:18	Day	718	2110.92
	0508-OFD-LRP-02		3.00	2.86	2.93	6:28	18:23		715	2094.95
	0508-OFD-LRP-03		3.00	2.95	2.98	18:19	6:26	Night	727	2166.46
	0508-OFD-LRP-04		3.00	2.96	2.98	18:25	6:33		728	2169.44
05/09/2017	0509-OFD-LRP-01	511701297	3.00	2.92	2.96	6:28	18:31	Day	723	2140.08
	0509-OFD-LRP-02		3.00	2.95	2.98	6:35	18:46		731	2178.38
	0509-OFD-LRP-03		3.01	3.06	3.04	18:32	6:35	Night	723	2197.92
	0509-OFD-LRP-04		3.00	3.01	3.01	18:47	6:43		716	2155.16
05/10/2017	0510-OFD-LRP-01	091709111	3.00	2.90	2.95	6:37	18:14	Day	697	2056.15
	0510-OFD-LRP-02		3.00	3.00	3.00	6:45	18:22		697	2091.00
	0510-OFD-LRP-03		3.01	3.00	3.01	18:15	6:31	Night	736	2215.36
	0510-OFD-LRP-04		3.01	2.99	3.00	18:24	6:38		734	2202.00
05/11/2017	0511-OFD-LRP-01	331709781	3.00	2.90	2.95	6:33	17:44	Day	671	1979.45
	0511-OFD-LRP-02		3.00	2.93	2.97	6:40	17:53		673	1998.81
	0511-OFD-LRP-03		3.00	2.98	2.99	17:46	6:06	Night	740	2212.60
	0511-OFD-LRP-04		3.01	3.00	3.01	17:54	6:17		743	2236.43
05/12/2017	0512-OFD-LRP-01	041713632	3.00	2.88	2.94	6:08	19:11	Day	783	2302.02
	0512-OFD-LRP-02		3.00	2.94	2.97	6:19	19:19		780	2316.60
	0512-OFD-LRP-03		3.00	3.00	3.00	19:12	6:15	Night	663	1989.00
	0512-OFD-LRP-04		3.00	2.98	2.99	19:20	6:24		664	1985.36

Launch Ramp Perimeter Samples										
Sample Date	Sample Number	COC	Pre-flow Rate (L/min)	Post-flow Rate (L/min)	Avg (L/min)	Time On	Time Off	Day/Night Shift	Total Minutes	Sample Volume (Liters)
05/13/2017	0513-OFD-LRP-01	091709392	3.00	2.88	2.94	6:16	18:08	Day	712	2093.28
	0513-OFD-LRP-02		3.00	2.91	2.96	6:25	18:14		709	2098.64
	0513-OFD-LRP-03		3.00	2.98	2.99	18:09	6:12	Night	723	2161.77
	0513-OFD-LRP-04		3.00	2.98	2.99	18:15	6:20		725	2167.75
05/14/2017	0514-OFD-LRP-01	321711838	3.00	2.88	2.94	6:14	18:06	Day	712	2093.28
	0514-OFD-LRP-02		3.01	2.93	2.97	6:22	18:18		716	2126.52
	0514-OFD-LRP-03		3.00	3.01	3.01	18:08	6:10	Night	722	2173.22
	0514-OFD-LRP-04		3.01	2.98	3.00	18:19	6:15		716	2148.00
05/15/2017	0515-OFD-LRP-01	041713911	3.00	2.89	2.95	6:12	18:08	Day	716	2112.20
	0515-OFD-LRP-02		3.00	2.90	2.95	6:18	18:16		718	2118.10
	0515-OFD-LRP-03		3.00	2.97	2.99	18:09	6:13	Night	724	2164.76
	0515-OFD-LRP-04		3.01	2.94	2.98	18:17	6:21		724	2157.52
05/16/2017	0516-OFD-LRP-01	331710074	3.01	2.96	2.99	6:15	18:09	Day	714	2134.86
	0516-OFD-LRP-02		3.01	2.97	2.99	6:22	18:16		714	2134.86
	0516-OFD-LRP-03		3.01	3.02	3.02	18:10	6:18	Night	728	2198.56
	0516-OFD-LRP-04		3.00	3.01	3.01	18:17	6:28		731	2200.31
05/17/2017	0517-OFD-LRP-01	091709676	3.01	2.90	2.96	6:20	18:09	Day	709	2098.64
	0517-OFD-LRP-02		3.01	2.93	2.97	6:29	18:20		711	2111.67
	0517-OFD-LRP-03		2.70	2.73	2.72	18:10	6:09	Night	719	1955.68
	0517-OFD-LRP-04		2.70	2.73	2.72	18:21	6:19		718	1952.96
05/18/2017	0518-OFD-LRP-01	033110244	2.70	2.59	2.65	6:12	18:00	Day	708	1876.20
	0518-OFD-LRP-02		2.70	2.60	2.65	6:20	18:08		708	1876.20
	0518-OFD-LRP-03		2.70	2.75	2.73	18:01	6:05	Night	724	1976.52
	0518-OFD-LRP-04		2.70	2.75	2.73	18:10	6:12		722	1971.06

3. Sampling Media and Target Analysis

Dust Monitoring Sample Methods

TSI DustTrak DRX 8533

The DustTrak DRX Aerosol Monitors are laser photometers that simultaneously measure mass and size fraction. These monitors are continuous, real-time, 90° light-scattering laser photometers that simultaneously measure size-segregated mass fraction concentrations corresponding to PM2.5, PM10, and Total PM Size fractions. They combine both particle cloud (total area of scattered light) and single particle detection to achieve mass fraction measurements. This size-segregated mass fraction measurement technique is superior to either a basic photometer or optical particle counter (OPC). It delivers the mass concentration of a photometer and the size resolution of an OPC.

- Photometers can be used at high mass concentration, but they do not give any size information and significantly underestimate large particle mass concentrations.
- OPC's provide size and count information; however, they do not provide any mass concentration information and cannot be used in high mass concentration environments

TrakPro software shall be utilized for exposure studies and environmental dust monitoring. TrakPro™ Data Analysis Software is a Microsoft Windows®-based software program that works with a variety of TSI data logging instruments. This software helps pre-program instruments, store and organize test data, and generate detailed graphs and reports needed to effectively communicate results.

Perimeter Air Sample Methods – CARB Modified TEM

Analysis of all air samples shall follow the analytical method specified by the United States Environmental Protection Agency, Asbestos Hazard Emergency Response Act (AHERA) criteria for asbestos (40 CFR, Part 763 Subpart E, Appendix A, adopted October 30, 1987), with the following exceptions CARB Modified TEM):

- The analytical sensitivity shall be 0.001 structures per cubic centimeter (0.001 s/cc); and
- All asbestos structures with an aspect ratio greater than three to one (3 to1) shall be counted irrespective of length.

The results of the analysis of air samples shall be reported as transmission electron microscopy (TEM) asbestos structures per cubic centimeter (s/cc).

The method requires the use of TEM 25 mm air sampling cassettes, designed and manufactured to meet all applicable NIOSH, OSHA, and EPA standards.

Sampling media for perimeter sampling shall comply with the following:

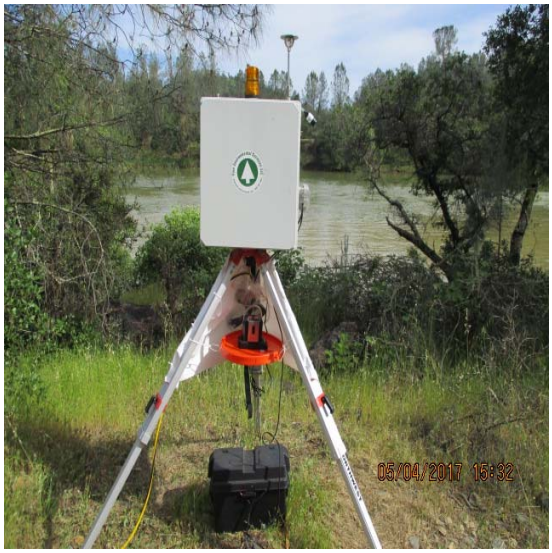
- 0.45 µm pore size, Mixed Cellulose Esther (MCE) Filter Material
- 5.0 µm Filter is placed under the 0.45 µm filter as a diffuser
- 2" Static Conductive Extension Cowl
- Meets AHERA Requirements Asbestos TEM 25 mm 0.45 µm Cassette-Individual

4. Photo Documentation

Figure 5 Photo Documentation of Air Monitoring Stations – Current Condition

Station 1- WP 246 Intake Yard	Station 2 - WP 247 Upper Overlook Entry
Station 3 – WP 248 Upper Overlook	Station 4 – WP249 Canyon Drive

Station 5- WP 278 Diversion Dam	Station 6 – WP 251 Diversion Dam Yard
Station 7 – WP 279 SE Diversion Dam	Station 8 – WP 277 SW Diversion Dam

	
Station 9- WP 281 Cherokee	Station 10 – WP 273 Burma Road
Station 11 – WP 009A Launch Ramp	Station 12 – WP 010A Launch Ramp Turnaround

5. Air Sampling Equipment Malfunctions & Corrective Actions

Table 6 - Equipment Failure

EQUIPMENT	Date/Time	EXCEPTION	REMEDY
Air Sample Pump	05/16/2017	Pump collecting 0516-OFD-TPT-16 stopped running for unidentified cause.	Pump taken out of service and replaced. Sample was successfully collected for remainder of shift.
Weather Station	5/12/2017-5/13/2017	Weather Station 1 (WS1) stopped communicating with the receiver during night shift. Technician discovered data gap, performed trouble shooting on unit, discovered the 9 volt battery was fully discharged.	Replace battery on receiver. Change all non-rechargeable batteries on inventory & establish routine battery change out schedule.
DustTrak DRX 8533	5/11-5/12/2017	WP 249 Canyon Dr - Daily Zero calibration spanned low, but device indicated an acceptable calibration, generating negative (-) values. Following Zero calibration re-set baseline and eliminated negative (-) values.	Reviewing daily zero span technique or if device is defective, take out-of-serve and repair.
DustTrak DRX 8533	5/14/2017	WP 247 Upper Overlook - Daily Zero calibration spanned low, but device indicated an acceptable calibration, generating negative (-) values. Following Zero calibration re-set baseline and eliminated negative (-) values.	Reviewing daily zero span technique or if device is defective, take out-of-serve and repair.

