



SCOTT A. THOMPSON  
Executive Director

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY

MARY FALLIN  
Governor

**CERTIFIED MAIL: RETURN RECEIPT REQUESTED**

June 22, 2016

Mr. Robert Compernelle, President  
FMRI  
10 Tantalum Place  
Muskogee, OK 74403

Subject: Conditional Approval of Data Gap Investigation for of the Former  
Fansteel Property, 10 Tantalum Place, Muskogee, OK

Dear Mr. Compernelle:

Thank you for the report "Discussion of Data Gap Investigation of the Former Fansteel Property, 10 Tantalum Place, Muskogee, OK" ("Data Gap Report") by Enercon Services, Inc., dated April 11, 2016. The Data Gap Report was submitted to meet the requirements for a Data Gap Analysis due on March 31, 2016, in Provision 5.Q.4 of the August 17, 2015 Forbearance Agreement.

The study area included the License Area, the portion of the Northwest Property Area still owned by FMRI, and the portion of the Northwest Property Area sold to the Muskogee Port Authority.

The findings of the report were presented in tabular form. DEQ has identified seven additional data gaps not addressed in the Data Gap Report

1. **Stratification is likely in Ponds 8 and 9 due to changes in the manufacturing process.** Changes in base material, from  $\text{CaF}_2$  at depth from manufacturing process, to  $\text{CaCO}_3$  at the top from ground water treatment are unknown.
2. **Impacts of the 1989 liner breach from the west side of Pond 3 were not assessed.** Sediment samples from June 1989 liner breach and surface release of supernatant from the WIP stored in Pond 3 were never collected for analysis.
3. **Leachates from  $\text{CaF}_2$  and  $\text{CaCO}_3$  in Ponds 8 and 9 were not characterized and delineated**
4. **Storage Locations for Process Chemicals other than ore:** Were areas other than the AST "Tank Farm" used?
5. **Historic Maintenance Areas:** Were areas other than the Machine Shop used to service and maintain equipment and process vessels? Where was this done before the Machine Shop was built in 1999?
6. **Hydraulic gradient between the off-site TCE Plume and the License Area is unknown.** Off-site well locations and elevations in the Northwest Property Area



are surveyed only to GPS and arbitrary datum. Also, some borings and wells were mis-plotted into the License Area in the 2015 Terracon Report.

7. **Impact of ceasing Interceptor Trench Operation is unknown.** If site operations cease, affected ground water will bypass the trench. What data have already been collected which could be used for a preliminary assessment of potential discharge of contaminated groundwater to the Arkansas River if interceptor trench operation ceased?

Provided the additional gaps are addressed, DEQ accepts the Data Gap Analysis as a sufficient basis to proceed with developing a Work Plan for Site Characterization as described in Provision 5.Q.5.

In addition, DEQ makes the following observations.

For Data Gaps Nos. 26 and 27, concerning the TCE Plume identified near the Sintering Building, we concur with the proposed additional comprehensive sampling, and recommend using EPA Method 8260 for a VOC scan. Assessment of the portion of the plume that is found within the License Area should also be consistent with NRC requirements of Phase IV of the DP. As EPA guidance evolves, soil vapor intrusion may also need to be addressed.

For Data Gap No. 28, the VOC analyses performed for Data Gaps Nos 26 and 27 should determine the extent of the Methyl Isobutyl Ketone (MIBK) plume. The highest concentrations reported so far, in ground water from the few wells sampled have consistently been in MW-74, dropping from 140 milligrams per liter (mg/l) in 2009 to 1.6 mg/l in 2015, which is below the current EPA "Tapwater" Regional Screening Level (RSL) for MIBK (also known as 4-Methyl-2-Pentanone) which is currently 6.3 mg/l.

For Data Gap No. 1 concerning the unknown composition of cooling water additives, the table in the Discussion noted chromate-containing compounds were used before 1971 but were subsequently replaced with other additives. Unless records satisfactorily identifying the replacement additives are found, ground water immediately adjacent to the Sintering Building, Electron Beam Building, Chem C Building and nearby cooling towers should be sampled and tested for chromium, Volatile Organic Compounds (VOC, EPA 8260) and Semivolatile Organic Compounds (SVOC, EPA 8270). Total Chromium and any potential VOC or SVOC additives detected should be included on the list of analytes for the comprehensive ground-water monitoring.

For Data Gaps Nos. 2, 20, 11, 13, 14, 18, 19, 21, 22 and 23, Preliminary Remediation Goals (PRG) will need to be developed. These may include Derived Concentration Goal Levels (DCGL), EPA Regional Screening Levels (RSL) and, if applicable, site-specific PRG based on a risk assessment considering anticipated land use.

In addition to the data gaps to be added or clarified, we have the following comments concerning the information quoted in the Data Gap Report from other reports and documents:

Section 6.0: The second paragraph on Page 18 is not clear that the shipments of WIP are not loaded onto railcars at the site, but instead are placed in intermodal containers and trucked from FMRI to Catoosa, where the containers are loaded onto railcars.

