GW - 55

REPORTS

4-20-11

AES Animas Environmental Services, LLC

624 E. Comanche . Farmington, NM 87401 . TEL 505-564-2281 . FAX 505-324-2022 . www.animasenvironmental.com

GW-55

OCD

2011 APR 22 P 12:37

April 20, 2011

Glen von Gonten
Edward Hansen
New Mexico Oil Conservation Division
1220 S. St. Francis Drive
Santa Fe, New Mexico 87505

RE: 1st Quarter Remedial Progress Report 2011 for the Thriftway Refinery, 626 County Road 5500, Bloomfield, New Mexico

Dear Mr. von Gonten and Mr. Hansen:

Animas Environmental Services, LLC (AES) has prepared this 1st Quarter Remedial Progress Report 2011 detailing remedial activities during the first quarter on behalf of Thriftway Company (Thriftway) for the Thriftway Refinery, located at 626 County Road 5500, Bloomfield, San Juan County, New Mexico, in accordance with New Mexico Oil Conservation Division (NMOCD) and New Mexico Environment Department (NMED) Ground Water Quality Bureau (GWQB) regulations.

This 1st Quarter Remedial Progress Report details groundwater monitoring and gauging activities, multi-phase extraction (MPE) remediation system operations, and phytoremediation activities conducted at the site between January and March 2011. A General Site Plan is included as Figure 1.

1.0 Groundwater Monitoring and Gauging

BioTech conducted groundwater monitoring and gauging of the monitor wells at the site on February 17 and 23, 2011. Based on the current sampling plan, monitoring and gauging events will occur during the first and third quarter of 2011, with groundwater sampling scheduled during the second and fourth quarters. The information below, taken from the Interim Groundwater Sampling Plan submitted to NMOCD on January 25, 2010, lists wells that were gauged during the February 2011 event.

Year 2 Quarter #1 Monitor Well Gauging List

Well Name	Gauging Only	Gauging and Sampling
TW-1 through TW-18	X	*
TW-22 through TW-26	X	*
TW-28 through TW-50	X	*
MW-5, MW-7, MW-20, MW-21	X	*
* No analytical samples collected during quarterly gauging events in the first or third quarters of Years 2 through 4.		

1.1 Measurement of Groundwater Elevations

Depth to groundwater in each of the selected wells was measured with an electronic water level indicator, which has an accuracy of 0.01 feet. Depth to groundwater measurements were recorded on Water Sample Collection Forms. Electronic copies of the Water Sample Collection Forms are included in Appendix A.

1.2 Measurement of Free Product

Each of the wells previously known to contain light non-aqueous phase liquid (LNAPL, or "free product") were measured with an electronic interface probe, and the depths to the top of product and the oil/water interface were recorded on a groundwater measurement form. Free product was measured in February 2011 in 12 wells, including TW-13, TW-14, TW-22, TW-24, TW-25, TW-26, TW-28, TW-29, TW-32, TW-33, TW-40, and TW-44.

In monitor wells containing free product, corrected groundwater elevations (Hc) were determined using the following formula:

$$H_c = H_m + (H_o * (\rho_o/\rho_w))$$

where:

H_m is the measured elevation of the hydrocarbon-water interface (ft)

H_o is the thickness of the hydrocarbon layer (ft)

ρ_o is the hydrocarbon density of diesel, assumed to be 0.827 (g/ml) (API, 1986)

ρ_w is the water density, assumed to be 1.0 (g/mL)

2.0 Groundwater Monitoring Results

2.1 Hydraulic Gradient Data

2.1.1 Hydraulic Gradient

Using surveyed top of casing (TOC) elevations and the recorded groundwater depths, AES determined specific groundwater elevations, relative to sea level, for each well measured. Groundwater elevations across the site in February 2011 ranged from 5,423.89 feet above mean sea level (AMSL) in MW-5 to 5,440.84 feet AMSL in TW-1. Groundwater elevations have increased across the site by an average of 0.08 feet since the last sampling event in November 2010. Groundwater gradient was calculated between TW-1 and MW-5 with a magnitude of 0.008 ft/ft to the northwest for February 2011. The groundwater flow direction has remained stable, in a northwesterly direction, and is consistent with historical site data.

Table 1 includes depth to groundwater measurements and final water table elevations. Groundwater elevation contours for February 2011 are included on Figure 2. Electronic copies of the Water Sample Collection Forms are included in Appendix A.

2.2 Free Product

Free product was measured in 12 monitor wells, including TW-13, TW-14, TW-22, TW-24, TW-25, TW-26, TW-28, TW-29, TW-32, TW-33, TW-40, and TW-44. Monitor wells TW-19 and TW-20 typically contain free product but were attached to the RSI unit during the February monitoring event. Measured LNAPL thicknesses ranged from 0.01 feet (TW-14 and TW-44) to 1.56 feet (TW-32). Free product thickness contours for February 2011 are presented in Figure 3, and Graph 1 includes free product thicknesses over time in the eastern portion of the product plume (TW-13, TW-14, TW-19, and TW-22).

3.0 Measurement of Groundwater and Free Product in MPE Wells

BioTech personnel measured depth to groundwater in the Phase 1, 2, and 3 MPE wells on February 25, March 1 and 3, 2011. Depth to water ranged from 14.21 feet below TOC in MPE-56 to 23.63 feet below TOC in MPE-1. On February 25, March 1 and 3, 2011, free product was reported in MPE-5 (0.03 feet), MPE-26 (0.42 feet), MPE-35 (0.38 feet), MPE-38 (0.57 feet), and MPE-47 (0.49 feet). Roots in the wells prevented groundwater measurements in MPE-11, MPE-12, MPE-27, and MPE-28. Groundwater measurements

were not made in MPE-43, MPE-44, MPE-45, MPE-46, and MPE-50 because they were attached to the RSI unit. MPE well data is included in Table 2.

4.0 MPE Remediation System Operations

The MPE remediation system was brought online on March 10, 2010. The MPE system consists of an RSI internal combustion engine (ICE) unit with two engines (Engine #1 and Engine #2) to extract soil vapors and free product from the MPE extractions wells.

Both Engine #1 and Engine #2 were shut-down during September 2010 due to extensive mechanical problems, and as a result no data report has been generated since September 2010. Following an engine rebuild, Engine #2 was installed at the site on January 4, 2011. Current MPE well locations and remediation system layout is included on Figure 4.

RSI Engine #2 Active MPE Well Summary, Thriftway Refinery, Bloomfield, New Mexico

Date of MPE Adjustments	***Engine #2-(operating within the following MPE Wells)***
January 4, 2011	Engine #2 Initial Startup TW-20, MPE-42, MPE-43, MPE-44, MPE-45, MPE-46, MPE-50
January 6, 2011	Engine shutdown- Freezing of MPE lines and MPE wells, repair to rear main seal needed
January 19, 2011	Engine restart following repair to rear main seal TW-20, MPE-42, MPE-43, MPE-44, MPE-45, MPE-46, MPE-50
January 24, 2011	Engine shutdown- no propane and change supply valve TW-20, TW-19, MPE-43, MPE-44, MPE-45, MPE-46, MPE-50
January 28, 2011	TW-20, MPE-42, MPE-43, MPE-44, MPE-45, MPE-46, MPE-50
February 4, 2011	Engine shutdown- MPE wells freezing
February 17, 2011	Engine restart following replacement of MPE pump impeller TW-20, MPE-42, MPE-43, MPE-44, MPE-45, MPE-46, MPE-50
March 3, 2011	TW-13, TW-19, MPE-43, MPE-44, MPE-45, MPE-46
March 4, 2011	TW-13, TW-19, MPE-35, MPE-43,MPE-44, MPE-45, MPE-46
March 11, 2011	Engine shutdown- pull leaking oil cooler for repair
March 17, 2011	Engine restart-repaired oil cooler installed TW-13,TW-19, MPE-26, MPE-35, MPE-43, MPE-44, MPE-45, MPE-46
March 23, 2011	Engine shutdown-MPE lines frozen –restart unit after lines thaw TW-13,TW-19,MPE-26, MPE-35, MPE-43, MPE-44, MPE-45, MPE-46
March 30, 2011	TW-13,TW-19,MPE-26, MPE-35, MPE-43, MPE-44, MPE-45, MPE-46

BioTech personnel routinely inspect the system and record performance data. During O&M visits, BioTech personnel perform routine maintenance on the MPE remediation

unit. Maintenance includes checking fluid levels, checking and replacing air filters, changing spark plugs, changing oil, flushing the radiator, and inspecting the catox unit. Engine #1 is currently not in operation, therefore, no data report was generated for Engine #1 during the reporting period of January through March 2011.

In Engine #2, well vacuums for the reporting period from January through March 30, 2011, typically ranged between 20 and 90 in-H_2O during MPE operations, with total process flow typically ranging between 19 and 77 scfm. Well flow dilution air is estimated to be approximately 10 percent at each well (as needed to lift product).

4.1 System Operations

Based on system operations from January 4 to March 30, 2011, the following remedial summary is presented:

MPE Remediation System Summary, Thriftway Refinery, Bloomfield, New Mexico

Parameters	***Engine #1 Reporting Period (1/4/11—3/30/11)***	***Engine #2 Reporting Period (1/4/11—3/30/11)***	***Total Cumulative to Date***
Estimated Petroleum Hydrocarbons Removed (lbs)*	No data**	3,271.88	16,475.13
Equivalent Gallons Gasoline Removed (gal)*	No data**	527.71	2,657.35
Total Cubic Feet Processed (scf)	No data**	3,469,977	12,698,662

*from soil vapors only

MPE Remediation System Run Time Summary, Thriftway Refinery, Bloomfield, New Mexico

Month	***Engine #1 Run Time (hrs)***	***Engine #1 Percent Run Time***	***Engine #2 Run Time (hrs)***	***Engine #2 Percent Run Time***
January through March 2011	No data**	No data**	1,194	58 %

**Engine #1 is currently undergoing an engine rebuild.

During the first quarter Engine #2 had a 38 percent run time for January, a 51 percent run time for February, and an 85 percent run time for March. The low run times in January and February are due to below freezing temperatures and engine repairs. An operations report for Engine #2 (electronic) from January 4 through March 30, 2011, is presented in Appendix A.

4.2 Air Emissions Sampling

Influent and effluent photo-ionization detector (PID) readings and air samples were collected from the well gas influent and from the pre-cat and post-cat sample ports of Engine #2 on March 1, 2011. Air samples were not collected from Engine #1, which was not in operation on March 1, 2011. Air samples were collected in Tedlar bags and subsequently submitted to Hall Environmental Analysis Laboratory in Albuquerque, New Mexico, where they were analyzed for benzene, toluene, ethylbenzene and xylene (BTEX) and methyl t-butyl ether (MTBE) per EPA Method 8021B and EPA Method 8015B GRO. The analyzed air contaminants from samples collected from Engine #2 showed a 99 percent reduction in contaminant emissions which was achieved through combustion and post-combustion catalytic oxidation.

4.2.1 Engine #2

Analytical results for the well gas influent had reported concentrations of 8.326 parts per million by volume (ppmv) benzene, 4.868 ppmv toluene, 3.590 ppmv xylenes, 864 ppmv TPH-GRO. Ethylbenzene (1.056 ppmv) and MTBE (3.314 ppmv) concentrations were reported below laboratory detection limits.

Analytical results for the pre-cat sample showed reported concentrations of 0.267 ppmv benzene, 0.080 ppmv toluene, and 2.640 ppmv TPH-GRO. Concentrations of ethylbenzene (0.021 ppmv), xylenes (0.063 ppmv), and MTBE (0.064 ppmv) were reported below laboratory detection limits.

The analytical results for the post-cat sample had reported concentrations of 0.287 ppmv benzene, 0.093 ppmv toluene, and 2.28 ppmv TPH-GRO. Concentrations of ethylbenzene (0.021 ppmv), xylene (0.063 ppmv), and MTBE (0.064 ppmv) were reported below laboratory detection limits.

Tabulated air analyses are included in Table 3, and air laboratory analytical reports (electronic) are presented in Appendix A.

5.0 Phytoremediation Project

During the first quarter of 2011, BioTech personnel and New Mexico State University (NMSU) Farmington Agricultural Science Center personnel planted 240, 20-feet tall, poplar trees at the site. A brief summary of March 2011 phytoremediation activities is listed below:

- March 3: BioTech personnel purchased all necessary irrigation system parts. A New Mexico One Call request was submitted for the upcoming tree boring installation at the site.
- March 4: BioTech personnel laid out the irrigation system at the site.
- March 7: Site was prepared and tree locations flagged by BioTech personnel.
- March 9 through 11: BioTech personnel installed tree borings to a depth of approximately 7 feet below ground surface (bgs). Groundwater within the borings was encountered between approximately 4 and 5 feet bgs.
- March 14: At the NMSU nursery, BioTech and NMSU personnel cut 140 poplar trees nursery and hydrated them overnight in preparation for planting the following day.
- March 15: BioTech and NMSU personnel planted 140 poplar trees at the site.
- March 16: An additional 100 trees were cut and hydrated overnight at the NMSU nursery. BioTech personnel backfilled tree holes from the March 15 tree planting.
- March 17: BioTech and NMSU personnel planted the remaining 100 trees and backfilled the remaining holes at the site.

These activities conclude planting activities at the site for 2011. Plans have not yet been established for possible additional plantings in 2012. A photo log of the March poplar tree planting activities is included in Appendix A.

6.0 Summary and Conclusions

BioTech Remediation completed groundwater monitoring and gauging at the site in February and March 2011. Groundwater elevations in February 2011 increased by an average of 0.08 feet since November 2010 and are consistent with historical seasonal fluctuations. The groundwater gradient was calculated to be approximately 0.008 ft/ft in a northwest direction across the site, which is consistent with historical site data.

In February 2011, free product was observed and measured in 12 monitor wells, including TW-13, TW-14, TW-22, TW-24 through TW-26, TW-28, TW-29, TW-32, TW-33, TW-40, and TW-44. Measured thicknesses ranged from 0.01 feet (TW-14 and TW-44) to 1.56 feet (TW-32). In February and March 2011, free product was also observed in remediation wells MPE-5, MPE-26, MW-35, MPE-38, and MPE-47.

The MPE remediation unit has been operating since March 10, 2010. Both engines (Engine #1 and Engine #2) were operated through mid September 2010, when both were removed from the site for scheduled rebuilds. Engine #2, following an engine rebuild, was installed and turned on at the site on January 4, 2011. Based on system data and field monitoring measurements, AES estimates that approximately **3,272 lbs** of petroleum hydrocarbons have been removed as vapor and utilized as fuel for the RSI unit during the reporting period of January 4 through March 30, 2011. A total of **16,475** lbs of petroleum hydrocarbons have been mechanically removed from the site since system startup on March 10, 2010.

7.0 Recommendations and Scheduled Site Activities

The following items are scheduled to occur during the 2nd Quarter of 2011:

1. In accordance with the conditions of the Interim Groundwater Sampling Plan approval by NMOCD, the first semi-annual sampling event will be conducted in May 2011.

2. A representative from BioTech and/or NMSU Agricultural Science Center at Farmington will monitor the status and growth of plants and trees associated with the phytoremediation project.

3. Thriftway will continue to operate the RSI unit utilizing Engine #2, with a focus on continued reduction of free product.

4. BioTech will collect air emission samples from the well gas influent and from the pre-cat and post-cat sample ports from Engine #2. Air samples will be analyzed for BTEX and MTBE per EPA Method 8021B and EPA Method 8015B GRO.

If you have any questions regarding this report or scheduled site activities, please do not hesitate to contact Ross Kennemer or Elizabeth McNally at (505) 564-2281.

Sincerely,

Deborah Watson, Project Manager

Elizabeth McNally, P.E.
New Mexico Registration #15799

Tables

Table 1.	Summary of Groundwater Measurements and Water Quality Data
Table 2.	Summary of Groundwater and Free Product Measurements for Phase 1, 2, and 3 MPE Wells
Table 3.	Summary of Air Laboratory Analytical Results

Figures

Figure 1.	General Site Plan
Figure 2.	Groundwater Elevations, February 2011
Figure 3.	Free Product Thickness Contours, February 2011
Figure 4.	Remediation System Layout

Graphs

Graph 1.	Free Product Thicknesses over Time in TW-13, TW-14, TW-19, and TW-22

Appendices

Appendix A. *Electronic*
Water Sample Collection Forms
Laboratory Analytical Reports
RSI Operational Data Report
Photograph Log of Poplar Tree Planting, March 2011

cc: Robert Moss
Thriftway Company
501 Airport Drive
Farmington, NM 87401

S:\Animas 2000\2011 Projects\Thriftway\810 Refinery\Reports\NMOCD Quarterly Remedial Progress Report 041811.docx

TABLE 1

SUMMARY OF RECENT GROUNDWATER MEASUREMENTS AND WATER QUALITY DATA

Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	Date	T.O.C. (ft amsl)	Depth to Product (ft)	Depth to Water (ft)	NAPL Thickness (ft)	Corrected GW Elev. (ft)	pH	Conductivity (mS)	Dissolved Oxygen (mg/L)	Temp. (°C)	ORP (mV)	Purge Volume (gallons)
TW-1	15-Dec-08	5471.58		27.95		5443.63	6.24	2.772	7.51*	14.64	113.8	0.25
TW-1	26-Jan-09	5471.58		30.53		5441.05	NM	NM	NM	NM	NM	NM
TW-1	19-Aug-09	5471.58		30.73		5440.85	7.09	1.795	8.08	16.17	289.1	1.00
TW-1	19-Feb-10	5471.58		30.68		5440.90	NM	NM	NM	NM	NM	NM
TW-1	07-May-10	5471.58		30.43		5441.15	NM	NM	NM	NM	NM	NM
TW-1	18-Aug-10	5471.58		30.64		5440.94	NM	NM	NM	NM	NM	NM
TW-1	15-Nov-10	5471.58		30.88		5440.70	NM	NM	NM	NM	NM	NM
TW-1	17-Feb-11	5471.58		30.74		5440.84	NM	NM	NM	NM	NM	NM
TW-2	15-Dec-08	5469.31		28.91		5440.40	6.63	4.421	3.60	13.08	125.5	1.25
TW-2	26-Jan-09	5469.31		28.80		5440.51	NM	NM	NM	NM	NM	NM
TW-2	19-Aug-09	5469.31		28.97		5440.34	7.03	2.948	2.68	16.85	291.3	2.00
TW-2	19-Feb-10	5469.31		28.93		5440.38	NM	NM	NM	NM	NM	NM
TW-2	07-May-10	5469.31		28.71		5440.60	NM	NM	NM	NM	NM	NM
TW-2	18-Aug-10	5469.31		28.88		5440.43	NM	NM	NM	NM	NM	NM
TW-2	15-Nov-10	5469.31		29.11		5440.20	NM	NM	NM	NM	NM	NM
TW-2	17-Feb-11	5469.31		28.97		5440.34	NM	NM	NM	NM	NM	NM
TW-3	15-Dec-08	5468.14		27.99		5440.15	6.63	4.249	2.01	14.44	-1.6	1.25
TW-3	26-Jan-09	5468.14		27.87		5440.27	NM	NM	NM	NM	NM	NM
TW-3	19-Aug-09	5468.14		28.05		5440.09	6.95	4.16	2.120	16.34	289.5	2.50
TW-3	19-Feb-10	5468.14		27.96		5440.18	NM	NM	NM	NM	NM	NM
TW-3	10-May-10	5468.14		27.73		5440.41	NM	NM	NM	NM	NM	NM

TABLE 1

SUMMARY OF RECENT GROUNDWATER MEASUREMENTS AND WATER QUALITY DATA

Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	Date	T.O.C. (ft amsl)	Depth to Product (ft)	Depth to Water (ft)	NAPL Thickness (ft)	Corrected GW Elev. (ft)	pH	Conductivity (mS)	Dissolved Oxygen (mg/L)	Temp. (°C)	ORP (mV)	Purge Volume (gallons)
TW-3	18-Aug-10	5468.14		27.95		5440.19	NM	NM	NM	NM	NM	NM
TW-3	15-Nov-10	5468.14		28.16		5439.98	NM	NM	NM	NM	NM	NM
TW-3	17-Feb-11	5468.14		28.01		5440.13	NM	NM	NM	NM	NM	NM
TW-4	16-Dec-08	5458.72		19.16		5439.56	6.67	7.258	4.09	13.40	170.6	1.25
TW-4	26-Jan-09	5458.72		NM			NM	NM	NM	NM	NM	NM
TW-4	19-Aug-09	5458.72		19.22		5439.50	7.08	6.739	4.19	16.19	289.9	4.30
TW-4	19-Feb-10	5458.72		19.09		5439.63	NM	NM	NM	NM	NM	NM
TW-4	10-May-10	5458.72		18.86		5439.86	NM	NM	NM	NM	NM	NM
TW-4	18-Aug-10	5458.72		19.12		5439.60	NM	NM	NM	NM	NM	NM
TW-4	15-Nov-10	5458.72		19.31		5439.41	NM	NM	NM	NM	NM	NM
TW-4	17-Feb-11	5458.72		19.12		5439.60	NM	NM	NM	NM	NM	NM
TW-5	15-Dec-08	5465.18		25.54		5439.64	6.56	3.704	3.26	14.25	16.0	1.25
TW-5	26-Jan-09	5465.18		25.44		5439.74	NM	NM	NM	NM	NM	NM
TW-5	19-Aug-09	5465.18		25.58		5439.60	6.96	3.636	5.53	16.55	298.9	3.60
TW-5	19-Feb-10	5465.18		25.53		5439.65	NM	NM	NM	NM	NM	NM
TW-5	10-May-10	5465.18		25.31		5439.87	NM	NM	NM	NM	NM	NM
TW-5	18-Aug-10	5465.18		25.49		5439.69	NM	NM	NM	NM	NM	NM
TW-5	15-Nov-10	5465.18		25.70		5439.48	NM	NM	NM	NM	NM	NM
TW-5	17-Feb-11	5465.18		25.55		5439.63	NM	NM	NM	NM	NM	NM
TW-6	15-Dec-08	5463.57		24.78		5438.79	6.50	4.719	0.99	14.50	9.0	1.25

TABLE 1

SUMMARY OF RECENT GROUNDWATER MEASUREMENTS AND WATER QUALITY DATA

Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	Date	T.O.C. (ft amsl)	Depth to Product (ft)	Depth to Water (ft)	NAPL Thickness (ft)	Corrected GW Elev. (ft)	pH	Conductivity (mS)	Dissolved Oxygen (mg/L)	Temp. (°C)	ORP (mV)	Purge Volume (gallons)
TW-6	26-Jan-09	5463.57		24.67		5438.90	NM	NM	NM	NM	NM	NM
TW-6	19-Aug-09	5463.57		24.82		5438.75	6.95	4.535	1.81	16.24	295.6	4.00
TW-6	19-Feb-10	5463.57		24.74		5438.83	NM	NM	NM	NM	NM	NM
TW-6	10-May-10	5463.57		24.54		5439.03	NM	NM	NM	NM	NM	NM
TW-6	18-Aug-10	5463.57		24.73		5438.84	NM	NM	NM	NM	NM	NM
TW-6	15-Nov-10	5463.57		24.90		5438.67	NM	NM	NM	NM	NM	NM
TW-6	17-Feb-11	5463.57		24.57		5439.00	NM	NM	NM	NM	NM	NM
TW-7	15-Dec-08	5461.17		22.25		5438.92	6.47	5.302	0.82	14.88	0.8	1.25
TW-7	26-Jan-09	5461.17		22.14		5439.03	NM	NM	NM	NM	NM	NM
TW-7	19-Aug-09	5461.17		22.25		5438.92	6.92	4.780	1.67	16.37	290.3	3.00
TW-7	19-Feb-10	5461.17		22.17		5439.00	NM	NM	NM	NM	NM	NM
TW-7	10-May-10	5461.17		21.97		5439.20	NM	NM	NM	NM	NM	NM
TW-7	18-Aug-10	5461.17		22.17		5439.00	NM	NM	NM	NM	NM	NM
TW-7	15-Nov-10	5461.17		22.37		5438.80	NM	NM	NM	NM	NM	NM
TW-7	17-Feb-11	5461.17		22.78		5438.39	NM	NM	NM	NM	NM	NM
TW-8	16-Dec-08	5458.29		19.76		5438.53	6.42	5.575	0.51	12.78	-258.2	1.25
TW-8	26-Jan-09	5458.29		19.62		5438.67	NM	NM	NM	NM	NM	NM
TW-8	20-Aug-09	5458.29		19.88		5438.41	7.12	4.523	1.40	14.52	264.7	4.00
TW-8	19-Feb-10	5458.29		19.59		5438.70	NM	NM	NM	NM	NM	NM
TW-8	10-May-10	5458.29		19.73		5438.56	NM	NM	NM	NM	NM	NM
TW-8	18-Aug-10	5458.29		19.72		5438.57	NM	NM	NM	NM	NM	NM

TABLE 1

SUMMARY OF RECENT GROUNDWATER MEASUREMENTS AND WATER QUALITY DATA

Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	Date	T.O.C. (ft amsl)	Depth to Product (ft)	Depth to Water (ft)	NAPL Thickness (ft)	Corrected GW Elev. (ft)	pH	Conductivity (mS)	Dissolved Oxygen (mg/L)	Temp. (°C)	ORP (mV)	Purge Volume (gallons)
TW-8	15-Nov-10	5458.29		19.87		5438.42	NM	NM	NM	NM	NM	NM
TW-8	17-Feb-11	5458.29		20.21		5438.08	NM	NM	NM	NM	NM	NM
TW-9	16-Dec-08	5450.61		12.20		5438.41	6.90	3.473	2.27	14.53	15.6	1.25
TW-9	26-Jan-09	5450.61		12.05		5438.56	NM	NM	NM	NM	NM	NM
TW-9	20-Aug-09	5450.61		12.49		5438.12	7.57	2.397	1.33	16.93	269.2	2.50
TW-9	19-Feb-10	5450.61		11.99		5438.62	NM	NM	NM	NM	NM	NM
TW-9	10-May-10	5450.61		11.89		5438.72	NM	NM	NM	NM	NM	NM
TW-9	18-Aug-10	5450.61		12.30		5438.31	NM	NM	NM	NM	NM	NM
TW-9	15-Nov-10	5450.61		12.36		5438.25	NM	NM	NM	NM	NM	NM
TW-9	17-Feb-11	5450.61		12.09		5438.52	NM	NM	NM	NM	NM	NM
TW-10	16-Dec-08	5450.16		12.42		5437.74	6.49	3.876	0.98	11.97	-189.3	1.25
TW-10	26-Jan-09	5450.16		12.25		5437.91	NM	NM	NM	NM	NM	NM
TW-10	20-Aug-09	5450.16		12.70		5437.46	7.37	4.019	1.42	16.75	254.7	4.00
TW-10	19-Feb-10	5450.16		12.19		5437.97	NM	NM	NM	NM	NM	NM
TW-10	10-May-10	5450.16		12.15		5438.01	NM	NM	NM	NM	NM	NM
TW-10	18-Aug-10	5450.16		12.52		5437.64	NM	NM	NM	NM	NM	NM
TW-10	15-Nov-10	5450.16		12.54		5437.62	NM	NM	NM	NM	NM	NM
TW-10	17-Feb-11	5450.16		12.87		5437.29	NM	NM	NM	NM	NM	NM
TW-11	16-Dec-08	5456.31		18.12		5438.19	6.75	6.941	1.41	14.32	72.0	1.25
TW-11	26-Jan-09	5456.31		18.02		5438.29	NM	NM	NM	NM	NM	NM

TABLE 1

SUMMARY OF RECENT GROUNDWATER MEASUREMENTS AND WATER QUALITY DATA

Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	Date	T.O.C. (ft amsl)	Depth to Product (ft)	Depth to Water (ft)	NAPL Thickness (ft)	Corrected GW Elev. (ft)	pH	Conductivity (mS)	Dissolved Oxygen (mg/L)	Temp. (°C)	ORP (mV)	Purge Volume (gallons)
TW-11	20-Aug-09	5456.31		18.22		5438.09	7.43	6.704	2.52	15.35	261.4	4.00
TW-11	17-Feb-10	5456.31		18.04		5438.27	7.14	10.42	3.98	12.88	49.7	4.20
TW-11	11-May-10	5456.31		17.89		5438.42	7.22	6.44	2.32	13.25	232.1	3.75
TW-11	18-Aug-10	5456.31		18.04		5438.27	NM	NM	NM	NM	NM	NM
TW-11	15-Nov-10	5456.31		18.24		5438.07	NM	NM	NM	NM	NM	NM
TW-11	17-Feb-11	5456.31		18.15		5438.16	NM	NM	NM	NM	NM	NM
TW-12	15-Dec-08	5460.44		22.44		5438.00	6.49	4.247	0.95	16.15	-97.3	1.25
TW-12	26-Jan-09	5460.44	22.34	22.44	0.1	5438.08	NM	NM	NM	NM	NM	NM
TW-12	20-Aug-09	5460.44		22.50		5437.94	7.02	3.881	2.34	17.09	266.5	2.50
TW-12	17-Feb-10	5460.44		22.39		5438.05	6.94	5.727	1.46	15.59	206.2	3.00
TW-12	11-May-10	5460.44		22.21		5438.23	7.05	3.295	0.76	15.56	217.9	3.75
TW-12	19-Aug-10	5460.44		22.39		5438.05	6.93	3.343	0.55	16.74	399.3	2.50
TW-12	15-Nov-10	5460.44		22.54		5437.90	6.93	3.343	0.55	16.74	399.3	2.50
TW-12	17-Feb-11	5460.44		22.39		5438.05	NM	NM	NM	NM	NM	NM
TW-13	16-Dec-08	5458.17	20.64	21.48	0.84	5437.38	Not Sampled - NAPL Present					
TW-13	26-Jan-09	5458.17	20.52	21.46	0.94	5437.49	NM	NM	NM	NM	NM	NM
TW-13	12-Aug-09	5458.17	20.75	21.77	1.02	5437.24	NM	NM	NM	NM	NM	NM
TW-13	11-Nov-09	5458.17	20.76	21.86	1.10	5437.22	NM	NM	NM	NM	NM	NM
TW-13	15-Feb-10	5458.17	20.59	21.48	0.89	5437.43	NM	NM	NM	NM	NM	NM
TW-13	07-May-10	5458.17	20.44	21.03	0.59	5437.63	NM	NM	NM	NM	NM	NM
TW-13	21-Jun-10	5458.17	20.48	21.15	0.67	5437.57	NM	NM	NM	NM	NM	NM

TABLE 1

SUMMARY OF RECENT GROUNDWATER MEASUREMENTS AND WATER QUALITY DATA

Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	Date	T.O.C. (ft amsl)	Depth to Product (ft)	Depth to Water (ft)	NAPL Thickness (ft)	Corrected GW Elev. (ft)	pH	Conductivity (mS)	Dissolved Oxygen (mg/L)	Temp. (°C)	ORP (mV)	Purge Volume (gallons)
TW-13	18-Aug-10	5458.17	20.77	21.15	0.38	5437.33	NM	NM	NM	NM	NM	NM
TW-13	15-Nov-10	5458.17	20.79	21.39	0.60	5437.28	NM	NM	NM	NM	NM	NM
TW-13	23-Feb-11	5458.17	20.58	21.50	0.92	5437.43	NM	NM	NM	NM	NM	NM
TW-14	16-Dec-08	5454.24		16.82		5437.42	Not Sampled - Sheen of NAPL present					
TW-14	26-Jan-09	5454.24	16.71	17.02	0.31	5437.48	NM	NM	NM	NM	NM	NM
TW-14	20-Aug-09	5454.24	16.89	17.02	0.13	5437.33	Not Sampled - NAPL present					
TW-14	11-Nov-09	5454.24	17.20	17.67	0.47	5436.96	NM	NM	NM	NM	NM	NM
TW-14	15-Feb-10	5454.24	16.98	17.22	0.24	5437.22	NM	NM	NM	NM	NM	NM
TW-14	11-May-10	5454.24		16.85	sheen	5437.39	7.25	3.49	0.11	16.95	214.6	NM
TW-14	18-Aug-10	5454.24	17.01	17.03	0.02	5437.23	NM	NM	NM	NM	NM	NM
TW-14	15-Nov-10	5454.24		17.17		5437.07	NM	NM	NM	NM	NM	NM
TW-14	17-Feb-11	5454.24	17.04	17.05	0.01	5437.20	NM	NM	NM	NM	NM	NM
TW-15	16-Dec-08	5450.44		13.15		5437.29	6.69	6.647	1.25	13.17	-176.5	1.25
TW-15	26-Jan-09	5450.44		12.99		5437.45	NM	NM	NM	NM	NM	NM
TW-15	20-Aug-09	5450.44		13.35		5437.09	7.26	6.056	3.64	16.49	320.0	4.30
TW-15	17-Feb-10	5450.44		12.93		5437.51	NM	NM	NM	NM	NM	NM
TW-15	10-May-10	5450.44		12.86		5437.58	NM	NM	NM	NM	NM	NM
TW-15	18-Aug-10	5450.44		13.21		5437.23	NM	NM	NM	NM	NM	NM
TW-15	15-Nov-10	5450.44		13.24		5437.20	NM	NM	NM	NM	NM	NM
TW-15	17-Feb-11	5450.44		13.05		5437.39	NM	NM	NM	NM	NM	NM