Table 7 – Sample Failure

Date	Sample ID	Discussion
5/9/2017	0509-OFD-BPT-01	WP 017A AM Burma Road – Day shift sample was overloaded with particulate matter (soil) and was unable to be analyzed. PM shift reported no fibers detected.
5/13/2017	5-13-2017 Weather Data	Communication failure between station and receiver caused data gap from 0753 on 5/12/17 through 1355 on 5/13/17.

6. Exceedances & Corrective Actions

Table 8 Exceedance Report

Sample ID	Location	Non-Asbestos Structures	Asbestos Type	# Structures		Analytical Sensitivity (S/cc)	Asbestos Concentration (S/cc)
				≥ 0.5 µm < 5 µm	≥ 5 µm		
No exceedance events detected during reporting period.							

7. Laboratory Analysis Summary

Copies of the laboratory reports are included as Appendix A – Laboratory

Table Heading Explanations

Zone	A designation of area of the work zone.
Sample ID	An alpha-numeric identified, unique to a particular sample.
Location	A description of the location where the sample was collected, often accompanied by a way point.
Non -Asbestos Structures	Non-asbestos minerals that have fibrous morphology and aspect ratio of 3:1, irrespective of length.
Asbestos Type	Regulated asbestiforms of the following minerals: chrysotile (fibrous serpentine), crocidolite (fibrous riebeckite), amosite (fibrous cummingtonite--grunerite), fibrous tremolite, fibrous actinolite, and fibrous anthophyllite.
Structure	A microscopic bundle, cluster, fiber, or matrix which may contains asbestos ranked by aspect ratio of 3:1 and length.
Analytical Sensitivity	The analytical sensitivity is defined as the concentration that would result from the finding of one fiber or structure. The higher the total volume of air pulled through the filter and the more filter area analyzed the lower the analytical sensitivity. The target analytical sensitivity for this method is 0.001 structures per cc of air (s/cc).
Asbestos Concentration	The asbestos concentration in structures per cc (S/cc) is equal to the analytical sensitivity for that sample multiplied by the number of asbestos structures identified. BCAQMD has approved the DWR Community Action Level at the Perimeter of the Oroville Dam property of 0.005 regulated asbestos structures/cubic centimeter (s/cc) of air.
Non-Regulated Amphiboles	The laboratory reports these amphiboles as a best practice when the morphological characteristics of these minerals are consistent with regulated asbestiforms. However, the values are not used in determining asbestos concentration.

Table 9 - 2017.05.05 Laboratory Analysis Summary

Zone	Sample ID	Location	Non- Asbestos Structures	Asbestos Type	# Structures		Analytical Sensitivity (S/cc)	Asbestos Concentration (S/cc)
					≥ 0.5 µm < 5 µm	≥ 5 µm		
Upper Perimeter	0505-OFD-PMT-01	WP 246- AM INTAKE YARD	2	Actinolite	1	0	0.0010	0.00098
	0505-OFD-PMT-02	WP 247- AM UPPER OVERLOOK ENTRY	22	Actinolite	0	1	0.0010	0.00098
	0505-OFD-PMT-03	WP 248- AM UPPER OVERLOOK	2	None Detected			0.0010	<0.0010
	0505-OFD-PMT-04	WP 249- AM CANYON DRIVE	4	None Detected			0.0010	<0.0010
	0505-OFD-PMT-05	WP 246- PM INTAKE YARD	1	None Detected			0.0010	<0.0010
	0505-OFD-PMT-06	WP 247- PM UPPER OVERLOOK ENTRY	1	None Detected			0.0010	<0.0010
	0505-OFD-PMT-07	WP 248- PM UPPER OVERLOOK	0	None Detected			0.0010	<0.0010
	0505-OFD-PMT-08	WP 249- PM CANYON DRIVE	2	None Detected			0.0010	<0.0010
	0505-OFD-PMT-09	FIELD BLANK 1	0	None Detected			N/A	N/A
	0505-OFD-PMT-10	FIELD BLANK 2	0	None Detected			N/A	N/A
Diversion Dam	0505-OFD-TPT-01	WP 279- AM N. DIVERSION DAM	1	None Detected			0.0010	<0.0010
	0505-OFD-TPT-02	WP 251- AM DIVERSION DAM YARD	1	None Detected			0.0010	<0.0010
	0505-OFD-TPT-03	WP 279- AM SE DIVERSION DAM	0	None Detected			0.0010	<0.0010
	0505-OFD-TPT-04	WP 277- AM SW DIVERSION DAM	0	None Detected			0.0010	<0.0010
	0505-OFD-TPT-05	WP 281- AM CHEROKEE ROAD	1	None Detected			0.0010	<0.0010
			Non-asbestos structures reported above includes a contribution from non-regulated amphiboles.					
	0505-OFD-TPT-06	WP 278- PM N. DIVERSION DAM	0	None Detected			0.0010	<0.0010
	0505-OFD-TPT-07	WP 251- PM DIVERSION DAM YARD	0	None Detected			0.0009	<0.0009
	0505-OFD-TPT-08	WP 279- PM SE DIVERSION DAM	0	None Detected			0.0009	<0.0010
	0505-OFD-TPT-09	WP 277- PM SW DIVERSION DAM	0	None Detected			0.0010	<0.0010
	0505-OFD-TPT-10	WP 281- PM CHEROKEE ROAD	0	Actinolite	1	0	0.0009	0.00094
	0505-OFD-TPT-11	FIELD BLANK 1	0	None Detected			N/A	N/A
	0505-OFD-TPT-12	FIELD BLANK 2	0	None Detected			N/A	N/A
Burma Road	0505-OFD-BPT-01	WP 273- AM BURMA ROAD	8	Actinolite	2	1	0.0010	0.0030
	0505-OFD-BPT-02	WP 273- PM BURMA ROAD	1	None Detected			0.0010	<0.0010
	0505-OFD-BPT-03	FIELD BLANK 1	0	None Detected			N/A	N/A
	0505-OFD-BPT-04	FIELD BLANK 2	0	None Detected			N/A	N/A
Launch Ramp	0505-OFD-LRP-01	WP 009A- AM LAUNCH RAMP PARKING	0	None Detected			0.0010	<0.0010
	0505-OFD-LRP-02	WP 01A- AM LAUNCH RAMP TURNAROUND	4	Actinolite	0	1	0.0010	0.00099
	0505-OFD-LRP-03	WP 009A- PM LAUNCH RAMP PARKING	0	None Detected			0.0010	<0.0010
	0505-OFD-LRP-04	WP 01A- PM LAUNCH RAMP TURNAROUND	0	None Detected			0.0010	<0.0010
	0505-OFD-LRP-05	FIELD BLANK 1	0	None Detected			N/A	N/A
	0505-OFD-LRP-06	FIELD BLANK 1	0	None Detected			N/A	N/A

