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August 16, 2016

Tomas Oberding, PhD
New Mexico EMNRD
Oil conservation Division
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

APPROVED

By OCD Dr Oberding at 8:49 am, Sep 02, 2016

RE: Rule 34 Variance Request – Ursala Produced Water Recycling Containment

Dr. Oberding:

Devon is requesting a variance to rule 34 part 12(A)(4) requiring secondary liners to be 30-mil string reinforced LLDPE. Devon is requesting approval to use 40-mil LLDPE in place of the specified material. Based on our experience, we feel that the requested material will allow us to provide greater environmental protection in our impoundments.

Due to the construction of the 30-mil reinforced LLDPE material, nondestructive QA/QC testing cannot be performed. The proposed 40-mil LLDPE will be seamed in a manner that will allow nondestructive pressure testing of the seams to ensure proper sealing.

The proposed LLDPE is appropriate material for the proposed use in the impoundment, and is compatible with the material that will be stored. This material will provide equal or better environmental protection as the specified 30-mil reinforced LLDPE. Attached with this request is a sample specification sheet for the LLDPE with the proposed material highlighted.

The proposed new liner system cross-section is as follows: prepare subgrade, 12 oz. geotextile, 40-mil LLDPE, single sided geocomposite, 60-mil HDPE (smooth on bottom, textured on slopes). This will replace the cross-section required by the current rule and submitted with the original permit application. It should also be noted that this variance has been granted on past Devon sites, specifically the Hackberry Treated Water Impoundment constructed in 2015.

Should you have any questions or require additional information, please contact me by phone at 580-234-8780 or by email at jstallings@envirotechconsulting.com at your convenience

Thank you for your consideration.

Best regards,

ENVIROTECH ENGINEERING & CONSULTING, INC.

A handwritten signature in black ink, appearing to read "Jimmy Stallings", is written over a light blue circular stamp.

Jimmy Stallings, P.E.
President and Principal Engineer

GSE UltraFlex Smooth Geomembrane

GSE UltraFlex is a smooth linear low density polyethylene (LLDPE) geomembrane manufactured with the highest quality resin specifically formulated for flexible geomembranes. This product is used in applications that require increased flexibility and elongation properties where differential or localized subgrade settlements may occur such as in a landfill closure application.



AT THE CORE:

An LLDPE geomembrane that is used in applications requiring increased flexibility and elongation properties, such as landfill closures and mining applications.

Product Specifications

These product specifications meet GRI GM17

| Tested Property | Test Method | Frequency | Minimum Average Value | | | |
|---|--|------------|-----------------------|---------------------|---------------------|---------------------|
| | | | 40 mil | 60 mil | 80 mil | 100 mil |
| Thickness, mil Lowest individual reading | ASTM D 5199 | every roll | 40 36 | 60 54 | 80 72 | 100 90 |
| Density, g/cm ³ (max.) | ASTM D 1505 | 200,000 lb | 0.939 | 0.939 | 0.939 | 0.939 |
| Tensile Properties (each direction) Strength at Break, lb/in-width Elongation at Break, % | ASTM D 6693, Type IV Dumbbell, 2 ipm G.L. 2.0 in | 20,000 lb | 152 800 | 228 800 | 304 800 | 380 800 |
| Tear Resistance, lb | ASTM D 1004 | 45,000 lb | 22 | 33 | 44 | 55 |
| Puncture Resistance, lb | ASTM D 4833 | 45,000 lb | 56 | 84 | 112 | 140 |
| Carbon Black Content, % (Range) | ASTM D 1603*/4218 | 20,000 lb | 2.0 - 3.0 | 2.0 - 3.0 | 2.0 - 3.0 | 2.0 - 3.0 |
| Carbon Black Dispersion | ASTM D 5596 | 45,000 lb | Note ⁽¹⁾ | Note ⁽¹⁾ | Note ⁽¹⁾ | Note ⁽¹⁾ |
| Oxidative Induction Time, mins | ASTM D 3895, 200°C; O ₂ , 1 atm | 200,000 lb | >100 | >100 | >100 | >100 |
| TYPICAL ROLL DIMENSIONS | | | | | | |
| Roll Length ⁽²⁾ , ft | | | 870 | 560 | 430 | 340 |
| Roll Width ⁽²⁾ , ft | | | 22.5 | 22.5 | 22.5 | 22.5 |
| Roll Area, ft ² | | | 19,575 | 12,600 | 9,675 | 7,650 |

NOTES:

- ⁽¹⁾Dispersion only applies to near spherical agglomerates. 9 of 10 views shall be Category 1 or 2. No more than 1 view from Category 3.
- ⁽²⁾Roll lengths and widths have a tolerance of ±1 %.
- GSE UltraFlex is available in rolls weighing approximately 3,900 lb.
- All GSE geomembranes have dimensional stability of ±2% when tested according to ASTM D 1204 and LTB of <-77°C when tested according to ASTM D 746.
- *Modified.

GSE is a leading manufacturer and marketer of geosynthetic lining products and services. We've built a reputation of reliability through our dedication to providing consistency of product, price and protection to our global customers.

Our commitment to innovation, our focus on quality and our industry expertise allow us the flexibility to collaborate with our clients to develop a custom, purpose-fit solution.

[DURABILITY RUNS DEEP] For more information on this product and others, please visit us at GSEworld.com, call 800.435.2008 or contact your local sales office.