TABLE 1

SUMMARY OF RECENT GROUNDWATER MEASUREMENTS AND WATER QUALITY DATA

Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	Date	T.O.C. (ft amsl)	Depth to Product (ft)	Depth to Water (ft)	NAPL Thickness (ft)	Corrected GW Elev. (ft)	pH	Conductivity (mS)	Dissolved Oxygen (mg/L)	Temp. (°C)	ORP (mV)	Purge Volume (gallons)
TW-16	16-Dec-08	5448.45		8.76		5439.69	6.71	6.593	1.64	14.90	7.3	1.25
TW-16	26-Jan-09	5448.45		11.11		5437.34	NM	NM	NM	NM	NM	NM
TW-16	20-Aug-09	5448.45		11.85		5436.60	7.40	6.025	3.66	16.57	285.2	1.00
TW-16	17-Feb-10	5448.45		11.1		5437.35	NM	NM	NM	NM	NM	NM
TW-16	17-May-10	5448.45		11.25		5437.2	7.33	3.684	2.19	13.64	227.1	3.75
TW-16	18-Aug-10	5448.45		11.45		5437.00	NM	NM	NM	NM	NM	NM
TW-16	15-Nov-10	5448.45		11.52		5436.93	NM	NM	NM	NM	NM	NM
TW-16	17-Feb-11	5448.45		11.21		5437.24	NM	NM	NM	NM	NM	NM
TW-17	16-Dec-08	5446.24		9.99		5436.25	6.68	6.643	1.26	14.10	-31.3	1.25
TW-17	26-Jan-09	5446.24		9.82		5436.42	NM	NM	NM	NM	NM	NM
TW-17	21-Aug-09	5446.24		10.31		5435.93	7.13	6.100	8.37	17.86	289.9	3.00
TW-17	17-Feb-10	5446.24		9.75		5436.49	NM	NM	NM	NM	NM	NM
TW-17	10-May-10	5446.24		9.83		5436.41	NM	NM	NM	NM	NM	NM
TW-17	18-Aug-10	5446.24		10.21		5436.03	NM	NM	NM	NM	NM	NM
TW-17	15-Nov-10	5446.24		10.18		5436.06	NM	NM	NM	NM	NM	NM
TW-17	17-Feb-11	5446.24		9.92		5436.32	NM	NM	NM	NM	NM	NM
TW-18	16-Dec-08	5452.73		16.40		5436.33	6.65	5.094	0.88	16.42	-170.9	1.25
TW-18	26-Jan-09	5452.73		16.29		5436.44	NM	NM	NM	NM	NM	NM
TW-18	21-Aug-09	5452.73		16.48		5436.25	6.94	5.273	7.64	17.32	285.8	4.00
TW-18	17-Feb-10	5452.73		16.21		5436.52	6.8	7.990	2.04	15.58	210	3.30
TW-18	10-May-10	5452.73		16.11		5436.62	7.1	4.830	0.75	15.40	222	3.75

TABLE 1

SUMMARY OF RECENT GROUNDWATER MEASUREMENTS AND WATER QUALITY DATA

Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	Date	T.O.C. (ft amsl)	Depth to Product (ft)	Depth to Water (ft)	NAPL Thickness (ft)	Corrected GW Elev. (ft)	pH	Conductivity (mS)	Dissolved Oxygen (mg/L)	Temp. (°C)	ORP (mV)	Purge Volume (gallons)
TW-18	18-Aug-10	5452.73		16.31		5436.42	NM	NM	NM	NM	NM	NM
TW-18	16-Nov-10	5452.73		16.50		5436.23	7.1	4.730	0.82	16.85	-19	3.00
TW-18	17-Feb-11	5452.73		16.33		5436.40	NM	NM	NM	NM	NM	NM
TW-19	16-Dec-08	5458.49	22.15	22.62	0.47	5436.26	Not Sampled - NAPL Present					
TW-19	26-Jan-09	5458.49	22.01	22.57	0.56	5436.38	NM	NM	NM	NM	NM	NM
TW-19	13-Aug-09	5458.49	22.13	22.86	0.73	5436.23	Not Sampled - NAPL present					
TW-19	11-Nov-09	5458.49	TW damaged by demolition work									
TW-19	15-Feb-10	5458.49	TW damaged by demolition work									
TW-19	07-May-10	5458.49	17.45	17.52	0.07	5441.03	NM	NM	NM	NM	NM	NM
TW-19	18-Aug-10	5458.49		17.66	Sheen	5440.83	NM	NM	NM	NM	NM	NM
TW-19	15-Nov-10	5458.49	17.79	18.02	0.23	5440.66	NM	NM	NM	NM	NM	NM
TW-19	17-Feb-11	5458.49	Attached to RSI Unit									
TW-20	17-Dec-08	5453.74	15.14	15.86	0.72	5438.48	Not Sampled - NAPL Present					
TW-20	26-Jan-09	5453.74	17.36	18.62	1.26	5436.16	NM	NM	NM	NM	NM	NM
TW-20	13-Aug-09	5453.74	17.64	19.17	1.53	5435.84	Not Sampled - NAPL present					
TW-20	11-Nov-09	5453.74	17.52	19.45	1.93	5435.89	NM	NM	NM	NM	NM	NM
TW-20	15-Feb-10	5453.74	17.4	18.73	1.33	5436.11	NM	NM	NM	NM	NM	NM
TW-20	07-May-10	5453.74	17.28	18.25	0.97	5436.29	NM	NM	NM	NM	NM	NM
TW-20	07-May-10	5453.74	17.28	18.25	0.97	5436.29	NM	NM	NM	NM	NM	NM
TW-20	18-Aug-10	5453.74	Attached to RSI Unit									
TW-20	15-Nov-10	5453.74	17.56	18.88	1.32	5435.95	NM	NM	NM	NM	NM	NM

TABLE 1
SUMMARY OF RECENT GROUNDWATER MEASUREMENTS AND WATER QUALITY DATA
Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	Date	T.O.C. (ft amsl)	Depth to Product (ft)	Depth to Water (ft)	NAPL Thickness (ft)	Corrected GW Elev. (ft)	pH	Conductivity (mS)	Dissolved Oxygen (mg/L)	Temp. (°C)	ORP (mV)	Purge Volume (gallons)
TW-20	17-Feb-11	5453.74	Attached to RSI Unit									
TW-21	17-Dec-08	5451.85	15.42	17.19	1.77	5436.12	Not Sampled - NAPL Present					
TW-21	26-Jan-09	5451.85	16.35	16.94	0.59	5435.40	NM	NM	NM	NM	NM	NM
TW-21	13-Aug-09	5451.85	16.50	16.94	0.44	5435.27	Not Sampled - NAPL present					
TW-21	12-Nov-09	5451.85	TW damaged by demolition work									
TW-21	15-Feb-10	5451.85	TW damaged by demolition work									
TW-21	07-May-10	5451.85	TW damaged by demolition work									
TW-21	18-Aug-10	5451.85	TW damaged by demolition work									
TW-21	15-Nov-10	5451.85	TW damaged by demolition work									
TW-21	23-Feb-11	5451.85	TW damaged by demolition work									
TW-22	17-Dec-08	5450.19	14.75	14.76	0.01	5435.44	Not Sampled - NAPL Present					
TW-22	26-Jan-09	5450.19	14.69	15.26	0.57	5435.40	NM	NM	NM	NM	NM	NM
TW-22	13-Aug-09	5450.19	14.79	15.39	0.60	5435.30	Not Sampled - NAPL present					
TW-22	12-Nov-09	5450.19	14.88	15.58	0.70	5435.19	NM	NM	NM	NM	NM	NM
TW-22	15-Feb-10	5450.19	14.72	15.03	0.31	5435.42	NM	NM	NM	NM	NM	NM
TW-22	07-May-10	5450.19	14.63	14.73	0.10	5435.54	NM	NM	NM	NM	NM	NM
TW-22	18-Aug-10	5450.19	14.74	15.01	0.27	5435.40	NM	NM	NM	NM	NM	NM
TW-22	15-Nov-10	5450.19	14.94	15.14	0.20	5435.22	NM	NM	NM	NM	NM	NM
TW-22	23-Feb-11	5450.19	14.8	15.14	0.34	5435.33	NM	NM	NM	NM	NM	NM
TW-23	18-Dec-08	5443.64		6.60		5437.04	7.09	6.727	3.77	13.65	-138.4	1.25

TABLE 1

SUMMARY OF RECENT GROUNDWATER MEASUREMENTS AND WATER QUALITY DATA

Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	Date	T.O.C. (ft amsl)	Depth to Product (ft)	Depth to Water (ft)	NAPL Thickness (ft)	Corrected GW Elev. (ft)	pH	Conductivity (mS)	Dissolved Oxygen (mg/L)	Temp. (°C)	ORP (mV)	Purge Volume (gallons)
TW-23	26-Jan-08	5443.64		8.73		5434.91	NM	NM	NM	NM	NM	NM
TW-23	21-Aug-09	5443.64		9.07		5434.57	7.17	7.95	5.40	18.47	286.8	3.00
TW-23	17-Feb-10	5443.64		8.61		5435.03	NM	NM	NM	NM	NM	NM
TW-23	10-May-10	5443.64		8.64		5435.00	NM	NM	NM	NM	NM	NM
TW-23	18-Aug-10	5443.64		8.94		5434.70	NM	NM	NM	NM	NM	NM
TW-23	15-Nov-10	5443.64		9.10		5434.54	NM	NM	NM	NM	NM	NM
TW-23	17-Feb-11	5443.64		9.51		5434.13	NM	NM	NM	NM	NM	NM
TW-24	17-Dec-08	5444.79		10.97		5433.82	6.21	5.942	4.88	15.60	-64.3	1.25
TW-24	26-Jan-09	5444.79	11.84	11.85	0.01	5432.95	NM	NM	NM	NM	NM	NM
TW-24	21-Aug-09	5444.79	11.10	11.22	0.12	5433.67	Not Sampled - NAPL Present					
TW-24	13-Nov-09	5444.79	11.07	11.15	0.08	5433.71	NM	NM	NM	NM	NM	NM
TW-24	17-Feb-10	5444.79		10.78		5434.01	6.62	7.86	0.74	13.77	436.8	3.00
TW-24	11-May-10	5444.79		10.63		5434.16	7.05	4.70	0.33	14.39	229	3.75
TW-24	18-Aug-10	5444.79		11.09	Sheen	5433.70	NM	NM	NM	NM	NM	NM
TW-24	15-Nov-10	5444.79	11.17	11.30	0.13	5433.60	NM	NM	NM	NM	NM	NM
TW-24	23-Feb-11	5444.79	11.09	11.15	0.06	5433.69	NM	NM	NM	NM	NM	NM
TW-25	17-Dec-08	5448.80	14.13	14.62	0.49	5434.59	Not Sampled - NAPL Present					
TW-25	26-Jan-09	5448.80	14.05	14.41	0.36	5434.69	NM	NM	NM	NM	NM	NM
TW-25	13-Aug-09	5448.80	14.14	14.63	0.49	5434.58	Not Sampled - NAPL present					
TW-25	12-Nov-09	5448.80	14.24	14.91	0.67	5434.44	NM	NM	NM	NM	NM	NM
TW-25	15-Feb-10	5448.80	14.03	14.41	0.38	5434.70	NM	NM	NM	NM	NM	NM

TABLE 1

SUMMARY OF RECENT GROUNDWATER MEASUREMENTS AND WATER QUALITY DATA

Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	Date	T.O.C. (ft amsl)	Depth to Product (ft)	Depth to Water (ft)	NAPL Thickness (ft)	Corrected GW Elev. (ft)	pH	Conductivity (mS)	Dissolved Oxygen (mg/L)	Temp. (°C)	ORP (mV)	Purge Volume (gallons)
TW-25	07-May-10	5448.80	13.88	14.18	0.30	5434.87	NM	NM	NM	NM	NM	NM
TW-25	18-Aug-10	5448.80	14.00	14.39	0.39	5434.73	NM	NM	NM	NM	NM	NM
TW-25	15-Nov-10	5448.80	14.40	14.71	0.31	5434.35	NM	NM	NM	NM	NM	NM
TW-25	23-Feb-11	5448.80	14.21	14.45	0.24	5434.55	NM	NM	NM	NM	NM	NM
TW-26	17-Dec-08	5450.34	13.49	14.47	0.98	5436.68	Not Sampled - NAPL Present					
TW-26	26-Jan-09	5450.34	15.80	16.76	0.96	5434.37	NM	NM	NM	NM	NM	NM
TW-26	13-Aug-09	5450.34	15.83	17.29	1.46	5434.26	Not Sampled - NAPL present					
TW-26	12-Nov-09	5450.34	15.91	17.47	1.56	5434.16	NM	NM	NM	NM	NM	NM
TW-26	15-Feb-10	5450.34	15.81	16.86	1.05	5434.35	NM	NM	NM	NM	NM	NM
TW-26	07-May-10	5450.34	15.68	16.22	0.54	5434.57	NM	NM	NM	NM	NM	NM
TW-26	18-Aug-10	5450.34	15.75	16.75	1.00	5434.42	NM	NM	NM	NM	NM	NM
TW-26	15-Nov-10	5450.34	15.85	17.06	1.21	5434.28	NM	NM	NM	NM	NM	NM
TW-26	23-Feb-11	5450.34	15.81	16.75	0.94	5434.37	NM	NM	NM	NM	NM	NM
TW-28	17-Dec-08	5449.24	15.37	15.96	0.59	5433.77	Not Sampled - NAPL Present					
TW-28	26-Jan-09	5449.24	15.28	15.79	0.51	5433.87	NM	NM	NM	NM	NM	NM
TW-28	13-Aug-09	5449.24	15.27	10.31	-4.96	5434.83	Not Sampled - NAPL present					
TW-28	12-Nov-09	5449.24	15.35	16.74	1.39	5433.65	NM	NM	NM	NM	NM	NM
TW-28	15-Feb-10	5449.24	15.22	16.10	0.88	5433.87	NM	NM	NM	NM	NM	NM
TW-28	07-May-10	5449.24	15.08	15.47	0.39	5434.09	NM	NM	NM	NM	NM	NM
TW-28	18-Aug-10	5449.24	15.12	16.09	0.97	5433.95	NM	NM	NM	NM	NM	NM
TW-28	15-Nov-10	5449.24	15.49	16.67	1.18	5433.55	NM	NM	NM	NM	NM	NM

TABLE 1

SUMMARY OF RECENT GROUNDWATER MEASUREMENTS AND WATER QUALITY DATA

Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	Date	T.O.C. (ft amsl)	Depth to Product (ft)	Depth to Water (ft)	NAPL Thickness (ft)	Corrected GW Elev. (ft)	pH	Conductivity (mS)	Dissolved Oxygen (mg/L)	Temp. (°C)	ORP (mV)	Purge Volume (gallons)
TW-28	23-Feb-11	5449.24	15.24	16.39	1.15	5433.80	NM	NM	NM	NM	NM	NM
TW-29	17-Dec-08	5441.87	9.19	9.20	0.01	5432.68	Not Sampled - NAPL Present					
TW-29	26-Jan-09	5441.87	9.12	9.14	0.02	5432.75	NM	NM	NM	NM	NM	NM
TW-29	13-Aug-09	5441.87	9.22	10.06	0.84	5432.50	Not Sampled - NAPL present					
TW-29	13-Nov-09	5441.87	9.25	9.91	0.66	5432.51	NM	NM	NM	NM	NM	NM
TW-29	17-Feb-10	5441.87		8.96		5432.91	6.00	8.583	0.60	13.79	357.9	3.60
TW-29	07-May-10	5441.87	8.91	8.96	0.05	5432.95	NM	NM	NM	NM	NM	NM
TW-29	18-Aug-10	5441.87	9.14	9.69	0.55	5432.63	NM	NM	NM	NM	NM	NM
TW-29	15-Nov-10	5441.87	9.43	10.23	0.80	5432.30	NM	NM	NM	NM	NM	NM
TW-29	23-Feb-11	5441.87	10.31	10.90	0.59	5431.46	NM	NM	NM	NM	NM	NM
TW-30	18-Dec-08	5437.93		5.90		5432.03	6.46	6.328	6.25*	12.89	-66.2	1.25
TW-30	26-Jan-09	5437.93		5.69		5432.24	NM	NM	NM	NM	NM	NM
TW-30	21-Aug-09	5437.93		6.07		5431.86	6.61	7.238	5.52	18.52	304.0	5.50
TW-30	17-Feb-10	5437.93		5.65		5432.28	6.26	8.169	1.47	11.21	476.9	5.60
TW-30	11-May-10	5437.93		5.67		5432.26	6.77	5.188	0.76	12.56	238.8	3.75
TW-30	18-Aug-10	5437.93		5.99		5431.94	NM	NM	NM	NM	NM	NM
TW-30	16-Nov-10	5437.93		6.34		5431.59	6.96	6.832	0.61	15.28	-8.8	3.00
TW-30	17-Feb-11	5437.93		6.24		5431.69	NM	NM	NM	NM	NM	NM
TW-31	16-Dec-08	5438.54		7.03		5431.51	6.37	7.298	2.97	14.00	12.8	1.25
TW-31	26-Jan-09	5438.54		6.94		5431.60	NM	NM	NM	NM	NM	NM

TABLE 1

SUMMARY OF RECENT GROUNDWATER MEASUREMENTS AND WATER QUALITY DATA

Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	Date	T.O.C. (ft amsl)	Depth to Product (ft)	Depth to Water (ft)	NAPL Thickness (ft)	Corrected GW Elev. (ft)	pH	Conductivity (mS)	Dissolved Oxygen (mg/L)	Temp. (°C)	ORP (mV)	Purge Volume (gallons)
TW-31	21-Aug-09	5438.54		7.18		5431.36	6.84	10.35	6.90	21.75	319.9	3.00
TW-31	17-Feb-10	5438.54		6.82		5431.72	6.63	9.906	3.95	9.75	358.8	3.00
TW-31	11-May-10	5438.54		6.78		5431.76	6.96	7.523	1.31	13.25	228.9	4.00
TW-31	18-Aug-10	5438.54		6.98		5431.56	NM	NM	NM	NM	NM	NM
TW-31	16-Nov-10	5438.54		7.24		5431.30	6.98	5.526	0.99	15.87	-10.0	3.00
TW-31	17-Feb-11	5438.54		7.16		5431.38	NM	NM	NM	NM	NM	NM
TW-32	17-Dec-08	5441.61	7.22	8.79	1.57	5434.12	Not Sampled - NAPL Present					
TW-32	26-Jan-09	5441.61	9.02	10.31	1.29	5432.37	NM	NM	NM	NM	NM	NM
TW-32	13-Aug-09	5441.61	9.12	10.86	1.74	5432.19	Not Sampled - NAPL present					
TW-32	12-Nov-09	5441.61	9.26	10.88	1.62	5432.07	NM	NM	NM	NM	NM	NM
TW-32	16-Feb-10	5441.61	8.97	9.98	1.01	5432.47	NM	NM	NM	NM	NM	NM
TW-32	07-May-10	5441.61	8.92	9.34	0.42	5432.62	NM	NM	NM	NM	NM	NM
TW-32	18-Aug-10	5441.61	9.00	10.18	1.18	5432.41	NM	NM	NM	NM	NM	NM
TW-32	15-Nov-10	5441.61	9.30	10.87	1.57	5432.04	NM	NM	NM	NM	NM	NM
TW-32	23-Feb-11	5441.61	9.23	10.79	1.56	5432.11	NM	NM	NM	NM	NM	NM
TW-33	17-Dec-08	5445.85	12.96	13.02	0.06	5432.88	Not Sampled - NAPL Present					
TW-33	26-Jan-09	5445.85	12.92	13.02	0.10	5432.91	NM	NM	NM	NM	NM	NM
TW-33	13-Aug-09	5445.85	12.96	13.10	0.14	5432.87	Not Sampled - NAPL present					
TW-33	12-Nov-09	5445.85	13.10	13.40	0.30	5432.70	NM	NM	NM	NM	NM	NM
TW-33	16-Feb-10	5445.85	12.89	12.93	0.04	5432.95	NM	NM	NM	NM	NM	NM
TW-33	07-May-10	5445.85	12.68	12.70	0.02	5433.17	NM	NM	NM	NM	NM	NM

TABLE 1

SUMMARY OF RECENT GROUNDWATER MEASUREMENTS AND WATER QUALITY DATA

Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	Date	T.O.C. (ft amsl)	Depth to Product (ft)	Depth to Water (ft)	NAPL Thickness (ft)	Corrected GW Elev. (ft)	pH	Conductivity (mS)	Dissolved Oxygen (mg/L)	Temp. (°C)	ORP (mV)	Purge Volume (gallons)
TW-33	18-Aug-10	5445.85	12.81	12.99	0.18	5433.01	NM	NM	NM	NM	NM	NM
TW-33	15-Nov-10	5445.85	12.97	13.15	0.18	5432.85	NM	NM	NM	NM	NM	NM
TW-33	17-Feb-11	5445.85	12.98	13.05	0.07	5432.86	NM	NM	NM	NM	NM	NM
TW-34	18-Dec-08	5455.80		19.82		5435.98	7.48	6.744	3.97	14.29	-183.8	1.25
TW-34	26-Jan-09	5455.80		19.74		5436.06	NM	NM	NM	NM	NM	NM
TW-34	19-Aug-09	5455.80		20.23		5435.57	7.06	10.07	6.19	15.43	303.7	3.00
TW-34	18-Feb-10	5455.80		19.79		5436.01	7.06	9.266	2.40	12.35	-55.0	3.00
TW-34	12-May-10	5455.80		19.6		5436.20	7.03	5.825	2.18	13.57	133.5	3.75
TW-34	18-Aug-10	5455.80		20.1		5435.70	NM	NM	NM	NM	NM	NM
TW-34	15-Nov-10	5455.80		19.93		5435.87	NM	NM	NM	NM	NM	NM
TW-34	23-Feb-11	5455.80		19.83		5435.97	NM	NM	NM	NM	NM	NM
TW-35	18-Dec-08	5449.14		15.21		5433.93	7.04	7.929	4.39	14.98	-189.4	1.25
TW-35	26-Jan-09	5449.14		15.12		5434.02	NM	NM	NM	NM	NM	NM
TW-35	24-Aug-09	5449.14		15.29		5433.85	7.02	11.80	6.40	16.41	295.1	3.30
TW-35	18-Feb-10	5449.14		15.15		5433.99	7.20	11.52	2.91	12.99	-283.0	3.60
TW-35	12-May-10	5449.14		14.91		5434.23	7.17	6.714	1.91	12.77	197.4	3.75
TW-35	18-Aug-10	5449.14		15.08		5434.06	NM	NM	NM	NM	NM	NM
TW-35	17-Nov-10	5449.14		15.23		5433.91	7.13	7.175	0.72	15.97	-18.3	3.00
TW-35	23-Feb-11	5449.14		15.17		5433.97	NM	NM	NM	NM	NM	NM
TW-36	18-Dec-08	5441.91		13.03		5428.88	6.94	7.874	3.6	15.28	-270.7	1.25

TABLE 1

SUMMARY OF RECENT GROUNDWATER MEASUREMENTS AND WATER QUALITY DATA

Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	Date	T.O.C. (ft amsl)	Depth to Product (ft)	Depth to Water (ft)	NAPL Thickness (ft)	Corrected GW Elev. (ft)	pH	Conductivity (mS)	Dissolved Oxygen (mg/L)	Temp. (°C)	ORP (mV)	Purge Volume (gallons)
TW-36	26-Jan-09	5441.91	12.94	12.97	0.03	5428.96	NM	NM	NM	NM	NM	NM
TW-36	13-Aug-09	5441.91	13.17	13.35	0.18	5428.71	Not Sampled - NAPL present					
TW-36	13-Nov-09	5441.91	13.25	13.63	0.38	5428.59	NM	NM	NM	NM	NM	NM
TW-36	16-Feb-10	5441.91	12.96	12.98	0.02	5428.95	NM	NM	NM	NM	NM	NM
TW-36	12-May-10	5441.91		12.70		5429.21	7.08	6.193	1.42	12.75	388.4	3.75
TW-36	18-Aug-10	5441.91	13.10	13.18	0.08	5428.80	NM	NM	NM	NM	NM	NM
TW-36	15-Nov-10	5441.91	13.20	13.35	0.15	5428.68	NM	NM	NM	NM	NM	NM
TW-36	23-Feb-11	5441.91		13.03		5428.88	NM	NM	NM	NM	NM	NM
TW-37	17-Dec-08	5439.59		10.57		5429.02	6.51	4.698	3.5	14.02	-221.3	1.25
TW-37	26-Jan-09	5439.59		10.47		5429.12	NM	NM	NM	NM	NM	NM
TW-37	21-Aug-09	5439.59		10.71		5428.88	7.22	6.162	4.35	18.77	296.1	3.00
TW-37	16-Feb-10	5439.59		10.44		5429.15	6.77	6.700	1.11	12.18	430.5	3.00
TW-37	11-May-10	5439.59		10.16		5429.43	6.98	4.092	1.27	12.84	224.6	3.75
TW-37	19-Aug-10	5439.59		10.53		5429.06	7.05	4.268	0.41	18.90	324.2	1.50
TW-37	16-Nov-10	5439.59		10.68		5428.91	7.05	4.503	0.61	16.79	-13.6	3.00
TW-37	17-Feb-11	5439.59		10.58		5429.01	NM	NM	NM	NM	NM	NM
TW-38	17-Dec-08	5442.11		9.55		5432.56	6.95	5.466	4.06	12.82	-179.3	1.25
TW-38	26-Jan-09	5442.11		11.36		5430.75	NM	NM	NM	NM	NM	NM
TW-38	21-Aug-09	5442.11	11.57	11.58	0.01	5430.54	Not Sampled - NAPL Present					
TW-38	12-Nov-09	5442.11	11.64	11.70	0.06	5430.46	NM	NM	NM	NM	NM	NM
TW-38	18-Feb-10	5442.11		11.28		5430.83	6.73	7.314	0.57	12.54	549.0	2.10

TABLE 1

SUMMARY OF RECENT GROUNDWATER MEASUREMENTS AND WATER QUALITY DATA

Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	Date	T.O.C. (ft amsl)	Depth to Product (ft)	Depth to Water (ft)	NAPL Thickness (ft)	Corrected GW Elev. (ft)	pH	Conductivity (mS)	Dissolved Oxygen (mg/L)	Temp. (°C)	ORP (mV)	Purge Volume (gallons)
TW-38	12-May-10	5442.11		11.09		5431.02	7.06	4.741	2.37	12.83	205.3	3.75
TW-38	19-Aug-10	5442.11		11.30		5430.81	6.99	4.573	0.48	18.42	353.8	2.50
TW-38	16-Nov-10	5442.11		11.54		5430.57	7.10	4.657	0.79	16.96	-16.7	3.00
TW-38	17-Feb-11	5442.11		11.49		5430.62	NM	NM	NM	NM	NM	NM
TW-39	18-Dec-08	5438.43	7.7	7.71	0.01	5430.73	Not Sampled - Sheen of NAPL Present					
TW-39	26-Jan-09	5438.43		7.44		5430.99	NM	NM	NM	NM	NM	NM
TW-39	21-Aug-09	5438.43		7.96		5430.47	6.93	8.946	4.48	23.34	328.1	3.00
TW-39	17-Feb-10	5438.43		7.11		5431.32	6.64	6.092	1.22	8.11	244.4	2.10
TW-39	12-May-10	5438.43		6.98		5431.45	6.93	6.104	1.91	12.70	214.3	3.75
TW-39	19-Aug-10	5438.43		7.42		5431.01	7.19	3.956	0.30	22.67	359.2	2.50
TW-39	16-Nov-10	5438.43		7.95		5430.48	7.17	4.224	0.85	15.29	-20.8	3.00
TW-39	17-Feb-11	5438.43		9.01		5429.42	NM	NM	NM	NM	NM	NM
TW-40	18-Dec-08	5437.50		5.30		5432.20	Not Sampled - Sheen of NAPL Present					
TW-40	26-Jan-09	5437.50		7.27		5430.23	NM	NM	NM	NM	NM	NM
TW-40	13-Aug-09	5437.50	7.90	8.53	0.63	5429.49	Not Sampled - NAPL present					
TW-40	13-Nov-09	5437.50	7.93	8.49	0.56	5429.47	NM	NM	NM	NM	NM	NM
TW-40	16-Feb-10	5437.50	6.84	7.76	0.92	5430.50	NM	NM	NM	NM	NM	NM
TW-40	07-May-10	5437.50	6.78	7.90	1.12	5430.53	NM	NM	NM	NM	NM	NM
TW-40	18-Aug-10	5437.50	7.50	7.88	0.38	5429.93	NM	NM	NM	NM	NM	NM
TW-40	15-Nov-10	5437.50	7.97	8.51	0.54	5429.44	NM	NM	NM	NM	NM	NM
TW-40	17-Feb-11	5437.50	7.94	8.38	0.44	5429.48	NM	NM	NM	NM	NM	NM

TABLE 1

SUMMARY OF RECENT GROUNDWATER MEASUREMENTS AND WATER QUALITY DATA

Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	Date	T.O.C. (ft amsl)	Depth to Product (ft)	Depth to Water (ft)	NAPL Thickness (ft)	Corrected GW Elev. (ft)	pH	Conductivity (mS)	Dissolved Oxygen (mg/L)	Temp. (°C)	ORP (mV)	Purge Volume (gallons)
TW-41	18-Dec-08	5434.77		5.85		5428.92	6.16	5.669	3.92	10.95	-339.4	1.25
TW-41	26-Jan-09	5434.77		5.59		5429.18	NM	NM	NM	NM	NM	NM
TW-41	24-Aug-09	5434.77		6.27		5428.50	6.72	9.811	8.50	20.12	126.3	2.50
TW-41	16-Feb-10	5434.77		5.34		5429.43	6.06	8.192	0.46	8.01	461.4	3.00
TW-41	12-May-10	5434.77		5.17		5429.60	7.01	5.881	1.30	12.95	229.2	3.75
TW-41	20-Aug-10	5434.77		5.70		5429.07	7.07	5.434	0.52	20.38	197.0	2.50
TW-41	16-Nov-10	5434.77		6.12		5428.65	6.93	5.792	0.69	14.43	-6.7	3.00
TW-41	17-Feb-11	5434.77		6.06		5428.71	NM	NM	NM	NM	NM	NM
TW-42	16-Dec-08	5433.76		6.09		5427.67	6.48	6.036	1.07	12.04	23.5	1.25
TW-42	26-Jan-09	5433.76		5.97		5427.79	NM	NM	NM	NM	NM	NM
TW-42	24-Aug-09	5433.76		6.37		5427.39	7.23	10.81	6.43	19.48	219.0	2.50
TW-42	16-Feb-10	5433.76		5.84		5427.92	6.43	7.885	2.50	7.78	456.9	3.00
TW-42	12-May-10	5433.76		5.55		5428.21	7.27	5.816	2.60	12.54	233.5	3.75
TW-42	20-Aug-10	5433.76		6.05		5427.71	7.34	6.146	1.34	19.81	266.2	2.50
TW-42	16-Nov-10	5433.76		6.21		5427.55	7.26	6.589	1.84	14.17	-25.8	3.00
TW-42	17-Feb-11	5433.76		6.07		5427.69	NM	NM	NM	NM	NM	NM
TW-43	16-Dec-08	5440.42		12.19		5428.23	6.35	6.716	1.01	14.39	7.0	1.25
TW-43	26-Jan-09	5440.42		12.10		5428.32	NM	NM	NM	NM	NM	NM
TW-43	24-Aug-09	5440.42		12.44		5427.98	6.94	8.834	6.92	17.73	204.1	3.00
TW-43	16-Feb-10	5440.42		12.11		5428.31	6.79	7.655	3.56	12.46	431.3	3.00

TABLE 1

SUMMARY OF RECENT GROUNDWATER MEASUREMENTS AND WATER QUALITY DATA

Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	Date	T.O.C. (ft amsl)	Depth to Product (ft)	Depth to Water (ft)	NAPL Thickness (ft)	Corrected GW Elev. (ft)	pH	Conductivity (mS)	Dissolved Oxygen (mg/L)	Temp. (°C)	ORP (mV)	Purge Volume (gallons)
TW-43	12-May-10	5440.42		11.82		5428.60	7.01	4.736	1.60	12.89	225.4	3.75
TW-43	20-Aug-10	5440.42		12.29		5428.13	6.98	4.873	1.00	17.72	299.0	2.50
TW-43	16-Nov-10	5440.42		12.34		5428.08	6.94	5.273	0.84	16.58	-7.3	3.00
TW-43	17-Feb-11	5440.42		12.19		5428.23	NM	NM	NM	NM	NM	NM
TW-44	17-Dec-08	5444.08		12.66		5431.42	6.71	6.494	2.75	15.75	-43.4	1.25
TW-44	26-Jan-09	5444.08		14.93		5429.15	NM	NM	NM	NM	NM	NM
RW-26	26-Jan-09	5443.98	14.54	15.01	0.47	5429.34	NM	NM	NM	NM		NM
TW-44	18-Feb-10	5444.08	15.02	15.04	0.02	5429.06	NM	NM	NM	NM	NM	NM
TW-44	07-May-10	5444.08	14.66	14.68	0.02	5429.42	NM	NM	NM	NM	NM	NM
TW-44	18-Aug-10	5444.08	14.98	15.00	0.02	5429.10	NM	NM	NM	NM	NM	NM
TW-44	15-Nov-10	5444.08	15.12	15.15	0.03	5428.95	NM	NM	NM	NM	NM	NM
TW-44	17-Feb-11	5444.08	15.02	15.03	0.01	5429.06	NM	NM	NM	NM	NM	NM
TW-45	13-May-10	TBS		6.58			7.01	5.204	4.93	11.52	179.0	3.75
TW-45	20-Aug-10	TBS		7.06			6.98	5.245	1.84	19.10	234.6	2.50
TW-45	17-Nov-10	TBS		7.09			6.93	5.564	0.97	14.24	-7.2	0.50
TW-45	23-Feb-11	TBS		7.01			NM	NM	NM	NM	NM	NM
TW-46	13-May-10	TBS		6.86			7.15	4.889	4.72	12.28	206.5	3.75
TW-46	20-Aug-10	TBS		7.31			7.13	5.262	1.14	19.45	241.2	0.50
TW-46	15-Nov-10	TBS		7.41			NM	NM	NM	NM	NM	NM
TW-46	23-Feb-11	TBS		7.34			NM	NM	NM	NM	NM	NM