Table 10 - 2017.05.06 Laboratory Analysis Summary

Zone	Sample ID	Location	Non- Asbestos Structures	Asbestos Type	# Structures		Analytical Sensitivity (S/cc)	Asbestos Concentration (S/cc)
					≥ 0.5 µm < 5 µm	≥ 5 µm		
Upper Perimeter	0506-OFD-PMT-01	WP 246- AM INTAKE YARD	1	None Detected			0.0010	<0.0010
			Non-asbestos structures reported contains a contribution from non-regulated amphiboles					
	0506-OFD-PMT-02	WP 247- AM UPPER OVERLOOK ENTRY	0	None Detected			0.0010	<0.0010
	0506-OFD-PMT-03	WP 248- AM UPPER OVERLOOK	2	None Detected			0.0010	<0.0010
	0506-OFD-PMT-04	WP 249- AM CANYON DRIVE	9	None Detected			0.0010	<0.0010
			Non-asbestos structures reported contains a contribution from non-regulated amphiboles					
	0506-OFD-PMT-05	WP 246- PM INTAKE YARD	0	None Detected			0.0010	<0.0010
	0506-OFD-PMT-06	WP 247- PM UPPER OVERLOOK ENTRY	5	None Detected			0.0010	<0.0010
	0506-OFD-PMT-07	WP 248- PM UPPER OVERLOOK	1	None Detected			0.0010	<0.0010
	0506-OFD-PMT-08	WP 249- PM CANYON DRIVE	0	None Detected			0.0010	<0.0010
	0506-OFD-PMT-FB1	FIELD BLANK 1	0	None Detected			N/A	N/A
	0506-OFD-PMT-FB2	FIELD BLANK 2	0	None Detected			N/A	N/A
Diversion Dam	0506-OFD-TPT-01	WP 278- AM N. DIVERSION DAM	3	None Detected			0.0009	<0.0009
			Non-asbestos structures reported contains a contribution from non-regulated amphiboles					
	0506-OFD-TPT-02	WP 251 - AM DIVERSION DAM YARD	3	None Detected			0.0010	<0.0010
			Non-asbestos structures reported contains a contribution from non-regulated amphiboles					
	0506-OFD-TPT-03	WP 279- AM SE DIVERSION DAM	4	None Detected			0.0009	<0.0009
	0506-OFD-TPT-04	WP 277- AM SW DIVERSION DAM	0	None Detected			0.0009	<0.0009
	0506-OFD-TPT-05	WP 281- AM CHEROKEE ROAD	1	None Detected			0.0010	<0.0010
			Non-asbestos structures reported contains a contribution from non-regulated amphiboles					
	0506-OFD-TPT-06	WP 278- PM N. DIVERSION DAM	2	None Detected			0.0009	<0.0010
	0506-OFD-TPT-07	WP 251- PM DIVERSION DAM YARD	1	None Detected			0.0010	<0.0010
	0506-OFD-TPT-08	WP 279- PM SE DIVERSION DAM	1	None Detected			0.0010	<0.0010
	0506-OFD-TPT-09	WP 277- PM SW DIVERSION DAM	1	None Detected			0.0010	<0.0010
			Non-asbestos structures reported contains a contribution from non-regulated amphiboles					
	0506-OFD-TPT-10	WP 281- PM CHEROKEE ROAD	0	None Detected			0.0009	<0.0009
	0506-OFD-TPT-FB1	FIELD BLANK 1	0	None Detected			N/A	N/A
	0506-OFD-TPT-FB2	FIELD BLANK 2	0	None Detected			N/A	N/A
Launch Ramp	0506-OFD-LRP-01	WP 009A- AM LAUNCH RAMP PARKING	4	None Detected			0.0010	<0.0010
			Non-asbestos structures reported contains a contribution from non-regulated amphiboles					
	0506-OFD-LRP-02	WP 010A- AM LAUNCH RAMP TURNAROUND	2	None Detected			0.0010	<0.0010
			Non-asbestos structures reported contains a contribution from non-regulated amphiboles					
	0506-OFD-LRP-03	WP 009A- PM LAUNCH RAMP PARKING	0	None Detected			0.0010	<0.0010
	0506-OFD-LRP-04	WP 010A- PM LAUNCH RAMP TURNAROUND	0	None Detected			0.0010	<0.0010
	0506-OFD-LRP-FB1	FIELD BLANK 1	0	None Detected			N/A	N/A
	0506-OFD-LRP-FB2	FIELD BLANK 1	0	None Detected			N/A	N/A

Table 11 - 2017.05.07 Laboratory Analysis Summary

Zone	Sample ID	Location	Non- Asbestos Structures	Asbestos Type	# Structures		Analytical Sensitivity (S/cc)	Asbestos Concentration (S/cc)
					≥ 0.5 µm < 5 µm	≥ 5 µm		
Upper Perimeter	0507-OFD-PMT-01	WP 246- AM INTAKE YARD	1	None Detected			0.0010	<0.0010
	0507-OFD-PMT-02	WP 247- AM UPPER OVERLOOK ENTRY	0	None Detected			0.0010	<0.0010
	0507-OFD-PMT-03	WP 248- AM UPPER OVERLOOK	0	None Detected			0.0010	<0.0010
	0507-OFD-PMT-04	WP 249- AM CANYON DRIVE	0	None Detected			0.0010	<0.0010
	0507-OFD-PMT-05	WP 246- PM INTAKE YARD	0	None Detected			0.0010	<0.0010
	0507-OFD-PMT-06	WP 247- PM UPPER OVERLOOK ENTRY	0	None Detected			0.0010	<0.0010
	0507-OFD-PMT-07	WP 248- PM UPPER OVERLOOK	1	None Detected			0.0010	<0.0010
	0507-OFD-PMT-08	WP 249- PM CANYON DRIVE	0	None Detected			0.0010	<0.0010
	0507-OFD-PMT-FB1	FIELD BLANK 1	0	None Detected			N/A	N/A
	0507-OFD-PMT-FB2	FIELD BLANK 2	0	None Detected			N/A	N/A
Diversion Dam	0507-OFD-TPT-01	WP 278 - AM N. DIVERSION DAM	1	None Detected			0.0009	**<0.0009**
	0507-OFD-TPT-02	WP 251 - AM DIVERSION DAM YARD	4	None Detected			0.0009	**<0.0010**
	0507-OFD-TPT-03	WP 279 - AM SE DIVERSION DAM	2	None Detected			0.0009	**<0.0009**
	0507-OFD-TPT-04	WP 277 - AM SW DIVERSION DAM	6	None Detected			0.0010	**<0.0010**
	0507-OFD-TPT-05	WP 281 - AM CHEROKEE RD.	4	None Detected			0.0010	**<0.0010**
	0507-OFD-TPT-06	WP 278 - PM N. DIVERSION DAM	6	None Detected			0.0010	**<0.0010**
	0507-OFD-TPT-07	WP 251 - PM DIVERSION DAM YARD	7	None Detected			0.0010	**<0.0010**
	0507-OFD-TPT-08	WP 279 - PM SE DIVERSION DAM	10	None Detected			0.0009	**<0.0010**
	0507-OFD-TPT-09	WP 277 - PM SW DIVERSION DAM	10	Actinolite	0	1	0.0010	**0.00097**
			Non-asbestos structures reported includes a contribution from non-regulated amphiboles					
	0507-OFD-TPT-10	WP 281 - PM CHEROKEE RD.	10	None Detected			0.0010	**<0.0010**
	0507-OFD-TPT-11	FIELD BLANK 01	0	None Detected			N/A	N/A
	0507-OFD-TPT-12	FIELD BLANK 02	0	None Detected			N/A	N/A
Burma Road	0507-OFD-BPT-01	WP 017A AM Burma	1	None Detected			0.0010	<0.0010
	0507-OFD-BPT-02	WP 017A PM Burma	0	None Detected			0.0010	<0.0010
	0507-OFD-BPT-FB1	Field Blank 1	0	None Detected			N/A	N/A
	0507-OFD-BPT-FB2	Field Blank 2	0	None Detected			N/A	N/A

Table 12 - 2017.05.08 Laboratory Analysis Summary

Zone	Sample ID	Location	Non- Asbestos Structures	Asbestos Type	# Structures		Analytical Sensitivity (S/cc)	Asbestos Concentration (S/cc)
					≥ 0.5 µm < 5 µm	≥ 5 µm		
Upper Perimeter	0508-OFD-PMT-01	WP 246 - AM Intake Yard	0	None Detected			0.0010	<0.0010
	0508-OFD-PMT-02	WP 247 - AM Upper Overlook Entry	1	Actinolite	0	2	0.0009	0.0018
			Non-asbestos structures reported above contain a contribution from non-regulated amphiboles					
	0508-OFD-PMT-03	WP 248 - AM Upper Overlook	1	None Detected			0.0010	<0.0010
			Non-asbestos structures reported above contain a contribution from non-regulated amphiboles					
	0508-OFD-PMT-04	WP 249 - AM Canyon Drive	0	None Detected			0.0010	<0.0010
	0508-OFD-PMT-05	WP 246 - PM Intake Yard	1	None Detected			0.0010	<0.0010
			Non-asbestos structures reported above contain a contribution from non-regulated amphiboles.					
	0508-OFD-PMT-06	WP 247 - PM Upper Overlook Entry	0	None Detected			0.0009	<0.0009
	0508-OFD-PMT-07	WP 248 - PM Upper Overlook	0	Chrysotile	1	0	0.0010	0.00099
	0508-OFD-PMT-08	WP 249 - PM Canyon Drive	1	None Detected			0.0010	<0.0010
			Non-asbestos structures reported above contain a contribution from non-regulated amphiboles					
	0508-OFD-PMT-FB1	Field Blank 1	0	None Detected			N/A	N/A
	0508-OFD-PMT-FB2	Field Blank 2	0	None Detected			N/A	N/A
Diversion Dam	0508-OFD-TPT-01	WP 278 - AM N. DIVERSION DAM	2	None Detected			0.0009	<0.0009
	0508-OFD-TPT-02	WP 251 - AM DIVERSION DAM YARD	0	None Detected			0.0009	<0.0009
	0508-OFD-TPT-03	WP 279 - AM SE DIVERSION DAM	0	None Detected			0.0009	<0.0010
	0508-OFD-TPT-04	WP 277 - AM SW DIVERSION DAM	0	None Detected			0.0010	<0.0010
	0508-OFD-TPT-05	WP 281 - AM CHEROKEE RD.	0	None Detected			0.0010	<0.0010
	0508-OFD-TPT-06	WP 278 - PM N. DIVERSION DAM	1	None Detected			0.0010	<0.0010
	0508-OFD-TPT-07	WP 251 - PM DIVERSION DAM YARD	1	None Detected			0.0010	<0.0010
	0508-OFD-TPT-08	WP 279 - PM SE DIVERSION DAM	0	None Detected			0.0010	<0.0010
	0508-OFD-TPT-09	WP 277 - PM SW DIVERSION DAM	1	None Detected			0.0010	<0.0010
	0508-OFD-TPT-10	WP 281 - PM CHEROKEE RD.	0	None Detected			0.0009	<0.0009
	0508-OFD-TPT-FB1	FIELD BLANK 01	0	None Detected			N/A	N/A
	0508-OFD-TPT-FB2	FIELD BLANK 02	0	None Detected			N/A	N/A
Burma Road	0508-OFD-BTP-01	WP 017A AM Burma Rd.	7	Actinolite	1	0	0.0010	0.00095
	0508-OFD-BTP-02	WP 017A PM Burma Rd.	12	Actinolite	0	2	0.0010	0.0020
	0508-OFD-BTP-FB1	Field Blank	0	None Detected			N/A	N/A
	0508-OFD-BTP-FB2	Field Blank	0	None Detected			N/A	N/A
Launch Ramp	0508-OFD-LRP-01	WP 009A - AM Launch Ramp Parking	0	None Detected			0.0009	<0.0009
	0508-OFD-LRP-02	WP 010A - AM Launch Ramp Turnaround	0	None Detected			0.0009	<0.0009
	0508-OFD-LRP-03	WP 009A -PM Launch Ramp Parking	0	None Detected			0.0010	<0.0010
	0508-OFD-LRP-04	WP 010A - PM Launch Ramp Turnaround	0	None Detected			0.0010	<0.0010
	0508-OFD-LRP-FB1	Field Blank 1	0	None Detected			N/A	N/A
	0508-OFD-LRP-FB2	Field Blank 2	0	None Detected			N/A	N/A