- Page 21: Mr. Davis' comments about recycling tantalum scrap are based on statements by Mr. Burgess at a meeting between FMRI, Muskogee Port Authority and DEQ
- Figures 2, 6.1, 6.2, 6.3, 6.4, and "Conceptual TCE Plume Map Overlying Water Table Map":
  - The location of wells MW-01 through MW-07 and "MPA" series borings should be checked against the location information enclosed and against maps in the Temporary Brownfield Assessment (TBA) reports by DEQ. Borings MPA-2E and Monitoring Well MW-05 are plotted within the License Area. The locations plotted in the 2015 Terracon report are incorrect. Corrected location information for the MPA-series borings and monitoring wells MW-01 through MW-05 on the northern portion of the Northwest Property now owned by the Port of Muskogee are attached.
  - The wells MW-01 through MW-05 in former FMRI property in the Northwest Property Area could be used to extend the water table map to project the potential movement of the TCE Plume, once the top-of-casing elevations are determined relative to the same elevation datum used for the on-site monitoring wells, e.g. MW-51S and MW-54S and the well location information is checked and corrected as necessary.

#### Appendix C:

- 1993 Technical Report Remedial Assessment:
  - Missing Title Page and Table of Contents
  - Page 3-8 – incomplete copy.
  - Table 2 and Section 4 – "RCRA Corrective Action Levels" cited in the 1993 Technical Report apply to facilities expected to continue to operate under a RCRA permit and many have changed since 1993. For the purposes of the DP and other cleanup of this site, Preliminary Remediation Goals (PRG) should be developed based on EPA Regional Screening Levels (RSL) and the anticipated routes of exposure and anticipated land use. RSL indicate concentrations at which the risk to human health by exposure to the respective compound by the respective pathway, under default conditions, is considered acceptable.
- 2015 Limited Site Investigation and Sub-Slab Vapor Investigation

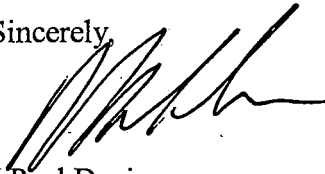
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As noted above, Exhibits A-2 through A-4: The location of wells MW-01 through MW-05 and "MPA" series borings should be checked against location data (enclosed) published by the DEQ.

- Borings MPA-2E and Monitoring Well MW-05 are plotted within the License Area, which is incorrect. The locations other borings and wells should also be checked and corrected as applicable.

Within one hundred twenty days of receipt of this letter, please provide the Work Plan for Site Characterization, as described in Agreement Provision 5.Q.5, for review. If you have questions or comments, please contact me by email at [j.paul.davis@deq.ok.gov](mailto:j.paul.davis@deq.ok.gov), or by telephone at 405-702-5132.

Sincerely,



J Paul Davis  
Environmental Programs Specialist  
Land Protection Division

- c. James Burgess, FMRI  
Jeff Laughlin, Enercon  
Gregory Chapman, NRC  
Gerald Schlapper, NRC Region IV

Enclosures: Water Level Elevations former Fansteel Northwest Property Area?  
Temporary Monitor Well/Boring Location information, former Fansteel Northwest  
Property Area

Water Level Elevations  
Former Fansteel Northwest Property Area  
Muskogee City/County Port Authority

Monitor Well	Latitude, Longitude	Ground Elevation	Top-of-Casing Elevation	Depth to Water (btc)	Water Level Elevation	Date Measured	Depth to Water (btc)	Water Level Elevation	Date Measured	Change since last
MW-01	35.776555 N, 95.305913 W	484.59	487.56	23.64	463.92	12/14/2010	23.96	463.60	1/28/2011	-0.32
MW-02	35.776716 N, 95.307746 W	500.00	496.77	34.76	462.01	12/14/2010	35.01	461.76	1/28/2011	-0.25
MW-03	35.776146 N, 95.306195 W	490.06	493.54	29.85	463.69	12/14/2010	29.58	463.96	1/28/2011	0.27
MW-04	35.775803 N, 95.307605 W	497.26	500.35	34.87	465.48	12/14/2010	35.12	465.23	1/28/2011	-0.25
MW-05	35.775747 N, 95.305477 W	486.10	488.90	24.71	464.19	12/14/2010	25.03	463.87	1/28/2011	-0.32

Note: All elevations are to local datum, specifically an elevation of 500.00 feet assigned to MW-02 Top of Casing (TOC)

Temporary Boring Locations  
Former Fansteel Northwest Property Area  
Muskogee City/County Port Authority

Temporary Monitor Wells and Borings	Latitude, Longitude
MPA-1 (a/k/a GW-1)	35.778271 N, 95.306111 W
MPA-2 (a/k/a GW-2)	35.775886 N, 95.306205 W
MPA-3 (a/k/a GW-3)	35.775773 N, 95.308214 W
MPA-2W	35.775807 N, 95.307062 W
MPA-2N	35.776552 N, 95.306069 W
MPA-2E	35.77588 N, 95.305373 W
MPA-2N-A	35.777128 N, 95.305954 W