TABLE 1
SUMMARY OF RECENT GROUNDWATER MEASUREMENTS AND WATER QUALITY DATA
Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	Date	T.O.C. (ft amsl)	Depth to Product (ft)	Depth to Water (ft)	NAPL Thickness (ft)	Corrected GW Elev. (ft)	pH	Conductivity (mS)	Dissolved Oxygen (mg/L)	Temp. (°C)	ORP (mV)	Purge Volume (gallons)
TW-47	13-May-10	TBS		6.04			7.23	11.86	3.36	12.89	214.8	3.75
TW-47	20-Aug-10	TBS		6.67			7.20	11.46	1.16	20.71	241.0	0.50
TW-47	17-Nov-10	TBS		6.93			7.08	10.79	2.09	14.87	-15.4	0.50
TW-47	23-Feb-11	TBS		6.94			NM	NM	NM	NM	NM	NM
TW-48	12-May-10	TBS		6.90			6.95	5.924	3.43	13.25	231.8	3.75
TW-48	19-Aug-10	TBS		7.18			6.85	5.861	1.75	21.73	405.2	2.50
TW-48	15-Nov-10	TBS		7.39			NM	NM	NM	NM	NM	NM
TW-48	17-Feb-11	TBS		7.31			NM	NM	NM	NM	NM	NM
TW-49	17-May-10	TBS		5.32			7.73	6.88	3.06	15.48	228.50	0.00
TW-49	20-Aug-10	TBS		5.84			NM	NM	NM	NM	NM	NM
TW-49	15-Nov-10	TBS		6.36			NM	NM	NM	NM	NM	NM
TW-49	23-Feb-11	TBS		6.27			NM	NM	NM	NM	NM	NM
TW-50	12-May-10	TBS		7.30			6.92	5.815	1.25	13.27	231.5	3.75
TW-50	19-Aug-10	TBS		7.67			6.96	5.946	0.45	22.26	334.4	2.50
TW-50	15-Nov-10	TBS		8.06			NM	NM	NM	NM	NM	NM
TW-50	17-Feb-11	TBS		7.99			NM	NM	NM	NM	NM	NM
MW-5	18-Dec-07	5428.97	Not Sampled - Filled with Roots									
MW-5	19-Dec-08	5428.97		5.04		5423.93	6.76	7.748	4.02	11.73		0.25

TABLE 1

SUMMARY OF RECENT GROUNDWATER MEASUREMENTS AND WATER QUALITY DATA

Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	Date	T.O.C. (ft amsl)	Depth to Product (ft)	Depth to Water (ft)	NAPL Thickness (ft)	Corrected GW Elev. (ft)	pH	Conductivity (mS)	Dissolved Oxygen (mg/L)	Temp. (°C)	ORP (mV)	Purge Volume (gallons)
MW-5	19-Dec-08	5428.97		5.04		5423.93	6.76	7.748	4.02	11.73		0.25
MW-5	18-Feb-10	5428.97		4.73		5424.24	7.39	8.422	3.30	9.93	403.1	3.00
MW-5	12-May-10	5428.97		4.32		5424.65	7.35	6.146	2.68	11.52	225.3	3.75
MW-5	18-Aug-10	5428.97		4.99		5423.98	NM	NM	NM	NM	NM	NM
MW-5	17-Nov-10	5428.97		5.17		5423.80	7.62	6.121	1.36	14.15	-46.2	3.00
MW-5	17-Feb-11	5428.97		5.08		5423.89	NM	NM	NM	NM	NM	NM
MW-7	1-Feb-02	5435.28		5.32		37288.00						No Sample
MW-7	29-Jul-02	5435.28		6.11		37466.00						No Sample
MW-7	6-Jun-03	5435.28		9.06		37778.00						No Sample
MW-7	19-Jan-04	5435.28		9.06		38005.00	7.0	2.827	0.93	49.7		P
MW-7	25-May-04	5435.28		9.14		38132.00	6.8	3.76	0.27	63.2		3
MW-7	27-Jul-04	5435.28		9.08		38195.00	7.3	5.32		72.8		B
MW-7	28-Dec-04	5435.28		9.05		38349.00	7.8					MP
MW-7	31-Mar-05	5435.28		7.67		38442.00	6.5	3.011	0.5	52		MP
MW-7	19-Sep-05	5435.28		9.20		38614.00	7.0	4.802	0.41	70.8		
MW-7	4-Jan-06	5435.28		8.14		38721.00	7.0	3.625	0.48	14.5		3
MW-7	02-Jan-07	5435.28		8.75		39084.00	NM	NM	NM	NM		No Sample
MW-7	19-Dec-07	5435.28		8.43		39435.00	NM	NM	NM	NM		No Sample
MW-7	17-May-10	5435.28		8.5		5426.78	6.95	6.66	3.08	13.83	217.6	3.75
MW-7	19-Aug-10	5435.28		8.2		5427.08	7.07	5.994	1.33	20.45	325.3	2.50
MW-7	15-Nov-10	5435.28		8.83		5426.45	NM	NM	NM	NM	NM	No Sample
MW-7	17-Feb-11	5435.28		8.76		5426.52	NM	NM	NM	NM	NM	NM

TABLE 1

SUMMARY OF RECENT GROUNDWATER MEASUREMENTS AND WATER QUALITY DATA

Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	Date	T.O.C. (ft amsl)	Depth to Product (ft)	Depth to Water (ft)	NAPL Thickness (ft)	Corrected GW Elev. (ft)	pH	Conductivity (mS)	Dissolved Oxygen (mg/L)	Temp. (°C)	ORP (mV)	Purge Volume (gallons)
MW-20	31-Jan-02	5430.45		6.04								P
MW-20	26-Jul-02	5430.45		6.31			7.2	2.95	1.22	79.6		P
MW-20	20-Nov-02	5430.45		5.85			7.1	1.9	0.30	55.0		P
MW-20	5-Jun-03	5430.45		5.89			7.1	3.43	1.58	58.1		
MW-20	20-Jan-04	5430.45		6.08			7.5	0.35	3.23	51.8		P
MW-20	25-May-04	5430.45		5.90			7.1	4.01	1.2	72.3		1.5
MW-20	27-Jul-04	5430.45		6.29			7.0	5.12		66.1		B
MW-20	29-Dec-04	5430.45		6.07								MP
MW-20	1-Apr-05	5430.45		5.69			6.5	2.378	0.55	54.4		
MW-20	19-Sep-05	5430.45		6.02			7.0	3.466	0.37	66.1		
MW-20	4-Jan-06	5430.45		5.85			7.0	3.47	0.6	12.3		3
MW-20	28-Jun-06	5430.45		6.18			6.7	4.979	0.34	17.8		3
MW-20	28-Dec-06	5430.45		5.50			7.0	8.505	0.51	8.9		3
MW-20	2-Jul-07	5430.45		5.75			7.0	4.841	1.32	16.09		2.6
MW-20	18-Dec-07	5430.45		5.89			7.05	5.621	2.89	12.10		1.25
MW-20	21-Jan-09	5430.45		5.86			6.73	5.996	3.58	8.34		0.5
MW-20	18-Feb-10	5430.45		5.81		5424.64	6.67	7.249	3.67	8.20	395.0	2.50
MW-20	13-May-10	5430.45		5.52		5424.93	6.96	4.948	2.09	10.89	216.9	3.75
MW-20	20-Aug-10	5430.45		6.01		5424.44	7.12	4.836	1.09	18.44	236.4	2.50
MW-20	17-Nov-10	5430.45		6.05		5424.4	6.94	5.167	0.40	13.63	-7.7	0.50
MW-20	23-Feb-11	5430.45		5.92		5424.53	NM	NM	NM	NM	NM	NM

TABLE 1

SUMMARY OF RECENT GROUNDWATER MEASUREMENTS AND WATER QUALITY DATA

Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	Date	T.O.C. (ft amsl)	Depth to Product (ft)	Depth to Water (ft)	NAPL Thickness (ft)	Corrected GW Elev. (ft)	pH	Conductivity (mS)	Dissolved Oxygen (mg/L)	Temp. (°C)	ORP (mV)	Purge Volume (gallons)
MW-21	30-Jan-02	5428.62		3.41								P
MW-21	26-Jul-02	5428.62		4.15								
MW-21	22-Nov-02	5428.62		3.51			7.1	7.58	0.55	55.0		P
MW-21	5-Jun-03	5428.62		3.21			7.2	7.79	0.95	65.4		
MW-21	20-Jan-04	5428.62		3.57			7.4	0.31	3.40	46.7		P
MW-21	25-May-04	5428.62		3.49			7.2	7.56	0.49	64.5		2.5
MW-21	28-Jul-04	5428.62		4.12			7.3	11.42		67.1		B
MW-21	29-Dec-04	5428.62		3.36								MP
MW-21	1-Apr-05	5428.62		2.77			6.7	5.747	0.28	50.9		
MW-21	19-Sep-05	5428.62		3.84			7.2	8.598	0.39	67.8		
MW-21	4-Jan-06	5428.62		3.27			7.1	6.118	0.77	11.9		3
MW-21	28-Jun-06	5428.62		3.81			6.8	9.223	0.32	19.8		3
MW-21	02-Jan-07	5428.62		3.23			6.7	9.393	0.9	8.2		3
MW-21	02-Jul-07	5428.62		3.54			7.0	9.066	0.86	18.74		2.7
MW-21	18-Dec-07	5428.62		3.54			7.12	8.043	0.62	12.90		3.25
MW-21	19-Dec-08	5428.62		3.43			6.79	7.562	9.78	11.04		1.25
MW-21	18-Feb-10	5428.62		2.86		5425.76	6.82	9.049	8.21	7.91	367.2	3.00
MW-21	13-May-10	5428.62		2.69		5425.93	7.06	7.075	1.74	12.41	224.9	3.75
MW-21	20-Aug-10	5428.62		3.31		5425.31	7.06	6.836	1.09	21.23	234.4	NM
MW-21	17-Nov-10	5428.62		3.68		5424.94	7.02	7.817	0.56	15.42	-12.0	0.50
MW-21	23-Feb-11	5428.62		3.65		5424.97	NM	NM	NM	NM	NM	NM

NOTES: NM - Not Measured

* Denotes erroneous DO measurement - sensor malfunction

TABLE 2

SUMMARY OF RECENT GROUNDWATER MEASUREMENTS OF PHASE 1 , 2, and 3 MPE WELLS

Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	*Date*	*T.O.C. (ft amsl)*	*Depth to Product (ft)*	*Depth to Water (ft)*	*NAPL Thickness (ft)*
Phase 1 Wells					
MPE-1	03-Mar-10	TBD		23.63	
MPE-1	10-May-10	TBD		23.46	
MPE-1	17-Aug-10	TBD		23.65	
MPE-1	11-Nov-10	TBD		23.82	
MPE-1	25-Feb-11	TBD		23.63	
MPE-2	03-Mar-10	TBD	21.51	21.54	0.03
MPE-2	18-May-10	TBD		21.29	
MPE-2	17-Aug-10	TBD	21.61	21.62	0.01
MPE-2	11-Nov-10	TBD	21.69	21.78	0.09
MPE-2	25-Feb-11	TBD		21.61	
MPE-3	03-Mar-10	TBD		20.79	
MPE-3	10-May-10	TBD		20.63	
MPE-3	17-Aug-10	TBD		20.83	
MPE-3	11-Nov-10	TBD		21.01	
MPE-3	25-Feb-11	TBD		20.89	
MPE-4	03-Mar-10	TBD		19.95	
MPE-4	10-May-10	TBD		19.80	
MPE-4	17-Aug-10	TBD		20.01	
MPE-4	11-Nov-10	TBD		20.20	
MPE-4	25-Feb-11	TBD		20.07	
MPE-5	03-Mar-10	TBD	19.30	19.41	0.11
MPE-5	18-May-10	TBD		19.00	
MPE-5	17-Aug-10	TBD	19.32	19.50	0.18
MPE-5	11-Nov-10	TBD	19.54	19.69	0.15
MPE-5	25-Feb-11	TBD	19.42	19.45	0.03
MPE-6	03-Mar-10	TBD		19.66	
MPE-6	10-May-10	TBD		NM	

TABLE 2

SUMMARY OF RECENT GROUNDWATER MEASUREMENTS OF PHASE 1 , 2, and 3 MPE WELLS

Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	*Date*	*T.O.C. (ft amsl)*	*Depth to Product (ft)*	*Depth to Water (ft)*	*NAPL Thickness (ft)*
MPE-6	17-Aug-10	TBD		19.70	
MPE-6	11-Nov-10	TBD		19.91	
MPE-6	01-Mar-11	TBD		19.69	
MPE-7	03-Mar-10	TBD		20.46	
MPE-7	10-May-10	TBD		NM	
MPE-7	17-Aug-10	TBD		20.49	
MPE-7	11-Nov-10	TBD		20.68	
MPE-7	01-Mar-11	TBD		20.54	
MPE-8	03-Mar-10	TBD		21.74	
MPE-8	10-May-10	TBD		21.60	
MPE-8	17-Aug-10	TBD		21.81	
MPE-8	11-Nov-10	TBD		21.98	
MPE-8	01-Mar-11	TBD		21.95	
MPE-9	03-Mar-10	TBD		23.44	
MPE-9	10-May-10	TBD		23.29	
MPE-9	17-Aug-10	TBD		23.51	
MPE-9	11-Nov-10	TBD		23.66	
MPE-9	01-Mar-11	TBD		23.49	
MPE-10	03-Mar-10	TBD		23.28	
MPE-10	10-May-10	TBD		23.10	
MPE-10	17-Aug-10	TBD		23.34	
MPE-10	11-Nov-10	TBD		23.46	
MPE-10	01-Mar-11	TBD		23.38	
MPE-11	03-Mar-10	TBD		21.83	
MPE-11	10-May-10	TBD		21.68	
MPE-11	17-Aug-10	TBD	NM-Roots in Well		
MPE-11	11-Nov-10	TBD	NM-Roots in Well		
MPE-11	01-Mar-11	TBD	NM-Roots in Well		

TABLE 2

SUMMARY OF RECENT GROUNDWATER MEASUREMENTS OF PHASE 1 , 2, and 3 MPE WELLS

Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	*Date*	*T.O.C. (ft amsl)*	*Depth to Product (ft)*	*Depth to Water (ft)*	*NAPL Thickness (ft)*
MPE-12	03-Mar-10	TBD		22.34	
MPE-12	10-May-10	TBD		22.20	
MPE-12	17-Aug-10	TBD		22.45	
MPE-12	11-Nov-10	TBD	NM-Roots in Well		
MPE-12	01-Mar-11	TBD	NM-Roots in Well		
MPE-13	03-Mar-10	TBD		22.70	
MPE-13	10-May-10	TBD		22.57	
MPE-13	17-Aug-10	TBD	22.78	22.82	0.04
MPE-13	11-Nov-10	TBD	22.9	22.96	0.06
MPE-13	01-Mar-11	TBD		22.82	
MPE-14	03-Mar-10	TBD		21.80	
MPE-14	10-May-10	TBD		21.65	
MPE-14	17-Aug-10	TBD	21.84	21.85	0.01
MPE-14	11-Nov-10	TBD		22.00	
MPE-14	01-Mar-11	TBD		21.86	
MPE-16	03-Mar-10	TBD		19.92	
MPE-16	10-May-10	TBD		19.78	
MPE-16	17-Aug-10	TBD		19.96	
MPE-16	11-Nov-10	TBD		20.14	
MPE-16	01-Mar-11	TBD		20.21	
MPE-17	03-Mar-10	TBD		20.11	
MPE-17	10-May-10	TBD		19.98	
MPE-17	17-Aug-10	TBD		20.04	
MPE-17	11-Nov-10	TBD		20.34	
MPE-17	01-Mar-11	TBD		20.21	
MPE-18	03-Mar-10	TBD		19.23	
MPE-18	10-May-10	TBD		NM	

TABLE 2

SUMMARY OF RECENT GROUNDWATER MEASUREMENTS OF PHASE 1 , 2, and 3 MPE WELLS

Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	*Date*	*T.O.C. (ft amsl)*	*Depth to Product (ft)*	*Depth to Water (ft)*	*NAPL Thickness (ft)*
MPE-18	17-Aug-10	TBD	19.27	19.28	0.01
MPE-18	11-Nov-10	TBD		19.34	
MPE-18	01-Mar-11	TBD		19.46	
MPE-19	03-Mar-10	TBD		19.02	
MPE-19	10-May-10	TBD		18.86	
MPE-19	17-Aug-10	TBD		19.06	
MPE-19	11-Nov-10	TBD		19.25	
MPE-19	01-Mar-11	TBD		19.05	
Phase 2 Wells					
MPE-20	03-Mar-10	TBD		18.72	
MPE-20	10-May-10	TBD		18.58	
MPE-20	17-Aug-10	TBD		18.75	
MPE-20	11-Nov-10	TBD		18.96	
MPE-20	01-Mar-11	TBD		18.87	
MPE-21	03-Mar-10	TBD	19.88	19.99	0.11
MPE-21	18-May-10	TBD		19.50	
MPE-21	09-Jun-10	TBD		19.75	
MPE-21	17-Aug-10	TBD	19.90	19.91	0.01
MPE-21	11-Nov-10	TBD	20.12	20.21	0.09
MPE-21	01-Mar-11	TBD		19.99	
MPE-22	03-Mar-10	TBD	20.73	20.81	0.08
MPE-22	18-May-10	TBD		NM	
MPE-22	09-Jun-10	TBD	20.4	20.90	0.50
MPE-22	16-Jun-10	TBD		20.53	
MPE-22	17-Aug-10	TBD	20.71	20.88	0.17
MPE-22	11-Nov-10	TBD	20.94	20.95	0.01
MPE-22	01-Mar-11	TBD		20.84	
MPE-23	03-Mar-10	TBD		21.10	

TABLE 2

SUMMARY OF RECENT GROUNDWATER MEASUREMENTS OF PHASE 1 , 2, and 3 MPE WELLS

Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	*Date*	*T.O.C. (ft amsl)*	*Depth to Product (ft)*	*Depth to Water (ft)*	*NAPL Thickness (ft)*
MPE-23	10-May-10	TBD		20.97	
MPE-23	17-Aug-10	TBD		21.14	
MPE-23	11-Nov-10	TBD		21.33	
MPE-23	01-Mar-11	TBD		21.29	
MPE-24	03-Mar-10	TBD		22.69	
MPE-24	10-May-10	TBD		22.53	
MPE-24	17-Aug-10	TBD		22.70	
MPE-24	11-Nov-10	TBD		22.88	
MPE-24	01-Mar-11	TBD		22.78	
MPE-25	03-Mar-10	TBD		23.02	
MPE-25	10-May-10	TBD		22.87	
MPE-25	17-Aug-10	TBD		23.12	
MPE-25	11-Nov-10	TBD		23.23	
MPE-25	01-Mar-11	TBD		23.08	
MPE-26	03-Mar-10	TBD	22.75	23.41	0.66
MPE-26	18-May-10	TBD	22.58	23.38	0.80
MPE-26	28-May-10	TBD	22.55	23.42	0.87
MPE-26	09-Jun-10	TBD	22.56	23.73	1.17
MPE-26	17-Aug-10	TBD	22.94	23.34	0.40
MPE-26	11-Nov-10	TBD	23.04	23.59	0.55
MPE-26	03-Mar-11	TBD	22.96	23.38	0.42
MPE-27	03-Mar-10	TBD		21.92	
MPE-27	10-May-10	TBD		21.76	
MPE-27	17-Aug-10	TBD		22.03	
MPE-27	11-Nov-10	TBD		22.06	
MPE-27	03-Mar-11	TBD	NM-Roots in Well		
MPE-28	03-Mar-10	TBD		21.54	
MPE-28	10-May-10	TBD		21.39	

TABLE 2

SUMMARY OF RECENT GROUNDWATER MEASUREMENTS OF PHASE 1 , 2, and 3 MPE WELLS

Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	*Date*	*T.O.C. (ft amsl)*	*Depth to Product (ft)*	*Depth to Water (ft)*	*NAPL Thickness (ft)*
MPE-28	17-Aug-10	TBD		21.70	
MPE-28	11-Nov-10	TBD	NM-Roots in Well		
MPE-28	03-Mar-11	TBD	NM-Roots in Well		
MPE-29	03-Mar-10	TBD		20.54	
MPE-29	10-May-10	TBD		20.39	
MPE-29	17-Aug-10	TBD		20.73	
MPE-29	11-Nov-10	TBD		21.72	
MPE-29	03-Mar-11	TBD		21.45	
MPE-30	03-Mar-10	TBD		21.19	
MPE-30	10-May-10	TBD		20.03	
MPE-30	17-Aug-10	TBD		21.33	
MPE-30	12-Nov-10	TBD		21.36	
MPE-30	03-Mar-11	TBD		20.99	
MPE-31	03-Mar-10	TBD		22.46	
MPE-31	10-May-10	TBD		22.30	
MPE-31	17-Aug-10	TBD		22.57	
MPE-31	12-Nov-10	TBD		22.64	
MPE-31	03-Mar-11	TBD		22.45	
MPE-33	03-Mar-10	TBD		22.34	
MPE-33	10-May-10	TBD		22.19	
MPE-33	17-Aug-10	TBD		22.39	
MPE-33	12-Nov-10	TBD		22.54	
MPE-33	03-Mar-11	TBD		22.61	
MPE-34	03-Mar-10	TBD		22.16	
MPE-34	10-May-10	TBD		22.01	
MPE-34	17-Aug-10	TBD		22.20	
MPE-34	12-Nov-10	TBD		22.37	
MPE-34	03-Mar-11	TBD		22.41	

TABLE 2

SUMMARY OF RECENT GROUNDWATER MEASUREMENTS OF PHASE 1 , 2, and 3 MPE WELLS

Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	*Date*	*T.O.C. (ft amsl)*	*Depth to Product (ft)*	*Depth to Water (ft)*	*NAPL Thickness (ft)*
MPE-35	24-Feb-10	TBD	20.71	20.95	0.24
MPE-35	03-Mar-10	TBD	20.64	20.98	0.34
MPE-35	18-May-10	TBD	20.34	20.67	0.33
MPE-35	09-Jun-10	TBD	20.26	20.79	0.53
MPE-35	16-Jun-10	TBD		20.46	
MPE-35	17-Aug-10	TBD	NM-Attached to RSI Unit		
MPE-35	12-Nov-10	TBD	20.86	21.27	0.41
MPE-35	03-Mar-11	TBD	20.87	21.25	0.38
MPE-36	03-Mar-10	TBD		19.91	
MPE-36	10-May-10	TBD		NM	
MPE-36	16-Jun-10	TBD		19.72	
MPE-36	17-Aug-10	TBD		19.94	
MPE-36	12-Nov-10	TBD		20.11	
MPE-36	03-Mar-11	TBD		19.92	
MPE-37	03-Mar-10	TBD	20.11	20.67	0.56
MPE-37	18-May-10	TBD		19.98	
MPE-37	16-Jun-10	TBD		20.07	
MPE-37	17-Aug-10	TBD		20.31	
MPE-37	12-Nov-10	TBD		20.51	
MPE-37	03-Mar-11	TBD		20.33	
MPE-38	03-Mar-10	TBD	19.80	19.83	0.03
MPE-38	18-May-10	TBD	19.49	20.40	0.91
MPE-38	09-Jun-10	TBD	19.51	20.31	0.80
MPE-38	16-Jun-10	TBD	19.61	20.30	0.69
MPE-38	17-Aug-10	TBD	NM-Attached to RSI Unit		
MPE-38	12-Nov-10	TBD	19.99	20.59	0.60
MPE-38	03-Mar-11	TBD	20.06	20.63	0.57
Phase 3 Wells					

TABLE 2

SUMMARY OF RECENT GROUNDWATER MEASUREMENTS OF PHASE 1 , 2, and 3 MPE WELLS

Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	*Date*	*T.O.C. (ft amsl)*	*Depth to Product (ft)*	*Depth to Water (ft)*	*NAPL Thickness (ft)*
MPE-39	18-Jun-10	TBD		17.29	
MPE-39	17-Aug-10	TBD		17.44	
MPE-39	12-Nov-10	TBD		17.64	
MPE-39	03-Mar-11	TBD		17.51	
MPE-40	18-Jun-10	TBD		17.46	
MPE-40	17-Aug-10	TBD		17.63	
MPE-40	12-Nov-10	TBD		17.83	
MPE-40	03-Mar-11	TBD		17.72	
MPE-41	18-Jun-10	TBD		18.14	
MPE-41	17-Aug-10	TBD	NM-Attached to RSI Unit		
MPE-41	12-Nov-10	TBD		18.51	
MPE-41	03-Mar-11	TBD		18.57	
MPE-42	18-Jun-10	TBD		18.90	
MPE-42	17-Aug-10	TBD	NM-Attached to RSI Unit		
MPE-42	12-Nov-10	TBD		19.25	
MPE-42	03-Mar-11	TBD		19.3	
MPE-43	18-Jun-10	TBD		19.75	
MPE-43	17-Aug-10	TBD	NM-Attached to RSI Unit		
MPE-43	12-Nov-10	TBD		20.1	
MPE-43	03-Mar-11	TBD	NM-Attached to RSI Unit		
MPE-44	18-Jun-10	TBD		19.95	
MPE-44	17-Aug-10	TBD	NM-Attached to RSI Unit		
MPE-44	12-Nov-10	TBD		20.29	
MPE-44	03-Mar-11	TBD	NM-Attached to RSI Unit		
MPE-45	18-Jun-10	TBD		20.05	sheen
MPE-45	17-Aug-10	TBD	NM-Attached to RSI Unit		
MPE-45	12-Nov-10	TBD		20.38	

TABLE 2

SUMMARY OF RECENT GROUNDWATER MEASUREMENTS OF PHASE 1 , 2, and 3 MPE WELLS

Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	Date	T.O.C. (ft amsl)	Depth to Product (ft)	Depth to Water (ft)	NAPL Thickness (ft)
MPE-45	03-Mar-11	TBD	NM-Attached to RSI Unit		
MPE-46	18-Jun-10	TBD		21.16	
MPE-46	17-Aug-10	TBD	NM-Attached to RSI Unit		
MPE-46	12-Nov-10	TBD		21.46	
MPE-46	03-Mar-11	TBD	NM-Attached to RSI Unit		
MPE-47	18-Jun-10	TBD		20.68	
MPE-47	17-Aug-10	TBD		20.92	
MPE-47	12-Nov-10	TBD	20.87	21.28	0.41
MPE-47	03-Mar-11	TBD	20.8	21.29	0.49
MPE-48	18-Jun-10	TBD		19.94	
MPE-48	17-Aug-10	TBD		20.22	
MPE-48	12-Nov-10	TBD		20.11	
MPE-48	03-Mar-11	TBD		20.16	
MPE-49	18-Jun-10	TBD		19.13	
MPE-49	17-Aug-10	TBD		19.44	
MPE-49	12-Nov-10	TBD		19.32	
MPE-49	03-Mar-11	TBD		19.35	
MPE-50	18-Jun-10	TBD		20.24	
MPE-50	17-Aug-10	TBD	NM-Attached to RSI Unit		
MPE-50	12-Nov-10	TBD		20.49	
MPE-50	03-Mar-11	TBD	NM-Attached to RSI Unit		
MPE-51	18-Jun-10	TBD		20.70	
MPE-51	17-Aug-10	TBD		20.68	
MPE-51	12-Nov-10	TBD		20.99	
MPE-51	03-Mar-11	TBD		21.04	
MPE-52	18-Jun-10	TBD		20.49	

TABLE 2
SUMMARY OF RECENT GROUNDWATER MEASUREMENTS OF PHASE 1 , 2, and 3 MPE WELLS
Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	*Date*	*T.O.C. (ft amsl)*	*Depth to Product (ft)*	*Depth to Water (ft)*	*NAPL Thickness (ft)*
MPE-52	17-Aug-10	TBD		20.64	
MPE-52	12-Nov-10	TBD		20.84	
MPE-52	03-Mar-11	TBD		20.70	
MPE-53	18-Jun-10	TBD		19.23	
MPE-53	17-Aug-10	TBD		19.38	
MPE-53	12-Nov-10	TBD		19.55	
MPE-53	03-Mar-11	TBD		19.42	
MPE-54	18-Jun-10	TBD		18.85	
MPE-54	17-Aug-10	TBD		19.02	
MPE-54	12-Nov-10	TBD		19.19	
MPE-54	03-Mar-11	TBD		19.15	
MPE-55	18-Jun-10	TBD		18.36	
MPE-55	17-Aug-10	TBD		18.51	
MPE-55	12-Nov-10	TBD		18.70	
MPE-55	03-Mar-11	TBD		18.61	
MPE-56	18-Jun-10	TBD		13.80	
MPE-56	17-Aug-10	TBD		13.94	
MPE-56	12-Nov-10	TBD		14.14	
MPE-56	03-Mar-11	TBD		14.21	
MPE-57	18-Jun-10	TBD		--	
MPE-57	17-Aug-10	TBD		14.63	
MPE-57	12-Nov-10	TBD		14.75	
MPE-57	03-Mar-11	TBD		14.67	
MPE-58	18-Jun-10	TBD		--	
MPE-58	17-Aug-10	TBD		14.86	
MPE-58	12-Nov-10	TBD		14.99	
MPE-58	03-Mar-11	TBD		15.06	

TABLE 3

SUMMARY OF AIR LABORATORY ANALYTICAL RESULTS

Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Sample ID	*Sample Date*	*Lab Analytical Method*	*Benzene (ppmv)*	*Toluene (ppmv)*	*Ethyl-benzene (ppmv)*	*Xylene (ppmv)*	*MTBE (ppmv)*	*TPH GRO (ppmv)*
Engine #1 Pre-Engine†	16-Mar-10	8021/8015	109.10	60.850	15.84	105.6	<12.745	14,160
Engine #1 Pre-Engine†	20-Aug-10	8021/8015	7.178	8.762	<1.056	9.293	<3.3137	1,152
Engine #2 Pre-Engine†	1-Mar-11	Not Sampled-Not in Operation						
Engine #1 Pre-Cat†	16-Mar-10	8021/8015	0.092	0.071	0.097	0.781	<0.0637	11.04
Engine #1 Pre-Cat†	20-Aug-10	8021/8015	<0.02871	0.027	<0.02112	0.125	<0.0637	3.360
Engine #2 Pre-Cat†	1-Mar-11	Not Sampled-Not in Operation						
Engine #1 Post-Cat†	16-Mar-10	8021/8015	0.057	0.032	0.038	0.317	<0.0637	6.00
Engine #1 Post-Cat†	20-Aug-10	8021/8015	0.049	0.088	0.032	0.465	<0.0637	10.08
Engine #2 Post-Cat†	1-Mar-11	Not Sampled-Not in Operation						
Percent Contaminant Reduction by Catox (%) Mar 2010			**99.999**	**99.999**	**99.998**	**99.997**	**99.995**	**100.000**
Percent Contaminant Reduction by Catox (%) Aug 2010			**99.993**	**99.990**	**99.970**	**99.950**	**99.981**	**99.991**
Engine #2 Pre-Engine†	16-Mar-10	8021/8015	2.153	5.598	0.887	8.448	<1.2745	600
Engine #2 Pre-Engine†	20-Aug-10	Not Sampled-Not in Operation						
Engine #1 Pre-Engine†	1-Mar-11	8021/8015	8.326	4.868	<1.056	3.590	<3.3137	864
Engine #2 Pre-Cat†	16-Mar-10	8021/8015	0.281	0.166	0.080	0.697	<0.0637	15.12
Engine #2 Pre-Cat†	20-Aug-10	Not Sampled-Not in Operation						
Engine #1 Pre-Cat†	1-Mar-11	8021/8015	0.267	0.080	<0.02112	<0.0634	<0.0637	2.64
Engine #2 Post-Cat†	16-Mar-10	8021/8015	<0.0287	<0.02434	<0.02112	0.139	<0.064	2.88
Engine #2 Post-Cat†	20-Aug-10	Not Sampled-Not in Operation						
Engine #1 Post-Cat†	1-Mar-11	8021/8015	0.287	0.093	<0.02112	<0.0633	<0.0637	2.28
Percent Contaminant Reduction by Catox (%) Mar 2010			**99.986**	**99.996**	**99.976**	**99.983**	**99.949**	**99.995**
Percent Contaminant Reduction by Catox (%) Mar 2011			**99.966**	**99.981**	**99.970**	**99.982**	**99.981**	**99.997**

TABLE 3

SUMMARY OF AIR LABORATORY ANALYTICAL RESULTS

Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Notes:

< **Analyte not detected above listed method limit**

ppmv **Parts per million (by volume)**

† **These results were reported in µg/L, they were converted to ppmv using the following formulas**

Benzene ppmv = µg/L x 0.2871

Toluene ppmv = µg/L x 0.2434

Ethylbenzene ppmv = µg/L x 0.2112

Xylenes ppmv = µg/L x 0.2112

MTBE ppmv = µg/L x 0.2549

GRO ppmv = µg/L x 0.24 **GRO is an estimation

FIGURE 1

GENERAL SITE PLAN

THRIFTWAY REFINERY
626 ROAD 5500
BLOOMFIELD, NEW MEXICO

Animas Environmental Services, LLC

DRAWN BY: N. Willis	**DATE DRAWN:** February 2, 2009
REVISIONS BY: C. Lameman	**DATE REVISED:** March 9, 2011
CHECKED BY: D. Watson	**DATE CHECKED:** March 9, 2011
APPROVED BY: E. McNally	**DATE APPROVED:** April 20, 2011

LEGEND

MONITOR WELL LOCATIONS

N

SCALE

200 100 0 200

50

(1 INCH = 200 FEET)

AERIAL SOURCE: PICTOMETRY ONLINE FEBRUARY 2009

S:\ANIMAS 2000\2011 PROJECTS\THRIFTWAY\810 REFINERY\MAPS AND DRAWINGS\FEBRUARY 2011 SAMPLING DRAWINGS\FIGURE 1 GENERAL SITE PLAN

FIGURE 2

GROUNDWATER ELEVATION CONTOURS FEBRUARY 2011

THRIFTWAY REFINERY
626 ROAD 5500
BLOOMFIELD, NEW MEXICO

Animas Environmental Services, LLC

DRAWN BY: N. Willis	**DATE DRAWN:** February 2, 2009
REVISIONS BY: C. Lameman	**DATE REVISED:** March 2, 2011
CHECKED BY: D. Watson	**DATE CHECKED:** March 3, 2011
APPROVED BY: E. McNally	**DATE APPROVED:** April 20, 2011

LEGEND

- MONITOR WELL LOCATIONS
- 5440.84 GROUNDWATER ELEVATION IN FEET (AMSL)
- —5439— GROUNDWATER ELEVATION CONTOUR IN FEET (AMSL)

NOTE: GROUNDWATER MEASUREMENTS WERE MADE ON FEBRUARY 17 AND 23, 2011. LOCATIONS OF TW-45 THROUGH TW-50 ARE APPROXIMATE. TW-19 AND TW-20 WERE ATTACHED TO RSI UNIT.