Table 13 - 2017.05.09 Laboratory Analysis Summary

Zone	Sample ID	Location	Non- Asbestos Structures	Asbestos Type	# Structures		Analytical Sensitivity (S/cc)	Asbestos Concentration (S/cc)
					≥ 0.5 µm < 5 µm	≥ 5 µm		
Upper Perimeter	0509-OFD-PMT-01	WP 246 - AM Intake Yard	0	None Detected			0.0010	<0.0010
	0509-OFD-PMT-02	WP 247 - AM Upper Overlook Entry	3	None Detected			0.0010	<0.0010
	0509-OFD-PMT-03	WP 248 - AM Upper Overlook	3	None Detected			0.0009	<0.0010
	0509-OFD-PMT-04	WP 249 - AM Canyon Drive	1	Actinolite	0	1	0.0010	0.00095
	0509-OFD-PMT-05	WP 246 - PM Intake Yard	1	None Detected			0.0009	<0.0010
	0509-OFD-PMT-06	WP 247 - PM Upper Overlook Entry	4	None Detected			0.0010	<0.0010
	0509-OFD-PMT-07	WP 248 - PM Upper Overlook	4	None Detected			0.0009	<0.0010
	0509-OFD-PMT-08	WP 249 - PM Canyon Drive	5	None Detected			0.0010	<0.0010
	0509-OFD-PMT-FB1	Field Blank 1	0	None Detected			N/A	N/A
	0509-OFD-PMT-FB2	Field Blank 2	0	None Detected			N/A	N/A
Diversion Dam	0509-OFD-TPT-01	WP 278 - AM N. Diversion Dam	3	None Detected			0.0010	<0.0010
	0509-OFD-TPT-02	WP 251 - AM Diversion Dam Yard	7	None Detected			0.0010	<0.0010
	0509-OFD-TPT-03	WP 279 - AM SE Diversion Dam	0	None Detected			0.0010	<0.0010
	0509-OFD-TPT-04	WP 277 - AM SW Diversion Dam	0	None Detected			0.0009	<0.0009
	0509-OFD-TPT-05	WP 281 - AM Cherokee Rd.	9	None Detected			0.0010	<0.0010
	0509-OFD-TPT-06	WP 278 - PM N. Diversion Dam	3	None Detected			0.0010	<0.0010
	0509-OFD-TPT-07	WP 251 - PM Diversion Dam Yard	2	None Detected			0.0009	<0.0009
	0509-OFD-TPT-08	WP 279 - PM SE Diversion Dam	2	None Detected			0.0010	<0.0010
	0509-OFD-TPT-09	WP 277 - PM SW Diversion Dam	3	None Detected			0.0010	<0.0010
	0509-OFD-TPT-10	WP 281 - PM Cherokee Rd.	3	None Detected			0.0009	<0.0009
	0509-OFD-TPT-FB1	Field Blank 01	0	None Detected			N/A	N/A
	0509-OFD-TPT-FB2	Field Blank 02	0	None Detected			N/A	N/A
Burma Road	0509-OFD-BPT-01	WP 017A - AM Burma Rd	0	Overloaded				
	0509-OFD-BPT-02	WP 017A - PM Burma Rd	6	None Detected			0.0010	<0.0010
	0509-OFD-BPT-FB1	Field Blank 1	0	None Detected			N/A	N/A
	0509-OFD-BPT-FB2	Field Blank 2	0	None Detected			N/A	N/A
Launch Ramp	0509-OFD-LRP-01	WP 009A - AM Launch Ramp Parking	0	None Detected			0.0010	<0.0010
	0509-OFD-LRP-02	WP 010A - AM Launch Ramp Turnaround	1	None Detected			0.0009	<0.0009
	0509-OFD-LRP-03	WP 009A - PM Launch Ramp Parking	2	None Detected			0.0009	<0.0009
	0509-OFD-LRP-04	WP 010A - PM Launch Ram Turnaround	1	None Detected			0.0010	<0.0010
	0509-OFD-LRP-FB1	Field Blank 1	0	None Detected			N/A	N/A
	0509-OFD-LRP-FB2	Field Blank 2	0	None Detected			N/A	N/A

Table 14 - 2017.05.10 Laboratory Analysis Summary

Zone	Sample ID	Location	Non- Asbestos Structures	Asbestos Type	# Structures		Analytical Sensitivity (S/cc)	Asbestos Concentration (S/cc)
					≥ 0.5 µm < 5 µm	≥ 5 µm		
Upper Perimeter	0510-OFD-PMT-01	WP 246- AM INTAKE YARD	6	None Detected			0.0010	<0.0010
			Non-asbestos structures reported contains a contribution from non-regulated amphiboles					
	0510-OFD-PMT-02	WP 247- AM UPPER OVERLOOK ENTRY	5	None Detected			0.0010	<0.0010
	0510-OFD-PMT-03	WP 248- AM UPPER OVERLOOK	1	None Detected			0.0010	<0.0010
	0510-OFD-PMT-04	WP 249- AM CANYON DRIVE	1	None Detected			0.0010	<0.0010
	0510-OFD-PMT-05	WP 246- PM INTAKE YARD	1	None Detected			0.0010	<0.0010
	0510-OFD-PMT-06	WP 247- PM UPPER OVERLOOK ENTRY	1	None Detected			0.0010	<0.0010
	0510-OFD-PMT-07	WP 248- PM UPPER OVERLOOK	8	None Detected			0.0010	<0.0010
	0510-OFD-PMT-08	WP 249- PM CANYON DRIVE	1	None Detected			0.0010	<0.0010
	0510-OFD-PMT-FB1	FIELD BLANK 1	0	None Detected			N/A	N/A
	0510-OFD-PMT-FB2	FIELD BLANK 2	0	None Detected			N/A	N/A
Diversion Dam	0510-OFD-TPT-01	WP 278- AM N. DIVERSION DAM	5	None Detected			0.0010	<0.0010
	0510-OFD-TPT-02	WP 251- AM DIVERSION DAM YARD	4	Chrysotile	1	0	0.0010	0.00098
	0510-OFD-TPT-03	WP 279- AM SE DIVERSION DAM	2	None Detected			0.0010	<0.0010
	0510-OFD-TPT-04	WP 277- AM SW DIVERSION DAM	3	None Detected			0.0010	<0.0010
	0510-OFD-TPT-05	WP 281- AM CHEROKEE RD.	3	None Detected			0.0010	<0.0010
	0510-OFD-TPT-06	WP 278- PM N. DIVERSION DAM	3	None Detected			0.0010	<0.0010
	0510-OFD-TPT-07	WP 251- PM DIVERSION DAM YARD	3	None Detected			0.0010	<0.0010
	0510-OFD-TPT-08	WP 251- PM DIVERSION DAM YARD	2	None Detected			0.0009	<0.0009
	0510-OFD-TPT-09	WP 277- PM SW DIVERSION DAM	4	None Detected			0.0010	<0.0010
	0510-OFD-TPT-10	WP 281- AM CHEROKEE RD	0	None Detected			0.0010	<0.0010
	0510-OFD-TPT-FB1	FIELD BLANK 1	0	None Detected			N/A	N/A
	0510-OFD-TPT-FB2	FIELD BLANK 2	0	None Detected			N/A	N/A
Burma Road	0510-OFD-BPT-01	WP 017A- AM BURMA	10	None Detected			0.0009	<0.0010
			Non-asbestos structures reported contains a contribution from non-regulated amphiboles					
	0510-OFD-BPT-02	WP 017A- PM BURMA	1	None Detected			0.0010	<0.0010
	0510-OFD-BPT-FB1	FIELD BLANK 1	0	None Detected			N/A	N/A
	0510-OFD-BPT-FB2	FIELD BLANK 2	0	None Detected			N/A	N/A
Launch Ramp	0510-OFD-LRP-01	WP 009A- AM LAUNCH RAMP PARKING	5	None Detected			0.0009	<0.0009
			Non-asbestos structures reported contains a contribution from non-regulated amphiboles					
	0510-OFD-LRP-02	WP 010A- AM LAUNCH RAMP TURNAROUND	3	None Detected			0.0010	<0.0010
			Non-asbestos structures reported contains a contribution from non-regulated amphiboles					
	0510-OFD-LRP-03	WP 009A- PM LAUNCH RAMP PARKING	2	None Detected			0.0009	<0.0009
	0510-OFD-LRP-04	WP 010A- PM LAUNCH RAMP TURNAROUND	4	None Detected			0.0009	<0.0009
	0510-OFD-LRP-FB1	FIELD BLANK 1	0	None Detected			N/A	N/A
	0510-OFD-LRP-FB2	FIELD BLANK 2	0	None Detected			N/A	N/A

Table 15 - 2017.05.11 Laboratory Analysis Summary

Zone	Sample ID	Location	Non- Asbestos Structures	Asbestos Type	# Structures		Analytical Sensitivity (S/cc)	Asbestos Concentration (S/cc)
					≥ 0.5 µm < 5 µm	≥ 5 µm		
Upper Perimeter	0505-OFD-PMT-01	WP 246- AM INTAKE YARD	2	Actinolite	1	0	0.0010	0.00098
	0505-OFD-PMT-02	WP 247- AM UPPER OVERLOOK ENTRY	22	Actinolite	0	1	0.0010	0.00098
	0505-OFD-PMT-03	WP 248- AM UPPER OVERLOOK	2	None Detected			0.0010	<0.0010
	0505-OFD-PMT-04	WP 249- AM CANYON DRIVE	4	None Detected			0.0010	<0.0010
	0505-OFD-PMT-05	WP 246- PM INTAKE YARD	1	None Detected			0.0010	<0.0010
	0505-OFD-PMT-06	WP 247- PM UPPER OVERLOOK ENTRY	1	None Detected			0.0010	<0.0010
	0505-OFD-PMT-07	WP 248- PM UPPER OVERLOOK	0	None Detected			0.0010	<0.0010
	0505-OFD-PMT-08	WP 249- PM CANYON DRIVE	2	None Detected			0.0010	<0.0010
	0505-OFD-PMT-09	FIELD BLANK 1	0	None Detected			N/A	N/A
	0505-OFD-PMT-10	FIELD BLANK 2	0	None Detected			N/A	N/A
Diversion Dam	0505-OFD-TPT-01	WP 279- AM N. DIVERSION DAM	1	None Detected			0.0010	<0.0010
	0505-OFD-TPT-02	WP 251- AM DIVERSION DAM YARD	1	None Detected			0.0010	<0.0010
	0505-OFD-TPT-03	WP 279- AM SE DIVERSION DAM	0	None Detected			0.0010	<0.0010
	0505-OFD-TPT-04	WP 277- AM SW DIVERSION DAM	0	None Detected			0.0010	<0.0010
	0505-OFD-TPT-05	WP 281- AM CHEROKEE ROAD	1	None Detected			0.0010	<0.0010
			Non-asbestos structures reported above includes a contribution from non-regulated amphiboles.					
	0505-OFD-TPT-06	WP 278- PM N. DIVERSION DAM	0	None Detected			0.0010	<0.0010
	0505-OFD-TPT-07	WP 251- PM DIVERSION DAM YARD	0	None Detected			0.0009	<0.0009
	0505-OFD-TPT-08	WP 279- PM SE DIVERSION DAM	0	None Detected			0.0009	<0.0010
	0505-OFD-TPT-09	WP 277- PM SW DIVERSION DAM	0	None Detected			0.0010	<0.0010
	0505-OFD-TPT-10	WP 281- PM CHEROKEE ROAD	0	Actinolite	1	0	0.0009	0.00094
	0505-OFD-TPT-11	FIELD BLANK 1	0	None Detected			N/A	N/A
	0505-OFD-TPT-12	FIELD BLANK 2	0	None Detected			N/A	N/A
Burma Road	0505-OFD-BPT-01	WP 273- AM BURMA ROAD	8	Actinolite	2	1	0.0010	0.0030
	0505-OFD-BPT-02	WP 273- PM BURMA ROAD	1	None Detected			0.0010	<0.0010
	0505-OFD-BPT-03	FIELD BLANK 1	0	None Detected			N/A	N/A
	0505-OFD-BPT-04	FIELD BLANK 2	0	None Detected			N/A	N/A
Launch Ramp	0505-OFD-LRP-01	WP 009A- AM LAUNCH RAMP PARKING	0	None Detected			0.0010	<0.0010
	0505-OFD-LRP-02	WP 01A- AM LAUNCH RAMP TURNAROUND	4	Actinolite	0	1	0.0010	0.00099
	0505-OFD-LRP-03	WP 009A- PM LAUNCH RAMP PARKING	0	None Detected			0.0010	<0.0010
	0505-OFD-LRP-04	WP 01A- PM LAUNCH RAMP TURNAROUND	0	None Detected			0.0010	<0.0010
	0505-OFD-LRP-05	FIELD BLANK 1	0	None Detected			N/A	N/A
	0505-OFD-LRP-06	FIELD BLANK 1	0	None Detected			N/A	N/A

Table 16 - 2017.05.12 Laboratory Analysis Summary

Zone	Sample ID	Location	Non- Asbestos Structures	Asbestos Type	# Structures		Analytical Sensitivity (S/cc)	Asbestos Concentration (S/cc)
					≥ 0.5 µm < 5 µm	≥ 5 µm		
Upper Perimeter	0512-OFD-PMT-01	WP 246 - AM Intake Yard	1	Chrysotile None Detected	0	1	0.0009	0.00094
	0512-OFD-PMT-02	WP 247 - AM Upper Overlook Entry	5	Chrysotile	0	1	0.0010	0.00096
	0512-OFD-PMT-03	WP 248 - AM Upper Overlook	0	None Detected			0.0010	<0.0010
	0512-OFD-PMT-04	WP 249 - AM Canyon Drive	1	None Detected			0.0009	<0.0009
	0512-OFD-PMT-05	WP 246 - PM Intake Yard	1	None Detected			0.0010	<0.0010
	0512-OFD-PMT-06	WP 247 - PM Upper Overlook Entry	0	None Detected			0.0010	<0.0010
	0512-OFD-PMT-07	WP 248 - PM Upper Overlook	0	None Detected			0.0010	<0.0010
	0512-OFD-PMT-08	WP 249 - PM Canyon Drive	0	None Detected			0.0010	<0.0010
	0512-OFD-PMT-FB1	Field Blank 1	0	None Detected			N/A	N/A
	0512-OFD-PMT-FB2	Field Blank 2	0	None Detected			N/A	N/A
Diversion Dam	0512-OFD-TPT-01	WP 278 - AM N. Diversion Dam	2	None Detected			0.0010	<0.0010
			Non-asbestos structures reported above contain a contribution from non-regulated amphiboles.					
	0512-OFD-TPT-02	WP 251 - AM Diversion Dam Yard	0	None Detected			0.0010	<0.0010
	0512-OFD-TPT-03	WP 279 - AM SE Diversion Dam	0	None Detected			0.0010	<0.0010
	0512-OFD-TPT-04	WP 277 - AM SW Diversion Dam	0	None Detected			0.0010	<0.0010
	0512-OFD-TPT-05	WP 281 - AM Cherokee Rd.	0	Actinolite	1	0	0.0010	0.00098
	0512-OFD-TPT-06	WP 278 - PM N. Diversion Dam	0	None Detected			0.0009	<0.0009
	0512-OFD-TPT-07	WP 251 - PM Diversion Dam Yard	1	Actinolite	0	1	0.0010	0.00099
			Non-asbestos structures reported above contain a contribution from non-regulated amphiboles.					
	0512-OFD-TPT-08	WP 279 - PM SE Diversion Dam	1	None Detected			0.0010	<0.0010
			Non-asbestos structures reported above contain a contribution from non-regulated amphiboles.					
	0512-OFD-TPT-09	WP 277 - PM SW Diversion Dam	0	Actinolite	1	0	0.0010	0.00096
	0512-OFD-TPT-10	WP 281 - PM Cherokee Rd.	0	None Detected			0.0009	<0.0009
	0512-OFD-TPT-FB1	Field Blank 01	0	None Detected			N/A	N/A
	0512-OFD-TPT-FB2	Field Blank 02	0	None Detected			N/A	N/A
Burma Road	0512-OFD-BPT-01	WP 017A - AM Burma Road	1	None Detected			0.0010	<0.0010
			Non-asbestos structures reported above includes a contribution from non-regulated amphiboles.					
	0512-OFD-BPT-02	WP 017A - PM Burma Road	1	None Detected			0.0009	<0.0009
			Non-asbestos structures reported above includes a contribution from non-regulated amphiboles.					
	0512-OFD-BPT-FB1	Field Blank 1	0	None Detected			N/A	N/A
	0512-OFD-BPT-FB2	Field Blank 2	0	None Detected			N/A	N/A
Launch Ramp	0512-OFD-LRP-01	WP 009A - AM Launch Ramp Parking	1	None Detected			0.0010	<0.0010
	0512-OFD-LRP-02	WP 010A - AM Launch Ramp Turnaround	2	None Detected			0.0010	<0.0010
	0512-OFD-LRP-03	WP 009A - PM Launch Ramp Parking	1	None Detected			0.0010	<0.0010
	0512-OFD-LRP-04	WP 010A - PM Launch Ramp Turnaround	0	None Detected			0.0010	<0.0010