SCALE
200 100 0 200
50
(1 INCH = 200 FEET)

KUTZ WASH

ARROYO

CR 5500

GATE

REFINERY OFFICE

DISPATCH OFFICE

SHOP

PROCESS WATER EVAPORATION LAGOONS

HYDROCRACKER REFORMER (REMOVED)

FIRE WATER POND (REMOVED)

GROUNDWATER GRADIENT
0.008 FT/FT BETWEEN
TW-1 AND MW-5

TW-47 TBS 6.94
MW-21 5424.97
MW-22 NM
MW-5 5423.89
TW-49 TBS 6.27
TW-46 TBS 7.34
TW-45 TBS 7.01
MW-20 5424.53
TW-42 5427.69
TW-41 5428.71
TW-40 5429.48
TW-39 5429.42
TW-50 TBS 7.99
TW-31 5431.38
TW-30 5431.69
MW-7 5426.52
MW-9 NM
TW-48 TBS 7.31
MW-10 NM
TW-29 5427.46
TW-43 5428.23
TW-37 5429.01
TW-38 5430.62
TW-32 5432.11
TW-24 5433.69
TW-23 5434.13
TW-17 5436.32
TW-16 5437.24
TW-44 5429.06
TW-33 5432.86
TW-28 5433.80
TW-25 5434.55
TW-22 5435.33
TW-18 5436.40
TW-15 5437.39
TW-10 5437.29
TW-9 5438.52
TW-36 5428.88
TW-26 5434.37
TW-21 DAMAGED NM
TW-19 NM
TW-14 5437.20
TW-11 5438.16
TW-8 5438.08
TW-35 5433.97
TW-20 NM
TW-13 5437.43
TW-12 5438.05
TW-7 5438.39
TW-4 5439.60
TW-34 5435.97
TW-6 5439.00
TW-5 5439.63
TW-3 5440.13
TW-2 5440.34
TW-1 5440.84

S:\ANIMAS 2000\2011 PROJECTS\THRIFTWAY\810 REFINERY\MAPS AND DRAWINGS\FEBRUARY 2011 SAMPLING DRAWINGS\FIGURE 2 GROUNDWATER ELEVATION CONTOURS

FIGURE 3

FREE PRODUCT THICKNESS CONTOURS FEBRUARY 2011

THRIFTWAY REFINERY
626 ROAD 5500
BLOOMFIELD, NEW MEXICO

Animas Environmental Services, LLC

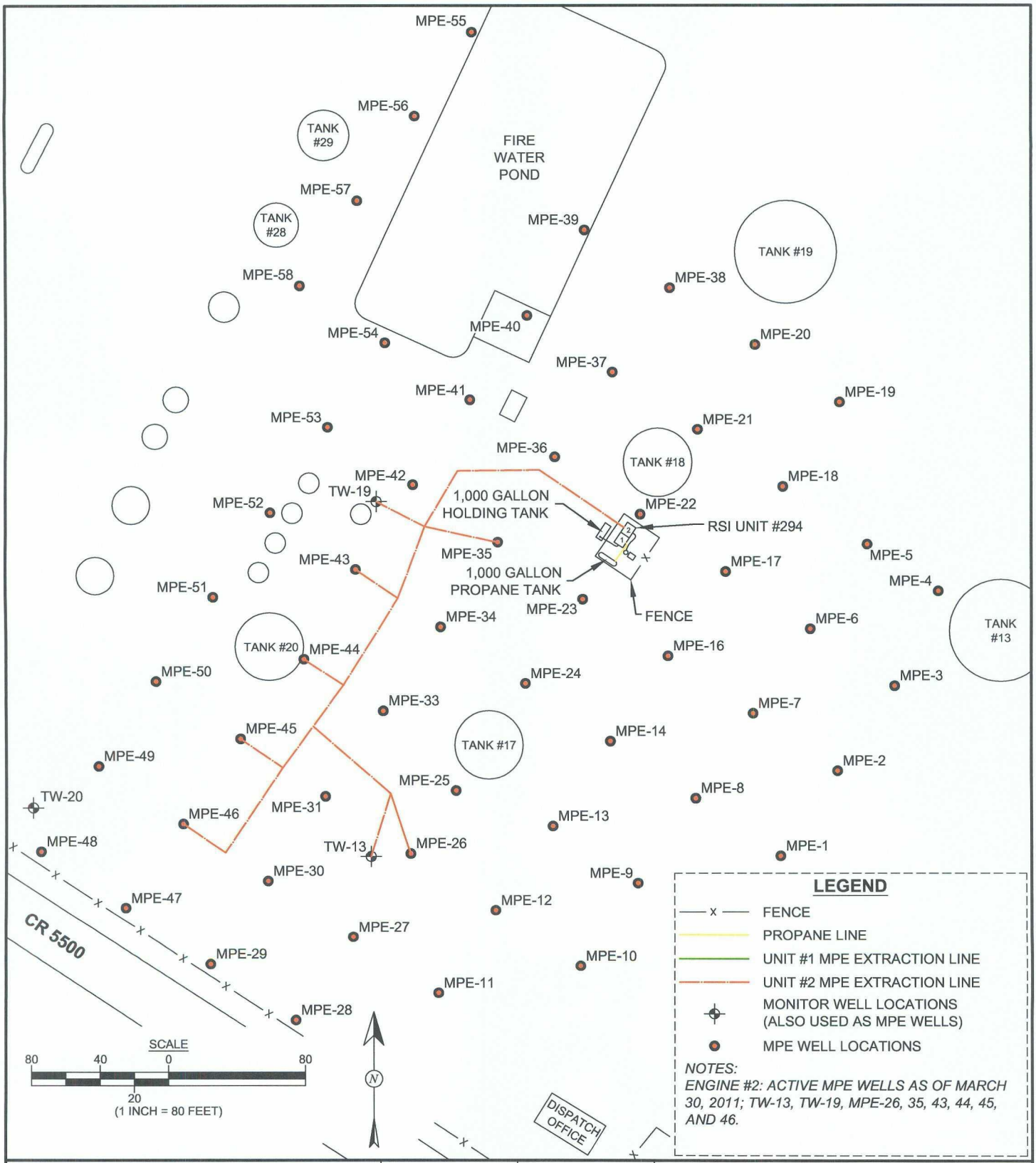
DRAWN BY: N. Willis	**DATE DRAWN:** February 2, 2009
REVISIONS BY: C. Lameman	**DATE REVISED:** March 4, 2011
CHECKED BY: D. Watson	**DATE CHECKED:** March 5, 2011
APPROVED BY: E. McNally	**DATE APPROVED:** April 20, 2011

LEGEND

- MONITOR WELL LOCATIONS
- MPE REMEDIATION WELL
- 0.57 FREE PRODUCT THICKNESS IN FEET
- —0.25— FREE PRODUCT THICKNESS CONTOUR IN FEET

NOTE: ALL MEASUREMENTS WERE MADE ON FEBRUARY 17 AND 23, 2011. LOCATIONS OF TW-45 THROUGH TW-50 ARE APPROXIMATE. TW-19 AND TW-20 WERE ATTACHED TO RSI UNIT.

SCALE
200 100 0 200
50
(1 INCH = 200 FEET)



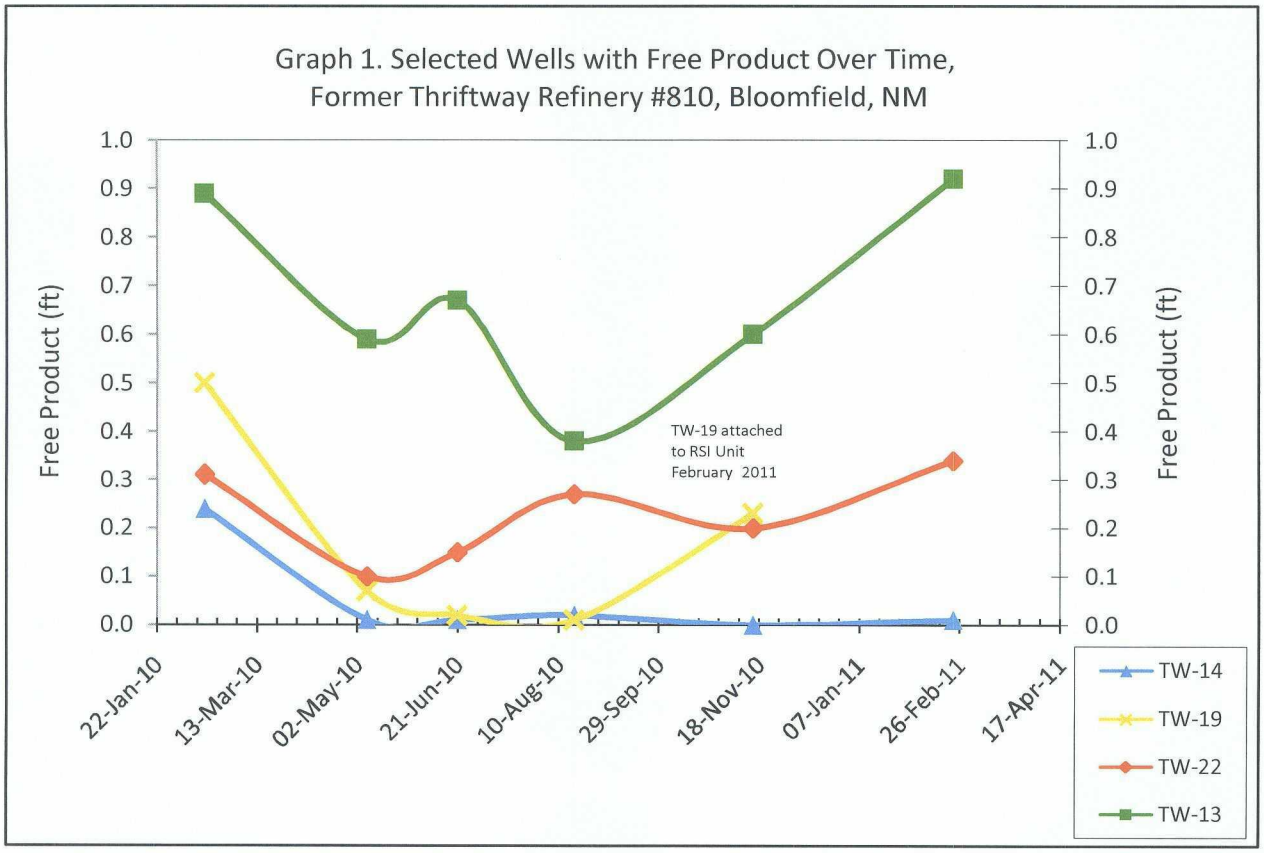
Animas Environmental Services, LLC

DRAWN BY: N. Willis	**DATE DRAWN:** April 27, 2010
REVISIONS BY: N. Willis	**DATE REVISED:** April 18, 2011
CHECKED BY: D. Watson	**DATE CHECKED:** April 19, 2011
APPROVED BY: E. McNally	**DATE APPROVED:** April 20, 2011

FIGURE 4

REMEDIATION SYSTEM LAYOUT

THRIFTWAY REFINERY
626 ROAD 5500
BLOOMFIELD, NEW MEXICO


Graph 1. Selected Wells with Free Product Over Time,
Former Thriftway Refinery #810, Bloomfield, NM
Free Product (ft)
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
TW-19 attached
to RSI Unit
February 2011
22-Jan-10
13-Mar-10
02-May-10
21-Jun-10
10-Aug-10
29-Sep-10
18-Nov-10
07-Jan-11
26-Feb-11
17-Apr-11
TW-14
TW-19
TW-22
TW-13

Ambient Air Monitoring Form

Animas Environmental Services
624 E. Comanche, Farmington NM 87401
Tel. (505) 564-2281 Fax (505) 324-2022

Project: Groundwater Monitoring
Site: Thriftway #810 Refinery
Location: Bloomfield, New Mexico
Tech: Chad Dalton

Project No.: AES 050204
Date: 3-1-11
Time: 1425
Form: 1 of 2

Time	Air Temp (°F)	Oxygen (%)	LEL (%)	Carbon Monoxide (ppm)	OVM-PID (ppm)	Sample Location / Notes / Observations
1430	56°				0.0	Around RST unit
1500	57°				0.0	Around RST unit

List Equipment Used and Date of Last Calibration:

DEPTH TO GROUNDWATER MEASUREMENT FORM

Animas Environmental Services
624 E. Comanche, Farmington NM 87401
Tel. (505) 564-2281 Fax (505) 324-2022

Project: Groundwater Monitoring
Site: Thriftway #810 Refinery
Location: Bloomfield, New Mexico
Tech: Chad Dawson

Project No.: AES 050204
Date: 2-17-11 / 2-23-11
Time: 1120-1530 / 0920-1445
Form: 2 of 2

Well I.D.	Time	Depth to NAPL (ft.)	Depth to Water (ft.)	NAPL Thickness (ft.)	Notes / Observations
TW-35	0955	—	15.17	—	
TW-36	0930	—	13.03	—	
TW-37	1230	—	10.58	—	
TW-38	1225	—	11.49	—	
TW-39	1109	—	9.01	—	
TW-40	1117	7.94	8.38	0.44	
TW-41	1150	—	6.06	—	
TW-42	1200	—	6.07	—	
TW-43	1211	—	12.19	—	
TW-44	1216	15.02	15.03	0.01	
TW-45	1420	—	7.01	—	
TW-46	1425	—	7.34	—	
TW-47	1435	—	6.94	—	
TW-48	1057	—	7.31	—	
TW-49	1445	—	6.27	—	
TW-50	1405	—	7.99	—	
MW-5	1157	—	5.09	—	
MW-7	1114	—	9.96	—	
MW-20	1430	—	5.92	—	
MW-21	1458	—	3.65	—	

Wells measured with KECK water level or KECK interface tape, decontaminated between each well measurement.

DEPTH TO GROUNDWATER MEASUREMENT FORM	Animas Environmental Services 624 E. Comanche, Farmington NM 87401 Tel. (505) 564-2281 Fax (505) 324-2022

Project: Groundwater Monitoring
Site: Thriftway #810 Refinery
Location: Bloomfield, New Mexico
Tech: Chad Dawson

Project No.: AES 050204
Date: 2-17-11 / 2-23-11
Time: 1020-1530 / 920-1445
Form: 1 of 2

Well I.D.	Time	Depth to NAPL (ft.)	Depth to Water (ft.)	NAPL Thickness (ft.)	Notes / Observations
TW-1	1027	—	30.74	—	
TW-2	1031	—	28.97	—	
TW-3	1034	—	28.01	—	
TW-4	1038	—	19.12	—	
TW-5	1427	—	25.55	—	
TW-6	1440	—	24.57	—	
TW-7	1435	—	22.78	—	
TW-8	1412	—	20.21	—	
TW-9	1043	—	12.09	—	
TW-10	1418	—	12.87	—	
TW-11	1459	—	18.15	—	
TW-12	1450	—	22.39	—	
TW-13	0950	20.58	21.50	0.92	
TW-14	1055	17.04	17.05	0.01	
TW-15	1516	—	13.05	—	
TW-16	1047	—	11.21	—	
TW-17	1520	—	9.92	—	
TW-18	1505	—	16.35		
TW-19	~~[illegible]~~	~~[illegible]~~	~~[illegible]~~		Attached to RSI
TW-20	—	—	—	—	Attached to RSI
TW-21	—	—	—	—	Well Damaged
TW-22	1012	14.80	15.14	0.34	
TW-23	1526	—	9.51	—	
TW-24	1100	11.09	11.15	0.06	
TW-25	1050	14.21	14.45	0.24	
TW-26	0959	15.31	16.75	0.44	
TW-28	1005	15.24	16.39	1.15	
TW-29	1105	~~[illegible]~~ 14.31	14.90	0.59	
TW-30	1058	—	6.24	—	
TW-31	1101	—	7.16	—	
TW-32	1113	09.23	10.79	1.56	
TW-33	1221	12.98	13.05	0.07	
TW-34	0940	—	19.93	—	

Wells measured with KECK water level or KECK interface tape, decontaminated between each well measurement.

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

Wednesday, March 09, 2011

Ross Kennemer
Animas Environmental Services
624 East Comanche
Farmington, NM 87401

TEL: (505) 564-2281
FAX (505) 324-2022

RE: TW #810 Refinery

Order No.: 1103094

Dear Ross Kennemer:

Hall Environmental Analysis Laboratory, Inc. received 3 sample(s) on 3/2/2011 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. Below is a list of our accreditations. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites.

Reporting limits are determined by EPA methodology.

Please do not hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Laboratory Manager

NM Lab # NM9425 NM0901
AZ license # AZ0682
ORELAP Lab # NM100001
Texas Lab# T104704424-08-TX

Hall Environmental Analysis Laboratory, Inc.

Date: *09-Mar-11*

CLIENT:	Animas Environmental Services	**Client Sample ID:**	Pre Engine
Lab Order:	1103094	**Collection Date:**	3/1/2011 2:40:00 PM
Project:	TW #810 Refinery	**Date Received:**	3/2/2011
Lab ID:	1103094-01	**Matrix:**	AIR

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: GASOLINE RANGE						Analyst: **BDH**
Gasoline Range Organics (GRO)	3600	250		µg/L	50	3/4/2011 2:19:06 PM
Surr: BFB	102	79.4-132		%REC	50	3/4/2011 2:19:06 PM
EPA METHOD 8021B: VOLATILES						Analyst: **BDH**
Methyl tert-butyl ether (MTBE)	ND	13		µg/L	50	3/4/2011 2:19:06 PM
Benzene	29	5.0		µg/L	50	3/4/2011 2:19:06 PM
Toluene	20	5.0		µg/L	50	3/4/2011 2:19:06 PM
Ethylbenzene	ND	5.0		µg/L	50	3/4/2011 2:19:06 PM
Xylenes, Total	17	15		µg/L	50	3/4/2011 2:19:06 PM
Surr: 4-Bromofluorobenzene	110	96.8-145		%REC	50	3/4/2011 2:19:06 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
NC	Non-Chlorinated	ND	Not Detected at the Reporting Limit
PQL	Practical Quantitation Limit	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: *09-Mar-11*

CLIENT:	Animas Environmental Services	**Client Sample ID:**	Pre-Cat
Lab Order:	1103094	**Collection Date:**	3/1/2011 2:48:00 PM
Project:	TW #810 Refinery	**Date Received:**	3/2/2011
Lab ID:	1103094-02	**Matrix:**	AIR

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: GASOLINE RANGE						Analyst: **BDH**
Gasoline Range Organics (GRO)	11	5.0		µg/L	1	3/4/2011 2:46:27 PM
Surr: BFB	93.6	79.4-132		%REC	1	3/4/2011 2:46:27 PM
EPA METHOD 8021B: VOLATILES						Analyst: **BDH**
Methyl tert-butyl ether (MTBE)	ND	0.25		µg/L	1	3/4/2011 2:46:27 PM
Benzene	0.93	0.10		µg/L	1	3/4/2011 2:46:27 PM
Toluene	0.33	0.10		µg/L	1	3/4/2011 2:46:27 PM
Ethylbenzene	ND	0.10		µg/L	1	3/4/2011 2:46:27 PM
Xylenes, Total	ND	0.30		µg/L	1	3/4/2011 2:46:27 PM
Surr: 4-Bromofluorobenzene	104	96.8-145		%REC	1	3/4/2011 2:46:27 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
NC	Non-Chlorinated	ND	Not Detected at the Reporting Limit
PQL	Practical Quantitation Limit	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: *09-Mar-11*

CLIENT:	Animas Environmental Services	**Client Sample ID:**	Post-Cat
Lab Order:	1103094	**Collection Date:**	3/1/2011 2:51:00 PM
Project:	TW #810 Refinery	**Date Received:**	3/2/2011
Lab ID:	1103094-03	**Matrix:**	AIR

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: GASOLINE RANGE						Analyst: BDH
Gasoline Range Organics (GRO)	9.5	5.0		µg/L	1	3/4/2011 3:13:57 PM
Surr: BFB	93.8	79.4-132		%REC	1	3/4/2011 3:13:57 PM
EPA METHOD 8021B: VOLATILES						Analyst: BDH
Methyl tert-butyl ether (MTBE)	ND	0.25		µg/L	1	3/4/2011 3:13:57 PM
Benzene	1.0	0.10		µg/L	1	3/4/2011 3:13:57 PM
Toluene	0.38	0.10		µg/L	1	3/4/2011 3:13:57 PM
Ethylbenzene	ND	0.10		µg/L	1	3/4/2011 3:13:57 PM
Xylenes, Total	ND	0.30		µg/L	1	3/4/2011 3:13:57 PM
Surr: 4-Bromofluorobenzene	106	96.8-145		%REC	1	3/4/2011 3:13:57 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- NC Non-Chlorinated
- PQL Practical Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Animas Environmental Services
Project: TW #810 Refinery **Work Order:** 1103094

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8015B: Gasoline Range											
Sample ID: 5ML RB		*MBLK*				Batch ID: **R43957**		Analysis Date:		3/4/2011 9:06:28 AM	
Gasoline Range Organics (GRO)	ND	mg/Kg	5.0								
Sample ID: 2.5UG GRO LCS		*LCS*				Batch ID: **R43957**		Analysis Date:		3/4/2011 7:09:45 PM	
Gasoline Range Organics (GRO)	24.87	mg/Kg	5.0	25	0	99.5	88.8	124			
Sample ID: 2.5UG GRO LCSD		*LCSD*				Batch ID: **R43957**		Analysis Date:		3/4/2011 7:39:43 PM	
Gasoline Range Organics (GRO)	25.11	mg/Kg	5.0	25	0	100	88.8	124	0.960	14.8	
Method: EPA Method 8015B: Gasoline Range											
Sample ID: 5ML RB		*MBLK*				Batch ID: **R43957**		Analysis Date:		3/4/2011 9:06:28 AM	
Gasoline Range Organics (GRO)	ND	mg/L	0.050								
Sample ID: 2.5UG GRO LCS		*LCS*				Batch ID: **R43957**		Analysis Date:		3/4/2011 7:09:45 PM	
Gasoline Range Organics (GRO)	0.4974	mg/L	0.050	0.5	0	99.5	81.8	120			
Sample ID: 2.5UG GRO LCSD		*LCSD*				Batch ID: **R43957**		Analysis Date:		3/4/2011 7:39:43 PM	
Gasoline Range Organics (GRO)	0.5022	mg/L	0.050	0.5	0	100	81.8	120	0.960	17.1	
Method: EPA Method 8021B: Volatiles											
Sample ID: 5ML RB		*MBLK*				Batch ID: **R43957**		Analysis Date:		3/4/2011 9:06:28 AM	
Methyl tert-butyl ether (MTBE)	ND	mg/Kg	0.10								
Benzene	ND	mg/Kg	0.050								
Toluene	ND	mg/Kg	0.050								
Ethylbenzene	ND	mg/Kg	0.050								
Xylenes, Total	ND	mg/Kg	0.10								
Sample ID: 100NG BTEX LCS		*LCS*				Batch ID: **R43957**		Analysis Date:		3/4/2011 8:10:00 PM	
Methyl tert-butyl ether (MTBE)	0.9923	mg/Kg	0.10	1	0	99.2	65.5	229			
Benzene	1.047	mg/Kg	0.050	1	0	105	83.3	107			
Toluene	1.072	mg/Kg	0.050	1	0	107	74.3	115			
Ethylbenzene	1.046	mg/Kg	0.050	1	0	105	80.9	122			
Xylenes, Total	3.221	mg/Kg	0.10	3	0	107	85.2	123			
Sample ID: 100NG BTEX LCSD		*LCSD*				Batch ID: **R43957**		Analysis Date:		3/4/2011 8:40:11 PM	
Methyl tert-butyl ether (MTBE)	0.9819	mg/Kg	0.10	1	0	98.2	65.5	229	1.05	22	
Benzene	1.028	mg/Kg	0.050	1	0	103	83.3	107	1.83	15.6	
Toluene	1.058	mg/Kg	0.050	1	0	106	74.3	115	1.28	19.2	
Ethylbenzene	1.036	mg/Kg	0.050	1	0	104	80.9	122	0.951	19.5	
Xylenes, Total	3.196	mg/Kg	0.10	3	0	107	85.2	123	0.798	17	
Method: EPA Method 8021B: Volatiles											
Sample ID: 5ML RB		*MBLK*				Batch ID: **R43957**		Analysis Date:		3/4/2011 9:06:28 AM	
Methyl tert-butyl ether (MTBE)	ND	µg/L	2.5								
Benzene	ND	µg/L	1.0								
Toluene	ND	µg/L	1.0								
Ethylbenzene	ND	µg/L	1.0								
Xylenes, Total	ND	µg/L	2.0								
1,2,4-Trimethylbenzene	ND	µg/L	1.0								
1,3,5-Trimethylbenzene	ND	µg/L	1.0								

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	NC	Non-Chlorinated
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Animas Environmental Services
Project: TW #810 Refinery **Work Order:** 1103094

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8021B: Volatiles											
Sample ID: 100NG BTEX LCS		*LCS*				Batch ID:	**R43957**	Analysis Date:		3/4/2011 8:10:00 PM	
Methyl tert-butyl ether (MTBE)	19.85	µg/L	2.5	20	0	99.2	97.6	132			
Benzene	20.94	µg/L	1.0	20	0	105	93.4	120			
Toluene	21.44	µg/L	1.0	20	0	107	96.2	122			
Ethylbenzene	20.92	µg/L	1.0	20	0	105	95	121			
Xylenes, Total	64.43	µg/L	2.0	60	0	107	97.6	122			
1,2,4-Trimethylbenzene	19.25	µg/L	1.0	20	0	96.2	86.1	113			
1,3,5-Trimethylbenzene	21.04	µg/L	1.0	20	0	105	94.9	123			
Sample ID: 100NG BTEX LCSD		*LCSD*				Batch ID:	**R43957**	Analysis Date:		3/4/2011 8:40:11 PM	
Methyl tert-butyl ether (MTBE)	19.64	µg/L	2.5	20	0	98.2	97.6	132	1.05	10.6	
Benzene	20.56	µg/L	1.0	20	0	103	93.4	120	1.83	10.1	
Toluene	21.17	µg/L	1.0	20	0	106	96.2	122	1.28	14.3	
Ethylbenzene	20.72	µg/L	1.0	20	0	104	95	121	0.951	15.5	
Xylenes, Total	63.92	µg/L	2.0	60	0	107	97.6	122	0.798	10.4	
1,2,4-Trimethylbenzene	18.98	µg/L	1.0	20	0	94.9	86.1	113	1.40	11.4	
1,3,5-Trimethylbenzene	20.66	µg/L	1.0	20	0	103	94.9	123	1.81	11.8	

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	NC	Non-Chlorinated
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name ANIMAS ENVIRONMENTAL Date Received: 3/2/2011

Work Order Number 1103094 Received by: MMG

Checklist completed by: _____ 03/02/11 Sample ID labels checked by: MG
Signature Date Initials

Matrix: Carrier name: Greyhound

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐	Not Shipped ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	N/A ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		Number of preserved bottles checked for pH:
Water - VOA vials have zero headspace?	No VOA vials submitted ☑	Yes ☐	No ☐	
Water - Preservation labels on bottle and cap match?	Yes ☐	No ☐	N/A ☑	
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	*<2 >12 unless noted below.*

Container/Temp Blank temperature? *<6° C Acceptable*
If given sufficient time to cool.

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

Chain-of-Custody Record

Client: Animas Environmental Services

Mailing Address: 624 E Comanche Farmington NM 87401

Phone #: 505-564-2281

email or Fax#: 505-324-2022

QA/QC Package:

☒ Standard ☐ Level 4 (Full Validation)

Accreditation

☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:

☒ Standard ☐ Rush _____

Project Name: TW 810 Refinery

Project #: AES 050204

Project Manager: R. Kennemer

Sampler: Chad Dawson

On Ice: ☒ Yes ☐ No

Sample Temperature: _____

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1103694	BTEX + MTBE + TMBs (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles (Y or N)
3-1-11	1440	Air	Pre Engine	Tedlar Bags		-1	X		X													
"	1448	Air	Pre-Cat	"		-2	X		X													
"	1457	Air	Post-Cat	"		-3	X		X													

Date	Time	Relinquished by:	Received by:	Date	Time
3-1-11	1523	Chad D		3-1-11	1523
3-1-11	1615			3/2/11	10:45

Remarks: BILL TO BIOTECH

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Remediation Service Int'l
4835 Colt Unit D
Ventura CA 93003
805.644.8382
805.644.8378 FAX
www.rsi-save.com

20150.3

Report Generator Version 1.4

Date of Report:	4/13/2011
Project Name:	Thriftway Refinery
	20000 Btu/lb
Unit ID:	0
Controller S/N:	182
Software version:	844
Date Range From:	1/4/2011 14:03
Date Range To :	1/31/2011 23:24
Lbs. Removed/Period:	721.81
Gal Removed/Period:	116.43
SCF Processed/Period	849141

Assumptions:

6.2	lb/gallon of gasoline
120	Mole Weight of Extracted VOC
2520	Btu/Cubic Foot of Propane
1000	Btu/Cubic Foot of Natural Gas

Parts/Million by Volume (PPMV) Conversion to Micrograms/Liter (ug/L)
(PPMV/24.055)*AVG. Mole Weight=ug/L

Mass Transfer Equation to Convert to Pounds/Hour:
(ug/L)*(Flow SCFM)*28.3 L/SCF*60 Minutes/Hour*2.2 lbs/Kg*(1/10^9)

There are no express or implied warranties for fitness of use or any other purpose of the data contained herein.
See report footnotes for disclaimer details and other technical information relating to calculation procedures.
Footnotes:

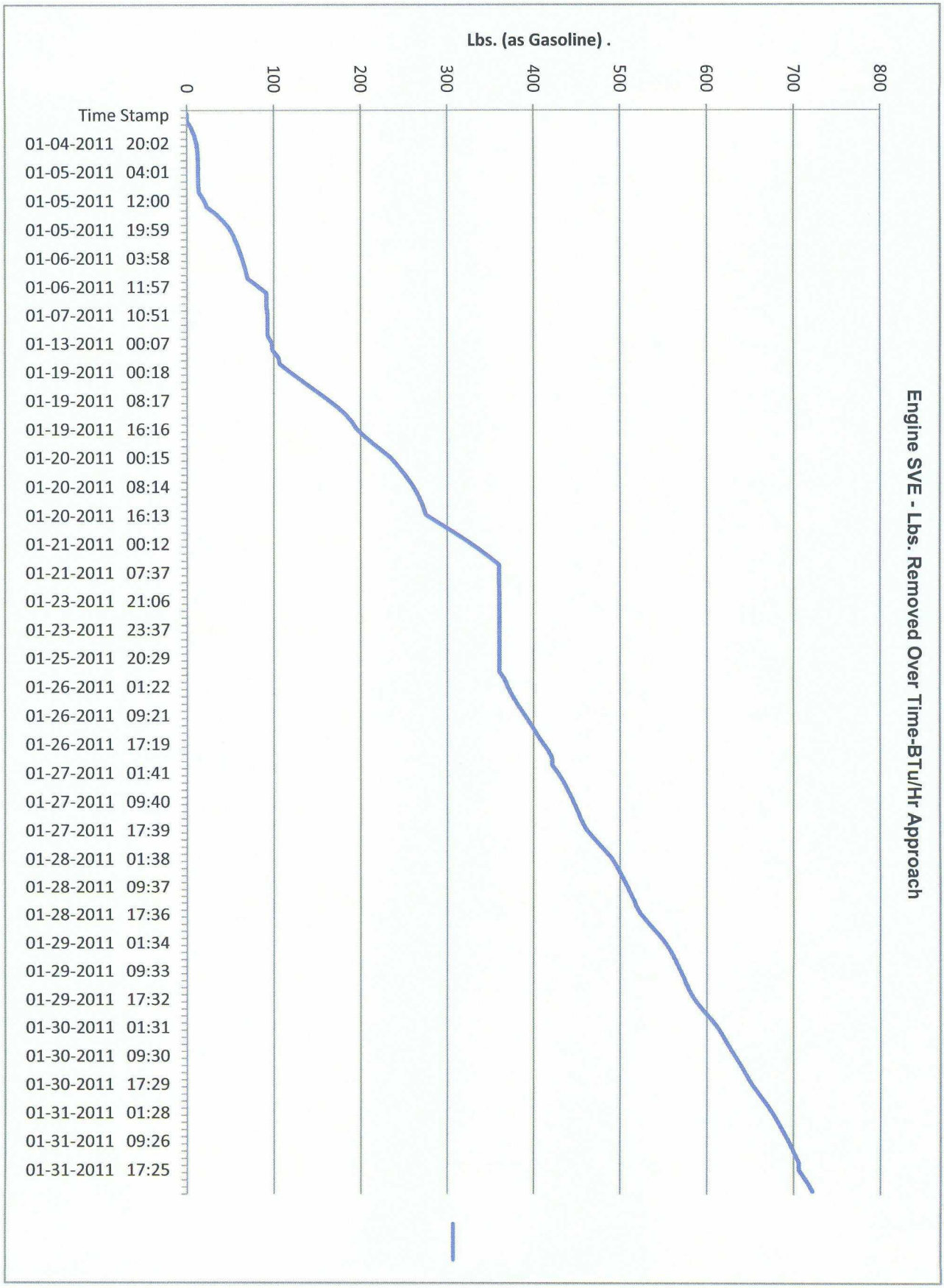
RSIs Innovative Approach to Estimating Btu/Hr:
1. Measure alternate fuel usage of engine prior to introduction of process flow
2. Multiply the SCFM flow rate of the alternate fuel (propane or natural gas) by the Btu value to determine energy demand on the engine at static conditions
3. The controller records a "snapshot" of the energy demand at a given RPM and engine manifold vacuum just prior to allowing the process flow to begin
4. The controller adjusts the initial baseline based on engine load or oxygen deficiency as necessary
5. Any drop in energy demand is assumed to be caused by the introduction of the process flow and is displayed as Estimated Btu/hr and recorded accordingly