Table 17 - 2017.05.13 Laboratory Analysis Summary

Zone	Sample ID	Location	Non- Asbestos Structures	Asbestos Type	# Structures		Analytical Sensitivity (S/cc)	Asbestos Concentration (S/cc)
					≥ 0.5 µm < 5 µm	≥ 5 µm		
Upper Perimeter	0513-OFD-PMT-01	WP 246- AM INTAKE YARD	0	None Detected			0.0010	<0.0010
	0513-OFD-PMT-02	WP 247- AM UPPER OVERLOOK ENTRY	1	None Detected			0.0010	<0.0010
	0513-OFD-PMT-03	WP 248- AM UPPER OVERLOOK	0	None Detected			0.0010	<0.0010
	0513-OFD-PMT-04	WP 249- AM CANYON DRIVE	0	None Detected			0.0010	<0.0010
	0513-OFD-PMT-05	WP 246- PM INTAKE YARD	0	None Detected			0.0009	<0.0010
	0513-OFD-PMT-06	WP 247- PM UPPER OVERLOOK ENTRY	0	None Detected			0.0009	<0.0009
	0513-OFD-PMT-07	WP 248- PM UPPER OVERLOOK	0	None Detected			0.0009	<0.0010
	0513-OFD-PMT-08	WP 249- PM CANYON DRIVE	0	None Detected			0.0009	<0.0009
	0513-OFD-PMT-FB1	FIELD BLANK 1	0	None Detected			N/A	N/A
	0513-OFD-PMT-FB2	FIELD BLANK 2	0	None Detected			N/A	N/A
Diversion Dam	0513-OFD-TPT-01	WP 278- AM N. DIVERSION DAM	1	None Detected			0.0010	<0.0010
	0513-OFD-TPT-02	WP 251- AM DIVERSION DAM YARD	2	None Detected			0.0010	<0.0010
	0513-OFD-TPT-03	WP 279- AM SE DIVERSION DAM	2	None Detected			0.0010	<0.0010
	0513-OFD-TPT-04	WP 277- AM SW DIVERSION DAM	1	None Detected			0.0010	<0.0010
	0513-OFD-TPT-05	WP 281- AM CHEROKEE RD	0	None Detected			0.0010	<0.0010
	0513-OFD-TPT-06	WP 278- PM N. DIVERSION DAM	0	None Detected			0.0010	<0.0010
	0513-OFD-TPT-07	WP 251 - PM DIVERSION DAM YARD	1	None Detected			0.0010	<0.0010
			Non-asbestos structures reported contains a contribution from non-regulated amphiboles					
	0513-OFD-TPT-08	WP 279- PM SE DIVERSION DAM	2	None Detected			0.0010	<0.0010
	0513-OFD-TPT-09	WP 277- PM SW DIVERSION DAM	4	None Detected			0.0010	<0.0010
	0513-OFD-TPT-10	WP 281- PM CHEROKEE RD.	1	None Detected			0.0010	<0.0010
	0513-OFD-TPT-FB1	FIELD BLANK 01	0	None Detected			N/A	N/A
	0513-OFD-TPT-FB2	FIELD BLANK 02	0	None Detected			N/A	N/A
Burma Road	0513-OFD-BPT-01	WP 017A- AM BURMA ROAD	2	None Detected			0.0009	<0.0010
	0513-OFD-BPT-02	WP 017A - PM BURMA ROAD	0	None Detected			0.0010	<0.0010
	0513-OFD-BPT-FB1	FIELD BLANK 1	0	None Detected			N/A	N/A
	0513-OFD-BPT-FB2	FIELD BLANK 2	0	None Detected			N/A	N/A
Launch Ramp	0513-OFD-LRP-01	WP 009A- AM LAUNCH RAMP PARKING	1	None Detected			0.0010	<0.0010
	0513-OFD-LRP-02	WP 010A- AM LAUNCH RAMP TURNAROUND	1	None Detected			0.0010	<0.0010
	0513-OFD-LRP-03	WP 009A- PM LAUNCH RAMP PARKING	0	None Detected			0.0010	<0.0010
	0513-OFD-LRP-04	WP 010A- PM LAUNCH RAMP TURNAROUND	0	None Detected			0.0009	<0.0010
	0513-OFD-LRP-FB1	FIELD BLANK 1	0	None Detected			N/A	N/A
	0513-OFD-LRP-FB2	FIELD BLANK 2	0	None Detected			N/A	N/A

Table 18 - 2017.05.14 Laboratory Analysis Summary

Zone	Sample ID	Location	Non- Asbestos Structures	Asbestos Type	# Structures		Analytical Sensitivity (S/cc)	Asbestos Concentration (S/cc)
					≥ 0.5 µm < 5 µm	≥ 5 µm		
Upper Perimeter	0514-OFD-PMT-01	WP 246-AM Intake Yard	1	Chrysotile	0	1	0.0009	0.00094
	0514-OFD-PMT-02	WP 247-AM Upper Overlook Entry	6	None Detected			0.0009	<0.0009
	0514-OFD-PMT-03	WP 248-AM Upper Overlook	1	Actinolite	0	1	0.0010	0.0010
	0514-OFD-PMT-04	WP 249-AM Canyon Drive	0	None Detected			0.0009	<0.0009
	0514-OFD-PMT-05	WP 246-PM Intake Yard	0	None Detected			0.0010	<0.0010
	0514-OFD-PMT-06	WP 247-PM Upper Overlook Entry	0	None Detected			0.0010	<0.0010
	0514-OFD-PMT-07	WP 248-PM Upper Overlook	1	None Detected			0.0010	<0.0010
	0514-OFD-PMT-08	WP 249-PM Canyon Drive	3	None Detected			0.0010	<0.0010
	0514-OFD-PMT-FB1	Field Blank 1	0	None Detected			N/A	N/A
	0514-OFD-PMT-FB2	Field Blank 2	0	None Detected			N/A	N/A
Diversion Dam	0514-OFD-TPT-01	WP 278-AM N. Diversion Dam	1	Actinolite	1	0	0.0009	0.00094
			Non-asbestos structures reported includes a contribution from non-regulated amphiboles.					
	0514-OFD-TPT-02	WP 251-AM Diversion Dam Yard	0	Actinolite	1	1	0.0009	0.0019
	0514-OFD-TPT-03	WP 279-AM SE Diversion Dam	0	None Detected			0.0009	<0.0010
	0514-OFD-TPT-04	WP 277-AM SW Diversion Dam	1	None Detected			0.0009	<0.0010
			Non-asbestos structures reported includes a contribution from non-regulated amphiboles.					
	0514-OFD-TPT-05	WP 281-AM Cherokee Rd.	2	Actinolite	0	1	0.0010	0.00095
			Non-asbestos structures reported includes a contribution from non-regulated amphiboles.					
	0514-OFD-TPT-06	WP 278-PM N. Diversion Dam	1	Actinolite	1	0	0.0010	0.00098
			Non-asbestos structures reported includes a contribution from non-regulated amphiboles.					
	0514-OFD-TPT-07	WP 251-PM Diversion Dam Yard	1	Actinolite	2	0	0.0010	0.0020
			Non-asbestos structures reported includes a contribution from non-regulated amphiboles.					
	0514-OFD-TPT-08	WP 279-PM SE Diversion Dam	1	Actinolite	0	3	0.0009	0.0028
			Non-asbestos structures reported includes a contribution from non-regulated amphiboles.					
	0514-OFD-TPT-09	WP 277-PM SW Diversion Dam	0	Chrysotile	1	0	0.0010	0.0010
			Non-asbestos structures reported includes a contribution from non-regulated amphiboles.					
	0514-OFD-TPT-10	WP 281-PM Cherokee Rd.	2	Actinolite	0	2	0.0010	0.0020
			Non-asbestos structures reported includes a contribution from non-regulated amphiboles.					
	0514-OFD-TPT-FB1	Field Blank 01	0	None Detected			N/A	N/A
	0514-OFD-TPT-FB2	Field Blank 02	0	None Detected			N/A	N/A
Burma Road	0514-OFD-BPT-01	0514-OFD-BPT-01	5	Actinolite	2	0	0.0010	0.0020
	0514-OFD-BPT-02	WP 017A-PM Burma Rd	4	Actinolite	1	0	0.0010	0.00098
	0514-OFD-BPT-FB1	Field Blank 1	0	None Detected			N/A	N/A
	0514-OFD-BPT-FB2	Field Blank 2	0	None Detected			N/A	N/A
Launch Ramp	0514-OFD-LRP-01	WP 009A-AM Launch Ramp Parking	5	None Detected			0.0009	<0.0009
			Non-asbestos structures reported includes a contribution from non-regulated amphiboles.					
	0514-OFD-LRP-02	WP 010A-AM Launch Ramp Turnaround	5	Actinolite	0	2	0.0010	0.0020

	0514-OFD-LRP-03	WP 009A-PM Launch Ramp Parking	2	None Detected			0.0010	<0.0010
	0514-OFD-LRP-04	WP 010A-PM Launch Ramp Turnaround	3	None Detected			0.0010	<0.0010
			Non-asbestos structures reported includes a contribution from non-regulated amphiboles.					
	0514-OFD-LRP-FB1	Field Blank 1	0	None Detected			N/A	N/A
	0514-OFD-LRP-FB2	Field Blank 2	0	None Detected			N/A	N/A

Table 19 - 2017.05.15 Laboratory Analysis Summary

Zone	Sample ID	Location	Non- Asbestos Structures	Asbestos Type	# Structures		Analytical Sensitivity (S/cc)	Asbestos Concentration (S/cc)
					≥ 0.5 µm < 5 µm	≥ 5 µm		
Upper Perimeter	0515-OFD-PMT-01	WP 246 - AM Intake Yard	1	None Detected			0.0010	<0.0010
	0515-OFD-PMT-02	WP 247 - AM Upper Overlook Entry	17	None Detected			0.0010	<0.0010
	0515-OFD-PMT-03	WP 248 - AM Upper Overlook	0	None Detected			0.0010	<0.0010
	0515-OFD-PMT-04	WP 249 - AM Canyon Drive	1	None Detected			0.0010	<0.0010
	0515-OFD-PMT-05	WP 246 - PM Intake Yard	3	Chrysotile	0	1	0.0010	0.00097
	0515-OFD-PMT-06	WP 247 - PM Upper Overlook Entry	0	Chrysotile	3	0	0.0010	0.0029
	0515-OFD-PMT-07	WP 248 - PM Upper Overlook	1	Chrysotile	1	0	0.0010	0.00096
	0515-OFD-PMT-08	WP 249 - PM Canyon Drive	1	None Detected			0.0009	<0.0009
	0515-OFD-PMT-FB1	Field Blank 1	0	None Detected			N/A	N/A
	0515-OFD-PMT-FB2	Field Blank 2	0	None Detected			N/A	N/A
Diversion Dam	0515-OFD-TPT-01	WP 278 - AM Diversion Dam	0	None Detected			0.0010	<0.0010
	0515-OFD-TPT-02	WP 251 - AM Diversion Dam Yard	0	None Detected			0.0010	<0.0010
	0515-OFD-TPT-03	WP 279 - AM SE Diversion Dam	0	None Detected			0.0010	<0.0010
	0515-OFD-TPT-04	WP 277 - AM SW Diversion Dam	0	None Detected			0.0010	<0.0010
	0515-OFD-TPT-05	WP 281 - AM Cherokee Road	0	None Detected			0.0010	<0.0010
	0515-OFD-TPT-06	WP 278 - PM Diversion Dam	0	None Detected			0.0009	<0.0010
	0515-OFD-TPT-07	WP 251 - PM Diversion Dam Yard	0	None Detected			0.0009	<0.0010
	0515-OFD-TPT-08	WP 279 - PM SE Diversion Dam	0	None Detected			0.0009	<0.0010
	0515-OFD-TPT-09	WP 277 - PM SW Diversion Dam	0	None Detected			0.0009	<0.0010
	0515-OFD-TPT-10	WP 281 - PM Cherokee Road	0	None Detected			0.0010	<0.0010
	0515-OFD-TPT-FB1	Field Blank 01	0	None Detected			N/A	N/A
	0515-OFD-TPT-FB2	Field Blank 02	0	None Detected			N/A	N/A
Burma Road	0515-OFD-BPT-01	WP 017A - AM Burma Road	0	None Detected			0.0010	<0.0010
	0515-OFD-BPT-02	WP 017A - PM Burma Road	0	None Detected			0.0010	<0.0010
	0515-OFD-BPT-FB1	Field Blank 01	0	None Detected			N/A	N/A
	0515-OFD-BPT-FB2	Field Blank 02	0	None Detected			N/A	N/A
Launch Ramp	0515-OFD-LRP-01	WP 009A - AM Launch Ramp Parking	0	None Detected			0.0010	<0.0010
	0515-OFD-LRP-02	WP 010A - AM Launch Ramp Turnaround	11	None Detected			0.0010	<0.0010
			Non-asbestos structures reported above contain a contribution from non-regulated amphiboles.					
	0515-OFD-LRP-03	WP 009A - PM Launch Ramp Parking	1	None Detected			0.0010	<0.0010
			Non-asbestos structures reported above contain a contribution from non-regulated amphiboles.					
	0515-OFD-LRP-04	WP 010A - PM Launch Ramp Turnaround	0	None Detected			0.0010	<0.0010
	0515-OFD-LRP-FB1	Field Blank 1	0	None Detected			N/A	N/A
	0515-OFD-LRP-FB2	Field Blank 2	0	None Detected			N/A	N/A

Table 20 - 2017.05.16 Laboratory Analysis Summary

Zone	Sample ID	Location	Non- Asbestos Structures	Asbestos Type	# Structures		Analytical Sensitivity (S/cc)	Asbestos Concentration (S/cc)
					≥ 0.5 µm < 5 µm	≥ 5 µm		
Upper Perimeter	0516-OFD-PMT-01	WP 246 - AM Intake yard	0	None Detected			0.0009	<0.0010
	0516-OFD-PMT-02	WP 247 - AM Upper Overlook Entry	1	None Detected			0.0009	<0.0010
	0516-OFD-PMT-03	WP 248 - AM Upper Overlook	6	None Detected			0.0009	<0.0009
	0516-OFD-PMT-04	WP 249 - AM Canyon Drive	4	None Detected			0.0010	<0.0010
	0516-OFD-PMT-05	WP 246 - PM Intake Yard	3	None Detected			0.0010	<0.0010
	0516-OFD-PMT-06	WP 247 - PM Upper Overlook Entry	0	None Detected			0.0010	<0.0010
	0516-OFD-PMT-07	WP 248 - PM Upper Overlook	1	None Detected			0.0010	<0.0010
			Non-asbestos structures reported includes a contribution from non-regulated amphiboles.					
	0516-OFD-PMT-08	WP 249 - PM Canyon Drive	0	None Detected			0.0010	<0.0010
	0516-OFD-PMT-FB1	Field Blank 1	0	None Detected			N/A	
	0516-OFD-PMT-FB2	Field Blank 2	0	None Detected			N/A	
Diversion Dam	0516-OFD-TPT-01	WP 278 - AM N. Diversion Dam	1	None Detected			0.0010	<0.0010
	0516-OFD-TPT-02	WP 251 - AM Diversion Dam Yard	0	None Detected			0.0010	<0.0010
	0516-OFD-TPT-03	WP 279 - AM SE Diversion Dam	0	None Detected			0.0010	<0.0010
	0516-OFD-TPT-04	WP 277 - AM SW Diversion Dam	0	None Detected			0.0010	<0.0010
	0516-OFD-TPT-05	WP 019A - AM E. Diversion Dam	0	None Detected			0.0010	<0.0010
	0516-OFD-TPT-06	WP 020A - AM SE Canal	0	None Detected			0.0010	<0.0010
	0516-OFD-TPT-07	WP 021A - AM SW Canal	0	None Detected			0.0010	<0.0010
	0516-OFD-TPT-08	WP 281 - AM Cherokee Rd.	0	None Detected			0.0010	<0.0010
	0516-OFD-TPT-09	WP 278 - PM N. Diversion Dam	0	None Detected			0.0010	<0.0010
	0516-OFD-TPT-10	WP 251 - PM Diversion Dam Yard	0	None Detected			0.0010	<0.0010
	0516-OFD-TPT-11	WP 279 - PM SE Diversion Dam	0	None Detected			0.0010	<0.0010
	0516-OFD-TPT-12	WP 277 - PM SW Diversion Dam	0	None Detected			0.0010	<0.0010
	0516-OFD-TPT-13	WP 019A - PM E Diversion Dam	0	None Detected			0.0010	<0.0010
	0516-OFD-TPT-14	WP 020A - PM SE Canal	1	None Detected			0.0009	<0.0009
	0516-OFD-TPT-15	WP 021A - SW Canal	1	None Detected			0.0010	<0.0010
	0516-OFD-TPT-16	WP 281 - PM Cherokee Rd.	1	None Detected			0.0010	<0.0010
	0516-OFD-TPT-FB1	Field Blank 1	0	None Detected			N/A	N/A
	0516-OFD-TPT-FB2	Field Blank 2	0	None Detected			N/A	N/A
Burma Road	0516-OFD-BPT-01	WP 017A - AM Burma Road	3	Actinolite	1	0	0.0010	0.00098
	0516-OFD-BPT-02	WP 017A - PM Burma Road	0	None Detected			0.0010	<0.0010
	0516-OFD-BPT-FB1	Field Blank 1	0	None Detected			N/A	N/A
	0516-OFD-BPT-FB2	Field Blank 2	0	None Detected			N/A	N/A
Launch Ramp	0516-OFD-LRP-01	WP 009A - AM Launch Ramp Parking	2	None Detected			0.0009	<0.0009
			Non-asbestos structures reported includes a contribution from non-regulated amphiboles					
	0516-OFD-LRP-02	WP 010A - AM Launch Ramp Turnaround	0	None Detected			0.0009	<0.0009
	0516-OFD-LRP-03	WP 009A - PM Launch Ramp Parking	1	None Detected			0.0010	<0.0010

	0516-OFD-LRP-04	WP 010A - PM Launch Ramp Turnaround	1	None Detected			0.0010	<0.0010
	0516-OFD-LRP-FB1	Field Blank 1	0	None Detected			N/A	N/A
	0516-OFD-LRP-FB2	Field Blank 2	0	None Detected			N/A	N/A