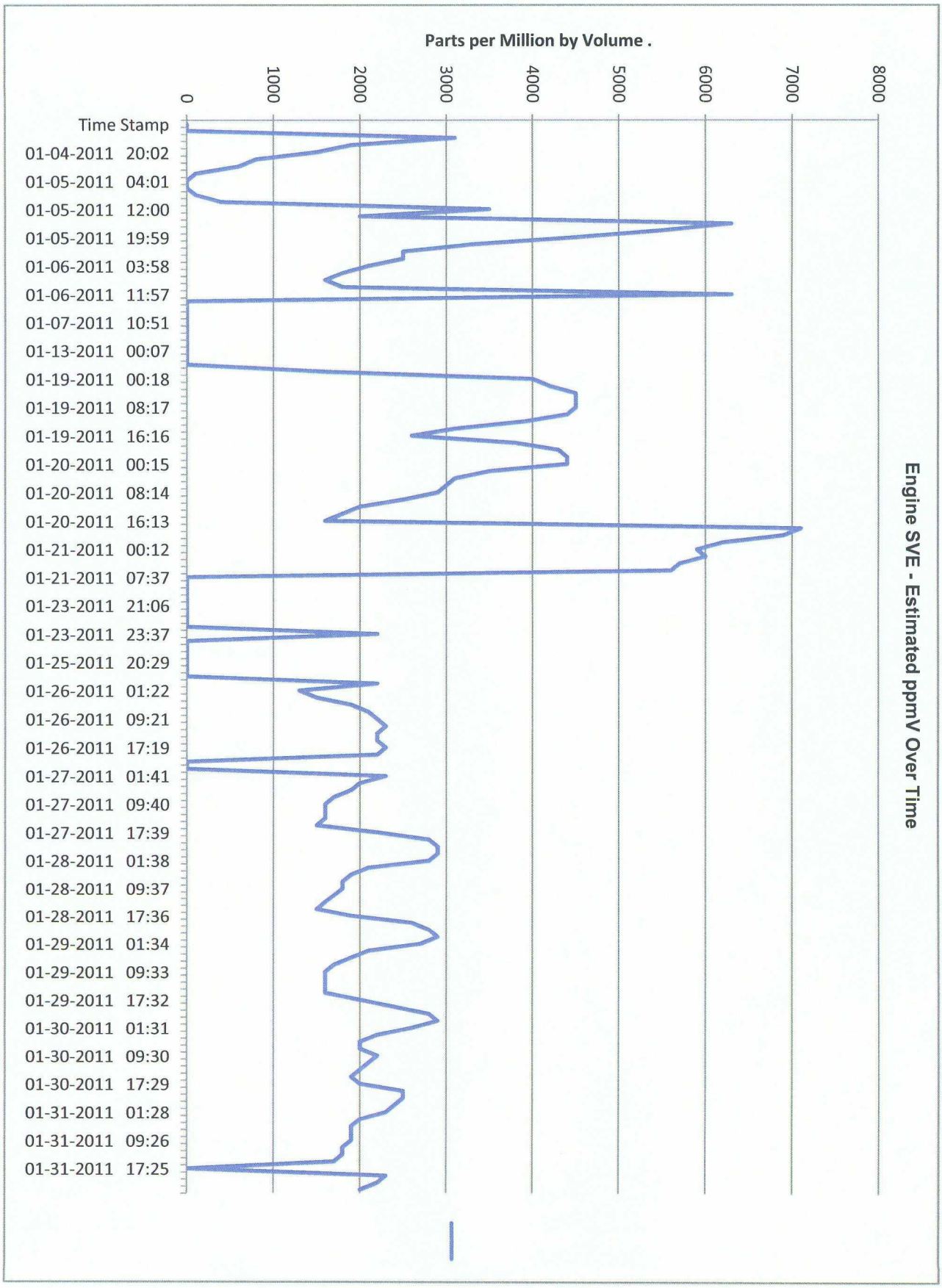
RSIs Innovative Approach to Estimating PPMV:
1. The controller completes the Btu/hr calculation as explained above
2. The controller looks at the well flow rate (estimated or measured in SCFM)
3. The controller then computes the average PPMV using the mass transfer equation to solve for PPMV
4. If the flow rate is estimated then PPMV is subject to accuracy of estimated flow and accuracy of the Btu/hr calculation
5. If the flow rate is measured then this PPMV estimate will be relative to actual lab data assuming the flow measurement and the Btu calculations are correct

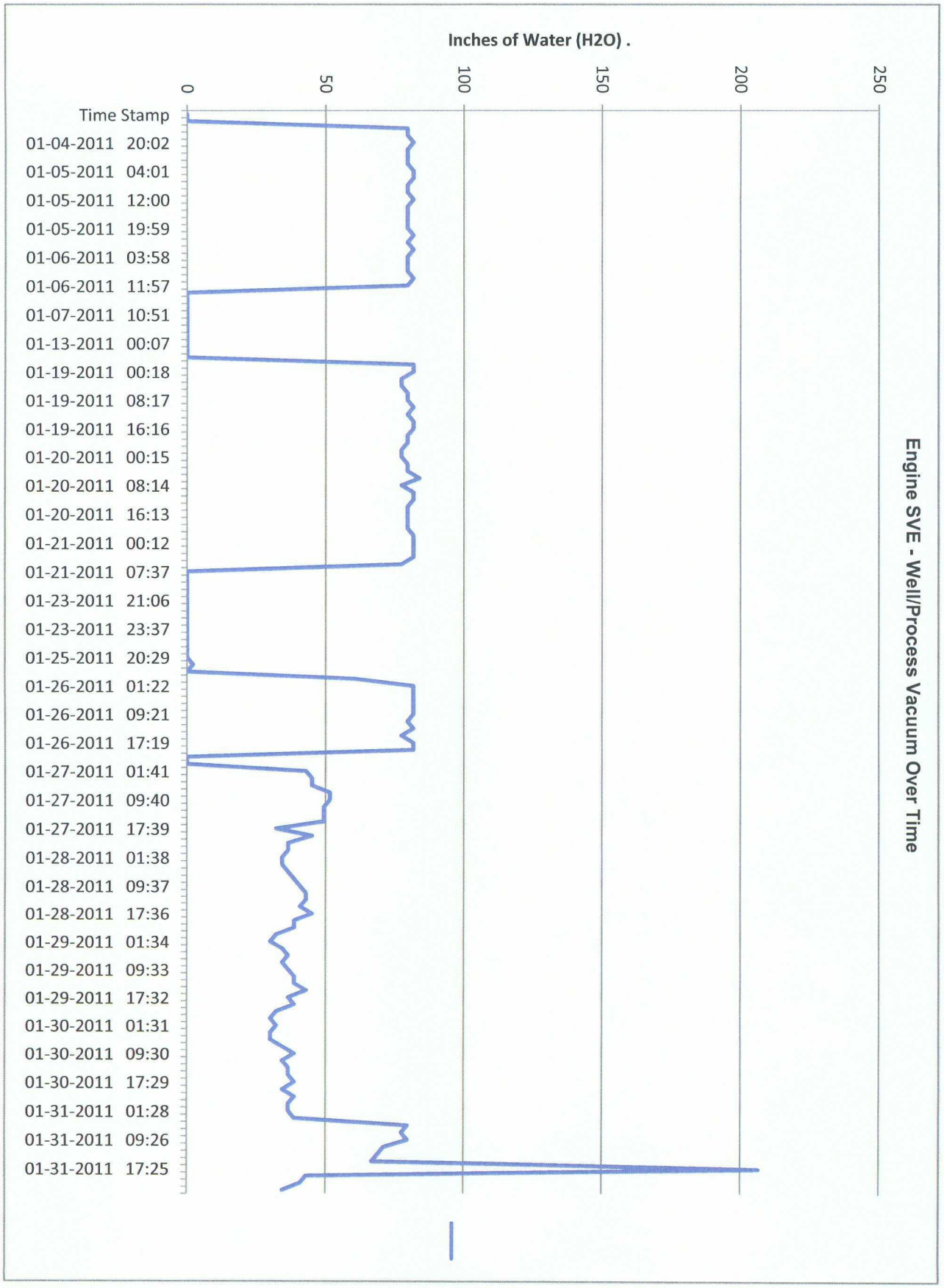
There are many advantages to using RSIs innovative approach in calculating how much mass was removed from a project in a given time period. Our method eliminates human calculation error and prevents incorrect or non-calibrated use of field instrumentation and it is a consistent periodic measurement over time which when used properly will reduces costly laboratory analysis.

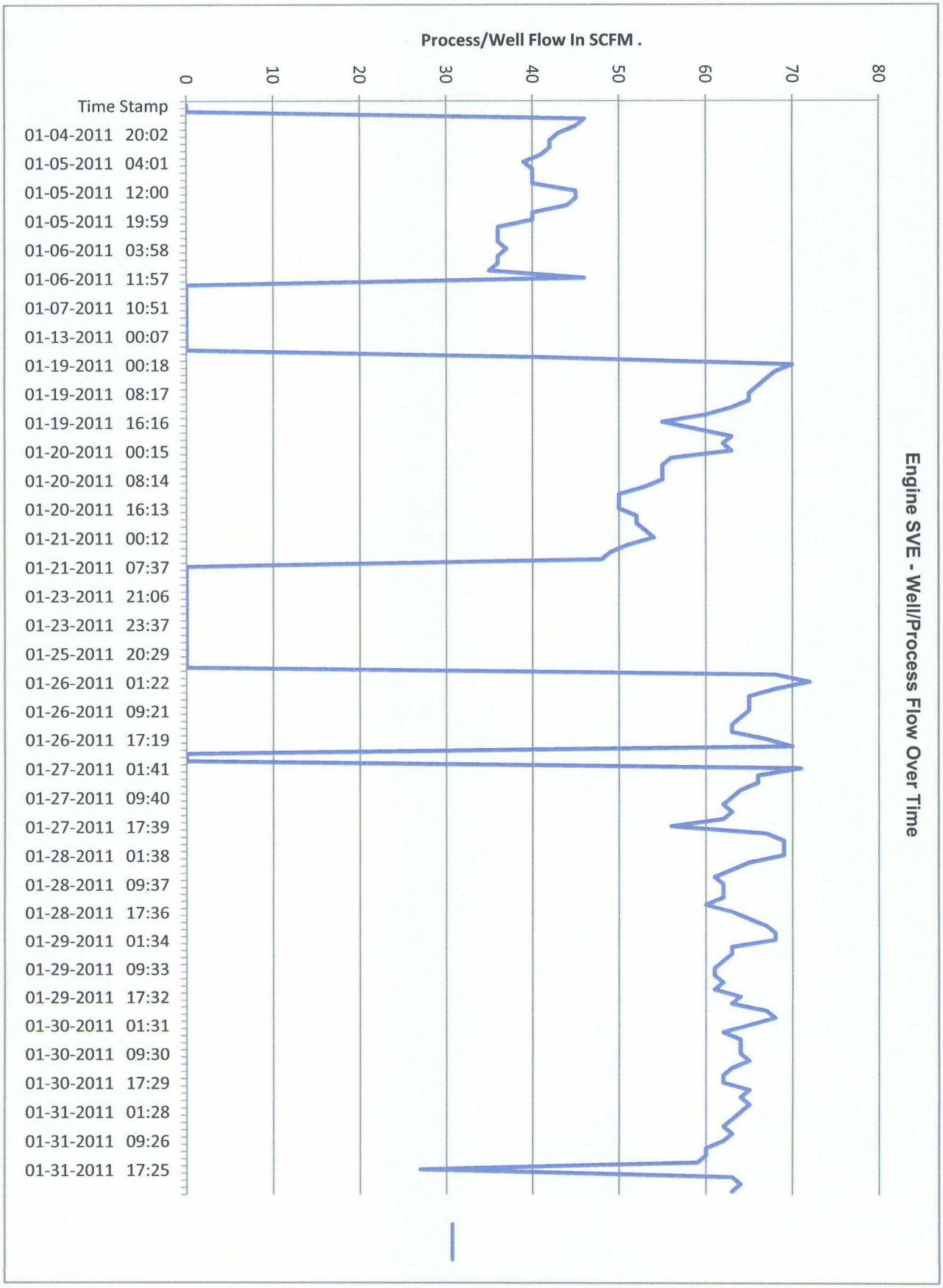
Our estimates of VOC removal have proven to be reasonable when compared to independent lab data. Because the process flow rate and the alternate fuel flow rate measurements are dependent upon proper system operation there are no expressed or implied warrantees of fitness of use for any purpose when using this report or the data contained herein.

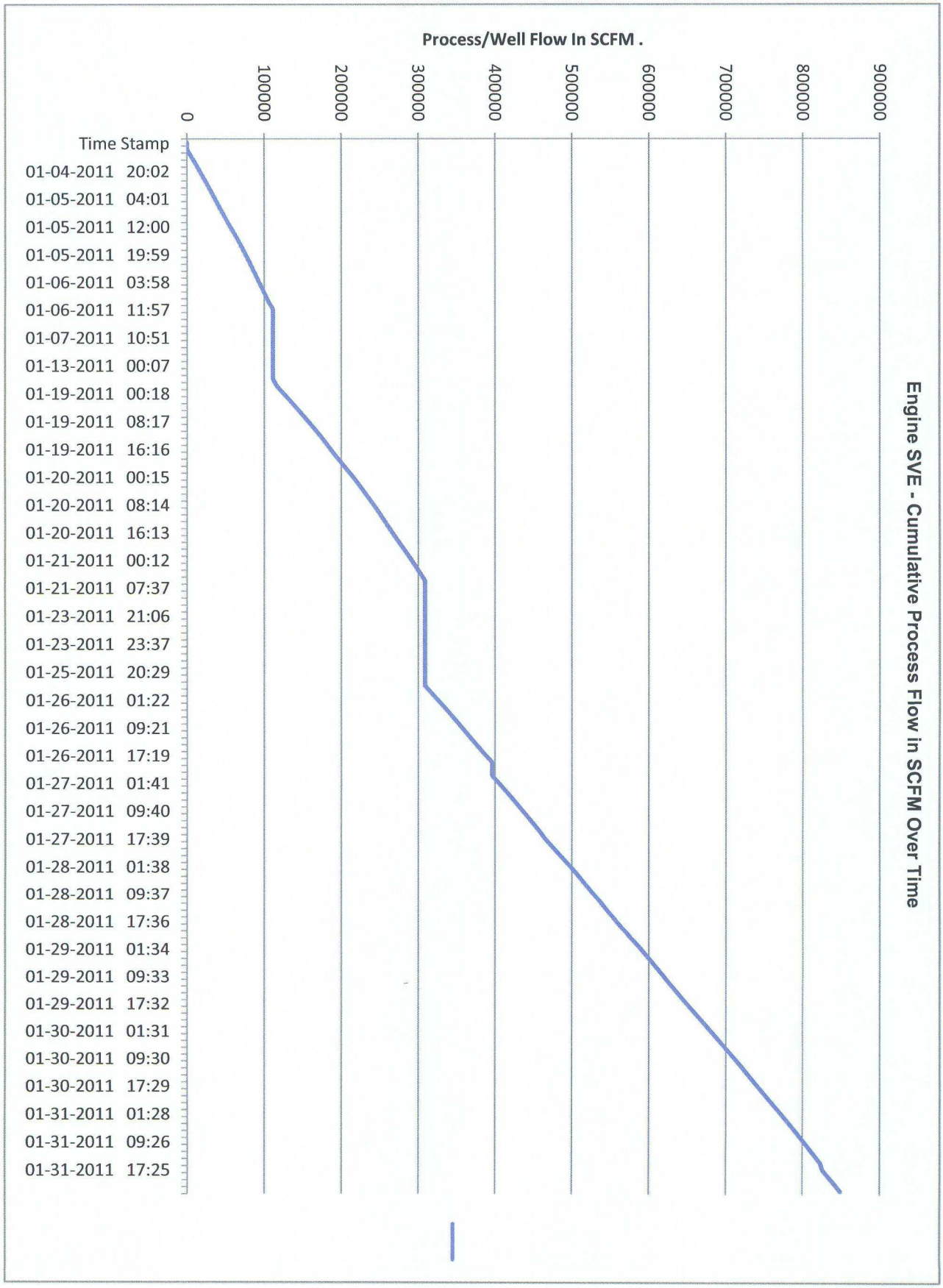
Please do not hesitate to contact RSI 1-800-368-8685 if you should have any questions or require further information

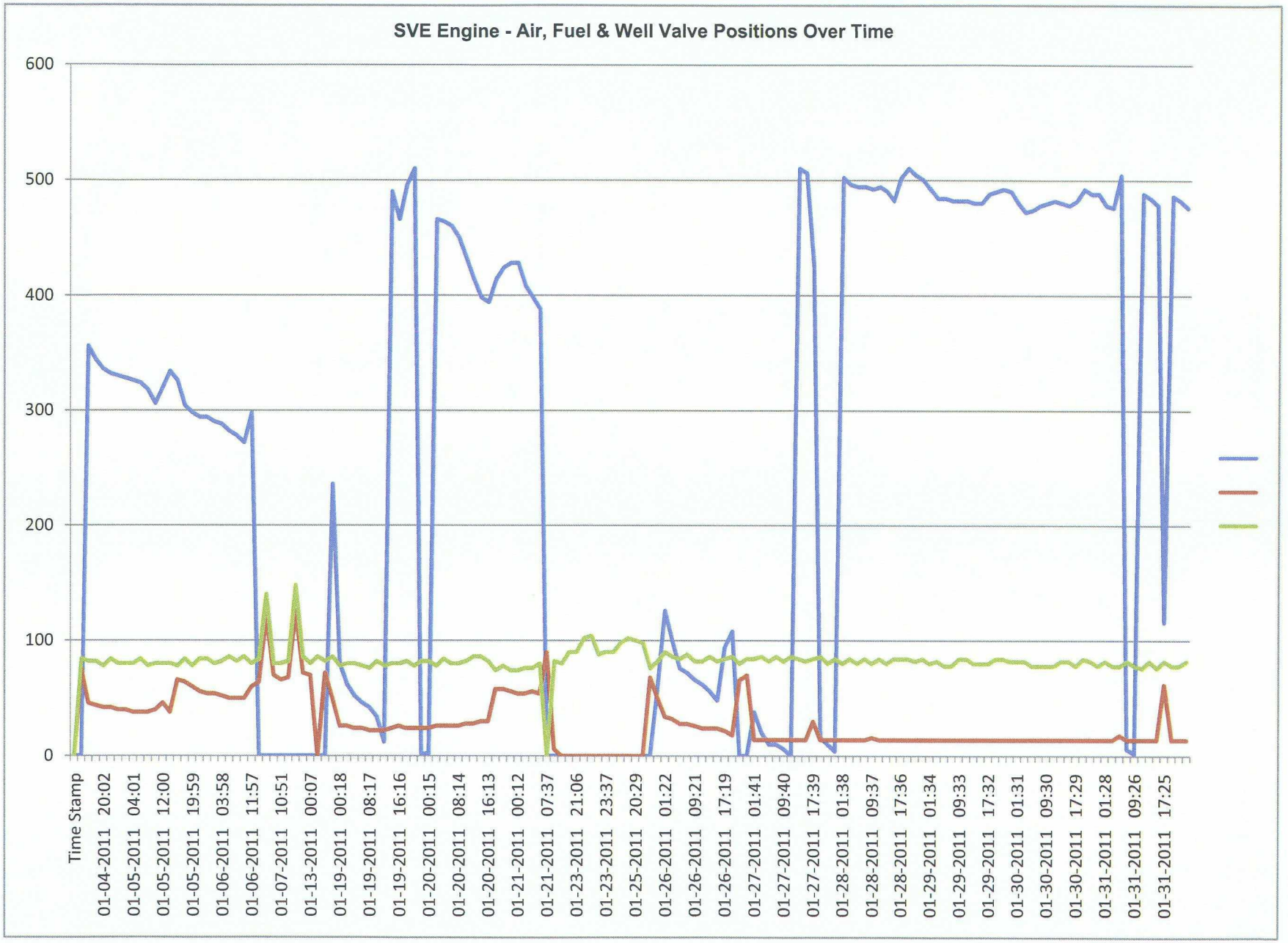

Lbs. (as Gasoline) .
0
100
200
300
400
500
600
700
800
Time Stamp
01-04-2011 20:02
01-05-2011 04:01
01-05-2011 12:00
01-05-2011 19:59
01-06-2011 03:58
01-06-2011 11:57
01-07-2011 10:51
01-13-2011 00:07
01-19-2011 00:18
01-19-2011 08:17
01-19-2011 16:16
01-20-2011 00:15
01-20-2011 08:14
01-20-2011 16:13
01-21-2011 00:12
01-21-2011 07:37
01-23-2011 21:06
01-23-2011 23:37
01-25-2011 20:29
01-26-2011 01:22
01-26-2011 09:21
01-26-2011 17:19
01-27-2011 01:41
01-27-2011 09:40
01-27-2011 17:39
01-28-2011 01:38
01-28-2011 09:37
01-28-2011 17:36
01-29-2011 01:34
01-29-2011 09:33
01-29-2011 17:32
01-30-2011 01:31
01-30-2011 09:30
01-30-2011 17:29
01-31-2011 01:28
01-31-2011 09:26
01-31-2011 17:25
Engine SVE - Lbs. Removed Over Time-BTu/Hr Approach

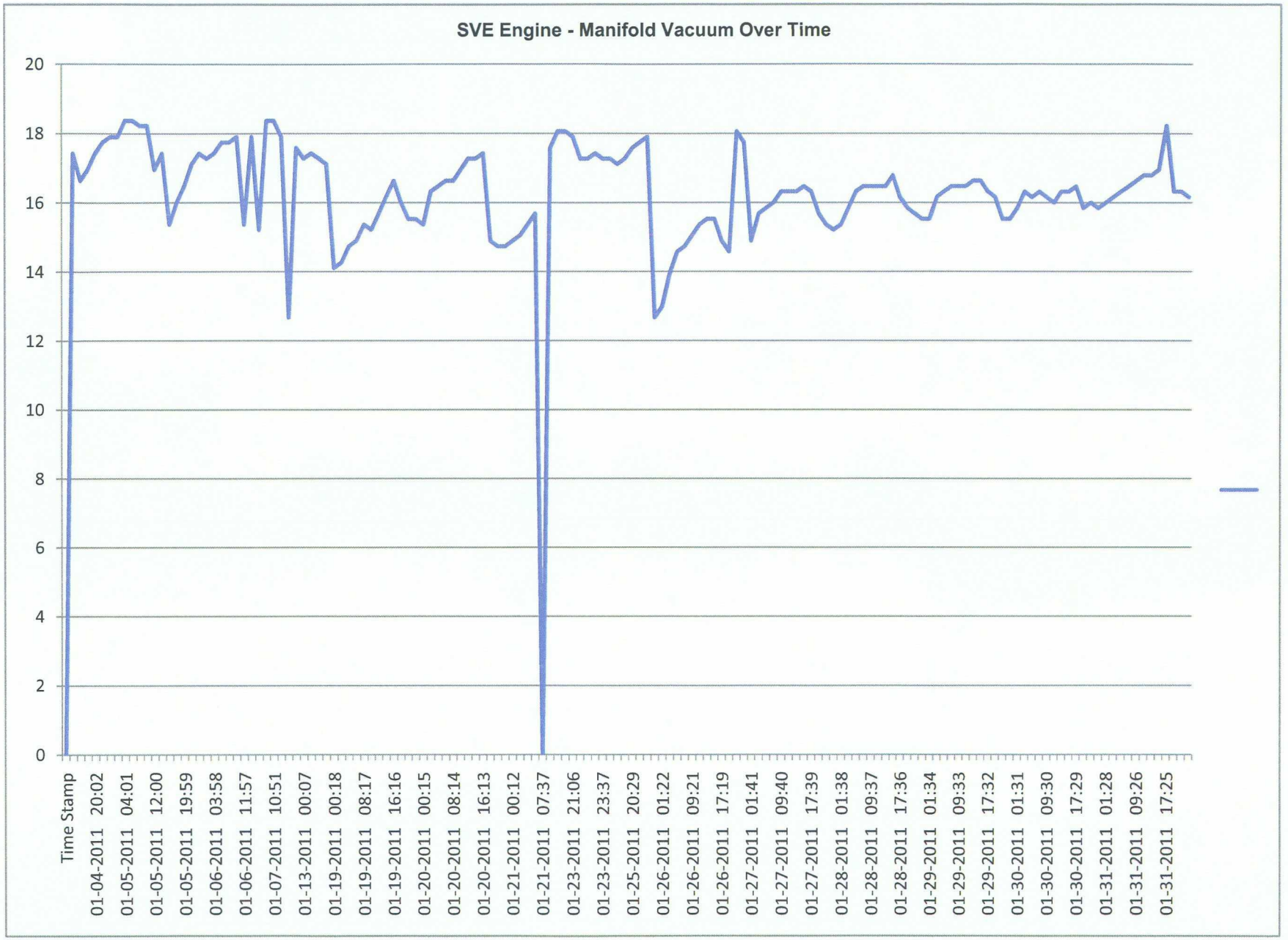

Parts per Million by Volume .
0
1000
2000
3000
4000
5000
6000
7000
8000
Time Stamp
01-04-2011 20:02
01-05-2011 04:01
01-05-2011 12:00
01-05-2011 19:59
01-06-2011 03:58
01-06-2011 11:57
01-07-2011 10:51
01-13-2011 00:07
01-19-2011 00:18
01-19-2011 08:17
01-19-2011 16:16
01-20-2011 00:15
01-20-2011 08:14
01-20-2011 16:13
01-21-2011 00:12
01-21-2011 07:37
01-23-2011 21:06
01-23-2011 23:37
01-25-2011 20:29
01-26-2011 01:22
01-26-2011 09:21
01-26-2011 17:19
01-27-2011 01:41
01-27-2011 09:40
01-27-2011 17:39
01-28-2011 01:38
01-28-2011 09:37
01-28-2011 17:36
01-29-2011 01:34
01-29-2011 09:33
01-29-2011 17:32
01-30-2011 01:31
01-30-2011 09:30
01-30-2011 17:29
01-31-2011 01:28
01-31-2011 09:26
01-31-2011 17:25
Engine SVE - Estimated ppmV Over Time


Engine SVE - Well/Process Vacuum Over Time
Inches of Water (H2O) .
0
50
100
150
200
250
Time Stamp
01-04-2011 20:02
01-05-2011 04:01
01-05-2011 12:00
01-05-2011 19:59
01-06-2011 03:58
01-06-2011 11:57
01-07-2011 10:51
01-13-2011 00:07
01-19-2011 00:18
01-19-2011 08:17
01-19-2011 16:16
01-20-2011 00:15
01-20-2011 08:14
01-20-2011 16:13
01-21-2011 00:12
01-21-2011 07:37
01-23-2011 21:06
01-23-2011 23:37
01-25-2011 20:29
01-26-2011 01:22
01-26-2011 09:21
01-26-2011 17:19
01-27-2011 01:41
01-27-2011 09:40
01-27-2011 17:39
01-28-2011 01:38
01-28-2011 09:37
01-28-2011 17:36
01-29-2011 01:34
01-29-2011 09:33
01-29-2011 17:32
01-30-2011 01:31
01-30-2011 09:30
01-30-2011 17:29
01-31-2011 01:28
01-31-2011 09:26
01-31-2011 17:25

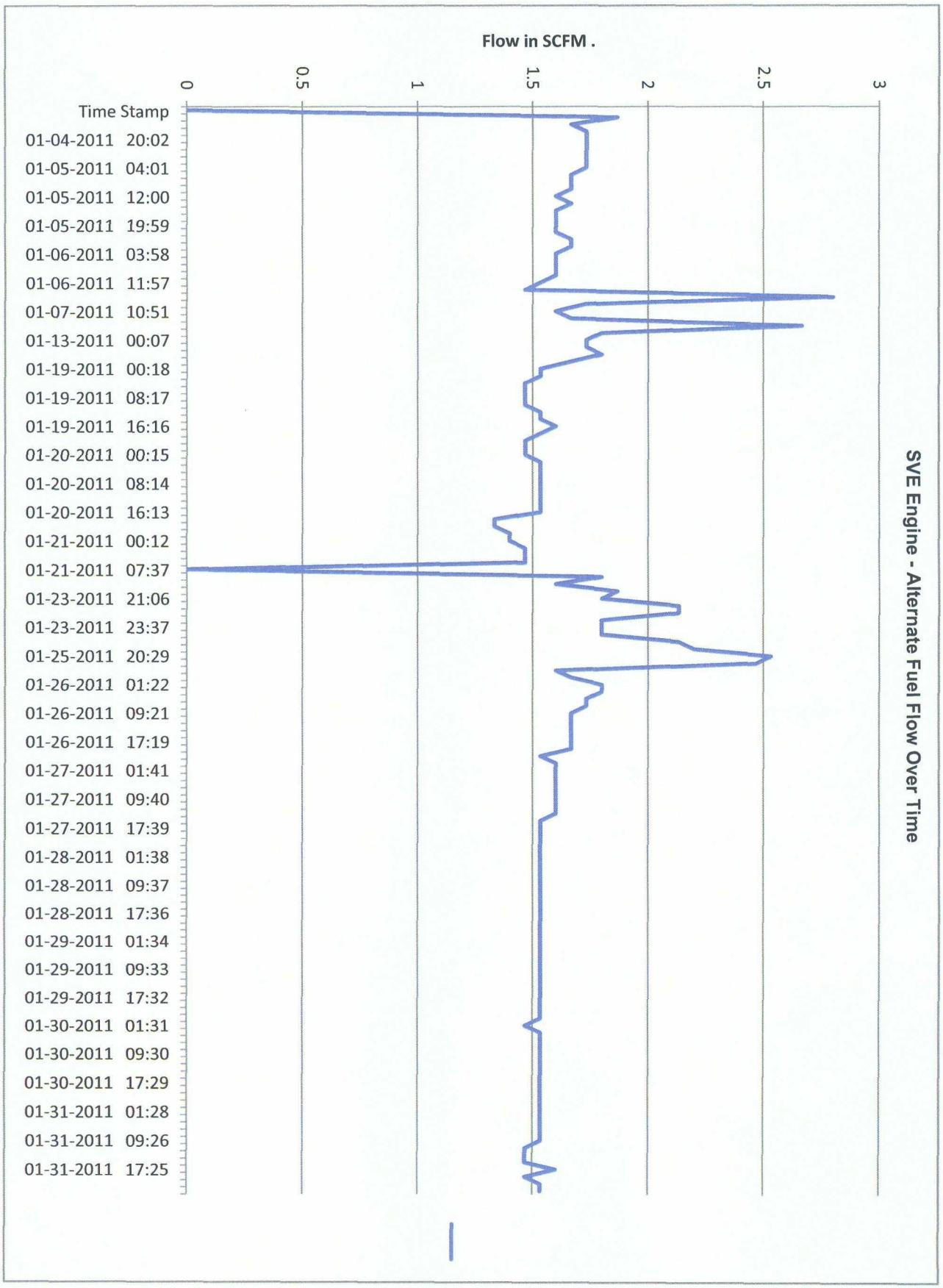

Process/Well Flow In SCFM .
0
10
20
30
40
50
60
70
80
Time Stamp
01-04-2011 20:02
01-05-2011 04:01
01-05-2011 12:00
01-05-2011 19:59
01-06-2011 03:58
01-06-2011 11:57
01-07-2011 10:51
01-13-2011 00:07
01-19-2011 00:18
01-19-2011 08:17
01-19-2011 16:16
01-20-2011 00:15
01-20-2011 08:14
01-20-2011 16:13
01-21-2011 00:12
01-21-2011 07:37
01-23-2011 21:06
01-23-2011 23:37
01-25-2011 20:29
01-26-2011 01:22
01-26-2011 09:21
01-26-2011 17:19
01-27-2011 01:41
01-27-2011 09:40
01-27-2011 17:39
01-28-2011 01:38
01-28-2011 09:37
01-28-2011 17:36
01-29-2011 01:34
01-29-2011 09:33
01-29-2011 17:32
01-30-2011 01:31
01-30-2011 09:30
01-30-2011 17:29
01-31-2011 01:28
01-31-2011 09:26
01-31-2011 17:25
Engine SVE - Well/Process Flow Over Time