Table 21 - 2017.05.17 Laboratory Analysis Summary

Zone	Sample ID	Location	Non- Asbestos Structures	Asbestos Type	# Structures		Analytical Sensitivity (S/cc)	Asbestos Concentration (S/cc)
					≥ 0.5 µm < 5 µm	≥ 5 µm		
Upper Perimeter	0517-OFD-PMT-01	WP246 AM INTAKE YARD	0	None Detected			0.0010	<0.0010
	0517-OFD-PMT-02	WP247 AM UPPER OVERLOOK ENTRY	0	None Detected			0.0010	<0.0010
	0517-OFD-PMT-03	WP248 AM UPPER OVERLOOK	6	None Detected			0.0010	<0.0010
	0517-OFD-PMT-04	WP249 AM CANYON DRIVE	2	None Detected			0.0009	<0.0009
	0517-OFD-PMT-05	WP246 PM INTAKE YARD	1	None Detected			0.0010	<0.0010
	0517-OFD-PMT-06	WP247 PM UPPER OVERLOOK ENTRY	0	None Detected			0.0009	<0.0009
	0517-OFD-PMT-07	WP248 PM UPPER OVERLOOK	0	None Detected			0.0009	<0.0010
	0517-OFD-PMT-08	WP249 PM CANYON DRIVE	0	None Detected			0.0010	<0.0010
	0517-OFD-PMT-FB1	FIELD BLANK 1	0	None Detected			N/A	N/A
	0517-OFD-PMT-FB2	FIELD BLANK 2	0	None Detected			N/A	N/A
Diversion Dam	0517-OFD-TPT-01	WP 278 - AM N. Diversion Dam	0	None Detected			0.0010	<0.0010
	0517-OFD-TPT-02	WP 251 - AM Diversion Dam Yard	1	None Detected			0.0010	<0.0010
	0517-OFD-TPT-03	WP 279 - AM SE Diversion Dam	0	None Detected			0.0010	<0.0010
	0517-OFD-TPT-04	WP 277 - AM SW Diversion Dam	0	None Detected			0.0010	<0.0010
	0517-OFD-TPT-05	WP 019A - AM E. Diversion Dam	0	None Detected			0.0010	<0.0010
	0517-OFD-TPT-06	WP 020A - AM SE Canal	0	None Detected			0.0010	<0.0010
	0517-OFD-TPT-07	WP 021A - AM SW Canal	0	None Detected			0.0010	<0.0010
	0517-OFD-TPT-08	WP 281 - AM Cherokee Rd.	1	None Detected			0.0010	<0.0010
	0517-OFD-TPT-09	WP 278 - PM N. Diversion Dam	0	None Detected			0.0010	<0.0010
	0517-OFD-TPT-10	WP 251 - PM Diversion Dam Yard	1	None Detected			0.0010	<0.0010
	0517-OFD-TPT-11	WP 279 - PM SE Diversion Dam	0	None Detected			0.0010	<0.0010
	0517-OFD-TPT-12	WP 277 - PM SW Diversion Dam	0	None Detected			0.0010	<0.0010
	0517-OFD-TPT-13	WP 019A - PM E Diversion Dam	0	None Detected			0.0010	<0.0010
	0517-OFD-TPT-14	WP 020A - PM SE Canal	0	None Detected			0.0010	<0.0010
	0517-OFD-TPT-15	WP 021A - SW Canal	0	None Detected			0.0010	<0.0010
	0517-OFD-TPT-16	WP 281 - PM Cherokee Rd.	0	None Detected			0.0010	<0.0010
	0517-OFD-TPT-FB1	Field Blank 1	0	None Detected			N/A	N/A
	0517-OFD-TPT-FB2	Field Blank 2	0	None Detected			N/A	N/A
Burma Road	0517-OFD-BPT-01	WP 017A- AM BURMA ROAD	0	None Detected			0.0010	<0.0010
	0517-OFD-BPT-02	WP 017A- PM BURMA ROAD	0	None Detected			0.0010	<0.0010
	0517-OFD-BPT-FB1	Field Blank 1	0	None Detected			N/A	N/A
	0517-OFD-BPT-FB2	Field Blank 2	0	None Detected			N/A	N/A
Launch Ramp	0517-OFD-LRP-01	WP009A AM LAUNCH RAMP PARKING	2	None Detected			0.0010	<0.0010
	0517-OFD-LRP-02	WP010A AM LAUNCH RAMP TURNAROUND	0	None Detected			0.0010	<0.0010
	0517-OFD-LRP-03	WP009A PM LAUNCH RAMP PARKING	0	None Detected			0.0010	<0.0010
	0517-OFD-LRP-04	WP010A PM LAUNCH RAMP TURNAROUND	0	None Detected			0.0010	<0.0010

Table 22 - 2017.05.18 Laboratory Analysis Summary

Zone	Sample ID	Location	Non- Asbestos Structures	Asbestos Type	# Structures		Analytical Sensitivity (S/cc)	Asbestos Concentration (S/cc)
					≥ 0.5 µm < 5 µm	≥ 5 µm		
Upper Perimeter	0518-OFD-PMT-01	WP246 AM INTAKE YARD	4	None Detected			0.0010	<0.0010
			Non-asbestos structures reported includes a contribution from non-regulated amphiboles					
	0518-OFD-PMT-02	WP247 AM UPPER OVERLOOK ENTRY	3	None Detected			0.0010	<0.0010
			Non-asbestos structures reported includes a contribution from non-regulated amphiboles					
	0518-OFD-PMT-03	WP248 AM UPPER OVERLOOK	2	Actinolite	1	1	0.0010	0.0020
	0518-OFD-PMT-04	WP249 AM CANYON DRIVE	1	Actinolite	0	1	0.0010	0.00097
			Non-asbestos structures reported includes a contribution from non-regulated amphiboles					
	0518-OFD-PMT-05	WP246 PM INTAKE YARD	1	None Detected			0.0010	<0.0010
	0518-OFD-PMT-06	WP247 PM UPPER OVERLOOK ENTRY	3	Actinolite	0	1	000010	0.0095
				Chrysotile	1	0		0.0095
				For all types				0.0019
			Non-asbestos structures reported includes a contribution from non-regulated amphiboles					
	0518-OFD-PMT-07	WP248 PM UPPER OVERLOOK	2	Actinolite	0	1	0.0010	0.00097
	0518-OFD-PMT-08	WP249 PM CANYON DRIVE	0	None Detected			0.0009	<0.0009
	0518-OFD-PMT-FB1	FIELD BLANK 1	0	None Detected				N/A
	0518-OFD-PMT-FB2	FIELD BLANK 2	0	None Detected				N/A
Diversion Dam	0518-OFD-TPT-01	WP 278 - AM N. Diversion Dam	0	None Detected			0.0010	<0.0010
	0518-OFD-TPT-02	WP 251 - AM Diversion Dam Yard	6	Actinolite	0	1	0.0010	0.0010
			Non-asbestos structures reported includes a contribution from non-regulated amphiboles.					
	0518-OFD-TPT-03	WP 279 - AM SE Diversion Dam	0	Actinolite	0	1	0.0010	0.0010
	0518-OFD-TPT-04	WP 277 - AM SW Diversion Dam	1	None Detected			0.0010	<0.0010
	0518-OFD-TPT-05	WP 019A - AM E. Diversion Dam	0	None Detected			0.0010	<0.0010
	0518-OFD-TPT-06	WP 020A - AM SE Canal	4	None Detected			0.0010	<0.0010
	0518-OFD-TPT-07	WP 021A - AM SW Canal	1	None Detected			0.0010	<0.0010
	0518-OFD-TPT-08	WP 281 - AM Cherokee Rd.	0	Actinolite	0	1	0.0010	0.0010
	0518-OFD-TPT-09	WP 278 - PM N. Diversion Dam	1	None Detected			0.0010	<0.0010
	0518-OFD-TPT-10	WP 251 - PM Diversion Dam Yard	0	None Detected			0.0010	<0.0010
	0518-OFD-TPT-11	WP 279 - PM SE Diversion Dam	2	None Detected			0.0009	<0.0010
	0518-OFD-TPT-12	WP 277 - PM SW Diversion Dam	0	None Detected			0.0010	<0.0010
	0518-OFD-TPT-13	WP 019A - PM E Diversion Dam	0	None Detected			0.0010	<0.0010
	0518-OFD-TPT-14	WP 020A - PM SE Canal	1	None Detected			0.0009	<0.0010
	0518-OFD-TPT-15	WP 021A - SW Canal	0	None Detected			0.0010	<0.0010
	0518-OFD-TPT-16	WP 281 - PM Cherokee Rd.	2	None Detected			0.0009	<0.0009
	0518-OFD-TPT-FB2	Field Blank 1	0	None Detected			N/A	N/A
	0518-OFD-TPT-FB2	Field Blank 2	0	None Detected			N/A	N/A
Burma Road	0518-OFD-BPT-01	WP017A AM Burma	0	None Detected			0.0010	<0.0010
	0518-OFD-BPT-02	WP017A PM Burma	1	None Detected			0.0010	<0.0010
	0518-OFD-BPT-FB1	Field Blank 1	0	None Detected			N/A	N/A
	0518-OFD-BPT-FB2	Field Blank 2	0	None Detected			N/A	N/A

Launch Ramp	0518-OFD-LRP-01	WP009A AM Launch Ramp Parking	2	None Detected			0.0010	<0.0010
	0518-OFD-LRP-02	WP010A AM Launch Ramp Turnaround	0	None Detected			0.0010	<0.0010
	0518-OFD-LRP-03	WP009A PM Launch Ramp Parking	1	None Detected			0.0010	<0.0010
	0518-OFD-LRP-04	WP010A PM Launch Ramp Turnaround	1	None Detected			0.0010	<0.0010
	0518-OFD-LRP-FB1	Field Blank 1	0	None Detected			N/A	N/A
	0518-OFD-LRP-FB2	Field Blank 2	0	None Detected			N/A	N/A

8. Perimeter Dust Monitoring Summary

The dust monitoring data is compiled in twelve (12) hour increments for day/night shifts. Information is logged for PM10, PM 2.5 and Total Dust.

Particle pollution includes:

PM10: inhalable particles, with diameters that are generally 10 micrometers and smaller; and

PM2.5: fine inhalable particles, with diameters that are generally 2.5 micrometers and smaller.

Total inhalable dust is the fraction of airborne material which enters the nose and mouth during breathing and is therefore liable to deposition anywhere in the respiratory tract. The particle sizes of total inhalable dust are up to 100 microns.

Perimeter dust levels for this time period were unremarkable, with intermittent spikes due to wind gust. There were no citable episode of “visible emissions” at the work zone perimeter.

Dust results are presented in Appendix B.