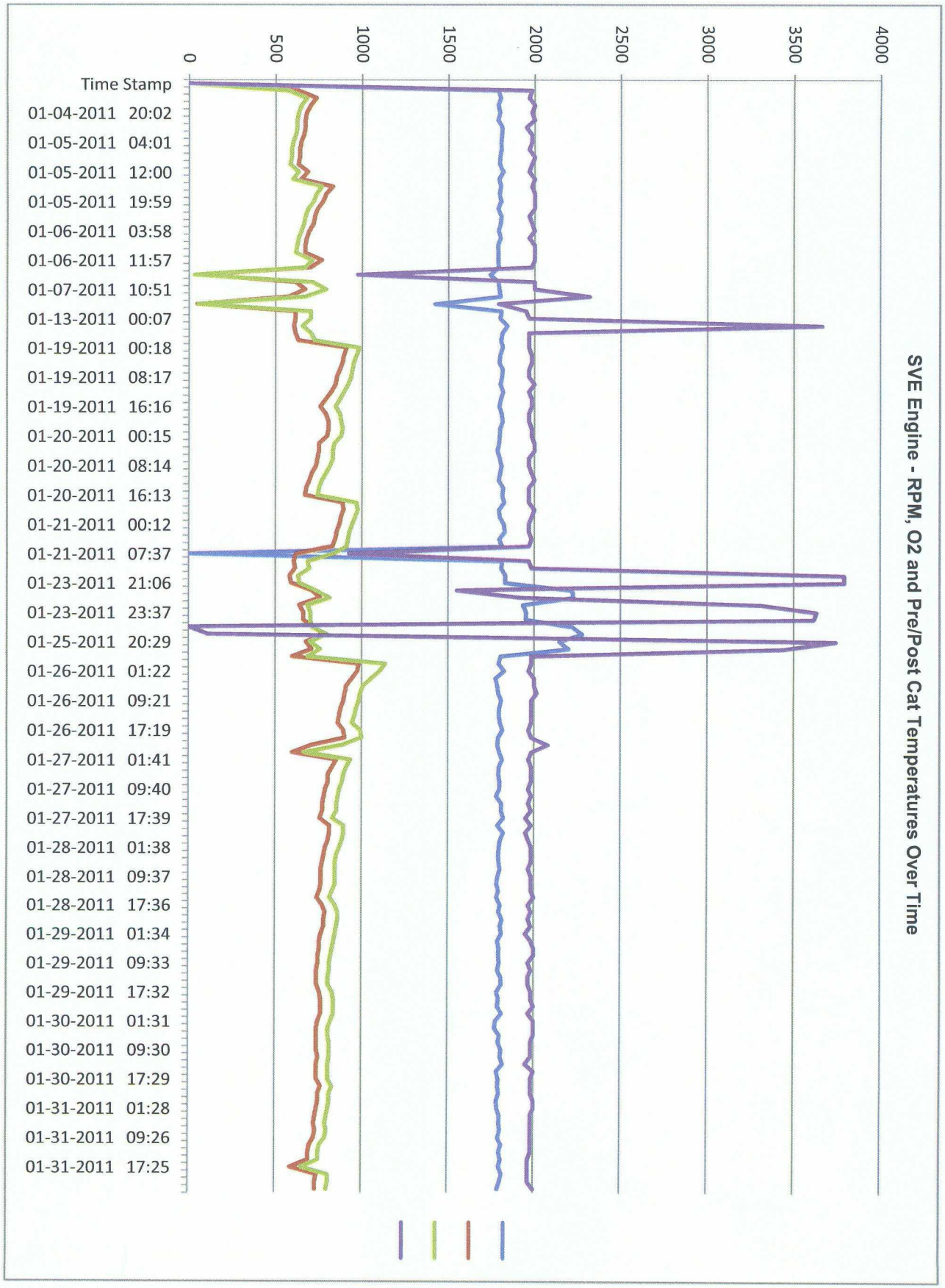

Engine SVE - Cumulative Process Flow in SCFM Over Time
Process/Well Flow In SCFM .
0
100000
200000
300000
400000
500000
600000
700000
800000
900000
Time Stamp
01-04-2011 20:02
01-05-2011 04:01
01-05-2011 12:00
01-05-2011 19:59
01-06-2011 03:58
01-06-2011 11:57
01-07-2011 10:51
01-13-2011 00:07
01-19-2011 00:18
01-19-2011 08:17
01-19-2011 16:16
01-20-2011 00:15
01-20-2011 08:14
01-20-2011 16:13
01-21-2011 00:12
01-21-2011 07:37
01-23-2011 21:06
01-23-2011 23:37
01-25-2011 20:29
01-26-2011 01:22
01-26-2011 09:21
01-26-2011 17:19
01-27-2011 01:41
01-27-2011 09:40
01-27-2011 17:39
01-28-2011 01:38
01-28-2011 09:37
01-28-2011 17:36
01-29-2011 01:34
01-29-2011 09:33
01-29-2011 17:32
01-30-2011 01:31
01-30-2011 09:30
01-30-2011 17:29
01-31-2011 01:28
01-31-2011 09:26
01-31-2011 17:25


SVE Engine - Air, Fuel & Well Valve Positions Over Time
600
500
400
300
200
100
0
Time Stamp
01-04-2011 20:02
01-05-2011 04:01
01-05-2011 12:00
01-05-2011 19:59
01-06-2011 03:58
01-06-2011 11:57
01-07-2011 10:51
01-13-2011 00:07
01-19-2011 00:18
01-19-2011 08:17
01-19-2011 16:16
01-20-2011 00:15
01-20-2011 08:14
01-20-2011 16:13
01-21-2011 00:12
01-21-2011 07:37
01-23-2011 21:06
01-23-2011 23:37
01-25-2011 20:29
01-26-2011 01:22
01-26-2011 09:21
01-26-2011 17:19
01-27-2011 01:41
01-27-2011 09:40
01-27-2011 17:39
01-28-2011 01:38
01-28-2011 09:37
01-28-2011 17:36
01-29-2011 01:34
01-29-2011 09:33
01-29-2011 17:32
01-30-2011 01:31
01-30-2011 09:30
01-30-2011 17:29
01-31-2011 01:28
01-31-2011 09:26
01-31-2011 17:25


SVE Engine - Manifold Vacuum Over Time
20
18
16
14
12
10
8
6
4
2
0
Time Stamp
01-04-2011 20:02
01-05-2011 04:01
01-05-2011 12:00
01-05-2011 19:59
01-06-2011 03:58
01-06-2011 11:57
01-07-2011 10:51
01-13-2011 00:07
01-19-2011 00:18
01-19-2011 08:17
01-19-2011 16:16
01-20-2011 00:15
01-20-2011 08:14
01-20-2011 16:13
01-21-2011 00:12
01-21-2011 07:37
01-23-2011 21:06
01-23-2011 23:37
01-25-2011 20:29
01-26-2011 01:22
01-26-2011 09:21
01-26-2011 17:19
01-27-2011 01:41
01-27-2011 09:40
01-27-2011 17:39
01-28-2011 01:38
01-28-2011 09:37
01-28-2011 17:36
01-29-2011 01:34
01-29-2011 09:33
01-29-2011 17:32
01-30-2011 01:31
01-30-2011 09:30
01-30-2011 17:29
01-31-2011 01:28
01-31-2011 09:26
01-31-2011 17:25


SVE Engine - Pre- & Post-Cat T, Manifold Vacuum Over Time
10000
1000
100
10
1
Time Stamp
01-04-2011 20:02
01-05-2011 04:01
01-05-2011 12:00
01-05-2011 19:59
01-05-2011 03:58
01-06-2011 11:57
01-06-2011 10:51
01-07-2011 00:07
01-13-2011 00:18
01-19-2011 08:17
01-19-2011 16:16
01-19-2011 00:15
01-20-2011 08:14
01-20-2011 16:13
01-20-2011 00:12
01-21-2011 07:37
01-21-2011 21:06
01-23-2011 23:37
01-23-2011 20:29
01-25-2011 01:22
01-26-2011 09:21
01-26-2011 17:19
01-26-2011 01:41
01-27-2011 09:40
01-27-2011 17:39
01-27-2011 01:38
01-28-2011 09:37
01-28-2011 17:36
01-28-2011 01:34
01-29-2011 09:33
01-29-2011 17:32
01-29-2011 01:31
01-30-2011 09:30
01-30-2011 17:29
01-30-2011 01:28
01-31-2011 09:26
01-31-2011 17:25


SVE Engine - Alternate Fuel Flow Over Time
Flow in SCFM .
0
0.5
1
1.5
2
2.5
3
Time Stamp
01-04-2011 20:02
01-05-2011 04:01
01-05-2011 12:00
01-05-2011 19:59
01-06-2011 03:58
01-06-2011 11:57
01-07-2011 10:51
01-13-2011 00:07
01-19-2011 00:18
01-19-2011 08:17
01-19-2011 16:16
01-20-2011 00:15
01-20-2011 08:14
01-20-2011 16:13
01-21-2011 00:12
01-21-2011 07:37
01-23-2011 21:06
01-23-2011 23:37
01-25-2011 20:29
01-26-2011 01:22
01-26-2011 09:21
01-26-2011 17:19
01-27-2011 01:41
01-27-2011 09:40
01-27-2011 17:39
01-28-2011 01:38
01-28-2011 09:37
01-28-2011 17:36
01-29-2011 01:34
01-29-2011 09:33
01-29-2011 17:32
01-30-2011 01:31
01-30-2011 09:30
01-30-2011 17:29
01-31-2011 01:28
01-31-2011 09:26
01-31-2011 17:25


SVE Engine - RPM, O2 and Pre/Post Cat Temperatures Over Time
0
500
1000
1500
2000
2500
3000
3500
4000
Time Stamp
01-04-2011 20:02
01-05-2011 04:01
01-05-2011 12:00
01-05-2011 19:59
01-06-2011 03:58
01-06-2011 11:57
01-07-2011 10:51
01-13-2011 00:07
01-19-2011 00:18
01-19-2011 08:17
01-19-2011 16:16
01-20-2011 00:15
01-20-2011 08:14
01-20-2011 16:13
01-21-2011 00:12
01-21-2011 07:37
01-23-2011 21:06
01-23-2011 23:37
01-25-2011 20:29
01-26-2011 01:22
01-26-2011 09:21
01-26-2011 17:19
01-27-2011 01:41
01-27-2011 09:40
01-27-2011 17:39
01-28-2011 01:38
01-28-2011 09:37
01-28-2011 17:36
01-29-2011 01:34
01-29-2011 09:33
01-29-2011 17:32
01-30-2011 01:31
01-30-2011 09:30
01-30-2011 17:29
01-31-2011 01:28
01-31-2011 09:26
01-31-2011 17:25

Remediation Service Int'l
4835 Colt Unit D
Ventura CA 93003
805.644.8382
805.644.8378 FAX
www.rsi-save.com

27018.69

Report Generator Version 1.4

Date of Report:	4/13/2011
Project Name:	Thriftway Refinery
	20000 Btu/lb
Unit ID:	0
Controller S/N:	182
Software version:	844
Date Range From:	2/1/2011 1:24
Date Range To :	2/28/2011 22:16
Lbs. Removed/Period:	932.95
Gal Removed/Period:	150.43
SCF Processed/Period	1224238

Assumptions:

6.2	lb/gallon of gasoline
120	Mole Weight of Extracted VOC
2520	Btu/Cubic Foot of Propane
1000	Btu/Cubic Foot of Natural Gas

Parts/Million by Volume (PPMV) Conversion to Micrograms/Liter (ug/L)
(PPMV/24.055)*AVG. Mole Weight=ug/L

Mass Transfer Equation to Convert to Pounds/Hour:
(ug/L)*(Flow SCFM)*28.3 L/SCF*60 Minutes/Hour*2.2 lbs/Kg*(1/10^9)

There are no express or implied warranties for fitness of use or any other purpose of the data contained herein.
See report footnotes for disclaimer details and other technical information relating to calculation procedures.
Footnotes:

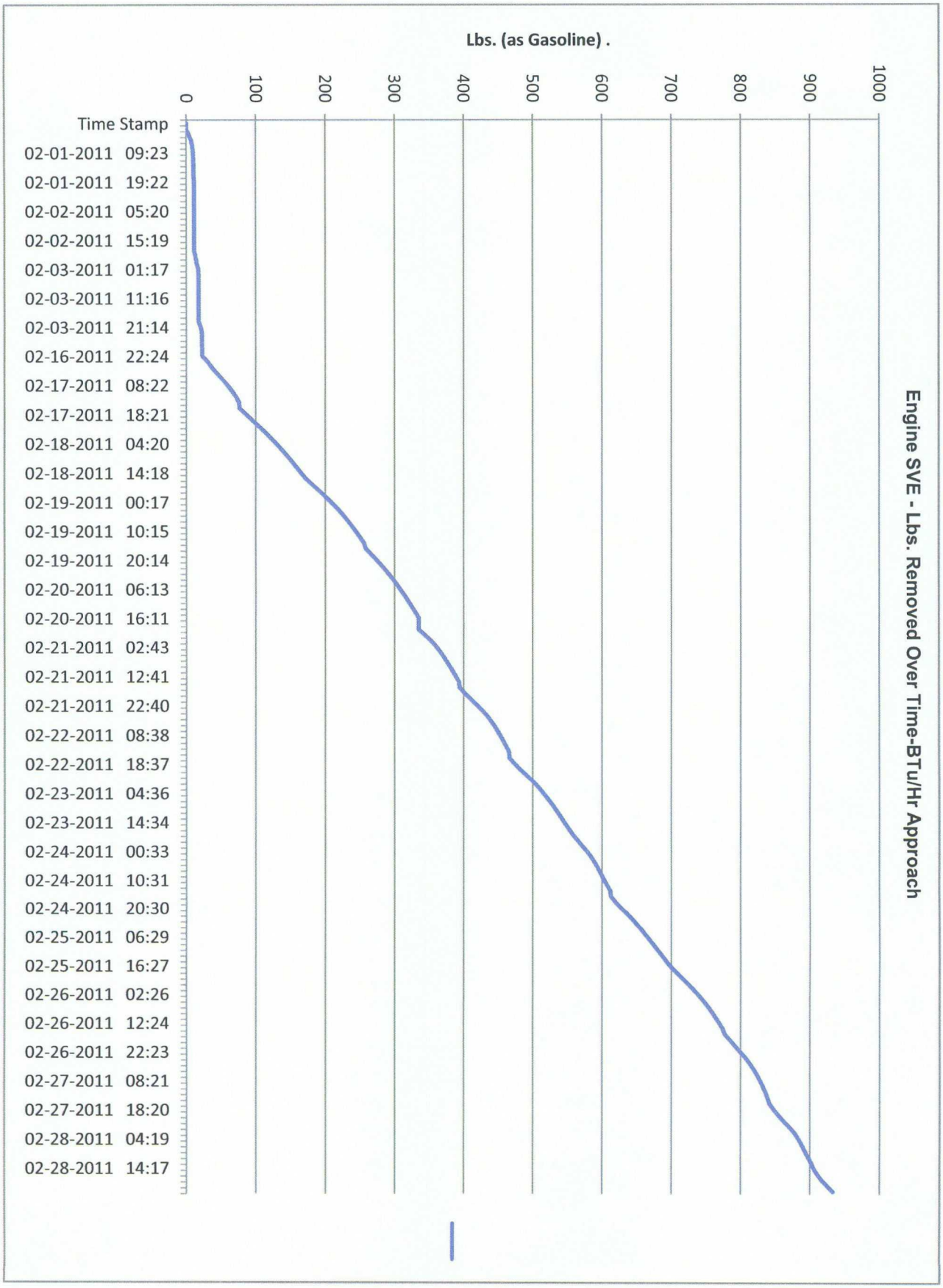
RSIs Innovative Approach to Estimating Btu/Hr:
1. Measure alternate fuel usage of engine prior to introduction of process flow
2. Multiply the SCFM flow rate of the alternate fuel (propane or natural gas) by the Btu value to determine energy demand on the engine at static conditions
3. The controller records a "snapshot" of the energy demand at a given RPM and engine manifold vacuum just prior to allowing the process flow to begin
4. The controller adjusts the initial baseline based on engine load or oxygen deficiency as necessary
5. Any drop in energy demand is assumed to be caused by the introduction of the process flow and is displayed as Estimated Btu/hr and recorded accordingly

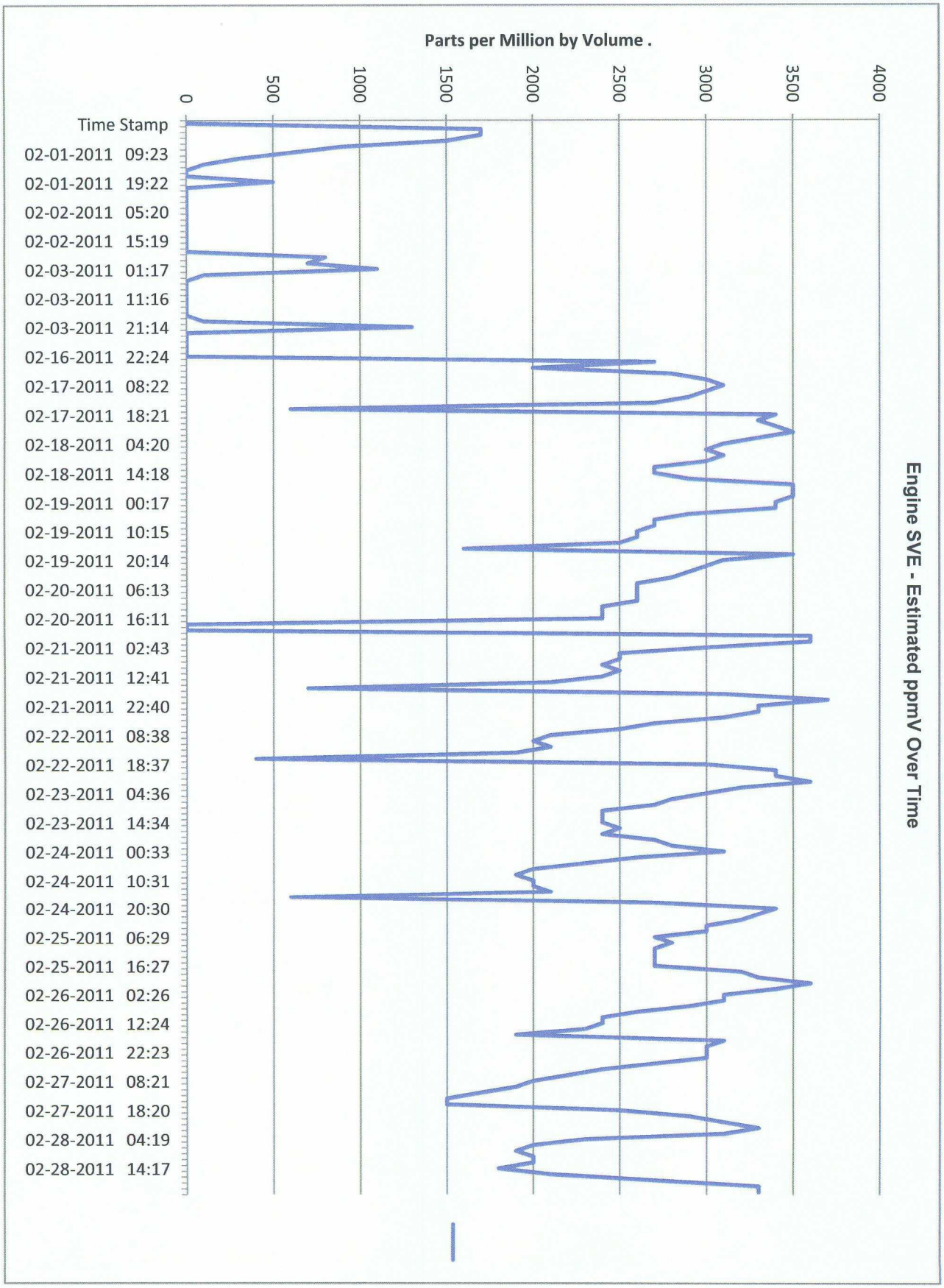
RSIs Innovative Approach to Estimating PPMV:
1. The controller completes the Btu/hr calculation as explained above
2. The controller looks at the well flow rate (estimated or measured in SCFM)
3. The controller then computes the average PPMV using the mass transfer equation to solve for PPMV
4. If the flow rate is estimated then PPMV is subject to accuracy of estimated flow and accuracy of the Btu/hr calculation
5. If the flow rate is measured then this PPMV estimate will be relative to actual lab data assuming the flow measurement and the Btu calculations are correct

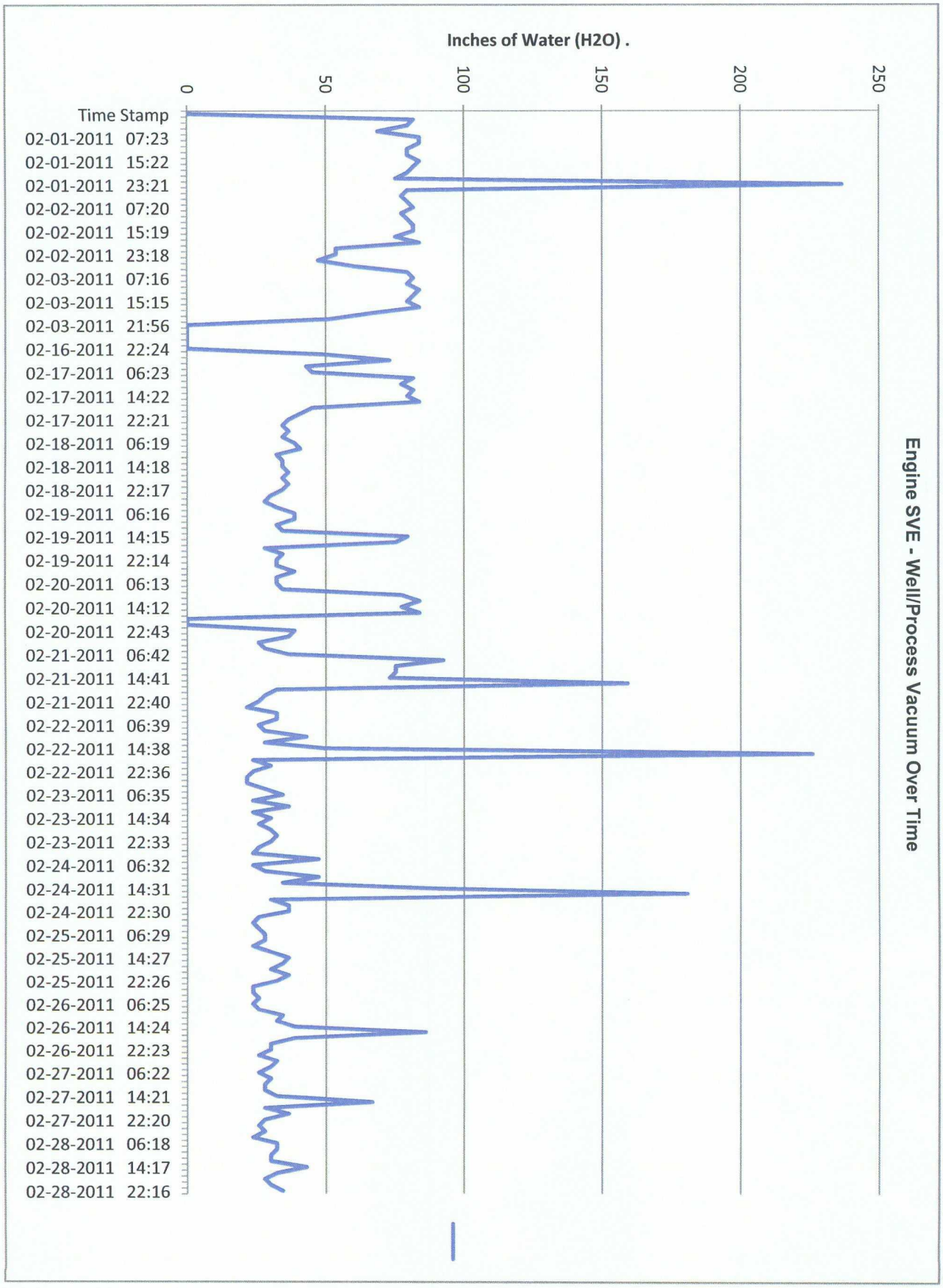
There are many advantages to using RSIs innovative approach in calculating how much mass was removed from a project in a given time period. Our method eliminates human calculation error and prevents incorrect or non-calibrated use of field instrumentation and it is a consistent periodic measurement over time which when used properly will reduces costly laboratory analysis.

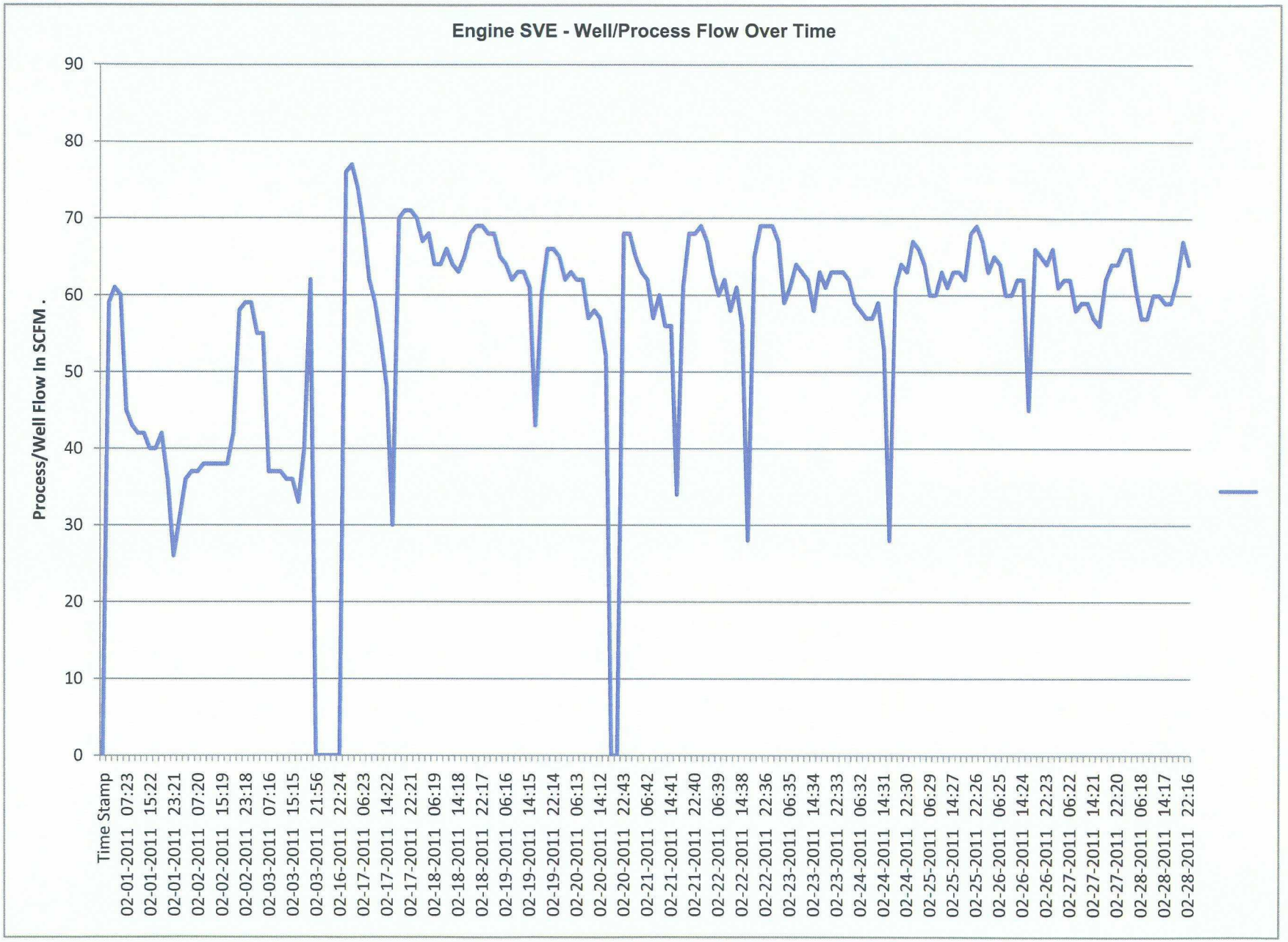
Our estimates of VOC removal have proven to be reasonable when compared to independent lab data. Because the process flow rate and the alternate fuel flow rate measurements are dependent upon proper system operation there are no expressed or implied warrantees of fitness of use for any purpose when using this report or the data contained herein.

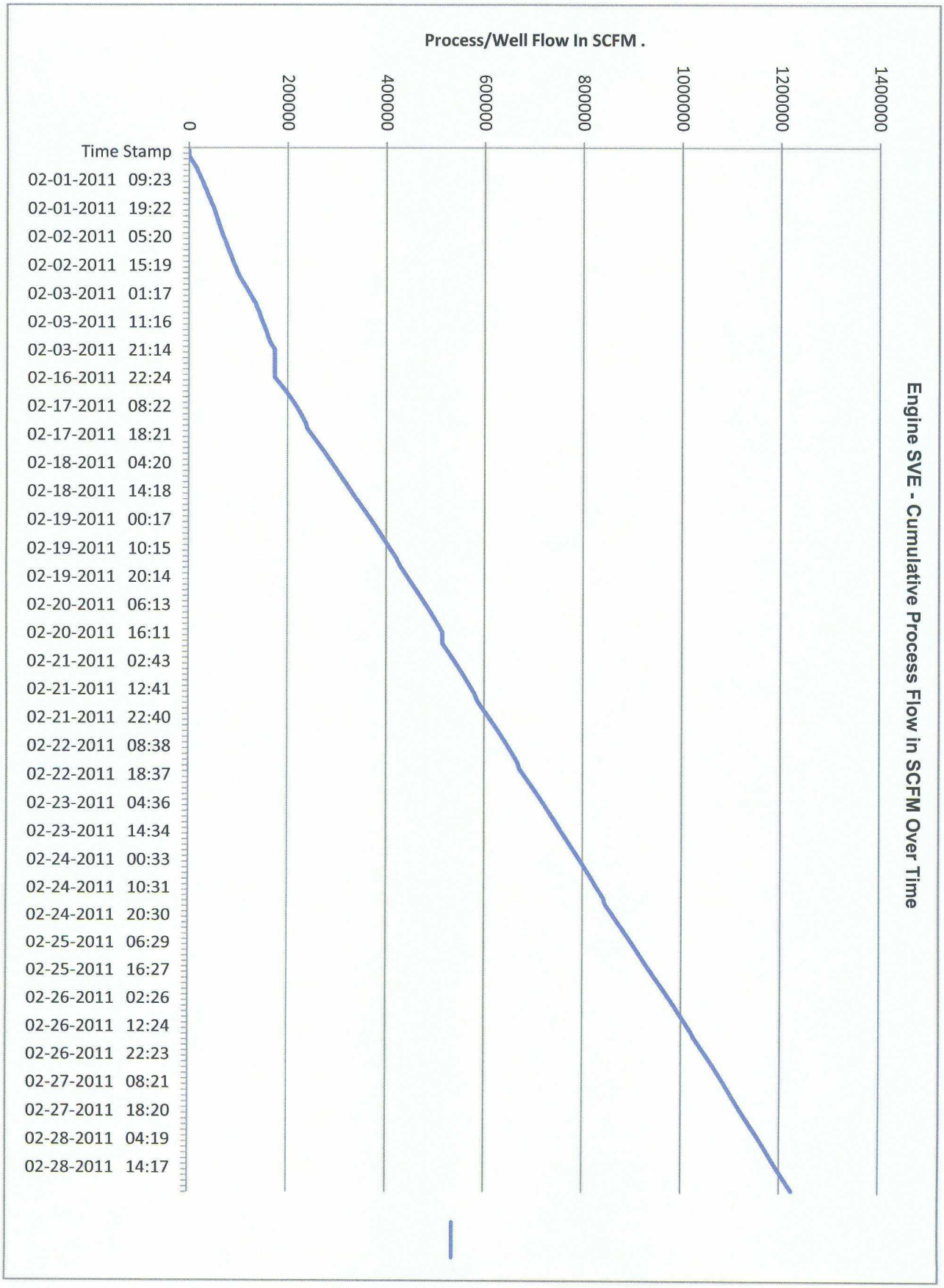
Please do not hesitate to contact RSI 1-800-368-8685 if you should have any questions or require further information


Lbs. (as Gasoline) .
0
100
200
300
400
500
600
700
800
900
1000
Time Stamp
02-01-2011 09:23
02-01-2011 19:22
02-02-2011 05:20
02-02-2011 15:19
02-03-2011 01:17
02-03-2011 11:16
02-03-2011 21:14
02-16-2011 22:24
02-17-2011 08:22
02-17-2011 18:21
02-18-2011 04:20
02-18-2011 14:18
02-19-2011 00:17
02-19-2011 10:15
02-19-2011 20:14
02-20-2011 06:13
02-20-2011 16:11
02-21-2011 02:43
02-21-2011 12:41
02-21-2011 22:40
02-22-2011 08:38
02-22-2011 18:37
02-23-2011 04:36
02-23-2011 14:34
02-24-2011 00:33
02-24-2011 10:31
02-24-2011 20:30
02-25-2011 06:29
02-25-2011 16:27
02-26-2011 02:26
02-26-2011 12:24
02-26-2011 22:23
02-27-2011 08:21
02-27-2011 18:20
02-28-2011 04:19
02-28-2011 14:17
Engine SVE - Lbs. Removed Over Time-BTu/Hr Approach

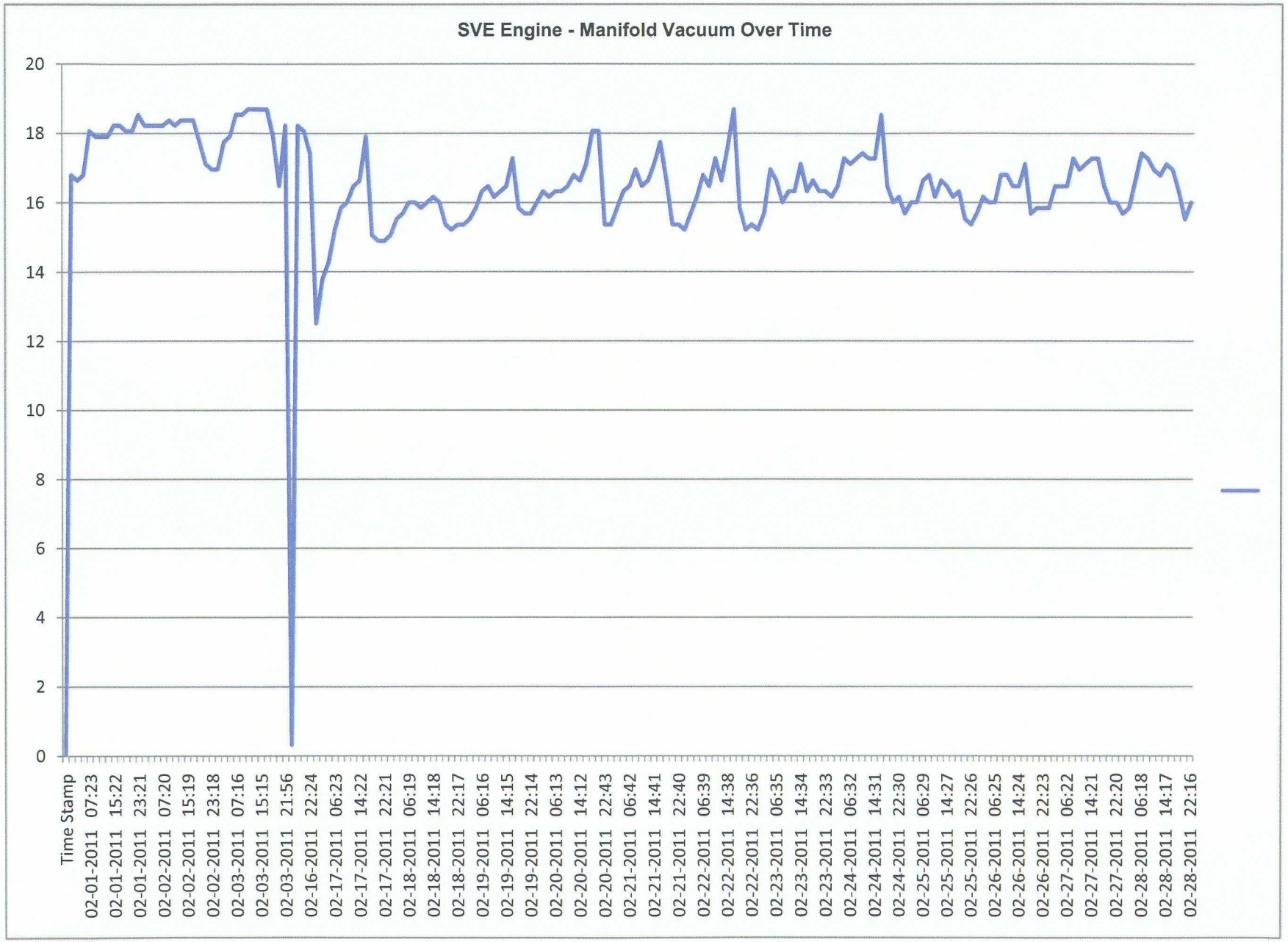

Parts per Million by Volume .
0
500
1000
1500
2000
2500
3000
3500
4000
Time Stamp
02-01-2011 09:23
02-01-2011 19:22
02-02-2011 05:20
02-02-2011 15:19
02-03-2011 01:17
02-03-2011 11:16
02-03-2011 21:14
02-16-2011 22:24
02-17-2011 08:22
02-17-2011 18:21
02-18-2011 04:20
02-18-2011 14:18
02-19-2011 00:17
02-19-2011 10:15
02-19-2011 20:14
02-20-2011 06:13
02-20-2011 16:11
02-21-2011 02:43
02-21-2011 12:41
02-21-2011 22:40
02-22-2011 08:38
02-22-2011 18:37
02-23-2011 04:36
02-23-2011 14:34
02-24-2011 00:33
02-24-2011 10:31
02-24-2011 20:30
02-25-2011 06:29
02-25-2011 16:27
02-26-2011 02:26
02-26-2011 12:24
02-26-2011 22:23
02-27-2011 08:21
02-27-2011 18:20
02-28-2011 04:19
02-28-2011 14:17
Engine SVE - Estimated ppmV Over Time


Engine SVE - Well/Process Vacuum Over Time
Inches of Water (H2O) .
0
50
100
150
200
250
Time Stamp
02-01-2011 07:23
02-01-2011 15:22
02-01-2011 23:21
02-02-2011 07:20
02-02-2011 15:19
02-02-2011 23:18
02-03-2011 07:16
02-03-2011 15:15
02-03-2011 21:56
02-16-2011 22:24
02-17-2011 06:23
02-17-2011 14:22
02-17-2011 22:21
02-18-2011 06:19
02-18-2011 14:18
02-18-2011 22:17
02-19-2011 06:16
02-19-2011 14:15
02-19-2011 22:14
02-20-2011 06:13
02-20-2011 14:12
02-20-2011 22:43
02-21-2011 06:42
02-21-2011 14:41
02-21-2011 22:40
02-22-2011 06:39
02-22-2011 14:38
02-22-2011 22:36
02-23-2011 06:35
02-23-2011 14:34
02-23-2011 22:33
02-24-2011 06:32
02-24-2011 14:31
02-24-2011 22:30
02-25-2011 06:29
02-25-2011 14:27
02-25-2011 22:26
02-26-2011 06:25
02-26-2011 14:24
02-26-2011 22:23
02-27-2011 06:22
02-27-2011 14:21
02-27-2011 22:20
02-28-2011 06:18
02-28-2011 14:17
02-28-2011 22:16

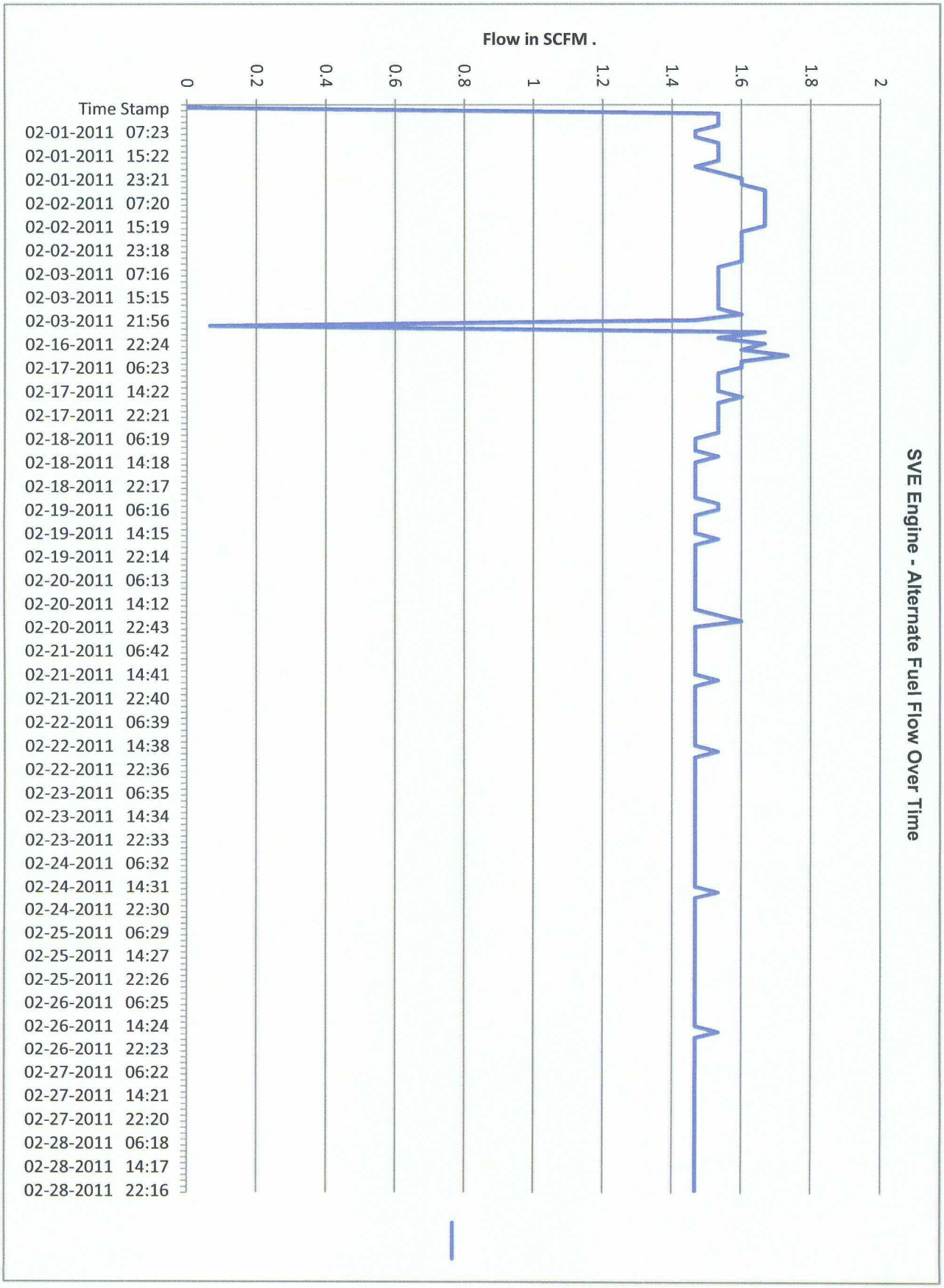

Engine SVE - Well/Process Flow Over Time
Process/Well Flow In SCFM .
90
80
70
60
50
40
30
20
10
0
Time Stamp
02-01-2011 07:23
02-01-2011 15:22
02-01-2011 23:21
02-02-2011 07:20
02-02-2011 15:19
02-02-2011 23:18
02-03-2011 07:16
02-03-2011 15:15
02-03-2011 21:56
02-16-2011 22:24
02-17-2011 06:23
02-17-2011 14:22
02-17-2011 22:21
02-18-2011 06:19
02-18-2011 14:18
02-18-2011 22:17
02-19-2011 06:16
02-19-2011 14:15
02-19-2011 22:14
02-20-2011 06:13
02-20-2011 14:12
02-20-2011 22:43
02-21-2011 06:42
02-21-2011 14:41
02-21-2011 22:40
02-22-2011 06:39
02-22-2011 14:38
02-22-2011 22:36
02-23-2011 06:35
02-23-2011 14:34
02-23-2011 22:33
02-24-2011 06:32
02-24-2011 14:31
02-24-2011 22:30
02-25-2011 06:29
02-25-2011 14:27
02-25-2011 22:26
02-26-2011 06:25
02-26-2011 14:24
02-26-2011 22:23
02-27-2011 06:22
02-27-2011 14:21
02-27-2011 22:20
02-28-2011 06:18
02-28-2011 14:17
02-28-2011 22:16


Process/Well Flow In SCFM .
0
200000
400000
600000
800000
1000000
1200000
1400000
Time Stamp
02-01-2011 09:23
02-01-2011 19:22
02-02-2011 05:20
02-02-2011 15:19
02-03-2011 01:17
02-03-2011 11:16
02-03-2011 21:14
02-16-2011 22:24
02-17-2011 08:22
02-17-2011 18:21
02-18-2011 04:20
02-18-2011 14:18
02-19-2011 00:17
02-19-2011 10:15
02-19-2011 20:14
02-20-2011 06:13
02-20-2011 16:11
02-21-2011 02:43
02-21-2011 12:41
02-21-2011 22:40
02-22-2011 08:38
02-22-2011 18:37
02-23-2011 04:36
02-23-2011 14:34
02-24-2011 00:33
02-24-2011 10:31
02-24-2011 20:30
02-25-2011 06:29
02-25-2011 16:27
02-26-2011 02:26
02-26-2011 12:24
02-26-2011 22:23
02-27-2011 08:21
02-27-2011 18:20
02-28-2011 04:19
02-28-2011 14:17
Engine SVE - Cumulative Process Flow in SCFM Over Time


SVE Engine - Air, Fuel & Well Valve Positions Over Time
600
500
400
300
200
100
0
Time Stamp
02-01-2011 07:23
02-01-2011 15:22
02-01-2011 23:21
02-02-2011 07:20
02-02-2011 15:19
02-02-2011 23:18
02-03-2011 07:16
02-03-2011 15:15
02-03-2011 21:56
02-16-2011 22:24
02-17-2011 06:23
02-17-2011 14:22
02-17-2011 22:21
02-18-2011 06:19
02-18-2011 14:18
02-18-2011 22:17
02-19-2011 06:16
02-19-2011 14:15
02-19-2011 22:14
02-20-2011 06:13
02-20-2011 14:12
02-20-2011 22:43
02-21-2011 06:42
02-21-2011 14:41
02-21-2011 22:40
02-22-2011 06:39
02-22-2011 14:38
02-22-2011 22:36
02-23-2011 06:35
02-23-2011 14:34
02-23-2011 22:33
02-24-2011 06:32
02-24-2011 14:31
02-24-2011 22:30
02-25-2011 06:29
02-25-2011 14:27
02-25-2011 22:26
02-26-2011 06:25
02-26-2011 14:24
02-26-2011 22:23
02-27-2011 06:22
02-27-2011 14:21
02-27-2011 22:20
02-28-2011 06:18
02-28-2011 14:17
02-28-2011 22:16


SVE Engine - Manifold Vacuum Over Time
20
18
16
14
12
10
8
6
4
2
0
Time Stamp
02-01-2011 07:23
02-01-2011 15:22
02-01-2011 23:21
02-02-2011 07:20
02-02-2011 15:19
02-02-2011 23:18
02-03-2011 07:16
02-03-2011 15:15
02-03-2011 21:56
02-16-2011 22:24
02-17-2011 06:23
02-17-2011 14:22
02-17-2011 22:21
02-18-2011 06:19
02-18-2011 14:18
02-18-2011 22:17
02-19-2011 06:16
02-19-2011 14:15
02-19-2011 22:14
02-20-2011 06:13
02-20-2011 14:12
02-20-2011 22:43
02-21-2011 06:42
02-21-2011 14:41
02-21-2011 22:40
02-22-2011 06:39
02-22-2011 14:38
02-22-2011 22:36
02-23-2011 06:35
02-23-2011 14:34
02-23-2011 22:33
02-24-2011 06:32
02-24-2011 14:31
02-24-2011 22:30
02-25-2011 06:29
02-25-2011 14:27
02-25-2011 22:26
02-26-2011 06:25
02-26-2011 14:24
02-26-2011 22:23
02-27-2011 06:22
02-27-2011 14:21
02-27-2011 22:20
02-28-2011 06:18
02-28-2011 14:17
02-28-2011 22:16


SVE Engine - Pre- & Post-Cat T, Manifold Vacuum Over Time
10000
1000
100
10
1
0.1
Time Stamp
02-01-2011 07:23
02-01-2011 15:22
02-01-2011 23:21
02-02-2011 07:20
02-02-2011 15:19
02-02-2011 23:18
02-03-2011 07:16
02-03-2011 15:15
02-03-2011 21:56
02-16-2011 22:24
02-17-2011 06:23
02-17-2011 14:22
02-17-2011 22:21
02-18-2011 06:19
02-18-2011 14:18
02-18-2011 22:17
02-19-2011 06:16
02-19-2011 14:15
02-19-2011 22:14
02-20-2011 06:13
02-20-2011 14:12
02-20-2011 22:43
02-21-2011 06:42
02-21-2011 14:41
02-21-2011 22:40
02-22-2011 06:39
02-22-2011 14:38
02-22-2011 22:36
02-23-2011 06:35
02-23-2011 14:34
02-23-2011 22:33
02-24-2011 06:32
02-24-2011 14:31
02-24-2011 22:30
02-25-2011 06:29
02-25-2011 14:27
02-25-2011 22:26
02-26-2011 06:25
02-26-2011 14:24
02-26-2011 22:23
02-27-2011 06:22
02-27-2011 14:21
02-27-2011 22:20
02-28-2011 06:18
02-28-2011 14:17
02-28-2011 22:16


SVE Engine - Alternate Fuel Flow Over Time
Flow in SCFM .
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8
2
Time Stamp
02-01-2011 07:23
02-01-2011 15:22
02-01-2011 23:21
02-02-2011 07:20
02-02-2011 15:19
02-02-2011 23:18
02-03-2011 07:16
02-03-2011 15:15
02-03-2011 21:56
02-16-2011 22:24
02-17-2011 06:23
02-17-2011 14:22
02-17-2011 22:21
02-18-2011 06:19
02-18-2011 14:18
02-18-2011 22:17
02-19-2011 06:16
02-19-2011 14:15
02-19-2011 22:14
02-20-2011 06:13
02-20-2011 14:12
02-20-2011 22:43
02-21-2011 06:42
02-21-2011 14:41
02-21-2011 22:40
02-22-2011 06:39
02-22-2011 14:38
02-22-2011 22:36
02-23-2011 06:35
02-23-2011 14:34
02-23-2011 22:33
02-24-2011 06:32
02-24-2011 14:31
02-24-2011 22:30
02-25-2011 06:29
02-25-2011 14:27
02-25-2011 22:26
02-26-2011 06:25
02-26-2011 14:24
02-26-2011 22:23
02-27-2011 06:22
02-27-2011 14:21
02-27-2011 22:20
02-28-2011 06:18
02-28-2011 14:17
02-28-2011 22:16


SVE Engine - RPM, O2 and Pre/Post Cat Temperatures Over Time
2500
2000
1500
1000
500
0
Time Stamp
02-01-2011 07:23
02-01-2011 15:22
02-01-2011 23:21
02-02-2011 07:20
02-02-2011 15:19
02-02-2011 23:18
02-03-2011 07:16
02-03-2011 15:15
02-03-2011 21:56
02-16-2011 22:24
02-17-2011 06:23
02-17-2011 14:22
02-17-2011 22:21
02-18-2011 06:19
02-18-2011 14:18
02-18-2011 22:17
02-19-2011 06:16
02-19-2011 14:15
02-19-2011 22:14
02-20-2011 06:13
02-20-2011 14:12
02-20-2011 22:43
02-21-2011 06:42
02-21-2011 14:41
02-21-2011 22:40
02-22-2011 06:39
02-22-2011 14:38
02-22-2011 22:36
02-23-2011 06:35
02-23-2011 14:34
02-23-2011 22:33
02-24-2011 06:32
02-24-2011 14:31
02-24-2011 22:30
02-25-2011 06:29
02-25-2011 14:27
02-25-2011 22:26
02-26-2011 06:25
02-26-2011 14:24
02-26-2011 22:23
02-27-2011 06:22
02-27-2011 14:21
02-27-2011 22:20
02-28-2011 06:18
02-28-2011 14:17
02-28-2011 22:16

Remediation Service Int'l
4835 Colt Unit D
Ventura CA 93003
805.644.8382
805.644.8378 FAX
www.rsi-save.com

98650.48

Report Generator Version 1.4

Date of Report:	4/13/2011		
Project Name:	Thriftway Refinery		
		20000	Btu/lb
Unit ID:	0		
Controller S/N:	182		
Software version:	844		
Date Range From:	3/1/2011 0:16		
Date Range To :	3/30/2011 16:48		
Lbs. Removed/Period:	1617.12		
Gal Removed/Period:	260.85		
SCF Processed/Period	1396598		

Assumptions:

6.2	lb/gallon of gasoline
120	Mole Weight of Extracted VOC
2520	Btu/Cubic Foot of Propane
1000	Btu/Cubic Foot of Natural Gas

Parts/Million by Volume (PPMV) Conversion to Micrograms/Liter (ug/L)
(PPMV/24.055)*AVG. Mole Weight=ug/L

Mass Transfer Equation to Convert to Pounds/Hour:
(ug/L)*(Flow SCFM)*28.3 L/SCF*60 Minutes/Hour*2.2 lbs/Kg*(1/10^9)

There are no express or implied warranties for fitness of use or any other purpose of the data contained herein.
See report footnotes for disclaimer details and other technical information relating to calculation procedures.
Footnotes:

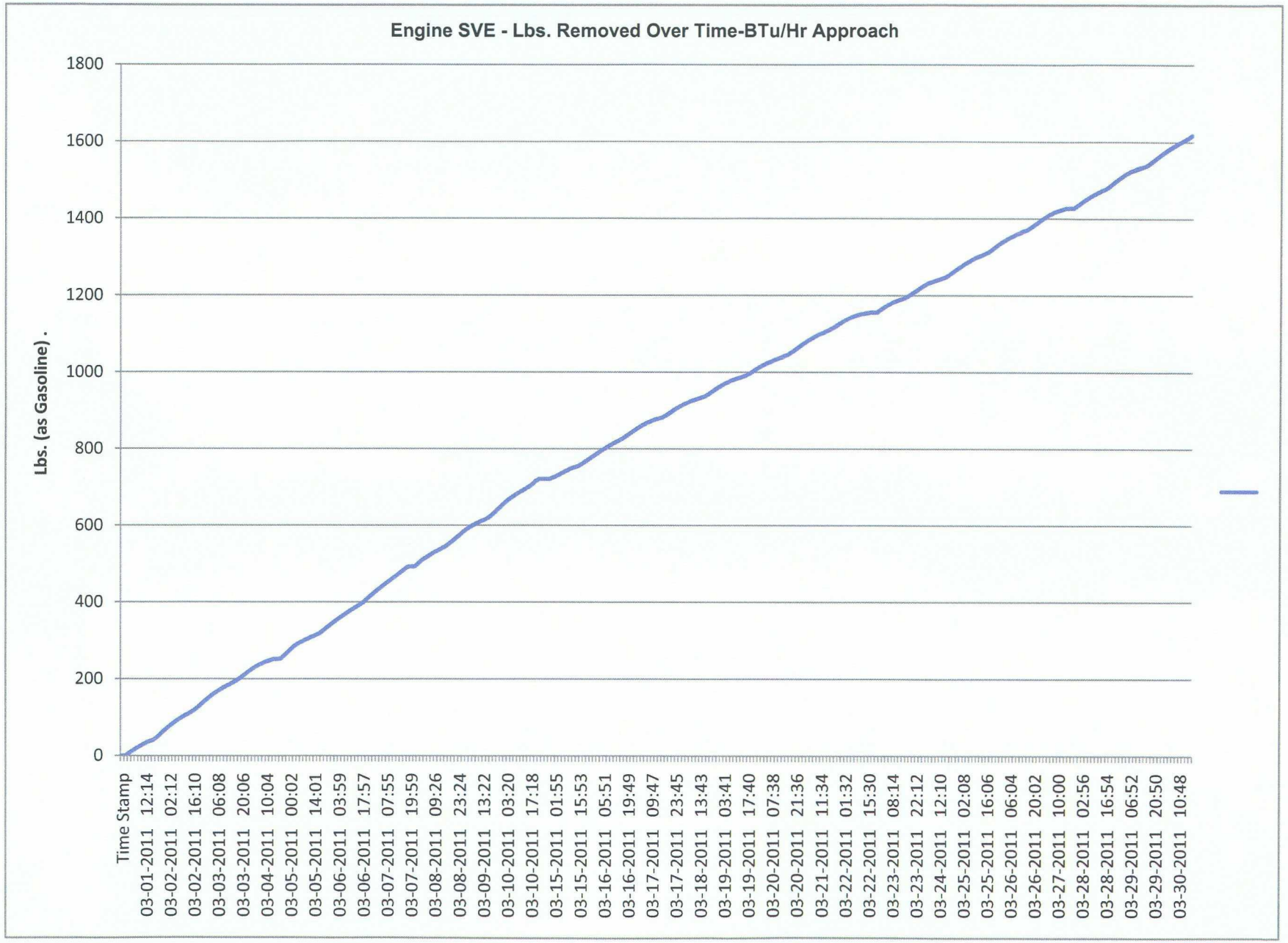
RSIs Innovative Approach to Estimating Btu/Hr:
1. Measure alternate fuel usage of engine prior to introduction of process flow
2. Multiply the SCFM flow rate of the alternate fuel (propane or natural gas) by the Btu value to determine energy demand on the engine at static conditions
3. The controller records a "snapshot" of the energy demand at a given RPM and engine manifold vacuum just prior to allowing the process flow to begin
4. The controller adjusts the initial baseline based on engine load or oxygen deficiency as necessary
5. Any drop in energy demand is assumed to be caused by the introduction of the process flow and is displayed as Estimated Btu/hr and recorded accordingly

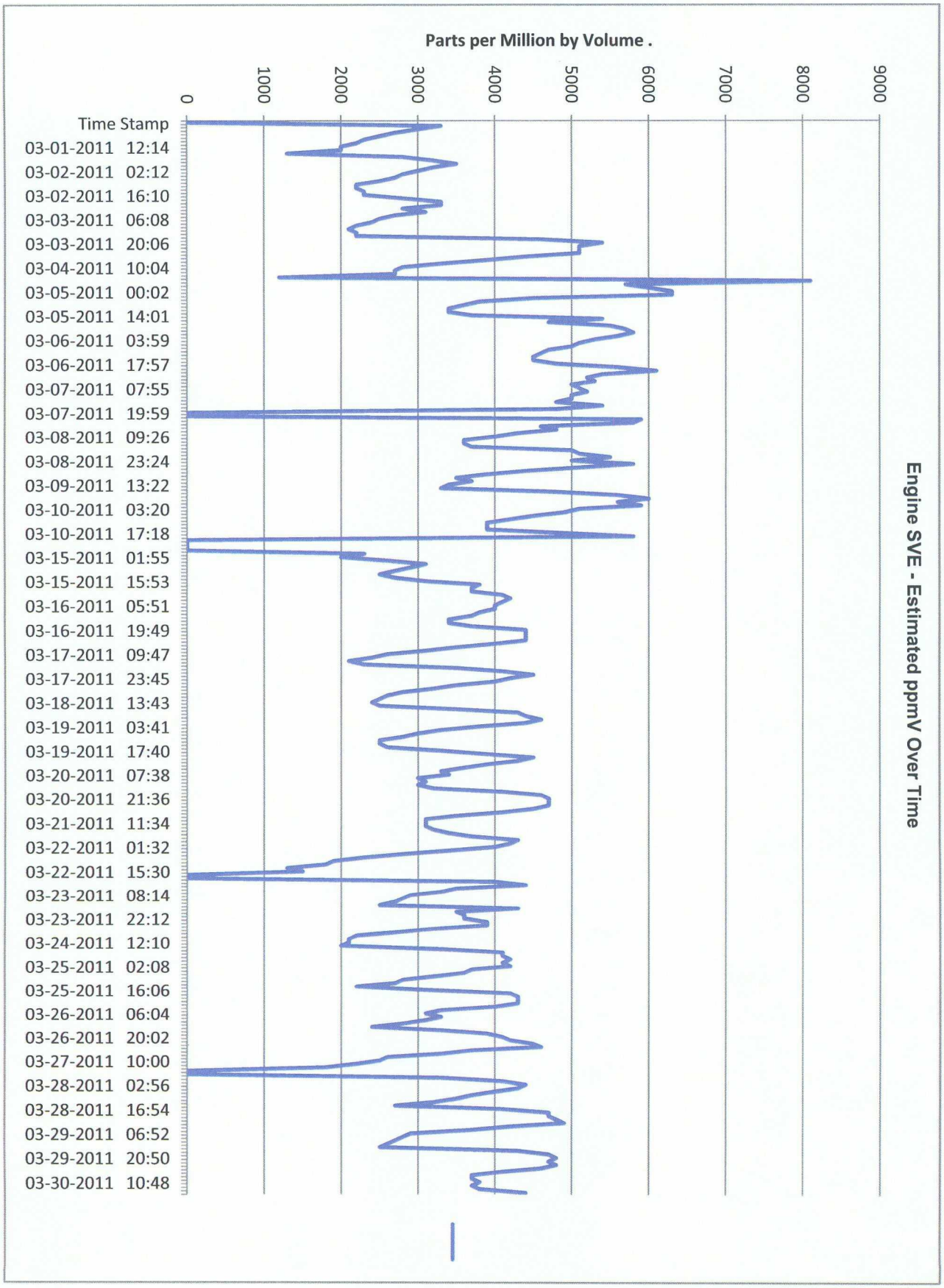
RSIs Innovative Approach to Estimating PPMV:
1. The controller completes the Btu/hr calculation as explained above
2. The controller looks at the well flow rate (estimated or measured in SCFM)
3. The controller then computes the average PPMV using the mass transfer equation to solve for PPMV
4. If the flow rate is estimated then PPMV is subject to accuracy of estimated flow and accuracy of the Btu/hr calculation
5. If the flow rate is measured then this PPMV estimate will be relative to actual lab data assuming the flow measurement and the Btu calculations are correct

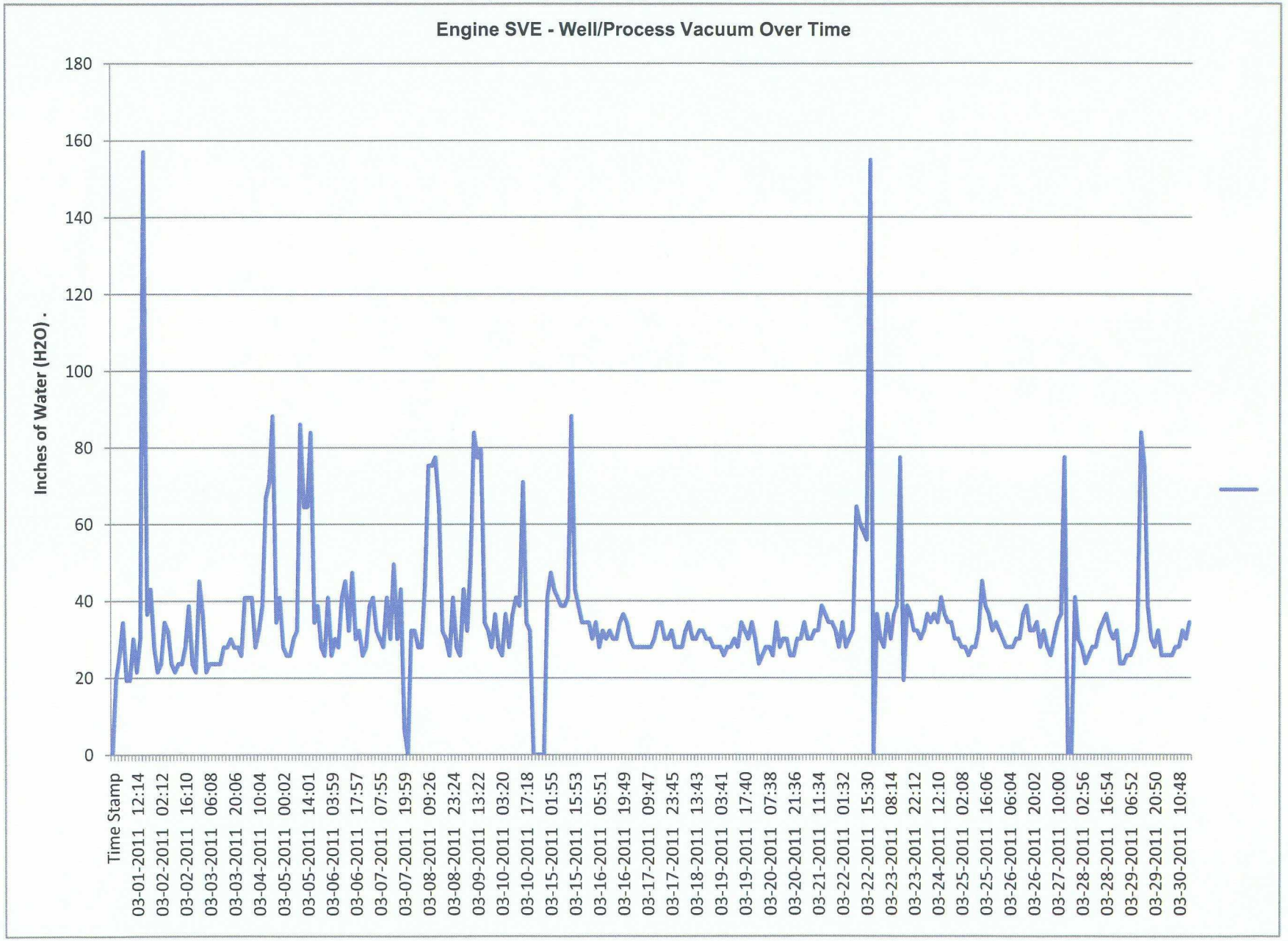
There are many advantages to using RSIs innovative approach in calculating how much mass was removed from a project in a given time period. Our method eliminates human calculation error and prevents incorrect or non-calibrated use of field instrumentation and it is a consistent periodic measurement over time which when used properly will reduces costly laboratory analysis.

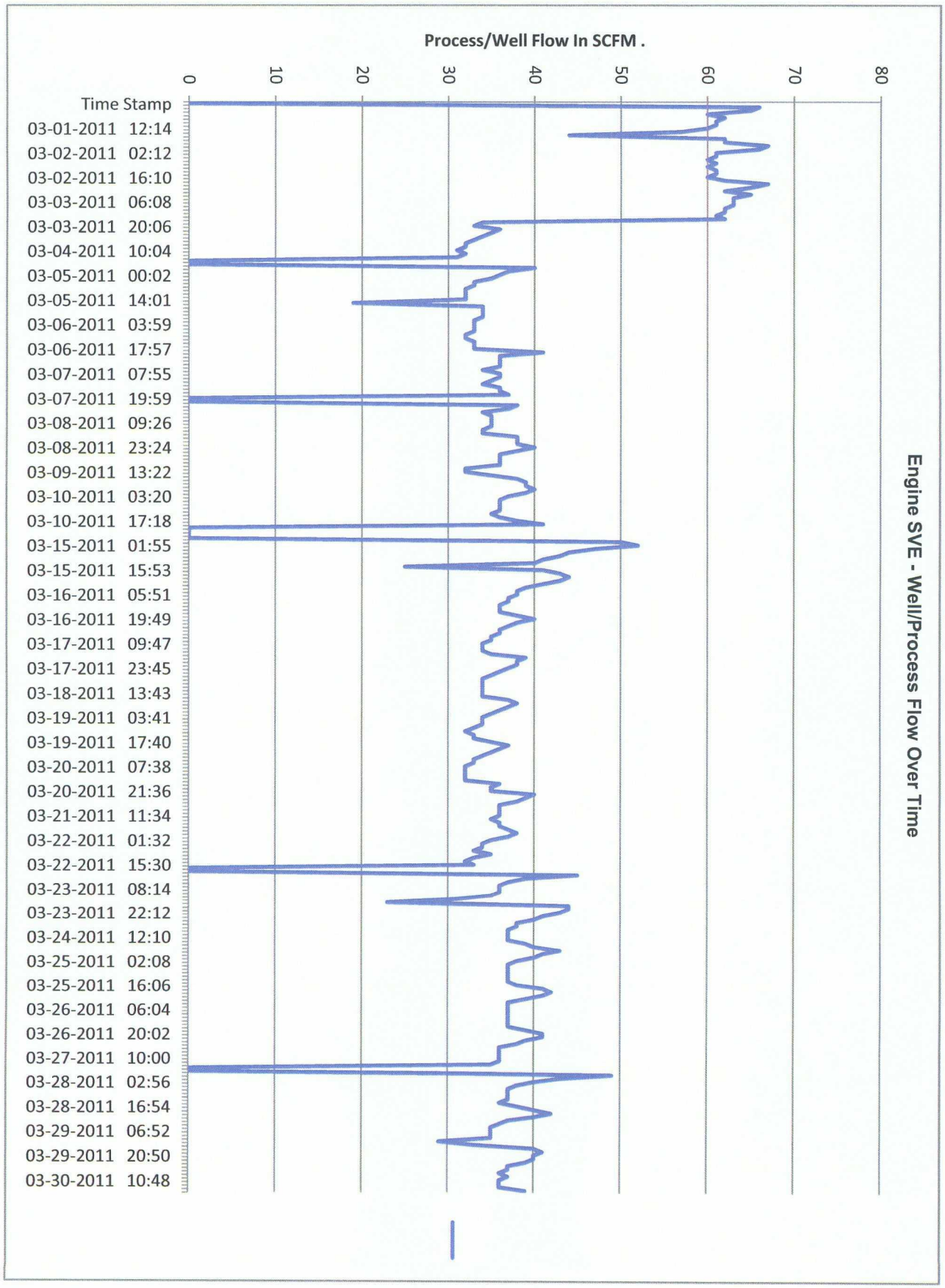
Our estimates of VOC removal have proven to be reasonable when compared to independent lab data. Because the process flow rate and the alternate fuel flow rate measurements are dependent upon proper system operation there are no expressed or implied warrantees of fitness of use for any purpose when using this report or the data contained herein.

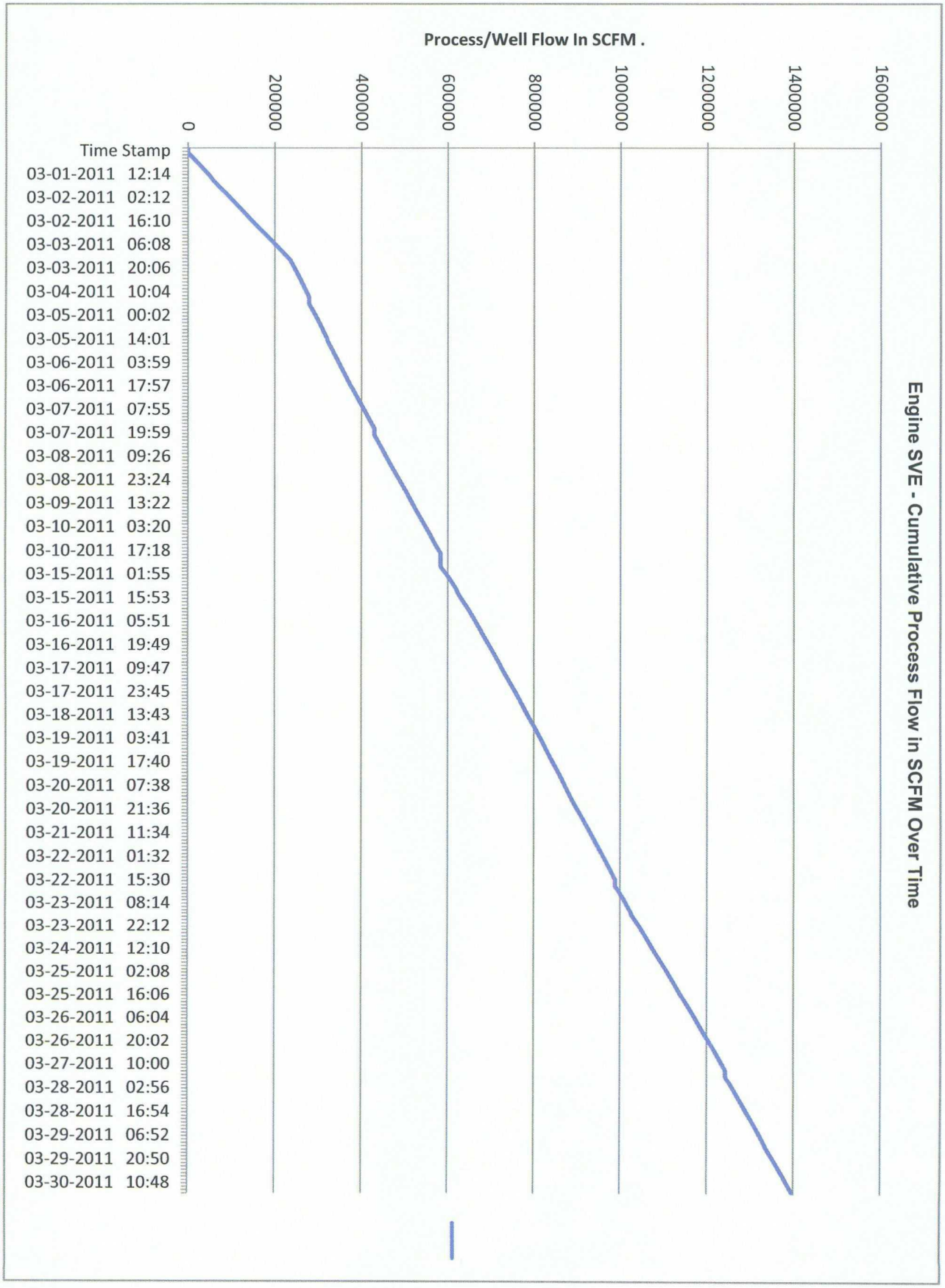
Please do not hesitate to contact RSI 1-800-368-8685 if you should have any questions or require further information

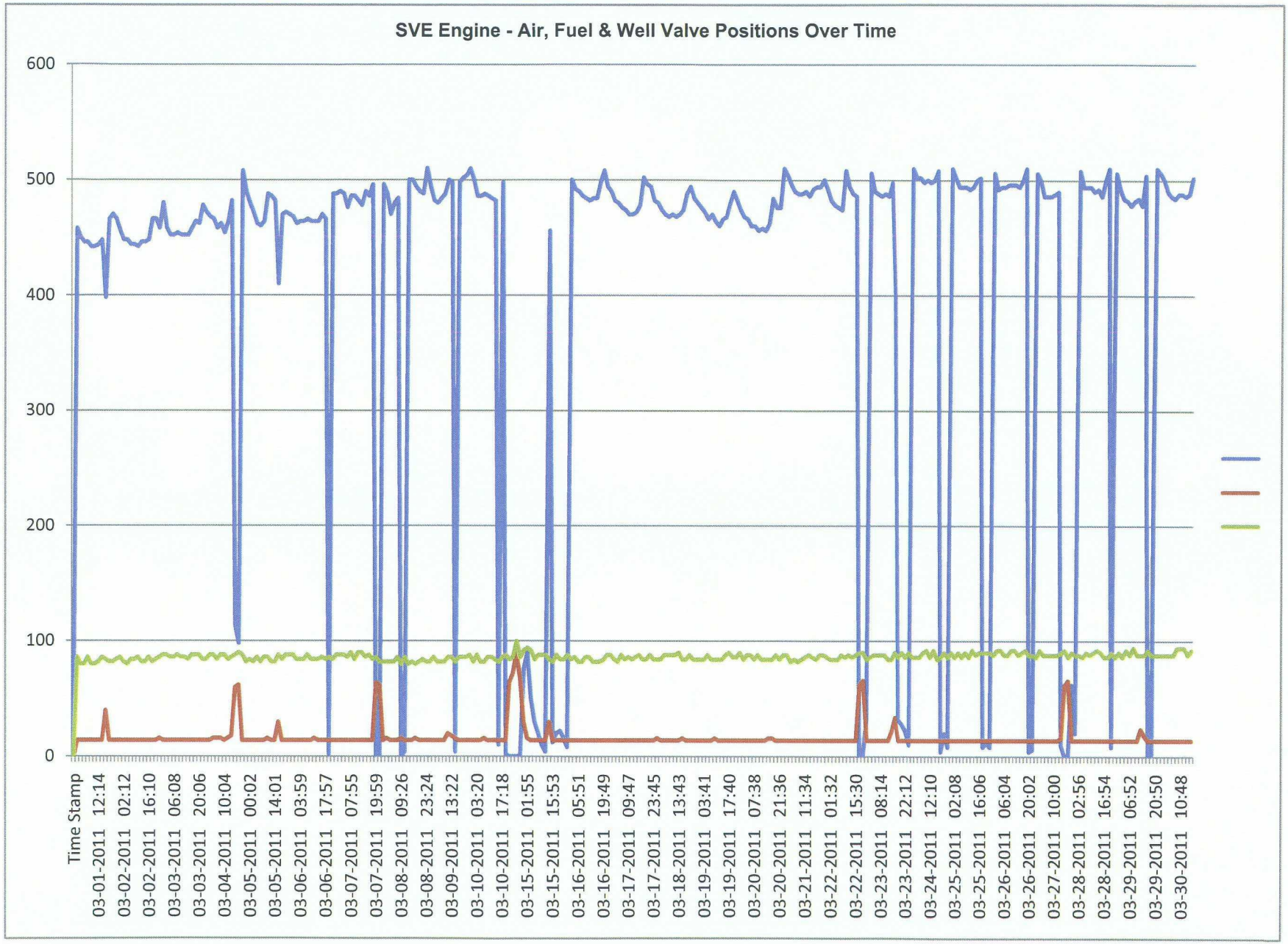

Engine SVE - Lbs. Removed Over Time-BTu/Hr Approach
Lbs. (as Gasoline) .
1800
1600
1400
1200
1000
800
600
400
200
0
Time Stamp
03-01-2011 12:14
03-02-2011 02:12
03-02-2011 16:10
03-03-2011 06:08
03-03-2011 20:06
03-04-2011 10:04
03-05-2011 00:02
03-05-2011 14:01
03-06-2011 03:59
03-06-2011 17:57
03-07-2011 07:55
03-07-2011 19:59
03-08-2011 09:26
03-08-2011 23:24
03-09-2011 13:22
03-10-2011 03:20
03-10-2011 17:18
03-15-2011 01:55
03-15-2011 15:53
03-16-2011 05:51
03-16-2011 19:49
03-17-2011 09:47
03-17-2011 23:45
03-18-2011 13:43
03-19-2011 03:41
03-19-2011 17:40
03-20-2011 07:38
03-20-2011 21:36
03-21-2011 11:34
03-22-2011 01:32
03-22-2011 15:30
03-23-2011 08:14
03-23-2011 22:12
03-24-2011 12:10
03-25-2011 02:08
03-25-2011 16:06
03-26-2011 06:04
03-26-2011 20:02
03-27-2011 10:00
03-28-2011 02:56
03-28-2011 16:54
03-29-2011 06:52
03-29-2011 20:50
03-30-2011 10:48

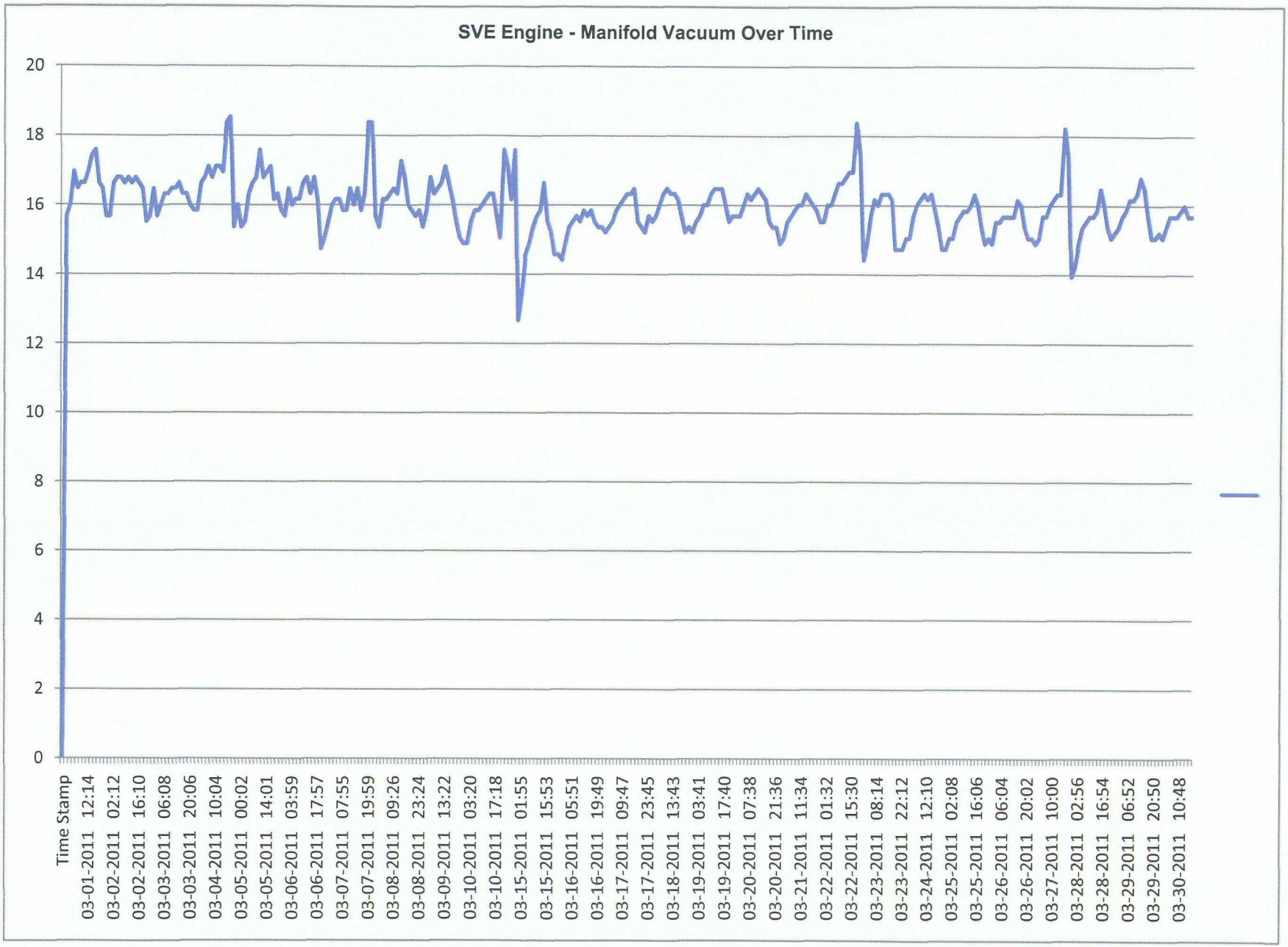

Parts per Million by Volume .
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
Time Stamp
03-01-2011 12:14
03-02-2011 02:12
03-02-2011 16:10
03-03-2011 06:08
03-03-2011 20:06
03-04-2011 10:04
03-05-2011 00:02
03-05-2011 14:01
03-06-2011 03:59
03-06-2011 17:57
03-07-2011 07:55
03-07-2011 19:59
03-08-2011 09:26
03-08-2011 23:24
03-09-2011 13:22
03-10-2011 03:20
03-10-2011 17:18
03-15-2011 01:55
03-15-2011 15:53
03-16-2011 05:51
03-16-2011 19:49
03-17-2011 09:47
03-17-2011 23:45
03-18-2011 13:43
03-19-2011 03:41
03-19-2011 17:40
03-20-2011 07:38
03-20-2011 21:36
03-21-2011 11:34
03-22-2011 01:32
03-22-2011 15:30
03-23-2011 08:14
03-23-2011 22:12
03-24-2011 12:10
03-25-2011 02:08
03-25-2011 16:06
03-26-2011 06:04
03-26-2011 20:02
03-27-2011 10:00
03-28-2011 02:56
03-28-2011 16:54
03-29-2011 06:52
03-29-2011 20:50
03-30-2011 10:48
Engine SVE - Estimated ppmV Over Time

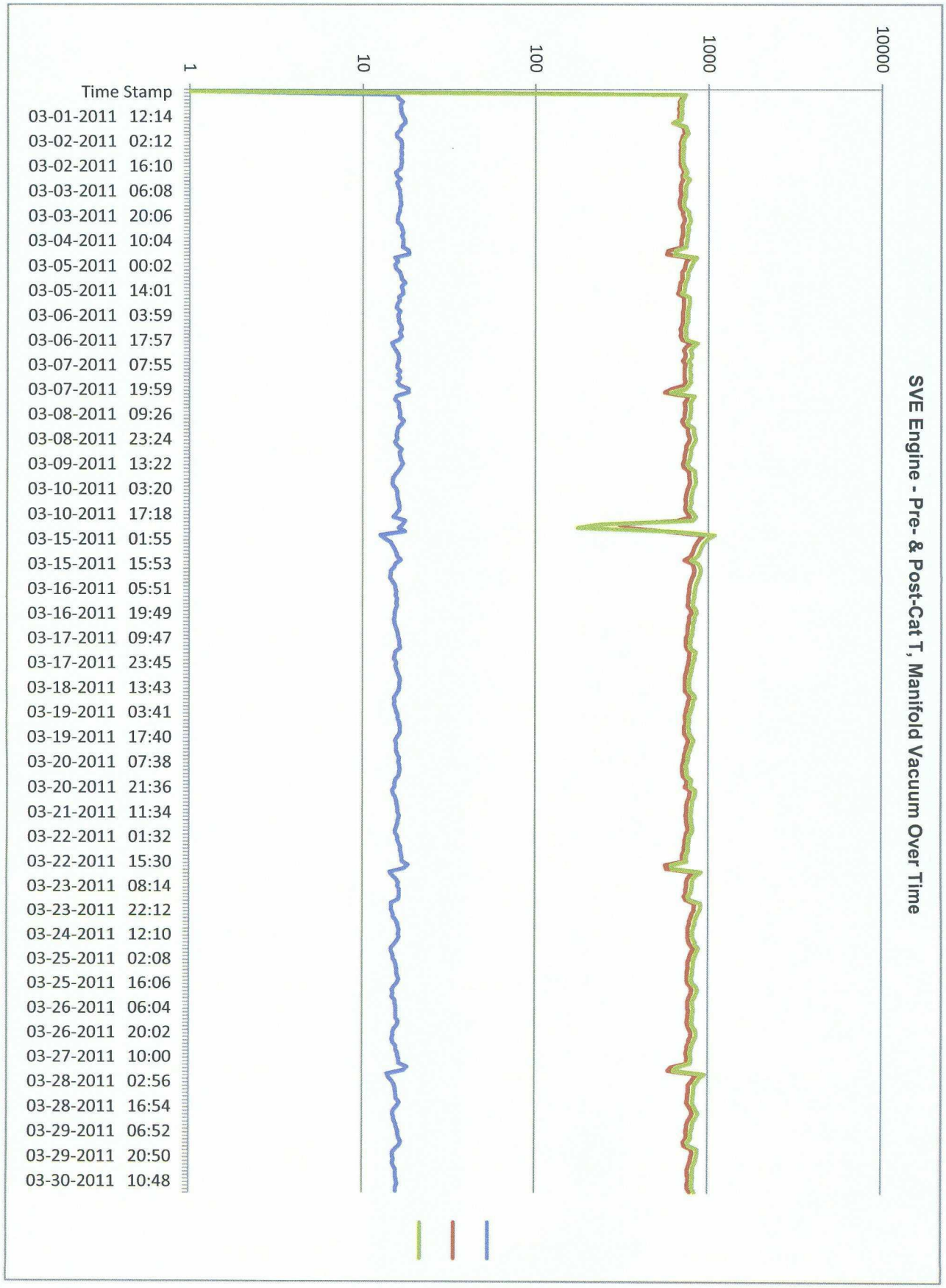

Engine SVE - Well/Process Vacuum Over Time
Inches of Water (H2O) .
180
160
140
120
100
80
60
40
20
0
Time Stamp
03-01-2011 12:14
03-02-2011 02:12
03-02-2011 16:10
03-03-2011 06:08
03-03-2011 20:06
03-04-2011 10:04
03-05-2011 00:02
03-05-2011 14:01
03-06-2011 03:59
03-06-2011 17:57
03-07-2011 07:55
03-07-2011 19:59
03-08-2011 09:26
03-08-2011 23:24
03-09-2011 13:22
03-10-2011 03:20
03-10-2011 17:18
03-15-2011 01:55
03-15-2011 15:53
03-16-2011 05:51
03-16-2011 19:49
03-17-2011 09:47
03-17-2011 23:45
03-18-2011 13:43
03-19-2011 03:41
03-19-2011 17:40
03-20-2011 07:38
03-20-2011 21:36
03-21-2011 11:34
03-22-2011 01:32
03-22-2011 15:30
03-23-2011 08:14
03-23-2011 22:12
03-24-2011 12:10
03-25-2011 02:08
03-25-2011 16:06
03-26-2011 06:04
03-26-2011 20:02
03-27-2011 10:00
03-28-2011 02:56
03-28-2011 16:54
03-29-2011 06:52
03-29-2011 20:50
03-30-2011 10:48

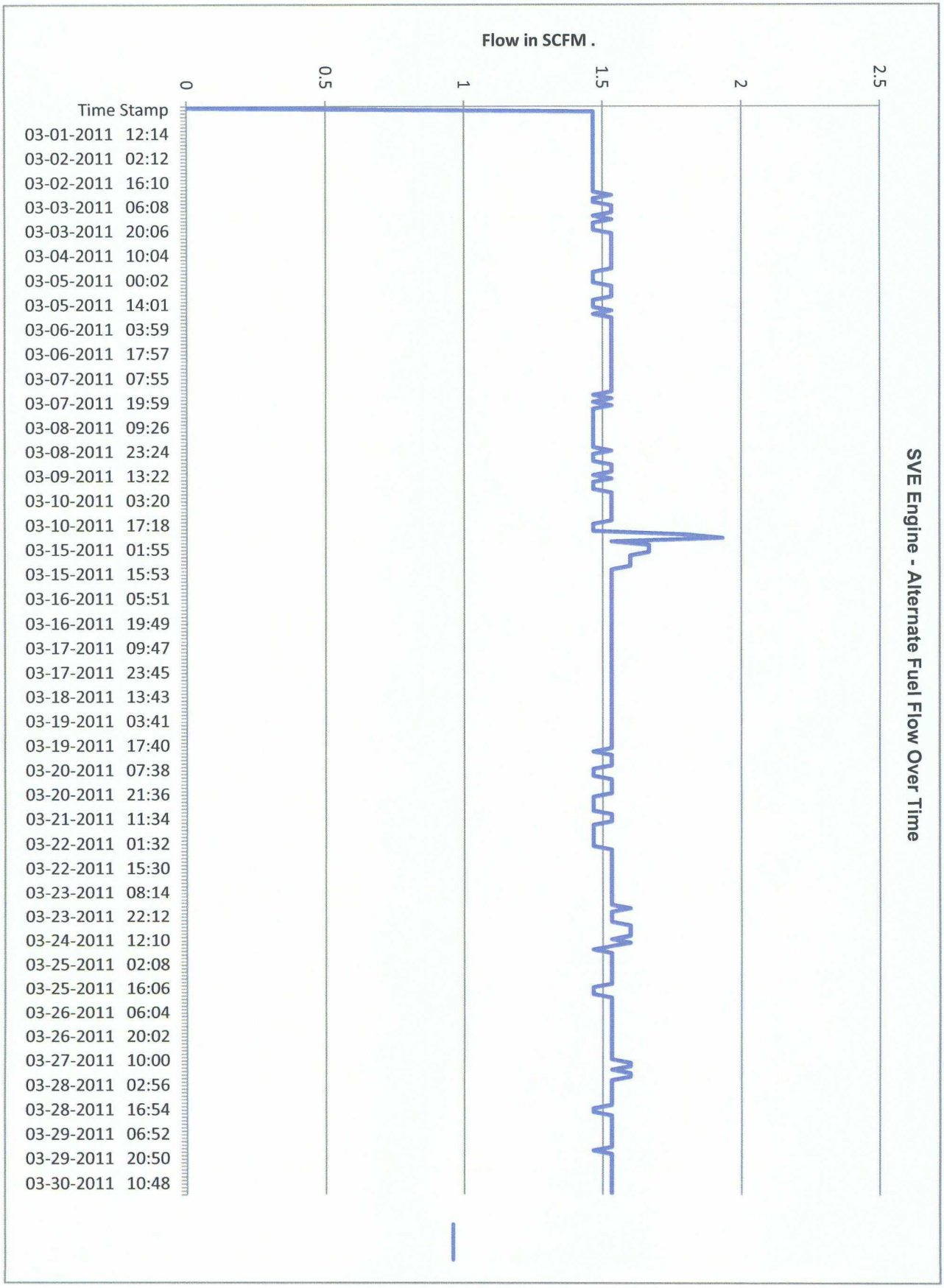

Engine SVE - Well/Process Flow Over Time
Process/Well Flow In SCFM .
0
10
20
30
40
50
60
70
80
Time Stamp
03-01-2011 12:14
03-02-2011 02:12
03-02-2011 16:10
03-03-2011 06:08
03-03-2011 20:06
03-04-2011 10:04
03-05-2011 00:02
03-05-2011 14:01
03-06-2011 03:59
03-06-2011 17:57
03-07-2011 07:55
03-07-2011 19:59
03-08-2011 09:26
03-08-2011 23:24
03-09-2011 13:22
03-10-2011 03:20
03-10-2011 17:18
03-15-2011 01:55
03-15-2011 15:53
03-16-2011 05:51
03-16-2011 19:49
03-17-2011 09:47
03-17-2011 23:45
03-18-2011 13:43
03-19-2011 03:41
03-19-2011 17:40
03-20-2011 07:38
03-20-2011 21:36
03-21-2011 11:34
03-22-2011 01:32
03-22-2011 15:30
03-23-2011 08:14
03-23-2011 22:12
03-24-2011 12:10
03-25-2011 02:08
03-25-2011 16:06
03-26-2011 06:04
03-26-2011 20:02
03-27-2011 10:00
03-28-2011 02:56
03-28-2011 16:54
03-29-2011 06:52
03-29-2011 20:50
03-30-2011 10:48


Process/Well Flow In SCFM .
0
200000
400000
600000
800000
1000000
1200000
1400000
1600000
Time Stamp
03-01-2011 12:14
03-02-2011 02:12
03-02-2011 16:10
03-03-2011 06:08
03-03-2011 20:06
03-04-2011 10:04
03-05-2011 00:02
03-05-2011 14:01
03-06-2011 03:59
03-06-2011 17:57
03-07-2011 07:55
03-07-2011 19:59
03-08-2011 09:26
03-08-2011 23:24
03-09-2011 13:22
03-10-2011 03:20
03-10-2011 17:18
03-15-2011 01:55
03-15-2011 15:53
03-16-2011 05:51
03-16-2011 19:49
03-17-2011 09:47
03-17-2011 23:45
03-18-2011 13:43
03-19-2011 03:41
03-19-2011 17:40
03-20-2011 07:38
03-20-2011 21:36
03-21-2011 11:34
03-22-2011 01:32
03-22-2011 15:30
03-23-2011 08:14
03-23-2011 22:12
03-24-2011 12:10
03-25-2011 02:08
03-25-2011 16:06
03-26-2011 06:04
03-26-2011 20:02
03-27-2011 10:00
03-28-2011 02:56
03-28-2011 16:54
03-29-2011 06:52
03-29-2011 20:50
03-30-2011 10:48
Engine SVE - Cumulative Process Flow in SCFM Over Time


SVE Engine - Air, Fuel & Well Valve Positions Over Time
600
500
400
300
200
100
0
Time Stamp
03-01-2011 12:14
03-02-2011 02:12
03-02-2011 16:10
03-03-2011 06:08
03-03-2011 20:06
03-04-2011 10:04
03-05-2011 00:02
03-05-2011 14:01
03-06-2011 03:59
03-06-2011 17:57
03-07-2011 07:55
03-07-2011 19:59
03-08-2011 09:26
03-08-2011 23:24
03-09-2011 13:22
03-10-2011 03:20
03-10-2011 17:18
03-15-2011 01:55
03-15-2011 15:53
03-16-2011 05:51
03-16-2011 19:49
03-17-2011 09:47
03-17-2011 23:45
03-18-2011 13:43
03-19-2011 03:41
03-19-2011 17:40
03-20-2011 07:38
03-20-2011 21:36
03-21-2011 11:34
03-22-2011 01:32
03-22-2011 15:30
03-23-2011 08:14
03-23-2011 22:12
03-24-2011 12:10
03-25-2011 02:08
03-25-2011 16:06
03-26-2011 06:04
03-26-2011 20:02
03-27-2011 10:00
03-28-2011 02:56
03-28-2011 16:54
03-29-2011 06:52
03-29-2011 20:50
03-30-2011 10:48

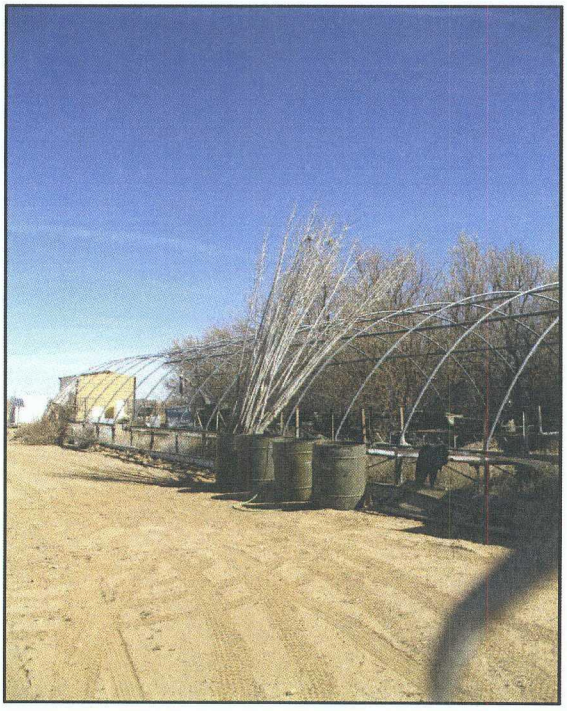

SVE Engine - Manifold Vacuum Over Time
20
18
16
14
12
10
8
6
4
2
0
Time Stamp
03-01-2011 12:14
03-02-2011 02:12
03-02-2011 16:10
03-03-2011 06:08
03-03-2011 20:06
03-04-2011 10:04
03-05-2011 00:02
03-05-2011 14:01
03-06-2011 03:59
03-06-2011 17:57
03-07-2011 07:55
03-07-2011 19:59
03-08-2011 09:26
03-08-2011 23:24
03-09-2011 13:22
03-10-2011 03:20
03-10-2011 17:18
03-15-2011 01:55
03-15-2011 15:53
03-16-2011 05:51
03-16-2011 19:49
03-17-2011 09:47
03-17-2011 23:45
03-18-2011 13:43
03-19-2011 03:41
03-19-2011 17:40
03-20-2011 07:38
03-20-2011 21:36
03-21-2011 11:34
03-22-2011 01:32
03-22-2011 15:30
03-23-2011 08:14
03-23-2011 22:12
03-24-2011 12:10
03-25-2011 02:08
03-25-2011 16:06
03-26-2011 06:04
03-26-2011 20:02
03-27-2011 10:00
03-28-2011 02:56
03-28-2011 16:54
03-29-2011 06:52
03-29-2011 20:50
03-30-2011 10:48


SVE Engine - Pre- & Post-Cat T, Manifold Vacuum Over Time
10000
1000
100
10
1
Time Stamp
03-01-2011 12:14
03-02-2011 02:12
03-02-2011 16:10
03-03-2011 06:08
03-03-2011 20:06
03-04-2011 10:04
03-05-2011 00:02
03-05-2011 14:01
03-06-2011 03:59
03-06-2011 17:57
03-07-2011 07:55
03-07-2011 19:59
03-08-2011 09:26
03-08-2011 23:24
03-09-2011 13:22
03-10-2011 03:20
03-10-2011 17:18
03-15-2011 01:55
03-15-2011 15:53
03-16-2011 05:51
03-16-2011 19:49
03-17-2011 09:47
03-17-2011 23:45
03-18-2011 13:43
03-19-2011 03:41
03-19-2011 17:40
03-20-2011 07:38
03-20-2011 21:36
03-21-2011 11:34
03-22-2011 01:32
03-22-2011 15:30
03-23-2011 08:14
03-23-2011 22:12
03-24-2011 12:10
03-25-2011 02:08
03-25-2011 16:06
03-26-2011 06:04
03-26-2011 20:02
03-27-2011 10:00
03-28-2011 02:56
03-28-2011 16:54
03-29-2011 06:52
03-29-2011 20:50
03-30-2011 10:48


SVE Engine - Alternate Fuel Flow Over Time
Flow in SCFM .
0
0.5
1
1.5
2
2.5
Time Stamp
03-01-2011 12:14
03-02-2011 02:12
03-02-2011 16:10
03-03-2011 06:08
03-03-2011 20:06
03-04-2011 10:04
03-05-2011 00:02
03-05-2011 14:01
03-06-2011 03:59
03-06-2011 17:57
03-07-2011 07:55
03-07-2011 19:59
03-08-2011 09:26
03-08-2011 23:24
03-09-2011 13:22
03-10-2011 03:20
03-10-2011 17:18
03-15-2011 01:55
03-15-2011 15:53
03-16-2011 05:51
03-16-2011 19:49
03-17-2011 09:47
03-17-2011 23:45
03-18-2011 13:43
03-19-2011 03:41
03-19-2011 17:40
03-20-2011 07:38
03-20-2011 21:36
03-21-2011 11:34
03-22-2011 01:32
03-22-2011 15:30
03-23-2011 08:14
03-23-2011 22:12
03-24-2011 12:10
03-25-2011 02:08
03-25-2011 16:06
03-26-2011 06:04
03-26-2011 20:02
03-27-2011 10:00
03-28-2011 02:56
03-28-2011 16:54
03-29-2011 06:52
03-29-2011 20:50
03-30-2011 10:48


SVE Engine - RPM, O2 and Pre/Post Cat Temperatures Over Time
2500
2000
1500
1000
500
0
Time Stamp
03-01-2011 12:14
03-02-2011 02:12
03-02-2011 16:10
03-03-2011 06:08
03-03-2011 20:06
03-04-2011 10:04
03-05-2011 00:02
03-05-2011 14:01
03-06-2011 03:59
03-06-2011 17:57
03-07-2011 07:55
03-07-2011 19:59
03-08-2011 09:26
03-08-2011 23:24
03-09-2011 13:22
03-10-2011 03:20
03-10-2011 17:18
03-15-2011 01:55
03-15-2011 15:53
03-16-2011 05:51
03-16-2011 19:49
03-17-2011 09:47
03-17-2011 23:45
03-18-2011 13:43
03-19-2011 03:41
03-19-2011 17:40
03-20-2011 07:38
03-20-2011 21:36
03-21-2011 11:34
03-22-2011 01:32
03-22-2011 15:30
03-23-2011 08:14
03-23-2011 22:12
03-24-2011 12:10
03-25-2011 02:08
03-25-2011 16:06
03-26-2011 06:04
03-26-2011 20:02
03-27-2011 10:00
03-28-2011 02:56
03-28-2011 16:54
03-29-2011 06:52
03-29-2011 20:50
03-30-2011 10:48

March 14, 2011: Cutting of poplar trees at NMSU nursery.



March 14, 2011: Hydrating of cut poplar tree in preparation for planting. Trees were hydrated over night.

March 15, 2011: Trailer loaded with approximately 140, cut and hydrated poplar trees.

March 15, 2011: Unloading poplar trees at the site (TW 810 Refinery).

March 15, 2011: BioTech and NMSU personnel planting trees in pre-bored 7-feet holes. Groundwater was encountered between 4 and 5 feet below ground surface.

March 15, 2011: BioTech personnel planting trees at the site.

March 23, 2011: Facing east, looking at recently planted poplar trees, March 2011.

March 23, 2011: Facing east between two rows newly planted poplar trees.